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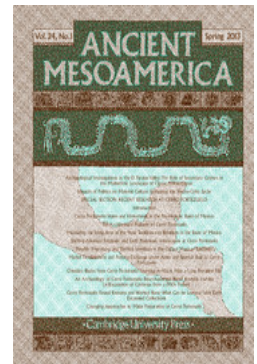
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## PROVISIONING THE CEREN HOUSEHOLD

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Ancient Mesoamerica / Volume 11 / Issue 02 / July 2000, pp 217 - 230

DOI: null, Published online: 07 February 2001

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**How to cite this article:**

Payson Sheets (2000). PROVISIONING THE CEREN HOUSEHOLD . Ancient Mesoamerica, 11, pp 217-230

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## PROVISIONING THE CEREN HOUSEHOLD

### *The vertical economy, village economy, and household economy in the southeastern Maya periphery*

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#### Abstract

The Classic-period households of the Ceren village in the southeastern periphery of the Maya area provisioned themselves by one of three different economies. (1) Household members produced many items for intrahousehold use, including architecture, food, and some artifacts, with no input from outside. (2) Each household produced some commodity in excess of what they needed for their internal consumption, by means of part-time specialization, and they used this for exchange with other households within the village or nearby. This is termed the horizontal or village economy. The commodities included craft items such as groundstone tools and painted gourds as well as agricultural specialities such as agave for fiber. (3) Each household obtained distant exotic items, such as obsidian tools, jade axes, and polychrome serving ceramics, by exchanging their household surplus commodities in elite centers. In this paper, this is called the vertical economy. The choices available to commoner households in negotiating economic transactions in various elite centers gave them economic power and could have the effect of constraining the elite in setting exchange equivalencies. This is quite different from the view from the top of the pyramid which generally depicts commoners as the exploited class at the bottom of a powerful political and economic hierarchy.

Much of the literature on the pre-Columbian economies of Mesoamerica focuses on the economic activities controlled by the elite. When viewing Mesoamerican economies from the top of the pyramid, from the elite perspective, it is easy to get the impression most economic activities were under centralized control, and some scholars believe all economic behavior was under elite authority (e.g., Henderson 1997). Certainly the long-range trade routes that extended for hundreds of kilometers from Olmec times through the Aztec period were closely affiliated with elites. Certainly the obsidian, jade, decorated ceramics, feathers, seashells, stingray spines, and other goods were under elite influence in their trade, manufacture, distribution, consumption, and/or ultimate disposition. Because of their durability, many of these kinds of materials preserve well in the archaeological record and thus provide ample data to support interpretations of political economy. For example, Henderson (1997:145) claimed with regard to the Classic Maya “ultimately the aristocracy dominated the entire economy.” The extraordinary beauty of many of the elite-restricted goods has also contributed to their being highlighted by scholars, particularly those with strong interests in the humanities, and thus perhaps overlooking less aesthetically sophisticated products of a possible alternative economy.

So, were there alternatives to the elite-controlled vertical economy in Classic times in southeastern Mesoamerica? Were there means by which ancient Mesoamerican commoners could obtain the cutting and scraping tools, food serving vessels, grinding stones, net bags, and other items needed for quotidian purposes? If we look from the bottom up, from the “grassroots,” can we find evidence for different economic systems functioning beyond the hi-

erarchical controls of the elite? I believe the Ceren site, a small village of commoners functioning within the Zapotitan valley, presents an opportunity to explore the degree to which models of political economy pertain to the Classic-period economy in that area of southern Mesoamerica, and the degree to which alternative means of provisioning the households were utilized. In some regards, the different economic systems in which the household would participate were complementary rather than alternatives to an elite-controlled vertical economy. One important aspect that emerges from this exploration is that commoner individual and household choice was far greater than would have been anticipated by economic models emphasizing the elite.

The archaeology of the Zapotitan Valley of El Salvador (Figure 1) is reasonably well known during the Middle to Late Classic period because of University of Colorado research. In particular, the survey and testing program by Black (1983) and artifactual analyses by Beaudry (1983) and Sheets (1983), and the past decade of research at Ceren have contributed information utilized in this article (Cobos and Sheets 1997; Sheets 1992, 1994; <http://ceren.colorado.edu>). The largest site within the roughly 550 km<sup>2</sup> valley is Campana San Andrés, with a population estimated to have been in the thousands. Somewhat smaller than San Andrés, but very numerous, were the secondary regional centers scattered around the valley, each with elite residents and occupational specialists. Those large sites contrast with the small Ceren village with a population of about 100 people. Ceren and San Andrés are only 5 km apart, and the secondary regional centers are a few kilometers farther away. The detailed research at the Ceren site allows for an exploration of economic relationships between the two nearby

