
5. Chronology and Cultural Phases at Chalcatzingo

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The Chalcatzingo chronology was derived from an intensive analysis of ceramic stratigraphy and placed within a framework of absolute dates provided by fifty-seven radiocarbon assays. We did not attempt to define phases or chronological sequences by comparisons with established sequences elsewhere. Instead, the chronology and phases which follow are based primarily upon the data from Chalcatzingo.

None of the units excavated at Chalcatzingo provided a long stratigraphic section encompassing the total Formative period occupation span of the site. The majority of the units had stratigraphy which covered only a maximum of three subphases (as they were later to be defined). Some had only one or two natural levels corresponding to a single subphase. But, because many columns had overlapping cultural stratigraphy, it was possible to link them together for a continuous stratigraphic sequence.

The ceramic chronology and phases described below are based on a restricted and relatively "pure" sample from thirty-eight excavation units. Each of the thirty-eight units selected was part of the overall intensive excavation of individual site areas and presents the best stratigraphy for its area. These units are special ones in terms of our sequence and will be designated as Selected Stratigraphic Units (SSU) in the text. They are described and illustrated in Appendix B.

Within the thirty-eight Selected Stratigraphic Units there were 149 stratigraphic levels. In order for a level to be included in the analysis, its depositional conditions had to qualify as undisturbed. All plow zones, erosion zones, areas of fill, and areas with obvious or even possible disturbance were eliminated. Levels containing more than 25 percent eroded sherds were considered disturbed and were rejected. Twenty-five percent was used as a cutoff because it was found

that the lowest percentage of eroded materials in plow zone levels coincided with that figure.

The 105 levels that remained after the disturbed ones were weeded out contained nearly 120,000 sherds and provided the basic data for the phasing and subphasing discussed here. For descriptions of the stratigraphy of the selected units, together with excavation profiles, see Appendix B.

Although we have attempted to minimize the effects of disturbance in analyzing the stratigraphic record, it is always difficult to deal with "floating" artifacts (artifacts from earlier levels which, through various processes, turn up in later levels). Such "floating" may be a major cause of the difficulty we have had in determining the upper temporal limits of some ceramic types. The time of appearance of a new ceramic form or type is seldom questionable, but due to "floating" it is often difficult to ascertain when the form or type ceased to be utilized.

Radiocarbon dates from the Selected Stratigraphic Units and also from a wide range of contexts were used to provide a chronological framework for the phases. All of the radiocarbon samples are described in Table 5.1, and most dates are displayed in Figure 5.1. At no time were the C-14 dates used to place a particular level or feature within a phase or subphase.

Of the fifty-seven radiocarbon assays submitted by the project, forty-three were from Formative period levels and/or features. As is probably to be expected, some of the dates appear to be erroneous and were eliminated from consideration.

At this time there is a lack of consistency in the way in which archaeologists handle and publish corrected radiocarbon dates. Thus, it is frequently difficult to compare cultural chronologies among sites or areas. In this text, we have de-

cided to use the more accurate radiocarbon 5730 half-life. Dates discussed were converted to years BC or AD by subtraction from AD 1950. No other correction factors have been applied to the dates.

Figure 5.2 provides a general correlation of the phase sequences from Chalcatzingo and major Mesoamerican areas discussed in this book.

AMATE PHASE, 1500–1100 BC

This phase is represented by the earliest cultural materials found at Chalcatzingo. Its time span is estimated by three radiocarbon assays (Fig. 5.1), two of which come from Selected Stratigraphic Units. All are problematical.

No carbon sample was found from an Early Amate subphase context. Date N-1698, 1660 ± 90 BC, is the oldest date from Chalcatzingo and derives from SSU 28, Level VII-C. Although the associated cultural materials, principally ceramics, date to the Late Amate subphase, the sample may represent an Early Amate occupation owing to the fact that its level is not a secure primary deposition. Level VII-C represents a pre-PC Structure 4 mound occupation; however, this level occurs only in the bottom of a 3×1 m test unit perforating the mound. In this instance, the character of the deposit is difficult to determine.

Date N-1413, 1470 ± 80 BC, is associated with Amate phase ceramics which did not contain sufficient diagnostic attributes to assist in delineation of the subphase. Date N-1955 derives from SSU 3, Level V, which contains definite Late Amate subphase artifacts. On the basis of the associated cultural materials, the date appears to be too recent.

The dispersed nature of the Amate phase dates does not lend itself to a secure temporal bracketing of the phase. Principally on the basis of N-1413, the

lower limit of the Amate phase was placed at 1500 BC. The upper limit, 1100 BC, is arbitrary, since no reliable dates derive from Early Barranca subphase contexts.

Early Amate Subphase, 1500–1250 BC

The Early Amate subphase represents the earliest cultural material found at Chalcatzingo and includes the major ceramic types Cuautla Brown, Cuautla Red-Slipped, Atoyac Unslipped Polished III, Arboleda Coarse, and Tadeo Coarse. These types are found at Amate phase sites within the Amatzinac Valley. At this time, no externally introduced pottery is clearly evident in the assemblage.

Late Amate Subphase, 1250–1100 BC

The five major ceramic types of the Early Amate subphase continue into this subphase, which is characterized by the appearance of two additional ceramic types, Del Prado Pink and Carved Grey. Del Prado Pink is a minor type at the site, and petrographic analysis shows it to be nonlocal. Carved Grey ceramics share the carved exterior and the iconography of Calzadas Carved of the San Lorenzo phase at San Lorenzo, but at the same time according to petrographic study (Table 13.1) represent an undoubtedly locally manufactured ceramic type.

Kaolin ceramics first appear in this subphase, but in very small amounts. A few sherds also occur in Barranca and Cantera phase levels. The quantity is too minor to ascertain their true temporal range. Whether this pottery is manufactured from the local kaolin clay or is imported has not yet been determined, but the very small quantity of sherds recovered may imply that this is a nonlocal, imported ceramic type. A few sherds of Amatzinac White ceramics, a popular type beginning with the Barranca phase, also have been found in levels from this phase.

Although Grove (1974b:114) has pointed out that *tecomates* (see glossary at end of Chapter 13 for definition of this and other forms) never occur in significant quantities in Formative period central Mexican assemblages, some are present in this subphase in Cuautla Brown, Cuautla Red-Slipped, and Arboleda Coarse ceramics. In addition, Cuautla Red-Slipped bowls often have an incised or true grater-bottom interior. Vessel supports from this time period include solid round supports and elongated spider-leg supports.

A minor quantity of bottle sherds are found in this subphase. However, only one example of an Exotic Bottle style vessel was recovered by our excavations (Fig. 4.13).

The lack of such Exotic Bottles, which are so abundant in Early Formative burials in central Morelos (Grove 1970b, 1974a, 1974b) and the Valley of Mexico (Piña Chan 1958; Porter 1953), could be inferred to mean that Chalcatzingo is peripheral to these regions. This may or may not be the case, but is not demonstrated by our data, for no Amate phase burials were recovered by our excavations, and our sample is therefore not comparable. Exotic Bottle sherds are not common in nonburial contexts at any central Mexican Early Formative site.

BARRANCA PHASE, 1100–700 BC

The Barranca phase C-14 dates from Chalcatzingo, including those from Selected Stratigraphic Units, run from 1170 to 670 BC in terms of absolute dates and from 1305 to 570 BC with the corresponding one-sigma ranges. Taking into account this complete array, the dating of the Barranca phase was placed at 1100–700 BC. The internal dating of the subphases has been arbitrarily determined and the subphases fairly evenly spaced within that total span.

Only one date, N-1704, is available from an Early Barranca subphase context in a Selected Stratigraphic Unit. It appears to be much too recent in terms of its corresponding cultural context.

Three dates are available from Middle Barranca contexts in Selected Stratigraphic Units: N-1710, N-1711, N-1702. It is important to note that both N-1710 and N-1702 come from an intrusive pit feature; however, N-1710, 1070 ± 85 BC, the earlier date, comes from the upper level, and N-1702, 670 ± 100 BC, comes from the lower level. The age discrepancy is four hundred years.

Six dates come from Late Barranca subphase contexts in Selected Stratigraphic Units: N-1416, N-1409, N-1407, N-1412, N-1705, and N-1954. The absolute values of the dates range from 1170 to 770 BC.

If, as has been suggested elsewhere (Chapter 6), the majority of terrace construction at Chalcatzingo occurred during the Barranca phase, disturbances caused by this activity could account for the inconsistency of the Barranca dates. This also casts suspicion on the validity

of the stratigraphy for the internal Barranca subphasing.

Early Barranca Subphase, 1100–1000 BC

The criteria for the separation of Late Amate and Early Barranca subphases is based on several significant changes in ceramic types and forms. These changes are most apparent in decorated ceramics. While Cuautla Brown and Cuautla Red-Slipped ceramics continue, the new types, Tenango Brown, Amatzinac White, White-Rimmed Black, Laca, and Peralta Orange ceramics become important for the first time. All five types appear to be locally manufactured. Peralta Orange ceramics, present in significant quantities, are essentially restricted to the Amatzinac Valley and for that reason represent an important type. This type continues into the Cantera phase, at which time its forms are considered to be good temporal markers. A sixth type, Pavón Fine Grey, appears to be a nonlocal ware (see Chapter 13).

Among the form changes, slightly rounded bowl bottoms begin during this subphase. These are contemporaneous with flat-bottomed bowls, which continue in popularity. The appearance of rounded bowl bottoms begins a Barranca phase trend toward deeper bases as the phase progresses. The true grater-bottom vessels found in Amate phase Cuautla Red-Slipped ceramics are now displaced by the purely decorative pseudo-graters of Amatzinac White, Laca, and White-Rimmed Black vessels.

Although spider-leg and round solid vessel supports were present during the Amate phase, supports of any type are nonexistent in the Barranca phase assemblage.

Ovate bowls (RB-16) and collared ollas (RO-1) (see Appendix D for explanation of these form abbreviations) make their appearance at this time. The peculiar convex neck of the collared olla may indicate a function for these vessels distinct from that of the normal flared (concave) neck olla. *Tecomates* decline in quantity.

Various plate-like forms also begin in the Early Barranca subphase. These are flat to slightly concave in form with slipped and polished interiors and roughened exteriors. They appear similar to *comales* used in later periods for tortilla preparation.

Table 5.1. Radiocarbon Dates

Lab No.	BP 5568 Years	BP 5730 Years	Corrected Date	Provenience and Comments
N-1402	2620±80	2690±85	740±85 BC	PC Str. 1, 112–114S/0–2E, 57 cm. SSU 35–36, Level II. Late Cantera subphase.
N-1403	2480±80	2550±85	600±85 BC	PC Str. 1, 112–114S/2–4E, 20–40 cm. Adjacent to SSU 35–36, level correlates to I. Late Cantera subphase.
N-1404	2580±65	2660±70	710±70 BC	PC Str. 1, 114–116S/0–2E, 40–60 cm. SSU 35–36, Level II. Late Cantera subphase.
N-1405	2700±85	2780±100	830±100 BC	PC Str. 1, 114–116S/2–4E, 40–60 cm. Adjacent to SSU 35–36, level correlates to II. Late Cantera subphase.
N-1406	2890±100	2980±105	1030±105 BC	PC Str. 1, 118–120S/0–2E, 90 cm. Early Cantera subphase.
N-1407	2690±80	3040±85	1090±85 BC	PC transect trench, 87–90S/0–1E, 360–380 cm. SSU 31, Level VII. Late Barranca subphase.
N-1408	2800±80	2880±85	930±85 BC	PC transect trench, 80–84S/0–1E, 200–220 cm. Barranca phase.
N-1409	3010±95	3090±100	1140±100 BC	PC transect trench, 71–75S/0–1E, 370–390 cm. SSU 30, Level VII. Late Barranca to Early Cantera subphase.
N-1410	2620±90	2690±90	740±90 BC	PC transect trench, 60–63.5S/0–1E, 233 cm. Associated with PC Str. 5. Barranca phase.
N-1411	2840±95	2920±100	970±100 BC	PC Str. 3, 110–112S/16–18E, 60–80 cm. SSU 37. Late Cantera subphase.
N-1412	2910±130	2990±135	1040±135 BC	PC Str. 3, 110–112S/16–18E, 190–210 cm. SSU 37, Level IV. Late Barranca subphase.
N-1413	3320±80	3420±80	1470±80 BC	PC Str. 4, 14–17.5S/39–40E, 200–220 cm. Amate phase.
N-1414	1390±75	1440±80	AD 510±80	T-9A Str. 1, 0–2S/0–2E, 20–40 cm. From possible Classic period intrusion.
N-1415	1350±75	1390±80	AD 560±80	T-9A Str. 1, 4–6S/0–2W, 31–40 cm, Zone B. From probable Classic period intrusion.
N-1416	3030±130	3120±135	1170±135 BC	T-9A Str. 1, 8–10S/0–2W, 140–160 cm. SSU 4, Level IV. Late Barranca subphase.
N-1417	2720±80	2800±85	850±85 BC	T-9A Str. 1, 8–10S/2–4W, 60–80 cm. Adjacent to SSU 4. Late Cantera subphase.
N-1694	1230±75	1260±80	AD 690±80	T-4 Fea. 1, Classic period lime kiln, 295–320 cm, interior of feature.
N-1695	1760±100	1810±100	AD 140±100	T-4, Square 162A, 220 cm. Associated with Middle Formative stone walls. Date is too recent.
N-1696	2690±95	2760±100	810±100 BC	T-11 Str. 2, 4–6S/2–5W, 50 cm. Level correlates to Level I of SSU 5. Late Cantera subphase.
N-1697	2460±80	2530±85	580±85 BC	T-11 Fea. 1, section B. Intrusive pit feature.
N-1698	3510±85	3610±90	1660±90 BC	PC Str. 4, 0–3N/0–1E, 555 cm. SSU 28, Level VII. Late Amate subphase.
N-1699	1260±75	1300±75	AD 650±75	Cave 1, 3–4S/2–3E, 62 cm. Classic level.
N-1700	2590±185	2660±190	710±190 BC	T-25, 1–3S/2–3W, Level IV, interior of altar. Cantera phase.
N-1701	2490±95	2560±100	610±100 BC	T-25, 1–3S/6–7W, Level V. From the contact level of altar base and earlier ground surface. Cantera phase.
N-1702	2540±95	2620±100	670±100 BC	T-25, 0–1S/0–1W. SSU 16–19, <i>pozo</i> . Middle Barranca subphase. Date is too recent.
N-1703	2460±95	2530±100	580±100 BC	T-25, 0–1S/8–9W, Level VI. Sample in association with two child burials (nos. 98, 99). Adjacent to SSU 16–19. Cantera phase.
N-1704	2110±94	2170±95	220±95 BC	PC Str. 1, 114–116S/0–2E, 340 cm. SSU 35–36, Level XIII. Early Barranca subphase context. Date is too recent.
N-1705	2690±95	2770±100	820±100 BC	PC Str. 1, 114–116S/0–2E, 240 cm. SSU 35–36, Level VIII. Late Barranca subphase.
N-1706	2810±80	2890±85	940±85 BC	PC Str. 2, 134S/32W, 90 cm, Room 4. Cantera phase.
N-1707	2500±80	2570±85	620±85 BC	PC Str. 2, 132S/28W, 80 cm, Room 2. Cantera phase.
N-1708	2510±80	2580±85	630±85 BC	PC Str. 2, 130S/38W, 35 cm, floor. Cantera phase.
N-1709	2510±105	2580±110	630±110 BC	T-11 Str. 1, 1–2N/0–2E, 110–130 cm. SSU 5, Level IV. Early Cantera subphase.
N-1710	2930±85	3020±85	1070±85 BC	T-25, 0–1S/0–1W. SSU 16–19, Level X. From upper level of <i>pozo</i> . Middle Barranca subphase. Date seems too early.
N-1711	2640±85	2720±85	770±85 BC	T-25, 0–1N/0–1W, Level VII. Associated with Burial 96. Middle Barranca subphase.
N-1712	2820±85	2900±85	950±85 BC	T-29 Str. 1, 4–6S/18.5–20W, 120 cm. Early Cantera subphase.
N-1713	2710±80	2790±85	840±85 BC	PC Str. 1, 122–124S/2–4E, 75 cm. Early Cantera subphase.
N-1946	2770±75	2850±85	900±85 BC	PC Str. 4, 24.1S/4.7W, 40 cm. Associated with stone line. Late Cantera subphase. Date seems too early.

Table 5.1 (continued)

Lab No	BP 5568 Years	BP 5730 Years	Corrected Date	Provenience and Comments
N-1947	2870±90	2950±90	1000±90 BC	T-6 Str. 1, 11–12S/1–2E, SSU 2, Level IV. Sample is from an apparently undisturbed level, predating the stone-faced platform and Mon. 27. Date seems too recent in terms of cultural context. Late Amate subphase.
N-1948	2180±85	2240±90	290±90 BC	T-6 Str. 2, 16–17S/0–2W, Level IV. From fill of structure covering Str. 1 and Mon. 27.
N-1949	1020±65	1050±65	AD 900±65	T-6 Str. 1, 19–21S/2–3E, Level III. From a Classic period intrusion.
N-1950	2700±85	2780±85	830±85 BC	T-21, 25–27N/72–73W, Fea. 1. SSU 8, Level IV. Late Cantera subphase.
N-1951	2490±70	2560±70	610±70 BC	T-23 Str. 1b, Fea. 2, firepit. Late Cantera subphase.
N-1952	2500±80	2570±85	620±85 BC	T-23 Str. 1b, Fea. 6, firepit. Late Cantera subphase.
N-1953	2530±90	2600±95	650±95 BC	T-37. Sample associated with Burial 136. Cantera phase.
N-1954	2640±95	2720±95	770±95 BC	N-2, 3–6N/0–1E, 164–174 cm. SSU 1, Level III. Late Barranca subphase. Sample from context sealed by floor. Very reliable date.
N-1955	2930±70	3020±75	1070±75 BC	N-7, 11–13N/0–1W, 240–250 cm. SSU 3, Level V. Late Amate subphase. Date seems too recent.
N-1956	2530±65	2600±70	650±70 BC	Telixtac. Cantera phase.
N-2271	920±70	954±75	AD 996±75	Cave 1, 3–4S/1–1.8W, 0–11 cm. Postclassic.
N-2272	1230±80	1260±85	AD 690±85	Cave 1, combined sample from Classic period levels.
N-2273	860±75	885±80	AD 1065±80	Cave 2, Level D. Classic period. Date seems too recent.
N-2274	2570±180	2640±185	690±185 BC	Cave 4, 1–2N/0–1W, 100–115 cm. Carbon sample scraped from sherds. Dates the upper portion of the Middle Formative deposit.
N-2275	3340±160	3440±165	1490±165 BC	Cave 4, combined sample, 130–149 cm. Dates the lower portion of the Formative deposit.
N-2276	1020±75	1050±75	AD 900±75	Cave 8, 11–12N/0–1W, 85–92 cm. Sample dates the upper levels of cave occupation. Postclassic.
N-2277	2720±65	2800±65	850±65 BC	Cave 8, 9–10N/1–2E, 111–123 cm. Possibly Cantera phase.
N-2278	2570±70	2640±70	690±70 BC	Cave 22, Test 1, 83–88 cm. Classic period. Date in error.
ISGS-508	700±75	720±75	AD 1230±75	Tetla-11, 6–7S/1–2W, house floor. Middle Postclassic.
ISGS-509	595±75	610±75	AD 1340±75	Tetla-11, 5–6S/0–2E, Level IV. Intrusive oven, Middle Postclassic.

Middle Barranca Subphase, 1000–850 BC

The types and forms of the Middle Barranca subphase are nearly identical to those of the previous subphase. The distinction between these subphases occurs primarily in the decorative motifs on Amatzinac White ceramics, since the plastic decoration on this type changes rapidly (see Chapter 13).

Late Barranca Subphase, 850–700 BC

The major changes which define the Late Barranca subphase are the increase in Peralta Orange ceramics and the increased variety of forms for both Tenango Brown and Peralta Orange types. White-rimmed Black, Laca, and Pavón Fine Grey ceramics continue as before. A new type, Carrales Coarse Grey, begins to appear in significant quantities during this subphase.

There is a greater variety of forms in Amatzinac White, including the appearance of spouted trays (RD-9), everted rim bowls (RB-20, 21, 22), and flower

pot bowls (RB-62). The Late Barranca subphase is the last subphase in which pseudo-grater bottoms are abundant. Pseudo-graters in all ceramic types decrease in popularity in the subsequent subphases.

CANTERA PHASE, 700–500 BC

The dating of the Cantera phase is based on twenty-four radiocarbon assays, four of which come from Selected Stratigraphic Units.

Only one date is available from an Early Cantera subphase context in a Selected Stratigraphic Unit, N-1709, dating to 630 ± 110 BC.

Three dates, N-1950, N-1402, and N-1404, derive from Late Cantera subphase contexts in Selected Stratigraphic Units. The absolute values of these dates fall slightly outside the established dates for the phase. N-1402 and N-1404 come from an area of Cantera phase burials; however, the carbon samples were not in direct association with those burials but

rather are from the surrounding matrix. This indicates the possibility that the carbon could be dating an earlier, undetermined occupation. N-1950 comes from a refuse feature whose artifacts are Late Cantera subphase, but, again, whether the carbon was used at the same time as the artifacts is indeterminable.

The total array of Cantera phase dates spans from 1030 ± 105 to 580 ± 100 BC. Importantly, eleven of the twenty-four dates cluster closely in the 700–500 BC range, whereas the remaining dates are spread from 1030 to 710 BC.

Five dates can be considered extremely reliable for the dating of the Cantera phase because of their association with activity features of limited temporal duration: (1) N-1703, 580 ± 100 BC, is associated with two Cantera phase burials; (2) N-1707, 620 ± 85 BC, is associated with a residential structure floor and ceramics dating to the Cantera phase; (3) N-1708, 630 ± 85 BC, comes from the same structure floor as N-1707; (4) N-1951, 610 ± 70 BC, derives from a fire-

pit within a Cantera phase residential structure; and (5) N-1952, 620 ± 85 BC, derives from another firepit within the same Cantera phase residential structure as N-1951. As can be easily noted, these five dates closely cluster at approximately 600 BC. By taking into account the one-sigma ranges, the upper temporal limit of the Cantera phase can be placed at 500 BC.

Early Cantera Subphase, 700–600 BC

During this subphase Laca and White-Rimmed Black ceramics diminish in frequency, while Peralta Orange surpasses Tenango Brown in popularity. Carrales Coarse Grey ceramics are abundant, but this type has little elaborate decoration until the Late Cantera subphase. There is one new type, Xochitengo Polychrome.

Amatzinac White acquires a series of new forms and design motifs beginning in this subphase which make it very distinct: double-loop handle censers (RB-101), small shallow bowls (RB-70), and highly outcurving wall bowls (RB-90) with wide *raspada* interior rim incising. All of these new forms are found in both burial and midden contexts.

After a long period of minimal change in olla forms, Early Cantera subphase ollas in Peralta Orange and Tenango Brown evidence new forms with rolled lips and short necks. Plain handles on ollas are present during this time. Peralta Orange composite silhouette bowls (RB-45) with shoulder punctuation first occur in this subphase's assemblage.

Other noteworthy forms are bowls with basal ridges (RB-85) in Carrales Coarse Grey, and three-prong braziers. Although these braziers are also found in Barranca phase contexts, they appear in greatest quantity beginning with the Early Cantera subphase.

Late Cantera Subphase, 600–500 BC

Three new pottery types occur in this subphase. Two of these, Amayuca Ruddy and Mingo Fine Brown, first appeared in minute quantities at the end of the Early Cantera subphase. The third type, Santa Clara Orange, is restricted to the Late Cantera subphase.

