Before the Volcano Erupted

THE ANCIENT CERÉN VILLAGE IN CENTRAL AMERICA

Edited by Payson Sheets

CHAPTER 17

Artifacts Made from Plant Materials

Harriet F. Beaubien and Marilyn Beaudry-Corbett

UNIVERSITY OF TEXAS PRESS
AUSTIN

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION
Before the volcano erupted : the ancient Cerén village in Central America / edited by Payson Sheets.— 1st ed.
p. cm.
Includes bibliographical references and index.
ISBN 0-292-77761-2 (hardcover : alk. paper)
1. Ceren Site (El Salvador) 2. Mayas—Antiquities. 3. Mayas—Urban residence—El Salvador—Zapotitán Valley. 4. Volcanic ash, tuff, etc.—El Salvador—Zapotitán Valley. 5. Social archaeology—El Salvador—Zapotitán Valley. 6. Plant remains (Archaeology)—El Salvador—Zapotitán Valley. 7. Animal remains (Archaeology)—El Salvador—Zapotitán Valley. 8. Zapotitán Valley (El Salvador)—Antiquities.
I. Sheets, Payson D.
F1435.1.C39 B43 2002
972.84'22—dc21

200200361I

Contents

Artifacts Made from Plant Materials

Harriet F. Beaubien and Marilyn Beaudry-Corbett

Introduction

The combination of Cerén's unique archaeological situation and the early recognition of the extent to which perishable material could be recovered with careful removal, processing, and conservation has resulted in an assemblage of materials not usually available from household excavation projects. This category of remains gives us useful data about Cerén inhabitants' use of plant materials. It also provides an opportunity to evaluate the extent to which we can expect parallels between ethnographic information and the prehistoric record.

Materials of plant origin survived as chars, impressions (subsequently cast from voids), and occasionally as directly preserved materials. The inventory of artifacts includes both portable objects and architectural components fabricated from processed plant materials. (In this chapter we will not discuss fixed architectural features such as shelves and roofing.) Objects were made from the woody parts of gourds or calabashes and palm fruit endocarps, from various plant fibers, and from wood stems or cane. Architectural components were made from wood, cane, and string. We should mention that terms like *gourds* and *cane* are applied according to common usage, rather than from the standpoint of scientific botanical attribution. In some cases, such as for gourds, we have made a tentative botanical attribution. In other cases, such as for fibers, we are unable to relate the remains directly to the botanical realm.

In archaeology, it is always necessary to evaluate the nature of the available sample before searching for qualitative or quantitative patterns in the data. In this case, the limitations of the data set are numerous. First of all, even at Cerén, organics tend to be fugitive. Decayed materials may not be recognized or their presence may only be inferred from the context. For example, recovered pigments would have been kept in receptacles, but none exist; they undoubtedly decayed without leaving evidence of their nature. Thus, we know that our data set is very incomplete.

Another limitation is the unequal number of structures in the various functional categories. For example, only one kitchen has been excavated, while three storehouses and two domiciles have been investigated. The ceramics inventories (Chapter 13) caution us against taking a normative view of these structures, expecting them to house similar assemblages based on their functional classification.

A further problem with this data set results from reassembly uncertainties. As an example, it is extremely difficult to evaluate whether fragments of painted layers scattered around a room represent parts of the same gourd object or several different objects. Refitting is more straightforward when dealing with chipped stone or pottery.

These various caveats lead us to use a broad brush in dealing with artifacts made from plant materials. Numbers are presented for completeness, but our review of the findings is based on a qualitative rather than a quantitative approach. Table 17.1 summarizes the finds for each type of plant material according to the recovery location. We caution that the table presents only materials where

TABLE 17.1. Artifacts by Plant Material and Provenience

	Domicile		*Storehouse*		*Kitchen*	*Civic*	*Special Use*	
	Str. 1	*Str. 2*	*Str. 4*	*Str. 7*	*Str. 11*	*Str. 3*	*Str. 10*	*Str. 12*
Gourds		1	2	1+	5		2	2
Palm fruit				1			1?	
Fibers								
Support ring					2		2	
Basketry			2		3			
Matting	1		2	1	1			1*
Cloth			2	1				
String bag			1					
String							1	
Wood/stems								
Utensil	2	1					2	
Forked support	1		1	1	1	1	1	
Fencing		1	3?	1			1	
Wood ash			15	10+				
Total	4	3	28	16+	12	1	9	3

* Woven strip on pot neck.
NOTE: Structure 6 (storehouse) and Structure 9 (special use/sweat bath) produced no artifacts made from plant materials.

the recovery provenience seems related to their systemic context. For example, we itemize string used on the deer skull headdress but not string blown into a pot or caught on an agave plant.

