

Historic-Period Lithic Technologies in Old Town San Diego

by
Michael P. Sampson
and Jill H. Bradeen

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Abstract

The 1990s excavations on Block 408 in Old Town San Diego yielded slightly over 8,000 flaked and ground stone and flaked glass specimens (**Figure 1**). These were recovered from securely historic contexts. The current analysis revealed an intensive manufacture and use of traditional aboriginal tool types of locally available lithic raw materials. Lithic tools here played a key role in everyday food processing and tool maintenance tasks. Manufacturing techniques and patterns of lithic tool use from the site will be compared with local Late Prehistoric traditions and use patterns found at other early historic sites. We will explore alternate hypotheses as to why older tool-making technologies survived in a mid-19th century, commodities-oriented economy.

Introduction

Stone tool manufacture and use span roughly 2.5 million years of human history (De la Torre 2004; Schick and Toth 1993:78, 84-85, 102-104). Thus, stone tools have served a significant role in the everyday lives of humans for over 99% of our species' history. Indeed, in the modern-day era, stone tool use had continued as a tradition and common practice among certain human groups, such as, Australian Aborigines, New Guinea Highlanders, indigenous people in southern Africa, people in southern Mexico, and others.

Stone implements and the debris abandoned during their manufacture and use represent common and highly tangible remains of human behaviors (cf. Crabtree 1982). These latter human residues that are so abundant and ever-present on the landscape become the tell-tale life signatures we archaeologists call "sites," "cultural features," or "cultural landscapes." Defining evidence of stone tool manufacturing techniques, the function to which a tool served, or, the cultural context of the tool manufacture and use are readily recognized as research realms of the prehistorian. However, here in Old Town San Diego and many other locations, stone artifacts have a story to tell in historic times.

Throughout this lengthy era of stone-tool use by humans and human ancestors, stone artifacts have been fashioned by applying force to various lithic (stone) materials to detach flakes from a greater mass; this is the parent rock or “core” (**Figures 4, 7**). Ultimately, the subject stone is shaped by purposeful design, and a functional tool formed (Crabtree 1982; and others). Subsequently, the waste materials that we call “flakes” can themselves become a functional tool, one capable of serving a necessary role in everyday life (e.g., Gould et al. 1971:163; White and Thomas 1972:278-279; and others; **Figure 5**). A stone-tool user, whether in prehistory or historic times, would also simply use a stone for a variety of tasks with minimal or no modification by means of flintknapping.

The stone-tool maker and user were discriminating in their choices of raw material and the specific rocks chosen for use within a particular geologic source (or, “quarry”). Availability of materials, whether due to cultural reasons, distance, territoriality, or other factors, had a direct influence on toolmaking activities and tasks that could be completed (Crabtree 1971:8-9; Gould 1978; Schick and Toth 1993:122-127; and others). Stone tool usage might even have served to bond the toolmaker and tool user to cultural traditions in transition, e. g., at the time of historic contact, or help cement one’s place in indigenous society (Allen 1998; Gould 1978:831-833; Hudson 1993; Silliman 2003:129; Silliman 2004:102-115).

The skillful manufacture and efficient use of stone tools evidences a rather sophisticated understanding of the elastic limits of lithic materials, as well as, taking advantage of the physical principles of motion, force, gravity, mass, density, friction, projectile motion, kinetic energy and other laws in nature (Crabtree 1975:105-112; Crabtree 1982:1-2). Cultural factors and skill would then influence how these natural forces are applied, when and where they can be applied, and the ultimate form of an end product.

Indian people in California and elsewhere continued to make and use stone tools at Indian villages that were occupied into the contact (early historic) era, at the Spanish Missions, on Mexican Period ranchos, and into the American Period, or what we refer to as the “post-contact period” (e.g., Allen 1998:63-64, 77-83; Bartel 1991:19-21; Carrico 1983; Cobb 2003; Greenwood 1976:11-14; Kyle 1987; Whittaker and Fratt 1984; and others; **Figure 2**). Within these new living situations of the Contact Period and post-contact times, stone tools both symbolized a maintenance of cultural traditions and represented a practical solution for an everyday chore, while taking on new social meanings for the users (cf. Allen 1998; Cobb 2003; Silliman 2003; and others). Traditional historical accounts of the Contact Period and European and American colonialism may not provide much information on the daily lives of Indian people, but, archaeological remains such as stone artifacts can help us learn about them and something about how they coped in a new society. The study of stone tool use in the Contact Period and post-contact era has drawn the attention of researchers in California and beyond (e.g., Allen 1998; Gould 1978; Gould et al. 1971; Hayden

1978; Hohenthal 1950; Johnson 2003; Miller 1979; Nelson 1916; Powell 1895; Schiff 1997; Silliman 2003, 2005; White and Thomas 1972; and others).

