

Lapidary, Bone, and Tools of Production

Shell working and ceramic production were the principal, but not the only, craftwork activities of the Ejutla household. They were not even the only kinds of specialized economic production, as lapidary work also appears to have been carried out for exchange. Although the members of the excavated household produced shell ornaments and certain ceramic products at fairly high levels of intensity for exchange beyond their immediate household or community, they made lapidary items seemingly at lower frequency and intensity. Dog teeth, and some bone, were also modified, possibly for inclusion in neckwear with beads of shell. In addition, they made bone tools, spun fiber, and wove cloth. But these latter production activities were likely mostly or entirely for the consumption of this household.

In this chapter, we focus on these other secondary crafts and practices along with the tools of production. We start with the evidence for lapidary craftwork and the evidence of cross-craft technology (Shimada 1996, 2007). Specifically, we discuss hollow tubular cane drills that were used to shape both shell and stone materials. We follow with a consideration of the worked bone, including ornaments as well as tools that have been employed for weaving (Feinman et al. 2018b). We close the chapter with a discussion of the stone tools that the Ejutla artisans made to work the shell and lapidary materials. Some of these tools are discussed and depicted in chapter 5, as their use cannot be tied solely to craftwork, and they were likely used for other domestic tasks as well, including agricultural activities. Here we focus on their use for working lapidary stone and shell. Other tools are mentioned in section 8.4 in conjunction with shell-working techniques. In section 9.3 we provide additional information on the tools themselves.

9.1. Lapidary Craftwork

Among recovered artifacts in the middens and the house are numerous stone ornaments, unfinished lapidary objects, small carved stones, and semiprecious raw materials and production debris, including flakes of greenstone, mica, and large quartz crystals (Table 9.1). One of the most abundant lapidary objects are cylindrical drill cores or plugs. Most of these small cylinders are onyx, although a few are limestone or unidentified stone (Figure 9.1). The drill cores are generally between 1 and 3 cm long, with diameters of 10–12 mm. They were cut with a hollow tubular drill (Foshag 1957, 54–55; Holmes 1919, 350–51; Rau 1869, 393) made from cane, applying the same tools and technology that was used to obtain shell disks. The diameters of the drill plugs match those of the shell disks

that were cut with tubular drills (Figure 9.2). Some plugs still have the characteristic lip at their base, while the base of others is rough and unsmoothed. The tops of several drill cores bear tubular cut marks showing where a prior level of drill cores had been removed; others have one concave side showing where an adjacent plug had previously been removed. None of the drill plugs were worked into ornaments but instead are the remnants from using tubular cane drills to hollow out stone blocks into rounded bowls (e.g., Diehl 1983, 101–02). There are no complete (or even partially complete) finished stone bowls in the assemblage of any size, only eight very small fragments that most likely represent failed attempts. Most of them were cut from the same material as the recovered drill plugs. One tiny piece of onyx microdebitage was recovered from the house floor, tying the working of onyx to the Ejutla household (Feinman et al. 1993, 38; Middleton 1998, 213–14). This use of ‘intersecting technologies’ (Earle 1994, 455; Hagstrum 1992) to produce very different items further supports the inference that this Ejutla household was involved in several craft activities, or ‘multicrafting.’

Most of the drill plugs were found in the dense midden or near the house, but 10 were collected from the surface in the area south of the excavated house, in the same area where there was dense shell debris and other possible houses. We suspect multicrafting was practiced by many households in this part of the Ejutla site, but the proportion of their time devoted to different crafts and the levels of intensity at which they worked likely varied from the house we excavated.

Other objects of onyx include flat, mostly rectangular plaques, flakes, and chunks of unworked material (Figure 9.3). Several plaques have at least one nicely cut edge, but only one of them appears to have been finished into an ornament. This ornament has a trapezoidal form, with all four edges smoothly abraded. One top corner is broken; the other corner has a small carved notch on the top and another longer one on the side just below the top, possibly to hold string for suspension. The possible pendant is approximately 4 cm long. The nearly complete scarcity of other onyx ornaments compared to debris is similar to the pattern for shell, with much more debris than finished or partly finished artifacts, indicating these ornaments also may have been made for exchange and thereby had been transferred from this context.