Findings

Relating these materials to the systemic context, it seems that the kitchen and storehouses were more likely to contain them than were domiciles. It is likely that a wider range of household maintenance activities took place in these structures with active space, as opposed to those with passive interior space for sleeping and sitting. The special purpose structures are not homologous in terms of their function (see Chapters 9–12), so it is to be expected that objects of plant origin would vary among them. The types of plant-origin artifacts in Structure 10 are similar to those in Structure 11 (kitchen) and Structures 4 and 7 (both storehouses), more evidence that Structure 10 had a nondomestic purpose that involved both storage and food preparation.

GOURDS OR CALABASHES

The processed fruit rinds of gourds or calabashes likely were in common use as utensils for dipping water or dried materials, as food service containers, and for other purposes. From various features described below and in Beaubien 1993, the gourd artifacts recovered at Cerén seem comparable to *Crescentia alata,* the tree-variety gourd seen in the landscape and in use today.

Their presence in the artifact assemblage lends credence to the ancient use of gourd containers mentioned in the Popol Vuh and described in some detail in Bishop Landa's ethnographic records. As cited by Fowler (1989: 154) gourd working and the use of gourds among the Pipil were mentioned by various Conquest Period observers, and the gourd-working industry of Izalco was described in the mid-twentieth century. Osborne (1975: 134–135) commented on the use of husks or shells of several fruits as containers in Central America during the 1950s. McBryde (1947: 57, 148) also mentioned several varieties of the calabash or gourd tree utilized in the inner Coastal Plain and highlands of Guatemala. Those recovered at Cerén add enormously to our knowledge of this class of artifact, since only an exceptional few had previously been recovered archaeologically as waterlogged fragments from the cenote at Chichén Itzá (Coggins 1992: 360–364). Decorative paint layers possibly applied to gourds were also recovered at Tikal (Beaubien, personal observation, site museum 1991) and at Copán (Beaubien, personal observation, site excavations 1993 ff.; Bell et al. 1999).

It is interesting that Osborne (1975: 323) raised the possibility that trade or migration between 1544 and 1574 was responsible for the introduction into

El Salvador of the Guatemalan skill in gourd decoration. We do not have definitive proof of production at Cerén, but the findings demonstrate that Zapotitán Valley residents had access to this specialized craft product long before the Conquest Period.

Because of organic decomposition, unpainted gourds have not been easy to detect archaeologically, although they probably were present. One impression was recorded in Structure 4 (Feature W), and their presence has been inferred from the shape of preserved contents such as wood ash hemispheres. Those which had a painted surface decoration were detected because of the surviving paint remains and were recovered, although in extremely fragile, often fragmentary, condition.

Based on the nature of the surviving paint layers, we can reconstruct two situations that occurred during the volcanic destruction. Some gourd objects were buried intact by ash; their organic component eventually decomposed, but the paint layers retained much of the object's original form. A variation of this pattern occurred when one painted gourd, protected in a niche, flattened as the organic object decomposed. A total of seven gourd bowls and one lid are identifiable.

Other objects were shattered and the pieces scattered during the eruption activity. Those paint layers survive as flattened or slightly curved segments of larger forms. The scattered find spots of this second category make it difficult to determine the number of objects represented. In fact, three segments found near Structure 7 may belong to the same object; four additional objects are represented by recovered segments. Other disassociated paint fragments, found in four groupings, could not be securely associated with a particular type of object and have not been used in this summary.

General Form The bowls as preserved range in diameter from 11 cm (1-310) to 22 cm (1-247), and in height from 3 cm to 11 cm; the lid (4-273) is 9 × 0.5 cm. They appear to have been made by cutting gourds laterally so that stem nodes are in the center of the resulting form. This feature is preserved most clearly in the lid. The full curvature of the bowls is not well preserved, but a generally hemispherical form is suggested. The largest bowl, however, presents a somewhat elongated profile.