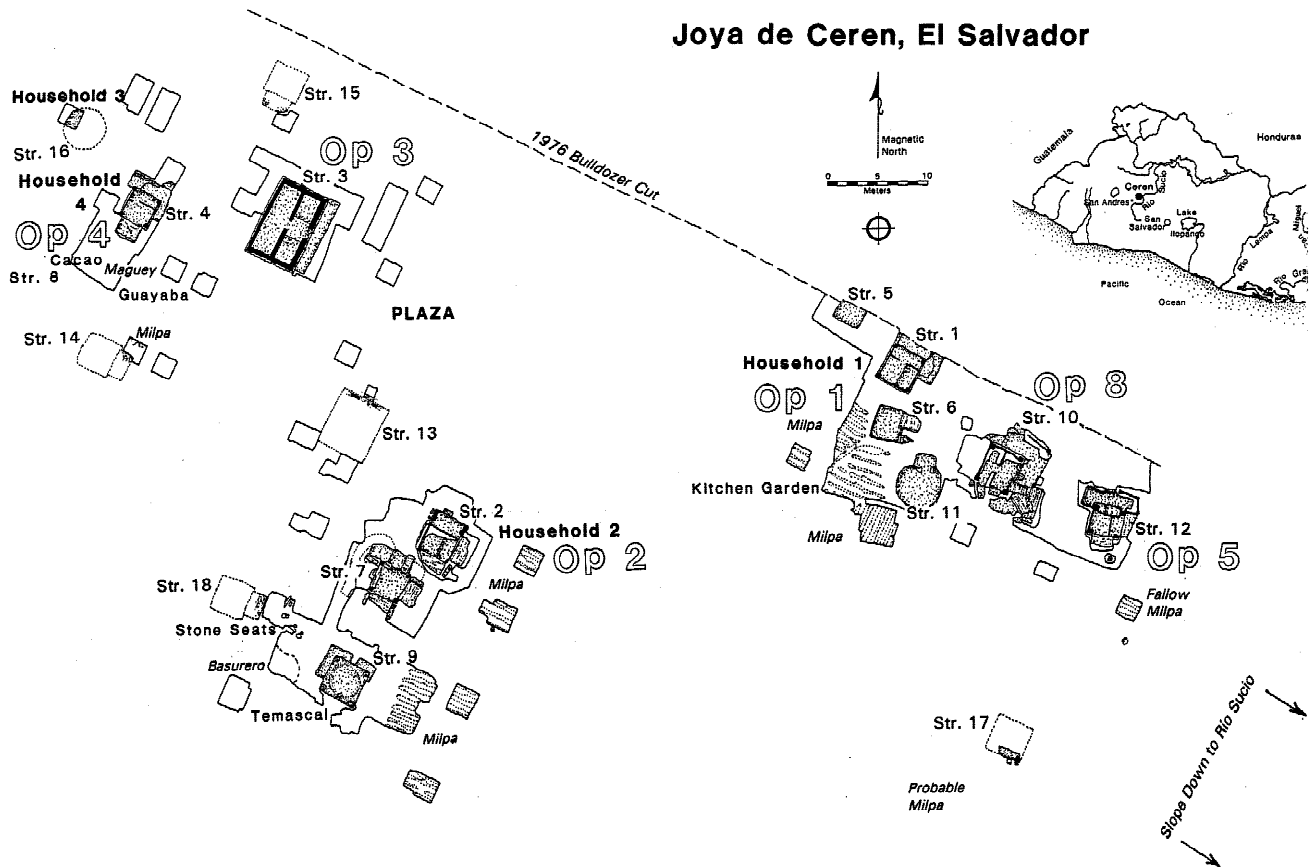


Figure 1. Map of the Ceren site, with inset map locating the Ceren site within central-western El Salvador.

but unequal settlements. Were the Ceren residents laboring within the constraints of an all-enveloping economic system controlled by the elite at San Andrés? Or, at the other extreme, were the Ceren household economies functioning on their own, in blissful isolation from the unknowing or ineffectual elites of San Andrés? If the truth lies somewhere in between, with Cerenians utilizing a mixture of economies, what components of the village economy were controlled from without and which were run from within? Did commoners have choices, and did they have alternative means of provisioning their households?

The Ceren site was a small village buried about A.D. 600 by a sudden explosive eruption of Loma Caldera volcano (Sheets 1992). The volcanic vent was only 700 m to the north. The first and third of the 14 phases of the eruption were moist, fine-grained volcanic ash that packed around organic materials and other items, preserving them to an extraordinary degree as hollow spaces. The thatch roofs were preserved, as well as the plants growing in kitchen gardens and maize milpas. The rapid and unplanned abandonment of the village left most artifacts in their original positions of use or storage (Sheets 1998). The extensive preservation of organic materials and in situ artifacts within households and special-purpose buildings at the site provides an opportunity to study economic activities within the household, the village, and the valley.

Economic activities within the village can be divided into three categories, each examined from the household perspective. The first two involve egalitarian economic activities which evidently occurred with no control from outside the village, and the third

involves at least some degree of elite control, presumably most often from San Andrés, but potentially from other secondary regional centers. The first category, the household economy, focuses on the items household members produced for their intrahousehold use or consumption. It could also be called the egalitarian economy, or subsistence economy. These items are replicated in all households studied to date. The second category is the village economy and involves household part-time specialization and exchange among households in the village. It could also be called the egalitarian or horizontal economy. Every household excavated so far at Ceren produced at least one commodity in excess of what they needed within the household, and presumably that surplus was exchanged within the village for the commodities other households over-produced from their part-time specializations. This is considerably more specialization than we expected in a commoner village. The horizontal exchanges between households need not be limited to the village, as some households must have exchanged their part-time specialized goods with households in other villages. In addition to their craft specializations, two of the three Ceren households investigated to date apparently were providing services to special-purpose buildings, and this represents the behavioral analog to specialist-goods production. The third economic system in which all Ceren households participated is what I call the vertical economy, or it could be called the regional, hierarchical, or formal economy. This includes the items Ceren households would have to obtain from the elite or attached specialists associated with the elite at San Andrés or a secondary regional

center. These are items for which the elite would have some control over at least one of the following: trade, production, distribution, or consumption. One could also argue that these three all are aspects of the same economy, but I feel they are sufficiently different to warrant classifying them as separate economies.

It is the third category which has received the most attention in the form of Mesoamerican studies of political economies. If I were trying to build an argument for elite control of the Ceren economy, I would emphasize the polychrome pottery, obsidian implements, jade axes, hematite cylinders, and presumably salt that every household obtained from the elite. The Ceren household undeniably needed to exchange some surplus production for elite-controlled items in the San Andrés marketplace or a secondary regional center. This, however, would be a biased argument, and what is clear from looking at entire household assemblages is the items obtained from the elite make up an important but small fraction of the total assemblages. This paper explores the vertical economy as well as the less well-known alternatives to provisioning the household.

Throughout this paper the site of San Andrés is emphasized as the nearby elite center, because it is the elite center closest to Ceren as well as the largest settlement in the valley in Classic times. It should be pointed out, however, that Black's (1983) survey of 15% of the Zapotitan valley found two secondary regional centers that were contemporary with Ceren and San Andrés. Those two would extrapolate to approximately 13 in the entire valley at that time. The implication is a Ceren household member could choose to walk a little farther to obtain items such as obsidian or other elite-controlled items from a secondary regional center, if the price were better or there were other social, kin, or economic advantages. Lithic implements and debitage at San Andrés and the secondary regional centers indicate obsidian specialist manufacture (Sheets 1983). With the individual decision-making on where to take their surplus, even the lowliest commoners could have had an effect upon the elite, the special goods the elite provided, and the exchange ratios the elite demanded or tried to establish. Not all the power and decision-making were concentrated at the top of the hierarchy of the society. Commoners were empowered more than one would expect after reading the political-economy literature.

## THEORIES OF POLITICAL ECONOMY

The literature on political economies focuses on the unequal relationships between the elite and the commoners in complex societies, often including specialists attached to the elite. Not surprisingly the emphasis is on hierarchy, centralization of authority, and economic control by the elite. The elite often use their control of exchanges to maintain or enhance the existing inequality. Brumfiel and Earle (1987) demonstrated how elites may utilize exchange and specialization to increase their power relative to the commoners. Through time the commoners build greater indebtedness and can end up in a position of abject dependency. Thus, the archaeological data that consistently reflect such inequality are emphasized in the political-economy literature. Those data may indicate elite control over production, distribution, or consumption of particular items within a complex society.

D'Altroy and Earle (1985) identify two components of how archaic states finance themselves, that is, staple and wealth finance. Staple finance is the obligatory payment of subsistence goods to the state, and wealth finance is the special item used for payment. Had San Andrés been the only source of special items

in the valley, such a wealth finance system might have been applicable. But "obligatory" payment is inappropriate for the Zapotitan valley, and it appears the elite centers would have had to remain attractive to the commoners.

