An Interim Report on Two Rockshelter Sites with Early Holocene Occupation in the Northern Baja California Peninsula

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Abstract

In two field seasons in 1997 and 1999, excavations were conducted at the Abrigo Paredón rockshelter (Figure 1), in conjunction with a geoarchaeological study of the Laguna Chapala basin in the central interior of Baja California. This small rockshelter at the foot of an outcrop of granite boulders proved to be the site of a lithic workshop principally for the production of bifacial points. Although choppers, thick humbacked core/scrapers, and retouched or utilized flakes were also recovered from the shallow aeolian/col-luvial, silty sand deposits, the predominant artifact type was a large lanceolate point preform. Finished projectile points were small foliate forms. A radiocarbon date of ca. 9000 RCYBP from the lower deposits indicates an early Holocene occupation, probably when the now-dry Laguna Chapala basin contained a permanent lake or marsh.

In 2000 and 2001 excavations were begun at the Abrigo de los Escorpiones (Figure 1), a very large rockshelter situated high in a volcanic outcrop overlooking the Pacific coast about 6 km south of Ejido Eréndira. The rockshelter is filled with shell midden to a minimum depth of 5.5 m below the present surface of the deposit; a red-dish-brown silt with heavy rubble extends to bedrock at about 8 m depth. With increasing depth below present surface, the rockshelter enlarges into a cavern filled with midden and rubble. A radiocarbon date of ca. 8900 RCYBP indicates an early Holocene age for the lowest midden deposit. The site was primarily a shellfish collecting station throughout its history, although some fish bones, sea mammal bones, and a number of manos and milling stones indicate that other resources of the coastal zone were also exploited. The artifact assemblage is markedly different from that of the Abrigo Paredón. Projectile points are very rare and restricted to early Holocene levels; the major categories of flaked stone artifacts are large flakes, flaked cobbles, cores, and choppers.

Introduction

The long-term focus of our research in Baja California has been a search for evidence of a Pacific coastal route of entry for the earliest settlers of the Americas. In recent years the venerable Clovis-first model, proposing an interior entry of specialized big game hunters about 12,000 radiocarbon years ago, has disintegrated. Geological evidence that the hypothetical ice-free corridor through which the Clovis hunters supposedly entered was closed by continental ice at its northern end between 30,000 and 11,000 RCYBP (Lemmen et al. 1994); also archaeological evidence demonstrates that populations maintaining diverse subsistence adaptations and technological traditions were already in South America before Clovis times (Dillehay 2000; Lavallée 2000). An increasing number of North American archaeologists now support the model that the first American colonists came by watercraft along the north Pacific rim, utilizing ice-free areas along the coastline (Fladmark 1979; Gruhn 1994; Dixon 1999). If so, elements of this early coastal population should have soon expanded south into Baja California. For us, the prime research questions are, how early did this movement occur and what technology did the earliest colonists bring with them?
What is the earliest archaeological evidence from Baja California? Archaeologists have commonly believed that fluted projectile points like Clovis are the key indicators, and they have referred to the discovery of several such specimens in the northern part of Baja California Sur (Aschmann 1952; Hyland and Gutiérrez 1995). These few points were all surface finds, however, with no paleoenvironmental or archaeological context. They are undated and should not be treated as regional type markers through extrapolation from dated sites hundreds of kilometers farther north and east. With the collapse of the Clovis-first model, it can no longer be assumed that fluted points are manifestations of the earliest colonists.

In our view, bifacial stone projectile point styles need not be the key to identification of the earliest archaeological sites in Baja California. We believe that the first people were coastally adapted generalists who had long exploited the productive Pacific coastal ecosystems with a relatively simple lithic technology. No doubt, artifacts of bone, shell, and especially vegetal materials were exceedingly important, but unfortunately they are much less likely to be preserved. We predict that the earliest archaeological sites will produce very sparse cultural material, with simple, undiagnostic lithic artifacts. To identify the earliest sites in Baja California, therefore, it is absolutely essential to find and excavate datable archaeological contexts.