Structural Characteristics of the Paint Layers Each layer of paint, whether recovered as a cohesive layer or as fragments, measures approximately 0.5 mm in thickness and has two well-bonded components: a ground (or preparation) layer overlaid with a pigmented layer. Impressions are preserved on the underside where the fine-textured wet paint came in contact with the gourd shell. Both exterior and interior were painted, verified readily by nine of the objects in which paired layers were found with their ground surfaces touching. These would have originally been separated by the gourd shell but merged as it decomposed. Paint layers applied to the exterior possess a smooth-textured underside; those applied to the interior are fibrous or pebbly; and a recognizable pattern of radiating ribs is preserved on the interior paint layer from the flattened gourd. Even now, the paint is cohesive with a strong binder and shows little sign of abrasion, suggesting that during use, the painted gourd could have been handled without loss of paint. A protective varnish may have been applied, but this has not been confirmed analytically. (Results of paint analysis are included in Table 18.1.)

Decorative Scheme While no two decorated gourds are alike, they may be sorted into several general groups distinguishable both by the color of their ground (or preparation) layer and by the decorative approach.

Group 1 has the following characteristics. The preparation layer is white. The interior is painted a solid color, either green or red; if green, a red rim band is present. The exterior decoration is polychromatic and is organized into registers with repeated motifs. Group 1-A (a variation of Group 1) also has a white ground, but the exterior paint appears to be monochrome rather than polychrome.

Group 2 is distinguished by a pink preparation layer. The interior is solid pinkish red, either from the preparation layer alone or with an additional application of paint. The exterior decoration is polychromatic on a red background, and the decorative motifs are arranged in an asymmetrical fashion rather than in registers.

Group 1. Eight objects share this decorative scheme; they are listed in Table 17.2 and illustrated in Figure 17.1.

A few comments are in order about some of the motifs and the register layout of the gourds. The geometric and human figural motifs as well as the organization into registers call to mind characteristics of Cerén's ceramic serving vessels. The element on 8-160 (Fig. 17.1e) can be interpreted as either an animal head or a stylized seated figure bending forward like those painted on Copador and Arambala recurved bowls (Fig. 17.2a).

The radiating linear pattern on the base of 2-51 (Fig. 17.1g) may represent the gourd's rib pat-

TABLE 17.2. Painted Gourds by Decorative Group and Provenience

	Domicile	*Storehouse*		*Kitchen*	*Special Use*	
	Str. 2	*Str. 4*	*Str. 7*	*Str. 11*	*Str. 10*	*Str. 12*
Group 1						
Bowl	2-51			1-247 1-310	8-160 8-520	
Segment			2-204, -205, -248*	1-273** 1-303**		
Group 1-A						
Lid		4-273				
Segment		4-317				5-35
Group 2						
Bowl				1-237		5-49
Total	1	2	1	5	2	2

* Collected as three field specimens, interpreted as being from one object.
** Not extant; recorded in photographs, not described in text.
NOTE: Artifacts are listed by their field specimen numbers.

tern. There is a group of polychrome painted vessels called melon effigy bowls that mimic this same pattern (Fig. 17.2b).

Of all the gourds in this group, 2-51 shows the most complex use of registers and motifs (Fig. 17.1f, g). The red rim band is very broad and includes a repeating seated human figure (similar to Fig. 17.2a); the remaining green field has a register of geometric motifs and the radiating linear pattern on the base. In addition, a significantly broader palette is used on this bowl. Where only red, green, and to a lesser extent yellow occur on the other Group 1 objects, this object also includes blue, brown, black, white, and many pastel hues.

Group 1-A. The surviving paint layers of the lid (Fig. 17.1h) and two gourd segments appear to be monochromatic (see Table 17.2). However, each case is problematic, since only one paint layer is accessible for study and little can be said about them due to their fragmentary nature.

Group 2. Only two gourds are represented in this category; they are listed in Table 17.2 and illustrated in Figure 17.1. On the exterior, the bold motifs appearing on the red field are painted in yellow, brown, and white. While incompletely preserved on both bowls, the elements are neither organized in registers nor repeated regularly around the surface (Fig. 17.1i, j). Bars and coiled shapes arch asymmetrically across the base and near the rim. There is a free-form tradition in the ceramic corpus, as evidenced by spiral decorated Gualpopa and Copador bowls (Fig. 17.2c). However, the gourd pattern appears to be even more complicated than the ceramic one.