Pavón Fine Grey reaches its maximum frequency during this time. Carrales Coarse Grey, possibly a local imitation of Pavón Fine Grey, likewise reaches its peak of frequency. Xochitengo Polychromes continue, and except for the addition of the twisted handle on Peralta Orange ollas, Tenango Brown and

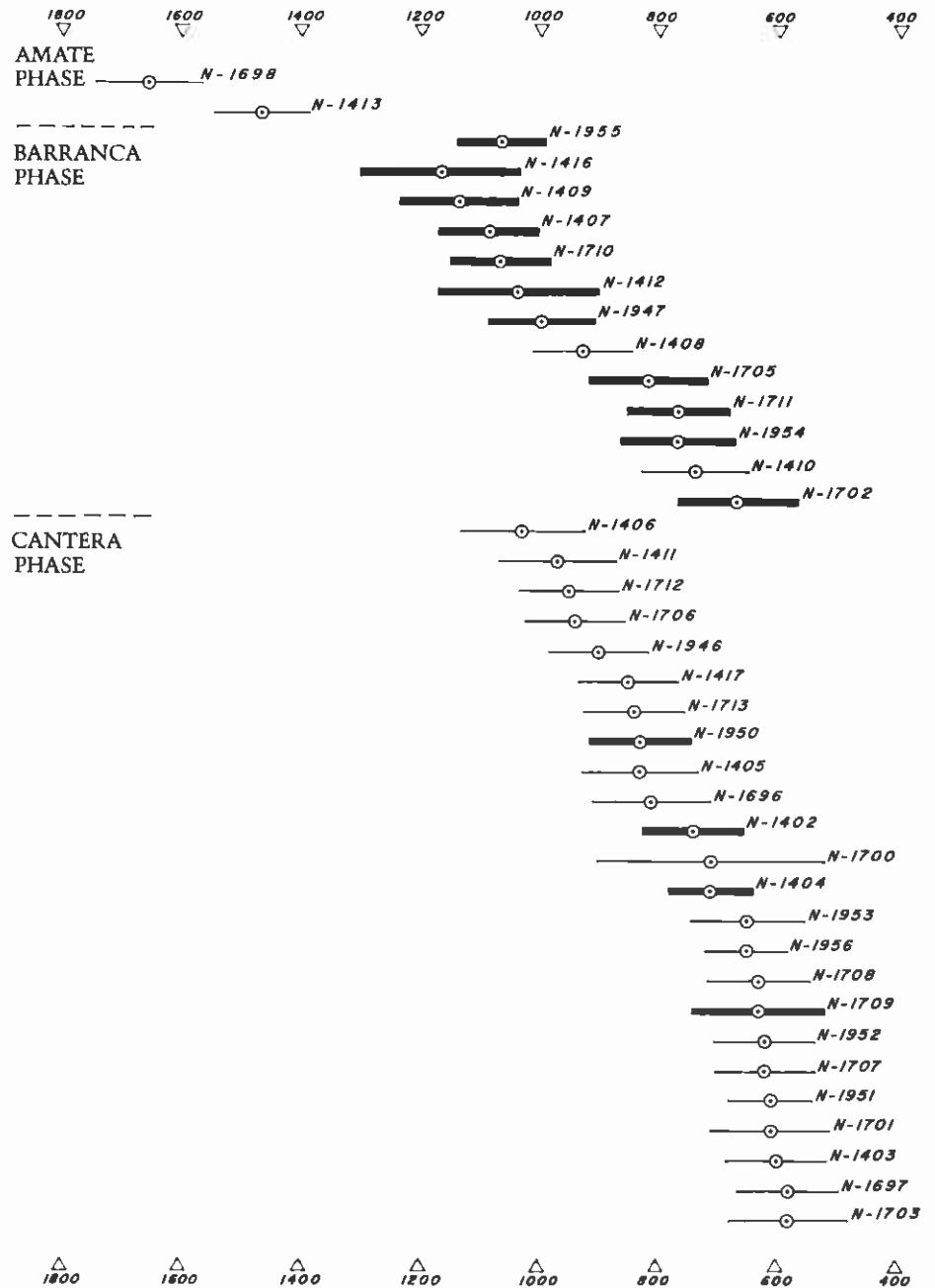


Figure 5.1. Radiocarbon dates. Wide lines are SSU units (Appendix B); line length equals the 1 Sigma variation range. Highly aberrant samples not included in this chart.

Peralta Orange ceramics remain essentially unchanged. However, Laca and White-Rimmed Black types have virtually disappeared.

Cantaritos and shallow miniature bowls (RB-67) are Late Cantera subphase form markers and are common burial furniture, in addition to being found in midden and household contexts. The predominant form for Amatzinac White is the highly outcurving wall bowl (RB-90) with wide *raspada* interior incising, but there is no innovation in Amatzinac White from the Early Cantera subphase.

LATE AND TERMINAL FORMATIVE PERIODS, 500–150 BC, 150 BC–AD 150

Our archaeological sample from the time period following the Cantera phase is small and certainly insufficient to allowing any phasing. The small artifact sample from the Late and Terminal Formative is highly differentiated. It includes sherds recovered during the regional survey, figurine heads from survey and from excavations at Chalcatzingo, and sixteen vessels which were grave furniture for burials from this time period. Two radiocarbon assays yielded dates placing them within the Late and Terminal Formative (N-1695, AD 140 \pm 100, and N-1704, 220 \pm 95 BC), but neither has a secure association with unmixed Late or Terminal Formative period artifacts.

Late Formative figurine heads were occasionally recovered in the upper levels of excavations on the main, terraced site area, as well as in mixed Formative-Classical period fill from the Tetla-II strata pit excavations (see Chapter 25). These were primarily E and G figurine types (e.g., Vaillant 1930: 130–133; Noguera 1975: Fig. 30). Chronologically such heads fall within the Ticoman I and II subphases in the Valley of Mexico (Tolstoy 1978: 259; Sanders, Parsons, and Santley 1979: 441–444).

On the other hand, the burials uncovered on T-27 appear to postdate the small sample of figurine heads. Interestingly, no Late Formative figurine fragments were recovered during those excavations, although three whole figurines, unclassifiable within the Vaillant typology, were associated with Burial 117 (Fig. 8.17). Darlena Blucher kindly examined illustrations of the burial vessels and is of the opinion (personal communication to Grove) that they have attributes similar to the Terminal For-

mative Tezoyuca and Patlachique phase ceramics from the Teotihuacan Valley.

The material at Chalcatzingo does not suggest any important occupation of the site during the Late and Terminal Formative. Ceramically, there is no transition from the Late Cantera complex to the Late Formative. This may certainly indicate a break in the occupation following the Late Cantera subphase. Late Formative artifacts do indicate occasional minor occupation, possibly in the nature of a few isolated residences (for a contrasting view, see Chapter 21 and Appendix H). At any rate it is possible to say that Chalcatzingo's importance as a regional center ended with the termination of the Late Cantera subphase.

RESUMEN DEL CAPÍTULO 5

La cronología de Chalcatzingo se deriva de un análisis de la cerámica proveniente de 38 Unidades Estratigráficas Selectas (SSU), las cuales contenían 105 niveles sin perturbación. También proveen datos cronológicos los ensayos de radiocarbón, en total 57, de los cuales 43 son del periodo Formativo, pero la cerámica y no los fechamientos de C-14 fué utilizada para ubicar los niveles o rasgos dentro de las fases.

Los periodos Formativo Temprano y Formativo Medio se subdividieron en tres fases. El componente Formativo Temprano tiene el nombre de fase Amate (Temprano, 1500–1250 AC; Tardío, 1250–1100 AC). La subfase Amate Temprano representa la primera ocupación en Chalcatzingo. Los tipos de cerámica principales son los Cuautla Café, Cuautla Engobe Rojo, Atoyac sin Engobe Pulido III, Arboleda Burdo, y Tadeo Burdo. La subfase Amate Tardío continúa estos tipos, y añade dos nuevos, Del Prado Rosa y Gris Esgrafiado. Añadidos menores son las cerámicas de kaolin, los tecomates, y los botellones.

El Formativo Medio está dividido en las fases Barranca (Temprana, 1100–1000 AC; Media, 1000–850 AC; Tardía, 850–700 AC) y Cantera (Temprana, 700–600 AC; Tardía, 600–500 AC). La subfase Barranca Temprana se diferencia de la fase Amate precedente por la ocurrencia de varios tipos importantes: Tenango Café, Amatzinac Blanco, Negro con Borde Blanco, Laca, Peralta Naranja, y

Pavón Gris Fino. Pavón Gris Fino es un tipo que no es local. Durante esta subfase ocurren primero las vasijas con fondo redondo así como las formas de plato de comal. La subfase Barranca Medio se caracteriza fundamentalmente por cambios que presentan las vasijas Amatzinac Blanco en sus motivos decorativos. La subfase Barranca Tardía se define por un aumento en la cerámica Peralta Naranja y un aumento en la variedad de formas de este tipo, así como la presencia del Tenango Café. El Carrales Gris Burdo aparece simultáneamente.

La fase Cantera es el tiempo de población máxima en Chalcatzingo. La subfase Cantera Temprana se caracteriza por la presencia de un nuevo tipo, Xochitengo Policromo, y por un aumento en las formas del Amatzinac Blanco, las que incluyen incensarios de asa doble, pequeños tazones de cajete, y tazones de pared bastante divergentes con decoración de bordes interiores de ancho raspado e incisiones. Otras innovaciones importantes de forma incluyen las ollas Peralta Naranja y Tenango Café con cuello corto y labio rolado.

Aparecen tres nuevos tipos menores de cerámica en la subfase Cantera Tardía—Amayuca Rojizo Mingo Café Fino, y Santa Clara Naranja—en tanto que desaparecen Laca y Negro con Borde Blanco. Los tipos principales de las fases Barranca y Cantera Temprana persisten. En esta subfase los marcadores de forma incluyen cantaritos y tazones miniatura en cajete.

Las ocupaciones en Chalcatzingo del Formativo Tardío y Final son pequeñas y a estos periodos no se les ha asignado fases.

	Chalcatzingo	Basin of Mexico	Basin of Mexico	Tehuacan Valley	Valley of Oaxaca	Chiapa de Corzo	Altamira	San Lorenzo	La Venta-Tres Zapotes	Lowland Maya	Chalchuapa
100 B.C.	Terminal Formative					Horcones					
200			Ticomán			Guanacaste				Chicanel	Caynac
300	Late Formative (unphased)	Ticomán		Late Santa María	Monte Albán I			Remplás			
400			Atoto-Cuautepec			Francesa			Middle T.Z.		Chul
500					Rosario	Escalera		Palangana	L.V.IV-Lower T.Z.		
600	Late Cantera	Cuautepec	Totolicha-La Pastora	Early Santa María						Mamón	Kal
700	Early Cantera	La Pastora	Zacatenco		Guadalupe			(hiatus)			
800	Late Barranca	El Arbolillo				Dih		Nacaste	L.V.III	Xe	Colos
900	Middle Barranca	Bomba	Iglesia-El Arbolillo				Jocotal		L.V.II		
1000		Manantial		Late Ajalpan	San José			San Lorenzo			Tok
1100	Early Barranca	Ayotla	Ixtapaluca				Cuadros	B A	L.V.I		
1200	Late Amate	Coapexco				Cotorra					
1300		Nevada		Early Ajalpan	Tierras Largas		Ocos	Chicharras			
1400	Early Amate							Bajo			
1500		Tlalpan		Purron			Barra	Ojochi			

a. Tolstoy 1978. b. Tolstoy and Paradis 1970. c. MacNeish, Peterson and Flannery 1970. d. Drennan 1976. e. Green and Lowe 1967. f. Green and Lowe 1967. g. Coe and Diehl 1980. h. Coe 1970. i. Lowe 1978. j. Sharer and Gifford 1970.

Figure 5.2. Comparative chronological sequences.

6. The Settlement and Its Architecture

MARY PRINDIVILLE and DAVID C. GROVE

There are several sets of data useful in reconstructing the nature of the settlement at Chalcatzingo. The most important of these are the residential and public architectural features and their distribution across the site. In this chapter the residential and public structures are described and discussed separately, and then the data are combined to provide an overall view of the site during each major cultural phase.

PUBLIC AND SPECIAL ARCHITECTURE

Early and Middle Formative period mound architecture is virtually unknown in central Mexico, and it was unreported at Chalcatzingo prior to this project. However, eight structures at the site, ranging in time from Amate to Cantera phase, can now be identified as public and/or special architectural constructions. These architectural features differ greatly from the site's residential structures in form, construction, and presumably also in function. The basic details of these structures, as well as the residential structures, have been presented in Chapter 4. Here they will be discussed in the context of the settlement.

Public Architecture

PC Structure 4

The largest and most visible architectural construction at Chalcatzingo is PC Structure 4, a 70 m long earthen platform mound forming the northern edge of the Plaza Central (T-1) terrace. The north side of this mound rises nearly 8 m above the surface of T-15 (Fig. 6.1). The platform mound is one of the few structures at the site which can clearly be identified as public architecture. Its five discernable construction stages, four of which range from Amate to Cantera phase, indicate that the mound, and by implication the Plaza Central terrace

as well, was important throughout the site's history.

The earliest construction (Stage a; Figs. 6.2, B.18 level 6) is an earth and clay mound with stone facing on its lower sides. This structure, which apparently dates to the Amate phase, is over 15 m long (in the profile cuts) and 2.2 m tall. A further Amate phase rebuilding (Stage b) added another 2 m of height and perhaps enlarged the structure to the south with a further stone construction. A stone pavement extended at least 30 m southward from the mound.

No clearly identifiable Barranca phase building stage was found in our limited mound excavations. However, the proximity of the mound to Barranca phase PC Structure 5 implies a continued importance of the Plaza Central and PC Structure 4.

Building Stage c is difficult to date due to the limited data yielded by the few pits excavated into the mound. While probably Late Barranca phase, it may actually encompass several rebuildings. Stage d represents one or more Cantera phase rebuildings. Because our tests were limited to one restricted area of the mound, they do not provide data on the structure's east-west development. A fifth building stage (e) during the Classic period added a pyramid structure (T-3 Structure 1), an area of pavement, and some ball court construction to the mound's west and northwest sides (see Chapter 24). Nevertheless, the platform as it appears today is primarily the Late Cantera subphase (Stage d) configuration.

The mound today is over 70 m in length (east-west) and may be nearly as wide (see Chapter 4 for an explanation of the problems in determining the true size). It rises 5 m above the base of the original Amate phase (Stage a) mound. The upper surface (Stages d and e) covers an area of over 2000 m².

Our archaeological data indicate at

least two functions served by the mound. First, it served as a substructure for carved stone monuments. There is no doubt that one carving, and possibly more, stood on the upper surface of the Late Cantera subphase platform. Monument 9, a large rectangular slab with a bas-relief earth-monster face (Chapter 9), was uncovered by looters on the mound's northern edge. Our excavations revealed several large faced stone blocks (MCR-5, -6, and -7; Chapter 11) on the upper east end of the platform, and fragments of several similar blocks lie beside the path which crosses the structure's east end (Fig. 6.3). From their location today it can be inferred that these latter large worked stone blocks had once been positioned atop the platform's upper surface, although their configuration is unknown. The possibility must also be considered that Monument 16, originally found by Guzman on the west (T-15) side of the El Paso Drainage, slightly downhill from PC Structure 4, was also originally placed on top of the platform.

A second definite function for the Late Cantera subphase platform was that of burial location for the community's highest ranking individuals. These are exemplified by Burials 39 and 40 (Chapter 8), the only known individuals interred at Chalcatzingo wearing jade jewelry. Our excavations also revealed a looted tomb and a crypt within the platform (Chapter 4, Figs. 4.9, 4.10).

A third possible function for the mound remains untested, namely, that it served as the foundation for public buildings. Classic period disturbances and recent plowing of the upper surface may make it difficult to ever test this possibility.

PC Structure 6

A house-like structure, PC Structure 6 is located at the southeast edge of the PC Structure 4 platform (Figs. 4.11, 4.12). At this time, it is difficult to ascertain what relationship this Cantera phase structure



Figure 6.1. PC Structure 4 mound, with T-3 Structure 1 pyramid.

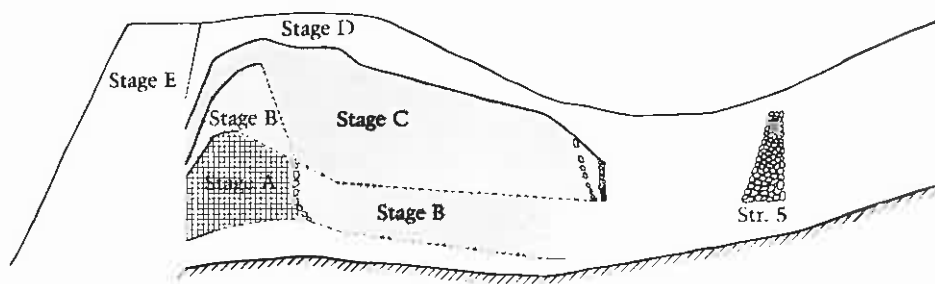


Figure 6.2. Profile drawing of PC Structure 4 construction stages; PC Structure 5 to the right.



Figure 6.3. Large worked stones at the eastern end of PC Structure 4.

had with the mound and its function. It is possible that Structure 6 was a public building functionally related to activities on the platform, but it is tentatively being categorized as a house structure (see below).

PC Structure 5

The only Barranca phase structure at the site identifiable as public architecture is PC Structure 5, an all-stone and apparently free-standing mound 18 m south of PC Structure 4. Because this structure was assigned low priority at the time of its discovery in the PC transect trench, it was not completely excavated, and therefore its exact dimensions remain unknown. It is approximately 2.7 m in height, 5 m in width (N-S) and over 13 m in length (E-W), although its western extremities are badly damaged. The structure's profile, complete with a long sloping northern face, is reminiscent of ball court ranges. PC Structure 5 is parallel to the PC Structure 4 platform, and is probably contemporaneous with Structure 4c. The sloping earth and stone construction stage on the platform (Fig. 6.2) does appear to be very similar to that of Structure 5 in size and profile, but the actual association between the two structures is uncertain, and their similarities and ball court-like appearance may be coincidental. Their exact stratigraphic relationship remains undetermined. The sloping Structure 4c face is covered with a later rebuilding which slopes downward to end at a vertical stone wall, which also has its base at the Structure 5 level (Fig. 6.2). Two inferences can be made from this later construction: first, because it sits at the same elevation, the area between the two structures was level in the past; second, the building of the vertical stone wall destroyed any real or coincidental symmetry. The identification of PC Structure 4 and 5 as related to a Barranca phase ball court remains to be settled by future archaeological investigations.

Platform Architecture

We hesitate to characterize the five known stone-faced platforms as public architecture because their exact function remains uncertain. Because they are raised platforms, they are obviously special. But it remains to be determined whether they were truly public architecture in the sense of being substructures for public buildings, or if special residences were constructed on them. Although the upper surfaces of most of

them lie within the plow zone and remnants of possible superstructures have long since been destroyed, there are data which suggest that at least some of the structures may have had a residential function. It is likewise significant that three of the five platforms have associated stelae, and this perhaps assists in assessing the character of these constructions.

T-6 Structure 3

The earliest of the platform constructions is T-6 Structure 3, an Amate phase platform only partially exposed during a brief field season in 1976 (Fig. 4.18). Because the structure lies well below the plow zone and its upper surface may be undisturbed, we did not attempt to clear the platform in the short excavation time available but left it virtually untouched for future research. Only 4 m of the platform's eastern side was exposed, revealing a facing of field stones ca. 1 m in height. This platform and PC Structure 4 (Stages c and d) represent the earliest monumental architecture known at Chalcatzingo and some of the few examples reported in central Mexico.

T-6 Structure 1

The remaining four platforms are all Cantera phase constructions. The largest and most impressive of these also is located on T-6 (Str. 1), a few meters east of its Amate phase counterpart. The platform's outer face, 15.7 m long with sides ca. 3 m long, rises in two stages (Fig. 6.4), 80 cm and 50 cm in height, and represents the final form of apparently many rebuildings. The wall of the stepped second stage of the platform is also the front wall of the previous platform, with only its upper 50 cm exposed today. Other possible wall lines to the rear may be walls of earlier structures. Our excavations did not reveal a definite back wall to the platform; thus it may have been three-sided rather than a definite rectangular construction.

T-6 Structure 1 is important not only because it is a large stone-faced platform mound, but also because it is one of the few Middle Formative period structures in Mesoamerica to have a stela (Mon. 27) standing in situ in front of it. The stela, carved in bas-relief, is described in Chapter 9. Grove (1981b) believes that stelae such as Monument 27 are portrait representations, most probably of a site's chief, and that the monuments in some way commemorate those individuals. If this assumption is true, then the three platforms at Chalcatzingo with stelae in

association (see below) are probably not generalized "public architecture" but are in some manner associated directly with the personage portrayed. The (possible) superstructure on the platform may have served as a residence of that personage, or as a public building used by the personage and/or his or her lineage. Likewise the entire terrace may have had a similar association with the person or lineage.

T-15 Structure 5

A platform (Str. 5; Fig. 4.27) sits near the northern edge of T-15, overlooking T-27. It is in relatively poor condition. While its length can be determined as 19.5 m, its width is uncertain, since our limited excavations concentrated on the slightly sloping front face. This face, like the other walls, is constructed of unfaced field stones and river cobbles, and varies in height from 70 to 100 cm.

Monument 21 once stood in front of this raised platform, and its original location can be determined by the stone cluster which once surrounded this now-fallen stela. This stela is important in that it depicts a female personage. Its implications are discussed in Chapters 10 and 27.

T-25 Structure 2

The third and final platform with an associated stela is T-25 Structure 2 (Fig. 7.23), a Late Cantera subphase construction which postdates the T-25 altar and patio area (see Chapter 7). The structure is 16.5 m long, 4.5 m wide, and ca. 50 cm tall. Unlike the platforms described above, it is clearly a low, raised rectangular platform, i.e., it is four-sided. It is further distinguished from the other platforms in that its associated stela (the basal stump of Mon. 23) is located by the rear of this platform's southwest corner instead of standing at the "front" (north, downhill) face of the platform.

Daub and amorphous adobe chunks imply the presence of a superstructure on the platform, and two Cantera phase trash areas suggest that the superstructure may have been a dwelling. However, the raised platform and associated stela also serve to identify this structure as special and distinct from the site's regular residences.

T-27 Structure 1

The platform excavated on T-27 (Str. 1; Fig. 4.33) is like T-25 Structure 2 in that both are definitely rectangular raised platforms and in form are more like



Figure 6.4. T-6 Structure 1 with broken stela (Mon. 27) in situ (wall in background built by project to protect the structure and stela).

raised house foundations than T-6 Structure 1 or T-15 Structure 5. T-27 Structure 1 is 18 m long and 7.5 m wide. There is evidence that the platform's original height may have been over 1 m and that erosion and plowing have reduced its height today to ca. 70 cm. Incomplete wall lines within the structure suggest that there have been several building stages. Daub and amorphous clay fragments recovered in the excavations provide evidence of a superstructure. However, no trash pits were located, nor is there evidence of a stela or other monuments on this terrace.

Other Special Architecture

T-29 Structure 1

An architectural construction which is difficult to categorize is the Barranca phase wall complex which projects northward from the upper edge of T-29 (Str. 1; Fig. 4.35). This structure apparently served as the foundation of a small artificial "terrace" ca. 20 m long and 5 m wide which jutted over the sloping T-29 hillside.

As is so often the case at Chalcatzingo, the structure's upper surface has been stripped away by erosion and plowing. The only evidence that this small terrace may have supported a structure are the fragments of clay daub and amorphous clay lumps found in the excavations. Because of the destruction of the upper surface, there is no way to ascertain the function of the presumed superstructure as a public or residential building.

T-29 Structure 1 is a Late Barranca subphase construction. On its southern side it extends slightly on to T-25 (Fig. 4.2). It perhaps can be taken as evidence of an expanding population and the need for some flat area on T-29 on which to construct a building (of whatever function). Or the construction can conversely be viewed as an expansion of T-25, perhaps related to activities involving the altar (Mon. 22) which played such an important role on T-25 during the Cantera phase.

Comments

Mound architecture and the kinds of special structures discussed above are generally unknown elsewhere in central Mexico. A few mounds and platforms, perhaps Middle Formative in date, have been reported at Cuicuilco (Heizer and Bennyhoff 1972:97-98), and a circular stone-faced Early Formative structure was identified at San Pablo in southern

Morelos (Grove 1970b). It is this rarity that makes Chalcatzingo's structures so important.

Although it was limited during the Early and Middle Formative in Mexico's central highlands, public architecture was becoming more abundant to the south at this time. Adobe platforms occur at San José Mogote, Oaxaca, in the late Early Formative and Middle Formative. The late Middle Formative Rosario phase at that site includes a large plaza flanked by low platform mounds, with an elite residence at one end of the plaza and a major mound at the other end (Flannery and Marcus 1976a). Further south, both coastal and highland Chiapas have Middle Formative sites with mound architecture arranged around plazas (Lowe 1977:224-226).

Early Formative architecture at Gulf Coast Olmec centers is poorly known, but the record from Middle Formative San Lorenzo and La Venta is impressive. The rectangular plaza and its long flanking platform mounds appear to have been major architectural features at both sites (Coe and Diehl 1980:29, 388, Map 2; Diehl 1981; P. Drucker, Heizer, and Squier 1959: Fig. 4). Most of these structures seem to be earthen, but adobe brick construction and some minor use of stone facing occurs with the La Venta Complex A mounds (P. Drucker, Heizer, and Squier 1959:80, Figs. 25-28).