Previous Research

Rebecca Allen (1998), working within the Neophyte [baptized Indian people] housing site of Santa Cruz Mission in central California, noted that flaked-stone artifacts were manufactured and used throughout the Mission era. The manufacture of flaked-stone artifacts primarily took place inside Neophyte living areas. Flaked-stone tools were employed in a variety of tasks, with simple flake tools being the predominant implement. There were relatively fewer formal stone tools than that found in local Late Prehistoric sites. Allen (1998:7) argued: "One possible reason for retention of native culture was the lack of real integration [of the Indian Neophytes] into Hispanic society."

Excavations at San Buenaventura Mission in Ventura, California during the early 1970s yielded a significant component of flaked-stone artifacts, including numerous stone projectile points, bifaces [flaked on both surfaces], "knives," and flake tools. A variety of lithic raw materials were used there (Greenwood 1976:11-14).

Whittaker and Fratt (1984) found that the use of stone tools continued long after the introduction of European tools at Mission sites in Arizona. Of course, the relatively isolated, frontier nature of these locations in the late 18th century and early 19th century made metal tools and other European goods scarce commodities. According to Whittaker and Fratt (1984:15-16), the Tumacacori Mission flaked-stone artifacts show a continuity with stone tool assemblages found in prehistoric sites [prior to the arrival of the Spanish] of the region. The tools are simple, easily made and casually discarded, but, these implements would have been suitable for a variety of everyday tasks.

The San Diego Presidio (**Figure 2**), of which Old Town San Diego was an adjunct in its early years, yielded a strong component of lithic artifacts, according to Jack Williams (2005). Amorphous shaped flake tools were the most common type found at the Presidio by Dr. Williams and his associates in the 1990s, but, the Spanish and other Presidio inhabitants used a wide range of stone tools. For certain highly visible areas of behavior, such as, male-oriented tasks, Native American traditions were adopted at the San Diego Presidio. Indian culture highly influenced Spanish settlers there (Williams 2005).

Rancho Petaluma, a Mexican Period (1830s-1840s) agricultural enterprise located just north of San Francisco Bay near the modern town of Petaluma, yielded evidence of what Stephen Silliman (2004:102-115) described as "significant stone tool use." This rancho had a sizable population of local Indian workers. Large numbers of flaked-stone tools and flakes and groundstone tools were identified at the Indian residential area within the rancho. Several flaked-

glass items were also recovered on the rancho. According to Silliman, the production and use of stone tools in a colonial [post-contact] world indicates (1) material necessity to overcome a scarcity of metal tools, (2) a maintenance of material comfort and familiarity, and (3) a political and social statement about identity and gender. This site is today located within Petaluma Adobe State Historic Park.

Katukto (W-569 and W-571), a village site in north San Diego County occupied by Luiseño Indians many years after the abandonment of the missions, yielded an array of stone tools and other traditional aboriginal items. Tools found here consisted of several “hammer-pounders” (showing pronounced battering use), flake tools, manos, two metates, core tools, steatite items, and others (Carrico 1983). The tradition of making and using traditional stone tools continued at least into the late 1800s at this location.

Archaeological site CA-SDI-5938, located in Westwood Valley in the modern-day community of Rancho Bernardo, was occupied by Indian people well into the 19th century. This particular part of San Diego County served as Mexican Land Grant ranch lands at that time, so, the site occupants may have worked on the local ranches. Archaeological investigations in the 1980s here turned up sizable flaked-stone and groundstone tool assemblages. The site showed a diversity of stone tool types resembling the tools commonly recovered in Late Prehistoric (prior to Spanish settlement) sites in the same area. The finds included a large number of flakes, projectile points, manos, flake tools, hammerstones, cores, etc. (Kyle 1987). Again, it is significant that Indian people who lived in present-day San Diego County continued traditional stone tool use long into the 1800s and well after settlement by the Spanish, Mexicans, and other historic-period settlers.

The Rose-Robinson Site (CA-SDI-11824H), situated at the south end of Block 408 in Old Town, was excavated in 1982-1983 and yielded 349 stone artifacts, primarily flakes of local lithic raw materials. Two flaked-glass items were also recovered here (Schulz et al. 1985:39-41). Gunflints of “blond chalcedony” were found at the Rose-Robinson Site (Schulz et al. 1985:38); a single example was recovered from the excavations reported here (**Figure 15**).

Research Questions

The presence of stone artifacts, identified in the initial State Parks exploratory excavations of Block 408 in Old Town, raised research and interpretive questions. We initially simply sought to answer whether the stone artifacts were truly part of the historic-period assemblages, or, derived from a Late Prehistoric cultural context. Local researchers had identified much of Old Town as lying within the prehistoric village complex of Cosoy (Ezell and Ezell 1987). Of course, the research at the San Diego Presidio had demonstrated stone tool use by Spanish, Mestizo, and Indian residents. Mestizos and Indians came down to live

in Old Town (note, for example, the discussion by Glenn Farris in this symposium) in its early years.

The conclusions from the 1990s State Parks investigations at Block 408 directed by Larry Felton unequivocally place the stone artifact assemblages in the historic era. We then could ask: Do the stone artifacts recovered during the 1990s excavations here represent the presence of Indian people in the historic-period households? If so, in what capacity are they present, and for what functions are they employing this traditional technology?