The search for early sites has long involved us with Baja California archaeology. Our good friend Don Tuohy had accompanied William Massey on several field trips to the interior of Baja California Sur in the 1950s, and in 1991 Tuohy guided one of us (AB) around the entire peninsula. In 1992 the junior author took a former student, Ian Franck, on a more intensive road survey of areas with archaeological potential, discovering sites which were further examined by the authors in 1993. In 1998 we engaged Franck to carry out an intensive survey by bicycle of the northwest coastline between Punta Banda and Punta Colonet. On each of these informal surveys, notes were taken but no artifacts collected, and reports were provided to the regional offices of the Instituto Nacional de Antropología e Historia (INAH).

In November 1997 with a permit from INAH, working with Loren Davis, we initiated a geoarchaeological study of the Laguna Seca Chapala basin in order to check Brigham Arnold’s hypothesis that large bifaces found on old lake beaches were Pleistocene in age (Arnold 1957). This project led to the excavation of a small but highly productive rockshelter, designated the Abrigo Paredón (Figure 1), which proved to be a lithic workshop of early Holocene age.

In 2000 Bryan, Gruhn, and Davis shifted the focus of research to the northwest coast of the peninsula, following up on Franck’s earlier survey. With a permit from INAH, Davis conducted a geoarchaeological study of the La Bocana area at the mouth of the Santo Tomás River, while Bryan and Gruhn initiated excavations in a large rockshelter designated the Abrigo de los Escorpiones (Figure 1), located south of Ejido Eréndira. With further excavations in 2001-2004, this site was found to be filled by a very deep shell midden, and it has produced evidence of an early Holocene occupation.

To date, then, our research in Baja California has resulted in the discovery of two rockshelter sites with evidence of early Holocene occupations dating back to ca. 9000 RCYBP. These two early sites, the Abrigo Paredón in the Laguna Chapala basin and the Abrigo de los Escorpiones on the Pacific coast near Ejido Eréndira, are described below.

Abrigo Paredón

The Abrigo Paredón (Figure 1) is situated on the eastern side of the Laguna Seca Chapala. The site is
661.8 m above sea level and about 3.5 m above the level playa floor.

The site is on the north side of a large round-topped granite boulder with a vertical face which rises about 5 m above the surface of the fill (Figure 2). To the south, directly behind this granite boulder, a long bedrock ridge rises steeply, strewn with large and small granite boulders and with felsite and granite scree, but a 6 by 4 m area in front of this vertical-faced boulder is level. To the north of the boulder is an open area of sand and silt which slopes down gradually to the playa about 100 m distant to the northwest. The shelter faces north, and in the fall and winter months most of the area is in shade and out of the wind most of the time, although no protection is provided from rain. At the west end, however, west of the large vertical-faced boulder, is a small (3 by 2 m), low, covered alcove formed by adjacent overhanging boulders. This alcove has been used as a campsite in recent times, as there is a stone-lined fire pit and much modern garbage in the corners of the alcove.

With a permit from INAH, the first excavations were carried out from November 17 to December 8, 1997, and the excavated area was expanded in February 1999 (Figure 3). In 1997 two 2 by 2 m units, C4 and D4, were excavated in the east part of the shelter. In 1999, Unit A4 in the alcove, Unit B4 adjacent on the east, and Units C5 and D5 directly north of the shelter were excavated. Also in 1999 a backhoe trench, 1 by 4 m and 4 m to the north of Units C5 and D5, was excavated to a depth of 200 cm.

Figure 1. Locations of Abrigo de los Escorpiones and Abrigo Paredón. Map by Loren Davis.
The excavations in the 2 by 2 m units were carried to a maximum depth of approximately 55 cm below surface through brown, silty sand deposits (Figure 4), which were apparently mixed aeolian and colluvial materials. Throughout this stratum there were abundant flaking detritus and numerous lithic artifacts, a very small quantity of shell and bone fragments, and rare small charcoal fragments. Underlying was a sterile, cemented gravel stratum comprised of tightly packed granite and felsite clasts, probably scree derived from the high rocky ridge directly behind the shelter. The sterile gravel deposit was excavated only to a maximum depth of 40 cm in one of the excavation units, but the backhoe trench placed 4 m north of the excavated area revealed sterile, cemented sandy silt sediments underlying it to the maximum excavated depth of 200 cm below surface.

The brown, silty sand stratum contained abundant gruss throughout, rendering it coarse in texture. In the lower part of the deposit, the sediment was markedly compact, due to increased calcium carbonate content; the lowermost 5-10 cm of brown silty sand, over the gravel stratum, was virtually cemented. A problem in the upper 20-25 cm was extensive bioturbation induced by the burrowing of rodents, spiders, and ants. Rodent runs penetrated the surface of the cemented zone in the lowermost part of the brown, silty sand stratum, but there was no evidence of recent disturbance within this cemented zone, which also yielded abundant flakes and numerous artifacts.

