

Summary report on excavations at the Abrigo de los Escorpiones

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Introduction

The Abrigo de los Escorpiones was introduced at this conference in 2001, following the first two field seasons. The long phase of fieldwork has now been completed, and this presentation is intended to provide a summary description of results of the project to date.

The Abrigo de los Escorpiones is located approximately 6 km south of the small coastal town of Eréndira in northwest Baja California. Situated approximately 22 m above present sea level, it is a long rock overhang within the interior of a small ancient volcanic crater, which is a prominent landmark approximately 100 m west of the rocky coastline (Figure 1). In the northwest corner of the long overhang is a large exposed shell midden, the site of our excavations (Figure 2).

Excavations undertaken by a University of Alberta crew in the year 2000 revealed that the shell midden was at least 5 m thick, underlain by heavy rock rubble. Subsequent field seasons revealed that the accumulating midden had buried the mouth of a deep cavern. Four seasons of excavation were required to reach bedrock and the distant rear wall of the cavern (Figure 3). The excavations were completed and the site backfilled in 2004.

Stratigraphy

The 5-m-thick shell midden deposits have been divided into three major stratigraphic zones on the basis of marked change in the nature of the sedimentary matrix (Figure 4). The upper midden zone, which was almost 3 m thick, was comprised of abundant mussel shell, often in thick extensive lenses, in a matrix of brown silt. The range of six radiocarbon dates on charcoal extended back to approximately 4600 RCYBP (radiocarbon years before present). Underlying was a distinctive zone of black/brown ashy silt, oily in texture, with countless thin lenses of crushed shell, predominantly mussel but with some clam, limpet and giant chiton in the lower levels. This middle zone of the midden deposits, which was approximately 1.5 m thick, yielded four radiocarbon dates on charcoal between approximately 6300 and 7000 RCYBP. It was underlain by a distinctive lower midden zone of brown loamy silt containing abundant shell, predominantly clam, limpet and giant chiton. The base of this lower zone of the midden, which was approximately 1.5 m thick, produced a date of approximately 8900 RCYBP on charcoal.

The boundary between the base of the shell midden and the underlying rubble stratum was well marked by a precipitate of calcium carbonate coating the abundant large rocks within the matrix. The rubble stratum was characterized by heavy rock rubble, angular fragments of volcanic rock, embedded in a matrix of compact coarse reddish-brown silt. Numerous rodent burrows, marked by soft sediment, may have introduced some flakes and artifacts as well as fragments of shell and charcoal from the overlying shell midden; but while all but one of the five



Figure 1. View of the Abrigo de los Escorpiones from the modern shoreline.



Figure 2. View of the rock shelter within the small volcanic crater.