Semiprecious stones in the Ejutla assemblage include beads and larger unworked chunks of greenstone and other nonlocal material (Figure 9.4). Most of the beads

Table 9.1. Lapidary objects and materials at Ejutla.

Stone material*	Bowl	Drill core	Natural crystal	Lapidary fragment	Lapidary object	Ornament	Pebble	Debitage	Raw material	Total
andesite	1	–	–	–	–	–	–	–	–	1
basalt	–	–	–	1	–	–	–	–	–	1
chert	1	–	–	–	–	2	–	–	1	4
crystals	–	–	103	34	4	–	3	–	3	147
greenstone	–	–	–	–	1	11	–	8	2	22
gypsum	–	–	–	5	–	–	–	–	–	5
ignimbrite/tuff	–	–	–	–	–	2	–	–	–	2
limestone	1	3	–	–	4	2	–	–	–	10
limonite	–	–	–	–	–	1	–	–	–	1
mica	–	–	–	–	–	1	–	–	190	191
mudstone	–	1	–	–	–	1	–	–	–	2
obsidian	–	–	–	–	–	14	–	–	–	14
onyx	3	35	–	6	8	–	–	9	6	67
other semiprecious	–	–	–	–	–	–	–	–	8	8
quartz	1	1	–	–	–	3	–	–	–	5
sandstone	1	–	–	–	–	1	–	–	–	2
schist	–	–	–	–	–	–	–	–	1	1
slate	–	–	–	–	1	–	–	–	–	1
UID stone	–	2	–	–	–	2	–	–	–	5
Total	8	42	103	46	18	40	3	17	211	489

* does not include tools.



Figure 9.1. Cylindrical drill plugs cut from onyx, limestone, and other unidentified stone.