It is then reasonable to ask of these assemblages: Are the stone tools made and used by Indian people, in particular, local Kumeyaay, exclusively? Are Mestizo and Mexican residents making and using many of the stone tools found in Block 408? Such questions lead us to carefully evaluate the typical Late Prehistoric flaked-stone and groundstone assemblages of sites throughout San Diego County. Can we observe a continuity of artifact types and, perhaps, even technological attributes, from Late Prehistoric times into the nineteenth century in Old Town San Diego? What would stone artifact assemblages in an historic-period Indian site, or cultural context, look like?

Other questions we are asking of the stone tool assemblage from Block 408 are more basic: How was an artifact made, and what tools were employed to manufacture it? What types of tools are represented in the Block 408 collections? What lithic raw materials were used by stone-tool makers in Old Town? For what tasks were the stone tools used? How effective are local lithic raw materials, i.e., those available in and near Old Town San Diego, as tools? Upon what types of materials were the hammerstones and other battering tools used? Was a tool used and reused or simply used once and discarded?

For those of us conducting research at Block 408, stone tools and their debris provide a platform for “reading” the Indian side of post-contact life in Old Town. Stone tools are a reflection of cultural tradition and the performance of mundane tasks in mid-nineteenth century Old Town.

Study Results

The geologic sources of toolstone in the Old Town area would be the Late Eocene conglomerates on Presidio Hill, the stream bed of the San Diego River, the conglomerate formations on Point Loma, and perhaps, local beaches (**Figure 3**). The lithic raw materials most readily available, i.e., “local,” would be volcanics and quartzites (cf. Kennedy 1975). We consider other stone raw material as “non-local” to Old Town.

The 1990s California State Parks archaeological investigations in Block 408 of Old Town San Diego yielded a total of 8,171 stone artifacts, which is an impressive number for an historic-period archaeological site. The Silvas/McCoy

Parcel (CA-SDI-14298H), designated as “Locus D” of the Block 408 parcels, had 5922 stone artifacts or 72.47% of the total recovered in Block 408. The Silvas/McCoy House Site as the focus of the 1990s State Parks excavations here would be expected to show larger numbers. Of the Block 408 total, flakes numbered 7,495 or almost 92% of the lithic artifact count in Block 408 (**Figure 10**). The counts for other stone artifacts recovered within Block 408 include: 157 miscellaneous (and fragmentary) groundstone items, 94 flake tools, 91 cores, 51 core tools, 28 manos, 12 projectile points, 5 pieces of steatite (including one bead), 3 pieces of a “Mexican” type of metate (made from non-local stone; **Figure 16**), 2 metates of local material, 8 flaked-glass items, and 273 fire-affected rocks. Three of the twelve projectile points were manufactured from glass rather than stone (**Figure 13**).

We have identified 32 “battered tools” to date in our analysis of the Block 408 assemblages. Battered tools are a distinctive type of core tool that show purposeful flaking to create shaped working margins and highly pronounced battering use-wear along those margins (**Figure 12**). Local volcanics were the materials of choice on much of the Block 408 battered tools, with lesser numbers of quartzite and granitic cobbles used. Battered tools have been defined by other researchers as implements primarily employed to produce metates and manos [groundstone tools used to process plant foods] and to sustain or “resharpen” the working surfaces of groundstone implements (e.g., Dodd 1979; Flenniken et al. 1993). The working surfaces of metates and manos must be “resharpened” by pecking or battering to maintain its effectiveness. We had hypothesized that some of the battered tools were used to split open bone, but, butchering experiments conducted for the current project indicate our category of “battered tools” may be too small for the task.

The Block 408 assemblage contains flake tools showing cutting, scraping, planing, and woodworking use-wear patterns (**Figure 11, 19**). Tool users in historic Old Town employed simple flakes of quartzite or volcanics without modification for the latter tasks. Some of the working edges of these flake tools were resharpened by unifacial flaking for continued use. Flake tools with unmodified working edges represent an effective implement for a variety of everyday tasks, and can be made easily. Other Contact-period Indian sites have yielded a significant number of flake tools, as noted in the preceding discussion.

One of the more curious artifacts in the Block 408 collection is a relatively large (47 mm x 30 mm x 14 mm; 14.6 grams), triangular-shaped obsidian projectile point showing modification by unifacial retouch along its basal portion (**Figure 14**). Two flakes were removed by pressure flaking on the base to create a point or “nipple” in the middle. The point shows a break at the end of the point under low-power microscopy, and indicates use of the modified point as a drill. The surface of the obsidian point is noticeably weathered and scratched, indicative of some antiquity and exposure to extreme environmental conditions. The two flakes on the base are relatively free of the same weathering and scratches, and

are thought to post-date its use as a projectile point. The blade element of the point may have been placed in some form of haft when used as a drill. We hypothesize that the point was scavenged by historic tool-users from a site predating the Late Prehistoric Period; the point is large enough to have been used as a dart with an atlatl, e.g., an Elko style point or similar.

