

CASUAL PAPERS

Cultural Resource Management

SEPTEMBER 1982, Vol. 1, No. 1

IN THIS ISSUE

HISTORICAL SITE ARCHAEOLOGY IN SAN DIEGO COUNTY

SAN CLEMENTE ISLAND EXCAVATIONS AND SURVEY: 1950

SUBMERGED CULTURAL RESOURCES IN SAN DIEGO COUNTY

DATA

CURRENT RESEARCH

NEXT ISSUE

EDITORIAL POLICY

★ ★ ★ ★

CULTURAL RESOURCE MANAGEMENT CENTER
DEPARTMENT OF ANTHROPOLOGY
SAN DIEGO STATE UNIVERSITY
SAN DIEGO CA 92182-0377

TABLE OF CONTENTS

Papers:

*Historical Site Archeology in San Diego County: Tapping the Resource	Jerome Schaefer	1
San Clemente Island Excavation and Survey (A Preliminary Examination of Artifactual Material and Field Notes from 1950)	Fred W. Kidder	5
*Submerged Cultural Resources in San Diego County	Roy E. Pettus	72

Data:

Master's Theses (1961-1982) of San Diego State University Dealing In or Related to the Practice of Archaeology in San Diego County	88
Collections Curated by San Diego State University, Department of Anthropology	90

Current Research:

Cultural Resource Management Center	95
Next Issue	96
Editorial Policy	97

*This paper was partially funded under the National Historic Preservation Act of 1966 through the California Office of Historic Preservation.

HISTORICAL SITE ARCHAEOLOGY IN SAN DIEGO COUNTY:
TAPPING THE RESOURCES*

Jerome Schaefer, Ph. D.
Cultural Resource Systems, Inc.
Wirth Associates

Introduction

As the site of the first Spanish Mission in California in 1769, San Diego maintains a special place in California history. The documents, archaeological remains and architecture that have been produced since that time constituted an important resource to be preserved and tapped. The intent of this essay is to summarize some of the major issues concerning historical archaeology in San Diego County and to describe some of the most applicable research orientations that enhance the historical significance of the resource base for social science, for history, and for public interpretation. There is no need to re-iterate San Diego's history which is already well synthesized (Bancroft 1884-1890, Burkenroad 1978, Burkenroad and Cleland 1980, Fink 1976, MacPhail 1979). Broad periods of historical development will be defined here, however, as a framework for discussion. It will not be possible to enumerate all the previous research in historic sites archaeology and history, much of which remains buried in a steadily proliferating corpus of survey and mitigation reports (Kidder, et al., 1980). Some representative studies will be cited, however, which reflect the variety of recently examined site types and research orientations. Also, most of the larger projects remain unpublished or only partially published and I apologize now for what must be a superficial account of previous research.

Historical Significance of San Diego County Resources

Within historic times, San Diego's population has lived under three political entities: 1) The Spanish period dominated by the mission and presidio institutions (1769-1821); 2) the short-lived Mexican period during which the mission lands were gradually secularized into private land grants (1821-1848); and 3) the American period which saw the Anglication of the county's socio-political system and the urbanization of its population (1848-present).

* Author's permission is needed to cite. Bibliography in possession of Author.

nature of the CRM proposal process, there will be a tendency to underfund historic projects resulting in inadequate research designs, only token interdisciplinary analysis and delayed publication schedules. This problem exists in prehistoric CRM mitigation projects as well (Raab, Klinger, Schiffer and Goodyear 1980) but it is exacerbated in historical archaeology because of the greater cost requirements necessary in documentary research and effective analyses of what are extremely large and diverse artifact collections. To solve this problem, a number of steps should be taken. They include greater information flow between the State Office of Historic Preservation, development agencies, and in particular, federal granting agencies such as the Department of Housing and Urban Development (HUD) to ensure that sufficient time and funds are budgeted at the beginning of a project to carry out the CRM process. There should also be greater monitoring of the competitive proposal process and implementation by the contractor to guarantee high quality reports.

Curation problems will also continue to mount. Historical archaeology produces a great volume of artifacts including perishable wood, leather, cloth, and metal materials which require far greater attention and space than most prehistoric finds. However, due to the competitive situation, contractors are reluctant to budget for sufficient long-term curation. Moreover, the needed facilities simply do not exist. For one reason or another, historic collections from earlier, publicly-funded excavations are not accessible for comparative study.

Other areas for improvements include better use of current theoretical and methodological concepts. Due to funding limitations or lack of expertise, there is sometimes a failure to apply new or innovative approaches and a lack of reference to works which are attempting to expand the vistas of historical archaeology (Brown 1980, South and Schuyler). There is still a tendency to view historical archaeology as an adjunct to the descriptive chronicle rather than as a means to apply anthropological, economic, or geographical theory. Sometimes this cannot be avoided with small projects and limited data bases, but larger projects must be conducted up to current research standards. Other areas for improvement include better integration of specialty studies which too often appear as appendices rather than addressing a cultural research design or model. More comparative work can now be done as well, especially considering the recent urban studies in other parts of California (Greenwood 1975, 1976, Praetzel et al. 1980, Schulz and Rivers 1980, Schulz et al. 1980). With the enormous temporal and functional variety of historical resources in San Diego County, and the growing expertise and theory in the field of historical archaeology, the inherent potential for future research will surely be realized. In recent years, the quality of historical reports has steadily improved, but these improvements are small compared to the future potential that exists.

SAN CLEMENTE ISLAND EXCAVATIONS AND SURVEY

(A Preliminary Examination of Artifactual
Material and Field Notes From 1950)

Fred W. Kidder
Cultural Resource Management Center
Department of Anthropology
San Diego State University

During the Department of Anthropology renovations in the summer of 1980, a collection of artifactual material was discovered tucked away in a dark corner of a little-used storage room. Removal of the dust-like overburden revealed that the collection, still packed in its original boxes, had indeed resided in the same spot for many years. These materials were subsequently removed and were housed in the Anthropology laboratory on the campus of San Diego State University. The collection is currently under study.

Initial examination showed that most material was intact and compared favorably with the compiled field notes included here (see Appendix 1). Much of the material was re-bagged and boxed except in instances where preservation of the associated matrix material was important. Fragile material, when removed, was wrapped, matrix and all, in cotton cloth and tissue paper. One rather fragile specimen, which was deteriorating badly, is now undergoing preservation.

Contact was made with the Natural Resource Officer for the United States Navy on San Clemente Island to inform him of the existence and condition of the collection since environmental documents are currently under preparation for the Island. At this time, the original vellum maps of the Island with the location of the archaeological sites marked on them (as completed by the field school) were loaned to the Navy Resource Office for duplication. Given the poor condition of the originals, one was destroyed in the copying process. A copy of that map does exist though and is housed with the collection and field notes. According to field notes, a photographic record should be extant, but as yet, no photographs have been located. These, of course, would provide an invaluable source of information and would aid in the understanding and clarification of the current state of the artifact assemblage.

The Native American Heritage Commission was also informed of the existence and publication of the initial study. With respect to their wishes, locational information of sites discussed in Appendix 1 have been altered or removed where necessary. This information will remain confidential.

Excavated material remains have been compared with field notes, maps, and artifact notes in order to ascertain the completeness of the current collection. It should be noted that many of the smaller artifacts, such as drilled shell beads, are not present in the collection. It is possible that this material was never removed from the field locations since it cannot be located.

The following is a brief summary of the excavation and survey as it now stands with new photo documentation where appropriate. The collection contains many interesting diagnostic artifacts with a large assemblage of stone vessels in a good state of preservation. Volcanic and sedimentary materials are well represented in the lithic assemblage. Many partial and whole stone disks often referred to as "donut stones" or "net weights" as well as phallic shaped pestles are present (Photo 1). For example, one stone bowl was excavated still containing red ochre pigment on both its bowl and associated pestle. A large sea mammal (identified as a sea lion) was excavated from a hearth area. (Much discussion between participants as to the etiology of the skeletal material is included in the field notes.) A few soil samples were also included.

One of the more interesting aspects of this project are the field notes that the 10 students completed during their 11 days on the Island. These associated notes, duplicated here in the appendix, provide the reader with useful as well as frivolous information on the excavation and associated artifactual material. It is obvious that some students went to great pains to make their notes as complete as possible. More importantly, those notes will play an important part in later reconstruction and study of excavation material remains from the Island.

The field notes were reproduced exactly, except for minor editing and removal of names which may identify the participants (initials are used instead). For the sake of clarity, field drawings are not included here, since their quality varies greatly from author to author. When appropriate, the locations of sites under discussion in the field notes are included in parentheses.

The Field School

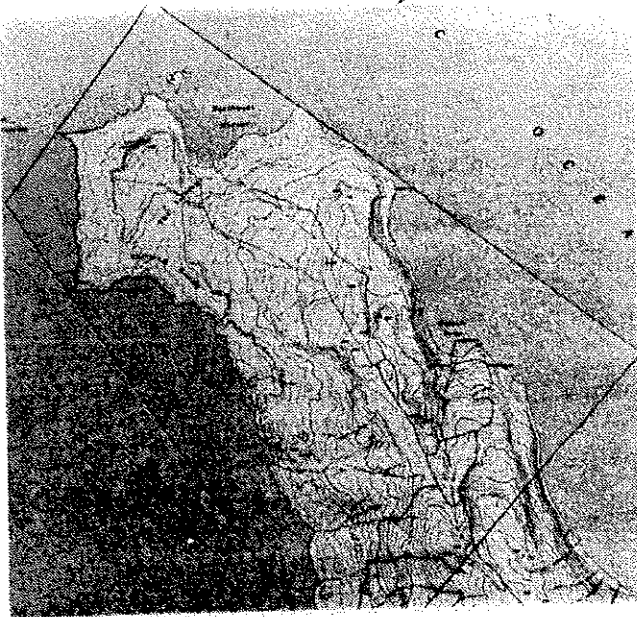
From July 6-17, 1950, survey and excavations were carried out [by a San Diego State College field school] on San Clemente Island, California. Ten field personnel, a cook, equipment, vehicles, and assorted paraphernalia were transported by the United States Navy from San Diego to San Clemente Island to complete a reconnaissance and salvage excavation in and around an area soon to be impacted by field maneuvers. According to various field notes, students were divided into two groupings, each assigned to specified survey and excavation areas on the Island. Then an on-foot survey of a portion of the Island (see map, page 8) was systematically carried out. Resources were identified and mapped by a professional cartographer accompanying the crew(s). Later, most prehistoric sites were excavated or at least surface collected.

During the 11-day field season, a total of 31 prehistoric archaeological sites were recorded. As mentioned earlier, most of these were tested, and many were subjected to large scale trenching. Further, many sites were then systematically excavated, with the placement of controlled sub-surface test units. The resultant material, some 400 or more diagnostic artifacts, were assigned catalog numbers in the field. It appears that the laboratory crews concentrated on cataloging and recording these "larger" artifacts, such as stone bowls and pestles, rather than flaked lithics or shell. Many of the more complete descriptions then tend to be of stone bowls, metates, and manos. The smaller lithic material was lumped under a general category of "stone" and much of this material remains uncatalogued. It appears that some of the material from the artifactual collection may have been surface collected from areas outside the initial survey and excavation plane (since provenience for some material is different from the general area explored.) Two or three complete stone bowls and a number of bowl fragments could be classified in this category.

Many of the participants refer to the excavation of human burials. This material, if removed from the field, is not now extant in the current collection. As will be noted in examining the field notes, some pathologies were noted.

The collection of artifactual material, field notes, and maps of prehistoric site locations completed during the excavation was then packed for return shipment to the University. As best can be ascertained, the material was placed in storage after the field school returned to San Clemente, there to remain. It was never formally studied and a preliminary report never completed, although excellent detailed maps were produced.

Most will agree that given the number of sites excavated and tested during the 11-day field period and the quantity and quality of the material recovered, it is obvious that this was a large undertaking for so few people. The archaeological methods employed were based wholly upon resource discovery and salvage rather than on a carefully controlled subsurface exploration and testing technique. It should be obvious to most readers of these notes (see Appendix 1 & 2) that much care was taken by many individuals in the field during excavation to accurately record all aspects of the excavations, surface collecting, and trenching.



Map of Land Area Surveyed on
San Clemente Island
1950



Stone Bowl and Associated Red
Ochre Pigment as Excavated



Groundstone, San Clemente Island

BEADMAKERS ONCE LIVED ON SAN CLEMENTE

San Diego Union

August 8, 1950

Bead makers, among the finest in prehistoric America once kept shop 60 miles west of here on barren San Clemente Island.

As proof of [this] ancient history, a dozen State College student archaeologists, headed by Dr. S.L.R., Professor of Anthropology, brought back hundreds of tiny beads after a two week stay on the island.

'The remarkable quality of the San Clemente beads,' R. said, 'is their size. I know of no Indians that made smaller beads than these. They are made from shells, some beautifully formed. Just think of the hours of labor that went into drilling so many tiny holes.'

NAVY COOPERATES

The expedition was undertaken with the cooperation of the navy to unravel mysteries of the islandic Indians' origins. Findings indicate that the thousand or so inhabitants who once lived on San Clemente had been influenced by Gabrielino Indians who lived on the channel islands and also by the coastal La Jolla Indians who lived in the area before Cabrillo came.

'The San Clemente people' R. said, 'had implements of stone and shells. They had no pottery. Some of their bowls were beautifully shaped and a few showed traces of shell inlays, and indication of influence from the islands farther north. Some of the choppers were like those used on the mainland. There is no way of knowing where the people themselves came from.'

HOUSE PITS UNCOVERED

The college group uncovered several house pits surrounded by a ring of shells. Evidently the Indians lived in a hut in the center and disposed of the shells after each meal by simply tossing them over their shoulders. They lived on fish and shell fish.

R. said the discovery of the fish hooks proved that they were anglers. He said that two kinds of hooks, notched and un-notched, were found. The Indians used asphalt, which is found on the island, to help stick the fish lines to the hooks.

'We dug up a seal skeleton with the hook still in it,' R. said. 'They must have used it for a ceremonial burial.'

HUMAN GRAVES FOUND

The archaeologist found human graves in a cave, which probably belonged to an early tribe. Skeletons showed that the bodies had been bent and buried face down. One still had an arrowhead in his chest, indicating, R. said, 'that he had not died of natural causes.'

'We cannot be sure of the origins of the San Clemente island Indians,' R. said. 'They were living there when Cabrillo first visited the island in 1542. They had all left about 100 years ago.'

MORE STUDY NEEDED

'I suspect that more study may indicate that the La Jolla Indians lived between 1,000 and 500 years ago and that the Gabrielinos were there about 500 years ago.'

(Photographs)

APPENDIX I

COMPILED FIELD NOTES AS RECORDED IN 1950

SAN CLEMENTE ISLAND EXCAVATIONS

AND SURVEY

July 5, 1950

Loaded aboard the naval vessel Y. E. 379 at 1600 hours. Equipment and vehicles were secured and departure was made at 2000 hours for San Clemente Island. The party was accompanied by Lt. Commander W. of the 11th Naval District. Voyage smooth all the way. Slept on the deck.

July 6

Dock in Wilson Cove, San Clemente Island at 0400. Equipment and vehicles were unloaded. Billets were set up in BOQ and all operations are to be made from this point. The first survey was made of sand dune area late in the morning. A broken bowl was found off the road and field operations started from here, designation of Site No. 1. The area within 400 yards radius was checked for surface artifacts possibly barred by wind and drifting sand. An atlas, presumably human, was found by self, spot designation as pit A. The site seems to be identified by a darkening of the soil from charcoal dust, grease left after prolonged habitation. After supper, Dr. R. and F. and self drove down to peak above goose neck beacon and found some caves. These look fair--might return for additional work.

July 7

Operations continued on Site #1 and additional inspection of area was made. Photographic assignment was given to me. Feature #1: a broken bowl. Was photographed after proper procedures for removal had been made. Procedure for establishing scale and direction of photographs were made. All instruments in photos will have pointed part pointing to magnetic north. Photos will have recording sheet.

Considerable number of surface artifacts found consisting of pestles, manos, metates, and some odd shaped stones, mostly round with a depression on both sides or like doughnuts with the hole unfinished. Bowl fragments were found on the surface of the sand dune in scattered areas of the dunes. No natural arrangement of skeletal remains found. Note: If two sticks or a forked stick were found in a particular manner, these dough-nut stones could be used as a club.

[drawing]

These knots would then bear into depressions and hold the stone in place.

July 8

Work continued on Site 1 and 3. Site 3 showed considerable promise as far as surface artifacts are concerned. There was also a considerable number of bones on the surface (no skull). However, there was a complete lack of skeletal orientation. Photographed and continued work. The jeep seemed to be acting up on the way to get chow. I checked this and found the nut on the steering pivot loose--no cotter key! This fixed, the day's operations continued. F. and self went fishing after supper and found two sites which have been dug. They are about 25 yards south of butane tanks below BOQ and approximately 30 yards apart.

July 9

No work assigned. Dr. R., F., and self went down to site found last night and dug excavation a little further. This proved negative, with the exception of a large number of fish bones. Giving the site up at dinner time was just "coincidental." This site was number 30. In afternoon, Dr. R., H., F., and self rode in the jeep over passable roads to southern section of the island. On the way back to the area, area near the old stone ruin was investigated. Good possibilities--this site assigned number 25. He checked the jeep to see why it didn't have the power it should. Found the accelerator linkage jamming against the carburetor linkage, also set back mixture--far too rich. Developed skimming in front end. Check this on the way, back-steering pivot nut cracked. Lucky to get a part from Mrs. P. of the Island personnel. Hope it holds. Also took a look at two sites south of the airstrip. Dropped a couple of test pits. While digging, I spotted the first whole fishhook made of shell.