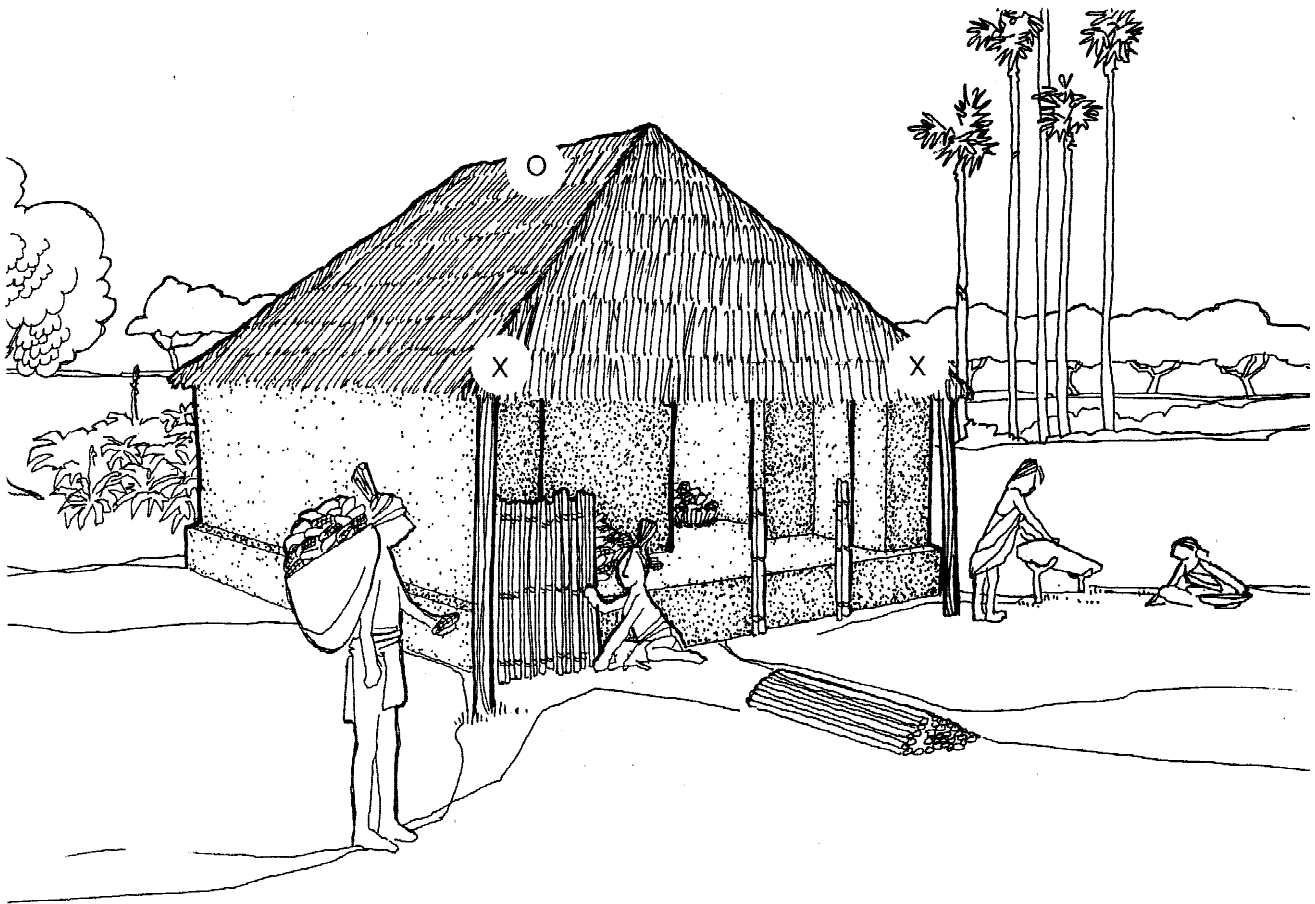
Many Mesoamerican scholars have investigated the ways in which elite-dominated economic systems have developed or maintained inequality (e.g., Aoyama 1994; Ball 1993; Mallory 1984; Santley 1994; Schortman and Urban 1994; Sheets 1983). Elites furthered their political ambitions by organizing craft production and exchange as well as trade between polities. Such intervention in trade, production, and/or distribution of particular goods allowed the elite to establish unequal relationships that resulted in a mixture of loyalty, indebtedness, and dependence of commoners to the elite (Clark and Blake 1994). In cases where all households need or want goods that could only be obtained from outside their own polity, elites could establish monopolistic control resulting in dependency upon the elite for such goods (Hirth 1992). Even in cases of extreme centralization, however, commoners find many ways of resisting elite domination, often by engaging in activities hidden from the elite (Scott 1985).

## EVIDENCE OF THE VERTICAL ECONOMY AT CEREN

Ceren was a village of perhaps a dozen to a score of households, with a core consisting of a plaza ringed by public buildings. Household 1 has been fully excavated, and Household 2 is largely excavated; only the kitchen has yet to be excavated. Household 3 is only known by part of a kitchen, and Household 4 is known only for a storehouse-workshop building and the special plants growing around it (Sheets 1992).

Although the sample of excavated households is very small, it is notable that every household investigated owned artifacts that must have been obtained from the elite-dominated vertical economy. Therefore, to at least some degree, the Ceren households were at the receiving or dependency end of that economy. Those artifacts include obsidian in the form of prismatic blades, macroblades and scrapers, jade axes, polychrome ceramics, seashells, presumably salt, and hematite pigment cylinders. All households had these items, and they were initially obtained from the elite in the primary or secondary centers. Or these items could have been exchanged horizontally between commoner households within the valley after they were obtained from a large center. The latter scenario does not lessen the idea of initial dependency upon the elite, but it does identify another domain of choice available to the individuals at the bottom of the socioeconomic order.

Each household had approximately six obsidian prismatic blades for everyday use stored in the thatch of their roofs at consistent locations above doorways and in the corners (Figure 2). Each household also stored a bundle of pristine blades at a higher location toward the peak of the thatch roof for future use. Each household also owned a macroblade or two, and a few scrapers, which generally were stored in thatch but occasionally in other localities (Figure 3). Within Ceren there is some evidence of resharpening of tools, especially scrapers and occasionally macroblades, but there is no clear evidence any of these implements were manufactured within the village. No polyhedral or prismatic blade cores have been found, and no core tablets or other evidence of core rejuvenation have been encountered. The obsidian probably came from the Ixtepeque source located approximately 80 km to the northwest, based on trace element analyses from sites near to Ceren and contemporary with it (Michel et al. 1983). Furthermore, the Ceren



**Figure 2.** Artistic reconstruction of Structure 4 just prior to the volcanic eruption. Structure 4 was a storage and workshop building. The usual locations of storage of obsidian prismatic blades that are in everyday use, in the underside of the thatch, are each marked with an X, and storage of a bundle of pristine blades not yet put into use is marked with an O.

obsidian visually matches the color and luster of obsidian from Ixtepeque. Because of the high skill needed for core-blade technology and the relatively low discard rate of obsidian implements, it would be surprising if households or anyone in commoner villages manufactured these tools locally.