The significant investment in stone-tool-making activities, in particular, employing a direct freehand percussion technique, identified in Block 408 leads one to expect a sizable component of hammerstones, that is, the hand-held percussor for shaping artifacts by flintknapping. The Block 408 assemblage contains many unmodified cobbles and core-hammers, each with directed or focused battering use-wear. Cobble hammers (**Figure 8**) tend to be volcanic or quartzite rounded cobbles used by Old Town toolmakers with little to minimal modification. Such implements are expedient, yet practical and effective for its purpose. Core hammers are flintknapping percussors that show battering use-wear along high points created by purposeful flake removals (**Figure 9**).

One of the steatite pieces, originating from a bowl, showed elaborate incised designs (**Figure 17**). This material seems unlike the talc schist (or soapstone) obtainable from a quarry in the Cuyamaca Mountains to the east of Old Town, and, so, may have come from Catalina Island. The steatite bead found in Block 408, measuring 28.7 mm in diameter, 19.3 mm thick, with a hole diameter of 7 mm, has deep incised marks that are purposefully made and marks seemingly created by its use.

The “local” raw materials, i.e., volcanics (4902) and quartzites (2812), represent 94.4% of the stone artifact finds in the Block 408 total. The percentages of lithic raw material usage are consistent in each of the Block 408 parcels (**Figure 6**). The other lithic raw materials are represented in the collection as minor components. Cherts and chalcedonies (242 or 2.9%) are the next highest total for raw material. We think it is highly significant that quartz (76), obsidian (11), and the cherts and chalcedonies, all of which do not naturally occur in or next to Old Town, show such relatively low numbers in the Block 408 assemblages. Late Prehistoric (pre-contact) archaeological sites throughout San Diego County will contain significant percentages of the latter three stone materials (cf. Carrico and Taylor 1983; Gamble 2004; Hector 1985; Schaefer 1988; Schroth and Gallegos 1991; True 1970; Winterrowd and Cardenas 1987). We conclude that traditional pre-Contact trading networks broke down in historic times, leaving the prospective stone worker living in Old Town to rely almost exclusively upon nearby geologic sources.

The stone artifact assemblage from the 1990s excavations in Block 408 is noteworthy for the relatively large number of items and the variety of tool types and uses (as indicated by our artifact-function analyses). The assemblage has the “feel” of many other prehistoric site assemblages encountered within sites in San Diego County and beyond. The proportionally large number of flakes, the

battered tools and hammerstones, the variety of functions reflected in the flake tools, the metates, and the lithic technology are consistent with the lithic components of local Late Prehistoric Period archaeological sites. It is further worth noting that certain Late Prehistoric lithic cultural components typical in San Diego County sites are also either missing or conspicuously low in number in the Block 408 stone tool assemblage (**Figure 18**). These components include the following: the use of quartz, obsidian, and varieties of chert, projectile points and other bifacially flaked tools, plano-convex or so-called “domed” type core tools and scrapers, metates and stone bowls of local materials, and soapstone or steatite artifacts. Stone toolmakers in Old Town recognized the value, economy, and familiarity of continuing to use stone implements, but, the changed social conditions of this nineteenth century Mexican and American community caused use-patterns to evolve. Certain types of stone tools were not longer viable or necessary in post-contact times, and the traditional sources of non-local raw materials had apparently become no longer available in Old Town. An incentive for Indian residents who made and used stone tools to seek out raw materials from places distant to Old Town was probably lost in the new economy of the nineteenth century.

We conclude that local Kumeyaay people are responsible for most of the stone artifacts found in Block 408 of Old Town San Diego (**Figure 20**). We see a continuity of tradition in many aspects of the Old Town lithic economy with stone artifact assemblages recovered in local aboriginal (pre-contact) contexts. From a practical standpoint, the stone tools of Block 408 are functional, familiar, and easy to make (i.e., low economic cost). Stone tools likely held more intangible values for Old Town Indian residents, for example, by providing a specific identity for that tool user, or, by maintaining a tie to pre-contact times. Stone tool use no doubt faded rapidly from the Old Town economy as the pre-contact Indian people and former Presidio residents passed away or moved out.