Provenience Observations The more prevalent decorative scheme, characterized by registers and repeated motifs, is found on gourd bowls in a domicile, the kitchen, and Structure 10, a special use building, and among the segments recovered from a storehouse. The most ornately decorated example was the only gourd recovered from a domicile. Its elaborate style may indicate the relative importance of the building's occupants or may relate to the meal represented by the serving vessels placed with it in the niche below the bench.

One of the two gourds painted in the asymmetrical style was found in the kitchen; the other was found in Structure 12, a special use building. These objects may support a gender linkage between the users of those structures. A female-oriented ritual practice has been suggested for Structure 12, a building notable both for its eccentric architecture and ceremonial artifact assemblage.

PALM FRUIT ENDOCARP

The endocarp of a palm fruit (*Acrocomia aculeata*) was carved and perforated to create a spindle whorl. The charred whorl still retained its charred wooden spindle wrapped with thread when recovered from Structure 7. (Similar whorls were recovered from

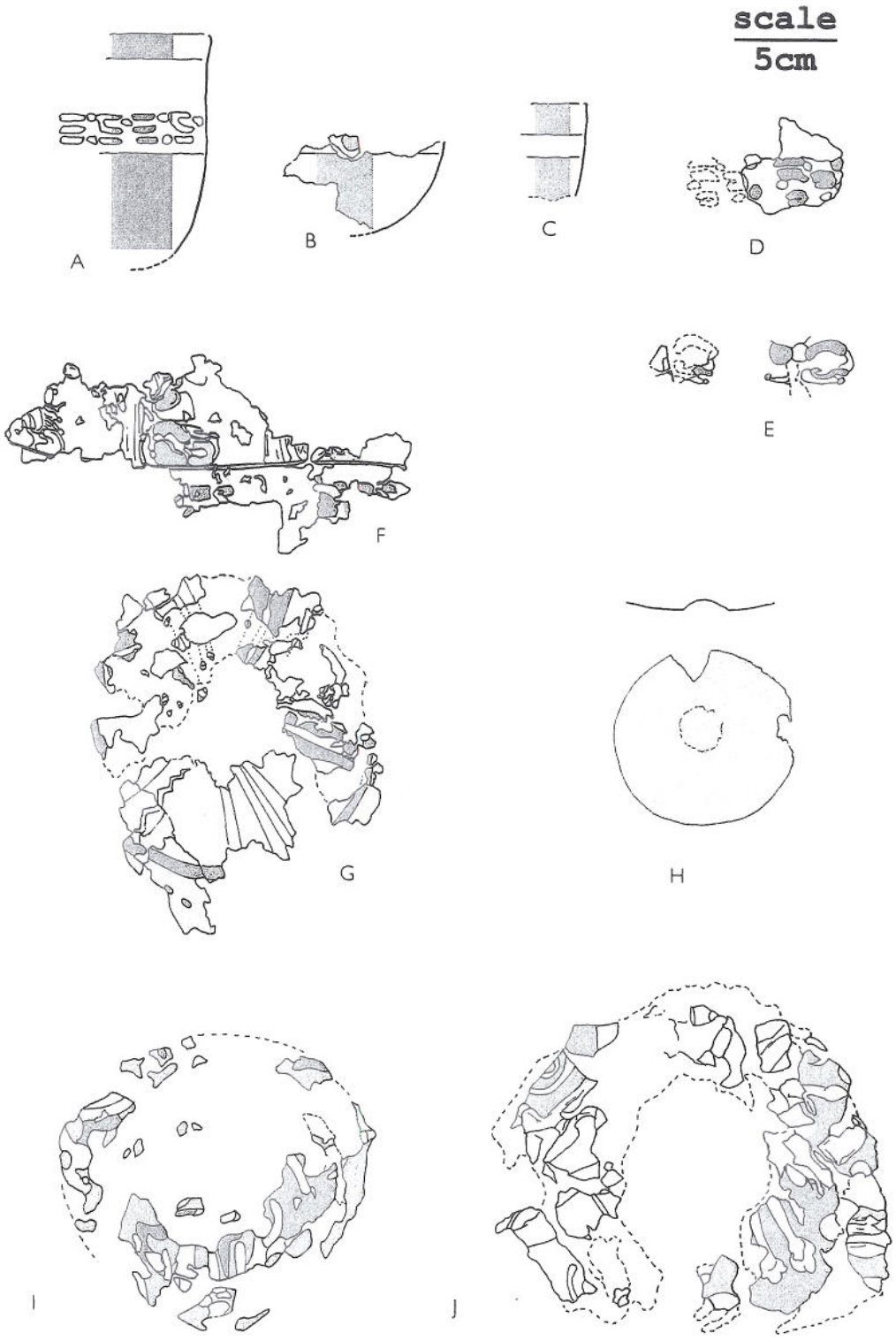
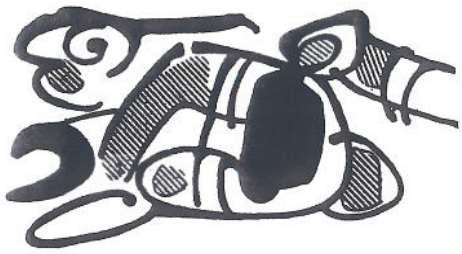
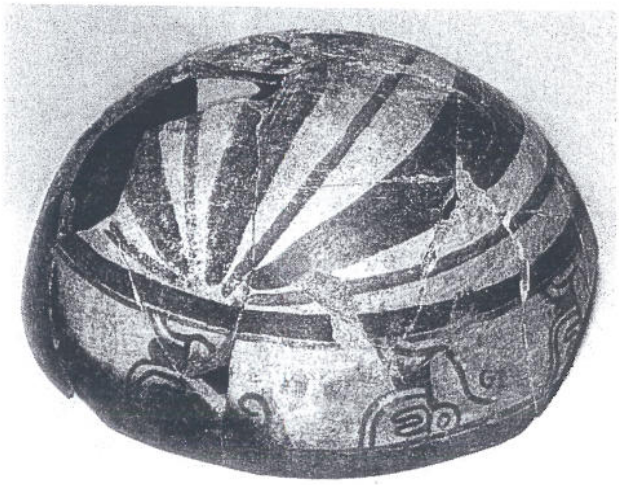