Mesoamerican archaeologists often interpret obsidian core-blade technology as under elite control, with attached specialists in charge of manufacture (e.g. Aoyama 1994; Clark 1987; Sheets 1983; Spence 1984). The manufacture of obsidian macrocores, macroblades and scrapers, polyhedral cores, prismatic blades, and a range of secondary products is a technically demanding craft which most scholars agree was beyond the ad-hoc specialist abilities of most commoner households. Data from the Zapotitan survey (Black 1983; Sheets 1983) and the Ceren site reaffirm there was no core-blade manufacture in small villages. To obtain their needed obsidian implements, Cerenians presumably would take their surplus agrarian or craft production, or possibly labor, firewood or grass for thatching, to a nearby center for exchange.

Cream-paste polychrome serving vessels (Figure 4) are another class of long-distance-traded artifacts common in each household (Beaudry-Corbett 2001). Based on chemical analyses, most, if not all, the Copador, Gualpopa, and Chilanga polychrome ceramics that constituted the principal food and drink serving vessels in all households may have come from the Copan valley about 100 km

to the north. At least that is the closest chemical match to the Ceren cream paste, but there are large areas of the southeast periphery where chemical analyses have not been done, so it might turn out that the source for Ceren cream-paste ceramics is toward Copan but not in the Copan valley. The elite in San Andrés or one of the secondary regional centers negotiated the importation of ceramics into the Zapotitan valley, which made them available to Ceren households via marketplace exchange for surplus food or household craft production. These imported ceramics constituted one-sixth to one-third of the ceramic vessel inventory of each household.

The reason why so much effort was expended to obtain polychrome food and drink serving vessels from the Copan valley is important but unknown. Certainly the materials as well as the knowledge existed in the Zapotitan valley to make polychromes and avoid carrying heavy and fragile ceramics long distances. If cream paste, however, was deemed necessary, and thus kaolinitic clay required, the lack of kaolin in the Zapotitan valley necessitated obtaining it from farther north. Cream-paste pottery may have been made in the Copan area for local use but largely for export to areas such as the Zapotitan valley. While in the Zapotitan valley it may have carried the prestige of Copan and the Classic Maya. It is possible that Cerenians desired to maintain a connectedness with the Maya in and around Copan and found possessing pottery pro-





Figure 3. Obsidian implements of Household 2: 295-2-54, -134, -53, and -58. The top prismatic blade was stored in roof thatch over the porch of Structure 7 (the storehouse); it is missing the distal end. The second blade was stored in thatch just north of the doorway of Structure 7; it is complete with the exception of the platform and some tiny edge nicks from use. The third blade is also virtually complete except for some nicks from use; it was stored in the thatch roof of the domicile of the household, Structure 2. At bottom is a complete stemmed macroblade, with lateral retouch at the proximal end to assist in holding it for use. It was stored in the thatch of Structure 2, and some remnants of thatch are still adhering to the artifact. Scale is in centimeters.

duced in or near the Copan valley was a way to achieve this. Perhaps via their serving vessels they maintained connections with a distant prestigious place (for a discussion of perceived relationships between distance and supernatural potency and power, see Helms 1979).

Each household had at least one, and often a few, hematite (iron oxide) cylinders. The cylinders were made of powdered hematite held together by an unknown, but presumably organic, binder, and they were of a standardized size and shape. Households often kept mica near the hematite, perhaps as a “poor person’s” imitation of specular hematite pigment. Household 1 also had a miniature legged metate that was used for further grinding of the hematite, perhaps before using it as body paint. Each household also had some shell, presumably from the Pacific. Salt could also have been an elite-provided commodity, but we have no direct evidence of salt at the

site. Salt would have leached away shortly after the volcanic entombment.

Each household owned a jade ax, certainly the most “expensive” single artifact owned by a household. Surprisingly, no jade axes found at the Ceren site were hafted. They presumably came from the Sierra de las Minas jade source approximately 130 km north of Ceren, and they probably were manufactured near that source. The elite of San Andrés probably were responsible for their arrival in the Zapotitan valley, and the handicrafts, food, firewood, thatch, and other items that commoners brought to San Andrés or secondary centers to exchange for the axes must have supported the elite in their needs.

The jade source (Sierra de las Minas), obsidian source (Ixtepeque), and Copador pottery source (Copan valley) all lie north of Ceren, which suggests all three may have come into the Zapotitan



Figure 4. Copador cream-paste polychrome ceramics, top two from Household 1 and bottom two from Household 2: (a) recurved bowl with design perhaps derived from hieroglyphics [295-1-288]; (b) inside of open bowl with three birds [295-1-128]; (c) inside of open bowl with two birds and two symbols resembling the Maya number zero [295-2-338]; and (d) incurved bowl with faces on upper register and male monkeys on lower register [295-2-280].

valley along the same trade route, and perhaps even carried by the same porters. The elite in San Andrés likely organized all three, but probably in different ways. Obsidian came into San Andrés in macrocore form, and manufacture took place in that major center as well as in secondary centers and large villages (Sheets 1983)

but not in small villages. Jade axes probably were manufactured in the Motagua River valley near the source and entered the Zapotitan valley ready-made. Similarly, cream-paste polychromes were manufactured in or near the Copan valley and arrived at San Andrés ready for redistribution.

It is probable that the Zapotitan valley commoners living near San Andrés obtained the above elite-controlled items by marketplace exchange at that center. Marketplace exchanges in ancient societies share three characteristics: (1) households provision themselves independently from each other, (2) the marketplace is centralized, and (3) the exchanges are not dependent on social ranking (Hirth 1998).

Further, Hirth (1998:463) clarified what one should expect to see in the archaeological record after marketplace exchanges have occurred. He argued the household inventories that result from marketplace exchanges show “greater homogeneity . . . than would be produced by other types of exchange, [with] variation among domestic assemblages being largely the result of individual purchasing power.” Hirth’s prediction is accurate when applied to Ceren, as the items apparently made within the household, such as incensarios, show the greatest variation of any artifact class. Items apparently produced within the village, and entering households following horizontal exchanges, show almost as much variation. They include groundstone artifacts, gourds, figurines, and utilitarian ceramics. In contrast, the items such as obsidian tools, hematite cylinders, and jade axes obtained in vertical exchanges show high degrees of uniformity in manufacture and morphology. Significantly, they occur in similar frequencies in the known households, but that may mean different things in different artifact categories. That each household owned a jade ax for their woodworking needs is not surprising. An ax should last for many years. Obsidian blades are fragile, and I would expect oscillation in the obsidian inventory of a household through time, as blades were used, broken, and discarded and replaced by another bundle of blades from the marketplace.

In summary, there is evidence of a vertical economy functioning in the Zapotitan valley during the Classic period and affecting every commoner household. Each Ceren household had to mobilize craft or food or other material production (e.g., firewood or thatching) beyond what it needed for its own consumption to exchange for obsidian tools, approximately a fifth of their pottery vessels, and their jade ax. They also had to obtain their hematite pigment cylinders, seashells, presumably salt, and some other commodities from central places outside the village. Those exchanges presumably took place in the marketplace in San Andrés or in subsidiary marketplaces in secondary regional centers in the Zapotitan valley. It should be pointed out, however, there is no confirming direct evidence of marketplaces in the Zapotitan valley, but their existence seems probable.