Chalcatzingo shows no close parallels to either the Oaxacan or the Gulf Coast architecture except in one regard. All three areas have major Middle Formative public architecture in the form of long earthen platform mounds. The upper area of the PC Structure 4 platform was the location of monumental stone carvings and the burials of high-ranking individuals. Whether such functions likewise were related to the Gulf Coast platform mounds (in particular) remains to be answered by future research.

HOUSE STRUCTURES

Sixteen incomplete structures, the majority of them apparently houses, were excavated by the project. Eleven of these date to the Cantera phase, two to the Barranca phase, two were Classic, and one was Postclassic. While the raised stone-faced platforms previously discussed may have been substructures for residences, only Formative period structures with ground level foundations will be dealt with here.

Most of Chalcatzingo's terraces have one restricted area which is heavy in Cantera phase sherds. The project's investigations into residences and residential patterns focused attention on these sherd concentrations, which were hypothesized to represent house debris and to be surface indications of houses.

Random sampling, such as was carried out in Oaxaca by Marcus Winter (1972) at Tierras Largas, was not used as a primary means of locating houses, since the project's approach was to maximize the data yield, and a Cantera phase structure was virtually assured each time a terrace's sherd concentration was excavated. This approach, on the other hand, clearly provided a sample biased in favor of Cantera phase structures. Structures with low ceramic associations or lacking surface indications may have been neglected because of this strategy.

During the excavation of structures, the major time and effort were directed to the area within the structure's foundation walls (the interior), and excavations were seldom expanded any great distance to the outside. This sampling technique may have missed features external to the main structure. A testing program was conducted on T-23 to check for features external to the houses and for other possible structures missed through the sampling biases (see below).

A basic problem encountered during the excavation of structures was simply the destruction and/or lack of preservation of the house remains. As mentioned previously, the terraces of Chalcatzingo have suffered the effects of heavy erosion. At the same time, alluvial redeposition (from higher areas on the site) has taken place. These two forces have apparently equaled each other, and over most of the site the modern surface is essentially at the same level as the Cantera phase surface. This means that Middle Formative house structure remains (walls and floors) lie within the modern plow zone, and what has not been destroyed by erosion has become the victim of the yearly plowing and planting.

No complete Cantera phase dwelling was recovered. The foundation walls have been at least partially scattered, the floors plowed away, and any artifact patterns destroyed. As will be mentioned, however, some of this destruction probably took place during the Cantera phase as well. Thus, the descriptive data presented in the following pages are generalized from all of the structures.

House Construction Size

A major feature setting Chalcatzingo's Cantera phase house structures apart from other reported Middle Formative period houses is size. The estimated average floor area within a Cantera phase house is 63 m², more than twice the area of other known Mesoamerican dwellings (e.g., Flannery 1976a).

Archaeologists have attempted to use house floor area as a means for estimating the number of people who inhabited the structure. Unfortunately, there is lack of agreement as to the appropriate figures to use for these calculations. Raoul Naroll (1962) suggests a figure of 10 m² per person. This estimate seems too low to other investigators (e.g., LeBlanc 1971:211; Winter 1972:166). Using Naroll's "low" figure would provide an estimated household population of six to seven individuals. Estimates of this type, when based upon household floor area, rest on the assumption that the entire structure functioned as a residence. That assumption has not been demonstrated for Chalcatzingo's Formative period houses (see below).

T-9B Structure 1 is the only Barranca phase house for which any good data are available. Its floor area, ca. 27.5 m², is considerably smaller than that of Cantera phase structures. If this house, which is Early Barranca subphase in date, is typical of the phase as a whole (and the fragmentary N-2 house suggests T-9B Structure 1 should not be considered typical in terms of construction), then there was a substantial increase in average house size between Early Barranca and Cantera phases.

Walls and Wall Foundations

Two types of stone foundation walls are characteristic of Late Cantera subphase houses. They are typically found together in the same house structure and seem distinctive enough to serve to differentiate Late Cantera subphase walls from those of other periods.

One type of foundation wall is characterized by an alignment of small cobbles (ca. 20–40 cm diameter). Although these walls can be up to three rows in width, a single row is the common practice (Fig. 6.5). These foundation lines appear to correlate with wattle and daub wall construction. Norman Thomas (1974:7, Fig. 5), using ethnographic examples, shows that such stone lines are usually placed at the base of wattle and daub walls to retard erosion. Our excavations did not find any postmolds or wall trenches adja-



Figure 6.5. Wall line composed of a single row of stones, PC Structure 2.

cent to the stone lines, but daub fragments were often recovered.

The second and more common foundation wall type is constructed of large (50–80 cm) stones laid to present a relatively flat upper surface (Fig. 6.6). This larger and heavier foundation seems to have served as the base for adobe brick walls. There are three variations to this wall type: (1) one row of large stones edged on both sides by smaller cobbles; (2) one row of cobbles edging a row of large stones; and (3) a double row of large stones. This last variation is often two courses high.

The data strongly suggest that both wall types appeared together in Late Cantera subphase houses. PC Structure 1d has two foundation walls built of large stones, indicating that these supported adobe brick walls. The missing north wall is presumed to have been of similar construction. The west wall line, largely destroyed, was constructed of small stones, implying that the wall was of wattle and daub. Numerous associated burned daub fragments support this assumption. Data available from other Late Cantera subphase house remains confirm that the common construction pattern must have been three walls of adobe brick and a fourth wall of wattle and daub. A possible exception to this is PC Structure 2, which may have had only wattle and daub walls.

According to an informant from the village, present-day weather patterns bring cold, rain-laden winds and storms from the northeast, while winds during the hot dry season originate from the southwest. For that reason the east sides of houses today are constructed of heavy adobe brick walls to block the cold and rain, while more open walls on the west side catch breezes during the hot months.

Unfortunately, most excavated houses were not complete enough to ascertain the entire wall pattern (see Chapter 4 maps). However, several good examples, such as PC Structure 1d, T-23 Structure 1b and c, and T-4 Structure 1, all seem to have their long adobe-walled sides (as ascertained by stone wall foundations) oriented toward the north and east (against the cold rains) and their more open sides facing westward.

T-23 Structure 1b was the only house in which firepits were discovered. The firepits were located in the vicinity of the wattle and daub wall (its hypothesized location), suggesting that this side of the house was at least partially open for ventilation purposes.

The remnants of an Early Cantera subphase house floor with 3.5 m of wall base remaining (PC Str. 1a) were found at 140 cm below PC Structure 1d. In contrast to the Late Cantera foundation walls, this wall was constructed of a double row of irregular cobble-sized stones. Five post-



Figure 6.6. Wide foundation wall line, PC Structure 3.



Figure 6.7. T-9B house excavations showing wall line boulders protruding into plow zone.

molds were found within this foundation, showing the upper wall to have been of wattle and daub (other data indicate this as well).

The Barranca phase structures found on N-2 and T-9B likewise show different foundation construction techniques. The T-9B house is outlined by a wall composed of large stones set side by side but not laid out to create a flat upper surface. The impression given is simply of stones set side by side (Fig. 6.7). The wall is single in some areas and double in others (Fig. 4.20). Within the structure apparent room areas are also delimited by rows of the irregular large stones. On the other hand, the few segments of walls remaining of the N-2 structure were single rows of small cobble-size stones (Fig. 4.37). Both the T-9B and N-2 structures were probably of wattle and daub, since daub fragments were found in the excavations of both areas and no regular stone foundations occur.

The only further point of comparison that can be made is with a segment of a Barranca phase wall uncovered in the Plaza Central cross trench. This wall, which sits upon *tepetate*, is constructed of large stones in the manner of the T-9B walls. It is highly possible that foundation wall construction changed during the Barranca phase, and the T-9B and N-2

walls may be reflections of these differences, the N-2 walls being far more similar to those of the Cantera phase.

Three types of evidence were found relating to the construction materials of the upper walls: adobe bricks, amorphous adobe chunks, and daub fragments. There is strong evidence for the manufacture and use of rectangular adobe bricks during the Cantera phase. One unusual and surprising set of evidence comes from Cave 4, high on the western face of the Cerro Delgado, where excavations revealed a Cantera phase artificial floor of adobe bricks (Fig. 4.39). Rectangular adobe bricks were also found in our regular excavations, including a complete brick recovered from T-23 Structure 1a.

A second type of artifact which serves as evidence of the use of adobe bricks is the large and often amorphous chunks of adobe recovered during house area excavations. These chunks lack plant impressions (so common in daub). An obvious problem in identifying adobe bricks is that they are only sun dried and tend to "melt" if exposed to rain. In some instances these melted bricks can be identified as such, while at other times they may simply appear as amorphous lumps.

While some Cantera phase bricks were

made of pure adobe clay, our data indicate that others were manufactured around a core of *tepetate*, or were tempered with pieces of *tepetate*. Older villagers at Chalcatzingo remember when such techniques were used in adobe brick making several decades ago. While lacking cane impressions, recovered adobe chunks had grass impressions and, in addition to *tepetate*, inclusions of charcoal fragments, pieces of burnt clay (daub), and sherds. Some chunks in our sample have finger impressions left during the manufacturing process. The presence of charcoal, daub, and sherds within adobes suggests that they were manufactured from soil gathered near dwellings as opposed to the practice today of gathering the soil outside of the village. The implications of this hypothesis are discussed below.

The mud plaster or daub placed over the cane sides of the houses is easily identified when found in archaeological contexts because of the cane impressions left in the mud fragments (Fig. 6.8). At Chalcatzingo the impressions serve to identify the cane as *Tithonia tubaeformis* of the Compositae family. These plants are abundant along field borders and the hillslopes of Chalcatzingo. Today, as in the past, their tall stems are often as thick as a human thumb.

Most daub fragments show only one row of canes. However, some thicker fragments (ca. 20–25 cm thick) appear to have covered a double row. Daub fragments with concave corners demonstrate that structures were plastered not only on the outside but on the interior as well. Some fragments also show the plastering to have curved down from the wall and onto the floor area. This is confirmed by the mud plaster found in situ at the floor-wall junction of PC Structure 1a.

It is important to mention that the majority of the daub fragments recovered were at least partially hardened by heating. This, along with other data, indicates that those structures had burned at one time.

Traces of white pigment were found on the outer surfaces of many Cantera phase daub fragments, showing that the structures had been painted. Tests with hydrochloric acid indicate that the white pigment is not a lime (calcium) based paint. It is highly probable that the pigment is kaolin clay. A kaolin source exists very near to Chalcatzingo (Chapter 23) and was apparently exploited during the Middle Formative.



Figure 6.8. Daub fragments in situ, T-23 Structure 1.

Daub fragments are occasionally found adjacent to the stone foundation lines which we believe supported adobe walls. It is possible that the daub fragments became scattered throughout the structure during its burning, destruction, and the subsequent removal of the debris. The possibility must also be considered that portions of these walls were also wattle and daub; the adobe wall may not have run completely from floor to roof, but could have been topped by a wattle and daub section. We prefer the former explanation.

Roofing

No good archaeological evidence was found to indicate the type of material used for roofing the Cantera phase house structures. Occasional daub fragments with grass rather than Compositae impressions could be from wall areas adjoining a grass-thatched roof, but may also simply be from grass growing along the base of the wall and accidentally caught up during plastering. Both grass and Compositae are abundant on the site. They may have been used together as roofing material, or grass thatch may have been used alone.

Floors

House floors were rarely preserved at Chalcatzingo. Although we were able to distinguish three different types of floors

within Cantera phase structures—(1) dirt with a subfloor of small stones, (2) hard-packed dirt with no subfloor layers, and (3) mud plaster—in most instances the house floors could not be identified. For example, although we knew exactly where the floor in PC Structure 2-1 should have been because we had a preserved burned section present, no floor could be identified even immediately next to the preserved floor area. It is quite possible that in many instances the house floors were purposely destroyed. Data leading to this hypothesis are presented in the discussion of house destruction, below.

Room Differentiation and Activity Areas

Interior walls within several house structures provide evidence that both Barranca and Cantera phase houses were divided into rooms. These walls were probably of mud-plastered cane, since Compositae-impressed daub fragments were found near the junction of two interior walls of T-9B Structure 1. In a few instances, minor variations in artifact patterns among the different rooms can be ascertained, allowing some speculation as to room use and activity areas.

Three room areas can be differentiated within the Barranca phase structure T-9B

Structure 1 (Fig. 4.20). Room 1 runs the entire length of the house's west side. Obsidian fragments and core flakes within this room indicate that obsidian working or an activity requiring obsidian tools was conducted here.

An area of burned earth is found midway in the room, near the threshold stone marking the door to Room 2. No ash or carbon was associated with the feature. We cannot assume that this area of burned earth is a hearth, especially since hearth features, either as firepits or raised hearths, are rare at Chalcatzingo. However, all house structures contain brazier fragments, and those at T-9B Structure 1 are found in rooms other than where the burned earth was found.

These braziers are apparently cooking braziers and were the common means of cooking during the Barranca and Cantera phases. Brazier fragments are frequently found in association with charcoal flecks in the surrounding soil. These braziers are unusual in that the tripod supports which serve to hold vessels above the coals are zoomorphic (Fig. 13.68).

Rooms 2 and 3 of the structure contain ceramic vessels, both whole and broken, found on or slightly below the estimated floor level (apparently destroyed by plowing). One vessel was found within the exterior foundation wall of Room 2. Both Rooms 2 and 3 lack the quantity of obsidian found in Room 1, implying that they functioned for activities such as sleeping or storage, or for activities which required constant cleaning. The presence of vessels in these rooms tends to imply a storage function.

While it is not certain that the PC Structure 2 complex had residential functions, it, too, is clearly divided into separate room areas. Three rooms occur in Structure 2-1 and at least two more in Structure 2-2. Room 2 of Structure 2-1 (Fig. 4.7) is the largest of the identifiable rooms. It may even have contained a small partition wall at its western end. The only subfloor burials (nos. 41–50) in the PC Structure 2 group are located beneath Room 1.

Obsidian cores were found in Rooms 2 and 3. Rooms 1, 2, and 3 all contained in the room fill a scatter of both worked and unworked jade fragments and drill cores. Room 4 had two anthropomorphic heads from cooking braziers, and a scatter of charcoal. These latter artifacts indicate a possible cooking function for this room.

The data from the PC Structure 2 complex suggest that workshop activi-

ties were carried out here. The presence of subfloor burials and the fragments of cooking braziers indicate a possible residential use as well.

T-23 Structure 1 represents the intermixed remains of at least three Cantera phase houses (essentially rebuildings of the same structure). Each rebuilding destroyed portions of the previous structures, and Classic period intrusive features further complicate the interpretations (Figs. 4.30, 6.9–6.11).

Only the southern portion of T-23 Structure 1a, the earliest of the three houses, is preserved (Fig. 6.9). Three probable room areas can be defined by the presence of interior walls 12 and 13. Two complete vessels, as well as fragments of hollow ceramic spheres and an obsidian "blood-letter," were found on the "floor" of the westernmost room (Room 1). The 4 m wide middle room (Room 2) still has a stone subflooring present in some areas. There is one subfloor burial (no. 80), and two manos and an obsidian scraper were found at the approximate level where the floor should have been. The eastern room (Room 3) lacked stone artifacts. In the area where the northern end of the house once existed, excavations uncovered obsidian workshop debris including cores, blades, and debitage. The overall distribution of artifacts for Structure 1a suggests domestic activities (vessels and grinding stones) in the area where wall remains still exist and workshop activities in the area immediately to the north.

The second of the three structures, Structure 1b, is somewhat more complex, with two east-west walls, a small raised "platform" structure on the east side, and one probable room partition (Fig. 6.10). While there may be two structures here, possibly even structures with different functions (due to the small, low platform), we cannot unequivocally classify them as separate and thus are tentatively considering them together.

The structure contains two firepit features (Feas. 2, 6). These features, located at the north end of the house (which we hypothesize to have had a wattle and daub wall), appear as shallow pits lined with burned rock. The interiors of the pits contained lenses of charcoal and ash, small stones, and sherds. Both pits had been filled in to the top with additional small stones. The circumference of each pit and the floor area of the immediate periphery had been baked by heat. An area of burned earth was found

between the firepits, adjacent to the foundations of Wall 7 (see below).

No seed or bone remains were recovered in the flotation samples taken from the firepits and surrounding areas, and their exact function (cooking or otherwise) remains uncertain. Charcoal from each feature was radiocarbon dated. The date from the Feature 2 sample (N-1951) is 610 ± 70 BC, and that from Feature 6 (N-1952) is 620 ± 85 BC. The features are separated by Wall 7 (implied by the foundation stones). This fact may be insignificant, since the firepits may not have been used at the same time, or again it may reflect a separation of activities.

Two firepits, used at the same time and separated by a partition, would have interesting implications for the composition and structure of the household, suggesting perhaps two families within the structure. However, we have not carried out an exhaustive search of the ethnographic record looking for modern parallels. It is also possible that neither firepit functioned for cooking, particularly in view of the presence of brazier fragments within this house. Whatever the function of the firepits, the fact that they are located in the eastern portion of Structure 1b, while obsidian debitage and cores were found in the structure's western area, does imply a separation of activities.

Structure 1c, the uppermost of the T-23 houses (Fig. 6.11), has interior dividing walls, but again no floors are clearly identifiable. The most interesting feature within the house is Feature 5, a stone circle filled with ash, small heat-cracked stones, and quantities of daub fragments with *Compositae* imprints. The feature is not a firepit because the earth within the stone ring is not burned or baked, and daub fragments would not normally occur within a firepit.

We believe that Feature 5 represents the remains of a collapsed *tlecuil*, a raised cooking hearth with a stone foundation and mud-plastered cane sides. Raised cooking hearths, constructed of stone or adobe, are still used in Chalcatzingo and throughout much of rural Mexico today. Whether the presence of firepits, cooking braziers, and a raised *tlecuil* within the three Structure 1 houses is significant in terms of an "evolution" of cooking methods is doubtful. Cooking braziers appear to have been the common means of food preparation throughout the site.

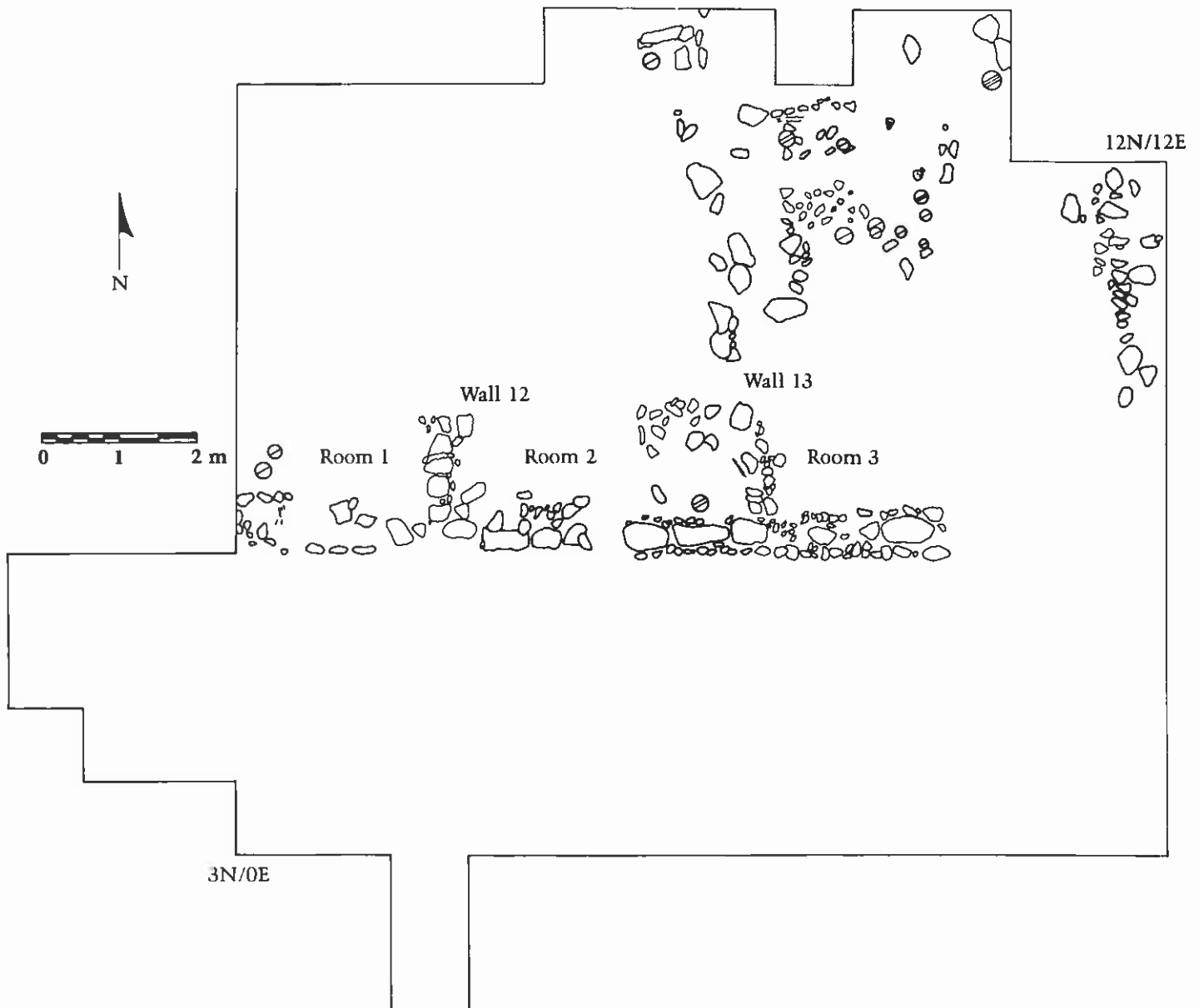


Figure 6.9. Plan map of T-23 Structure 1a.

Activity areas within Structure 1c are difficult to define, as the structure sits close to the plow zone and has been damaged both by plowing and by Classic period disturbances.

The Cantera phase structures on T-11 (Strs. 1 and 2; Fig. 4.21) demonstrate a different type of hearth area, in this instance separated from the main house structure. The main structure is Structure 1, while Structure 2 is a smaller building adjoining Structure 1 to the southeast. Structure 2 includes a feature composed of an area of burned rocks within which smaller rocks are patterned in a manner to suggest that they

may have functioned as fire dogs. Charcoal specks, a burned stick, three vessels, and a broken metate were also found here. We know that cooking areas detached from the main house structure are common in central Mexico during the ethnographic present, but this is our only example at Chalcatzingo.

Nonsubterranean Storage Areas

In speaking of storage facilities, two different types of storage need to be considered. The first is the regular household storage of goods needed as part of the normal daily activities. Included within this category would be the storage of ag-

ricultural products such as corn. The second type of storage can be called "warehousing," meaning the storage of quantities of an item or items for exchange purposes. This latter type of storage must be considered when attempts are made to explain the large surface area covered by Cantera phase houses. Part of their interior space may have been utilized for warehousing if the site was heavily involved in redistribution and/or exchange networks.