[drawing]

July 10

K. P. Group went to survey airstrip area.

July 11

Detail work proceeded on two sites south of the airstrip #23 and #24. Site 24 was staked off, leveled and digging proceeded. Photographs were taken. Animal skeleton was found at this site. Projectile of some type was found in the midst of the skeletal remains. Photos taken before removal. I personally can't buy the idea of this being a dog. If I recall my Zoo. correctly, the cat skull didn't look like that at all. I am assuming that the dog is much the same as a cat.

Foramen magnum opens posteriorly instead of vertically.

Sagittal crest very pronounced and very long.

Lamboidal crest seems too pronounced.

If it was a dog, and these people had gone to the trouble of domesticating it, why kill it?

My guess is that it might be a seal pup; first, because of the way that it was killed and second, because of the way that these primitive people would probably not permit them to kill a full grown seal. And third, a high and long sagittal crest suggests heavy musculature of the neck of a seal; and fourth, the position of the foramen magnum is like a seal's.

More fishhooks taken out of Site 23 but not much else. Found another site approximately 500 yards below #23 directly west--negative results.

July 12

Assigned to the map detail and allocations of Recon. teams to cover the sand dunes area completely.

C. and P. to cover area south of the machine gun school to one half mile north of the school.

Commander C. and Dr. N. areas within one quarter mile radius of jeep and to the ocean (Malva 255).

M. and E. 3/4 of a mile north and to the ocean west.

F. and H. 3/4 of a mile west and to the rifle range.

F. and J. 3/4 of a mile north to Castle Rock.

Dr. R. and self rode south to the machine gun school to Eel point.

(map of survey areas)

Compared notes at noon and combined efforts on the sites that M. and E. had found. C. and G. returned to the site found by them. F. and J. went around the island to BOQ.

Some skeletal remains found in sand plus some beads. Designation as Site 4 and 5.

Ran foot race with kit fox--fox lost. F. now has his specimen.

July 12 (continued)

H. found evidence of previous digging at the site designated as #6. I found a stone object, shaped much like the head of a carpenter's ripping hammer. Could be a mano, but does not look like othe previously found.

[drawing]

July 13

Stayed in--ears cooked! Worked on getting maps in order and selecting those that would be helpful in making the master map when returning to the mainland. Also started to tie in locations of various sites worked on so far. Site found by Dr. R. and self tied in with very small triangle of error. Used Brunton compass continued at site 4 and 5. Also digging started on site 6.

July 14

Operations continued in cave. Worked with Commander C. and Dr. N. on locating sites 4, 5, and 6. Number of photos taken of group at work. Bones found at this site but no orientations as yet. I personally like the idea of working these cave sites. It would seem to me that these Indians that used the caves are more primitive culture. Isn't it more likely that any remains found are more apt to be found as they were used rather than rummaging through a garbage pit or old fire pit? Landslide, cave in or outright desertion of site because of seasonal wind change or weather severity might cause them to leave.

July 15

Additional work on the cave by the group. Photographic work on the cave site finished. Came in early, helped D. for awhile with identification of artifacts by location. Also finished work on maps. Now have enough data to complete work on master maps on velum when I get home. Hope to make a good map for a permanent record of the expedition. Afternoon, did one half day of KP so J. could get out and see what we've been doing. Fixed hamburgers for supper. Mrs. B., of the Island staff, brought down two cakes for us. Fixed flat on the jeep right before supper. Mr. P. gave us a hot patch and helped by loaning us some tools. Visited the B.'s, enjoyed visiting with them. Also talked with E. V. for awhile. He was writing his report on the group--assured me he would write a good report on us.

July 16

The day was spent mostly in getting supplies and equipment squared away after supper. Helped J. and Dr. R. get the food situation divided up for the fellows. Radio message from the mainland says that we are to be ready to leave at 1300 hours.

July 6

I sighted the Island 2:35 a.m. We unloaded in the dark and one bedroll was dropped into the water and one was wet by a black dog (mine). The water was very clear under the beams of our flashlights and we saw many phosphorescent sea creatures. We loaded the truck and the dock and rode up the hill behind the truck and the cove to the deserted BOQ. Chl. and I took the end room (#15). After our gear was all stowed away and it was becoming light, the jeep and the 32 Chevy drove out to the sand dunes for the survey trip. There was a black top road to the backbone of the island and leading south down the center. We left this road and traveled down a dirt road to the west coast of the Island (west of Wilson's Cove). Here we found a large sand dune area. We stopped in the heart of it, near a marked bowl that had been found previously.

The sides of the dunes that had been blown by the wind exposed rocks and chips, pieces of animal bone and shell of all kinds (although predominantly abalone).

2

[drawings]

Evidences of fire was clear. I worked with a group (H. and Chl.) that sifted one of these fire pits. We found nothing but charcoal chips and quite a few fish bones. I walked over the area of site 1 and found many bowl parts and some round stones that had dimples on each side.

We later found out that this was common and the stone choppers and scrapers that were found on the surface were very crude. They do not go with the stone bowls. Arrived home at 12:00 and had a roast beef dinner (caught 4 lizards, then fished, then went to bed at 10:00).

[drawing]

July 7

We got up at 6:30, ate breakfast at 7:00, and went to the Dune area (Site 1) at 8:00 a.m.

I wandered around looking for something spectacular (found nothing except a bowl 400 yards east of Site 1, pit A which I marked). E. and I went to Site 1, pit D and started trenching that mound, an abrupt little sand dune 10 feet high and 25 feet across. It was covered with the usual stone rubble and shell material. The top of it had a thin covering of sand, 1-2" which when scraped away revealed the black layer of sand and fire pits below. We dug as indicated on the facing page and found nothing out of the ordinary. On the surface were parts of bowls, materials, some hammer stones and scrapers and a few manos.

[drawing]

plus many discarded stones. Encountered the tops of fire pit stones in the spots indicated about 6" down.

July 7 (continued)

Typical fire pit arrangement.

[drawing]

Just above, room for an abalone to be boiled in the shell.

Finished work here and walked over the area to Site 3 and helped J. M. look for more bone awls.

Went home.

[drawing]

July 8

We went 1 or 2 miles south of the air strip to survey. I was southeast, in section with Chl. and J. M. We spread out and in spite of our desire we found only a few bowl pieces. We examined the east cliffs in our sector and combed one canyon. Came back to the jeep. Ate (all except H., who was lost), then we drove to the northeeast sector to work Site 20 (found by today's survey part). (Stopped to help J. M. dig at fossil.)

I dug in trench until we reached the rocks (found an arrow point), then I screened for O. who had found two 25¢ pieces (abalone), then went home.

[drawing]

Fished in the morning then I went over to Site 30 near the butane tanks and dug with J. M., D., Ch., and E. We found more fish bones than we have ever before or since. I spent most of the time on pit 2.

[drawing]

I wonder what type of bone this is, I found it in pit 2.

[drawing]

July 10

We all went out to Site 24 (located on the July 8th survey). This was to be screened in earnest (see archaeological site survey record). I assisted D. as artifact man (see my contour sections of this Site), helped J. F. level it off, worked with the surface collection and took note of the stone pattern if any. I screened and I found no small artifacts. We struck bone in pit 2; this trenched out to be a seal with a harpoon barb on its back. It was wrapped around a rock with an abalone shell at its feet. Went home.

[drawing]

July 11

We went back to Site 24 and commenced work. D. Ch., O., J. M. and myself went over to Site 23 and started screening everything. In the course of the day, we found many small artifacts (arrow, dimes, several fishhooks, large bead, pendant). It is unfortunate that we had to leave this place.

July 12

In the morning, we did survey work back on the dunes (starting from Site 1 area), we went out up to and down the coast covering much more ground than usual. D. was mess cook, so I handled the artifacts in his place. Ch. and I covered the area between Site 1 and the machine gun school. We picked up some surface stuff (manos, do-nuts, etc.), and located a camp site about 500 yards east of SCI 1, pit 1. Ate lunch (H. lost again). We went north to Site 4, E. and J. M. have brought back a lot of pestles from there. I helped screen while they dug in the top of the dune. About 20 minutes of this, when Dr. R. came back from a dune to the north and said to move over there. We found human bones all over the surface.

[drawing]

E., J. M. and I dug into a saddle on the dune (SCI 15) and found human bones but no complete skeleton (they seemed to be dropped in there); a fine screening, however, revealed many small shell beads.

Ch. killed a fox for me by throwing a knife through its throat.

We went home with a pile of unconnected bones.

[drawing]

July 13

Messed cooked all day. Baked potatoes, steak, carrots, peas for supper. I got to run the automatic potato peeler for the carrots (Oh happy day!).

[drawing]

July 14

We all went to SCI 6 (a cave shelter had fallen in.) A skeleton had been removed the day before. We dug and screened but found one bead. Some needle-like artifacts turned up, however.

[drawing]

July 14 (continued)

A body was found on the northern wall of the cave and down on the rock floor of the cave. After a few hours of this, I, for one, thought that we would not find anything worth recovering (however, bones in horrible condition started to appear).

Trip to northwest harbor (Site 8) sand dune, found bowls with different rim.

July 15

Back to the cave, worked around for one-half day without much luck, although a lot of dirt was removed. Afternoon, skulls began to show up (fragmentary). I went back to Site 5 and found some more beads (stone tray), then came "home."

Worked with D. late into the night cataloging and packing.

July 16

Worked with D. on artifacts.

Took trip to China Point, found fresh water well there, saw goats on the way back.

Looked over Site 25. Found nothing there and came home. Worked with D. late.

July 17

Packed all gear.

Took it to the dock.

Went on board Koca Ata. Home (pleasant trip). Arrived Navy pier. Mother waiting on the dock.

Bowl rims.

[drawing]

July 6

Site 1

The team consisting of P. and the author, made a rough examination of the region to the south of the road. The southernmost point at which there was any sign of habitation was excavated. Charcoal, baked earth, and shell fragments were found to a depth of six inches. Only one diagnostic fragment was found. That was a piece of mano (flat). Of two circular areas roughly 14 inches in diameter in which the charcoal extended into the sterile sand to a depth of about 7 inches.

Completing this examination, the team moved 200 feet north and sank a test pit on a knoll just below the crest. There was 3 inch layer of charcoal overlying sterile sand. On the surface however there were found fragments of 3 bowls.

July 7

On the second day of operations, the team returned to the location of the previous day activities and continued explorations to the south. The morning's work was climaxed by the finding of a number of fragments which gave promise of going into the reconstruction of two complete bowls.

The afternoon was spent trenching a small mound upon whose surface was found a number of fragmental human bones. A 10 foot trench convinced everyone that the bone material covered the surface only, and that the lower levels consisted of virgin sand. Of little interest archaeologically was the fact that P. found 7 glass net floats of Japanese vintage.

July 8

In addition to the usual members of the party, E. L. was assigned to the group this morning. Our task was reconnaissance and we were given the area south and east from the jeep. We examined the region for a distance of about 2 miles. We came across one large camp site and several smaller ones. Of cultural material, we turned up 2 fractured stone rings (dough nuts) and one complete one, also, a small green bead.

That afternoon we commenced the excavation of the largest camp site located earlier that day. The author was working alone, and it was his good fortune to locate two discs (commonly referred to as "dimes") about the size of a 10 cent piece. The first was made of stone and was inscribed with a picture of a palm leaf. The second was of shell and was without ornamentation. The excavation formed a test ditch some 12 feet in length and averaging 12 inches in depth.

July 9

This day is Sunday and because of it, the team did not get underway until after lunch. At that day we went to work in the site excavated July 9. This is the area south of the airport.

The work consisted of completing the test trench started the day before and extending that trench laterally through the most productive section. Two more small test pits were sunk in the area.

The artifact material consisted of a stone knife, an arrow point, a broken fishhook, and a fragment of a polished and incised doughnut. Several other unimportant items were uncovered.

July 10

Mess Duty

July 11

P. was on mess duty this day, and there a number of different people working with the students in different positions. For this reason, today's account will deal only with the activities of this student.

Work was begun at 8:30 on the as yet unopened mound 23. The mound was trenched to a depth of six inches and all soil sifted. This completed, a pit was opened measuring five feet on a side. During the day the pit was enlarged until it covered most of the center of the mound and measured 280 sq. feet. All dirt removed was sifted.

Of the artifact material found in the area, fishhooks were the most numerous. Five were found. Also found were 3 beads, a pendant, and an arrow head. Of this material the student accounted for, one fishhook, one bead, and the pendant.

Of unusual interest was the fact that a considerable number of finger and toe bones were found in the pit. This in itself is unusual, but when coupled with the fact that a great number of the same bones were found in another pit last Sunday, the question becomes an enigma pressing for solution.

July 12

The group went back to the dunes today. The team of P. & Cg., together once more, headed south on a reconnaissance mission. The first objective was the combing of the dunes with a fine toothed comb. During the completion

of this program a site was located and marked, at which there were a large number of human bones on the surface. Three jaw bones were immediately evident, and it was noted that every bone on the surface was fractured. Moving on, the team located a broken red bowl, the greater part of which was still present.

Upon completing the work in the dunes area, the team continued south to investigate some caves in the hillside above the machine gun moving target range. The caves contained only ---- and the team moved on to the terrace above which, by the way, was the fifth above the present beach line. On this terrace a little wider than most, the team came across at least a dozen camps of a particular type. There was little or no worked stone. At no place was there more than a single piece of diagnostic stone on a site. The sites themselves ranged from 6 to 12 inches in depth and were composed of a high concentration of charcoal and burned earth, with a little shell. A half bowl was found in the area, but not in the vicinity of any of the camps.

In the afternoon, the team returned to the bone covered site discovered earlier in the day. A trench was run across the width of the mound. A number of human bones, including 3 lower jaw bones were found. It was noted that all bones were found to be above the layer of burned and blackened sand, even where that layer was found to be under an overburden of four feet of sand. All bones except the very smallest were in a fractured condition. Very few rib and vertebrae were found, but there were piles of limb bones and cranial fragments. When considering this information, one cannot help but question the possibility of cannibalism.

The only notable artifact found was a well shaped scraper.

July 13

The team was today assigned to work on the "grove" discovered yesterday. It was almost immediately apparent that the "burial" was much disturbed. Churned up would be a better description. The bones, aside from the fact that they were not all in a fractured condition, were little better than those excavated by the team half a mile south yesterday.

There were, however, a great many beads in the vicinity and much of the morning was spent sifting for these artifacts which several thousand were found. A reconnaissance of the region at noon, showed that beads were not immediately apparent any where else except where already noted.

July 13 (continued)

Following the noon meal, the student in the company of H. J. set out to reconnoiter a site on a hillside about 1500 yards north. The site turned out to be a collapsed cave. A number of bones had already been dug up by a previous excavating party. Work was immediately begun to dig out the grotto in the hillside. Despite our intensive efforts, quitting time came before we had uncovered more than a single pestle. The site, however, shows promise of becoming the most productive region yet.

July 14

We returned today to the cave north of the dune area. Excavation was begun immediately. Aside from a well formed pestle, nothing of any world shaking importance was found until shortly before noon, a large femur in an apparently good state of preservation showed up in the northern end of the cave. Further excavation revealed the femur to be the best preserved of a number of badly fractured bones. It and several others were removed shortly after one. A little while later, sections of the upper and lower jaw, both still containing well preserved teeth came to light. Further digging produced little more of interest other than two teeth which were sifted out of the charcoal layer from the center of the room and a number of toe bones which seem to turn up at every turn.

July 15

Today the team along with J. M. returned to the excavation at the cave site. We had nothing to go on other than the fact that the job had not been completed, and we wanted to see if there might not be something else still buried toward the rear of the cave.

At 10 o'clock, we located a badly decomposed cranium in the wall at the left rear of the cave. Further excavation revealed a large skeleton in flexed position. It was lying on its left side and facing the southern extremity of what was the original opening. The bones did not quite have the strength of well dried leaves. Removal was impossible with the equipment on hand. The removal of the matrix was carried out as carefully as possible by all of the team members, each individual taking a turn. As the work progressed, it became evident that all of the bones were badly fractured. There were several stones over the burial, but their combined weight was insufficient to affect such complete crushing of the members. A crude, but recognizable, arrow point was found lodged in the spinal column. This point itself was lost, and was not recovered.

July 15 (continued)

Further work turned up another burial in the center rear of the cave. The cranium was all that was above the charcoal level. The bones of this interment proved to be in better condition than those already encountered and it was obvious from the start that some sort of a removal would be possible. While clearing away the surrounding matrix, more bones were encountered near the top of the cave. It was immediately evident that they would never be removed because of their already fractured state, and extreme degree of decomposition.

July 16

Today is Sunday and the team with the exception of P., who returned to the cave and took up the tools where they had been set down the night before. The first task was the cleaning up of the skeletons and photographing of those remains while in a place.

Completing this, the removal of the center skeleton was started. It should be noted that the skeleton was in a peculiar position. It was lying face down. The right leg pulled up at the right, with the knee cap under the right arm pit. The arm was pulled up at the side with the hand folded around the throat. The left arm and hand were in a similar position. The left leg was drawn up as was the right, but it was folded under the chest, the knee almost touching the right shoulder. The head was pulled back over the vertebral column. The position of the cranium was so far back, that it must have entailed the breaking of the neck to get there.