The evidence for these elite-associated exchanges preserve well not only at Ceren but at sites in the valley that underwent the more usual abandonment and site formation processes. Thus, the opportunity rears its head to write a strong, one-sided article documenting the pervasive vertical economy affecting all households in the Ceren village and by extension all villages in the valley. In that article the commoner households could be perceived as being caught in the grips of subservience to, and dependence on, the elite in a powerfully centralized vertical economy. As stressed here, there may be much more to the household provisioning story.

#### SPECIALIZATION AT OTHER SOUTHERN MESOAMERICAN SITES

An important issue to consider is if the existence of occupational attached-specialists to elites in southern Mesoamerica is a reason-

able expectation during the Classic period. Is it reasonable to expect it in the Zapotitan valley?

Costin (1991:25) argued attached specialization is best identified at its locus, in workshops that often are physically adjacent to elite residences. Although excavations have been conducted at San Andrés for many seasons, beginning more than a half century ago, virtually nothing is published on the site. The only published data regarding craft specialization are the obsidian artifacts such as polyhedral core fragments found at larger centers during the Zapotitan valley survey (Black 1983; Sheets 1983). Linda Brown (personal communication 1999) analyzed obsidian artifacts excavated recently from San Andrés and notes 6 polyhedral core fragments and 14 core rejuvenation flakes both indicating local manufacture. She suspects at least one obsidian core-blade workshop is near or under the Hilasal factory a few hundred meters southeast of the site center, based on the large amounts of manufacturing debris found there. Unfortunately, looking for evidence of attached specialization San Andrés literature is not productive. The results of assumed attached specialist production at San Andrés, however, can and will be sought within the village household context in this article.

The ceramic evidence cited above indicates considerable commercial interchanges between the Zapotitan valley and the Copan area. Some occupational specialists have been documented at Copan by researchers last century, as noted by Fash (1991). Those specialists include scribes, shell workers, obsidian-tool manufacturers, ballplayers, and, of course, the elite rulers themselves (Fash 1991:159–162). Even the name of a scribe is known, Mac Chaanal, inscribed on a bench in his home. I suspect we could safely include traders, sculptors, ceramicists, architects, groundstone-tool makers, and other artisans as specialists at Copan. A few of these were full-time specialists, but Fash (1991) argued the excavated evidence indicates shell and obsidian workers were part-time specialists. This suggests part-time specialists produced many of the crafts available at the Copan marketplace, assuming it existed. The main point is that the range of full-time to part-time specialists associated with the elite at Copan indicates it is reasonable to consider a similar situation in the Zapotitan valley, albeit not quite as well developed.

#### THE HOUSEHOLD AND VILLAGE ECONOMIES: HOUSEHOLD CRAFT PRODUCTION AND PART-TIME SPECIALIZATION AT CEREN

##### The Household Economy: Intrahousehold Production, Use, and Consumption

Although the sample of Ceren households is small, we are beginning to understand what households routinely produced for their own use, without significant assistance from outside the co-residential group. Each household probably built and maintained their own architecture from locally available materials, as evidenced by the smoothing tools presumably used for finishing earthen architectural surfaces found in each household. Each household built at least three structures: (1) a domicile for sleeping, eating, and various daytime activities; (2) a smaller building for storing food and artifacts; and (3) a kitchen. The energetics invested in building such architecture are not great, as even the largest and most elaborate household building excavated so far, the domicile of Household 2 (Structure 2), would have taken an estimated 62 person-days (V. M. Murcia, personal communication 1995). Most household buildings would have taken a third to a half of that ef-



fort. Structure 4 (Figure 2) would have taken about 50 person-days (one person-day is one full day of work by one person). Earthen architecture of the wattle-and-daub sort requires the pole reinforcements to be replaced every decade or so, before they rot, but that would involve only a few person-days of work. Wood for poles for vertical reinforcement and sticks used for horizontal reinforcements grew locally, and some were planted and tended near Household 4. Obtaining suitable materials and the construction process involve some skill and knowledge, but do not require a specialist. Both obtaining materials and construction routinely are accomplished within traditional Salvadoran households today and in the recent past. The grass (*Trachypogon plumosus*) used for thatching must have grown locally in abundance but has been eliminated from the valley in recent centuries by Old World grass competition, grazing, and agriculture (Lentz et al. 1996). Clay deposits for construction as well as for ceramics are exposed along the banks of the river and its tributaries. Each household produced maize, beans, squash, chiles, and seed and root crops from adjacent gardens and fields, apparently providing most if not all of the food consumed by the household in an average year, and each household presumably farmed more distant plots in an infield-outfield agro-economic system as a way of buffering poor years (Sheets and Woodward 2001).

Each household had an *incensario* used for burning copal incense. The *incensarios* are notable for variation in form and decoration. Some are ladle vessels (Figure 5) while others are cup-shaped. All are “clunky” and have the appearance of having been made in the household by someone who did not make that kind of vessel often. Each ladle *incensario* has an animal head effigy at the juncture of the handle and the cup, with each household using the head of a different animal species. They could represent an animal spirit companion to the head of a household.

Each household stored and processed basic foods and liquids in almost identical manners, and consumed them with polychrome ceramic vessels as well as painted and unpainted gourds. Each household owned approximately 12 gourd vessels and over 70 ceramic vessels, of which four-fifths were produced locally, within or near the village. It appears at least a few utilitarian vessels were manufactured in Household 1, based on finding a lump of clay that petrographically matches utilitarian ceramics in the household (Southward and Kamilli 1983), and an andesite ceramic smoothing flake in the same craft area. According to the detailed ceramic analysis by Beaudry-Corbett (2001), the great majority of Ceren vessels came from potters residing within the community or nearby. The limited number of paste compositional groups, and the fact that those groups do not correlate with vessel morphology or decoration, indicate local potters did not specialize in certain kinds of vessels. So, for most ceramic vessels, especially the utilitarian vessels (Figure 6), Ceren residents avoided the vertical economy and obtained them locally. About one-fifth of the Household 1 vessels were obtained by vertical exchanges that may have involved elites outside the village. So, ceramics are the only class of artifacts used in all three economic systems: a few made within the household that remained there, the majority obtained by local horizontal exchanges, and about one-fifth of the ceramics obtained from the Copan area via exchanges mediated by elites.

Basic woodworking probably was done within the household using the jade ax that each household possessed and perhaps aided by scrapers or other tools. Woodworking tasks for which we have evidence included cutting and shaping of vertical and horizontal poles in walls and roofs and making of digging sticks. Wooden artifacts such as bowls were rare. Firewood was broken and snapped rather than cut. Each household presumably obtained their own firewood and pine kindling.



Figure 5. Ladle *Incensario* from Household 1 [295-I-53]. Note animal effigy head at juncture of handle and cup. Copal residue was identified from the cup. Each household may have made their own incense burner; that each household had their own *incensario* indicates religious practices at that level within the community.