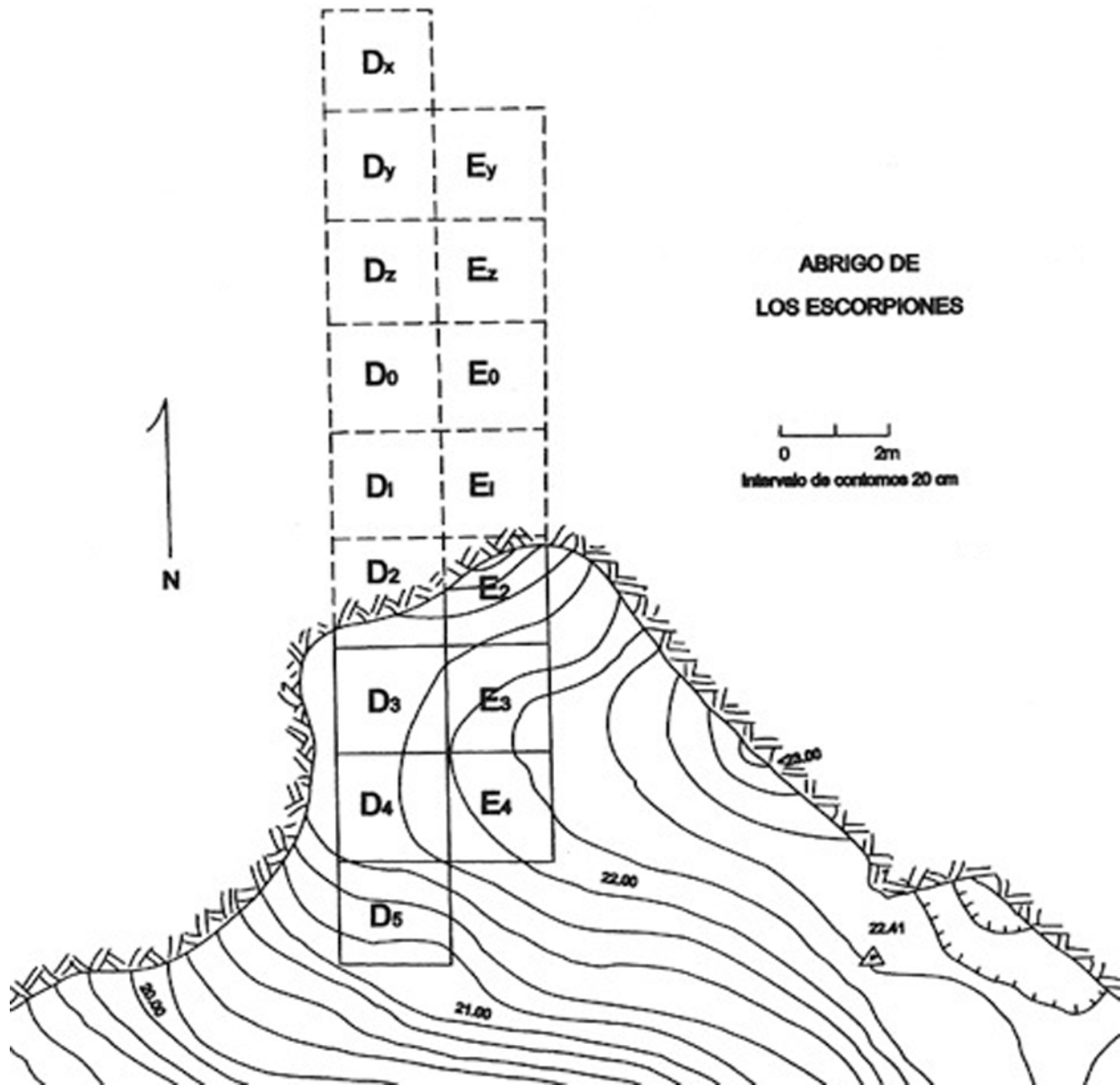


Figure 3. Topographic site map, indicating the area of excavation.

charcoal samples dated gave radiocarbon ages no older than the base of the midden, one charcoal sample, collected from the middle of the rubble stratum within the cavern, was dated $10,120 \pm 40$ RCYBP, significantly older. If indeed derived from the base of the overlying shell midden, this sample would indicate that the midden began to accumulate a millennium earlier than previous radiocarbon samples indicated. If the date is in fact contemporary with the formation of the rubble stratum, a very rapid deposition of the rubble is indicated, perhaps explaining why there was no occupation floor within it. To resolve the question, a U/Th (uranium/thorium) dating of permineralized bone from the base of the rubble stratum will be attempted.

The highly irregular surface of the volcanic bedrock was exposed at a depth of approximately 8 m below surface. Granite boulders trapped in bedrock depressions, which also contained fine beach sand, indicated that the bedrock had been sculpted by wave action. When