The limbs were cracked in every case. The ribs were badly fractured and the other ends were off set as much as two inches. The cranium was fractured by a downward force which may have been nothing more than compaction but this does not explain the fact that the lower jaw was found 3 inches away.

From the condition, it was evident that only the limbs could be removed and these only in a segmented condition. Utmost care was expended in attempts to remove the limbs whole, but to no avail. The various segments were wrapped and packed. No attempts were made to extract any other part of the frame, although part of the pelvis and vertebral segments were taken out in a comparatively undamaged condition. It was during the clearing away of the broken remains of the chest section that an inch and a half willow leaf point was found in the right chest cavity. This point was well shaped and trimmed. The butt was crusted with a black substance which was thought to be asphalt. It may be surmised that this served as a binder for hafting the point. Whether or not it was also bound we have no way of knowing. Further excavation turned up an obsidian point of rather crude construction. The point was lodged in the left chest cavity and was in the approximate position of the heart.

July 16 (continued)

Further excavation across the rear of the cave brought to light a continuing array of burials, but the bones were so desiccated and in such fragmental condition that it was impossible to ascertain even the original position of the burial.

A small (hand sized) stone of oblong dimensions was found in the left rear. It was well above the charcoal level and did not seem to be associated with any burial, or at least not closely. Toward the rear, the charcoal layer narrowed down to a two inch band of scorched earth, and all remains were interred above this layer.

To the right of center, a burial was found with some offerings. In the grave were 1) an 8 inch stone knife or spear head, as yet undetermined; 2) a large piece of red ocher; 3) 3 charm stones, two of which had been partly drilled; 4) a pink abalone shell. A note should be made of the fact that the upper side of some of the bones were painted red. Some of these were removed in the matrix, and it is hoped that care will be used in determining whether or not it was the bones themselves that were painted or whether the paint was a transfer from the outer skin covering.

In the right rear, a stone metate, some 6 x 12 inches was found standing vertically above the charcoal layer. It was not in close association with any burial.

Two feet to the right of the red painted bones, there was found a cranium with a rather crude basalt point lodged against the rear cranial arch. This point was similar to the first one located, the one that was lodged in the vertebra and it proves the authenticity of that point.

RECAPITULATION

A total of 18 burials were found in this cave and it is probable that there are a few more that we did not have time to uncover. With one exception, the condition of the teeth showed that all were young, probably in their early twenties or younger. The finding of 4 projectile points indicates that there was at least during one period considerable warfare.

The fractured condition of the bones and the almost complete lack of burial offerings poses a question which can only be answered only after a number of other graves have been opened and examined. It has been suggested that those buried were members of an enemy tribe, and though this may sound far fetched, it might be well to keep it in mind during future work. All skeletons were found in a flexed position or modification thereof.

RECAPITULATION (continued)

The cave was originally used as a habitation as evidenced by the deep deposition of abalone shells below the cave.

GEOLOGY

The island is the upper edge of a tilted fault block. The eastern edge forms an obvious fault scarp striking N 40° W. The western face dips to the ocean with a maximum dip of 14°. The northern end of the island is cut by 3 faults bearing N 3° W. The motion along these fractures has been generally of a horizontal nature but there is a limited horst and graben relationship along the two westernmost of the rifts. The greater part of the motion has been expended in a southward migration by the blocks to the west of the faults.

The mass of the island is made up of an acidic non-marine lava. In places it overlays unconformably pockets of diatomaceous earth. These are found along the eastern scarp and reach a maximum thickness of 62 feet. Beneath the layer of diatoms, there is a second lava bed similar to that above.

The emergence of the island to its present form has been in 19 stages. Eighteen beach terraces are visible on the island, the 19th being still under water. The amount of beach erosion indicates that the last emergence is not too far in the past when considered on a scale of geologic time. The forces of upheaval are very probably still at work. There is no indication that the direction of this action has ever been reversed.

North as used here is true rather than magnetic.

July 6

Quartered in the wardroom BOQ. All the "creature" comforts and even the luxuries of contemporary garrison quarters afforded.

1300 to 1600 accompanied Dr. R., who made a partial reconnaissance of the of the terrain in approximately 4 sq. miles in extent and about three miles generally southeast from the quarters at Wilson's cove.

Several promising signs or clues of surface artifacts were found indicating tentatively underlying artifacts, features, skeletal remains. The first day was abbreviated because the personnel had had very little sleep (if any) during the prior 24 hours, due to the night voyage from San Diego to San Clemente Island. 1800.

7 July

Under the directions from the director performed as assistant to D. H., the designated official in charge of artifacts. Artifacts that were collected by all members were turned over to D. H. who did the final field cleaning, bagging, marking, etc., and transportation of the artifacts to the temporary laboratory located in one of the rooms in the living quarters. Many specimens of the bowls, metates, manos, pestle, and discoidal, disconnected separate bowls and bones (human) were found. Selected specimens were retained and brought back to the laboratory. The many human bones found this date were all surface finds, scattered, disconnected and separate. Nothing as yet that could be considered as a complete burial has been found by the members by any of the shell excavations.

For particular locations and identifications of the various specimens collected references is made to D. H.'s journal.

July 8

Under instructions from the director, I was assigned to a trio of individuals that were assigned to survey a 1000 yrd. square area for indications of surface artifacts, features, etc., which might give promise or hope of underlying burials. The chief of this trio was H. J.; the two assistants comprising the trio were Com. C. and myself. The project time duration was from 9:20 til 12:00. The results, so far, as to the under burials were negative. This 1000 x 1000 yard area was the S W quadrant of the area designated on the director's map, approximately at the road forks east of the radio station on the hill; this included the territory north of the radio station and south of the pump station and ---- from the road from the west to the level plateau to the sea. Following this negative survey we re-assembled at the above stated road forks under the prior orders of the director. Lunch in the field, then to the P. M. project.

July 6 (continued)

Area project for this afternoon was a relatively small area, approximately 30 by 30 yards, situated above 600 yards NE from the main center highway in region of Dam #2. This area was designated by the director partially because of the promising surface finds by Dr. A. at the A. M. of this date. The director issued his instructions for the test pits and ---- holes. Auger tool was tried many times but in all cases proved unsatisfactory, especially a foot or less below the surface. Quite a few broken bowls and pestles and manos were found; shell very abundant. Fragments of bones are few and far between. Only one sure human bone found by Dr. R. and apparently was an infant or young child sacrum. A few important and impressive small artifacts were found at about 1/2 to 1 foot below the surface in several test trenches (shallow) by several other members. Personally, I found nothing authentic.

July 9

Sunday, performed no field duties; spent considerable time in my quarters studying various maps of San Clemente Island. Also received instructions from Com. C.' re-comparisons and contrast of naval charts and maps of US engineers, topographic quads and Coast and Geodetic Survey.

July 10

Site 24: Location as per Com. C. 3 to 1 enlargement of naval maps, special grid 32-cc and 32-dd on contour elevation 1050° interval is 40 feet. A slight mound approximately 35 inches high and approximately 50 by 50 feet. Duty as assistant to Com. C. in use of the telescopic alidade and plane table. Received instructions from Com. C. Observed the excavations of Site 24 by the designated crews.

July 11

Observed the completing of the excavation of site 24. Negative for human skeletal material. The director designated a new site area near site 24 and crew to excavate the same. Again I assisted Com. C. in locating this new site 23 on the map. Again the alidade and plane table are used to locate the new site 23 on Com. C.'s maps. Tied it in with the formally described site 24, site 23 was approximately due west from site 24, 370 feet. Center of the site (23) bore 166° true from the corner of the salt water tank on the road contour elevation of site 23 is 1042. Grids for site 23 is approximately 20 feet to the south and 20 feet west to the east of the South CC-31. Observed the crew excavate and screen. Artifact findings: a few fishhooks in charcoal layer down to the 1 foot level and also a few beads, two arrow heads and about 7 toe and finger bones.

July 12

On the instructions from the director, Com. C. and myself made a reconnaissance of the dune area from the central jeep meeting place (Malva) S.W. 45° to the sea hence N. W. for approximately 1 mile then east back to Malva. Six shell mounds were found with shallow charcoal layer 4 - 6"; artifacts and skeletal material were negative. At several scatter points, a few bones were found, seal bird, and human. The few human bones were badly eroded by the elements and fragmented. No site giving indications or promise to warrant excavation. CGS marker found as a result of this survey (mark #1). This project took the morning hours. In the afternoon, observed the beginning of the excavation of site 5 (as designated by Com. C. under Dr. R.'s delegated authority). The site gave considerable promise of multiple burials. The starting excavation down to three feet exposed a human femur, vertebrae, a few ribs, but no skull or pelvis as yet. Many beads or several varieties recovered in the screening. Tomorrow we will continue work on this site #5.

July 13

Assisted Com. C. in locating Site 5 on the maps. By chaining from the CGS marker No. 1 to the dune area it was 980 feet. Reference is to that to the basic maps (map of Fleet gunnery school areas dated 30 June 1945. The East West grids are designated A-B-C.... Scale 5 in. = 2000 ft. Each grid square is 2000 by 2000 feet for 4000 sq. feet. By magnetic compass bearing site 5 is $S49^\circ E$ (quad reading) from the above stated bench mark, $S68^\circ E$ from beacon ridge. $S82^\circ E$ from the North tangent of the round tank; $N85.3^\circ$ from N.E. corner house on the target range. General depth of the excavation is 28 inches and the general width is 86 inches. Average length is 19 feet. Loose sliding sand.

Artifacts: surface, scattered human, bird, fish, and goat bones in various stages of deterioration and erosion. Large numbers of shell beads (approximately 300) of blue black to white, very small in size. Chipped stone manos and pestles, metates; one fishhook blank. Below the surface was mixed burials, little cranial material, bone has deteriorated due to the moisture in the sand. Skeletal material is disarticulated and disoriented. Estimates of a minimum of 2 adults and one child burial. All going in the A. M.

In the P.M. Site 6

Found by H. J. on 12 July 50 (Yesterday). On hillside approximately ---- feet above the sea side plateau. Rock and sand formation location. West from site 5 approximately three quarters of a mile on a 40 per cent slope. Exact finds with the alidade are to be done tomorrow. Skeletal material on the surface appeared to be one male skeleton measuring length of the right

July 13 (continued)

tibia = 13 inches, length of the right femur = 15 inches (approximately estimated height of this individual is $13 + 15 + 4 + 6 + 14 + 4 + 5 = 61$ inches, with 10 per cent error (work notes are in the back pages of this book). A bowl and a pestle were found on the surface. The skeletal material was all and one of the same individual and were found partially on the surface and partially buried, some bones as deep as 1 to 1 and 1/3 feet, below the surface. The bones were in the best state of preservation of any of the specimens so far to date. Most of the long bones were fully intact, the pelvis, and sacrum in good condition: the cranial bones were fragmented into many small pieces with many of them missing. This burial is in a cave entrance and much excavation will be needed to clear the entrance. The sub-surface material is a mixture of shelved rock, largely of volcanic origin, quite a few spherical loose rocks and boulders, sub-angular rocks and a matrix of hard sand and clay.

July 14

Work continued by the entire party to open up the cave entrance at site 6. I assisted Com. C. in the plane table and alidade computations of locations and contour elevations findings. Plane table set at 51 feet above cave shelf or 72 feet up the slope (by chaining). Telescopic alidade bearings and tie on this site 6 were placed by Com. C. on the basic military map for transfer to R. C.'s overall map on the project as per instructions of Dr. R. Observed the P. M. crew with further excavations of site 6. This turned out to be a rock shelf with a large clovis, rather than a cave proper. A few scattered bones of another burial were found greatly deteriorated and disorganized, shells and fragments. Screening revealed no small artifacts; no beads. Apparently another case of extraordinarily promising site at "first blush" turning out to be mediocre on full investigation and excavation.

Angle of elevation of site of plane table to 360° feet contour line back of house of ammunition range $2^{\circ} 33'$. Distance to be taken from the map later. Every altitude computation has been taken from the alidade table level. This tie-in by transfer to Ch.'s official overall map shows grid location as F-4.

July 15

Did not go into the field today, stayed in camp and worked on my notes, consulted with D. H. re: the artifacts collection and completed the required form "archaeological site survey record" of site 24. (It is attached as part of this journal or diary secured by a rubber band.)

July 16

Accompanied Dr. R. on jeep trip to region of Pyramid cove at the southern end of the Island and return. On the way, we detoured to site 6 where a crew of men was busily excavating a few additional burials--the best find of a site of the entire expedition. Human skeletal material was gathered; excellent for future reconstruction on the college laboratory. Ironical that the best strike was made on the last day of field work.

The End

Appendix A

The health of the members of the expedition was excellent throughout. A few minor abrasions and contusions and skin breaks occurred all of which were quickly amenable to local treatment. Two cases of mild constipation occurred easily relieved by vegetable cathartic pills. The mess rations were excellent and well balanced and ample, plus in both quality and quantity. The nurse at the college dispensary provided first aid supplies of the best quality.

A table of medical supplies and equipment for an expedition party of 18 for a period of two weeks in the field will be provided the director on the start of the Fall semester on my return from the east.

Appendix B

This examinee desires to express his thanks and appreciation for being allowed to be a member of this expedition and so participate in this to me it was useful, interesting and instructive. I only wish that my other didactic courses could be ----- mented and complemented by such suitable field work.

BN

13

15

28 = femur tibia

4 = Est. malleolus to bottom of os calcis

6 = Est. acetabular cavity to crest of ilium

14 = Est. crest of ilium to shoulder girdle (7th cervical vert.)

4 = Est. 7th cerv. to foramen magnum

5 = Foramen magnum to vertex (est.)

61 inches in height \pm 10% error

General Data

Lv. San Diego 2000 5 July 1950. Ar. San Clemente Island 0400 6 July 1950.

July 6

Utilized in establishing group in quarters and general reconnaissance. Personal assignment to K. P.

July 7

A. M. Excavations in Dune area (see Special Data #1). P. M. Continued excavations without success - then survey work.

July 8

Survey work near airstrip - located several area that showed signs of occupancy. The most promising were investigated in the afternoon.

July 9

Sunday. Some survey work in the morning near butane tanks. A great deal of food bone taken out. Afternoon - some work at pit to east of the butane tanks with F.C.(SCI 30).

July 10

Excavation of site 24 about 2 miles SSE of airfield.

July 11

Continued excavation of site 24 - removed the skeletal remains of a large carnivore (see Special Data 3).

Afternoon we did survey work within 700 yards to the west of SCI 24. Dug several test pits with little results - observed some large stone mounds which were raided by man, but I think by white settlers.

July 12

Survey work at the dunes (see special section #4). Afternoon we excavated the site #4 (L-1 in survey description) to a slight extent. We then moved onto SCI 5 (special note #5) and excavated for bone material.

July 13

Further excavation of SCI 5 and surrounding area, producing little - other members of the party excavated cave #1.

July 14

1/2 day K. P. In morning excavated site SCI 6 (cave #1) - interesting burial discovered - very large bones about 150% of normal (I should estimate) (see special data #7, Physical Anthro. data).

July 15

One half day in the field - SCI 6, cave #1. Found 3 further burials. Burial #4 found in the flexed position.

July 16

Worked all day at SCI 6. 18 individual burials recognized.

Artifacts of SCI 6 (cave #1)

	<u>Co-ordinates*</u>	
Stone Bowl	H-11	8 in above charcoal in vertical position
Stone Blade	J-14	About 14 inches above charcoal in association with core.
Stone Metate	E-32	2 inches under charcoal soil in grey. 5 inches down. Ash.
Curved Pestle	F-9	About 8 inches above charcoal.
Core	G-9	3 inches below charcoal layer.
Spearhead - rt. thoracic cavity of burial IV		
Arrowhead	G-9	Left thoracic cavity of burial IV near midline.
Arrowhead	G-9	4 inches below charcoal layer.
Stone do-nut	Q-21	16 inches above charcoal.
Charm Stones	Q-14	With ochre, etc.
Stone Needle	F-9	With charcoal.

*Coordinates refer to graph paper (map)

Notes on Sites (Special Data)

Sarddune site "d" (site 1, pit D)
7th July

Location: Backsite N85°E to north edge of cement water tank N50°E to highest hill visible from the dune area.

Nature of excavation: Large shell mound with charcoal, etc. 3 fire pits.

Fire pit: 10 inches to one foot long up to eight inches wide, up to six inches deep.

[drawing]

May have been used to boil abalone in the shell - three fire pits were found all in the upper dark layer:

[drawing]

Site 30, pit 2 near butane tanks: F. C. excavation. A great deal of bone material taken out - some stone flake material, further excavations undertaken.

#3 Site 24 - (see general data) Approximately 2 mile SSE of Airfield.
Elev. 1053 feet above sea level.

Description: Occupation mound about three feet above surrounding terrain: Radius about 15 feet and black carbon soil. Underlain by clay at a depth of 18 inches. Clay underlain by calcareous material of secondary origin deposited by leeching of ground water.

No previous excavations present.

Procedure: Test pits and trenches, the central pit uncovered a burial of a moderately large carnivore - identity unknown: this burial was trenched about and subsequently removed.

[drawing]

Artifacts: Part of do-nut stone and chipped stone.

Site "L-1"

12th July Survey

Location: Castle rock at S10° point of highest mountain visible 75°. C.G.S. Marker dune 1, 1940 in site. Also, C.G.S. marker, dune 2 1940.