The brown, silty sand stratum incorporated clasts of granite and felsite, usually 3 to 5 cm in size but ranging up to 20 cm. A few large slabs of granite and felsite encountered lying flat within this stratum were possibly manuports, although there was no trace of any modification on the stones.

The sparse faunal remains, vertebrate and invertebrate, recovered from this stratum were small and in bad

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Figure 2. View of the Abrigo Paredón from the north.
condition; nevertheless, identification of some genera was possible. Among the mammalian bones identified by Hugh Wagner of the San Diego Natural History Museum, hare (*Lepus* sp.) predominates. There were also some splinters of artiodactyl long bones. All of the remains of marine shellfish identified by Scott Rugh of the San Diego Natural History Museum were Pacific coast species, mainly mussel and cockle.

The few hearths encountered just below the surface, and to judge from the association of glass, foil, and rusted metal, were modern in origin. Charcoal fragments were rare, very small, and scattered. Uncalibrated results from five samples which could be dated by the AMS method included two recent dates of 370 ± 40 RCYBP (Beta-115418) and 340 ± 50 RCYBP (Beta-115419) from the upper 15 cm of deposit, and three early Holocene dates of 9070 ± 60 RCYBP (Beta-115420), 8650 ± 60 RCYBP (Beta-115421), and 6800 ± 580 RCYBP (TO-8112) from between 20 and 50 cm. From these results it may be seen that the upper 5-15 cm of the brown, silty sand stratum contained some very small charcoal fragments from the Historic period. The intrusions were probably due to bioturbation. The samples from the lower levels indicate that the sand began to accumulate in the early Holocene by at least 9,000 radiocarbon years ago.

Figure 3. Map of the Abrigo Paredón, indicating the position of the excavation units.
Artifacts and flaking detritus were abundant in all levels of the stratum. From this relatively shallow deposit and from a relatively limited area of excavation, approximately 340 formal artifacts and fragments of formal artifacts, plus 25,000 unmodified flakes, were recovered.

The largest category of formal lithic artifacts is comprised of bifacial points and preforms (Figure 5), with most of the specimens in fragmentary condition, clearly discards. The Abrigo Paredón was apparently used primarily as a workshop for the reduction of large bifacial preforms which had been fabricated at quarry sites (felsite dikes nearby in the Laguna Chapala basin) into small and thinner bifacial preforms and ultimately into projectile points and knives.

Evidently small thin foliate points, willow leaf or slightly ovoid (Figure 6), were a desired type of projectile point. Although most of the points recovered were fragmentary, four complete serrated foliate projectile points were found. These complete specimens ranged in size from 57 by 16 by 7 mm to 33 by 12 by 6 mm. In addition, there were ten nearly complete points of the same form, which had broken before they were finished. Only one small side-notched point was recovered from the site, apparently from a bioturbated area.

Approximately 30 essentially complete leaf-shaped biface preforms ranged in size from 95 by 30 by 15 mm to 35 by 22 by 13 mm. All but two quartz specimens are of felsite. These preforms were shaped by percussion flaking and may have been discarded as too wide or thick to finish by pressure flaking. To judge from the approximately 90 biface fragments recovered, preforms commonly broke transversely or obliquely.

The interpretation of the Abrigo Paredón as primarily a knapping station is supported by preliminary analysis of the approximately 25,000 unmodified flakes recovered from the brown, silty sand stratum. The fine-grained material readily available at felsite dikes in the granite outcrops in the Laguna Chapala basin within a radius of a few kilometers of the Abrigo Paredón provided most of the toolstone used by the knappers (90-97 percent of the flakes recovered from each excavation unit were felsites). Vein quartz, also locally available, comprised 2-10 percent of the flakes. Materials exotic to the basin—chalcedony, obsidian, and quartz crystal—were exceedingly rare. Over 80 percent of the flakes were quite small, only about 10 mm or less in diameter, clearly the products of reduction of preforms and fabrication of artifacts.

Figure 4. Stratigraphic profile of north face of Units C4 and D4, Abrigo Paredón.
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Figure 5. Biface fragments, complete preforms, and projectile points from the Abrigo Paredón.