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HISTORIC-PERIOD LITHIC TECHNOLOGIES IN OLD TOWN SAN DIEGO

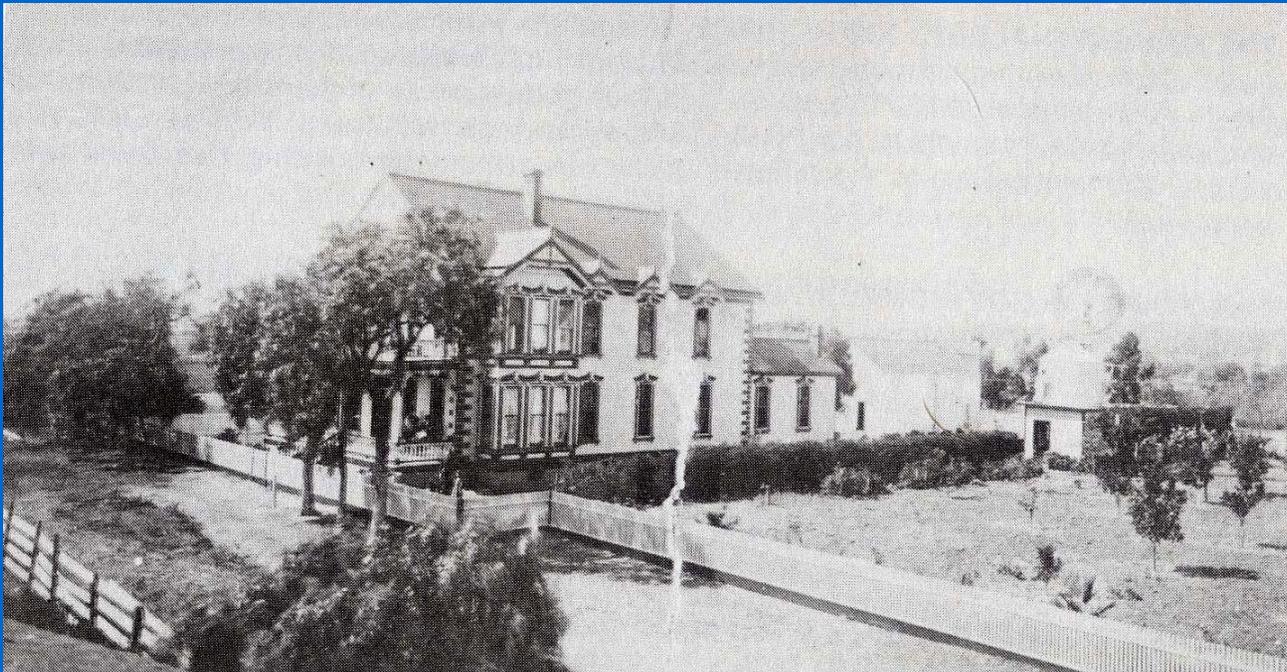


Figure 1

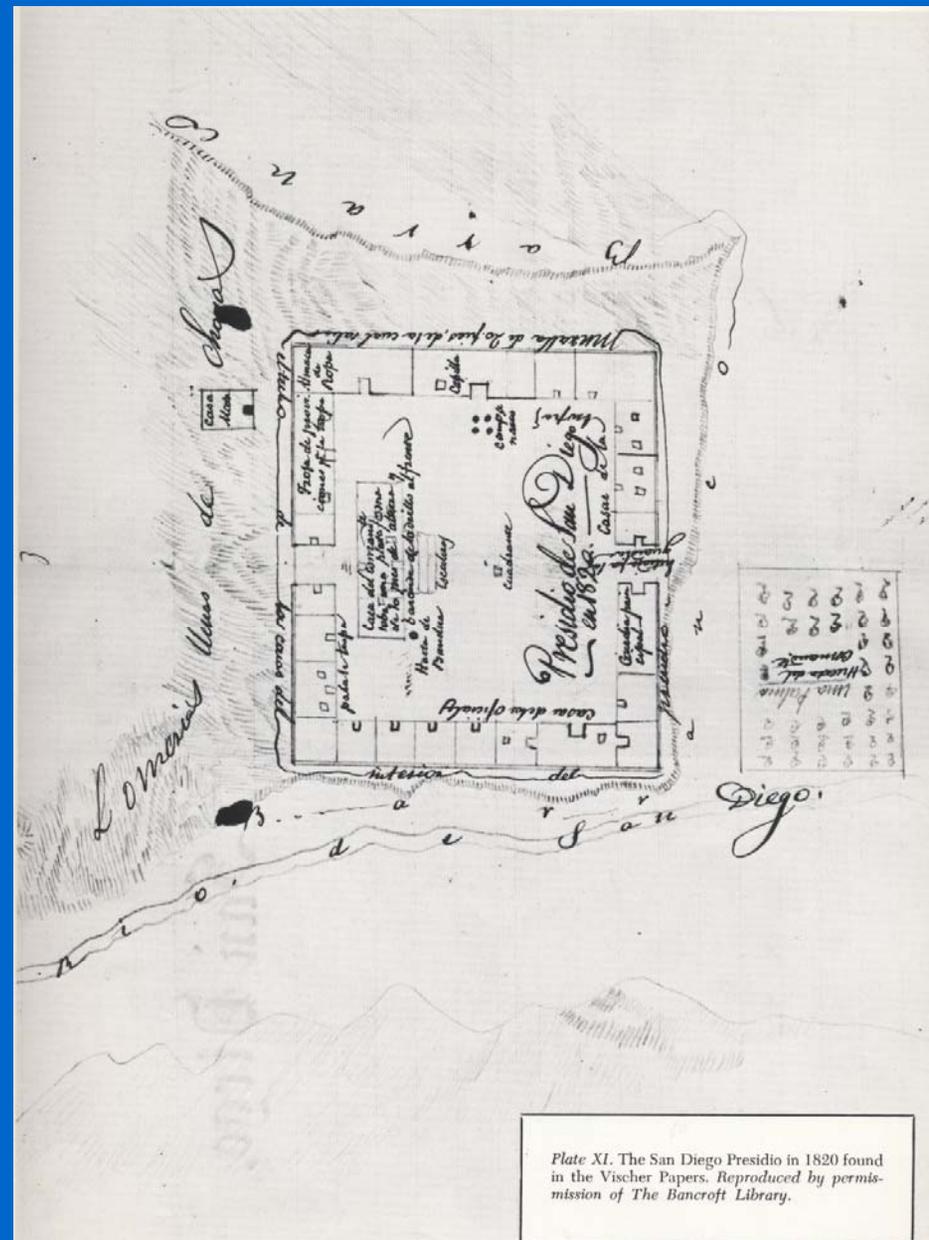


Figure 2

Plate XI. The San Diego Presidio in 1820 found in the Vischer Papers. Reproduced by permission of The Bancroft Library.