Nature: Shell fragments in general profusion, stone bowl fragments, other stone implements - high carbon sand - put down small pit in main mound. 1 ft. loose surface sand 6 inches under carbon sand. Sterile layer. Apparently previously visited, but no extensive examination.

12th July Survey (continued)

Area: 80 feet by 50 feet with another site about 60 feet to the seaward.

Site number 4 subsequently assigned--excavation interrupted by the discovery of site 5.

Site 5

Pit 1 - human burials location: approximately 980 feet from CGS B.M. #1-1940. Backsighting S49°E from above B. M. S68°E from beacon ridge, S82°E from the south edge of round tank, N84°E from the corner house on target range. Above are magnetic readings and untampered with.

Material: human bone, beads, stone chips, metates, pestles, manos, etc.

Burial description: bones up to three feet deep localized in the burial area but disarticulated and disorganized. The material contains only two cranial pieces, infant were found. Bone is bleached at this depth, but are deteriorating due to moisture in the sand.

Beads apparently not buried with the bone material but found in the surface at about six inches from the burial.

Much highly deteriorated surface bone (see physical anthropology section 345).

SCI-6 Burial Cave (see atlas map Six)

H. J. was responsible for discovering burial number 1 found by J. and Fe. and subsequent excavation skeleton in moderately good shape. Skull is fragmented.

Burial #2 "gigantopithecus gabrielensis"- very robust material.

Burial 3, 4, 5, etc. found in site as illustrated.

[drawings]

The Great Controversy

The finding of a large animal burial in the mound at SCI 24 must raise, in any extent, the intent of such a burial. We must therefore examine this animal with a view towards identifying the genus and species and assigning to it its relationship to aboriginal human life.

The Great Controversy (continued)

The animal was given the label of "dog" almost immediately from the moment of discovery - but more for the convenience than for accuracy. Later a faction within the expedition, including men well versed in anatomical studies, asserted that the animal was a young seal.

I should like here to take into consideration some of the cranial features of a known adult seal compared to the unknown mammal.

<u>Adult Seal</u>	<u>Unknown Carnivore</u>
Dental formula 3-1-2-3	3-1-2-3
Long narrow palate	Pear shaped palate
Tri-cusped molar	Tribercular molar
Pronounced sagittal crest	Pronounced sagittal crest
Receding crest over the occipital	Crest overhanging occipital

I believe that the resemblances are natural between the two because of common carnivore ancestry and that the resemblances are not great enough to warrant drawing the conclusion that they are both of the same genus and species.

Summary

What then is known of the Gabriellino Indians? We find that they were a shore dwelling people eating abalone; sheepshead (hammer head shark?), sea-urchins, snails, small animals, and birds, seals, and probably whales when they were available. They had no clay pottery, but instead used stone bowls. Stone work other than these was almost never elaborate and was largely the use of unimproved stone chips. Burial site SCI 6 indicated that there was some form of ----- on this Island, and the burials were common in the flexed or "fetal position." One of the major problems of the island, the use of the so called do-nut stones, remains unsolved. Their association with the burials in SCI 6 has been considered as possibly indicating the use of weight as battle implements.

Further burial practices include the smashing of stone bowls, presumably at the death of the individual. Some bone (including whale bone) was used in the manufacture of implements. The stone used was largely a poor grade of chert.

Physical Anthropology Section

- 1 m (measurable)
p (pathological) Results of survey by O. and P. U. above beach below the machine gun school surface to 4 inches - 12 mag.
- 2 m SCI 2 Pit A (originally small animal skull) a seal turned over to J.M. 12 mag
- 3 m and p SCI 5 Pit 1 - 4 in surface deep burial, some surf. material
- 4 m SCI 5 Pit 1 Burial only July 13
- 5 m SCI 5 Vicinity of Pit 1 Surface July 12

#6 July 13 - 2 Bags - one Box Burial at SCI 6. Following is a resume of Inventory in Box:

Tibia	2 (1 cracked, 1 good)
Humerus	1 broken
Radius	2 (1 broken, 1 good condition)
Ulna	2 (1 broken, 1 good condition)
Pelvis	2 pieces good
Vertebra	15 fragments
Scapula	1 poor condition
Mandible	1/2 poor condition
Fibula	2 both broken
Clavicle	2 both broken
Heel	1 fair condition
Vault Fragments	22 poor condition
Rib fragments	11 poor condition
Misc. fragments	Uncounted

Found with bone point drawn in below.

[drawing]

#7 July 14 - 2 boxes Burial SCI 6, Cave 1, found in north wall of excavation - bones are remarkable in that they are very robust material very highly fragile. Some material may belong to burial previously found here (#6).

Physical Anthropology Section (continued)

#8 One bag SCI 6 bone material taken out July 14 supplementary to two burials above.

#9 SCI #6 Cave 2, 16 July 1950. All material pertaining to burial 4. Including two projectile points found in situ. The spear point found in the right thoracic cavity and arrow point in left thoracic cavity.

Packed for restoration. Rib, material incomplete left humerus un---able.

When this trip became an actuality and I sized up my team members, I decided that I better need for a foundation as to the trade routes of the Indian inhabitants of this Island and less training in routine Anthropology. Tried to collect information that would try to answer the above questions that were raised in the literature.

Question: Could the San Clemente Indians build their famous plank canoes or did they have to trade for them? From Santa Catalina? On this Island.
 Note: Whales are thicker on the east side. They came into Wilson's cove while we were there.

But a whale killed at sea or on the West side is easy to tow ashore. Whale remains are very great. Zoological Department of USC claims that bones will not last a century. Found whale bone at least twenty places. Not on the West beaches.

East is the lee side. The West side is much richer in sea food products. The clams, the fish, the lobster, are much larger and more abundant on the windward side and West side. Also there is a great seal robbery.

July 6

Upon first survey found that natural drift in times before White man would supply several times the timber needed to split into planks. Found by partial search, 12 large logs of cedar, fir, redwood, and other splitting types buried in the sand at the edge of the beach, were deposited by the old sea. Much of the drift from very far. For instance, a tree trunk from Alaska might end up on San Clemente which is still in good condition.

Also found soapstone pendant 1/2 pound with man made hole in the top. Probably a sinker, at edge of beach below machine gun school.

Asked for, and got cooperation of the whole group to search for any natural supply of soapstone on the island and none reported. Pendant might have been a trade item from Santa Catalina Island.

Found a great surplus of CGS bench marks. Accurate spotting of sites became a problem of carting gear to the proper spot.

Was under the strong opinion from---- reading and examining a private collection such as Mr. T-- Murphy that most of the stone for the beautiful stone dart heads probably for decoration only, were traded for from the mainland. Checked scraps of crystal and found that every campsite had at least 3 types of stone. Have included two examples, two of them picked up on the surface, the other from excavation. Sample from the whole island identical on July 15 on the beach edge with that of the sand dune. Found a nodule about 17 x 13 weighing about 75 pounds. It had been chipped until the entire surface of crystal was exposed and it was gem quality.

Spots of pink milk and translucence were exposed. Weight was too much to bring in. Believe that all work done with this gem stone quality material on the Island was done with natural material. They may have exported it.

On July 16 while awaiting the return of the big game hunters, trenched site 26 about 20 feet and 1 foot wide and 16 inches deep. This site was very recent expected some trade goods to turn up. May have been detected if matter was sifted. The bones and shells in it were in the loose ashes as if left last year. Turned up small crystal arrow point. From the last to the beginning to end. Used the crudest materials.

July 7

Working with Dr. N. was very instructive. Found that in all sites there were abalone, keyhole limpets, pelican bones, seal bones, whale bones, sheep's head, teeth and piled in from modern times, sheep and goat. Found three dead cats, never saw a live one. Had many bouts with the island kit foxes, saw many more types of lizards than on the USC list; found no trace of snake. Certain some of the island birds have changed enough to be a sub species.

If F. delivers his finds correctly, USC should send a letter of appreciation to SD State.

I believe and have tested the belief--no trained anthropologist can walk 100 yards at random without finding evidence of primitive man. Generally a shell.

The amount of charcoal, not ash, shows that the finds were of large material oak(?) and there was much of it. Was abalone used to drink?

Dr. N. found several tree stumps in area back from the sea. The whole island must have been heavily wooded at some time. The village sites are all near a gully that must have been a brook in its day.

July 8

Evidence of deterioration of San Clemente by reason of the white man. Very depressing. Hope that the next trip we can have a bird man along. F. had Dr. N. go over human bones and find a healed break. H. gave me a scare by staying out late and I walked with J. a great distance. Kindly let him all specimens of crystal sherds on ---- hills.

July 8 (continued)

All village and burial sites have an impressive view, but this evidence of aesthetics was put aside because I think that the village was placed on thin soil that grow no trees and was surrounded by tress that cut out the view. Dr. N. brought out the theory that the human race was nestled in sight of the sea to get sea fish (hence the great kitchen middens) (ones on San Clemente shipped to China). Dr. N. comments on great peace of spirit caused by watching the sea. As he and I were the only ones to feel it, it must be a racial memory in the old.

July 9

Checked and compared many maps of all sources. Dr. N. got me confused, gave 2 week course in two hours.

July 10

See form.

Walked around a great deal. Dr. N. is a good walker, but is prone like myself, to report sites in the clear and not tromp through the heavy stuff. No time to test what the younger men had found. Actual site must be at least 50 --- as found by our party.

July 11

In spite of the tremendous amount of work on site 24, do not believe that it was completely removed. Think it a deep burial of other period - Indian in area.

Although was surprised and pleased with the skill in spotting crystal chips, surprised that I cannot locate a shell fishhook.

July 12

With world situation as is, was demoralized by great evidence of departed life on the sand dune due to careful search for quartz chips. Found large complicated bead.

July 13

As described by Dr. R., sites 5 and 6 were a potters field. These poor Indians, mostly women. Buried there with hundreds of beads. Beads that require very fine workmanship and skill, about 10 biscuit shaped disks of stone, concave on both sides. Top of bow drilled for fine making. In the Boy Scout days, I could get fire from one in a short time.

July 13 (continued)

When we come to die and in a later century another culture examines us, the fillings in our teeth will be all we have. We will be dead and poorer than the potter's field Indians.

Decided to drop all new sites but I hurried over with J. to re-examine site 6 on cliff where mano hand opened a grave, left their tools, and never came back. With my encouragement, J. continued working into the slope and found more bones and many fine artifacts. Asked Dr. R. to allow it to be worked down to shelf level. Yet I found it impossible to get interested in it. When Dr. N., at my request, made estimates of height, weight, sex, and abilities of persons taken from the site, I was willing to quit. Drew out survey for immediate time - decided to be cremated.

July 15

Rechecked the beach for drift - found more evidence for regular and continued drift for the southeastern tip of the island. This drift might have put the first inhabitants there. At northern end of west cove at low tide. Found seepage of mineral tar, enough to supply the whole island. Thus it was not necessary as stated in the literature to get it from Santa Catalina.

July 16

Checked the spot again and it was underwater at mid-tide. Reason why it was never found by previous expeditions.

July 6

Had green coffee and went on an inspection tour through empty buildings picking up what was needed for our stay. We're informed as to departure time. Arrived in time to see party leaving, went back to inspecting.

Party arrived at noon went to the field in the afternoon. Dr. N., Dr. R. and I inspected two sites south of road. Some excavation was done in the morning.

O. and I found charcoal and bits of shell and pieces of bowls on surface. Dug and found shell about six inches under. Found a region of about 14 inches around in which charcoal extended about 7 inches, then sterile sand.

The group then moved about 200 feet north and test pits were dug - nothing on surface, there were parts of bowls.

July 7

The group returns to the location of the former survey and digging continues. Most important find was pieces of stone bowl that when stuck together made almost two bowls.

Trenching took up most of the afternoon on a site that had sections of bone(s). 10 foot trench convinced everyone that the surface material was only surface.

Found several glass balls used in fishing nets of the Japanese. O., E., and I were assigned to cover a new area. The direction was southeast from the Jeep. Found various camps of various sizes. The find was 2 stone rings and parts of others. O. found a small green bead.

In the afternoon we dug one of the sites located in the morning. Screened for Chl., found nothing. O. found small disks of shells with markings on them.

July 9

Sunday, heavy meal falling at noon, no work was done in the morning. In the afternoon, O., Dr. R., and I went back to the site and completed digging the trench.

Find: A knife, arrow point, broken fishhook and piece of polished and incised doughnut. Several small important things were found.

July 10

Party went to a site that Dr. R. had located. Marked off 50 feet square. Made and squared 6 feet and started digging. Found a dog or some small animal with a sharp stone within him.

An abalone shell was placed at the head and position of the dog was around a stone. Dug around the animal and found nothing but hard broken shell and dirt.

July 11

K. P. Duty. Mr. & Mrs. Brown came for coffee and back again for dinner.

July 12

Went back to the Sand Dunes. Surveyed again, went to the cliffs, came back to the sand dunes and found a small white stone with markings as though it were a pendant [sic.]. Find was small section of bone knife and beads.

J. found a section covered with bone, Chl. was made keeper of the beads.

July 13

Went J.'s section and screened all morning, found many beads. Done some survey work around the section. Found nothing on the way back with the food spotted on a patch of shell work and a bead. Came back and found nothing. O., H., Dr. N. and F.C. went and inspected a cliff and found huge bowl, part that J. and I dug back. The cliffs seem to produce more whole bowls than the sand dunes.

July 14

The group went to the cliffs where O., J., H., F. C. and I. Found a white substance somewhat like ash, but no charcoal. Left that section and went up where O. was digging out a leg bone. Left for lunch. O. found a skull well crushed later.

Dr. R., Ra., J. and I went to a new site and dug a 6 by 10 foot trench. Found bits of charcoal, burned fish bone, bits of broken manos, chipped stone and an oval piece of shell. Nothing more under the burned earth. Took another site with the same results. Closed the doors at the machine gun school.

July 15

Went with the group to the cliff and started digging. As some of the dirt was removed, a skull was sighted-excavated but the skull was very fragile. Cracked, the head was on its left side in the flexed position. Found the bone in bad shape. Found a metate above the skull, found an arrow and chips of stone. Quartz and fish bones. O. started digging and found another. Went back for chow and returned to the site. E. found another section of bones. Pictures were taken, food was sent out and we secured for the day. J. M. will take a diagram tomorrow and then everyone can see the Indian burial.

July 16

Mess cook. Went hunting with R. and J. Shot nothing but found sections of worked rock above mosquito cove, a few fire sites and beautiful view of the cliffs, shore, and sea.

July 17

Sailed for the mainland. The end of a successful trip.

July 6

Left with Dr. R. for reconnaissance in sand dune on NW end of Island. Found quite a few surface artifacts and dug some test pits. Different sites and pits. Examples:

1. SCI. 1 Pit A Shell pendant sandstone file.
2. SCI. 1 Pit 2 B Stone scraper and fishhook.
3. Surface artifacts
 SCI 2 Feature 1-3 rim of a bowl with no bottom, pieces of bowl, scrapers, pestles, metates, manos, knife blade, etc.

P. M. Rested in the afternoon and put room in order.

July 7

Eureka! I have been appointed curator of artifacts, so I imagine that the hard work will begin for me now. Went to Site SCI 1 and men started digging out various pits and features. I, with Dr. N. assisting, went first to Feature 1, which was a stone bowl half buried in brown matrix, broken but repairable, and dug it out after R. C. had taken pictures of it in situ (note in R. C.'s pictures the pick points towards magnetic north).

[drawing]

After packing the bowl parts, Dr. N. and myself went over to Feature 2 SCI 1 on opposite side of E road running through sand dunes (200 yards N of road, due North between target on beach and block house on skyline). H., who was digging there, found nothing important underground. All material was from the surface. Material collected included, a mano, pieces of a stone bowl, pieces of stone do-nut (drawing), stone saw and stone drill and core, chips scrapers, and a few animal or human bones. Sacked material then went to pit B SCI 1 which was west of F-2 on west side of the road. Located on Sand Dune. Top layer of sand, dark layer of ashy material underneath. F. and E. were working this site. Material collected included a shell fishhook, stone scraper, etc. Sacked stuff, then went to Feature 3 SCI 1 located N of EW road, W of F-2 on sand hammock, NW of F-1.

Artifacts - metate and mano in situ. Photograph - R. C., roll 1, exp. 4.

[drawing]

Wandered around and saw many pieces of stone bowls, pestles, etc., lying on the surface. Went to Pit A and dug a little myself.

July 7 (continued)Pit A SCI 1

Location: Approximately SW of f-1 on Sand Dune. Artifacts collected and sacked = shell pendant, sandstone file. Went over sand dune to SCI 3 and collected and sacked artifacts.

Location: Approximately N of EW road between road and end of Sand Dunes in North of sand dune.

Artifacts collected and sacked = bowls, pestles, manos, scrapers, stone ring, bone awl, etc. Photograph of metate, mano bowl, scrapers, with group - Roll 1, Exp. 6 looking NW 340°.

Soil: Sand overburden with dark ashy underneath. Grid F5 on master map.

[drawing]

Went home to supper at 5 p.m. then tried to organize my lab. People kept bringing artifacts in. Commander C. brought in a large oblong flat pendant shaped object from the sea beach approximately W of SCI 1 Feature 1.

Later O. and I brought in 2 stone bowls in pieces, of course they found on the surface somewhere south of SCI 1 on or near the beach. (SCI 2) Grid F6 on master map.