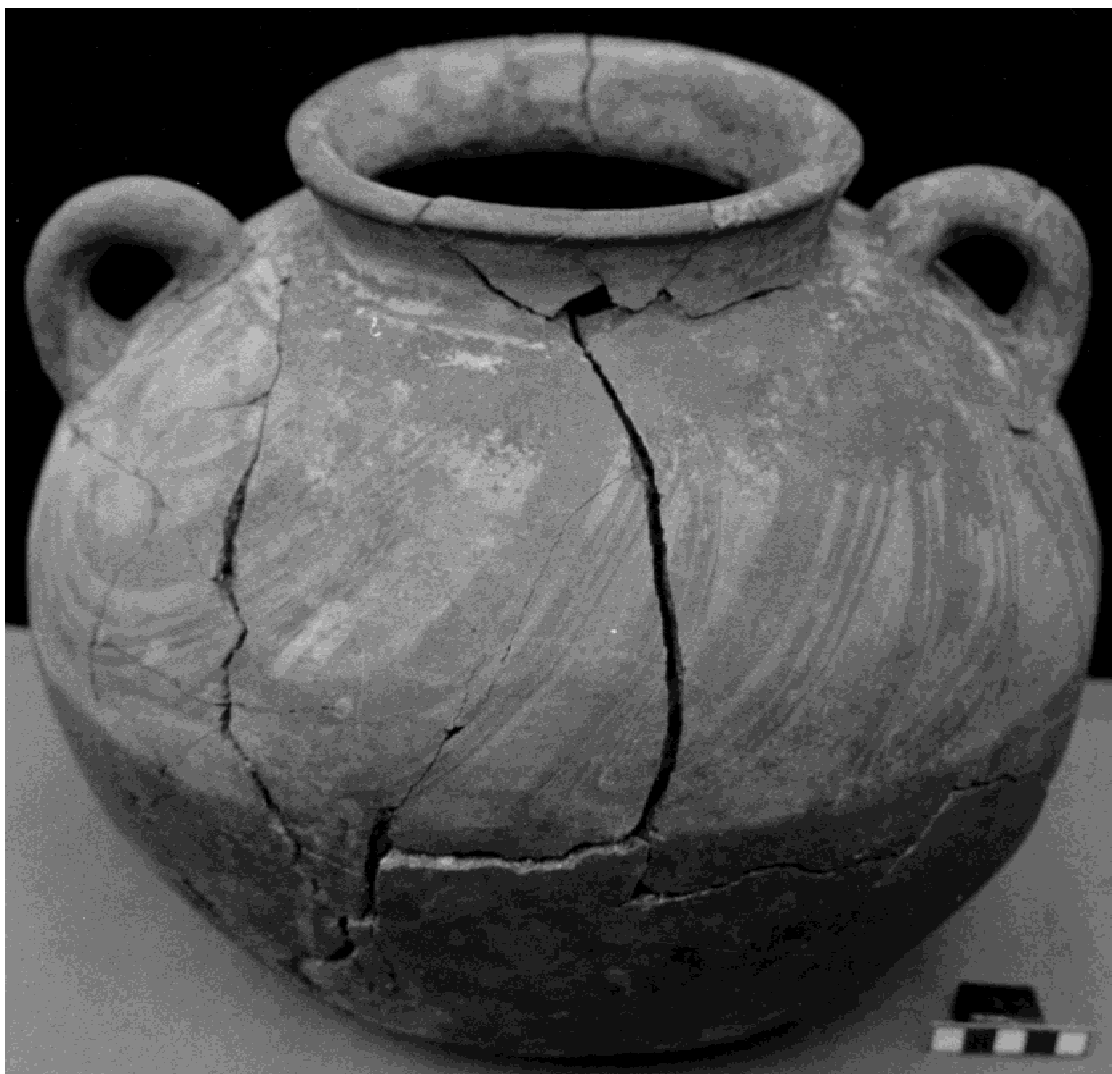


Figure 6. Scraped-slip utilitarian vessel from Household 1 (295-1-61). Decoration was by finger scraping of slip before it dried. Utilitarian pottery was made nearby, either in the village or close to it. Scale is in centimeters.

#### Household Specialization and Horizontal Exchanges in the Village Economy

*Household 1.* The nature and degree of craft specialization within Ceren households were greater than expected for a commoner village. Household 1 apparently manufactured groundstone implements in considerable numbers, supplying their internal needs as well as probably exchanging the surplus with other households in the village. The evidence for manufacture is the finding of the majority of hammerstones of the site within this household. As little chipped-stone manufacture was done within the site, the hammerstones evidently were used for pecking and shaping vesicular andesite groundstone implements, particularly metates, manos, and donut stones. Household 1 is conspicuous for the abundance of hammerstones and groundstone implements of all types, including a donut stone in the process of manufacture. What has not been found is the actual locus of manufacture, where we would expect to find

abundant andesitic particles and dust on the Classic-period surface. The workshop may have existed in the northern part of the household that was bulldozed away in 1976.

The well-used metate and mano that evidently served as the Household 1 principal maize grinding set was on the floor of the kitchen, adjacent to a vessel used for soaking maize kernels, and adjacent to the three-stone hearth. The other four metates, elevated to mid-thigh level on their forked sticks (*horquetas*), had only slight use-wear (Figure 7). Households in traditional communities in Central America today rarely have more than one mano-metate set, so we suspect Household 1 occasionally ground large amounts of maize for special occasions. I suggest the reason for this unusual maize grinding capacity is the presence of Structure 10, located only 5 m away, on the other side of the household patio. Structure 10 had only one mano-metate set in the building, but episodically probably required large amounts of ground maize to feed participants during feasting ceremonies. This is suggestive of



Figure 7. Metate and matching mano from Household 1 (295-1-84 and -104 respectively). Probably made in this household, the metate required only minimal shaping by pecking from its shape collected from the river nearby. The mano required extensive shaping. The metate was mounted in forked sticks, or *horquetas*, for grinding at just below waist level. Scale is in centimeters.

a service relationship between Household 1 and this community ceremonial facility, a behavioral rather than craft specialization. Household 1 also made large numbers of biconically perforated stones, many of which probably were traded outside the household (Figure 8).

All 10 of the spindle whorls found at the site to date were encountered in Household 1 or adjacent to it. They are the small variety that was used for cotton threadmaking. Household 1 women evidently made their own cotton thread and may also have exchanged some of that thread for items from other households.

It appears, therefore, Household 1 not only made and exchanged their surplus groundstone implements and cotton thread as means of obtaining other commodities; they also provided ground maize episodically to participants in religious ceremonies including community feasting at Structure 10. What they received in exchange for that service is not known, but it may have included reciprocal feasting obligations, prestige or a mild form of power in the community.