The possibility that agricultural products were stored within house structures was tested by taking pollen samples from room "floors" in various structures

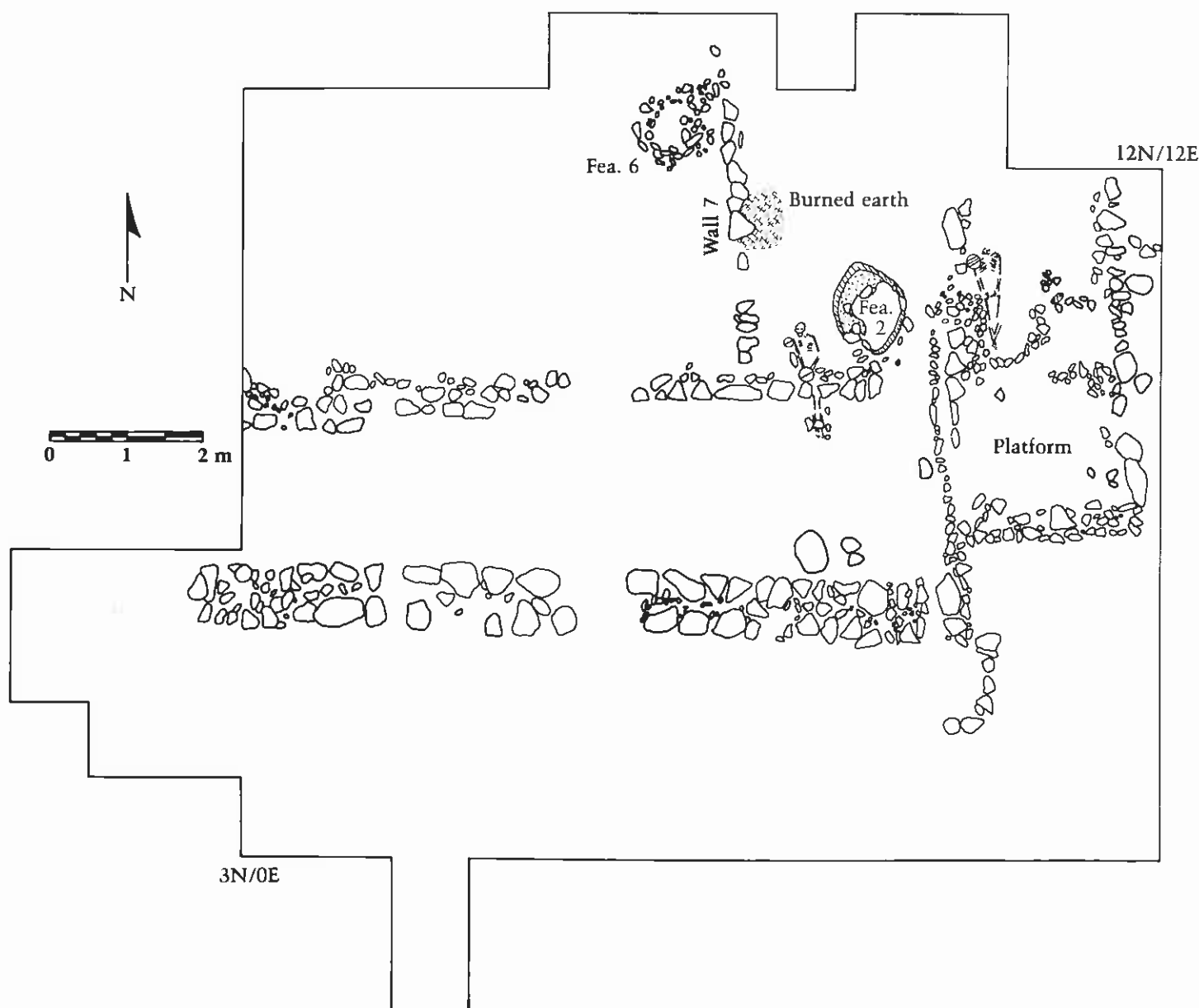


Figure 6.10. Plan map of T-23 Structure 1b.

(PC Str. 1, T-9B Str. 1, T-23 Str. 1a). The results show no appreciable difference in the pollen counts, suggesting that corn (in particular) was not stored within the rooms tested. Some rooms (e.g., T-9B Str. 1, Room 3) contain minor quantities of whole vessels, possibly implying the use of such rooms for storage.

Storage structures external to the residence are also probable. T-11 Structure 2, which may have served for cooking, also has an area which contained three vessels, two metates, and two manos. Due to the nearness to the presumed cooking area, this area was probably used to store food preparation artifacts. Other evi-

dence of external structures is tenuous. Small wall segments north and west of PC Structure 1d may represent the flimsy foundations of short-term constructions used for storing corn or other items.

Trash Deposits

Trash disposal is obviously an important activity in any household, and features related to trash disposal are often part of what Winter (1976) has termed the "household cluster." Whether due to cultural reality or sampling biases, our only example of a subsurface pit excavated into bedrock comes from T-25 (Fig.

6.12), where it had been associated with a Barranca phase house. It may have originally functioned as a storage pit, but when excavated it contained trash and a human burial (no. 103). While such pits were commonly used for trash disposal at other Formative period sites, few were found at Chalcatzingo.

A subfloor trash pit (Fea. C-1) related to PC Structure 1c intruded downward (into subfloor fill) from about 60 cm below surface, a level which may have been an earlier floor. Included in the trash deposit were sherds, amorphous adobe lumps, two metates broken in half, and a stone sculpture (Fig. 20.12).

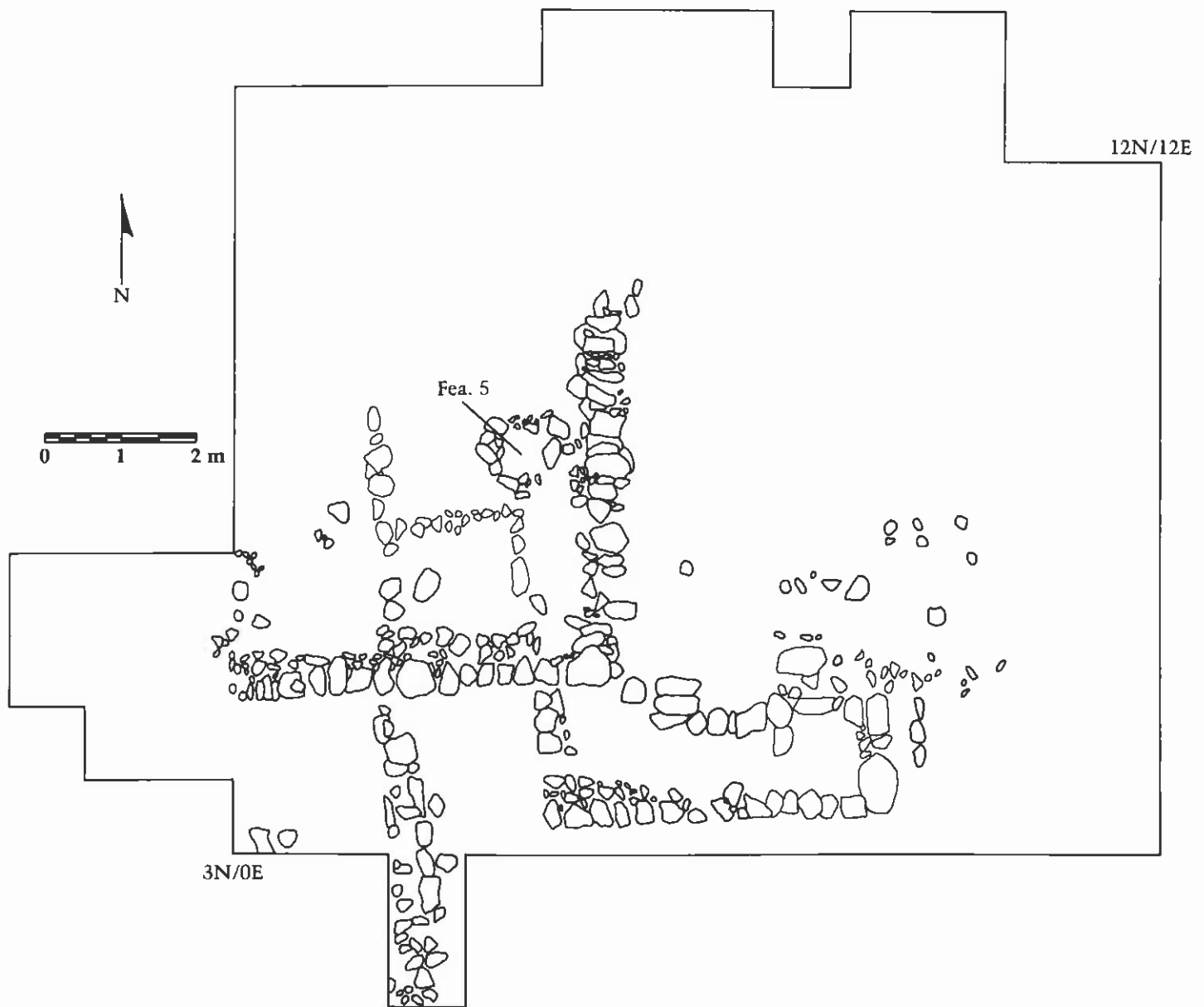


Figure 6.11. Plan map of T-23 Structure 1c.

The trash deposit associated with the T-23 Structure 1 complex is different from those above, since it apparently represents trash taken from Structure 1 and dumped in a low area (T-21) downhill from the house (Fig. 4.29). The deposit is stratified but exhibits no discernible temporal differences. It contained sherds, figurine fragments, worked stone, and animal bone, and it covered a disturbed burial (no. 78). A radiocarbon date on charcoal (N-1950; 830 ± 85 BC) is earlier than dates recovered from the firepit features of Structure 1b. However, the ceramics excavated from within the Structure 1 houses show no temporal dif-

ferences from those of the trash pit, and they are clearly contemporaneous and related.

Burials

The majority of Chalcatzingo's Cantera phase burials occur beneath house subfloors and are presumed to be the remains of people who inhabited those houses at least sometime during their life. A sharp distinction in the quality of the grave and the mortuary furniture exists between the subfloor burials of PC Structure 1d and those of other houses. This is one major factor in the identification of Structure 1d as an elite residence

during the Cantera phase (see Chapter 8).

Several anomalies exist in attempting to relate burial data to data gathered from the house excavations. Not all Cantera phase burials were within house subfloors (see Appendix C). Over twenty burials found on T-25 are unassociated with a house. Did these people come from various households? Also there is clearly a marked discrepancy between the quantity of burials found with PC Structure 1 (thirty-eight) and other houses (e.g., T-23 Structure 1 has seven burials).

If all members of a household were buried beneath the house floors, then

Table 6.1 House Population Estimates Using Floor Area
(Based on Naroll's 10 m²/person)

Structure	Floor Area (m ²)	Estimated Population	Subfloor Burials ^a
T-9B Str. 1	36	4	3
T-11 Str. 1	5	5	1
T-23 Str. 1c	63	6	7
PC Str. 1d	84	8	38 ^b
PC Str. 2	63	6	10
T-4 Str. 2	49	5	5

^aThis table is worthwhile only if the tenuous assumptions are made that all individuals within a house unit were eventually buried within that unit and that all burials are essentially contemporaneous with that house floor.

^bShows either great time depth or that this was a special burial location.



Figure 6.12. Subterranean storage pit, T-25.

perhaps a greater number of burials should be expected, but in fact few were found. The correlation between household burials and Naroll's formula for estimating household populations is close (see Table 6.1), but using such a correlation would imply a house usage of the lifetime of one family.

It is unfortunate that most burials were in such poor condition that they could not be analyzed to determine age and sex. It might be that persons of certain age sets or sex received burial elsewhere. The same could apply to individuals of a certain descent group or lineage. Such differences are reflected in the Early Formative burial data from Oaxaca (Flannery and Marcus 1976b:381–382) but have yet to be as clearly defined in the Chalcatzingo data.

House Destruction and Rebuilding

Chalcatzingo's houses are like those of many other Formative period sites in Mesoamerica in one important aspect—they were destroyed by burning. The evidence for this is the quantity of burned daub recovered in excavations. Every Formative period house excavated at Chalcatzingo had fire-hardened daub fragments in association. In houses which show several rebuildings (e.g., PC Str. 1, T-23 Str. 1), the foundation walls of *each* building stage have burned daub associated with them.

These data indicate that the burning of house structures was a common occurrence. It is unreasonable to assume that houses burned down accidentally with regularity, or that the houses were periodically put to the torch due to hostilities. No burned artifacts are ever found within the houses, as should be in the case of houses which were set afire without the consent of the occupants. The burning of house structures thus appears to have been an intentional act by the inhabitants. As important as the destruction is the fact that a new structure was quickly rebuilt in the same location.

A basic sequence of destruction and rebuilding can be deduced from the data from the excavation of T-23 Structure 1, the complex set of house foundations which represent a Cantera phase structure burned, rebuilt, and enlarged at least twice. The sequence is based on changes in house foundations as evidence of rebuilding. However, it is highly possible that houses were burned and then rebuilt on exactly the same foundation walls, with no such changes as ex-

hibited in T-23 Structure 1. For example, while T-9B Structure 1 reveals no clear evidence of rebuilding, burned daub fragments occur in the subfloor fill, and there is no reason to believe that this daub is not from an earlier rebuilding of the structure. Therefore, while we can delimit two rebuildings of T-23 Structure 1 (three sets of foundations), this should be taken as a minimal number.

As mentioned, there is no evidence to indicate that the houses which were burned contained household (or other) objects at the time of the fire. The contents of the structure were removed prior to setting the structure afire. How much the house was dismantled at that same time cannot be determined. It is possible that the major roof support poles and beams were removed for reuse (their burned remains were never found in the excavations), and the roof allowed to collapse into the interior of the house before burning. Adobes from the walls may also have been removed and only broken fragments left in the fire area, since fired broken fragments are found, while baked complete bricks are rare. It is obvious that the wattle and daub walls were left to burn.

Following the fire, the entire area was cleaned thoroughly and the trash deposited somewhere away from the house site. The trash deposit on T-21 (a deposit related to the T-23 structure) included burned daub, although these fragments could represent minor debris which became included in the trash over a period of time. The subfloor trash pit (Fea. C-1) in PC Structure 1c likewise contained some burned daub. The floor area preserved by burning in PC Structure 2-1 ends relatively abruptly, suggesting that at this time sections of the floor may have been torn up. An alternative possibility is that the floors were removed prior to burning, possibly when the roof supports were taken down. Because foundation walls on various structures at the site in addition to T-23 Structure 1 are missing, it is probable that at this time too some stone foundations were dismantled and the stones reused in constructing the foundations for the new structure.

Following the clearing of the major debris from the house area, the area was leveled, leaving a cap of ca. 10–20 cm of fill overlying the foundations of the old structure. This fill material is white with ash and contains burned daub and adobe fragments, indicating that it de-

rives at least partially from the area of the fire. Surprisingly, the fill lacks significant quantities of charcoal.

Although a cap of fill normally overlies the old foundation walls, some of these foundations were occasionally reused for the new structure. T-23 Structure 1 shows that with each rebuilding the structure enlarged to the south, suggesting that one possible factor in demolishing and rebuilding a house was the need for increased floor area.

In addition to the desire for a structure with greater space, other factors could lead to the decision to rebuild. One factor is obviously that neither adobe nor wattle and daub structures have great longevity. Evon Vogt (1969:90), using data from Zinacantan, estimates that a wattle and daub structure in that region will last twenty-five years, and an adobe house perhaps a decade longer. Adobe structures in eastern Morelos could have had a slightly greater life span because of the area's drier climate. Some adobe houses in the area have been standing for half a century, and while periodically re-roofed and replastered, they are rebuilt only when the occupants desire a larger or more "modern" house.

As Vogt's data indicate, wattle and daub houses are less durable and cannot be rejuvenated with simply another coating of mud plaster (as adobe structures can). The estimate of twenty-five-year life span for wattle and daub structures in Zinacantan is related to structures in which the wattle is wooden sticks and poles. Chalcatzingo's constructions utilized *Compositae* stalks, which deteriorate quickly, and the structures would probably last no more than a decade at the most.

In addition to normal deterioration, wattle and daub constructions and the thatched roofs of adobe structures soon become the home of a variety of insects and vermin. Although this may not have been a primary factor in the decision to rebuild, it could have been contributory. There are obviously other factors which may have entered into the decision, some of which may not be revealed by the excavation data. A hypothetical example can be made through an analogy to Grove's explanation (Grove 1981b) of Olmec monument mutilation. Grove believes that at the death of a site's chief, monuments related to the chief were ritually destroyed. It is likewise possible that a house was destroyed at the death of the head of the household, although

archaeologically this would be difficult to test on the basis of the present data.

Comments

Because Chalcatzingo's house structures can best be understood within the perspective of the overall settlement pattern at the site, a detailed discussion is provided later in this chapter, and only a few comments need be made here.

The house structures at Chalcatzingo during the Cantera phase are considerably larger than others reported in the literature for Mesoamerica. The average floor area is slightly over 60 m². A study by Barbara Ayres and John Whiting (1968:124) has demonstrated that 96 percent of the societies in which house floor area exceeds 200 ft² (18.5 m²) are characterized by extended families, status distinctions, or both. The status distinctions (or social ranks) at Chalcatzingo are best defined by burial differences and are discussed in Chapter 8. That Chalcatzingo's unusually large houses were occupied by extended families may be a further logical assumption.

The possibility that Chalcatzingo's houses were large because they also served a warehousing or storage function must not be overlooked. The fact that the excavations of these structures did not uncover caches of nonperishable artifacts or raw materials does not negate the possibility that some areas of the structures functioned for storage. In fact, it is highly improbable that any stored items would have been left to be later found by archaeologists, because a structure was emptied prior to its destruction and also because floor areas are seldom preserved.

Within the houses, general activity areas have been identified. Each house, including PC Structure 1 (the elite residence), showed evidence of obsidian working areas, indicating that each household made many of its own tools. Blade production may have been more restricted, however. Robert Santley (1977a) has suggested that one or two part-time obsidian specialists could have produced a sufficient supply of obsidian tools for a population the size of Chalcatzingo's (see below), and thus it is possible that any additional obsidian knapping at Chalcatzingo was being done on a scale to permit export of the finished blades.

The large concentration of debitage found on T-37 (Chapter 19) is clearly the debris from an obsidian workshop which was probably located near the concentra-

tion. This great quantity of debitage may imply that if an export workshop was located at Chalcatzingo, it was related to only one or a few house structures, and that the obsidian knapping activities within the other houses were primarily for the use of those households.

The tentative identification of other activities with specific structures can also be made. PC Structure 2 appears to have been involved in the processing of iron ore into red pigment and in the manufacture of green stone objects (Chapter 23). S-39 may have been an area of ceramic manufacture (Chapter 16), and Mark Harlan (1979:488) has suggested that T-24 had a figurine workshop.

ARCHITECTURAL ORIENTATIONS AND ASSOCIATIONS

There is increasing interest today in the orientation of sites and the various buildings within a site. The best data obviously come from Classic and Post-classic period centers, for not only do they have greater quantities of architecture than Formative period sites but they have also undergone more intensive excavations and thus have more data available. Data on Formative period sites are still rare, and the nature of the site orientations therefore poorly understood. While there is a general assumption that the site alignments are probably astronomical, there have been suggestions that a lodestone compass may have been used on the Gulf Coast (Carlson 1975). This hypothesis remains to be stringently tested against regional magnetic declination differences and changes through time.

Chalcatzingo's alignments are presented in Table 6.2. Several explanations are possible for the various orientations, but we have yet to subject any to the rigorous testing they would need. Our one attempt (1972) to observe the sunrise of the summer solstice was frustrated by a cloud-laden sky and a drenching rainstorm.

The greatest problem in dealing with possible astronomical orientations at the site is that of the horizons. The eastern horizon for the main site zone is the Cerro Delgado, and the southern horizon is similarly dominated by the Cerro Chalcatzingo. Only the northern and western horizons are unobstructed, as of course is the view from atop the Cerro Chalcatzingo. The saddle between the two *cerros* could also have been impor-

tant in astronomical observations.

Orientations do not have to be astronomical. The persons responsible for erecting the houses and/or public/elite structures could have oriented them to a landmark, although this is unlikely since orientations are not consistent. A major landmark, the volcano Popocatepetl, is N19E from the site but does not appear to have served as a point of orientation. It is also possible that some buildings were simply oriented to the natural topography of their field or terrace.

Amate Phase Orientations

Only two structures, PC Structure 4a-b and T-6 Structure 2, together with a wall section of unknown function (PC Structure 6a), are known to date to the Amate phase. PC Structure 4a-b, buried beneath the Cantera phase platform mound (PC Str. 4d), is exposed only in profile, and the short (1 m long) section of stone facing was insufficient for measuring the alignment. The PC Structure 6b wall has an orientation of N84½E (all orientations are being given to true north), while the south wall of T-6's Amate phase platform (Str. 2) is aligned N69½W.

Barranca Phase Orientations

The earliest Barranca phase constructions are a wall line exposed by the PC transect trench (PC Str. 7), which is too short to measure accurately (N40W ± 10°), and the site's major terraces. While these latter could simply be aligned with the topography of the original unmodified (Amate phase) hillslopes, the regularity of their front faces suggests otherwise. After nearly three thousand years of erosion and other modifications, their original orientation is obscured, but those west of the El Paso Drainage (T-15, T-17, and T-23) run essentially east-west (ca. N84W). The reasons for such regularity could have been ease of construction, erosion control, or an orientation toward a feature in the landscape or heavens.

As with Amate phase structures, the Barranca phase sample is too small to be meaningful. PC Structure 5, a stone construction facing north toward the PC platform mound (Str. 4), has an approximate orientation of N87½E. We have no data on the orientation of PC Structure 4 during the Barranca phase. The alignments of the T-9B house are difficult to measure because of the irregular nature of its walls of large stones, but are approximately N4½E. The late Barranca

subphase platform-like structure, T-29 Structure 1, has two clusters of readings taken from its substructure walls: N15½W and N75½E.

Cantera Phase Orientations

The orientation of structures during the Cantera phase is remarkably consistent, which suggests that these alignments were purposeful. A significant point is that the consistency is not simply among the public/elite structures but is found in the domestic architecture as well. In other words, it was a community-wide pattern shared by the architects of the stone-faced platforms and the builders of the houses (in this latter case, presumably their residents).

It is during the Cantera phase that we also begin to see significant associations between various structures. An example of this is found with PC Structures 1d and 2, which faced onto a common "court" area on the southwest side of the Plaza Central. Structure 1d's main axis runs N-S and is oriented N½E. Structure 2's axis runs E-W and is aligned within 1° of Structure 1d (all readings were taken with hand-held Brunton compasses and are probably accurate only to ± 1°). The northern (front) wall of Structure 2, if extended ca. 20 m eastward, would touch (and align with) the southern wall of Structure 1d. This indicates that their positioning was purposeful and careful.

Archaeomagnetic samples taken from the burned floor of PC Structure 2 demonstrate that at the time the house was burned, magnetic north was $5.6 \pm 4^\circ$ east of true north. This seems to indicate no relationship between structure orientation and magnetic north (cf. Carlson 1975). Radiocarbon dates from the structure (N-1707, N-1708; see Table 5.1), while not definitely related to that particular burning, place the general age of PC Structure 2 at $620-630 \pm 85$ BC.

While we can only estimate the general alignment of the Cantera phase PC Structure 4 platform based on its present topography, it appears very close (ca. N88½W) to the PC Structures 1 and 2 alignments, suggesting that this was the basic orientation of the Late Cantera subphase Plaza Central public/elite area. A stone line adjacent to Burial 40 atop the Structure 4 platform was oriented N84½E, and the tomb structure at the east end of the mound was N5E, but the significance of these deviating alignments is unknown.

Table 6.2. Architectural Orientations (True North)

<i>Phase</i>	<i>Structure</i>	<i>Orientation</i>
Amate	PC Str. 6b	N84½E
	T-6 Str. 3	N69½W
Barranca	PC Str. 5	N87½E
	T-9B Str. 1	N4½E
	T-29 Str. 1	N15½W
		N75½E
Cantera Public/Special Architecture	PC Str. 4d	N88½W
	T-6 Str. 1	N3½E
	T-15 Str. 5	N84½W
	T-25 Mon. 22	N87½W
	T-25 Str. 2	N87½W
	T-27 Str. 1	N87½W
Houses	PC Str. 2	N88½W
	PC Str. 3	N5E
	PC Str. 1	N½E
	PC Str. 6	N85½E
	T-4 walls	N73W
		N6½E
		N1½E
	T-9A Str. 1	N1½E
		N2W
	T-11 Str. 1	N3W
		N88W
	T-11 Str. 2	N89½W
	T-21 wall	N4½E
	T-23 Str. 1a	N84½W
	Wall 2	N2E
	Wall 3	N7E
	Wall 4	N79½W
	Wall 5	N85W
	Wall 11	N83W
	Wall 13	N83W
	T-23 Str. 1b	N83W
	Wall 6	N2½E
	Wall 7	N81W
	Wall 8	N3E
	Wall 10	N83½W
	T-23 Str. 1c	N5E
	Wall 9	N7E
	Wall 12	N88W
	Wall 14	N3W
	T-24 Str. 1	N88½W
	S-39 Str. 1	N1½E
Classic	T-3 Str. 1 stairway	N½W
	T-4 Str. 3	N12½E
		N76W
		N11½E
	T-15 Str. 2	N87½W
	T-15 Str. 4	N16½E
		N13½E
		N75½W
	T-17 platform wall	N6½E
	T-20 Str. 2	N77½-80W
	T-27 Str. 2	N4½E
		N2E
Postclassic	Tetla-11 house	N9½E
		N80W
	Tetla ball court	N64½W
	Adoratorio stairs (Aveni 1980:App. A)	N17°17'E N21°22'E

Stone-faced platform structures sit on the terraces to the north of (below) the Plaza Central terrace. The T-6 platform (Str. 1) is oriented N3½E, the T-15 platform (Str. 5) N84½W, while T-25 Structure 2 and T-27 Structure 1 are both N87½W, as is the table-top altar (Mon. 22) on T-25.