July 8

Recon. Went out this morning on recon. in the area to the south of the air base on the middle of the island. We drove out to a cross roads to the middle of the island below the radio station and South of the air field. Dr. R. divided us up into groups of three and each group was given a quarter of the compass to explore. Dr. R, J., and I were given the NW quarter to explore, each of us then exploring 30° of territory. The air strip was approximately 300° for the fork in the road where we stopped. The results of my exploration, though not startling were:

- (1) Piece of pestle (almost entire) piece of bowl.

[drawing]

- (2) Scrapers, piece of bowl, pieces of pestle

[drawing]

- (3) Piece of stone bowl

[drawing]

- (4) Pieces of pestle

[drawing]

- (5) Piece of bowl, pestle. Location, in line 2 with 2 closer to 4

[drawing]

July 8 (continued)

Came back to the meeting place at crossroads and ate lunch. P. M. then the entire party went out to a site that O. and P. had found to the SE of it. It was established as SCI 20. Soil - about 10" of grey, powdery top soil, then bed rock. Location - on rocky hill to E. of mainline road and S. of Dam and Wash. Grid E12 on master map.

[drawing]

Artifacts found and sacked included.

Surface: stone scrapers, pestles, piece of stone bowl, one half of doughnut, chips scrapers, choppers, hammerstone.

Pit 1

<u>Depth</u>	<u>Description</u>
a 14"	Abalone dime
above 14" level	Small point
" "	Engraved, core shaped stone
" "	Stone dime (engraved)
" "	Stone dohicky chips
2"	" "
upper 6"	Many shells
6 - 12"	Large bones, fewer shells
"	Knife blade
"	Fishhook
"	Arrow point
"	Painted stick
"	Scrapers
"	1 polished doughnut
"	Shell pendant

Pit 2

a	1"	Small stone bead
b	"	2 small stone awls (pipe shaped)
c	"	3 small points
d	"	1 shiny piece of obsidian, much charcoal and stone chips

Pit 3

	<u>Depth</u>	<u>Description</u>
a	3"	1 point or chips (carboned)
b	2"	2 chips
c	5"	Jasper chips

Pit 4

a	3"	1 small stone scraper
---	----	-----------------------

Pit 5

a	3"	Small point
---	----	-------------

Surface material on the slope of the hill S of pits - pestle, one half doughnuts.

July 9

Sunday, Grid E5 A. M. This morning some of the fellows went out exploring. J. and I went to a site below the barracks which I designated as SCI 30 Pit 1 and the site by the butane tanks as SCI 30 Pit 2 where E. worked.

Pit 1. It looked as if it had been dug in by someone before or it could have been a Navy project. Artifacts that were dug up and sacked included chips scrapers, needles, and 1 small point, some cores and a lot of fish and animal bone.

Pit 2. By butane tanks - artifacts taken out of this pit included a stone drill, core scrapers, painted stone, and usual flakes and animal and fish bone.

Went back to base to eat lunch.

P. M. In the afternoon, Dr. R., J., F., and myself went or drove out to southern end of the Island at Pyramid point and looked at radio station and cove below us where many fishing boats were anchored. Then we started back toward homebase. On the way back, J. and I saw many likely looking sites, so at one that looked particularly promising, Dr. R. stopped. Sure enough, on this hill and around it we found much surface material. So I officially designated this as SCI 25 for future reference. Grid D 14 master map.

July 9 (continued)

Location. On the hill top to left, 4 miles south of salt water tanks at the air station. Below and to the NE are two water catchment basins. Very noticeable from the road. With the 7 only known oak trees on the Island located to the left E on edge of ocean cliff.

[drawing]

We didn't do any excavating here as time was getting short so we picked up as many surface artifacts as we could carry and returned to the jeep.

Artifacts - points, scrapers, chips, mano, pestles, bowl fragments, choppers. While we had been at the site, Ch. had done a little exploring and had found some fossiliferous material containing some Pecten shell fossils. Took a few pieces of it and headed for home. I discovered that some of the other men had brought in a lot of things for me to work with while I was gone.

July 10

This day we went to a new site southeast of the Salt Water tank at the airfield which I designated as SCI 24. Grid E11 on master map.

Location: Approximately SW of the Salt Water Tanks at the airfield at contour elevation 1080 just off to the poor dirt road going in the Southwest direction from the main Island road.

[drawing]

Soil of site: Dark ashy, powdery with shell on a slight mound.

Area: 2500 square feet.

Depth: 1' 6" height approximately 3 feet

Surrounding soil type: Light brown compact.

Collected and sacked surface artifacts first. Artifacts: Fishhooks (2), chips, biconcave rounded stone, bowl parts, pestles, hammer stones, manos, choppers, scrapers, metate piece, dohicky stones, discoidal hammerstone.

Then established excavation plan. A square 50' on a side was set up surrounding the dark midden mound material, A north South and EW line through the center point were drawn which cut the plot into 4 square 25' on a side. Excavation: 6' side, 1 foot deep pits.

[drawing]

July 10

An unusual pattern of stone was noted. Dug trench one first. Artifacts stone chips at 8 inches. Soil: change in trench from a light brown color to a dark ashy color. 90" from name stake to center of the mound.

Pit 1, Level 1 (1 foot) - chip, etc. Ran into animal bone at 7 inches depth in a partially sterile layer (looks like carnivorous dog). Upper part of skull separated from the lower part (jaw). Large abalone shell found complete 5" north of the skeleton. Skeleton was curved around rock as if its back had been broken by this rock or something similar. Bone point about 1-1/2 inches long found imbedded in backbone.

[drawing]

Ran into whitish, crumbly limestone soil at about 1-1/2 feet of depth (about 1' below skeleton). We found out later that it might be a seal.

Pit 2. 3" depth, piece of pestle or mano. From 6" to 3' chips. At 3' struck white clay soil again.

Pit 3. Paper thin chips at 6", then chips, etc.

Pit 4. Chips.

Pit 5. Piece of mano, 3" deep.

Pit 6. Chips.

Disinterred "seal"

July 11

Today some of the fellows continued digging at SCI 24 and F., Chl., and myself went down to another site SCI 23 (grid E 11 master map).

Location: On the opposite side of the road from SCI 24 SWesterly.

[drawing]

Dug N S trench first to 6" deep. Soil: powdery dry. Artifacts: 1/2 stone metate, discoidal hammer stone, stone bowl, pestle, manos, chips, scrapers, cores, charmstones, doughnut parts, stone punch and choppers. Biconcave part of a stone tray.

July 11 (continued)

Pit 1. Artifacts: Chips, cores, pieces of ochre, drilled bone, grooved bone, drilled shell.

Pit 2. Artifacts: 4" depth "dime" scrapers, fishhook, and mano. Ran into many complete shells, then ran into toe, etc., bones, at 6" fishhook 4" - 8" deep. Ring 4"-8" deep.

Pit 3. 4" deep, fishhook point, piece of tray, chips.

Pit 4. 5" chips, pendant, shell bead, arrow point, stone beads, teeth.

Towards evening it was necessary for me to accompany J. M. and E. down the hill towards the ocean (W) from SCI 23 to investigate some possible sites. Found and established SCI 22 (Grid F11 on master maps).

Location: NW 320° from stake at side of road leading down hill to the ocean. From site 23 approximately 85 feet.

Test pit 2: 4 -5" deep chips. 11" piece of stone tray, scraper, mano.

Dug a little here then explored in the general area of this site.

Further down the road we came upon some rocks piled in an interesting way and the earth in between the rocks was ashy. Ch., who had found it first was as we were, very curious about this place. Further investigation might turn up something interesting. Then walked further on. On a small knoll by an EW fence I found some chips and cores on the surface. Brought the other fellows over and did a little digging. Found a few more chips and a piece of a mano, not much else.

FC was appointed as my assistant today. Went home for supper.

Worked in the lab. People kept bringing in things without my knowing about it. Don't know where some artifacts are from. Mail boat came in this evening. Wrote some letters to send back with it. Got a newspaper (rather F.'s father did) - too much war news.

July 12

Did mess duty today. Made some marker flags in the little spare time that I had. F. ran things today and brought in a lot of stuff, from a new site SCI 4 and SCI 5. Location SCI 4 was by Coast and Geodetic survey marker No. 1 on the Sand Dune. Grid F5 master maps.

[drawing]

July 12 (continued)

Artifacts: Surface-pestles, paint pot, core, scrapers, drill, manos.

Site 5: Was to the North of SCI 4 also on a Sand Dune. A few bones and usual manos, pestles, etc., were bagged and picked up.

July 13

Went out to Site SCI 4 and 5 today. Picked up a few things at Site 4 and then went straight to Site 5.

SCI 5 (grid F-5 on master map). Location (according to Dr. N.). By chaining from Site 4 to CGS marker No. 1 linear distance is approximately 980 feet. By magnetic bearing the site is S49°E (quadrant reading) from the CGS marker S68°5' E from the beacon on ridge. S82°E from S target of round tower tank, N83.5° from the NE corner of the house on the target range.

[drawing]

Sand was very loose and sliding so it was impossible to dig any sort of straight pit.

Artifacts (surface): Paint pot, stone tray, pestles, bowl parts, manos, discoidal hammer stones, drill, scrapers, charmstones, pendant, chips.

Pit 1 Average width 7' 6"
Length 17 feet
Depth 30"

Many fish, bird, animal bones, human bones, scattered throughout soil in various stages of deterioration (due to the moisture in the sand). Human bones highly diffused in one area may mean that this is a mixed burial or reburial. Articulated, disunited parts of at least two adults and one child. Soil is ashy beneath the surface.

Pit 2 artifacts: Beads, beads, beads! Apparently not buried with the burial.

Fishhook blanks, chips, shell rings, mano, fishhooks, scrapers, 2 worked chips, core, worked limpet shell (money?).

July 14

Went today to a new site in cave. Designated it as SCI 6 Cave 1 Burial. It is located in a shallow cave about 220 feet above surrounding plane. About 50 feet down the ridge Grid f-4 (master maps), depth 14", height 60".

July 14 (continued)

Soil of the site is diatomaceous and sandy loam. Surrounding soil - sandy loam. There is a large rock overhang so there may be some danger of a cave in, etc. Material in poor to fair condition due to the elements. Upper layer of light brown rock or earth then layer of ashy shell impregnated layer with human bones in it.

[drawing]

Artifacts:

<u>Depth</u>	<u>Side</u>	<u>Artifacts</u>
41"	L	Pestle
7"	M	Harpoon point
Charcoal	L	Flakes
On top of charcoal layer	R	Charred bones, toe and arm
	R	Chips
3" in charcoal.	R	Needle point, very small
	L	Blade
Into charcoal	L	Bone (head of human)
4" into charcoal	R	Sea lion tooth
In charcoal	L	Spear head
6" in charcoal	L	Scraper
6" in charcoal	L	Patella
2' above charcoal		Cartwheel
Next to bone		Polished chips
Close together 7" under charcoal		Stone marble, wooden club, leg bone

Ran into leg bone at 44 inches below the surface on top just a little into the charcoal layer. Piece of bowl and entire pestle. Bowls found in depression 16" below surface (small one) 4" below surface (large one).

[drawing]

Another shallow cave (2) discovered below cave 1.
2" below top layer-charcoal level.

<u>Depth</u>	<u>Artifact</u>
2 - 5"	Discoidal hammer stone
2 - 5"	Chips
14"	Small pestle, chips

Soil of cave 2 is ashy, grayish powder, may be fire pit in cave 1 front yard.

July 14 (continued)

P. M. In the afternoon, Dr. R., Ch., and I went to another site on the ocean bench S of machine gun school while the others stayed at Cave 1 SCI 6. Named SCI 7 (grid G7); Location: N5° E to look out tower S22E° eel point. Shell mound (very finely broken) (chicken gravel) 30 to 40 feet with bowl like depression in the center. Diameter 18 feet width, 40 feet. Close to CGS marker.

[drawing]

Dug test trench and pit. Pit 8 feet by 3 feet; a trench 16 feet depth 6" approximately. Dug test trench about 6 inches deep.

Artifacts:

<u>Depth</u>	<u>Artifact</u>
5"	Piece of bone
6"	Piece of mano
6"	Chips
4"	Piece of mano

Pit 1. Dug into point of maximum density of shell and ash and go about 2 feet on either side (old fire pit). Dug up old fire pit with stones and chips 6-8". Piece of mano on the surface (greenish grey) depth of ashy earth in the center 12-1/2 inches. (Depression very slight for the height of the mound. Proves that they dug down before they deposited material.)

Surface 2, Pit 2. Mound is similar to surface 1. Diameter 30 feet by 30 feet (extent of concentrated broken shell). Location: 85' 20° S of W of center of surface 1.

Surface artifacts: chips, pieces of pestle, etc.

Depth of ashy shell earth mound 10".

Height of mound (approximately).

(9-3/4 N-10-3/4E, 6-1/4S, 8-1/4W) Indicated that Indians excavated slight pit before depositing their garbage.

Dug pit in middle of mound (pit 2).

<u>Depth</u>	<u>Artifact</u>
4"	Scraper, flake
2"	Mano
1-3/4"	Chips
6"	Larger chips
6"	Piece of human ulna, under stone marble (middle)

Row of three hearth stones running SW to NE in center of the mound.

July 15

Stayed at home and worked in the lab.

In the afternoon Dr. R., F., and some of the other men went out to the north-west harbour and located a new site. $118^{\circ} 35'W$, $33^{\circ} 70'N$ in the sand dunes similar to SCI 1.

Artifacts: Surface-rim of a pot, wet stone (3 pieces), pestle (with unusual rim), awl, fishhook, asphaltum.

Some of the other men stayed at Site 6 these next two days and unearthed many skeletons (reported on by E. in more detail).

July 16

Stayed at home in the morning with F. and worked hard in the lab, packing and taking inventory. Sunday afternoon we and Dr. R. went out to cave burials first and saw how they were getting along then drove back down to the southern end of the Island at China Point and cove near Pyramid Cove. Took some pictures and found an old water well. Names carved all over the ground, which was diatomaceous earth. Saw more green brush in the wash bottom than we had seen anywhere else on the Island. Went back to pick up Ch. and P. and Jn. who had gone goat hunting. Had to wait around for them awhile so explored SCI 25 again then went down to catchment bottom and saw P. and Ch. coming so we went back to the car waited for them. Of course, the men brought in more artifacts for me from the cave burial (listed later).

Worked till late with F. on inventory and packing.

July 17

Worked hard all morning packing and inventorying with P.'s and F.'s help. Got on board in the afternoon. On the way home, slept, recopied inventory in redable fashion. Saw movie "Tokio Joe" and saw some flying fish, whales, etc.

July 17 (continued)

Sea Bull on the Radar. Saw some destroyers steaming towards us, one of the closer ones signaled. Arriving in San Diego harbor about 9:30 P. M. tired but happy to have experienced all that has preceded these pages.

D. H.
Curator of Archaeology

July 6

Test pit. Recon. Site C, due north between target on the beach and block house on sky line of mountain 200 yards north from the road. Objects found on the surface of the sand dune were (1) rim of rock pot, 3 scrapers (2) (3) and (4). One round diameter worked stone (5) one knaife shaped worked stone (6) (7) one unknown (7) one round file ? (8) ... 4S.C. - C (d to '8').

Re: Number 8 - the ground surrounding site C is covered with round sandstone and it may be a geological formation. All geologist picks point north.

Site C

3 fire pits

1 broken stone ware

Misc.

[drawing]

July 7

Having dug beneath the surface to a distance of one foot (where sterile earth was found) and in a 5 foot area, no artifacts were found beneath the surface. Artifacts that were found were all surface artifacts (the firepits may have been a result of a brush fire).

Artifacts:

9 stone pick

10 metate

11 scraper

12 grinding stone

13 broken grinding stone

14 arrow head

15 scraper

July 8

Surface artifacts on the surface found near the south end of the large sand dune near the ocean. Site 1: scraper-scraper. Human bones found on dunes #2 and #3. Numerous caves along dune #3 part of a bowl found on dune #2. Numerous abalone shells found on the surface in the general area.

July 9

K. P.

[drawing]

July 10

Site 24

Surface shell found. Abalone, periwinkle snail (sea) and (land), one pismo clam shell found. Test pit of one cubic foot, 27 particles of shell found, none of them intact. Ash extends 11 inches below the surface. Below the charcoal, there was an abode mixture, and very hard, even to pick.

[drawing]

July 11

Removed seal in pit of site 24, shovel for 7 inches, then ice pick and brush for another 4 inches. The ground below the seal skeleton was so hard that a pick was used to sink a hole down 30 inches.

In the afternoon a recon was made of the Seal Cove area round the dunes. The particulars of several bowls were found on and beneath the surface.

July 12

A recon of the northern end of the Island known as the isthmus was made. The extreme end of the island outpost, Castle Rock, is a dune area. A red stone bowl was found about 1/2 mile from Castle Rock and W 340° N of the surface. The ground was sandy and covered with abalone, conch and limpit shells; a great many chips were found. Seven caves on the ledge of the area near the west cove were found. All were investigated and the presence of man was negative.

The ledge to the north of site 5 (site 6) the remains of human bones were found in a 'cave' like depression on the hill. Two bowls were found in the depression 16 inches below the surface (small one), 4 inches below the surface (large one).

[drawing]

July 13

Working on site 5 on the dunes. A great number of small shell beads were found by screening the sand approximately 8 inches below the surface of the dune. Both green and pink abalone were found at site 6. Two scrapers were found about 100 yards due north of the site on the surface.