Figure 6. Foliate projectile point from the Abrigo Paredón.
Numerous retouched or utilized flakes suggest that the occupants were performing other tasks in addition to knapping. Thick scraper planes or humpbacked core/scrapers were also prominent artifacts in the total site assemblage. These carefully shaped artifacts, a type well-known throughout Baja California, are pyramidal or conical in form, with flat platform faces and steeply retouched peripheries, sometimes with noses or sharp graver spurs. They could have been used to work wood or perhaps to process agave for fiber; however, very few of the Abrigo Paredón artifacts show any evidence of wear on the edges, so residue analysis would be necessary to determine if they had been utilized to work materials or were simply prepared for use at another location.

In summary, the Abrigo Paredón was the location of a lithic workshop dating to the early Holocene and utilized as early as ca. 9000 RCYBP. The texture and inclusions of the brown, silty sand stratum indicate a mixed aeolian and colluvial origin of the sediment. The weather conditions we observed in the Laguna Chapala basin, frequent high winds and occasional heavy rainfall, have likely scoured and eroded the site resulting in deflation of the deposit. Extensive bioturbation by the small creatures which dwell underground has also mixed the sediment. The culture bearing stratum is thus unstratified, but considering that there is very little evidence for a late prehistoric occupation, it is concluded that the vast majority of the artifacts are of early Holocene age, as indicated by the radiocarbon dates.

**Abrigo De Los Escorpiones**

The Abrigo de los Escorpiones (Figure 1) is a large rockshelter in a prominent volcanic outcrop south of the Pacific coastal community of Ejido Eréndira. It is situated at an elevation of approximately 22 m above sea level and overlooks a low marine platform which extends to the rocky coastline about 100 m to the west. The rockshelter, long and curving, is formed by a high overhang on the east and north sides of an open alcove within the ancient volcanic outcrop (Figure 7). The sheltered area, at present 1-3 m wide, extends over a distance of approximately 35 m with a marked slope of the surface of the fill down to the west and to the south. Along most of its length, the irregular surface of the sheltered area is covered with fine rock rubble with several protruding boulders, but in the northwest quarter there is shell midden with shell fragments exposed on the surface far down the slope in front to the south.

The Abrigo de los Escorpiones was recorded on Franck's coastal survey in 1998. A permit was obtained from INAH, and the University of Alberta crew under the authors' direction carried out test excavations from April 26 to June 2, 2000. We decided to place the first test excavations at the northwest end of the rockshelter, where the midden deposit was most prominent (Figure 8). Three 2 by 2 m units were laid out along a trench line in a north-south direction, extending from near the rear wall of the shelter southward down the slope in front. From north to south, these were designated Units D3, D4, and D5. In late May with time running out, efforts were concentrated upon completing Unit D4 to bedrock. In Unit D4, excavation continued in 10 cm levels to a depth of 530 cm below surface (Figure 9). Bedrock was not reached (a probe indicated that there was at least 2 m deposit remaining), but the rock rubble stratum at this depth had ceased to yield cultural materials in undisturbed contexts.

The excavated area was filled with hay bales and then covered with backdirt at the close of excavations in 2000 in anticipation of further work at the site in May and June 2001. However, the site was later vandalized, and the area of excavation was disturbed to an approximate depth of 2 m below surface. To stabilize the walls of the area of disturbance, in 2001 excavations were carried out in the west half of Units E3 and E4, adjacent to D3 and D4 on the east, to a depth of about
2 m below surface. In the process of stabilization of the disturbed area, Unit D2 to the north was excavated in 10 cm levels to a depth of 180 cm below surface, and it was discovered that below the present surface of the fill the rockshelter opened up with the sheltered area enlarging in width to the north. In the 2001 field season, excavation of Unit D2 was carried to a depth of about 560 cm, the base of the shell midden deposit. In 2001 the excavation of Unit D3 was carried through the rubble stratum to bedrock at a depth of about 830 cm below the present surface of the fill.

The excavations in 2000 and 2001 indicated that the Abrigo de los Escorpiones is a very large rockshelter completely filled by a deep shell midden underlain by a stratum of reddish-brown silt with heavy rubble (Figure 9). The midden with three distinctive stratigraphic zones extended from the present surface to a depth of 5.6 m. Below the midden, heavy rubble in a matrix of reddish-brown silt extended to volcanic bedrock at about 8 m below the present surface.