As mentioned, three of the stone-faced platforms, T-6 Structure 1, T-15 Structure 5, and T-25 Structure 2, have stelae in association. The stela (Mon. 27) with the T-6 platform, while facing outward with the same orientation as the structure, is off-center in its placement, standing 4.9 m from the north end of the 15.7 m long platform. Monuments 25 and 26 are apparently contemporaneous with the platform and with Monument 27. The location of these monuments is arrived at by projecting the alignment of the T-6 platform (N3½E) another 15.7 m to the north.

Monument 21, the stela erected in front of the T-15 platform (Str. 5), is also placed off center, in this instance 3.9 m from the structure's west end. Based on the position of the fallen stela when discovered, it is highly probable that this monument's carved face pointed eastward, rather than to the north, the direction the platform faced. The stela associated with the nearby T-25 platform (Str. 2) sits at that platform's southwest corner and is oriented to face the east or west (the carved area is missing). Thus, no matter which way the platform structures themselves faced, all the stelae (including Mon. 26 associated with the round altar) faced only east or west.

The reader will have noticed that the distance 15.7 m repeats itself on T-6 measurements. The platform is 15.7 m long, and Monuments 25 and 26 are situated 15.7 m from that structure (and essentially in alignment with it). When we noticed that repetition, we decided, primarily out of curiosity, to calculate the difference in length between the T-15 platform (19.5 m) and the T-6 platform (15.7 m). The difference is 3.8 m. This is also approximately the distance which the stela (Mon. 21) is offset from the corner of the T-15 platform. This distance, 3.9 m, is apparently one Cantera phase unit of measurement. Three times 3.9 is 11.7 m, the length of the T-27 platform (Str. 1c). Four times that unit is about 15.7 m (T-6 Str. 1), and five times the unit is 19.5 m (T-15 Str. 5). The T-25 altar (Mon. 22) and patio may also use this module.

Curiously, the placement of Monument 27, the T-6 in situ stela, does not seem to fit the hypothesized 3.9 m module, nor does every Cantera phase structure at Chalcatzingo. In many cases the wall sections uncovered in our excavations were too destroyed to be accurately measured. The analysis of these data are still underway. However, using the module it is at least possible to hypothesize that the length of the site's largest mound, PC Structure 4d, might have been 20 module units (78 m), which is close to the mound's estimated present length.

There are few data available which allow us to compare the Chalcatzingo alignments with those of other Middle Formative sites in the central highlands or with other centers in Mesoamerica. Two alignments are known for La Venta: the main complexes are oriented N8W, while the Stirling Group is N7E (e.g., Heizer, Graham, and Napton 1968: Site Plan). Laguna de los Cerros' main mounds (Bove 1978: Map A) seem to duplicate the La Venta main complex's alignment. The orientation of the Central Court and Palangana groups at San Lorenzo align to true north (Coe and Diehl 1980:29, Map 2), essentially midway between the two La Venta orientations.

The trend of alignments at Chalcatzingo is clearly slightly east of north, ranging between that of Middle Formative San Lorenzo and La Venta's Stirling Group. However, because of the variation (however slight) in the orientation of Cantera phase public structures and residences, it is of doubtful value to compare them with those of Gulf Coast centers at this time.

THE SETTLEMENT PATTERN

In attempting to reconstruct an overall view of the site, particularly as it appeared at ca. 500 BC, one feature is quite clear: The Cantera phase village was a dispersed settlement spread over the terraced hillside. While most of the terraces were "residential" in the sense that each served as the location of a house structure, a limited number of terraces near the upper center of the site can be distinguished as public (and elite) areas (Plaza Central, T-6, T-15, T-25). The development of this pattern is considered in the discussion which follows.

Amate Phase, 1500–1100 BC

The Amate phase occupation was built upon the unmodified hillside slopes. Because the Amate phase levels were disturbed, destroyed, or deeply buried by the Early Barranca subphase terracing, only a general estimate of the site size can be made. The estimate is based on the distribution of undisturbed (buried) Amate phase levels found during the excavations and on one area of Amate phase sherds found during the site survey.

The Amate phase settlement occupied the hillside area today covered by the Plaza Central terrace, T-15, and T-6. It is probable that the T-2 area was also part of the occupation zone, for although T-2 has not been farmed in years, Amate phase sherds have been found along its northern terrace face. Sherds from this phase have also been found on the northeast edge of T-11 and represent the westernmost known extension of the occupation zone. Amate phase deposits were also found during the excavations on N-2 and N-7, fields below the hillside and north of the small stream. There are no data to indicate any Amate phase occupation between the T-15 area and the N-2 and N-7 fields, but the latter areas have been included for our population estimates.

Using the present surface areas of the terraces and fields which have yielded Amate phase materials as a way of calculating the general coverage of the occupation zone, the Amate phase occupation of the upper hillside covered an area of roughly 4–6 ha, and that at the base of the hill 0.6 ha. Using the criteria for estimating site size and population of settlements located during the project's regional survey (Chapter 21), the Amate phase occupation can be classified as a Hamlet, with an estimated population of up to 66 inhabitants.

Although possibly only a Hamlet in size, Amate phase Chalcatzingo included two monumental architectural features, the PC Structure 4a mound and the T-6 Structure 3 platform. The only other architectural feature known from this phase is a wall, PC Structure 6a, to the east of the PC Structure 4a mound. It is significant that these architectural features occur in areas which were important public/elite areas during the Cantera phase. It seems highly probable, particularly in the case of the Plaza Central area, that the choice of this location for a public building (PC Str. 4a) set the pattern for public areas which was con-

tinued by later generations (during the Barranca and Cantera phases) at Chalcatzingo.

No carved monuments or stone sculptures can be attributed to the Amate phase occupation.

Barranca Phase, 1100–700 BC

The Barranca phase essentially begins with a major change in the site's configuration. During the Early Barranca sub-phase the natural hillside slopes were intensively modified to form a series of terraces which created ca. 10 ha of level fields. This massive cut-and-fill operation disturbed the majority of the Amate phase deposits, in most cases removing them to be deposited as terrace fill. The terrace construction included well-planned water-control embankments on the two major rainfall drainages crossing the site (T-15 Str. 1, El Rey Drainage Str. 1) for the purpose of neutralizing the erosional effects of heavy rain runoff.

It is obvious that, with a completely different topography following the terracing, the settlement pattern should be modified. However, since the arrangement of the Amate phase dwellings is unknown, the extent of the changes cannot be determined. The spatial extent of the site is greater at this time, incorporating T-9, T-21, T-25, T-29, and east of the El Paso Drainage, T-20, in addition to the continued occupation of the original Amate phase "core area." At the base of the hill only N-2 has evidence of use. The total area covered is estimated at 13 ha, including ca. 1 ha of public area (ca. 8 percent of the total area). Thus, the settlement is classified as a Small Village with a probable population of 130–325.

The expansion of the Barranca phase settlement indicates an expanding population and the need for more land. The increased desire for agricultural land may be reflected in the decreasing use of the land near the spring for settlement, suggesting a switch from domestic to agricultural land use.

At this time only the Plaza Central (T-1) area can be defined as a public/elite area. PC Structure 4 was enlarged (Stage c) and PC Structure 5 built immediately to the south, indicating that the area remained important during this phase.

Only one complete Barranca phase house structure, T-9B Structure 1, was found. A floor fragment and a trash pit on T-25 indicate that a Middle Barranca sub-phase dwelling had been situated there as well. T-29 Structure 1, a structure of

uncertain use (public or residential), is also Barranca phase. While these data are minimal, they do seem to show similarities to the more abundant Cantera phase house data. The Barranca phase houses are widely separated, and there are no indications of more than one per terrace. This suggests that the Barranca phase settlement, like the Cantera phase settlement, was dispersed (see below). It is for this reason that using site area as a means of calculating population must be approached with caution.

Although no stone carvings or monuments can definitely be assigned to the Barranca phase, it is possible that Monument 22, the T-25 altar, may have originally been carved early in this phase. The Chalcatzingo altar is an enigma, for while it occurs in a very good Cantera phase context, its monolithic Gulf Coast counterparts are all apparently Early Formative monuments. Since it is imitative of those Gulf Coast monuments, it must be considered to be closely contemporaneous with them. As noted in Chapter 7, we know little of the history of the altar prior to its rebuilding on T-25.

Cantera Phase, 700–500 BC

During the Cantera phase the settlement extended beyond the terraced hillside and covered an area of about 40 ha. It is probable that several smaller, peripheral terraces (T-4, T-24, CT-1) were constructed on the talus slopes at this time. The presence of stone-faced platform structures on T-6, T-15, T-25, and T-27 demonstrates that the public/elite areas of Chalcatzingo likewise increased in extent. These special site areas cover a total surface of nearly 5 ha, about 12.5 percent of the land surface of the main site zone.

The most important of the special site areas was apparently still the Plaza Central. The northern end of this large terrace is flanked by the PC Structure 4 platform mound, while at least three house-like structures were located along the southern edge. One of these, PC Structure 1, has been classified as an "elite" residence based on its elaborate subfloor burials (Chapter 8). Its location across the plaza from PC Structure 4 suggests not only that it had special status in comparison to other residences on the site, but also that it may have been occupied by the community's "chief."

The two structures to the west of PC Structure 1 (the PC Str. 2 group) can

be said to have had special importance simply on the basis of their location. Their positioning in relation to PC Structure 1 suggests that they faced and shared a common "patio" area. While the PC Structure 2 buildings may have served as residences, the quantity of iron ore fragments and green stone in the structures and in the patio area indicates that workshop activities were also important.

The presence of platform structures with associated stelae on terraces lacking surface indications of Cantera phase houses suggests that these platforms could also have been substructures for elite residences, although only the T-25 and T-27 data seem to confirm this possibility. Whatever their function, their location indicates that the upper terraces on both sides of the El Paso Drainage constituted a special area of Cantera phase Chalcatzingo.

Apart from the special site areas, each of the remaining terraces and fields of the main site zone had one large Cantera phase house structure located upon it. Although other areas of these terraces were only incompletely tested, it appears likely that no other residences or major structures (contemporaneous with the house structure) occupied a terrace. The resulting pattern across the site is therefore that of a dispersed settlement.

In comparing Chalcatzingo to other sites in the valley, those of comparable size (Chapter 21, Appendix H) seem likewise to have been dispersed. The surveys of the southern Valley of Mexico have shown Middle Formative nucleated villages and dispersed settlements (Sanders, Parsons, and Santley 1979:96–97, Map 9). Therefore, a dispersed settlement type is not necessarily "unusual" for Middle Formative central Mexico (see also comments in Chapter 27). At Chalcatzingo the dispersed Cantera phase settlement may simply be a continuation of the older Barranca phase pattern, although the fuller implications of the pattern may not be completely understood on the basis of the present data alone.

Each residence in the Cantera phase community sat alone on an individual terrace or field. Although one or two impermanent structures may also have been present, the remaining area of each field was apparently utilized for agricultural purposes. If this hypothetical reconstruction is correct, then in addition to whatever major functions the site may have had as a center for local or regional redistribution, exchange, or ceremonial

functions, it was still an agricultural village.

It is significant that when a house was destroyed and then rebuilt, the rebuilding usually took place in the same location. The continued presence of a house on a particular piece of land implies some type of proprietary use rights to that field or terrace. Because the houses were continually rebuilt in the same location over what must have been a number of generations, it is highly likely that this use right was hereditary. The facts that the house location did not shift and that other houses were not built on the same piece of land suggest that agricultural land was at a premium, and that terraces then, as today, were considered prime land. The Cantera phase settlements in Tetla and in the flatlands between the site and the present village (Appendix H, RAS-1, -326, -328) probably reflect the expansion of the site's growing population into more marginal lands.

As Chalcatzingo grew over time, it spread outward from the original Amate phase "core area." It can be presumed (and this is generally confirmed by the archaeological data) that the terraces nearest to this "core area" have been the longest inhabited. This suggests that if each field or terrace was indeed passed on in a hereditary manner, and this system maintained over many centuries, then perhaps land closest to the "core area" belonged to the oldest lineages. While there is no evidence that the regular house structures nearest to the "core area" have any greater status or importance than those farther away, the "conversion" of T-15, T-25, and T-27 from residential terraces to areas with special stone-faced platforms (whatever their function) could be important in this regard. While this "conversion" probably reflects the expansion of the public/elite area and nothing more, it could imply that the residents of these upper terraces became part of the site's elite group, possibly because they were from the oldest lineage(s). This could be taken to indicate that the elite were local personages and not "outsiders." More excavations on these upper terraces are needed to further explore these possibilities.

It should be mentioned that based on house burials and their associated grave goods (Chapter 8), only PC Structure 1 is clearly of a higher status. The remaining houses (this does not include platform structures) appear relatively homoge-

nous. If any further differences in social rank are found at Chalcatzingo during future field work, it may be between occupants of the main site zone and the peripheral zones (Tetla and the flatlands).

It is difficult to estimate the Cantera phase population for Chalcatzingo, and several conflicting estimates exist. If Naroll's formula is used to calculate household population, a figure of ca. 7 inhabitants per house is reached. While the exact number of occupied terraces and fields in the main site zone with Cantera phase houses is difficult to determine, an estimate of 20 is relatively close. Combining these figures provides a population estimate of 140 people. This number is perhaps low, but the estimate refers only to the main site area and does not consider Tetla and the flatlands (the latter area is included in Hirth's estimate in Chapter 21).

Using paleoecological data to determine the carrying capacity of the terraces and land adjacent to the stream, David Bugé (1974:4) suggests that a population of ca. 600 could have been supported. However, since the public/elite terraces may not have been used for agricultural purposes, and because houses also occupied an area of each agricultural terrace, a reduction of one-third might be appropriate (ca. 400 people).

Kenneth Hirth (Chapter 21) has estimated a minimum of 433 and a maximum of 1,081 for the Cantera phase population at Chalcatzingo. The maximum seems too high.

Based on the settlement data as we now interpret them, the household size and paleoecological data provide perhaps the best population range for the main site area, 140–400 people. While this number may seem low, it is far too easy to overestimate the populations of early villages. Chalcatzingo had a dispersed settlement, and our population estimate suggests that it was still a Small Village. At the same time, however, the settlement functioned as perhaps the major political-religious center in central Mexico (see Chapter 26), with strong external ties, public architecture, and impressive monuments. As Joyce Marcus (1983) has pointed out, preindustrial cities were ranked at the top of their regional hierarchies not necessarily because of their size, but through their ritual status or political power.

RESUMEN DEL CAPÍTULO 6

La arquitectura del período Formativo en Chalcatzingo puede clasificarse como pública-especial y residencial. Las construcciones de la categoría pública-especial son PC Str. 4, el montículo plataforma larga, y PC Str. 5, las cuales constituyen ambas alguna forma de arquitectura pública, así como cinco plataformas con cara de piedra, algunas de ellas asociadas con estelas: T-6 Str. 3 (Fase Amate), T-6 Str. 1, T-15 Str. 5, T-25 Str. 2, y T-27 Str. 1. La arquitectura del montículo es muy rara en el centro de México durante el Formativo Temprano y Medio, aún cuando es común en el sur; por lo tanto la presencia de estas estructuras en las secuencias iniciales en Chalcatzingo le da significado a la importancia que tiene el sitio en la región.

La otra categoría, las estructuras de casas, consiste de dieciséis estructuras incompletas, trece de las cuales pertenecen al Formativo Medio. El énfasis en la excavación se dio en estas estructuras y en sus interiores. No se localizaron por medio de muestreo al azar, sino por la observación hecha en cada caso de que la terraza tuviera una concentración de tepalcates que correspondiera con los restos de una casa. La mayoría de las casas estaban dañadas seriamente por la erosión y el arado.

Los datos provenientes de las casas producen un cuadro compuesto de residencias del Formativo Medio. El rasgo que separa a las casas de Chalcatzingo de otros asentamientos del Formativo es su gran tamaño, con un área de piso estimado para la fase Cantera 63 m², la cual es más de dos veces el área de otras casas conocidas del período Formativo. Los cálculos de población basados en la superficie de piso pueden no ser aplicables a Chalcatzingo porque no se sabe si toda la estructura servía como residencia.

Las casas de la subfase Cantera Tardío consisten típicamente de tres paredes de adobe y una pared de varas y revestimiento. Esta última probablemente tenía la función de dejar entrar el aire y salir el humo. Las paredes de varas se asociaban comunmente con una sola hilera de piedras como cimientito. Las paredes de adobe tenían un cimientito más grande y más pasado, generalmente de varias hiladas de piedra de ancho. Las paredes de varas (Compositae) se construyeron de los diferentes recursos que abundan en la localidad, cubiertas con

una plasta de lodo. Algunas de las estructuras de las casas presentan muestras de haber sido pintadas con un pigmento de kaolin blanco. Los pisos casi nunca aparecen completos ya que se hacían de tierra aplanada o plasta de lodo. Los restos escasos de los materiales utilizados para el techado, hacen que tanto el pasto como los *Compositae* sean los candidatos viables a usarse para el objeto.

Las paredes interiores indican que las casas estaban divididas en varios cuartos, y el material del que estaban hechas sugiere que se llevaron a cabo diferentes actividades en los varios cuartos, por ejemplo dormir, guardar, cocinar, manufacturar herramientas de piedra. La preparación de alimentos parece haberse realizado principalmente sobre braceres de cerámica. A los muertos comúnmente se les enterraba bajo el piso de la casa. Nuestra muestra de casa, tal vez falseada, revela poca muestra de basura o de rasgos de almacenamiento.

Los habitantes quemaban periódicamente las construcciones y reconstruían en el mismo lugar, probablemente debido a que no eran muy durables y si fácilmente invadidas por insectos y las sabandijas. También es posible que se hayan destruido a la muerte del jefe de familia.

Durante la fase Cantera, para la cual tenemos la mayoría de los datos, tanto las estructuras pública-especial como doméstica presentan un patrón consistente de alineamiento en comunidad dispersa. La preferencia de asentamiento claramente muestra la dirección un poco hacia el oriente del norte, con lo cual la orientación queda dentro de las del grupo Stirling de La Venta y las de San Lorenzo. También hay muestra de un módulo de medida de 3.9 m en la fase Cantera. Los múltiplos de este módulo aparecen como las longitudes de varias estructuras y fueron utilizadas también para ubicar las estelas.

El desarrollo del patrón de asentamiento del sitio puede ser rastreado hasta la fase Amate. El asentamiento de la fase Amate ocupó las pendientes de la montaña que no han sufrido modificación, comprendidas hoy en T-1, T-15, y T-6 y una segunda superficie que consiste de N-2 y N-7. Estos dos poblamientos por separado cubrieron cerca de 6.5 has. con un cálculo aproximado de 66 habitantes por poblamiento. Hay dos estructuras monumentales que admiten

fechamiento en esta fase inicial, el monolito de plataforma PC Str. 4a y la plataforma de piedra con cara esculpida T-6 Str. 3.

Durante la subfase Barranca Temprana las pendientes de las laderas naturales se modificaron intensivamente para crear las series de terrazas con las que formaron cerca de 10 has. de terrenos en distintos niveles. También se construyeron dos grandes canales de drenaje para el agua de lluvia y el control del desbordamiento del agua. Estos cambios son indicativos de un aumento en la población y en la necesidad de tierra para agricultura y habitación. Aparentemente, durante este tiempo se inició el patrón de tener una sola casa por terraza, indicativo de que el asentamiento de la fase Barranca fué disperso, semejante al asentamiento de la fase Cantera. La Plaza Central continuó como área pública elitista del sitio. Solamente se puede fechar un monumento en esta fase, el altar T-25 que ha sido fechado tentativamente en la subfase Barranca Temprana dado que sus adornos de la costa del Golfo son todos del Formativo Temprano.

Durante la fase Cantera el asentamiento se extendió más allá de las laderas terraceadas y llegó a cubrir una superficie de cerca de 40 has. Las áreas elite-públicas se aumentaron para incluir T-6, T-15, T-25, y T-27, las cuales junto con la Plaza Central cubren casi 5 has. o 12.5 por ciento de la superficie del sitio principal de la zona. Probablemente la residencia del (de los) líder(es) de la comunidad es PC Str. 1. Cada terraza continúa teniendo solamente una casa, lo cual implica que las terrazas cumplían una función agrícola a la vez que residencial. Es posible que el uso de la tierra terraceada preferente fuera un derecho hereditario, y con ello tal vez se obtenga la base para establecer rangos diferentes en las familias o linajes de la comunidad. La posibilidad de que la élite del sitio consistiera de miembros de los linajes más antiguos, los cuales vivían en las terrazas más altas, sugiere que estos fueran personajes locales, y no "furáneos."

Los datos del tamaño de las casas y los de la paleoecología referentes a la capacidad de carga del área del sitio nos dan un rango de población para el área del sitio principal de 140-400 personas durante la fase Cantera. Este número puede parecer bajo, y en parte se debe al reflejo de la naturaleza dispersa del pa-

trón de asentamiento, pero no se desvía de las otras muestras que indican que Chalcatzingo era un centro político-religioso importante con lazos externos fuertes. Las ciudades pre-industriales se catalogan en la cumbre de sus jerarquías regionales, no necesariamente debido a su tamaño, sino por la indicación de su actividad ritual o su poder político.

7. The Altar and Associated Features

WILLIAM FASH, JR.

In 1973, the observation of two dressed stones exposed in a plow furrow on T-25 led to one of the project's major discoveries, a large table-top altar (Mon. 22). While such altars are common at San Lorenzo and La Venta, they had never previously been found outside of the Gulf Coast. The altar sits on the south side of a low-walled patio area, and excavations there in 1973 uncovered seventeen human burials and one dog burial (Fig. 7.1). In 1974 the continued research unearthed another five burials, a tiny section of a Barranca phase house floor, and, on the north end of the terrace, a Middle Formative stone-faced platform with an associated stela base. The unusual configuration of the altar at the time of its discovery, its chronological placement, and its temporal and cultural relationships to the burials and the stone-faced platform are discussed in the following pages.

THE ALTAR EXCAVATIONS

Upon discovery that the two long, faced stones in the T-25 plow furrow contained several carved lines, the terrace was gridded and exploratory excavations begun. It quickly became apparent that other faced stones occurred in alignment with the original two, and together they formed a large rectangular-U shape. Only the outer face of the rectangular-U construction was cleared since it was this face which was carved.

When the excavations reached the bottom edges of the stones at approximately 25 cm below surface, no underlying construction was immediately evident. However, continued clearing disclosed that the feature did continue downward but that the underlying stones were inset approximately 8–15 cm. When fully exposed on its three sides, the complete stone construction proved to be a large low rectangle ca. 1 m tall, 1.4 m wide,

and 4.4 m long. It was built of two lower courses of large rectangular stone blocks, capped by a third course which overhung the lower courses creating the "table-top" effect. This construction forms a north-facing altar similar in form to those found at Gulf Coast Olmec sites. However, Gulf Coast altars are monolithic and tall, while this was shorter and created from about twenty large blocks.

Although the altar form was clearly visible after the initial clearing excavations, the front face—the area usually rich with iconography in Gulf Coast altars—was not. The altar's face was hidden by another group of eight large worked and faced rectangular stone blocks which had been placed to form a large rectangle covering about three-fourths of the altar's front (Fig. 7.2). These stones rested upon a well-made stone pavement which extended 1.3 m in front of the altar and 60 cm to each side. Apparently contemporaneous with the pavement is a rough stone wall construction which extended the west side of the altar to the pavement's edge (Fig. 7.3).

Although the altar's face was 75 percent hidden by the large stone blocks, some relief carving was visible. When these covering blocks were removed, the relief was revealed to be the eyes and eyebrows of an earth-monster supernatural (Fig. 7.4), a theme implicit in Gulf Coast altars but explicit here. The face is quite similar to the earth-monster "altar" painted above Oxtotitlan cave (Grove 1970a, 1970b, 1973). Lacking in Chalcatzingo's altar is the niche, the implied earth-monster mouth-cave.

Curiously, when exposed, the relief appeared incomplete. Some of the stone blocks making up the face were carved, but a few which should have been carved were blank. This is evident in the incomplete left eye of the earth-monster face, which lacks the lower section containing the eyeball. The solution to this

enigma did not appear until late in 1974, when the altar was being structurally reinforced with cement mortar between the major stones. At that time, the projecting ledge stone on the altar's east side was raised, exposing the top edge of the large slab which comprises most of the altar's side. The missing eye section was carved on the upper edge of this slab. We interpret this to mean that sometime during its history the altar had been disassembled and improperly reassembled. The incorrect rebuilding may have been purposeful or perhaps irrelevant to those directing that labor. The implications of this rebuilding are examined later.