July 13

Site 6 was re-investigated in the afternoon and the femur, tibia, and assorted parts were uncovered. These were left in the matrix for the night after having used only a brush and hands to uncover them.

July 14

Site 6 was excavated. One of the first things found was a pestle about 2-1/2 inches in diameter and 8 inches long and found 4 inches below the charcoal surface (see drawing), the pestle was uncovered with a shovel. Numerous scrapers, chips, and round stones were found. These round stones were about 1-1/2 inches in diameter, the use was unknown at present. Some drill points were found also; these appeared to be made of thorns or bone and obviously worked.

We began the excavation of the femur and tibia found on the 13th at about 0930. The condition of the bone was so poor that it was not removed until 1100. They proved to be of tremendous size, larger than any we had uncovered. Below the bones named above and 4 inches to the east, a lower jaw containing the molar and premolar (4) was found along with two loose canines.

July 15

Worked on artifacts and mapped cave area. Noted filing of artifacts.

July 16

Worked on site 6. The first thing removed was a mano located 32 inches west of base (see drawing) and 4 inches under charcoal layer. The remainder of the burials No. II, III, V, and IV were prepared for display. After removing burial IV, we photographed II, III, IV, V and then proceeded to investigate the remainder of the cave. As IV was being removed, a spear point was found in the right chest cavity touching the back bone. An arrow point was (drawing) found in the left chest cavity.

It seemed that luck was with us as we began to dig into the vertical walls of the cave. Each spadeful contained either bone or chipped flakes. After about two shovelfuls, the shovel was abandoned in favor of an ice pick and brush. Four perfect teeth were found at VII above the datum line 16 inches, no charcoal was present. At point VII, a paint mortar was found, 5 inches above datum line along with an abalone shell containing what looks like asphalt with painted bones (E. had it). A few more chips were found beneath the abalone shell. At this point, the digging was stopped, the hole filled, the artifacts packed up.

APPENDIX 2

NOTE

Provenienced artifactual materials are listed on the following pages by site number (such as SCI 2). Listings are by artifact description taken directly from cards and field notes as recorded in 1950. No attempt has been made to reclassify or re-catalog this material as yet. There are approximately 200 artifacts still unprovenienced, and these, along with approximately 400 listed below are currently being re-examined. A compiled listing will hopefully be available soon.

ARTIFACT CATALOG
SAN CLEMENTE ISLAND

1950

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-1	Mano		243
	Pestle		158
	Scraper (?)	Secondary working	306
	Scraper		306
	Stone scraper		308
	Stone scraper		184
	Stone bowl fragment		300
	Bowl fragment		160
	Bowl fragment		159
	Bowl fragment		161
	Bowl fragment		164
	Hammer stone		163
	Irregular hammer stone		162
	Hammer stone		146
	Stone fragment		197
	Stone fragment		198
	Stone fragment		196
	Stone flake		182
	Stone flake		183
	Stone awl		307
	Stone chip		311
	Stone chip		312
	Pebble		313
	Stone chip		301
	Pebble		314
	Pebble		310
	Obsidian flake		305
	Chalcedony fragment		304
	Ovoid stone	Perforations started but...	302
	Worked ovoidal stone		302
Pierced stone pendant		307	
Stone scraper		145	
SCI-2	Bowl fragment, stone		3
	Bowl fragment, stone	F1	2
SCI-3	Fragment ovoid stone	Secondary chip one end	358
	Stone hand drill		329
	Stone flake	Cross section, broken point	330
	Stone flake		Diamond-triangular
	Stone flake	Diamond shape	332
	Pierced stone frag.		330
Stone bowl fragment	Med. hard sandstone-waterworked	342	

ARTIFACT CATALOG - SAN CLEMENTE ISLAND - 1950

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>	
SCI-3	Bowl fragment		365	
	Small hand pestle		88	
	Section of a broken pestle		83	
	Pestle, fragment	Butt end only	362	
	Pestle		364	
	Broken triangular pestle		79	
	Pestle	Good condition	366	
	Mortar	Exceptionally flat, 1/2	352	
	Mortar fragment 1/3		356	
	Round mono stone	One side decidedly worn	80	
	Metate, flat shaped edges	Working on edges, not top of bowl	355	
	Stone core		89	
	Stone core		200	
	Stone scraper		201	
	Stone chopper		202	
	Dish-shaped pierced stone	Net sinker made from mica shist	203	
	Ovoid stone polished	Scattered	204	
	Hand pecking stone	Point chipped	82	
	Discoidal hammer stone	Weathered	84	
	Discoidal hammer stone		85	
	Ovoid hammer stone		86	
	Bowl rim drilled for a hammer stone	Volcanic stone bowl part	87	
	Round throwing or hand stone		81	
	SCI-4	Metate	Complete stone metate found with the mano 77B	77A
		Mano		251
		Metate frag?	Flat two sides	311
		Mano fragment ?		226
Pestle		Evidently broken, wear on end, chips removed from handle	76	
Pestle		Complete stone mano found with the metate 77A	77B	
Pestle		Fragment	258	
Pestle		Complete	257	
Pestle			252	
Pestle			253	
Pestle		Incomplete	254	
Pestle			255	
Ovoid worked stone		A rough definitely worked stone. May have intended as a pierced stone.	75	
Ovoid hammer stone			256	

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-4	Stone disk (incomplete)	A complete, unfinished stone disk	78
	Stone hand drill		320
	Stone hand drill		327
	Stone core		313
	Stone core		322
	Core stone		328
	Stone scraper		324
	Stone scraper		323
	Stone scraper		319
	Stone fragment		318
	Pierced stone fragment 1/6		357
	Stone slab	Unworked & doubtful	321
	Stone flake		325
	Stone flake	Smoothed on one side ?	321
	Stone bowl	12 fragments	310, 310B, 372, 314, 315, 316, 318, 319, 320, 322, 323, 372
SCI-5	Stone core		152
	Stone chip		153
	Stone flake		148
	Stone flake		149
	Stone flake		150
	Elipsoid drill stone, 2 holes	Use unknown	336
	Stone scraper		151
	Stone scraper		151
	Stone scraper		155
	Stone scrapper		154
	Stone scraper		334
	Water worn hammer stone, 3"dia x 1"		335
SCI-6	Stone point discarded	Chalcedony point, unfinished	46
	Bone point		51
	Quartz chip		50
	Stone disk	One quarter (approx.) of a stone disk partially perforated	70
	Hammer stone		42
	Perforated stone	One half of a perforated stone	68
	Perforated stone	One half of a rough perforated stone	69
	Ovoid stone semi- perforated	Stone has large shallow per- forations each side & several small perforations each side	249

ARTIFACT CATALOG - SAN CLEMENTE ISLAND - 1950

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-6	Stone morar (half)	One half of irregular stone mortar	36
	Stone mortar	Complete	37
	Paint mortar ?		250
	Pestle	Complete	40
	Pestle	Disturbed by pothunters	43
	Pestle stone (broken) 1 side fl.		60
	Mano cylindrical		248
	Stone chopper		61
	Stone chopper		62
	Stone scrapper		49
	Stone scraper		53
	Stone scraper		52
	Stone scraper		55
	Discoid stone		38
	Discoidal stone		41
	Stone core		66
	Worked stone	A worked stone having a smooth finish	67
	Stone core		71
	Stone chip	A group of 4 stone chips	1
	Stone chip		45
	Stone chip		48
	Stone chip		47
	Stone chip		54
	Stone chip		56
	Stone chip		57
	Stone chip		58
	Stone chip		59
	Stone chip		63
	Stone chip		64
	Stone chip		65
	Stone chip	Has doubtful shape of scraper	72
	Stone chip		92
	Stone chip		99
	Stone chip		174
	Stone chip		173
	Stone chips		172
	Stone chips		171
	Stone chip		170
	Stone chip		169
	Stone chip	Doubtful	73
	Stone core		74
	Operculum		174
	Spheroid stone	Cave area contained only angular rock fragments	44
	Stone bowl (half)	Half minus bottom	39

ARTIFACT CATALOG - SAN CLEMENTE ISLAND - 1950

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-7	Grinding stone		104
	Stone chip		105
	Stone scraper		168
	Ovoid stone	With 2 shallow depressions	316
	Stone bowl frag.		315
	Pierced stone fragment	One half of p.s.	317
	Oval hammer stone		106
	Hammer stone		167
	Fire stone		166
	Fire stone		165
SCI-8	Asphaltum	With embedded shell particles	233A-B
	Quartzite fragment		234
	Discoidal stone	Evidence of secondary work	225
	Bowl fragment	White sandstone	231
	Mano, two sided	Exceptionally falt both sides	230
	Pestle	Fragment	237
	Pestle, incomplete		232
	Phalic stone, pestle	Incomplete	240
	Stone hand pick		241
	Shale core stone		236
Shale core stone		235	
SCI-15	Hammer stone		156
SCI-20	Stone chip		90
	Stone chip		94
	Stone flake		219
	Stone core		95
	Mano		245
	Pestle fragment, one flat side		108
	Pestle fragment		111
	Hammer stone	Doubtful	217
	Round stone with 2 indentations		113
	Stone with hole started		98
	Round stone, indented one side		109
	Stone, 2 indentations		112
	Stone disk, fragment	Black, polished stone with transverse groove	22
	Pierced stone disk, frag.		221
	Pierced disk		220
	Stone disk, fragment	Incompleted, unfinished	247
	Pierced stone disk	Complete	246
	Stone scrapper		91
	Stone scraper		93
	Stone bowl		96
Stone bowl		97	
Broken bowl fragment		107	

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-22	Stone Chip		103
	Hammer stone fragment		102
	Stone tray fragment		101
SCI-23	Stone chip		205
	Stone chip		216
	Stone chip		215
	Stone flake		213
	Stone chip	Quartzite	210
	Stone flake	Secondary chips have been removed	209
	Stone chip		208
	Stone flake		207
	Stone flake		272
	Stone flake		275
	Stone chip		274
	Stone chip		271
	Stone flake		268
	Stone flake	No secondary chipping	327
	Pebble	Unworked	276
	Stone, handworked, bi-truncated	Exceptional - complete	267
	Bone, whale	No sign of working	328
	Stone core		214
	Stone core		213
	Stone core		212
	Stone core		211
	Core stone		229
	Stone core		277
	Stone core		329
	Stone	Unworked	268
	Pierced stone frag., 1/2, 5" dia. (rest.)		341
	Pierced stone frag. 1/2		340
	Ovoid stone	Shallow depression one side	338
	Pierced stone fragment		348
	Flat pestle frag. butt		345
	Stone core		223
	Core stone		344
	Hammer stone		228
	Hammer stone		298
	Hammer stone fragment	1/2 impact end; very smooth; two flat sides	339
	Hammer stone, large (core)	10-1/2" x 5" dia.	347
Metate, stone seed	Small incomplete seed grinding metate	224	
Metate, 1/2		360	

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-23	Metate, 1/2		360
	Mano		266
	Mano		368
	Mano fragment		218
	Pestle, incomplete		227
	Pestle		250
	Stone bowl fragment	Lip edge	346
	Stone bowl fragment		343
SCI-24	Stone scraper	Evidence of being used as scraper	22
	Stone scraper		140
	Stone scraper		139
	Stone core		13
	Stone core		14
	Stone core		16
	Stone core	A stone core from which has evidence of removal of chips	23
	Stone core		24
	Stone core		25
	Stone core	A stone core from which artifacts have been removed	29
	Stone core		30
	Stone core		31
	Stone core		34
	Stone core		35
	Stone chip	An unfinished stone artifact	20
	Artifact, unfinished	Evidently an unfinished arrow- head	26
	Stone chips	An unfinished core	27
	Stone chip	An unfinished stone chip	28
	Stone chips	An unfinished artifact	32
	Stone (quartz) chip		33
	Stone flake		144
	Stone chip		143
	Stone chip		142
	Stone chip		141
	Stone chip		138
	Stone chip		136
	Stone chip		135
	Stone chip		134
	Discoidal hammerstone		9
	Discoidal hammer stone (broken in half)		12
	Hammer stone		19
	Stone hammer		137
Stone, polished		100	
Pestle (broken)	Flattened sides	15	
Pestle (end of broken)		17	
Pestle, broken	Found half below the surface	18	
Bowl fragment (with red coloring)		10	

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>	
SCI-25	Stone fragment		120	
	Stone fragment		187	
	Stone fragment		194	
	Stone fragment		193	
	Stone fragment		192	
	Stone fragment		191	
	Stone fragment		190	
	Stone fragment		189	
	Stone chips		119	
	Stone chip		131	
	Stone chip		130	
	Stone chip		129	
	Stone chip		128	
	Stone chip		127	
	Stone chip		126	
	Stone chip		124	
	Stone chip		123	
	Hammer stone		116	
	Stone hammer		125	
	Stone hammer		122	
	Flat stone fragment		115	
	Mano fragment		114	
	Mano fragment		118	
	Mano fragment		206	
	Pestle fragment		117	
	Stone scraper		121	
	Pestle fragment	Large diameter, fragment is of lower end	244	
	Stone bowl fragment		132	
	SCI-26	Hammer stone		265
	SCI-30	Scraper		287
Stained stone			185	
Stone fragment			186	
Stone flake			295	
Stone chip			296	
Stone chip			297	
Stone chip			298	
Stone, quartzite		Unworked	294	
Stone flake			293	
Stone chip			293	
Stone flake			292	
Stone chip			291	
Stone chip			290	
Stone chip			289	
Stone (scraper?)			286	
Stone chip			284	

<u>Site No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Field No.</u>
SCI-30	Stone, edged		283
	Stone fragment		282
	Stone flake		281
	Stone flake		280
	Stone chip		279
	Stone chip		278
SCI-31	Stone flake	Exceptional stone flaking	326
No site numbers	Pestle		359
	Polished stone	May be water worn	303
	Mano fragment, one side flat		110
	Stone bowl (almost complete)		1

SUBMERGED CULTURAL RESOURCES IN SAN DIEGO COUNTY

Roy Pettus
Cultural Resource Management Center
Department of Anthropology
San Diego State University

Introduction

A diversity of underwater cultural resources exists off San Diego County's coastline. These resources can be classified basically as either prehistoric or historic. There are approximately 40 prehistoric localities and 45 historic localities recorded seaward of San Diego County's shoreline. These non-renewable cultural resources are becoming accessible at an accelerating rate due to use of our coastal and off-shore areas for developmental and recreational purposes. To prevent negative effects to the cultural resources located in these sectors, awareness and consideration by planners and cultural resource managers is necessary. Proposed projects that might affect submerged cultural resources should include personnel qualified in marine cultural resource investigation.

The objective of this section of the overview is to make planners and research managers aware of the potential for offshore cultural resources that exists in San Diego County and to suggest methods of precluding impacts to these resources. This will be facilitated through a preliminary set of bibliographic references, a list of institutions housing marine site data and other basic resource material from which a thorough investigatory procedure can be implemented (based on specific project needs). Any such investigation should include a review of published and unpublished literature pertinent to the subject area and communication with specialists in related fields.

Recorded Underwater Cultural Resources Off San Diego County

As stated earlier, there are approximately 40 recorded prehistoric localities and 45 historic localities off San Diego's coastline. This information was taken from the site records held by the following:

1. Cultural Resource Management Center, California Archaeological Site Survey Regional Office, San Diego State University, San Diego, CA.
2. San Diego Museum of Man, San Diego, CA.

3. Bureau of Land Management, Pacific Outer Continental Shelf Office, Los Angeles, CA.
4. Marine Archaeology Program, Scripps Institution of Oceanography, La Jolla, CA.
5. Fathom Eight (non-profit organization, specializing in research, education, and publication of underwater archaeology and maritime history subjects), San Marino, CA.
6. Environmental Research Archaeologists (Cultural Resource Consultants), Los Angeles, CA.

An extremely small amount of the total offshore area of San Diego County has been surveyed for cultural resources. Hunter (1979), Pettus (1981), and Masters (1982) have completed systematic underwater archaeological surveys offshore from San Diego County with different results. The number of prehistoric sites and variety of artifacts which have been recorded in southern California, and the width of San Diego County's continental shelf indicate that potential is high for undiscovered cultural resources off this coastline. Recorded prehistoric marine sites range from single stone bowls (mortars) to sites exhibiting relatively large assemblages of artifacts (Masters, Moriarty, personal communication: 1980).

The submerged underwater historic sites in southern California are thought to number in the many hundreds (Stickel 1978:VI-3). For example, historic site records held by Fathom Eight Research group show underwater pre-World War II historic sites off San Diego County (Muche, personal communication 1980). The majority of these sites are shipwreck sites, although other historic features such as Spanish fortress ornaments, building ruins, etc., are thought to exist in offshore waters.

Other Spanish, Mexican, and Native American period artifacts have been recovered while conducting underwater research in San Diego Bay near the site of Fort Guijarros on Ballast Point (Pettus 1981). Additionally, sport divers, in past years, recovered a Spanish anchor and other nautical equipment from the bay. These artifacts are now housed in a local museum.