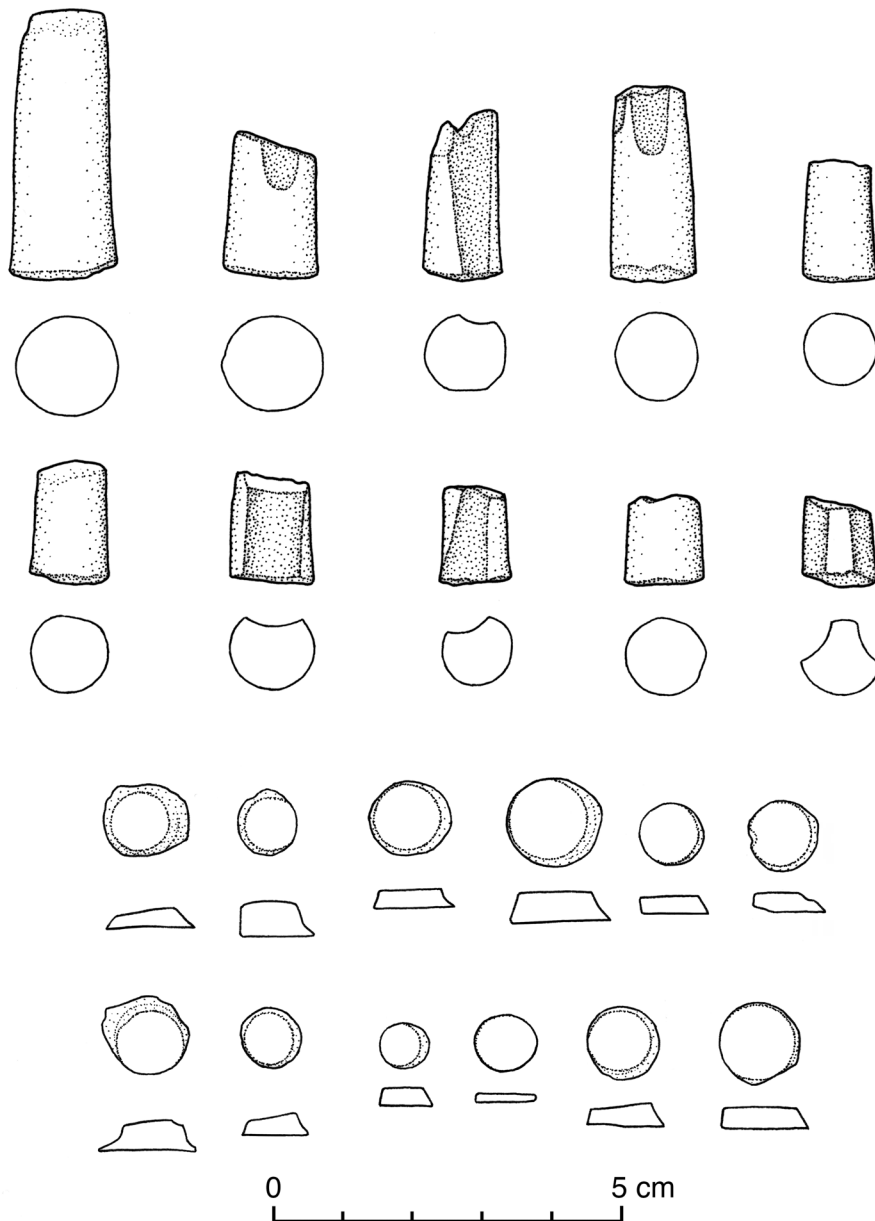


Figure 9.2. Drawings of stone drill plugs (top 2 rows) and shell disks (bottom 2 rows) cut with hollow tubular drills.

are greenstone or were crafted from the same materials as the drill plugs and bowl fragments. Although the overall number of greenstone ornaments and the amount of debris are low, flecks of greenstone in the microdebitage collected from the house floor also tie the crafting of the greenstone ornaments to the house (Middleton 1998, 213). As with the shell ornaments and onyx plaques, we have no way to determine how many finished objects may have been crafted and traded away.

Although most spindle whorls and whistles are ceramic, one whorl was made of stone, and a small buccal whistle was made of ignimbrite (see Figure 9.4 bottom). The whistle has a groove in the top edge and a hole drilled through the groove from both sides (e.g., Sánchez Santiago 2014). Other lapidary material at Ejutla includes several small human heads that may be unfinished pendants or

other adornments—none were perforated for suspension (Figure 9.5).

Large carved objects are rare but include a stone with carved bird imagery on two sides that was located just outside the north room of the structure (Figure 9.6). The stone appears to be a fragment from a larger object of unknown provenience. It was likely brought to the house already broken and placed near the entryway to the north room (see Figures 4.2 and 4.9). This object with bird imagery is dissimilar to any other stone used in the construction of the house and was originally carved elsewhere.

In the north room of the house there was small cache in the floor with numerous large cut pieces of mica (see Figure 4.10, Figure 9.7). We also recovered hundreds of thin mica sheets, mostly in and around the house (119

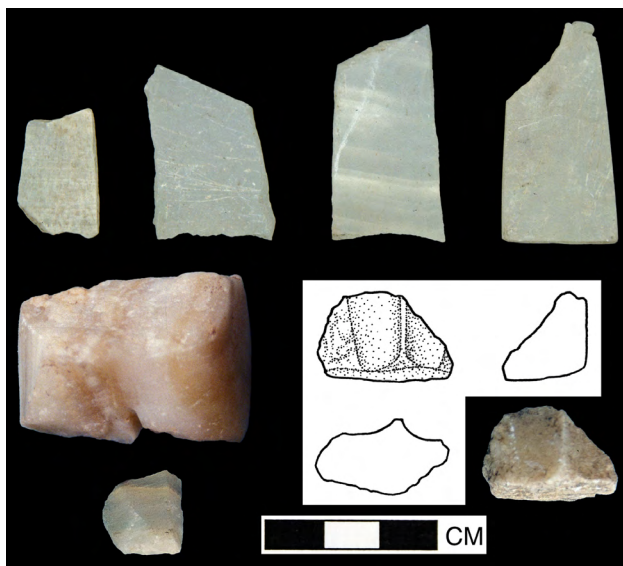


Figure 9.3. Onyx plaques, including possible broken ornament (on right top), and other onyx cut pieces.



Figure 9.4. Small lapidary objects include beads (top), obsidian nose plugs (center), a spindle whorl (bottom left), and a buccal whistle (bottom right).