**Household 2.** In addition to the standard agrarian, household, craft, and agricultural activities of every household, it appears Household 2 made decorated gourds, based upon two lines of evidence. Five miniature ceramic vessels were stored in the bodega (storehouse), each containing a slightly varying hue of cinnabar pigment (HgS). The only use of cinnabar discovered at the site to

date is in painting the outside of gourds, so I suspect this is a paint set for that purpose. In addition, as Simmons (1996) noted, the use wear on obsidian blades from Household 2 matches Lewenstein's (1987) experimentally produced use-wear on obsidian tools used for cutting gourds. Further substantiation of gourd processing in the household is provided by the large bag of wet Ilopango volcanic ash stored in the household that could have served as an efficient abrasive in cleaning the inner surfaces of the gourds (Simmons 1996). Additional evidence to confirm gourd processing, not yet encountered, would include finding gourds in various stages of the production process, the actual workshop, and stored kaolin-ite used to coat gourds prior to painting. With the exception of the cinnabar paint set and a jade-bead necklace, Household 2 has the same exotic materials arriving into the household in close to the same frequencies as did Household 1.

It is possible that Household 2 was providing a service by maintaining the *temascal* (sweatbath) located immediately adjacent to the south, in the form of firewood and/or water to pour over the firebox to make steam. The smoothing stones in Household 2 may be evidence of architectural maintenance of the sweatbath. Services are notoriously difficult to document archaeologically, but it is possible at Ceren to make some suggestions on this obstreperous topic.

**Household 3.** Little of Household 3 is presently known, as only a small part of the kitchen (Structure 16) has been excavated, so production and possible specialization in the household remain unknown.

**Household 4.** Considerable evidence of craft production and specialization exists for Household 4. Some 70 agave plants were growing around Structure 4. Because a household only needs approximately 5 agave plants for their sustained fiber needs (V. M. Murcia, personal communication 1995), approximately 12 additional households could have been supplied from this garden. The depulping of the agave leaves evidently was done on the north side of Structure 4. Three pairs of sticks were found at that corner, and the clay floor around the northeast pole supporting the roof had gone through numerous wet-dry cycles, generating cracking, and resulting in organic staining and darkening. The traditional Salvadoran technique of agave depulping that is still practiced uses pairs of sticks attached to a post; the leaves are pulled through with one hand as the other hand squeezes the sticks, separating the fibers from the rest of the leaf. Thus, the considerable surplus of agave fiber presumably was used to exchange for items within the village as well as for the exotic lithics found in the building, including a hard greenstone ax and obsidian blades.

Additional evidence Household 4 may have focused on agrarian specialization is provided by the cotton seeds found in storage within the building in a ceramic vessel, and fragments of ground cotton seeds on the metate mounted on *horquetas* under the northwest corner of the roof. Also, it is possible special foods or sauces were grown and prepared in the household. A cacao tree was found growing southwest of Structure 4, and cacao seeds were stored in ceramic vessels in the building. One vessel had cacao seeds in the bottom, and chiles above, separated by a layer of cotton gauze. It is possible they would have been prepared into a kind of "mole" sauce. Both the cottonseed oil and the cacao may have been produced in amounts greater than that consumed within the co-residential group.



Figure 8. Biconically perforated stone disks, or donut stones, from Household 2 (295-2-86 and -34). Both had been stored on the *bajareque* walltop of the west wall and had stayed put through the early stages of the eruption. The one on the left fell and broke during the emplacement of volcanic ash in Unit 3, and the one on the right was pushed off the wall by the turbulence of Unit 4. The one on the right is decorated by eight vertical grooves, a decorative motif common with donut stones. Scale is in centimeters.

The craft specializations of Households 1 and 2 apparently were focused toward commodity production, but may also have involved perishable goods and services. In contrast, Household 4 was more agro-specialized toward overproduction and exchange of agave fiber, perhaps cacao and cotton fiber and/or seeds, and *bajareque* reinforcing poles.

#### ECONOMIC ASSESSMENT: THE VERTICAL SCALED AGAINST THE VILLAGE AND HOUSEHOLD ECONOMIES

There is significant evidence each Ceren household was dependent on the local elite for certain items. The items that were beyond the ability of the household to supply for themselves included polychrome ceramic serving vessels, obsidian implements, hematite cylinders, a jade ax, shell, and presumably salt. Because they came from distant sources and often involved highly skilled manufacture, probably by attached specialists under elite control, they would have required a trip to a central site to exchange for surplus food or commodity production.

On the other hand, the vast majority of the artifacts inside the structures of a household, the foodstuffs stored within, and the very buildings themselves were a product household effort. This meant direct production or manufacture within the household, or production of a surplus for egalitarian, horizontal exchanges with other households in the village or nearby.

Schortman and Nakamura (1991) noted archaeologists frequently assume when a more complex society interacts with a less complex one, the more complex dominates the less complex. They explore the complexities of intersocietal interaction as factions within them interact, and as the less complex retain much power and decision-making. I make a similar argument in this paper, but at the intrasocietal level, with commoners interacting with the elite within a society while retaining considerable economic independence and decision-making. In fact, commoners could have had an effect on exchange values, as they decided to which elite marketplace they will take their surplus production, and social and kin factors would have been a part of such decision making in many cases. Focusing on the vertical economy, from the point of view of the principal site in a region, tends to obscure the vitality of commoner life as they negotiate transactions with their peers and rulers.

#### SUMMARY AND CONCLUSIONS

This section moves from the more specific to the general by examining variability in household assemblages, incentives for specialization, and the economy viewed from the top of the pyramid along with the other village economic systems that functioned apart from the elite.

Hirth (1998) argued marketplace exchanges result in homogeneity in household assemblages. The Ceren data are supportive of that, as the categories of artifacts that were apparently obtained

from the marketplace do seem quite homogeneous. Those include obsidian artifacts, jade axes, some polychrome pottery, and hematite cylinders. The majority of household artifacts not made within the household, however, were obtained by exchanges that did not involve the marketplace, by horizontal exchanges between households in the village, or with households in nearby settlements. Those include utilitarian ceramics, incense burners, manos and metates, donut stones, and other basic artifacts. A most important observation from Ceren is that a fundamental source of heterogeneity among households is the part-time craft specialization of each household and the horizontal exchange network. The products of those part-time household specializations are not as homogeneous as the products of attached specialists in the elite centers. As households generate specific craft items in amounts greater than they need for their own consumption, and use that surplus in exchange, they are developing variability in the archaeological record. The goods obtained by households from intravillage exchanges would be expected to be more heterogeneous than those obtained from the marketplace, and that in fact appears to be an accurate expectation. Both categories are identifiable at Ceren: the more homogeneous marketplace goods, and the more heterogeneous household-produced items. Service relationships are another source of household variability, where a household is involved in supporting the activities of a religious association/feasting building and shamanism, or in a sweatbath, for instance. Yet another source of variation among households is in ritual, where each household maintained, and probably manufactured, morphologically distinct incensarios for their own particular use.