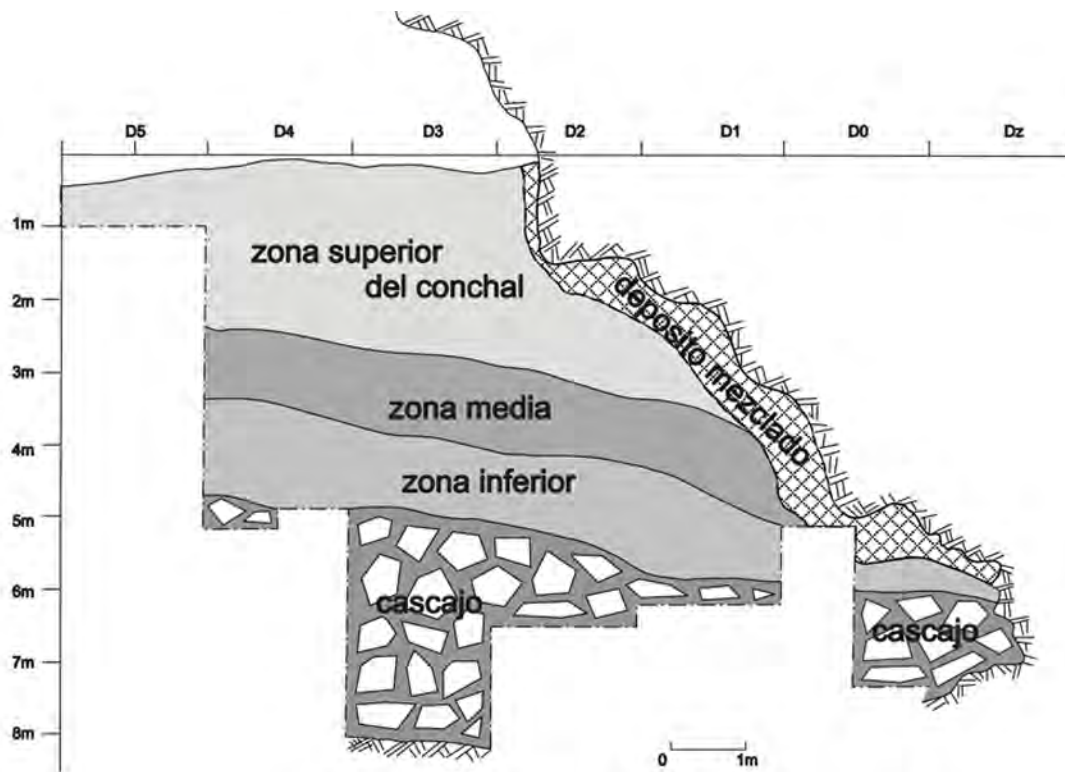


Figure 4. The principal stratigraphic profile of exposed sediments on the west face of Trench D.

the sea was in the cavern, it stood approximately 14 m above the present sea level. As there are prominent raised marine terraces in the Eréndira area (Figure 5), tectonic uplift may have been involved in determining the present high elevation of the ancient shoreline.

Sources of paleoenvironmental data

The sediments in the Abrigo de los Escorpiones were highly productive of vertebrate and invertebrate remains. Faunal analyses, currently underway or soon to be undertaken, will yield valuable information about the regional paleoenvironment from the late Pleistocene throughout the Holocene.

Represented species of shellfish remain to be identified and relative frequencies plotted; but it could be readily observed that the early Holocene levels of the shell midden were characterized by clam, limpet, giant chiton and a small conical gastropod, with mussel only a minor component. In later levels, California rock mussel is overwhelmingly predominant, with a small proportion of abalone. Rock platforms on the coastline just below the site are highly productive of mussels at the present time. Chemical analysis of a stratigraphic column of shell samples from the midden is underway, with an objective to determine variance in marine water temperature in the coastal zone throughout the Holocene.

As the area of excavation was directly under an avian raptor perch, thousands of bones of small mammals and birds were recovered. When identified, plotting of the relative frequency of species will allow inferences about climatic change in the region. Fish bones were not common, and the fish were small, likely nearshore species. Bones of large mammals, also not abundant, were predominantly of sea lion. There is at present an active sea lion rookery on a small offshore