GEOLOGICAL SETTING



Figure 3



CORE

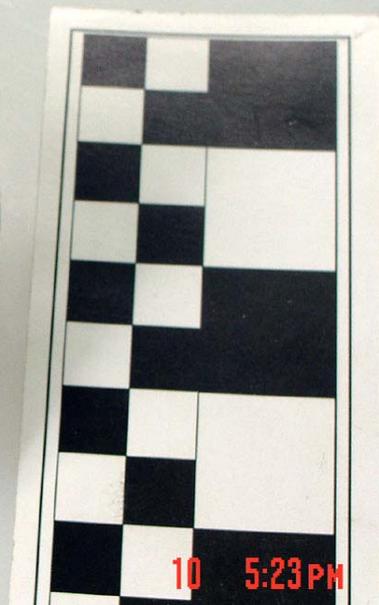


Figure 4

FLAKES

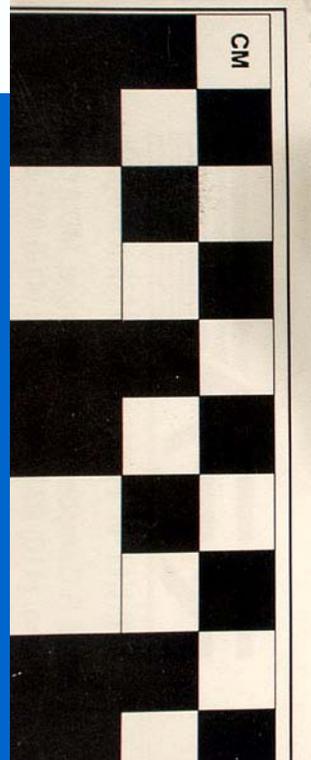
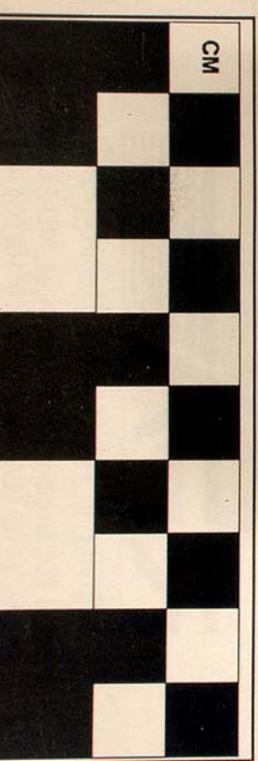


Figure 5

Lithic Material Usage, Silvas-McCoy Site

(Block 408, Locus D, CA-SDI-14298H)