FIGURE 17.1. Gourds grouped by decorative scheme. Group 1: (a) 1-247, partial profile; (b) 1-310, partial profile; (c) 8-520, partial profile; (d) 2-205, body; (e) 8-160, body below rim; (f) and (g) 2-51, rim area and plan view of base. Group 1-A: (h) 4-273, profile and plan view. Group 2: (i) 1-237, plan view; (j) 5-49, plan view.



A



B

C

FIGURE 17.2. Ceramic motifs and design layouts similar to gourds: (a) seated figure on Arambala recurved bowl (after Beaudry 1984:285); (b) Gualpopa melon effigy bowl from Cerén (3-6); (c) spiral decorated Gualpopa bowl from Cerén (1-94).

the cenote at Chichén Itzá [Coggins 1992: 359–360].) Fragments of a possible endocarp were found in Structure 10, but whether this was worked is unknown.

FIBERS AND FINE STEMS

Vessel Support Rings (Yaguales) These circular objects are used as stands for round-based ceramic vessels and can be found in village markets today throughout Central America. They served the same function at Cerén, where examples were found directly preserved in the kitchen and in Structure 10. In one case, fibers had been twisted as a mass to form the ring. In another case, flexible branches or vines about 2 cm thick had been bent and coiled at least three or four times.

Basketry Containers made of fibers or fine stems were found, including portable baskets and a maize crib built into Structure 4. The crib's floor was made of several overlapping layers of preserved fibers with mud on the outside. The portable baskets seem to vary in construction. One was formed of concentric spiral fiber bundles (*Tithonia rotundifolia* stems tied with *Agave* sp. fiber). Another was made of monocot stems, possibly *Cyperus*, a sedge called tule. It probably had a quite bulbous shape with a small mouth and had collapsed flat on the floor of the kitchen.

Matting Woven coverings (petates) were found in all types of domestic structures at Cerén. The manufacture of woven straw mats and other fiber items such as baskets is mentioned by Fowler (1989: 154) as being an important industry among Pipil-Nicarao commoners. He cites ethnohistorical sources that report the use of straw mats by caciques and nobles and that list petates as tribute items. Petates remain in widespread use today in Central America. They have the advantage of being inexpensive, lightweight, and easy to transport. They can be taken up quickly for household maintenance and are themselves cleaned easily. As Osborne stated (1975: 282), "Today mats serve as walls for the Indian huts, as beds, and as tables. They play an important role on ceremonial occasions when they are placed under the sacred figures or used by the shamans for their rites. . . . They are an almost indispensable household furnishing from the time an Indian is born on a mat till the time he dies and it becomes his shroud." McBryde (1947: 68) described three major fibers used for mats—palm, rush (tule)

and alpine bunch grass (*Muhlenbergia*)—and states, "The uses of them are manifold."