The upper stratigraphic zone of the midden consists of abundant shell fragments in a matrix of mottled brown silt with low rubble content. This zone was found to extend from the present surface to a maximum depth of about 280 cm. Shell fragments often occur in thick and extensive lenses comprised of complete valves, predominantly rock mussel, but also including some abalone and small marine gastropods. There are also fish bones. As the area of excavation is directly under an avian raptor perch, bones of small mammals and birds were abundant, and they should provide paleoenvironmental evidence. Some bones of marine mammals were also recovered from the midden. With the abundance of shell and bone and with a number of large rodent burrows penetrating the midden, the matrix of this zone of brown silt with shell is relatively

Figure 7. View of the Abrigo de los Escorpiones in 2000.
dry and loose, although compactness increases with depth.

The upper shell zone produced many lithic artifacts. Most common were large unmodified flakes, but there were also flaked cobbles, cores, choppers, hammerstones, retouched or utilized flakes, and manos and milling stones. Less common were shell artifacts, including *Olivella* beads, modified abalone shells, and very rare shell disks. Modified bones were also very rare. Small, thin hearths and ash lenses were common in the matrix, especially near the north wall of the rockshelter.

The Abrigo de los Escorpiones is utilized by campers on occasion, as shown by modern garbage found in pits extending as deep as 40 cm below the present surface. A thick brown ware sherd was found in the upper 10 cm of this zone, suggesting a late prehistoric occupation. Four uncalibrated radiocarbon dates obtained from the zone of brown silt with shell range from 1610 ± 90 RCYBP (Beta-144831) from a depth of 50-55 cm below surface in Unit D4 to 4550 ± 50 RCYBP (Beta-157351) at a depth of 270-280 cm in Unit D2 under the rockshelter wall.

A distinctive zone of compact black/brown ashy silt with abundant shell fragments underlies the upper shell

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**Figure 8.** Map of the Abrigo de los Escorpiones, showing the positions of the excavation units.
The surface of this middle zone, which is approximately 1.5 m thick, slopes down to the north and west into the interior of the rockshelter. It features abundant mussel shell, often in thick extensive lenses but usually crushed and compressed, in a very dark matrix of ashy silt which appears oily in texture and odor and adheres to the surface of shell and bone fragments. The shell is predominantly rock mussel with some abalone and small gastropods. In the lower levels of the middle zone, clams and giant chitons appear, and limpets are very common. There are also fish bones throughout this middle zone. Small mammal bones are much fewer than in overlying levels, although rodent burrows are still notable. Bones of sea mammals were also recovered.

Cultural material was abundant in this middle zone with a number of small, thin hearths and ash lenses. Many lithic artifacts were found including large flakes, flaked cobbles, cores, choppers, hammerstones, manos, and milling stones. Several large lanceolate projectile points were recovered. Also notable was a marked increase in the amount of flaking debitage. In 2000-2001 uncalibrated radiocarbon dates obtained from the middle zone ranged from 6340 ± 100 RCYBP (Beta-146369) at a depth of 200-210 cm in Unit D4 to 6760 ± 50 RCYBP (Beta-157352) at a depth of 430-440 cm in Unit D2.

At the base of the middle zone, another distinctive stratum emerged, sloping down to the north and west into the interior of the rockshelter. This lower zone of the midden appears to be approximately 1 m thick. It is characterized by a matrix of brown loamy silt with much rock rubble, but it also contains abundant...
shell fragments, charcoal fragments, flakes, and artifacts. Although rock mussel shell is common, there is a high proportion of clam shell, limpets, and giant chiton, as well as small conical gastropods. It is notable that clam and giant chiton no longer occur in the area.

This lower midden zone produced many lithic artifacts. Large flakes were numerous, often well-retouched to form scrapers, and there were also many choppers, as well as flaked cobbles, cores, and hammerstones. A few manos and milling stones fragments were also recovered. There was much flaking detritus. Four uncalibrated radiocarbon dates on charcoal collected from the lower zone in Unit D4 ranged from 8040 ± 70 RCYBP (Beta-144833) at a depth of 340-350 cm to 8870 ± 60 RCYBP (Beta-144865) at a depth of 465 cm.