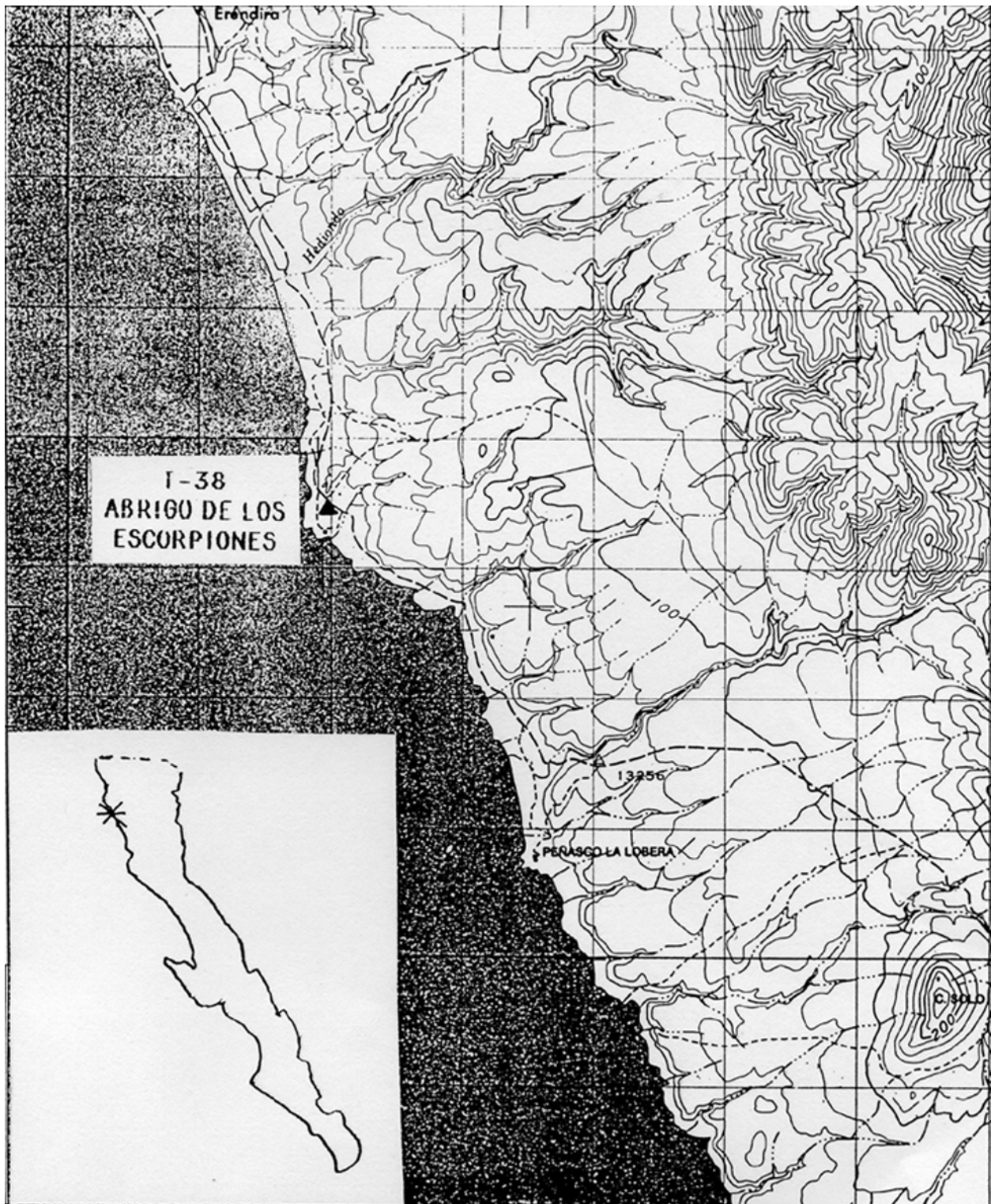


Figure 5. Topographic map of the Eréndira region, showing raised marine terraces.



Figure 6. Sample of heavy lithic artifacts recovered throughout the shell midden deposits.

island just a few kilometers to the south of the site. Also represented in the midden were sea otter, whale and artiodactyl. Bones from the underlying rubble stratum were permineralized and included some identifiable fragments of horse molars as well as bones of small mammals, birds, and fish. A horn core from a small extinct four-horned antelope was recovered from the base of the shell midden, as well as a horse molar; but both specimens are well permineralized, and were most likely derived from the underlying rubble stratum.

Artifacts

Flaked stone artifacts recovered throughout the midden deposits consisted predominantly of unifacially retouched or utilized flakes, flake scrapers, core scrapers, choppers, cores and flaked cobbles (Figure 6). There were very few bifacial artifacts. Bifacial projectile points were very rare, and limited to the early Holocene levels. Triangular points (Figure 7) and long, narrow leaf-shaped points (Figure 8) were restricted to the middle zone of the midden, and a few short irregular leaf-shaped points were recovered from the lower midden zone. No bifacial stone points were recovered from the upper midden zone.

Metavolcanic cobbles and pebbles abundant in gravels exposed in marine terrace deposits nearby provided the preferred tool stone for the occupants of the Abrigo de los Escorpiones throughout its human history. Flaking detritus was most abundant in early Holocene levels of the midden; in the upper midden zone, flakes were larger on average, and much less common.

Hammer stones, manos, and simple milling stones made on granite cobbles occurred throughout the shell midden deposits. The grinding implements were most common in the upper



Figure 7. Triangular projectile points recovered from the middle zone of the shell midden.



Figure 8. Long, narrow lanceolate projectile points recovered from the middle zone of the shell midden.



Figure 9. Bone fish lures or parts of composite fish hooks recovered from the middle zone of the shell midden.

zone of the midden, and relatively rare in the lower midden zone.

Formal bone artifacts were rare finds. Recovered from the early Holocene levels of the shell midden were several awl points and flaking tools, two small fish lures or barbs of composite fish hooks (Figure 9), a well-shaped bone bipoint (Figure 10), and a large enigmatic bone with a deep socket, perhaps a handle or billet (Figure 11). Shell ornaments were also uncommon, predominantly simple spire-lopped *Olivella* beads, which were found throughout the shell midden deposit.

Significance

When analyses are completed, the deep deposits exposed by four seasons of excavation in the Abrigo de los Escorpiones will provide an excellent record of regional paleoenvironmental and cultural change extending from the late Pleistocene throughout the Holocene. We expect that this site will set a standard in the development of a regional sequence for northwestern Baja California.

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Figure 10. Bone bipoint recovered from the middle zone of the shell midden.



Figure 11. Enigmatic bone object recovered from the middle zone of the shell midden.