The ledge stones forming the top of the altar ran only around its edge, and the top was not the solid pavement of stone which might be expected if this altar were duplicating the tops of Gulf Coast examples. Although difficult to demonstrate, it seems likely that a complete top pavement originally existed but was dismantled, forming the source of the large stone blocks used to hide the altar's face.

As the altar was cleared further and excavations were extended outward, it was discovered that the altar had been constructed (or reconstructed) at the south end of a sunken walled patio area (Fig. 7.4). Continued excavations uncovered human burials beneath the patio area and small caches of vessels along the patio's south edge and around the altar (Figs. 7.1, 7.5).

The patio's low walls are built of medium-sized, faced stone blocks arranged so that an inverted-V shaped niche was a major feature of the south (back) wall on each side of the altar (Figs. 7.4, 7.6). Rounded stones set to protrude at each side of these niches created eyes for these unusual earth-monster faces.

The altar is not centered along the south wall, at least as the south wall existed in its final form. The patio wall

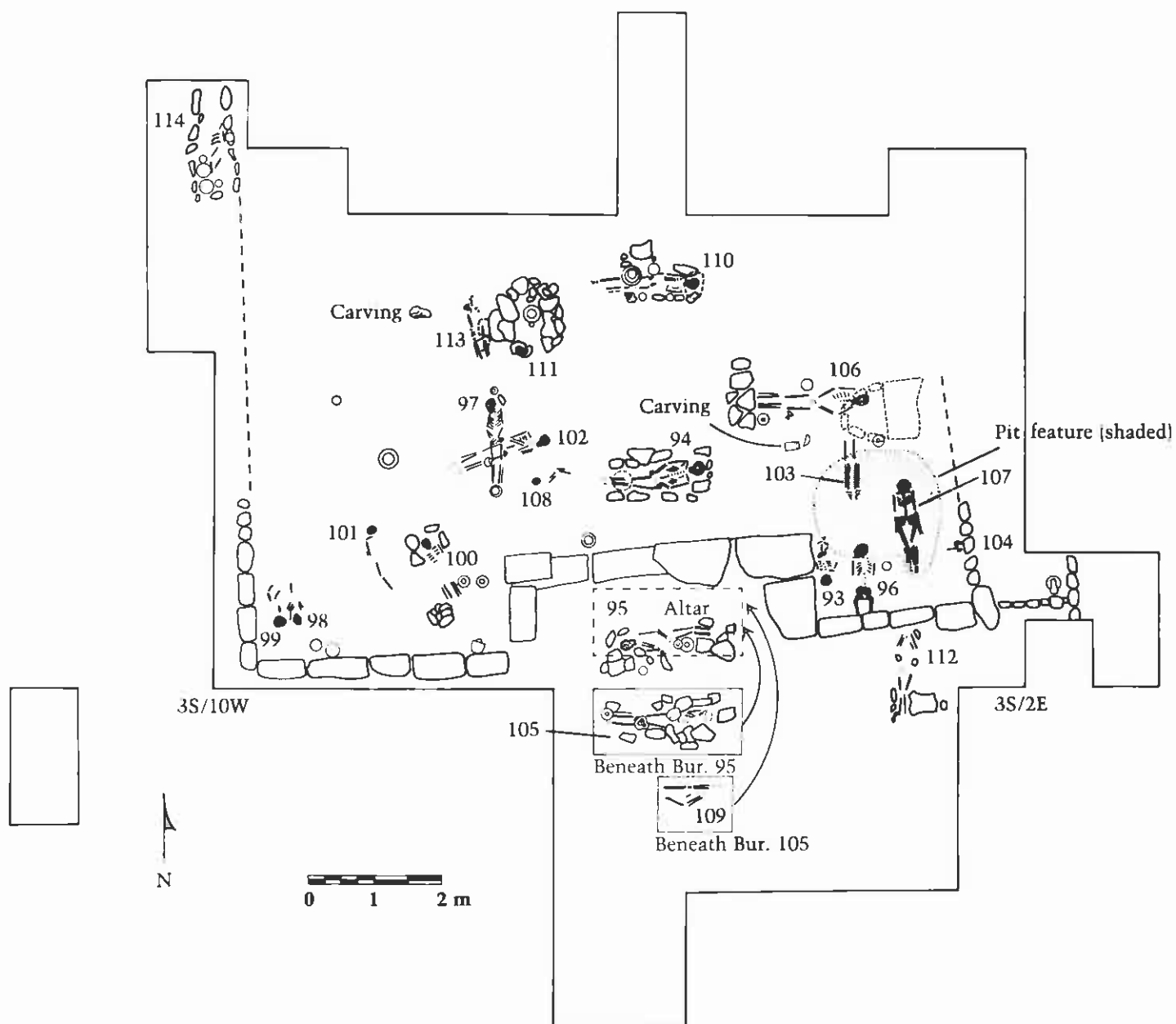


Figure 7.1. Plan map of T-25 altar excavations, showing burials 93–114.



Figure 7.2. Altar face hidden behind faced stones.



Figure 7.3. Extended wall lines, west end of altar.



Figure 7.5. Vessel cache at front of altar pavement.

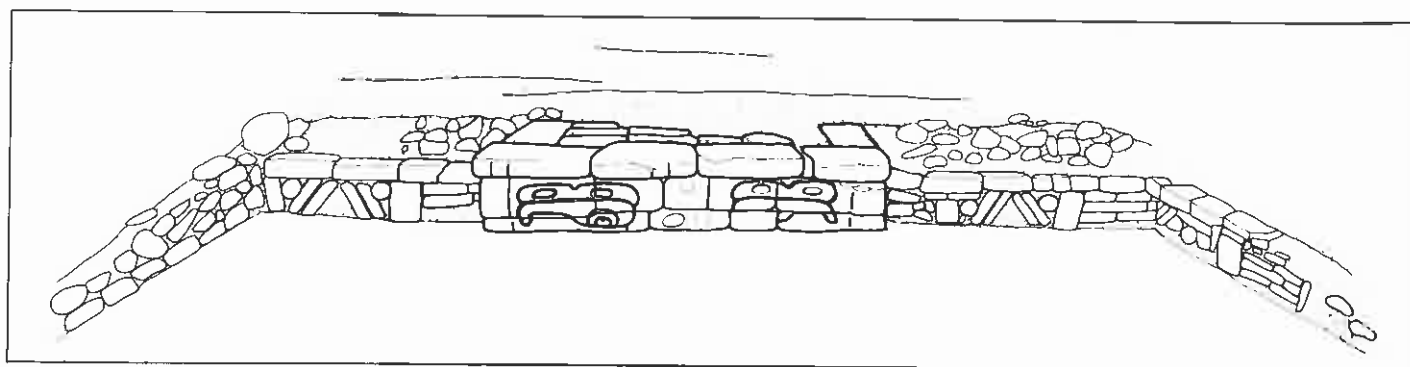


Figure 7.4. Altar and patio area showing altar face and patio wall niches.



Figure 7.6. Southwest corner of patio showing niche.

extending eastward from the rear of the altar is 2.3 m long, while the westward extension is 3.7 m long. This asymmetrical placement of the altar can be attributed to a rebuilding of the patio's eastern wall which moved it ca. 1.4 m closer to the altar.

There may have been four major building stages to the patio area. The bench-like south walls, with their inverted-V niches, are apparently part of the second building stage (Stage b). The evidence for the first stage (Stage a) rests with a long stone wall which runs ca. 70 cm behind (south of) the Stage b south wall and is at least as long as the Stage b south wall. This Stage a wall abuts the Barranca and Early Cantera subphase strata which were exposed when the sunken rectangular patio area was excavated in the sloping hillside. At the east end of the altar the wall rests upon stratigraphic Level VII (Fig. 7.7), thus predating the current position of the altar, which is built onto Level VI. Behind the altar, however, the wall is superficial and without great depth, and the natural stratigraphy of the cut is not completely hidden by the wall. It is here that a small section of a Barranca phase house floor (discussed below) is exposed. The lack of a complete Stage a wall behind the altar suggests that something—presumably the altar—may have stood in front of this wall.

The Stage b patio walls appear to have been built at the time the disassembled altar was rebuilt in its present configuration and location. At least two carved stones, apparently from the original altar, are incorporated into the western Stage b wall. Also within this same wall section, but largely destroyed, are the remains of another inverted-V niche.

It is impossible to estimate the dimensions of the Stage a patio, but the Stage b patio size can be hypothesized on the assumption that the south patio walls extending out from the back of the altar were of equal length (unlike today), or ca. 3.7 m each. These combine with the altar (ca. 4.2 m) for a patio width of 11.6 m. Interestingly, this reconstructed dimension is approximately three Cantera phase measurement modules (3.9 m; see Chapter 6), and the altar and each back wall roughly correspond to single module units.

Patio length is more difficult to ascertain. The present (Stage c) patio's side walls run north approximately 7 m and have been destroyed by erosion and plow-

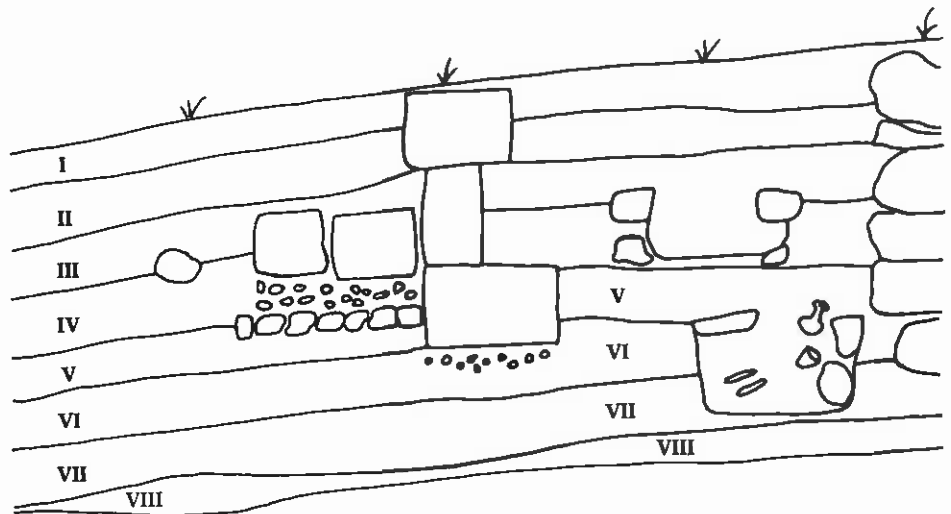


Figure 7.7. Profiles of stratigraphy in front of and behind the altar. Levels VIII–VI are Barranca phase and levels V–II are Cantera phase.

ing on the sloping terrace surface. However, a partially excavated fragmentary stone line running east-west 3.4 m north of the south Stage b walls (not shown on Fig. 7.1) may once have marked the northern extent of the patio. If this surmise is correct, the Stage b patio area was 39.4 m².

Stage c is simply an enlargement of the northern extent of the patio by another 3–4 m. This would have involved the destruction of the hypothesized Stage b northern wall mentioned above, and would account for its fragmentary remains. It would also imply that the east and west patio walls were lengthened. The northern limits of Stage c cannot be defined today because the patio blends into the plow zone due to the terrace's sloping surface.

Stage d is more complex. Apparently some time passed between the rebuilding of the altar (Stage b) and the act of covering the altar's face (part of Stage d). This is reflected in both the stratigraphy and the evidence that the table-top ledge was carefully replaced when the altar was rebuilt. Later, many of the top stones, including one ledge piece, were removed to use in covering the altar's face.

Prior to this, however, a stone pavement was laid in front of the rebuilt altar, and at the same time the altar's west side was extended by the construction of a stone wall. Eight large stone blocks were then set atop the pavement, apparently from the upper ledge, creating a

rectangular construction across the front of the altar (Fig. 7.2), which together with the altar formed essentially a two-step platform.

At some time following these events, the eastern wall of the patio was removed and replaced by a wall constructed of rough field stones (Fig. 7.8). This new wall was built 1.4 m nearer to the altar structure, thus creating the asymmetry in the patio's back (south) walls. At about the same time some crude stone walls of unknown function were built on the western side of the patio.

Chronology: Features and Burials

Although most of the stratigraphy on T-25 dates to the Cantera phase, these strata are underlain by shallow Barranca phase deposits which relate to an earlier occupation of the southern terrace area. Excavations south of the patio's back walls also unearthed several Barranca phase levels. During the excavations of the interior area of the altar (see below), a small fragment of a Barranca phase house floor was found in the south profile. This floor apparently represents the remains of the south edge of a Barranca phase house (T-25 Str. 1) which had been destroyed during the excavations of the sunken patio. Its location suggests that Burials 109 and 112 had been subfloor interments beneath that house.

A Barranca phase trash pit, intruded into *tepetate* and probably associated with the same house structure, is located



Figure 7.8. Eastern patio wall, construction Stage d.

1 m east of the altar at a depth of 0.7 m below the level of the altar base (Fig. 7.9). It is roughly circular, measuring 1.8 m in diameter at its widest point, and had been dug down slightly over 1 m into *tepetate*. Stratigraphy within the slightly bell-shaped pit was composed of five discernible levels (x–xiv) (Appendix B, SSU 16–19), all Barranca phase in date.

As mentioned below, the altar may have originally been constructed as early as the Barranca phase and subsequently moved and/or reassembled here in the Cantera phase. The construction of the altar at this location suggests that the Barranca phase house and related activities on T-25 might have been the determining factor for its location.

At least six burials apparently predate the construction of the patio area, and four of these are unquestionably Barranca phase. One of the four, Burial 113, consists only of the lower limbs of the skeleton and rests atop sterile soil. Burials 109 and 112, as mentioned, had probably been subfloor burials under the Barranca phase house. Burial 112 was adjacent to portions of a rough stone wall, possibly one of the foundation walls for the Barranca phase structure. This burial was in a supine position, the skeleton in a north-south orientation with the upper body to the north. The skull was lacking, and no definitely associated artifacts

were found. Burial 109, found at the base of the excavations conducted within the altar construction, lies atop *tepetate*. Although it is overlain by two Cantera phase burials clearly associated with the altar, the stratigraphy indicates that Burial 109 is Barranca phase and pre-altar. A tubular jade bead was found in association with this burial.

Burials 96, 103, and 107 all appear to be associated with the Barranca phase pit excavated into *tepetate* (Fig. 7.1). Burial 107, within the pit itself (Fig. 7.10), was associated with two mortuary offerings. One, a stingray spine (Fig. 7.11), is an imported object of undoubted ritual importance, and its presence suggests that this individual may have had a special status or position within the community. The other, an Amatzinac White cylindrical jar with a nearly flat base and fine-line incising around the outer rim (Fig. 7.12), had been placed by the right knee. Stratigraphy and the associated vessel indicate the burial is Late Barranca or transitional Barranca–Cantera phase.

Burials 96 and 103 are less securely datable to the Barranca phase. Burial 96 was interred in a face-down, extended position, its head resting over the edge of the pit. The lower limbs are overlain by the Stage b south wall, showing that it predates this wall. No burial furniture accompanied this interment, and it

is uncertain whether the obsidian blade found resting on the rib cage was deliberately placed with the body at the time of burial or was part of the fill laid over the burial. Burial 103 is disturbed and consists only of the lower limbs of an individual laid out in a supine position, with the feet extending over the edge of the pit.

The foundation stones of the rebuilt altar rest atop and slightly intrude into Level VI (Fig. 7.7). It is possible that the rebuilding actually began in the very lowest portions of Level V, and that the association with Level VI is intrusive for the purpose of laying a foundation. Both Levels IV and V, and their associated constructions, are Cantera subphase. This indicates that if the altar was originally carved and constructed at the same time as the Stage a patio walls, its creation can be dated to the early part of the Cantera phase. If the Stage a patio walls were constructed after the carving and dedication of the altar, the original monument may go back to the late Barranca subphase.

The stone block walls of the Chalcatzingo altar surround an interior earthen core which the excavations revealed to contain three burials. Burial 109, previously discussed, predates the reassembled form of the altar. Burial 105 was the first of two Cantera phase burials placed within the interior. The burial pit in which the individual was placed is intru-



Figure 7.9. Altar and patio showing position of trash pit.

sive from the lowermost portion of Level V, suggesting the possibility that Burial 105 was interred at the time of the altar's rebuilding.

The quality of the grave, its location within the altar, and the grave goods all indicate that the individual of Burial 105 was of high status. The burial occurred within a slab-lined and covered crypt (Figs. 7.13, 7.14). Seven vessels were placed as offerings. Two are Amatzinac White eccentric vessels in the form of what David Grove interprets as supernatural faces, with oval mouths on the side of the vessels and loop handles at the tops (Fig. 7.15a). One of these vessels occurred within the stone crypt together with an Amatzinac White bowl and a Peralta Orange punctate olla. It had incised pennant decoration on the back (Fig. 7.15b), a motif uncommon at Chalcatzingo but a marker for the late Middle Formative Rosario phase in the Valley of Oaxaca (Kent V. Flannery, personal communication to D. C. Grove). The other eccentric censer was placed within the rocks of the crypt which overlay the head of the burial.

A second burial (no. 93) almost certainly dates to the time of the re-erection of the altar. This, the burial of an infant lacking mortuary offerings, occurs at the altar's northeast corner (Fig. 7.16). It intrudes from Level V into Level VI. Al-



Figure 7.10. Trash pit; Burial 107 (within the pit) and legs of Burial 96.

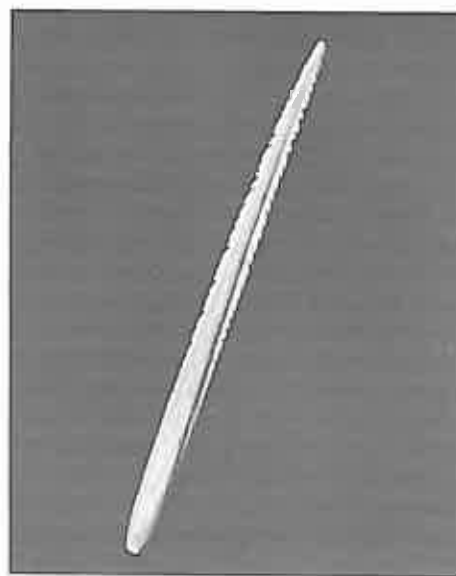


Figure 7.11. Stingray spine found with Burial 107.

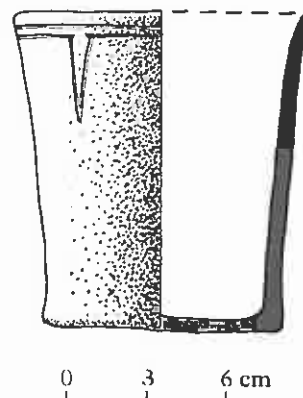


Figure 7.12. Amatzinac White vessel found with Burial 107.



Figure 7.13. Stone crypt, Burial 105.



Figure 7.14. Burial 105, stone crypt cover removed.

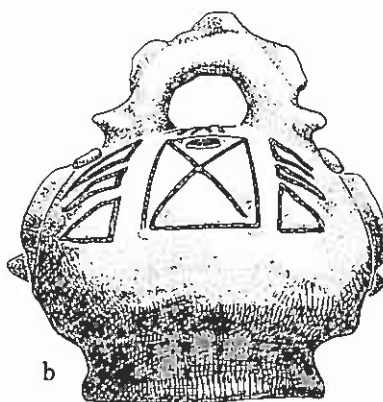
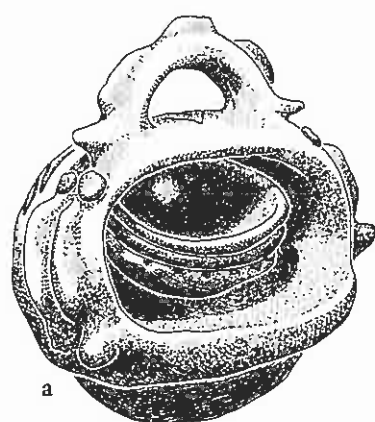


Figure 7.15. Vessel 1 associated with Burial 105: *a*, front, showing smaller vessels inside mouth; *b*, rear, showing incised design.



Figure 7.16. Burial 93 (small child) at northeast corner of altar.



Figure 7.17. Burial 94 stone crypt.

though there is no skeletal evidence to indicate that this child was sacrificed, ethnohistoric accounts (e.g., Durán 1971: 157–159, 164–165, 425, 454, 466) tell of the sacrificing of children in rituals related to water and rain, fertility, and mountains. The location of Burial 93 at the altar's corner and its apparent contemporaneity with the altar's rebuilding suggest it was a child sacrifice.

Sometime after the altar was re-erected, its face was covered by stone blocks removed from its upper surface. The stone pavement on which the blocks covering the altar were placed had not been part of the rebuilt altar. As Figure 7.7 illustrates, the pavement, which also hid a portion of the altar's carved face, is associated with Level IV. It served as a foundation for the stones used to hide the altar's face, but its westward extent goes beyond those stones and includes a crude stone extension wall built onto the altar's western side (Fig. 7.3). Vessel offerings were found in front of and underlying the pavement (Fig. 7.5) in front of each eye of the altar's earth-monster face. Whether the pavement and crude east extension were a separate construction act somewhat earlier than the placement of the large stone blocks over the altar's face cannot be determined from the stratigraphy.

Burial 94 is located directly in front of the altar at the edge of the stone pavement, which slightly overlay it. The burial had been placed within a well-formed stone crypt (Fig. 7.17), the walls of which parallel the edge of the pavement and the altar's front face. The body, extended in a supine position with the head to the east (Fig. 7.18), had no associated ceramic offerings. The burial clearly intruded from Level IV, which indicates that it was deposited after the reassembly of the altar but before the placement of the stone pavement in front of the altar.

The stratigraphy within the rebuilt altar diverges from the stratigraphy of the patio and northern area beginning with Level IV. Inside the altar Level IV is a clayish soil mixed with stones. It is thicker than its corresponding number in front of the altar. Interior Level IV appears to be a fill layer which followed the placement of Burial 105 (probably interred at the time the altar was rebuilt). Intruding into the Level IV interior fill was Burial 95, placed in a stone crypt (Fig. 7.19). Included as burial offerings were two ceramic vessels: a ridge-necked Peralta Orange olla decorated with punc-



Figure 7.18. Burial 94 with crypt covering stones removed.



Figure 7.19. Burial 95, altar interior.

tations (Fig. 13.42) and a Tenango Brown olla. A jade bead was found with the skull. The crypt was then overlain with a compact grey soil (Level III). Differences in interior and exterior stratigraphy prohibit us from determining whether Burial 95 was deposited before or after the Stage d rebuilding of the patio and the covering of the altar's face. It may well be that the two events were related, just as the interment of Burial 105 and the rebuilding of the altar have been hypothesized to be related. The restructuring of the altar may have been brought about yet a second time by the death of an important person.

A number of other burials were also interred within the patio area following Stage d. The exact sequence in which these burials took place is difficult to ascertain, but their presence indicates that the patio area was utilized as a burial plot. Although we have no archaeological proof, it is possible that the burials within this restricted area belong to one particular Early Cantera subphase lineage or family. These burials are all described in Appendix C, and only a few salient points are mentioned here.

Burial 97 is an adult directly interred with three offering vessels. One of these, a Carrales Coarse Grey composite bowl, has fine-line geometric incising along the rim. This is unusual for Carrales Coarse Grey vessels; yet a similar vessel was found with Burial 110 nearby, suggesting that the two burials could be roughly contemporaneous. Burial 97 was underlain by Burial 102, and therefore postdates the latter. Burial 102 lacks ceramic offerings, and because the interment of Burial 97 disturbed the stratigraphy, Burial 102 cannot be securely dated. Neither skeleton was in a good state of preservation, and sex determination was not feasible. As pointed out in Chapter 8, there is some reason to believe that overlapping subfloor burials in PC Structure 1 are male-female pairs and possibly husband-wife burials. Such a possibility must be considered in the cases of paired burials within the patio area as well.

Burial 108 may also be part of the Burial 97 and Burial 102 group. This child burial was disturbed, possibly by the interment of Burial 97. A jade bead was found in the child's mouth.

Two pairs of child burials were located in the southwestern area of the patio. The remains of Burials 98 and 99 were found intermixed (Fig. 7.20), and were associated with one Laca bowl. Their prox-

imity to each other suggests that these children died at the same time and were buried together. Their apparently simultaneous deaths and placement near the southwest corner of the patio indicate that they may have been sacrificed. A second juvenile pair, Burials 100 and 101, were found nearer to the altar. Burial 101 lies just west of Burial 100 and had no associated offerings. Burial 100 had been placed within a partially stone-lined grave and had three associated Cantera phase vessels. It is interesting to note that a pair of child burials was also found at La Venta within the basalt column tomb (P. Drucker 1952:23–26).