It is probable that at Cerén they were used on floors, shelves, and benches. The one associated with Structure 1 was found burned just east of the building, under the house eaves; another one, associated with Structure 7, covered a burned wooden pole shelf.

In addition to the petates, another kind of matting was found around the neck of a ceramic vessel in Structure 12. The function of this tightly fitted 3 cm strip is unknown. It may have served to improve the grip on the vessel, to allow for suspension, to impart something symbolic, or to fulfill another purpose.

Cloth One example from Structure 4 seems to have been a loosely woven cloth with about eight threads per centimeter which covered a jar containing a variety of seeds. Another example from the same structure, thought to have been cotton, is finer, with an estimated sixteen threads per centimeter; this was recovered as a plaster cast. The final example was found adhering to several contiguous sherds in Structure 7.

String The one recovered specimen of a string bag has a tight two-ply construction and was found carbonized, along with portable fencing, in Structure 4. Many examples of string cordage were located during the various field operations, either as carbonized specimens or cast impressions. Much seemed related to roofing and fencing components or to discard practices. One of the few in-use examples other than the architecturally related specimens was the charred single-strand piece associated with the deer headdress in Structure 10.

WOOD, ROBUST STEMS, AND WOOD ASH

Utensils Several carbonized sticks in association with donut stones are interpreted as having been digging sticks. One carbonized wood disk from Structure 2 is of unknown use.

Forked sticks used as supports for metates (horquetas) were recovered in the form of casts in or near both domestic and special purpose buildings. Thus, at Cerén, corn-grinding activities were not restricted to a certain type of structure or even to interior space, since three examples were outside Structures 1, 3, and 4. As with yaguales and petates, horquetas are still in use in rural El Salvador today. Examples seen in contemporary Joya de Cerén are located in or outside the kitchen and are tailored to the height of the user.

Fencing Plant stems of at least 1 cm diameter (*Tithonia rotundifolia*) were bound with string and used for portable fencing, for doorway closures, and to form the maize crib walls. All fencing material was recovered as plaster casts.

Wood Ash Hemispheres Throughout Middle America, maize is traditionally soaked overnight in water mixed with some lime, processed from limestone in places where it is relatively available. An alternative to lime is wood ash collected from hearths. Because the closest outcrop of limestone is near Metapán, 60 km north of Cerén, it is not surprising that households collected wood ash for this alternative soaking technique. The wood ash was placed in hard, spherically shaped organic containers, presumably gourds, and stored in elevated contexts in storehouses such as Structures 4 and 7. The containers decomposed, but the wood ash hemispheres retained their shape, having been encased in the volcanic ash.

Conclusions

This brief qualitative presentation of artifacts made from plant materials affirms eruption-period inhabitants' wide exploitation of their natural environment to make household commodities. It also provides solid evidence of industries that usually leave no direct archaeological trace. For the items known from ethnohistoric sources, including tribute lists, the Cerén assemblage provides a direct link into the prehistoric past, at least as far back as the sixth century A.D.

We would suggest that the continuity in usage can be extended to include a continuity in production mode as well. Fowler (1989: 152) has hypothesized that many of the craft products in Pipil-Nicarao communities in Southeastern Mesoamerica around the time of contact involved various levels of specialization on the part of both women and men. It seems probable that gourd processing and painting, as well as fiber crafts and palm fruit carving, were done by talented individuals either as part-time or full-time specialized activities.

We can only guess at the prevalence of these crafted objects in the overall settlement. However, their mere presence emphasizes again the overwhelming impression of Cerén as a thriving agri-

cultural community before its well-supplied households were crushed under the Loma Caldera ashfall.

Acknowledgments

The identification of the plant materials used in the fabrication of these artifacts is part of a larger study of Cerén's botanical remains, carried out by David Lentz with the assistance of María Luisa Reyna de Aguilar and others. Their contributions are gratefully acknowledged, with particular thanks to David Lentz for his assistance with this chapter.