As indicated above, a significant potential for historic research exists off San Diego and the southern California coast. This is further exemplified by Stickel (1978:VI-3) in the following brief listing of Spanish Galleons lost in southern California:

LIST OF SPANISH MANILA GALLEONS REPORTED
LOST IN SOUTHERN CALIFORNIA WATERS

<u>Site No.</u>	<u>Ship Name</u>	<u>Date Lost</u>
234	Nuestra Senora Ayuda	1641
285	San Pedro	1598
287	San Sebastian	January 1, 1754
292	Santa Domingo	1540
294	Santa Rosa	January 3, 1717
341	Trinidad	August 8, 1540
347	Unknown	1801

Where Underwater Cultural Resources Are Likely to be Found

Before carrying out an underwater cultural resources project, several background studies should be completed. Two of these studies, dealing with the "environmental history" and the "previous impacts history" of the area can directly indicate the potential existence and distribution of cultural resources for a given area. The "previous impact history" of an offshore area should be a compilation of evidence documenting prior physical disturbance in the vicinity of the project area. This could include dredging, filling, construction or other change that may have occurred to the physical surroundings in the vicinity.

Although no one has yet developed a predictive model specific to offshore San Diego, several larger studies which include the San Diego area within a regional ecological framework have been completed. A recent study, completed by Stickel, et al. (1978) describes sensitivity zones in the Southern California Bight. (San Diego County comprises the southern extremity of the Southern California Bight area.) The study is based on correlations between cultural site data and geomorphic features and changes in sea level. All available published and unpublished data and reports were reviewed in an attempt to help establish the distribution of cultural resources in the Southern California Bight.

The results of a mapping and diving survey of underwater artifact sites off the coast of San Diego County are reported by Masters (1982). Her study identifies and evaluates prehistoric underwater sites off San Diego's coast. She notes that from 12,000 - 10,000 years B. P., a coastal plane that extended west from today's coastline lay between the present-day 40-30 meter isobaths. Depending on which particular portion of the San Diego County coastline is being considered, the contours suggest a shoreline 2-17 kilometers further seaward than today's coast. Because the Southern California coast was occupied by humans from 12,000-10,000 before present, the archaeological evidence of their activities may be preserved in certain localities despite the rise in sea level which has drowned sites.

Probably the best known example of a drowned site surviving off San Diego is the La Jolla Beach and Tennis Club site. Tuthill and Allanson (1954) discuss this site which has yielded a diversity of artifact types. These include groundstone tools such as manos, metate fragments, pestles and grooved stones. Hundreds of stone mortars have also been recovered at this site.

Similarly, other studies that include the San Diego area have been completed by Bickel (1978) and Moriarty (personal communication 1980). Bickel (1978:6:20) suggests implications for prehistory based on changing sea levels. She correlates environmental change as manifest by sea level rise, with settlement system shifts that would have required changes in the location of villages and territorial boundaries ". . . almost generationally during periods of rapid sea level rise" (Bickel 1978:8). Diminished land area due to rising sea level would have had a major effect on local population densities and environments. People may have moved inland or moved near the coast due to sea level rise creating favorable ecological areas such as the San Francisco Bay region. The possible effect of sea level rise on people in the San Diego region has been studied by Warren (1963, 1968) and others.

Muche (1979:14) proposed factors to be considered when systematically attempting to predict the location of inundated cultural areas. The factors include:

1. recorded terrestrial sites.
2. marine and terrestrial geographical features.
3. reports of underwater cultural artifacts or features.
4. time-ocean depth correlation.
5. sea floor indications of a pre-inundation fresh water supply.
6. ethnohistoric documentation.
7. paleontological evidence.
8. paleo climatological data.

This system of site location was preliminarily field tested. Potentially sensitive areas were given probability ratings based on:

- (a) the extent to which they met the above-listed factors, and
- (b) the degree to which investigation of remote sensing data and sea bottom profiles correlated with the above-mentioned eight factors.

According to this study, a 72% success factor was achieved during the field test of 18 high probability areas. Cultural material was noted at 13 of the 18 locations tested. The cultural material consisted of "midden" materials and the following artifacts which were recorded at various depths of the tested locations:

- 1 steatite boat model
- 1 drill
- 7 projectile points
- 19 pestles
- 21 bowls (mortars)
- 9 shell beads
- "several" possible bedrock mortars

Physiography

In the planning states of any proposed project that might affect inundated marine cultural resources, an environmental history of the area should be compiled. Primarily, this should be an interdisciplinary study of the relationship between potential submerged cultural resources and natural features and processes. Among other things, this type of study should aid in the predicting the cultural resources potential of a given project area. This, in turn, helps with the cost effectiveness of the project. That is, by taking into account the state of the art in terms of methodology and technique (remote sensing, etc.), and judging the potential of the area based on other studies, a cost prohibitive project can be avoided (Pat Martz, personal communication).

Related interdisciplinary applications that should be considered in understanding the potential distribution and preservation of cultural resources in the study area include, but are not limited to the following: marine geology, geomorphology, paleogeography, paleontology, marine ecology, sea level change, tectonics, sedimentation rates, scouring, and other geophysical and oceanic processes.

Paleontology

The two previous decades are notable for the attempts made by paleontologists and archaeologists to jointly study man-associated sites and to assess the impact of man on ancient communities regardless of time boundaries (Stickel 1978:III-25). Paleontological data is used to interpret sea level change. From this translation, approximate reconstruction of past coastlines is possible (Bickel 1978:7). This information suggests numerous consequences for archaeology.

Skills Necessary for Underwater Cultural Resource Investigation

In addition to possessing the requisite archaeological/historical education and training for an underwater cultural resources study certain personnel involved in any underwater study must possess specialized skills. For example, survey methodology requires expertise in underwater location and recordation techniques. Other aspects of a project may dictate that participants are: qualified in remote sensing instrumentation and acoustical reflection interpretation; knowledge in ocean processes including geomorphology, paleogeography, and continental shelf geography; certified and experienced at a particular level in SCUBA and possibly another form of diving; experienced in underwater survey and recovery technique; and competent in underwater photography.

Conclusions

California is thought to have been occupied intensively by human populations for thousands of years. Evidence indicates that some of those early populations lived along the coast. The coast probably had, then as now, the densest distributions of human population centers relative to inland areas (Stickel 1978). Therefore, when the continental shelf was dry land, it was probably occupied by early groups. This indicates that important information can be gained from the study of underwater cultural resources off San Diego County. On a general level, the investigation of prehistoric cultural resources can add to our understanding of human coastal ecology (the study of human adaptation to life on and near the sea), and man's arrival in the new world, specifically, the southern California area.

Historically, sites off San Diego contain significant potential for nautical (ship) archaeology. Additionally, investigation of these important historic underwater sites can augment existing historical data and provide public access (through display of artifacts and features) to cultural resources important to the heritage of the community, state, and nation.

BIBLIOGRAPHY

- Arnold, J. B.
1976 An Underwater Archaeological Magnetometer Survey and Site Test Excavation Project off Padre Island. Texas Antiquities Committee Publication No. 3, Austin.
- Arnold, J. B. and O. J. Clausen
1975 A Magnetometer Survey with Electronic Positioning Control and Calculator-Plotter System, International Journal of Nautical Archaeology 4(2):353-366.
- Bass, George F.
1980 Marine Archaeology: A Misunderstood Science. In Elizabeth Mann Borgese and Norton Ginsberg (eds.), Ocean Yearbook 2: 137-152. Chicago: University of Chicago Press.
- Bickel, Polly
1978 Changing Sea Levels Along the California Coast: Anthropological Implications. Journal of California Anthropology 5(1): 6-20.
- Blackman, D. J. (ed.)
1973 Marine Archaeology. Colston Papers No. 23, Archon Books, Hamden, Connecticut.
- Caputo, M. V.
197 The Nestor Terrace in the Del Mar and Encinitas Quadrangles, San Diego County, California. Thesis on file at University of San Diego.
- Carter, George
1953 On Submarine Archaeology About San Diego. Southwest Museum, Los Angeles. The Masterkey 29(1):21-27.
- Clausen, Carl J. and J. Barto Arnold III
1976 The Magnetometer and Underwater Archaeology. International Journal of Nautical Archaeology and Underwater Exploration. Vol. 5, No. 2:158-165.
- Cockrell, W. A. (ed.)
in Magnetometer Search and Surveying in Shallow Water and Beach Areas. In The Proceedings of the Twelfth Conference on Underwater Archaeology, Fathom Eight, San Marino, California.

- Cockrell, W. A. and Larry Murphy
 1974 Survey of Fort Jefferson National Monument Preliminary Report. Manuscript of Nautical Archaeology and Underwater Exploration, Vol. 5, No. 2:158-165.
- Colston, Stephen A.
 1979 An Outpost of Empire: The Spanish Artillery Battery at Punta de Guisjarros, San Diego. A paper presented at the one hundred and seventy-sixth anniversary of the Battle of San Diego Bay, Ballast Point, San Diego, California, March 25, 1979.
- Dailey, M. D., Barbara Hill and Neal Lansing (eds.)
 1974 A Summary of Knowledge of the Southern California Coastal Zone and Offshore Areas, Vol. I, Physical Environment. U. S. Department of Interior, Bureau of Land Management.
- Desautels, R. J.
 1978 Underwater Archaeology: A Synthesis. In SEARCH: The Journal of Undersea Archaeology, Maritime History and Related Fields of Study 2:1:5-14.
- Dill, Robert F.
 1966 Erosion in the Head of La Jolla Submarine Canyon. In Sea Level Changes and Crustal Movements of the Pacific. Journal of Geosciences 10:1:105.
 1969 Pleistocene Sea-Level Fluctuation Off Southern California and Their Relation to Continental Slope Sedimentation. American Association of Petroleum Geologists Bulletin 53:2:457-458.
- Dixon, E. James (ed.)
 1976 Bering Land Bridge Cultural Resource Study. Bureau of Land Management, Outer Continental Shelf Office, Washington, DC.
- Emery, Kenneth O.
 1954 General Geology of the Offshore Area, Southern California. In California Division of Mines and Geology, Bulletin 170, pp. 197-111. San Francisco.
- Gagliano, W.
 1977 Cultural Resources Evaluation of the Northern Gulf of Mexico Continental Shelf. Coastal Environments, Inc. (for the Bureau of Land Management Outer Continental Shelf Office).
- Gilmore, James and Jack G. Hunter
 n.d. Guns of Goleta. State of California, Department of Parks and Recreation, Sacramento, California (in preparation).

- Gumerman, George J. and Thomas R. Lyons
1971 Archaeological Methodology and Remote Sensing. Science 172:
126-132.
- Hall, E. T.
1966 The Use of the Proton Magnetometer in Underwater Archaeology.
Archaeometry 9:32-44.
- Hedges, Ken
1980 Personal Communication.
- Holmes, Maurice G.
1963 From New Spain by Sea to the Californias: 1519-1668. Arthur H.
Clark Co., Glendale, CA, 284 pp.
- Holmquist, June Drenning and Ardis Hillman Wheeler
1964 Diving into the Past. . . Theories, Techniques, and Applica-
tions of Underwater Archaeology. Minnesota History Society
and the Council of Underwater Archaeology. The Society, St.
Paul.
- Horne, S.
1975 Underwater Surveys. Manuscript, Dames and Moore, Los Angeles.
- Hudson, Dee Travis
1976 Marine Archaeology Along the Southern California Coast. San
Diego Museum Papers, No. 9, San Diego.
- Hunter, Jack G.
1979 A Cultural Resource Reconnaissance Study of Proposed Dredging
and Construction Areas at Mission Bay Harbor, California.
United States Army Corps of Engineers, Environmental Planning
Section, Los Angeles, California.
- Keen, E. A.
1976 San Diego's Coastal and Marine Environment: San Diego, An
Introduction to the Region. Department of Geography, San
Diego State University.
- Kern, J. B.
1977 Origin and History of Upper Pleistocene Marine Terraces, San
Diego, California. Geological Society of America Bulletin
88:11:1553-1566.

- Lajoie, K. R., J. F. Wehmiller, and Kvenvolden
 1975 Correlation of California Marine Terrace by Amino Acid Stereochemistry. Geological Society of America Abstract Programs, 7:3:338-339.
- Lenihan, D. J. and Others
 1974 Preliminary Archaeological Survey of the Offshore Lands of Gulf Islands National Seashore. In Underwater Archaeology in the National Park Service. Daniel J. Lenihan, editor. U. S. Department of the Interior, National Park Service, Southwest Regional Office, Division of Archaeology, Santa Fe, New Mexico.
 1977 The National Reservoir Inundation Study: Final Report. National Park Service, Southwest Cultural Resources Center, Santa Fe
- Lyons, Thomas R. and Thomas Eugene Avery
 1977 Remote Sensing: A Handbook for Archaeologists and Cultural Resource Managers. National Park Service, Washington, DC.
- Martz, Patricia
 1980 Personal Communication.
- Masters, P. M.
 1980 Personal Communication.
 1982 Detection and Assessment of Prehistoric Artifact Sites Off the Coast of Southern California. In P. M. Masters and N. C. Fleming (eds.), Quaternary Coastlines and Marine Archaeology
- McCrary, P. A., K. R. Lajoie and C. A. Whitten
 1979 Marine Terrace Deformation, San Diego County, California. U. S. Geological Survey, Menlo Park, California.
- Milliman, John and K. D. Emery
 1966 Sea Levels During the Past 35,000 Years. Science 162:1121-1123.
- Moriarty, James R.
 1961 Submarine Archaeology. Science of Man 1(4):34, Mentone, CA.
 1963 The Use of Oceanography in the Solution of Problems in a Submarine Archaeological Site. In Papers in Marine Geology, Shephard Commemorative Volume: 511-522, Macmillan, New York.
 1964 The Interdisciplinary Use of Oceanography in a Submarine Archaeological Site. Contributions of the 5th Underwater Council, Mexico, D. F., Mexico.

- Moriarty, James R. (continued)
- 1964 Principles of Submarine Archaeology. Pacific Discovery 17(5): 18-25.
- 1968 Pre-Spanish Marine Transport and Boat Building Techniques on the Upper and Lower California Coast, Westerners, Vol. 1, November, 1968, pp. 19-26.
- 1969 Marine Archaeology in Submerged Prehistoric Sites. Ocean Magazine 3(2):47-49.
- 1980 Personal Communication.
- Moriarty, James and Larry J. Pierson
n.d. New Evidence of Chinese Ships in Pre-Columbian America (in preparation).
- Moriarty, James, Patrick Gibson and Larry J. Pierson
1975 Artifacts from Submarine Archaeological Sites. The Masterkey 49(4):147-154, Southwest Museum, Los Angeles.
- Moriarty, James R. and Mary Keistman, Trans.
1974 Cabrillo's Log, 1542-1543. In Cabrillo Gravestone Seminar, First Annual Cabrillo Festival Historical Seminar, Vol. 1, No. 1, San Diego.
- Muche, James F.
1977 Initial Survey-Manila Galleon San Pedro. SEARCH: The Journal of Under Sea Archaeology, Fathom Eight, San Marino, California 1(2):13-33.
- 1978 An Inundated Aboriginal Site, Coral Beach, California. In The Proceedings of the Ninth Conference on Underwater Archaeology.
- 1979 Site Location Factors, SEARCH: The Journal of Under Sea Archaeology, Fathom Eight, San Marino, California 3(3):14-16.
- 1980 Personal Communication.
- Murphy, Larry
1980 Survey Methodology: Specific Site Survey Biscayne National Monument. U. S. Department of the Interior, National Park Service.

- O'Keefe, Patrick J.
 1981 Current Developments Regarding Regulation of Marine Archaeology Outside Territorial Water. In Gordon P. Watts, Jr. (ed.), Underwater Archaeology: The Challenge Before Us; the Proceedings of the Twelfth Conference on Underwater Archaeology: 338-347. Fathom Eight Special Publication 2. San Marino: Fathom Eight.
- Owens, James
 1977 The State Interest in Protecting Sunken Archaeological Treasures. SEARCH: The Journal of Under Sea Archaeology, Fathom Eight, San Marino, California 1(3):3-19.
- Oxman, Bernard H.
 1981 The Third United Nations Conference on the Law of the Sea: The Ninth Session (1980). The American Journal of International Law 75(2):211-256.
- Palmer, H. D.
 1976 Erosion of Submarine Outcrops, La Jolla Submarine Canyon, California. Geological Society of America Bulletin, 87:3:427-432.
- Peterson, G. L.
 1970 Quaternary Deformation of the San Diego Area, Southwestern California. In Pacific Slope Geology of Northern Baja California and Adjacent Alta California, pp. 120-126.
- Pettus, Roy E.
 1978 Underwater Search and Survey Techniques. Unpublished manuscript in author's possession.
 1981 A Marine Cultural Resources Survey Offshore from a Spanish Fort Site at Ballast Point, San Diego, California, M. A. Thesis, San Diego State University.
- Pettus, Roy E., James F. Muche, and A. Lani Low
 1980 Fort Guijarros: Problems and Potential of a Composite. The Proceedings of the Eleventh Conference on Underwater Archaeology. Fathom Eight, San Marino, California.
 1981 Fort Guijarros: A Report from the Underwater Section. SEARCH: The Journal of Undersea Archaeology. Maritime History and Related Fields of Study, Fathom Eight, San Marino, California.