Is there an incentive for households to sacrifice independence and develop part-time craft specializations? Such an incentive would have to outweigh the potential disadvantages of households not being self-sufficient and having to rely on the products of a few other households. I believe part of the answer is in productive efficiency. Household part-time specialization as seen in the Ceren village must have been more efficient than independent households each producing the full range of local consumer goods. Instead of each household having to own the full range of implements to make the groundstone tools, gourds, agave-fiber twine and bags, special crops, ceramics, and other items, households engaged in part-time specializations. Thus the range of fabricating toolkits owned by particular households is greatly reduced, and production efficiency is also achieved by households developing greater familiarity with obtaining suitable raw materials and experience in their processing. Thus, a part-time craft specialization in a household represents an investment of tools, knowledge, and experience that can continue for many generations and allows other households to specialize in other aspects of needed commodities. The fact households would have to walk to other households for those exchanges is a negligible increase in time and energy, as Ceren households were close to each other (Figure 1). Furthermore, given the kin networks, information exchanges, social expectations, reciprocity, and other socially embedded aspects of the transfer of

goods, the increase in productive efficiency is only a small part of the advantages of the household exchange network. Household integration in the functioning village is fomented by part-time specialization and exchange.

It is easy for Mesoamerican archaeologists to assume political and economic centralization, as they view pre-Columbian societies from the perspective of their capitals. Viewed from the top of the pyramid, Mesoamerican societies do appear very hierarchical. Thus, interpretations based on models of political economy are easy to adopt and have understandably become quite popular. The arguments are compelling because they are based on data virtually all archaeologists agree upon: the elite controlled the long-distance trade in commodities such as obsidian, jade, fine polychrome ceramics, and pigments. It turns out that the items involved in the vertical economy tend to preserve well in most archaeological sites. Thus, a lesson from Ceren is that it is easy for archaeologists to overemphasize items resulting from the vertical economy. Certainly they were important, but they are greatly outnumbered by items produced within the household or by nearby households. The items produced by households with no connections to the elite are not as obvious in the archaeological record, but they can be detected and understood with extra effort by archaeologists.

Ceren households presumably built and maintained their own vernacular architecture. They evidently grew most to all of the food they needed in adjacent *milpas* and kitchen gardens. Households must have obtained the supplies needed for daily life, such as firewood, drinking water, and other basic items, with no outside assistance. Each household engaged in one or more part-time craft specializations, and each made more than it required for their intrahousehold purposes. The surplus could be exchanged within the village or in nearby villages for other goods. Or, that surplus could be exchanged in the marketplace for goods or commodities that came from significant distances, organized by the elite. In overview, the elite-connected items were needed and important to each household, but they are greatly outnumbered by the items produced within each household or obtained by each household by horizontal exchanges with other households free of elite control.

Ceren village economic life was a complex network involving households building their own architecture, growing most of their own food, and making many of the items they needed. Each household developed one or a few part-time craft or agrarian specializations and exchanged the surplus for the specialties made by other households in the village or nearby. Commoners traveled to elite centers to exchange their surplus production for the jade axes, obsidian tools, or polychrome ceramics which came from a distance and represented a vertical economy functioning in the middle of the Classic period in southernmost Mesoamerica. What emerges from this study is that even while participating in the vertical economy, commoners could exert choice, thus affecting how the elite commodities were exchanged. A commoner had power even while engaging the vertical economy.

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## RESUMEN

Si uno pudiera llevar a cabo un análisis de los artefactos de todas las viviendas de los sitios de la periferia de la región maya durante la época clásica, sería posible ver lo que parece el poder fuerte de la élite. Si el énfasis está en bienes de prestigio como, por ejemplo, implementos de obsidiana, cerámica policromada o hachas de jade, es obvio que los miembros de

cada vivienda tenían que hacer intercambios con la élite para conseguir estas clases de objetos, ya que la élite controlaba la distribución de tales objetos. En este sentido, es claro que la economía política era importante durante el clásico. Sin embargo, también hay que examinar la obtención de bienes de prestigio en cada vivienda para entender la economía total.



El sitio de Joya de Cerén, en el valle de Zapotitan de El Salvador, era una aldea de unos 100 habitantes del período clásico medio. Estuvo sepultado por unos cinco metros de ceniza volcánica de la erupción de Loma Caldera. Los habitantes se dieron a la fuga y no tuvieron tiempo de trasladar sus pertenencias. Casi todos los objetos que se encuentran en excavaciones del sitio se hallan en su lugar original de uso o almacenaje. La mayoría de los artefactos orgánicos están muy bien conservados. Por eso, tenemos la oportunidad de estudiar el inventario completo de los objetos dejados en cada vivienda. En este caso, vemos que los artefactos que procedieron del intercambio con la élite son importantes pero representan un proporción pequeña del inventario de cada vivienda.

Además de la economía política, hay otros dos sistemas económicos en que cada vivienda participaba. Uno es interno; es decir que cada vivienda construía sus propios edificios, tenía jardines y milpas suficientes para proveerse de comida y producía varios artefactos para su propio uso.

El otro sistema económico no tuvo nada que ver con la élite. Este sistema se trata del intercambio dentro del sitio. Cada vivienda excavada producía objetos de su especialización y los hizo en cantidades excesivos a lo que se

requería para su propio uso. Se supone que el exceso se usaba para el intercambio local. La Vivienda 1 especializó en la producción de artefactos de piedra pulida como metates, manos y piedras perforadas (morteros). La Vivienda 2 se dedicaba a la producción de las calabazas pintadas. No sabemos en que especializó la Vivienda 3 ya que sólo hemos excavado una parte de su cocina. La Vivienda 4 se dedicaba al cultivo de agave de cantidades grandes para hacer pita. Producían agave suficiente para una docena de viviendas. Aparentemente, se trata de un sistema de intercambio horizontal, fuera del alcance de la élite.

Los habitantes de Joya de Cerén y otras aldeas del valle pudieron decidir si querían ir a San Andrés u otro centro élite para adquirir ciertos objetos. También tenían la opción de adquirir objetos y productos de otras aldeas en la región y pensamos que de esta manera los campesinos tenían el poder de afectar los precios de los objetos. Una conclusión principal de este trabajo es que los campesinos podían tomar decisiones y por medio de sus decisiones, afectaban la economía regional del valle de Zapotitan en tiempos precolombinos.

## ACKNOWLEDGMENTS

The late Victor Manuel Murcia, my close Salvadoran friend and colleague, had been invaluable in sharing his knowledge regarding traditional Central American households, particularly those utilizing earthen floors, earthen architecture, and agave fibers for connecting reinforcing elements. His wisdom regarding earthen architecture in Central America, his warm personality, and his faith in the importance of all people are greatly missed. I wish to thank my colleagues at Colorado University at Boulder who cri-

tiqued an early version of this paper: Art Joyce, Frank Eddy, Cathy Cameron, Steve Lekson, and Linda Cordell. Marilyn Beaudry-Corbett was very helpful with some ceramic details. Brian McKee gave a draft a careful edit. The peer reviewers for this journal, Ken Hirth, Ed Schortman, and John Clark, were particularly helpful in pointing out weaknesses in the penultimate draft. All remaining errors of commission or omission, or other shortcomings, are my responsibility.

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