Burial 106 is of interest because the individual received seven vessels as mortuary furniture. This quantity is exceeded, however, by Burial 110, a few meters further north, which was found within a partially stone-lined grave with eight vessels in association and a metate covering the skull area (Fig. 7.21). Among the vessel inventory of both Burials 106 and 110 are Amatzinac White censers with double-loop handles. These have burned, smudged areas on their interior bases which indicate that copal or some similar substance was burned in them, perhaps only at the time of burial. Burial 110 occurs just north of the remnants of the crude stone wall which may have marked the northern extent of the Stage b patio area.

Burial 111 is unique for the patio area, since it is a skull burial. The skull was placed atop the south end of a crude ring of stones (Fig. 7.22). Two Amatzinac White bowls and a small Atoyac Unslipped Polished I bowl filled with powdered hematite had been placed within the ring. The skull was in extremely poor condition and could not be analyzed to determine its sex. A fluted serpentine bead was found in the mouth.

Burial 114 is unusual because its well-made crypt partially cuts the northwest edge of the patio wall. Its placement indicates that it is the latest burial in the patio area. The remains were in extremely poor condition, consisting of a few bone slivers and four adult teeth.

In addition to a dog burial, a number of unusual artifacts were found during the altar area excavations. Whether some of these represent offerings or simply discarded objects is a matter of conjecture. Among them is a zoomorphic sculpture (Fig. 20.6) and a section of a cylindrical stone sculpture (Fig. 20.7).



Figure 7.20. Burials 98 and 99 in southwest corner of patio.



Figure 7.21. Burial 110.



Figure 7.22. Stone ring and vessels associated with skull Burial 111. Skull sits atop stone in lower left corner.

STRUCTURE 2 PLATFORM AND MONUMENT 23

The 1974 excavations approximately 30 m north of the altar uncovered a low Cantera phase platform (T-25 Str. 2) measuring about 21 m long, 6 m wide, and 50 cm high (Fig. 7.23). The platform was constructed of three to four courses of river cobbles and field stones. The base stones rest in Level III and indicate that this platform was built after the major activity in the altar-patio area. Some patio area burials (e.g., Burial 114) may be contemporaneous with the platform and could represent individuals who in life were associated with the activities, domestic or otherwise, related to the platform.

Two refuse dumps were found during the platform excavations. One existed within the interior of the platform, the other in a stone-lined pit adjoining the platform's west end (Fig. 7.23). These both contain Late Cantera subphase refuse and indicate that some domestic functions may have been associated with this structure. In addition, a stone stela (Mon. 23) originally stood in situ at the platform's southwest corner. At the time of our excavations, only the basal stub remained, and no traces of carving could be detected on the remnant portion (Fig. 7.24).

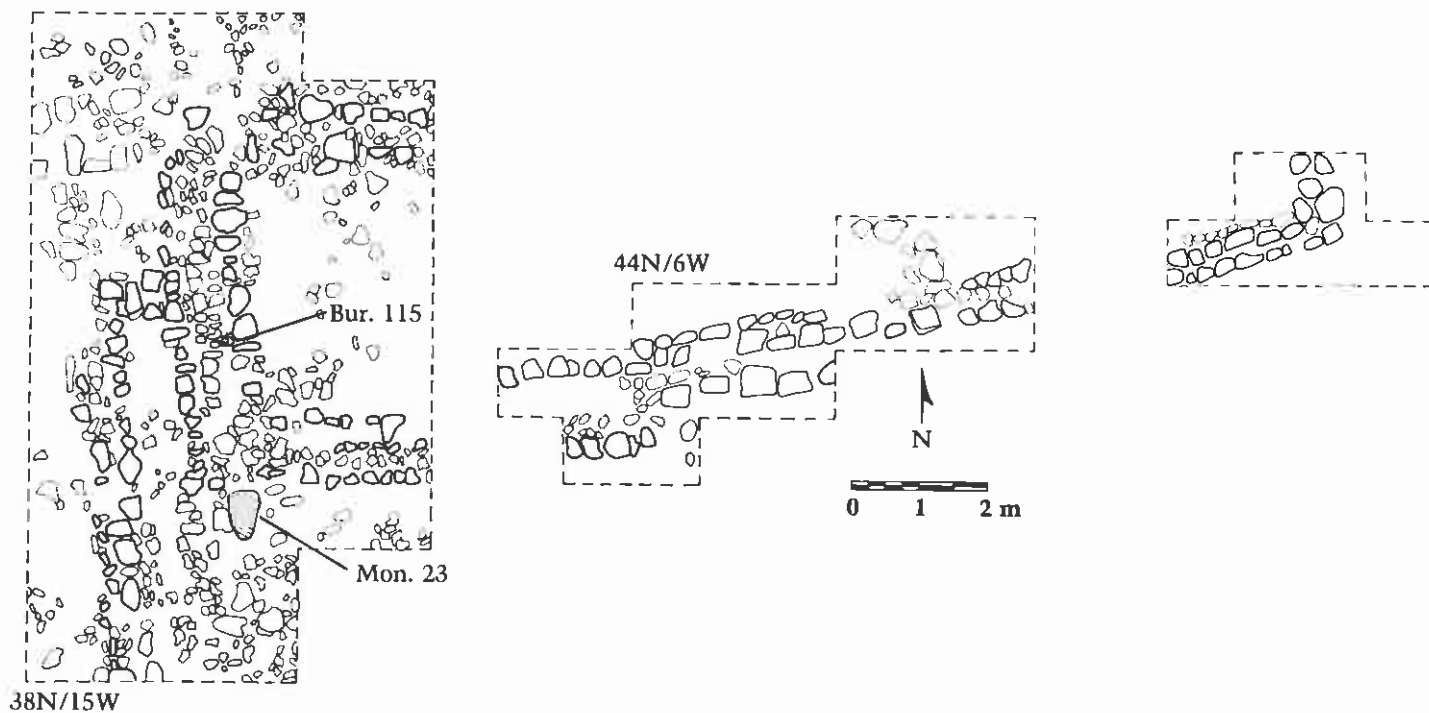


Figure 7.23. T-25 Structure 2; shaded area is stela base, Monument 23.

This northern area of T-25 apparently saw occasional reuse during the Classic period. A Classic period child burial (no. 115) intruded into the structure, and Classic period refuse occurred in the uppermost levels of this northern area.

COMMENTS AND CONCLUSIONS

The Chalcatzingo altar differs in several respects from its Gulf Coast counterparts. For instance, all known Gulf Coast altars are monolithic, and most depict a human figure seated within a niche in the altar's face. Chalcatzingo's altar lacks the niche and is constructed of twenty large stone blocks. Thus, this monument is not only unique in comparison with the Gulf Coast altars, but is unique as well for Chalcatzingo, where all other bas-reliefs were carved on monoliths (either free-standing or on the face of the Cerro Chalcatzingo).

While the monolithic altars, or blocks from which to carve them, were transported great distances to Gulf Coast centers, suitable large stones exist within 200 m of T-25 but were not utilized for the altar's construction. In fact, making the altar out of a number of large stones—all of which had to be shaped, dressed, assembled, and then carved—may have required more labor expenditure than simply carving one large boulder available nearby.

Unfortunately, attempts to compare the functions of Gulf Coast altars with those of the Chalcatzingo example are hampered by a paucity of published data on the former. With the exception of La Venta Altar 4 (Stirling 1943), the La Venta and San Lorenzo altars known today either were found repositioned or were not subjected to extensive horizontal excavations.

Grove (1973, 1981b) has suggested that one function of altars was that of a throne or "seat of power" for the ruler of an Olmec center. The iconography and particularly the altar's inset niche served to sanctify the ruler's divine origins as well as to link the ruler to the power of the underworld. Grove has also suggested (1981b) that a ruler's altar was mutilated and buried along with his other monuments at his death in order to neutralize the supernatural powers contained in these monuments and left uncontrolled by the ruler's death. It is important to remember therefore that the altar construction uncovered by our excavations represents an altar already dismantled

and rebuilt, and in that sense ritually neutralized.

Burials may have been associated with Gulf Coast altars. Matthew Stirling's excavations in front of La Venta Altar 4 (1943:55) uncovered a grouping of ninety-nine jade beads and one amethyst bead distributed in an arrangement suggesting that they had been worn as a necklace and bracelets by an individual buried in front of the altar. The quantity of jade indicates an important status for the buried person. Several burials are associated with Chalcatzingo's altar in a manner which may indicate a similar relationship. Burial 94 occurs directly in front of the altar. Like the La Venta burial, it lacks ceramic mortuary offerings. Burials 95 and 105 both were found within the altar's interior, an obvious area of special significance. Whether Burials 94, 95, and 105 represent deceased rulers and/or personages ritually related to the earth-monster cult symbolized in the al-

tar's iconography is conjecture at this point.

One major problem in dealing with the altar is that its final rebuilt form occurs in an unquestionable Cantera phase (700–500 BC) context. It is thus an anachronism, since the major Gulf Coast table-top altars may be Early Formative (1200–900 BC). Because Chalcatzingo's altar has clearly undergone at least one rebuilding, there is a possibility that it was originally made during the Barranca phase (1100–700 BC), a dating partially within the span of Gulf Coast altars.

The earliest evidence of occupation or use of T-25 is the Barranca phase structure, trash pit, and burials located on exactly the same area of the terrace as the altar. That the Barranca phase occupation may have been more than simple residential activity is suggested by the presence of a sting ray spine (an imported object of ritual importance) with Burial 107 and the association of a jade bead



Figure 7.24. Monument 23 stela base in situ.

with Burial 109. The facts that the altar sits in the locale of the Barranca phase structure and that Burial 109 underlies the altar may be coincidental but may also indicate a long-standing "sacred" importance for this location.

The Chalcatzingo altar is shorter than Gulf Coast altars and lacks the frontal niche. It is intriguing to speculate that perhaps the altar as originally built was taller through the addition of two or three lower courses of stones and did incorporate a niche. However, it is probable that the original altar was the same height and form as the re-erected altar. A niche would have been difficult to build within an altar constructed of horizontal stone blocks, and the large size of the altar's basal blocks indicates that they were intended as foundation stones. Niches do occur in the Stage b patio walls.

Although the time period of the altar's original construction is uncertain, it is probable that it was dismantled and certain that it was rebuilt during the Early Cantera subphase. It is possible that the re-erection was associated with and/or related to the placement of Burial 105 within the altar. Burial 95 also occurs within the altar and appears to correlate to the period when the altar was further modified by covering its carved face, an act possibly in response to the death of the personage of Burial 95.

It is important to reiterate that the Cantera phase burials within the patio area were not associated with the original altar. Some date to the re-erection of the altar, and the majority were buried in front of the highly modified structure. The structure and patio may have served as an ancestral shrine and a cemetery for the relatives of the individuals entombed within the altar.

It is certainly possible, but not demonstrated, that some of the individuals buried within the patio area had been associated in life with the Cantera phase platform structure and residence at the northern end of the terrace. We believe that this structure, like other stone platform structures associated with stelae at Chalcatzingo, was associated with one of the site's rulers. Excavations of the platform's subfloor area did not reveal any burials, indicating that they were probably interred elsewhere. The possibility exists that the platform and residence were located here due to descent ties expressed through the altar and the other activities on this terrace.

RESUMEN DEL CAPÍTULO 7

El altar de piedra (Monumento 22) construido con un patio hundido fué descubierto cuando surgieron del suelo, al paso del arado, dos piedras esculpidas en el campo T-25. El altar, de más de 4 metros de longitud, no es monolítico como los altares olmecas de la costa del Golfo, sino que está construido de dos niveles de piedras rectangulares rematadas por un nivel superior sobresaliente, el cual crea el efecto de cubierta de tabla.

Los ojos y cejas de un monstruo de la tierra sobrenatural, el cual es un tema olmeca común, se encuentran esculpidos en el frente del altar. Al realizar la excavación, esta parte esculpida se encontró cubierta en un 75 por ciento por grandes bloques de piedra colocados al frente de la cara del altar. Una vez expuesta, se vió que la cara no presentaba el gran nicho de otros altares olmecas, y que la cara esculpida estaba incompleta. En el transcurso de su historia, los bloques del altar deben haber sido desarmados y vueltos a armar en forma incorrecta. Más tarde la cara fué escondida con otros bloques de piedra.

El fechamiento de la construcción original del altar se desconoce. Se volvió a armar en el lugar que se encuentra ahora durante la subfase Cantera Temprana. Dado que los altares de la costa del Golfo aparentemente pertenecen todos al Formativo Temprano, el altar de Chalcatzingo pudo haber sido esculpido primero y después vuelto a construir en el lugar T-25.

El altar mira al norte hacia el área ocupada por un patio hundido rodeado de paredes. Las paredes del patio no son altas y están construidas de piezas de piedra, las que algunas veces presentan la forma de nichos triangulares. sobresalen a los lados de los nichos, formando los ojos, unas piedras redondas, en tanto que los nichos mismos figuran las bocas de estos rostros de monstruos terrestres.

El patio fué construido en cuatro etapas, las cuales todas corresponden a la fase Cantera. Los depósitos de la fase Cantera se encuentran por encima de los estratos de la fase Barranca, y un pequeño fragmento de un piso de una casa de la fase Barranca fué descubierto detrás del altar. Se descubrieron veintitrés entierros durante las excavaciones. Dos de ellos provinieron del interior del altar, pero la mayoría habían sido ente-

rrados debajo de la superficie del patio. Unos cuantos entierros se pueden fechar en la fase Barranca y por lo tanto relacionarse con la casa de la fase Barranca. Varios entierros de niños de la fase Cantera pueden ser sacrificios de niños.

Las excavaciones del extremo norte de esta terraza permitieron descubrir una plataforma baja con una escultura de piedra asociada a una estela que se encontró rota. Esta plataforma pudo haber sido el cimiento de una residencia especial. El hecho de que esta plataforma se encuentre localizada al norte del altar puede indicar una relación de parentesco entre los individuos que hayan vivido sobre la plataforma y aquellas personas que se encuentran enterradas bajo el patio y dentro del altar.

8. Chalcatzingo Burials as Indicators of Social Ranking

MARCIA MERRY DE MORALES

This chapter discusses the human burials found during the 1972–1974 field seasons at Chalcatzingo with particular reference to Middle Formative social complexity. This social dimension is manifested by variations in grave type, mortuary furniture, and, derivatively, location. Alternative hypotheses for social differentiation at Chalcatzingo are presented, as well as similarities to Gulf Coast Olmec burial practices. Detailed descriptions of every burial are given in Appendix C.

No Early Formative (Amate phase) human burials were recovered by our excavations, and only a few burials of the early Middle Formative (Barranca phase) were found. The largest portion of the burials occur in Cantera phase (late Middle Formative) contexts, corresponding to the time of the heaviest occupation at Chalcatzingo. Some Late Formative, Classic, and Postclassic interments were also found and are mentioned briefly.

At the beginning of the project it was hoped that human skeletal remains would be of sufficient quantity and quality to allow the study of variations within the burial population in order to determine whether one or more morphological populations were present and/or restricted to particular site areas. Such data might have provided insights into the nature of external influences at Chalcatzingo, such as the hypothesized presence of a Gulf Coast elite.

Unfortunately, the majority of the skeletal material recovered was poorly preserved and highly fragmentary. Thus, sufficient morphological data could not be obtained to support or refute this hypothesis. The sexes of the individuals in nearly all instances were indeterminable, and age could not be refined beyond the simple division of infant, juvenile, young adult, and adult. In addition, no meaningful observations concerning deformation of the bones resulting from ei-

ther pathological causes or premortem artificial deformation could be observed. The teeth were often well preserved, however, and in one instance, from the Classic period, dental mutilation was noted (Burial 92).

While morphological data were difficult to obtain from the majority of the burial population, skeletal preservation was sufficient to provide bone chemistry samples from over ninety Middle Formative skeletons. These samples were collected and analyzed for strontium content by Margaret Schoeninger. Since strontium is differentially distributed between meat and vegetable products, the relative amount of strontium in human bone can be used to infer diet. The results of that analysis (Schoeninger 1979a, 1979b) suggest that there were significant differences in meat consumption among the population at Chalcatzingo. Whether these differences resulted from a differential diet among a single population, as Schoeninger suggests, or serve to differentiate two distinct populations (i.e., an intrusive Gulf Coast elite) cannot yet be determined.

Burials at Chalcatzingo occur as sub-floor interments in house structures and in nonresidential special contexts, such as the patio area enclosing the table-top altar (Mon. 22) on T-25 and the large earthen platform mound on the Plaza Central (Str. 4). They occur in both extended and flexed positions and exhibit a variety of orientations.

The burials have been classified into three types based on grave preparation. A simple, direct interment is a burial made in an unlined excavation in the ground, with no elaboration of the grave. A stone-associated interment is a grave which has several stones placed around the edges and/or covering parts of the body. This type of grave is not as complete as a stone crypt, the third type, in which the grave is lined and covered with stone

slabs. In some instances, the Chalcatzingo crypts lacked covering slabs, but this appears to be a result of destruction by erosion and modern plowing rather than an intentional omission by the people preparing the grave.

Mortuary offerings consisted primarily of pottery, utilitarian stone, jadeite and serpentine objects, and obsidian, with pottery by far the most common artifact. Although a wide variety of ceramics was utilized on the site [see the typology presented in Chapter 13], only a relatively limited number of types and forms were found with the burials. No strong pattern has emerged which correlates certain vessels with specific burial types, and although some general statements can be made, there is a great deal of variability among the mortuary attributes.

The vast majority of ceramic vessels associated with burials are finished with an Amatzinac White slip. The principal forms for these vessels are the small shallow bowl and the double-loop handle censer. The small shallow bowl (Fig. 8.1a) is the most typical form of all ceramics associated with burials, occurring with twenty-nine of the 143 Formative period burials. Some are incised with decorative motifs. A few small shallow bowls, such as the Atoyac Unslipped Polished III type, lack the white slip. Small shallow bowls are found with extended and flexed burials in both crypt and noncrypt graves. They are sometimes found singly, but are frequently placed in pairs, mouth to mouth, suggesting that they held food or some other perishable substance. The mouth-to-mouth placement never occurs in association with crypt burials.

In addition, small shallow bowls are frequently paired with the small bottles we call *cantaritos* (Fig. 8.1b), the *cantaritos* often sitting within the shallow bowls (see below). *Cantaritos* with or

without shallow bowls were found with twenty-two Middle Formative burials, apparently restricted to extended interments. Both they and the shallow bowls occur most frequently with Plaza Central burials.

Fourteen burials were associated with Amatzinac White double-loop handle censers (Fig. 8.1d). All but three examples of this censer form are found with Plaza Central burials, and one of these exceptions was a Cerro Delgado cave burial (Burial 156). The charred interior bases of these vessels suggest that they functioned for burning a substance such as copal at the time of the burial. Their near absence at other site areas suggests that double-loop handle vessels may have been reserved for censuring at the burial of a person of special rank, position, or role.

Only five spouted trays were found in definite burial contexts. Spouted trays (Fig. 8.1c) normally have their interiors slipped with Amatzinac White. Four such artifacts were excavated with burials on the Plaza Central, and each was associated with a small shallow bowl. A similar association comes from a vessel cache on T-25. The fifth burial association, with the double burials on T-24 (Burials 90 and 91), lacked the shallow bowl and is the only occurrence of a spouted tray in a grave which also contains a jade bead.

Both grey wares, Carrales Coarse and Pavón Fine Grey, are also represented in burial contexts. Carrales Coarse Grey vessels are associated with twenty burials, while Pavón Fine Grey is rare. Most commonly the Carrales Coarse Grey vessels are composite bowls, often nicely incised and highly polished (Fig. 8.1e). Such bowls occur with extended and flexed burials, but are usually absent from crypt burials and from burials associated with jade ornaments.

Other ceramic types, such as Peralta Orange, are rare in burials. In addition, only six burials had definite associations with figurines, whole or fragmentary. The only burial excavated with two whole figurines is Burial 45, a subfloor burial in PC Structure 2 (Fig. 8.2). Several other burials, again primarily on the Plaza Central, had associated figurine fragments, usually only heads or bodies.

Jade, serpentine, and other greenstone objects comprise another class of Middle Formative burial offerings. Three general categories of greenstone jewelry were found—earspools, beads, and pendants—as well as some miscellaneous pieces.

All of the earpools are of the type which Charlotte Thomson (Chapter 17) characterizes as “standard” earpools. None of the “paper-thin” earpool fragments recovered by excavations were associated with burials.

All of the beads occurred singly except in Burials 39 and 40, which contained necklaces obviously worn by the deceased. In the majority of burials yielding single beads, the beads were found at or within the individuals’ mouths. A tubular bead found between the legs of Burial 40 (Fig. 17.10j) is of far greater workmanship and quality than any singular beads associated with other burials. Other greenstone objects include jade awl points and a serpentine were-jaguar figurine. (See Chapter 17 for descriptions and illustrations of these artifacts.)

Obsidian was also found in several burials, although in some cases it was difficult to ascertain whether the obsidian had been placed as part of the mortuary furniture or had simply been within the soil used to backfill the grave pit. Definite associations of obsidian were found only in burials from PC Structure 1 and T-25. Among the eight burials from PC Structure 1 associated with obsidian, the obsidian occurs in the form of complete or fragmentary prismatic blades, and the two burials from T-25 containing obsidian had respectively a partial blade and a flake. Obsidian also occurs with Burial 138 on T-37 because the individual was interred in a trash area composed of obsidian workshop debris. The lack of obsidian with burials elsewhere on the site could reflect a recording error on the part of the archaeologists excavating the burials, but it more likely appears to be part of a pattern of the restriction of certain mortuary objects to the Plaza Central and T-25 burials.

Manos and metates were found in association with nineteen burials, thirteen of which were in PC Structures 1 and 2. Only one of the metates was whole (with Burial 110); the rest were fragments. Several of the manos were whole. Because it was almost impossible to sex the burials by ordinary means, it could be tempting to assign female gender to burials associated with utilitarian ground stone artifacts. This practice has been correctly criticized (Marcus 1978b: 130).

MORTUARY PRACTICES AS AN INDICATOR OF SOCIAL POSITION

The mortuary practices indicated by the Chalcatzingo burials offer mute testimony of a non-egalitarian social organization as early as the Barranca phase but probably extending farther back in time. This statement is based on two assumptions. The first is that the treatment of an individual at death reflects the social position occupied in life. The second assumption is that the variability in social position can be determined by burial practices, in particular, the nature of the grave and the mortuary furniture. Obviously, age and sex data are also important, especially with regard to achieved statuses, but this information is lacking for the Chalcatzingo burials, so that any conclusions as to social ranking are based on nonskeletal evidence.

Evidence of a non-egalitarian social organization involving differential ranks or statuses (presumably hierarchically ordered) was taken to be unequal access to: (1) certain scarce and/or valued items and (2) the labor of other persons. For our purposes, we assumed that the manifestation of this differential access, in life and in death, followed community-wide rules or norms, present throughout at least the Middle Formative period. Without this assumption, we could not compare burial practices in order to derive some sort of ranking.

Certain propositions can be stated concerning variation in mortuary practices based on some rather obvious considerations. The first is that jade and other greenstone objects, which are nonlocal in origin and relatively rare at the site, were restricted to certain persons in life and in death. This is based on analogy to other prehispanic Mesoamerican cultures in which jade was the most highly valued material, particularly because of the sacred connotations of the color green. Its importation and use are assumed to have been controlled by the elite, and probably only the elite could “consume” jade by having it included in their graves.

A second proposition concerns the labor devoted to the interment. An extended burial requires a larger grave pit than a flexed burial, indicating greater expenditure of time and labor. The addition of stones to the grave is an increased labor investment since large flat stones are uncommon at the site and had to be transported to the burial location and



Figure 8.1. Ceramic vessels commonly associated with burials: *a*, shallow bowl; *b*, *cantarito*; *c*, spouted tray; *d*, double-loop handle censer; *e*, Carrales Coarse Grey decorated bowl.



Figure 8.2. Vessels, figurine, and mano associated with Burial 45.

placed around the body. A crypt is even more complex. It is therefore assumed that only higher-status individuals were permitted or could command the extra effort involved in making this latter grave type.

With these two propositions dealing with jade and grave type as markers of social inequality, a further observation concerning burial location can be made which also demonstrates differential status. Burials with crypts are found only on the Plaza Central, particularly in Structures 1 and 4, and on T-25. Jade artifacts are found primarily in burials in these same areas.

