

CHARACTERISTICS OF A SHELLFISH COLLECTING CAMP AT COSTA AZUL, BAJA CALIFORNIA

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*A shell midden, La Plomada, was excavated on the northern Pacific coast of Baja California. Analyses demonstrated intensive cultural activity at the site, where the mussel *Mytilus californianus* was preferentially exploited, along with sea urchins and the fish species *Semicossyphus pulcher*. Flaked lithics were scarce, and milling tools were almost absent, indicating that La Plomada was a camp dedicated to the exploitation of mollusks and other marine resources, established during the Late Prehistoric period (520 ±40 B.P.).*

Along the northern part of the Baja California peninsula, there are abundant concentrations of shell and burnt ground that are evidence of ancient settlements of hunting-gathering-fishing groups. These groups exploited marine resources as a survival strategy, and this gave them a lifeway in which the use of a great diversity of products was prevalent. The groups were converted into societies whose unspecialized economy made them highly productive. Some have called this the Broad Spectrum Revolution (Flannery 1969), which is the implementing of a subsistence strategy characterized by non-specialization and an ample range of exploited resources (Moreno and Verdún 2006). This gave rise to an idea of opportunistic and eclectic social organization that afforded the maximum use of the resources present in the immediate surroundings of the settlements.

In this paper will be presented the case of the site of La Plomada, a shell midden located in the area known as Costa Azul, to the north of Ensenada, Baja California (Figure 1). The site was investigated as part of the Gasoducto Costa Azul-El Carrizo Archaeological Project. According to radiocarbon dating, it has an age of 520 ±40 B.P., which places this site in the Late Prehistoric period.

LA PLOMADA AND ITS RESOURCES

The site represents a deep deposit, basically composed of abundant mollusk remains. It attests to a continued and intensive occupation of the location, possibly characterized by extended stays in the manner of a semipermanent camp. Two phases are indicated by the stratigraphy. In the first phase, a short-term occupation formed the deeper layers, containing few materials, suggesting a moderate occupation of short duration. After a marked diminution in the concentration of archaeological materials, a new phase appears, represented by the upper layers (Oviedo-García 2008). This showed a more prolonged and intensive occupation, indicating more activity, with a high ash content, charcoal, and abundant shell (Figure 2). During this final phase, La Plomada showed itself to be a site where the collection of marine resources had a fundamental importance, where species such as *Mytilus californianus* (mussel), *Tegula* (turban snail), *Haliotis cracherodii* (black abalone), and sea urchin (Echinoidea) were preferentially exploited. The presence and use of sea urchin in Baja California has been established at various sites in the northern part of the peninsula, both at ones located close to coastal terraces and in ones in the high mountains (Guía-Ramírez 2002, 2005a, 2005b). However, in none of these were the quantities of sea urchin remains consistent. They were limited at times to scarce fragments of plates or spines



Figure 1. Location of La Plomada.



Figure 2. Surface archaeological materials.

exposed to fire, in most cases representing no more than two individuals per area of excavation. Intensive use of sea urchin has been observed at some sites in northern California, where dense deposits of plates and spines have been recorded. Even so, in these sites, the use of sea urchin has not been considered continuous, since the layers of deposit alternated with phases of non-exploitation (Barsh 2005). In the case of La Plomada, the use of sea urchin was recorded as a conspicuous factor, but it did not indicate an intensive exploitation throughout the period of occupation, such as to make this activity a specialty of the site. Still, it is possible to show an increase in the exploitation of sea urchin into the Late Prehistoric period, when the collection of organisms from low-energy environments was intensified. At this site, it is proposed that there was a discrete exploitation of sea urchin throughout the year, although the sustainability of the product through the population's slow recovery does not permit an *intensive and continuous* exploitation throughout the year.

In addition to the major products or principal resources that formed the shell midden, minor products or alternative resources were identified. These represent a small percentage of the material, but they make it possible to document the wide diversity of products that were exploitable at the site. Remains assigned to the taxon Teleostei were identified, among which the species *Semicossyphus pulcher* (sheephead) was conspicuous. Also notable was the presence of crabs (Brachyura), cartilaginous fish (Elasmobranchii), and various teleost fish, such as anchovy (*Engraulis mordax*), halfbeaks (Hemiramphidae), cabezon (*Scorpaenichthys marmoratus*), seabass (*Paralabrax* sp.), pile perch (*Rhacochilus vacca*), barracuda (*Sphyraena* sp.), and porcupinefish (*Diodon hystrix* (Guía-Ramírez 2008). Fish are the animals that represented the main component of the midden at La Plomada, after the mollusks and sea urchins. Unquestionably, sheephead, *Semicossyphus pulcher*, was prominent, signaling the preference for fishing in the coastal zone, in shallow water with rocky settings and algal mats. Although members of other families are present, the elements assigned to them are few and do not reflect a substantial use on the part of the area's inhabitants. However, remains of weaver fish, rockfish, cabezon, seabass, and perch emphasize shore fishing, in rocky areas and algal mats, where the resources were relatively easy to get. On the other hand, species such as barracuda and northern anchovy are pelagic fish that live out beyond the breakers. They are accustomed to approach the coasts during the summer spawning season, which makes them available for fishing in shallow waters.

As to mammals, the identified taxa included carnivores, hares and rabbits (Leporidae), rats and mice, squirrels and gophers (Sciuridae and Geomyidae), black-tailed or mule deer (*Odocoileus hemionus*), and, among marine mammals, sea otters (*Enhydra lutris*) and sea lions (*Zalophus californicus*). With regard to the mammals, a preference was observed for the exploitation of terrestrial over marine mammals. In fact, the latter were limited to barely two fragments. Studies carried out on the coasts of California and Baja California show that a change occurred in the consumption of mammals through time. Whereas in the Middle Holocene a greater hunting of marine mammals was observed, this tended to disappear during the Late Holocene, the climatic epoch that included the Late Prehistoric period. During the latter, more hunting of terrestrial mammals was recorded, with small fauna predominating.

With regard to cultural remains, such as chipping waste and other artifacts, these were found to be scarce. Among the lithic materials were flakes, small and medium-sized cobbles apparently used as polishers, mano fragments, a milling stone, and small chunks of opal. There was also a transparent quartz projectile point (Figure 3) and an oval cobble with depressions in its faces that may have been a miniature tool used for milling or for processing shellfish. With regard to ceramics, only some surface sherds were found, evidently from a brief final occupation. It is worth emphasizing that only one sherd was found within the archaeological deposit. This indicates that the inhabitants who created the shell midden, despite their intensive activity and a prolonged occupation of the location, either did not make use of pottery in their lives, or else its use was rare.



Figure 3. Transparent quartz projectile point.

CONCLUSIONS

Analysis of the remains recovered at the site of La Plomada made it possible to establish that during the Late Prehistoric period there was a mixed use of marine and terrestrial resources. Low-energy marine zones were exploited, possibly closely related to the effects of tides, and the objective was to get food resources. Principally exploited were terrestrial, rocky intertidal, and algal mat biological settings. The site was a place where intensive activity and prolonged occupation occurred, a semipermanent camp where the groups exploited all available resources. These yielded an ample range of elements that permitted the survival of these groups. Products of marine and terrestrial origin were basic to their subsistence, and other activities, such as stoneworking and processing of plants, had reduced importance.

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