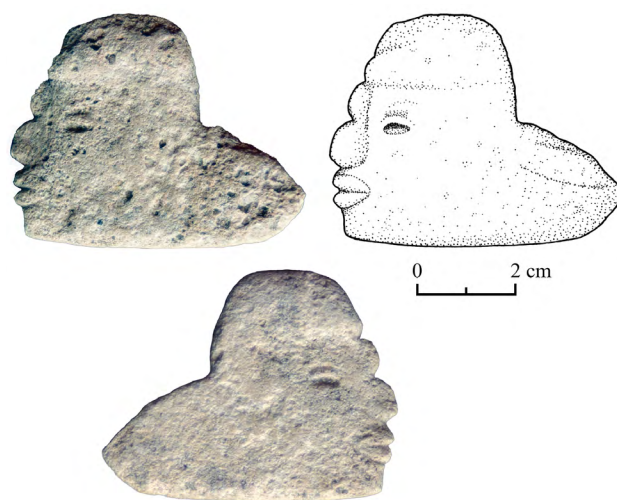


Figure 9.5. Small carved stone head in profile.

out of 191 collected pieces) but also some in the midden. Like microdebitage, small thin sheets of mica may not have been removed during floor sweeping. The mica may have been fashioned into ornamental pieces but also used as temper in pottery. Mica sheets were rare finds during our excavations at other Classic period sites, especially El Palmillo and the Mitla Fortress. The much greater abundance of mica at Ejutla reflects the role of the site's domestic units in exchange networks that brought mica from the Ejutla Valley to Monte Albán and as far north as Teotihuacan (see section 8.7).

Another semiprecious material that was abundant in Ejutla and rare at the other sites we excavated is crystal ($n = 153$ pieces) (Table 9.2). Crystals were considered a precious stone in prehispanic Mesoamerica (Brady and Prufer 1999; Sahagún 1963 [1590], 222, 225, 229) that was crafted into items of personal adornment (Brady and Prufer 1999; Sahagún 1959 [1590], 8, 18, 80; Smith and Kidder 1951, 44). A crystal earspool in the Museum of the American Indian is reported to be from Ejutla (Kidder 1947, 53). Approximately two-thirds of the rock crystal at Ejutla are natural quartz crystals; other pieces had been cut or otherwise modified, including one that was worked into a microdrill. Across Mesoamerica rock crystals have most often been found in ritual caches and offerings (Brady and Prufer 1999), but this is not the case in Ejutla. Although how the natural crystals were used at Ejutla is unknown, rock crystals have a hardness of 7 on the Mohs scale (Foreman 1978, 18), and the natural crystals also may have been used to work or polish beads made of shell or other materials.

In addition to the flecks of shell, onyx, and greenstone, tiny flakes of chert, mica, obsidian, and basalt were also recovered in microdebitage samples from the house floor (Middleton 1998, 213–14). Given the high quantity of obsidian blades in the Ejutla assemblage and the lack of cores, the blades were arriving in Ejutla already formed,



Figure 9.6. Carved stone with bird imagery found just outside the eastern wall of the structure.

and the flecks come from the resharpener of dulled blades, the working of blades into microdrills and other small tools for perforating shell beads and pendants, and the crafting of small ornaments including nose plugs (see Figure 9.4 center).

By weight and quantity (per liter of soil), the density of all the microartifacts generally exceeds the figures reported by Widmer (1991; see also Widmer 2019) for a suggested lapidary and shell-working area at Teotihuacan (Feinman et al. 1993). The recovery of these microartifacts in the heavy fraction from floor deposits provides support for the working of these materials inside the excavated house (Feinman et al. 1993; Middleton 1998, 213–14). Although larger artifacts of most of these materials are not particularly abundant in the collections associated specifically with the structure, all were found in the nearby

dense midden. For comparison, similar samples taken from a deposit associated with ceramic firing contained many small fired concretions and a greater quantity of small bone fragments than were found within the house, but only a single obsidian flake and no shell (Feinman et al. 1993, 38–39).

9.2. Bone Working

We recovered a range of bone tools, ornaments, and worked bone debris at Ejutla, made from both human and other animal remains that are present in the faunal assemblage. Given the availability of the raw materials, the widespread occurrence of most of the same basic tool forms at El Palmillo, Lambityeco, and the Mitla Fortress, and the limited quantities of worked bone debris, the tools and ornaments recovered in this Ejutla house appear to