At depths ranging from 480 cm below surface in Unit D4 on the south to 560 cm depth under the rockshelter wall in Unit D2, cultural material abruptly disappeared, and the matrix became a reddish-brown silt with heavy rock rubble. Fragments of shell and charcoal and occasional lithic flakes appeared to be confined to rodent burrows, which continued down to volcanic bedrock at 800-830 cm below the present surface in Unit D3. As charcoal fragments were considered to be intrusive from above, no radiocarbon dates were attempted from this basal stratigraphic zone in 2001. The surface of the volcanic bedrock slopes down to the north, into the interior of the rockshelter.

By the close of the 2001 season, excavations in the Abrigo de los Escorpiones had yielded approximately 800 artifacts, excluding the unmodified lithic flakes, which have not yet been analyzed. Most of the artifacts were simple. Among the assemblage of flaked stone artifacts, fine bifacially flaked specimens were very rare and limited in distribution. Despite the mass of shell fragments in the midden, artifacts fabricated of shell were rare, as were bone artifacts. Relatively large or heavy tools or utensils were predominant at the site—flaked cobbles, cores, choppers, hammerstones, manos and milling stones, and large flakes. Some artifact types, however, varied significantly in frequency and distribution.

In 2000-2001 bifacial projectile points or fragments of points found in undisturbed contexts were limited in distribution to the middle zone, and only seven specimens were recovered in 2000-2001. Of the three complete specimens (Figure 10), two were broad lanceolate points with a straight or slightly concave base, ranging in size from 50 by 26 by 9 mm to 42 by 21 by 5 mm. The third complete specimen was a long, thick leaf-shaped form with lateral edges contracting from the midpoint to a concave base. This specimen measured 63 by 22 by 6 mm.

Flake scrapers, retouched flakes, and utilized flakes varied significantly in frequency in the three zones of the shell midden. In the upper and middle zones, these categories together comprised 17-20 percent of the total artifact assemblages of each zone; in the lower zone, these three categories comprised 54 percent of the total assemblage. The most notable artifacts in the lower midden zone were thick flake scrapers, a type rare in the middle and upper zones but comprising 18 percent of the total assemblage from the lower deposit.

While the counting and analysis of unmodified flakes has not yet been completed, significant differences in the size and abundance of flakes are obvious in the collections from different midden zones. In the upper zone, only about half a dozen flakes were recovered from each 10 cm level, and these were large flakes, usually 5-10 cm in size. In contrast, in the middle and lower zones of the midden, the number of flakes per 10 cm level increased tenfold, and most of the flakes were small retouch flakes, less than 3 cm in size.
Flakes were derived from locally available metavolcanic cobbles and pebbles. In the upper zone, cobbles and pebbles with one or more flakes removed comprised about 28 percent of the total artifact assemblage; more completely flaked cores comprised 6 percent. Flaked cobbles were less common in the middle and lower zones of the midden, but cores were more frequent. Also in higher frequency in the middle and lower zones were utilized cores or choppers; such artifacts comprised only 3 percent of the total artifact assemblage in the upper zone but 12 percent in the lower zone.

Pounding and grinding implements, fabricated from granite cobbles or pebbles, were found throughout the deposits. In 2000-2001 simple, unshaped milling stones with very shallow grinding surfaces were most common in the upper zone, where they comprised 5 percent of the total artifact assemblage; only one was found in the middle zone, and four fragments were found in the lower zone. Manos were flat, oval, fist-sized granite cobbles with one or both faces smoothed by use; they also occurred in highest frequency, 13 percent of the total artifact assemblage, in the upper zone, with the frequency declining to 3 percent in the lower zone. Manos and milling stones were often fragmentary, discarded when damaged; the complete milling stones were often large or heavy, and they were probably cached near the rear wall of the shelter for use in future visits. Manos were often used as hammerstones, resulting in battering scars on one or both ends. Numerous hammerstones, granite cobbles or pebbles with battering scars, occurred throughout the deposits. In the upper zone hammerstones comprised about 11 percent of the total artifact assemblage, with a decrease in frequency to 6 percent in lower midden deposits.

Shell artifacts were very rare. Simple spire-opped *Olivella* beads were scattered throughout the midden, comprising about 4 percent of the total artifact assemblage. Two small, perforated abalone shell disks were recovered from the upper zone, and an irregular fragment of abalone shell with two perforations came from the middle zone. Modified abalone shells, complete valves with series of parallel striations on the
outer surface, were characteristic of the upper zone, where they comprised 7 percent of the total artifact assemblage.