- Pierson, Larry J.
 1977 Pre-Columbian Voyages to the New World, Cabrillo and His Compatriots. James R. Moriarty III (ed.), Cabrillo Historical Association, San Diego, pp. 1-21.
- Prott, Lyndel V. and P. J. O'Keefe
 1978 International Legal Protection for the Underwater Cultural Heritage. Revue Belge de droit international 14(1):85-103.
- Rebikoff, Dimitri
 1972 Photogrammetry in Dirty Water by Mosaic and Strip Scanning. Underwater Archaeology, A Nascent Discipline. Paris, UNESCO.
- Resources Agency, State of California
 1965 An Oceanographic and Biological Survey of the Southern California Mainland Shelf. State Water Quality Control Board Publication No. 27. Sacramento.
- Roth, Linda
 1980 The Site of Fort Guijarros Defense Fortification at the Entrance to Port of San Diego.
- Rozaire, Charles
 1962 Underwater Finds at Dana Point. The Masterkey 36(2):77-78. Southwest Museum, Los Angeles.
- Roy, Tye
 1980 Personal communication.
- Ruppe, Reynold J.
 in press Sea Level Change as a Variable in Colonial American Archaeology. In the Proceedings of the Tenth Conference on Underwater Archaeology, Fathom Eight, San Marino, California.
- Schiffer, M. and G. Gummerman
 1978 Conservation Archaeology. Academic Press.
- Scott, D. S. and F. S. Medioli
 1978 Vertical Zonations of Marsh Foraminifera as Accurate Indicators of Former Sea Levels. In Nature 272:5653:528-531.
- Shepard, J.
 1964 Sea Level Changes in the Past 6000 Years: Possible Archaeological Significance, Science, 143:574-576.
 1973 Submarine Geology, 3rd edition. Harper Row, New York.

- Shepard, J. and U. S. Grant IV
 1947 Wave Erosion Along the Southern California Coast. Geological Society of America Bulletin, 58:919-926.
- Sparkman, Philip S.
 1908 The Culture of the Luiseno Indians. 8(4)
- Stevenson, Robert E. and Richard D. Terry
 1957 Bottom Materials and Topography of the Shelf Between Point Conception and San Diego in Oceanography and Marine Geology of the Southern California Shelf. Allan Hancock Foundation, Los Angeles.
- Stevenson, R. E., E. Uchupi, and D. S. Gorsline
 1958 Some Characteristics of Sediments on the Mainland Shelf of Southern California. Allan Hancock Foundation, Los Angeles.
- Stickel, E. Gary
 1977 An Underwater and On-land Cultural Resource Survey, Port San Luis, California. Environmental Research Archaeologists, U. S. Army Corps of Engineers, Los Angeles, 60 pp. + appendices.
- An Underwater Archaeological Resources Survey of Selected Areas off Point Conception, California. Environmental Research Archaeologists, Los Angeles. 25 pp. + appendices.
- A Destroyed Submarine Artifact from Point Conception, California. Pacific Coast Archaeological Society 13(3):55-60.
- 1980 Personal Communication.
- Joint Efforts Between Sport Divers and Underwater Archaeologists in the Survey of Prehistoric Sites off the California Coast. A paper presented at National Scuba Workshop, February 15-18, 1980, Newfound Harbor Marine Institute, Big Pine Key, Florida.
- Stickel, E. Gary and J. Hunter
 1977 A Review of Remote Sensing Data on Cultural Resources. Unpublished manuscript on file at Environmental Research Archaeologists, Los Angeles.
- Strong, William D.
 1929 Aboriginal Society in Southern California. University of California. Publications in American Archaeology and Ethnology, 26:1-358.

- Thompson, D. E.
1971 Paleoecology of the Pleistocene Marine Sediments from San Diego County, California. In Les Niveaux Marins Quaternaires, Part 2. Pleistocene Quaternaria, 15:81.
- Throckmorton, Peter
1972 The Practical Application of Underwater Photography. Underwater Archaeology, A Nascent Discipline. Paris, UNESCO.
- Throckmorton, Peter (ed.)
1969 Surveying in Archaeology Underwater. B. Quartich, London.
- Tont, S. A.
1978 Sea Level-Air Temperature Correlations Near a Coastal Zone. In Nature 276:5684:171-172.
- Townsend, Samuel P.
1972 Standard Conservation Procedures: Underwater Archaeology, a Nascent Discipline. Paris: UNESCO.
- UNESCO
1972 Underwater Archaeology, A Nascent Discipline. United Nations Educational Scientific, and Cultural Organization, Paris.
- Upson, J.
1949 Late Pleistocene and Recent Changes of Sea Level Along the Coast of Santa Barbara County, California. American Journal of Science, 247:94-115.
- Wallace, Edith and George Kritzman
1956 A Shell Encrusted Artifact. The Newsletter of the Archaeological Survey Association of Southern California 3(2):11-12.
- Warren, Claude N.
1967 The Southern California Millingstone Horizon: Some Comments. American Antiquity 32(2):233-236. Salt Lake City.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. Eastern New Mexico University Contributions in Anthropology 1(3):1-14.
- Warren, Claude N. and Max G. Pavesic
1963 Shell Midden Analysis of Site SDi-603 and Ecological Implications for Cultural Development of Batiquitos Lagoon, San Diego County, California. Archaeological Survey Annual Report. University of California, Los Angeles.

- Waterman, T. T.
1908 Religious Practices of the Diegueno. University of California Publication. American Archaeology and Ethnology 8(6):271-358.
- Watters, David R.
1981 Linking Oceanography to Prehistoric Archaeology. Oceanus 24(2):11-19.
1982 UNCLOS III: The "Archaeological Objects" Articles. Third United Nations Conference on Underwater Archaeology, Fathom Eight, San Marino, California.
- Watts, Gordon P.
1980 Submerged Cultural Resources Survey and Assessment of the Mark Clark Expressway, Wando River Corridor, Charleston and Berkeley Counties, South Carolina. South Carolina Department of Highways and Public Transportation, Columbia.
- Williams, J. C. C.
1972 Underwater Surveying by Simple Graphic Photogrammetry with Obliques. Underwater Archaeology, A Nascent Discipline. UNESCO, Paris.

DATA

Included below are M. A. theses (1961-1982) of the Department of Anthropology, San Diego State University, dealing in or related to, the practice of archaeology in San Diego County.

- Almstedt, Ruth F.
1970 Multiple World View of a Diegueno Community.
- Baldwin, Mary Alice
1971 Culture Continuity from Chumash to Salinan Indians in California.
- Bull, Charles
1977 Archaeology and Linguistics, Coastal Southern California.
- Carrillo, Charles
1980 Culture Change at SDi-6153.
- Christenson, Lynne E.
1981 Mammalian Faunal Butchering Practices at an Inland La Jollan Site, San Diego, California.
- Hanna, David
1982 Malcolm J. Rogers: The Biography of a Paradigm.
- Hedges, Ken
*1970 An Analysis of Diegueno Pictographs.
- Howard, Jeffrey A.
1975 Description of Human Remains from the Presidio, San Diego.
- Isham, Dana A.
1974 Conflict and Compromise: The American Indian and the Archeologist.
- Johnson, Melissa
1982 An Evaluation of Site Preservation Through Open Space Easement.
- Kaldenberg, Russell
1977 Paleo-Technological Change at Rancho Park North, San Diego County, California.

* Master of Arts in Social Sciences (with an Anthropology emphasis).

- Kasper, Jan C.
1972 An Analysis of Mammalian Fauna From the Paradox 1 Site, Colorado.
- Krase, Jean
1979 The Old World Ceramic Sherds from San Diego's Presidio: A Qualitative, Quantitative, and Historic Analysis.
- McAllister, Martin
1976 Hohokam Social Organization: A Reconstruction.
- Miller, Patricia M.
*1975 Aboriginal Use of Harper Flat.
- Moriarty, James
*1969 The Yuman Indians of Southern California: An Interdisciplinary Synthesis.
- Pettus, Roy
1981 A Marine Cultural Resources Survey Offshore from a Spanish Fort Site at Ballast Point, San Diego, California.
- Reyna, Sharilyn
1973 A Report of the Archaeology of A:16:7, San Diego County, California.
- Shackley, Steven
1981 Late Prehistoric Exchange Network Analysis in Carrizo Gorge and the Far Southwest.
- Stedt, Pauline
1979 Trace Element Analysis of Two Prehistoric Populations: The Fremont and the Anasazi.

The following is a list of collections housed at San Diego State University. Some have been with the University for over 20 years, and particularly when the collections have been donated, may not have specific provenience.

Additionally, items that are not listed include a portion of the John Peabody Harrington collection (baskets, miscellaneous lithic artifacts, etc.), a type collection of Southwestern pottery, and 47 mortars and metates from San Diego County and Southern Arizona.

Any of these collections are available to qualified individuals for research purposes. Please contact the CRM Center, Department of Anthropology, San Diego State University, for information or clarification.

COLLECTIONS CURATED BY SAN DIEGO STATE UNIVERSITY

<u>Project</u>	<u>Date</u>	<u>Project Number</u>	<u>Artifacts</u>							
			<u>Lithics</u>	<u>Bone</u>	<u>Shell</u>	<u>Ground-stone</u>	<u>Ceramics</u>	<u>Historic</u>		
	ind									
	1959	CAL:F:1:2	X				X		X	
	1959	IMP-5	X				X		X	
	1959	SD-25-2					X		X	
	1968	CAL:F:6:1	X	X		X	X		X	
	1970	SDI-4710	X				X		X	
	1970	SDI-4712	X				X		X	
	1972	SDI-4558	X				X		X	
	1972	SDI-772					X		X	
	1974	C:13:6	X	X						
	1975	SDI-4769	X						X	X
	1975	SDI-4773-4	X						X	X
	1973	SDI-4611								X
Seeley Stables	1958									
1958-1 El Monte Park	1958									
1958-2	1958	LC-26	X	X					X	
1959-1,14,4,8,5,15,9	1959	IMP-2	X				X		X	
1960-2	1960	LC-26	X	X			X		X	
1962-10,13,11.5	1963		X	X			X		X	
1963-12 Imperial Site	1963		X						X	X

COLLECTIONS CURATED BY SAN DIEGO STATE UNIVERSITY (continued)

<u>Project</u>	<u>Date</u>	<u>Project Number</u>	<u>Artifacts</u>					<u>Ground-stone</u>	<u>Ceramics</u>	<u>Historic</u>
			<u>Lithics</u>	<u>Bone</u>	<u>Shell</u>	<u>Bone</u>	<u>Shell</u>			
1963-7	1963	SD-5-1	x					x		
1964-10,11,8	1964	YY-8-14	x					x		
1964-12	1964		x							
1966-12		LC-26	x	x			x	x		
1966-13	1966	CAL:F:1:3	x				x	x		
1966-4		LC-26	x	x			x	x		
1966-6,8,10 Sand Pit	1966	SDS-221	x				x	x		
1966-7	1966		x					x		
1968-2	1968							x		
1970-13		LC-26	x				x	x		
1970-16		LC-26	x	x			x	x		
1970-7	1970		x				x			
1972-19-7	1972		x				x		x	
Arroyo Matomi	1972		x				x			
Bailey Site			x							
Bikeway	1978	SDI-5512	x				x			
Bonita Woods	1958	SD-25-2	x						x	
Bucanan Reservoir		MAD-117					x			
Buckman Springs		SDI-777	x	x			x		x	

8231
W-257

W-200

COLLECTIONS CURATED BY SAN DIEGO STATE UNIVERSITY (continued)

<u>Project</u>	<u>Date</u>	<u>Project Number</u>	<u>Artifacts</u>			<u>Ground-stone</u>	<u>Ceramics</u>	<u>Historic</u>
			<u>Lithics</u>	<u>Bone</u>	<u>Shell</u>			
C. W. Harris Site	1960	SDI-149	x		x			
C. W. Harris Site	1964		x		x			
Circle Site	1973	11-SD-78	x	x	x	x		x
Cottonwood Creek		SDI-777	x	x	x	x		
Coyote Lake, San Bernardino	1966		x	x	x			
Fortuna Valley Rock Shelter	1970		x	x	x	x		
Gold Mine Ruins	1970							
Handyman	1975	SDI-4643	x	x	x			
Hujali Juk	1959		x					x
Hunters Camp, La Cresta Rd.	1970		x		x	x		
Isham Springs	1975	SDI-185	x		x	x		
Jacumba			x					x
K11			x					
Kamar	1967	W-132	x	x	x	x		x
Kitchen Creek	1973		x	x	x			x
Las Flores	1973	SDI-812	x		x	x		
LM	1970		x					
Lomas Santa Fe	1973		x	x	x			
Madeira Dawns	1974	SDI-5670	x					x

COLLECTIONS CURATED BY SAN DIEGO STATE UNIVERSITY (continued)

<u>Project</u>	<u>Date</u>	<u>Project Number</u>	<u>Lithics</u>	<u>Artifacts</u>					
				<u>Bone</u>	<u>Shell</u>	<u>Ground-stone</u>	<u>Ceramics</u>	<u>Historic</u>	
Otay Mesa	1978	SDI-5352	x						
Paleo and Mojave Hills	1966		x						
Panorama	1973	SDI-4565	x			x			
Presidio		SDI-38	x	x	x				
Puerta La Cruz	1979	SDI-799	x	x	x				x
Rancho Bernardo 5-23	1968	W-340-342	x	x	x			x	
Rogers Collection			x	x	x			x	
Salt Works	1967	SD-25-1	x		x				x
San Elijo Lagoon		SDI-4546	x						
San Mateo Creek	1965		x						
San Onofre	1965	SDI-1074	x	x	x				
Santee	1965		x						
Southern Arizona			x						x
Texas Street 1973		SDI-4546	x						
UCLJ-MI and M5	1970	SD-39	x		x				
Wayne Morris 1965-3	1965		x	x	x				x
Westmoreland Lost Site	1974		x	x				x	x
Ysidora	1975		x	x	x				

CURRENT RESEARCH*

Sky Oaks Biological Field Station: 33 prehistoric and 1 historic archaeological resource(s) were discovered and documented during the summer of 1981 in the upper San Luis Rey River drainage, northeast San Diego County. Since this land is under a 30 year lease to the University, a number of projects are planned. Currently, a test excavation is underway on an 1890's general store and house foundation and in November, an experimental burn/obsidian hydration test will take place.

Reference:

- Kidder, Fred W.
1981 Final Report: Archaeological Reconnaissance of Sky Oaks, Chihuahua Valley, San Diego County. Ms. on file, Systems Ecology/Biology Group.

Ruiz-Alvarado Adobe: Standing on the first Mexican land grant in San Diego County, this deteriorating adobe has recently been added to the National Registry of Historic Places (January 1982). Over the years, a number of studies and restoration plans have been put forth by both private and academic institutions and City/County governments. Members of the Penasquitos Task Force, City of San Diego, are currently opting for total restoration of the adobe. While all of these plans were formulated, the property has been allowed to deteriorate until only 2 partial walls are standing today. The City Park and Recreation Department, Open Space Division, has been instrumental in formulating a plan for the preservation of the adobe. The area is now being fenced and clean-up projects will begin there soon. An archaeological test excavation to discern site boundaries, expose foundations, etc., will begin in late September.

Reference:

- Ferris, Robert D., A.I.A.
1980 Ruiz Alvarado Adobe Ranch House, Los Pensasquitos Rancho: A Feasibility Study for the Preservation, Restoration and/or Reconstruction. Ms. on file, City of San Diego.

* Contributions to Current Research are welcomed.

COMING NEXT QUARTER --

ARCHAEOLOGY AND THE PUBLIC HIGHWAY SYSTEM: CALTRANS

We invite your participation in this publication and solicit your comments on all sections of this paper. We will publish discussion, criticism, original papers, and contributions to the Current Research Section in subsequent issues.

Manuscripts submitted for consideration for the December 1982 issue must be received no later than NOVEMBER 15, 1982. Papers should be in the format presented here.

Manuscripts, correspondence, criticism, etc., should be addressed to:

Cultural Resource Management Center
Department of Anthropology
San Diego State University
San Diego, CA 92182

EDITORIAL POLICY*

Articles, reviews, and contributions to Current Research should follow the format presented below.

1. Typing Format: Manuscripts must be double-spaced, typed on one side on good quality white paper. Onionskin or "erasable" paper are not acceptable. Margins must be at least one inch wide on each side, top, and bottom. Pages must be numbered consecutively in the upper right hand corner.

2. References cited in the text should be as follows:

Examples:

- a. According to Johnson (1978:23-27), the edge wear pattern....
- b. Various authors (McKenna 1973:23-27; Tetotler 1949:66) have long felt....

3. References cited:

- a. Book:

Smith, John A.
1823 The Wawoona Art of Eastern Biland. New York: John P. Jones.

- b. Journal article:

Milliman, Andrew and K. D. Emery
1966 Sea Levels During the Past 35,000 Years. Science 162:
1121-1123.

- c. Manuscripts: Refers to material not published.

Dearbourne, Diane D.
1963 The Rock Art of North America. Unpublished manuscript.
Files of the author.

4. Tables: Each table must be typed on a separate sheet. They should be numbered consecutively and cited as such in the text.

*Based broadly upon the American Anthropologist Style Guide and Information for Authors (American Anthropologist 1976:17:9-12).

5. Figures, Photographs, and Maps: Must be camera-ready copy and should include captions if needed. Each figure, photograph, or map must be numbered consecutively as well as separately, i.e., Map 2, Figure 3, etc.
6. Measurements: Should remain consistent throughout the text; for example:
 - a. Wrong: A series of 10 inch levels were excavated in the 1 meter unit.
 - b. Right: A series of 10 cm. levels were excavated in the 1 meter unit.
7. Proofs: Articles will be returned to the author before publication. All changes made by the author will be included at the discretion of the editors. Proofs of reviews and/or Current Research contributions will not be sent to the authors.