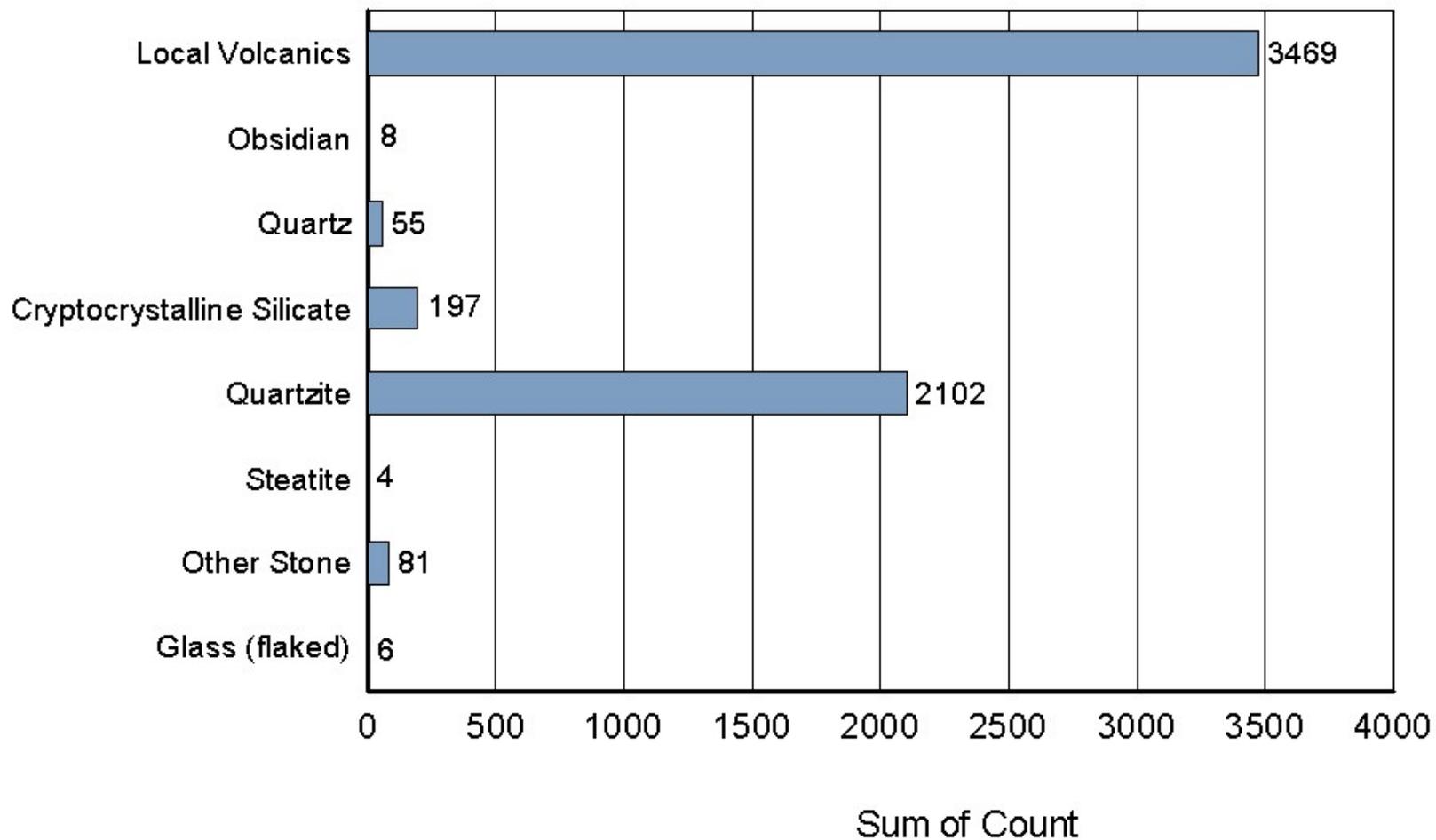


Figure 6



CORE



Figure 7

COBBLE HAMMERS

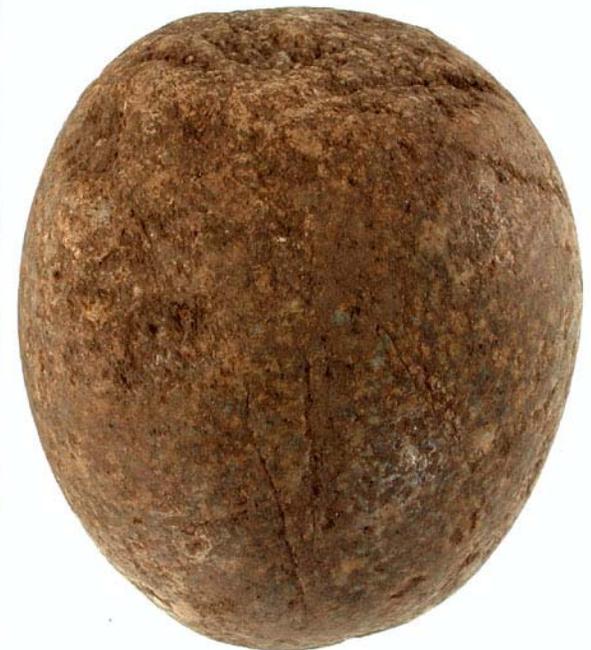
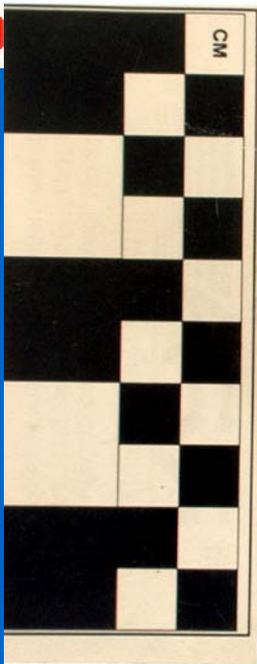


Figure 8

CORE TOOLS WITH BATTERING

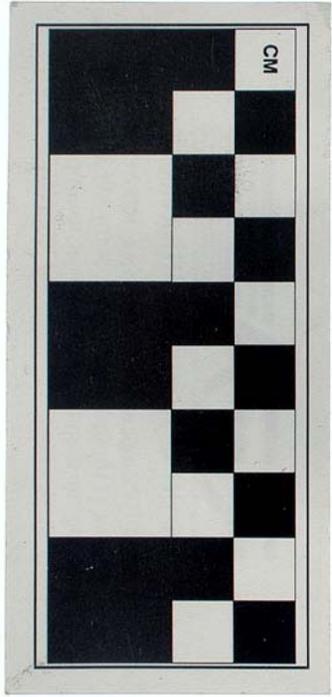


Figure 9

EXAMPLES OF FLAKES



Figure 10



BATTERED TOOL



Figure 11

FLAKE TOOL



Figure 12

PROJECTILE POINTS



Quartz



Glass

OBSIDIAN POINT REWORKED INTO DRILL



Figure 14

CHALCEDONY GUNFLINT



Figure 15

“MEXICAN” METATE



Figure 16

STEATITE BOWL FRAGMENTS



Figure 17

LATE PREHISTORIC LITHIC CULTURAL COMPONENTS EITHER LACKING OR OCCURRING IN CONSPICUOUSLY LOW NUMBERS IN BLOCK 408:

- ❖ THE USE OF QUARTZ, OBSIDIAN, AND VARIETIES OF CHERTS (ALL NOT LOCAL TO OLD TOWN)**
- ❖ PROJECTILE POINTS AND OTHER BIFACIALLY FLAKED TOOLS**
- ❖ “DOMED” TYPE SCRAPERS AND CORES**
- ❖ LOCAL METATES AND STONE BOWLS**
- ❖ STEATITE OR SOAPSTONE ARTIFACTS**



Figure 19

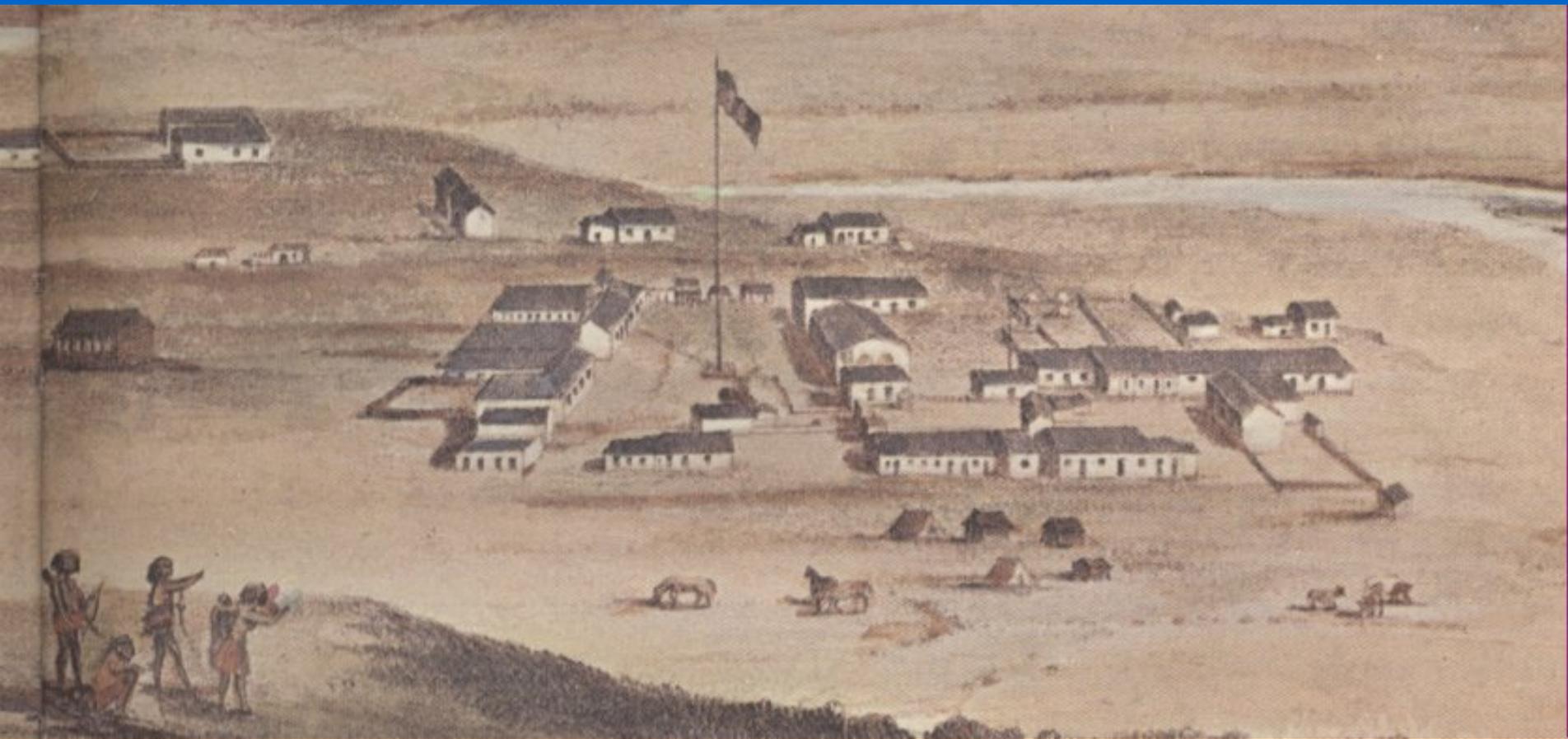


Figure 20

THE END



Figure 21