Bone artifacts were even rarer than shell artifacts; only five were recovered in 2000-2001. Four were blunt bone points, all broken. A unique bone artifact from the middle zone of the midden was a large, well-shaped, cylindrical piece with a deep circular socket, apparently a haft.

Only two potsherds have been found, one at a depth of 10 cm below surface and another at a depth of 60 cm, probably in a rodent burrow. Both sherds are a thick brown ware.

When the Abrigo de los Escorpiones was first encountered on our survey, it was realized that this large rockshelter, situated well above present sea level but close to the coastline and productive shellfish beds, could hold evidence of the earliest population to occupy the Pacific coastal zone of the Baja California peninsula. Our excavations in 2000 and 2001 demonstrated that the site had been utilized primarily as a shellfish collecting station beginning in the early Holocene, some 9,000 years ago. We documented that the rockshelter had been filled in by the accumulation of the shell midden, and we had still to penetrate its interior, where evidence of a Pleistocene occupation may yet be found.

**Update**

Excavations continued at the Abrigo de los Escorpiones rockshelter in 2002 and 2004. The sedimentary deposits were found to fill a cavern that extended about 7 m from the rear wall into the volcanic bedrock (Figures 8 and 9). The floor was about 8 m below the surface of the rockshelter fill, and featured deep, smooth-walled depressions containing trapped beach cobbles, indicating that sea level had once stood about 14 m above present sea level.

Within the cavern the rubble stratum covered bedrock to a thickness of about 2 m. It yielded permineralized bone of birds, small mammals, and large mammals, and it also produced fossil horse teeth. Shell fragments, charcoal, flakes, and artifacts were sparse within the rubble stratum and appeared to be largely associated with intrusive rodent burrows. However, an uncalibrated date of $10,120 \pm 40$ RCYBP (Beta-194041) was obtained on a charcoal sample collected from the middle of the rubble stratum. If derived by rodent intrusion from the base of the overlying shell midden, a date earlier than ca. 9000 RCYBP for the initiation of the shell midden deposit is indicated; if the date is contemporary with the formation of the rubble stratum, a rapid accumulation of the rubble is indicated, perhaps explaining why no definite occupation floor was identified. An attempt is being made to obtain a U/Th date on a bone sample from the base of the rubble stratum.

The middle and lower zones of the shell midden extended well into the interior of the cavern and continued to yield many artifacts. Several stone projectile points were recovered from the middle midden zone, including two long foliate serrated points (Figures 11a,b). Three small, short, broad, leaf-shaped stone points (Figures 11c,d) were recovered from the lower midden zone. Distinctive bone artifacts from the middle zone were two bone fish lures or parts of composite fishhooks and a well-made bone bipoint. Notable from the lower zone were unmodified fragments of whale bone and a milling stone with associated mano fragments in a feature at the very base of the shell midden.

**Conclusion**

The interior rockshelter site was primarily a lithic workshop, and the coastal rockshelter was primarily a shellfish collecting station. Although the oldest dated occupations are approximately the same age, ca. 9,000 RCYBP, the early Holocene artifact
assemblages recovered from the two sites are markedly dissimilar. On the coast at the Abrigo de los Escorpiones, thick flake scrapers, retouched or utilized flakes, and choppers were predominant in the early assemblage. Bifacial flaked projectile points were very rare and varied in type from broad thin lanceolate to long foliate forms. In the interior, at the Abrigo Paredón, bifacial flaking of preforms brought from nearby quarry sites was the major activity, and small narrow foliate projectile points finished by pressure flaking were characteristic. Of course, the marked difference in artifact assemblages may reflect the different activities at the two sites. It is of interest that associated molluscan remains at the Abrigo Paredón indicate that the knappers accessed shellfish resources from the Pacific coast, so periodic movement between coast and interior may be inferred. However, if the same people were represented at both sites, one would expect close similarities in the style of artifacts such as projectile points. The two sites are over 300 km apart, so it seems most reasonable to hypothesize that two different groups were involved, and by early Holocene times, populations in Baja California were already territorially defined. Whether there was an earlier, ancestral population remains to be seen.

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Figure 11. Projectile points from Abrigo de los Escorpiones: (a,b) foliate serrated points, middle zone; (c,d) leaf-shaped points, lower zone.
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