Of all these, PC Structure 4, the large earthen platform mound, appears to have had the greatest importance as a burial location. Burials found on the upper surface of this structure obviously fall outside the normal pattern of house subfloor interments. It is significant that PC Structure 4 is the largest architectural feature on the site. Our limited excavations uncovered two elaborate burials, a looted crypt, and a stone-faced tomb structure (Fig. 4.10). But the most striking aspect was the tremendous amount of jade in the two unlooted burials here (nos. 39, 40), more than was found in all other burials combined, and the fact that only these two individuals had been wearing the jade as jewelry at the time of burial.

PC Structure 1, a residence directly across the plaza from Structure 4, is the only house structure excavated which contained crypt burials. Thirty-eight subfloor burials were found within this structure, far more than in any other single structure. The range of burials here covers essentially every burial type found on the site, from crypt burials with associated jade to simple flexed burials lacking furniture. Because PC Structure 1 is the only house with crypt burials and jade in the burials, and further because it is situated on the Plaza Central, it has been designated as an "elite" residence.

The jewelry found with these burials consists primarily of jade originally meant to be worn, such as beads and ear-spools. However, with the exception of the were-jaguar figure found with Burial 33, all the associated jade in PC Structure 1 consists of broken items which apparently were no longer functional for their intended use but which, because they are of jade, still represented items of value.

The fragmentary nature of the burial jade artifacts corresponds to the pattern found elsewhere on the site, in nonburial contexts (see Chapter 17). However, jade is a very strong mineral and is not easily broken accidentally, so this breakage may have been purposeful, especially in the case of the larger artifacts such as the "standard" ear-spools. It is interesting to note that some pieces of these broken items are always missing from the grave, i.e., the entire (broken) artifact was not placed with the burial.

A third area with some apparently high-status burials is the patio associated with the table-top altar on T-25 (see Chapter 7). The presence of elaborate graves, including two crypt burials within the altar itself, suggests special activities for this location. The T-25 burials may slightly predate those of PC Structure 1, indicating perhaps a shift in importance from T-25 to PC Structure 1 in terms of elite burial location.

Along with the assumed high-status markers of crypt grave, greenstone artifacts, and elite burial location can be added a fourth type of burial treatment: the staining of the body and/or artifacts with hematite. Hematite staining is much rarer than greenstone artifacts with burials at the site, though hematite was presumably more accessible, with known sources in the area (Chapter 23).

Almost all of the hematite pigment occurred in Plaza Central burials, the area of elite burials. A few flecks around the skull of Cave 4's Burial 156 may have been hematite pigment, and hematite powder was found in a vessel associated with the skull burial (no. 111) on T-25, a possible ritual burial.

Only the two burials on PC Structure 4 (nos. 39 and 40) have hematite stains on the body itself. Elsewhere, it appears as stains on the offerings or as separate pieces accompanying the body. The fact that hematite staining occurs with the two individuals on PC Structure 4 and with two other Plaza Central burials having both crypts and jade inclusions (nos. 28, 33) distinguishes it as some kind of high-status marker.

Below this high rank category defined by grave type and the presence of jade and possibly hematite staining, we further assume that persons receiving ceramics as grave furniture were somehow ranked higher in the society than individuals who lacked such offerings. The burial ceramics are generally not everyday utilitarian vessels, but comprise more

"costly" types as well as forms of obvious ritual use, such as the double-loop handle censers.

The lowest rank category is made up of simple, direct burials lacking any associated furniture as well as direct burials containing only chipped or ground stone tools. This latter group is included with the burials lacking furniture because these stone artifacts are primarily utilitarian, are frequently broken, and seem of little value. Thus, we cannot make any social distinction between burials with only stone tool inclusions and burials without any furniture. Obviously, perishable goods that may have been included in the grave could have served as status markers but cannot be recognized today.

It is instructive at this point to compare the proposed ranking with all the Cantera phase burial data by correlating grave type with mortuary furniture. These data are presented in Table 8.1. Three categories of burial furniture are differentiated: (1) jade with or without ceramics; (2) jade lacking, ceramics present; and (3) jade and ceramics lacking. In the first category, two subcategories of jade can be defined: jade worn at the time of burial and unworn jade. The unworn jade has also been subdivided to distinguish single bead inclusions, based on the assumption that other green stone artifacts, such as ear-spools, blood-letters, etc., were treated differently than were the single beads. Beads, unlike these other artifacts, are usually unbroken. Furthermore, they were usually not just added to the grave but placed at or in the mouth of the deceased. The placing of beads in the mouth of the dead was also a Postclassic custom reported by the Spanish for the Valley of Mexico.

The general picture provided by Table 8.1 is that the elite (with crypts and jade; upper left corner) are few, while the non-elite (lacking these two attributes; lower right corner) are many, as would be expected. The other possible groupings—jade without crypts and crypts without jade—provide intriguing, possibly intermediate categories, as do the stone-associated interments, but no specific hypotheses can be presented at this time. Stone-associated graves, however, have much less jade than either crypts or direct burials, and it is therefore unclear whether they may signify rank differences.

Elaborate stone crypt graves seem to be better indicators of high rank than do

jade artifacts. Crypt graves are highly restricted, occurring only in PC Structures 1 and 4 and associated with Monument 22, the table-top altar on T-25. Furthermore, they represent an additional labor investment at the time of interment. Nevertheless, if grave type alone were taken as a measure of ranking, then it can be seen that other categories (jade or jade and ceramics, ceramics only, and burials lacking significant offerings) occur generally with each grave type, i.e., there is no absolute correlation of grave type with mortuary furniture.

Jade in burial association is somewhat less restricted in distribution than are stone crypts. A problem faced in interpreting the Chalcatzingo data lies in the fact that fragments of worked jade were found in essentially every house area (see Chapter 17). At the same time, with the exception of PC Structure 1, subfloor burials with jade as mortuary offerings are very rare. Thus, while every Chalcatzingo household may have had access to jade, the data support the assumption presented earlier that only a relatively few high-ranking members of the society had enough wealth in that substance to afford to utilize it as a mortuary offering and thus take it out of distribution.

Twelve direct burials had associated greenstone objects, alone or with ceramics. However, over 50 percent of these were simply associations with single beads. It is noteworthy that single beads occur only with direct burials, whereas other greenstone objects occur with all the grave types. This correlation of beads with a presumably lower-ranking grave type suggests that beads were not important rank markers in the same sense as other greenstone objects, but were considered to be different from these other artifacts. Thus, although they are all of greenstone, there was a conceptualized dichotomy between the two types of artifacts (beads and nonbeads).

Attempts to further refine the lower ranks, which required consideration of mortuary attributes other than crypts and jade, were generally unsuccessful. Several multivariate analyses were attempted, including those of Schoeninger (1979a; 1979b), Teresita Majewski (1976a), and Grove (personal communication), but they revealed little direct correlation between the type of interment, the presence of green stone artifacts, and the quantity and type of ceramics and other artifacts. In fact, individuals associated with jade artifacts and buried

Table 8.1. Cantera Phase Burials Categorized by Grave Type and Mortuary Furniture

Grave Type	Mortuary Furniture								
	Jade with or without Ceramics ^a								
	Worn	Unworn							
		Beads Only	Other	Ceramics, No Jade			No Jade or Ceramics		
Crypt	39		28	3	34	114	37 ^b		
	40		33	5	36		94		
			95	26	105				
Stone-Associated			136	78	110	156	35		
				79	142	157	51		
				100	143				
Direct		12	16	2	38	90	1	57	96
		23	32	4	41	97	6	58	101
		43	54	8	42	98	7	59	102
		47	87	9	44	99	11	60	103
		108	89	10	45	106	17	61	104
		111	91	13	49	127	18	77	137
				14	50	128	20	82	138
				15	52	139	31	85	141
				19	62	146	46	86	144
				21	66	147	48	88	145
				22	73	148	55	93	158
				24	80	152			
				25	81	153			
				27	83	154			
				29	84	155			
				30					

^aBurials which include both worn and unworn jade are listed under "worn."

^bThis is a skull burial within a small crypt.

within crypts normally have few associated ceramics, so we could not determine whether any ceramic types or forms were associated with higher-ranking individuals. A similar inverse correlation between jade and ceramic quantity also obtains for directly interred burials. Finally, the burials exhibited such great diversity in mortuary furniture that it was difficult to detect more detailed patterning using multivariate methods. Thus, we were unable to apply the ranking to any clustering of other artifacts. On the other hand, Schoeninger's (1979a; 1979b) analysis suggests a correlation between certain artifact categories (jade; shallow bowls; and no furniture) and access or lack of access to meat in the diet, confirming in general terms our hypothetical ranking.

While the multivariate analyses did not associate particular ceramic types or forms with particular ranks, our observations suggest that two such correlations

can possibly be made, although the number of instances is small in both cases. It seems fairly certain that *cantaritos* placed within shallow bowls mark a high-ranked individual. Such associations occur four times at Chalcatzingo, with Burials 10, 33, 39, and 40. These last three burials are in elaborated crypt graves and were associated with jade. A correlation can be drawn with La Venta, where a *cantarito* and a shallow bowl were found in Offering 5, a possible burial on the northeast platform (P. Drucker, Heizer, and Squier 1959: 162–164, Fig. 41).

The double-loop handle censer may also be a marker of high rank, although its importance appears to be less than that of the *cantarito* within the shallow bowl. Of the fourteen instances of burials associated with these censers, eleven (79 percent) are from PC Structures 1 and 2, although only two burials (nos. 28 and 34) have crypt graves. This high concentration on the Plaza Central suggests

they have either rank value or particular social significance.

In addition, a ceramic type which seems to be negatively correlated with high rank is Carrales Coarse Grey. As was noted, vessels of this type are usually absent from crypt and jade-associated burials. This suggests they may have served as a marker of a lesser position within the community.

One can speculate as to what the generalized rank categories described above and detailed in Table 8.1 actually corresponded to in the social organization of Cantera phase Chalcatzingo. There is no evidence that they related to fixed social classes or to a rigid hierarchy of political, religious, or economic positions except for the highest category. The individuals buried in the platform mound (Str. 4) on the Plaza Central, in crypts (and tombs), wearing vast quantities of jade, with hematite stains on their bodies and furniture, were probably the "chiefs" of the society, at the top of the political order if not the religious and economic hierarchies as well.

Differential access to valued goods and labor as represented by the other burials may, however, reflect differences in wealth or prestige based on idiosyncratic qualities or kinship ties. For example, the privilege of owning jade may have been restricted to relatives and friends of the chief or to certain powerful kinship groups, such as lineages. People may have inherited this right, as well as the accumulated wealth of their families, such that valued artifacts will appear in their or their family members' graves for this reason and not because the individuals held certain fixed socio-political positions. This may explain the high "rank" assigned to some of the children (see below). In the absence of kinship-based access, people may have been able to accumulate wealth (e.g., in jade) through their own entrepreneurial activities, which indicates that any status thus obtained would have been achieved.

There are other possibilities to account for the differences in burial treatment. They may reflect different rules for the placement of mortuary furniture according to the sex of the deceased. They may relate to the occupation of the deceased, including religious offices. Differential access may even reflect ethnicity; perhaps the higher-status individuals were part of a Gulf Coast elite who lived and died at Chalcatzingo. Thus, the rankings may not, in fact, manifest

a local hierarchy. Again, morphological data would have been very useful to test this last hypothesis.

DESCRIPTIONS OF THE BURIALS

The burials of the different site areas for the Middle Formative period are presented in greater detail below. The Late Formative, Classic, and Postclassic burials are also briefly discussed. The main distinctions between areas as represented by the archaeological features and artifacts of the graves are summarized, and distinguishing characteristics of burials within each area are also presented. Appendix C gives all the pertinent data for all burials, which are listed sequentially there by burial number.

Middle Formative Burials

PC Structure 4

Chalcatzingo's most elaborate burials were found along the top of the 70 m long Middle Formative platform mound, PC Structure 4, on the south and east sides of the mound. Although only two burials were recovered, the excavations atop the mound were limited in extent, and there is a strong probability that other burials remain to be found. Our 1976 excavations uncovered a looted crypt in the same area (Fig. 4.9), and 1974 excavations at the east end of the mound exposed a looted tomb faced with a stone wall and a stone-filled doorway (Fig. 4.10). The presence of the tomb structure and the elaborate burials which were recovered (nos. 39 and 40) strongly imply that the most important personages on the site were buried atop the platform mound.

Burial 39, an adult of undetermined sex, was uncovered during excavations in 1973. Burial 40, also an adult of undetermined sex, was found during the 1974 field season. Both burials share a number of traits. The individuals were in an extended, supine position, heads to the west. Both wore the majority of their associated jade artifacts, in sharp contrast to other burials on the site. Each also had a ceramic offering consisting of a *cantarito* placed inside an incised shallow bowl. As mentioned above, a similar association occurs with a jade-associated "burial" at La Venta (Offering 5; P. Drucker, Heizer, and Squier 1959: 162–164, Fig. 41).

At the time of its discovery, Burial 39 (Fig. 8.3) was covered by an irregular pile of stone which did not form the typical box-shaped crypt found with some other

burials. Red pigment covered most of the extended skeleton. Jade earspools were found on each side of the skull, and forty-nine small jade beads were under the mandible and around the neck in an association indicating that they had been part of a multistrand necklace. A stone adze, the only associated greenstone artifact not worn by the individual, had been placed on the upper chest. Eight jade beads found at the pelvic area had apparently been part of a belt or decoration worn below the waist.

Stones outlined the grave of Burial 40 (Fig. 8.4), but at the time of excavation the grave lacked covering stones. Its location on the sloping sides of the mound and its shallow depth today suggest that any covering stones might have been churned up by plowing and removed by the farmers who used this land. While in an extended position, the legs were slightly flexed, and the skeleton appeared to rest partly on its left side.

The right earspool of Burial 40 was still in position at the time of excavation, but the left earspool was found on the chest area, between the arms. One and probably both earspools had originally contained shell insets (Fig. 16.23a). Recovered in the area of the earspools were 94 tiny (2 × 2 mm) thin, flat squares of turquoise, apparently part of a mosaic covering on the earspools.

Eleven jadeite beads were found on the skull, and a polished concave iron ore mirror rested on the right maxilla. The mirror has two suspension holes near one edge (Fig. 16.22a). The position of the mirror and the beads around the skull indicates that although these had probably been suspended around the neck, they had either accidentally or purposely been raised to the face area at the time of burial. A spherical bead had been placed atop the mouth (between the lips?).

Sixteen beads were found in the pelvic area, again apparently part of a decorative belt or strand of beads worn below the waist. A long tubular bead (snuff tube?) lay between the legs. After the burial had been excavated and removed, a knotted strand of thread-like sinew was found under the area of the skull. It is probable that the sinew had at one time been threaded through the beads found on the skull but had been purposely broken at the time of burial or had partially disintegrated later. Like those of Burial 39, the offerings and body of Burial 40 were stained with red pigment.

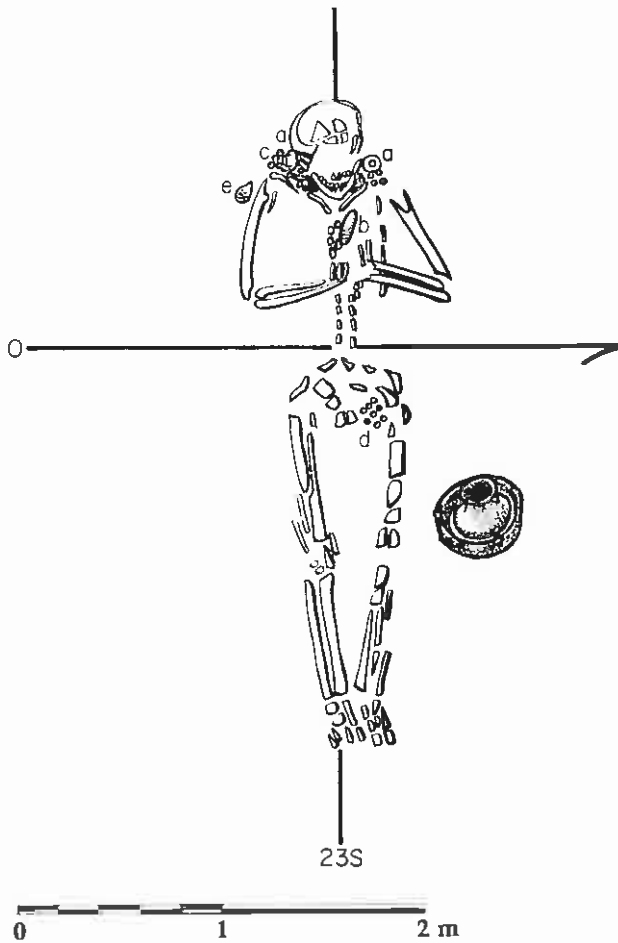


Figure 8.3. Burial 39, covering stones removed: *a*, earspools; *b*, adz; *c*, *d*, jade beads; *e*, figurine heads.

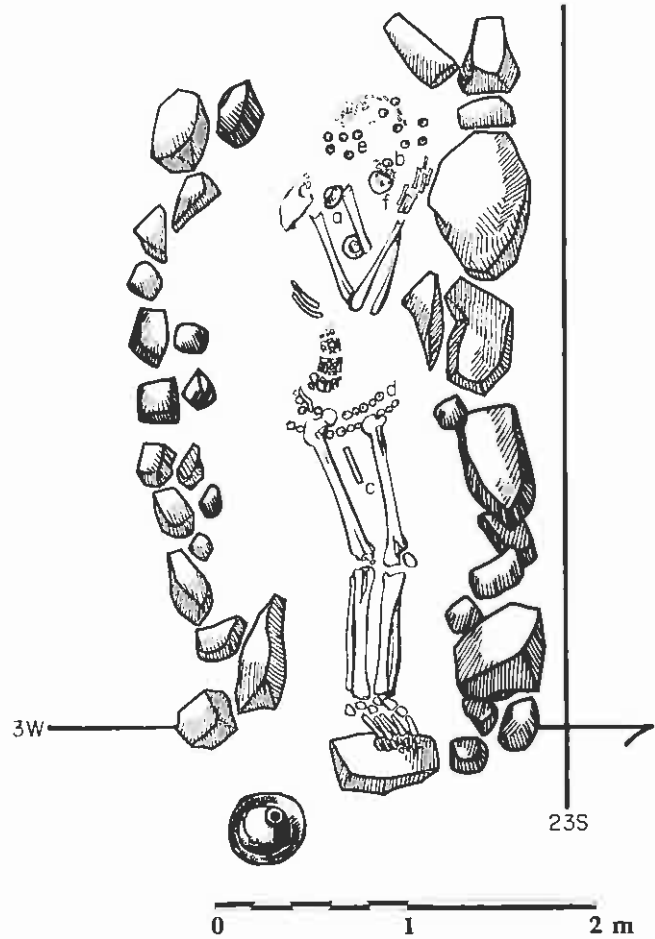


Figure 8.4. Burial 40: *a*, jade earspools; *b*, *d*, *e*, jade beads; *c*, tubular jade bead; *f*, iron ore mirror.

PC Structure 1

If crypt burials and/or jade ornaments are accepted as marker traits for high-ranking individuals, then Plaza Central Structure 1 (Figs. 8.5–8.7), an apparent domestic structure, occupied a prominent role among the houses of Cantera phase Chalcatzingo. Five crypts with stone covers (Burials 28, 33, 34, 36, 37) and three in the plow zone lacking covers (Burials 3, 5, 26) were found among the structure's subfloor interments. The facts that this structure is located on the Plaza Central, across the plaza area from the platform mound (Str. 4), and that it is the only residence found with definite sub-floor crypt burials, indicate that it was a special structure and probably the site's elite residence during the Late Cantera subphase.

The quantity of burials associated with this structure permits several observa-

tions. Neither depth, type of interment, nor mortuary furniture serves to make significant temporal distinctions among the thirty-eight PC Structure 1 burials. The similarity of ceramic debris, interment procedures, and offerings leads to the conclusion that these Late Cantera subphase burials occurred over a relatively short period of time, possibly within 100–150 years. In the following discussion, any variations in mortuary practices are therefore attributed to social and not to temporal factors.

Besides being the only excavated residence with crypt burials, PC Structure 1 is also unusual in that it is the only structure within which the entire range of burial positions and orientations found on the site occur (see Appendix C). Burials were almost equally divided among those oriented with the head to the north, south, west, and east, with a few

oriented to the northwest and northeast (Fig. 8.5–8.7). The majority of the individuals had been interred in an extended, supine position. Flexed burials, when found, had usually been placed on the right side.

As with the site as a whole, there does not appear to be any relationship among grave type, greenstone artifacts, and vessels interred with an individual. Nineteen of the twenty-four extended burials had associated vessels, which is what may be expected if both extended position and ceramic offerings are taken as an indication of at least some intermediate status. It is interesting to note that flexed burials, which might be assumed to be ranked lower than extended burials, divide almost equally between presence and absence of ceramic offerings.

A further noteworthy aspect with regard to the association of vessels with

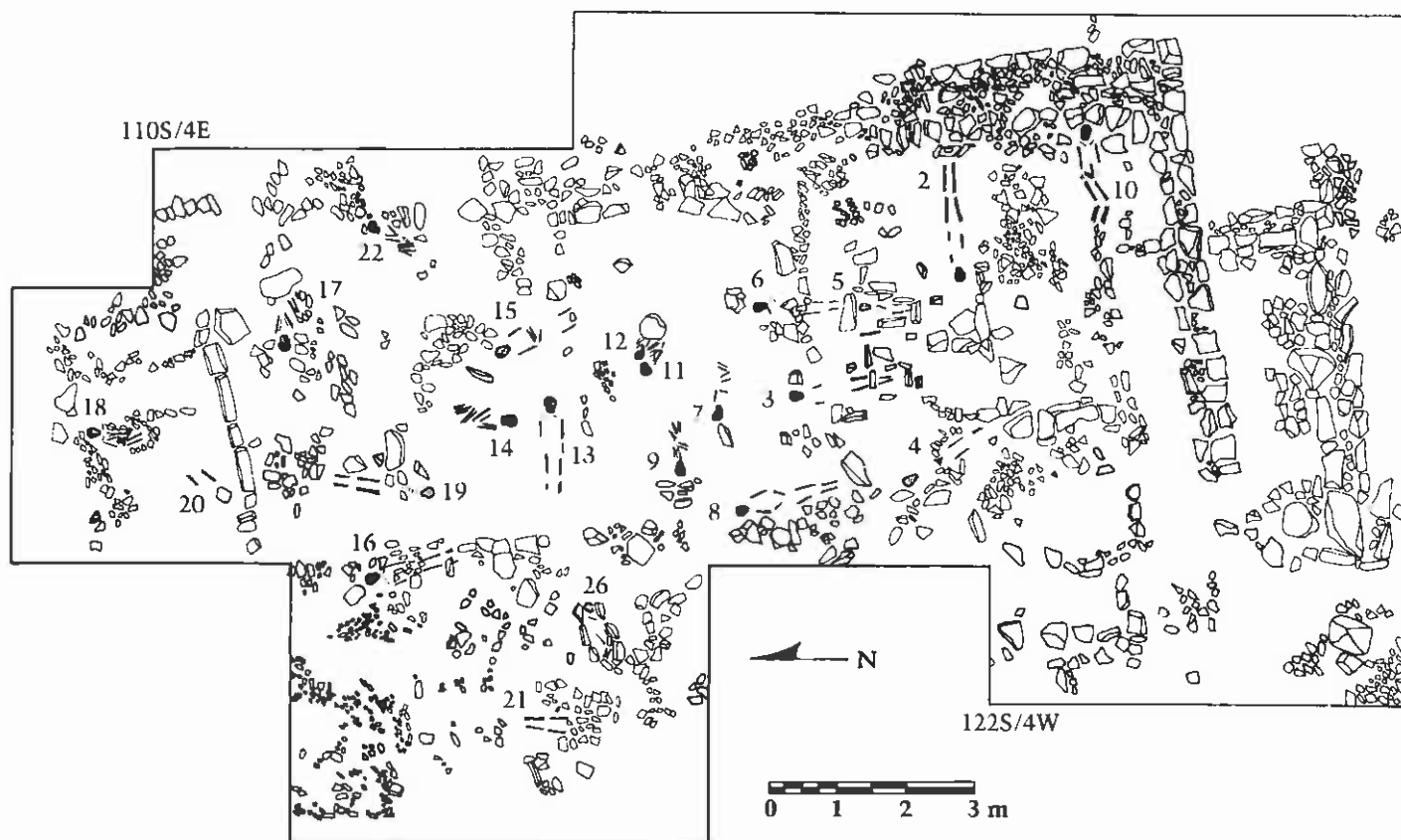
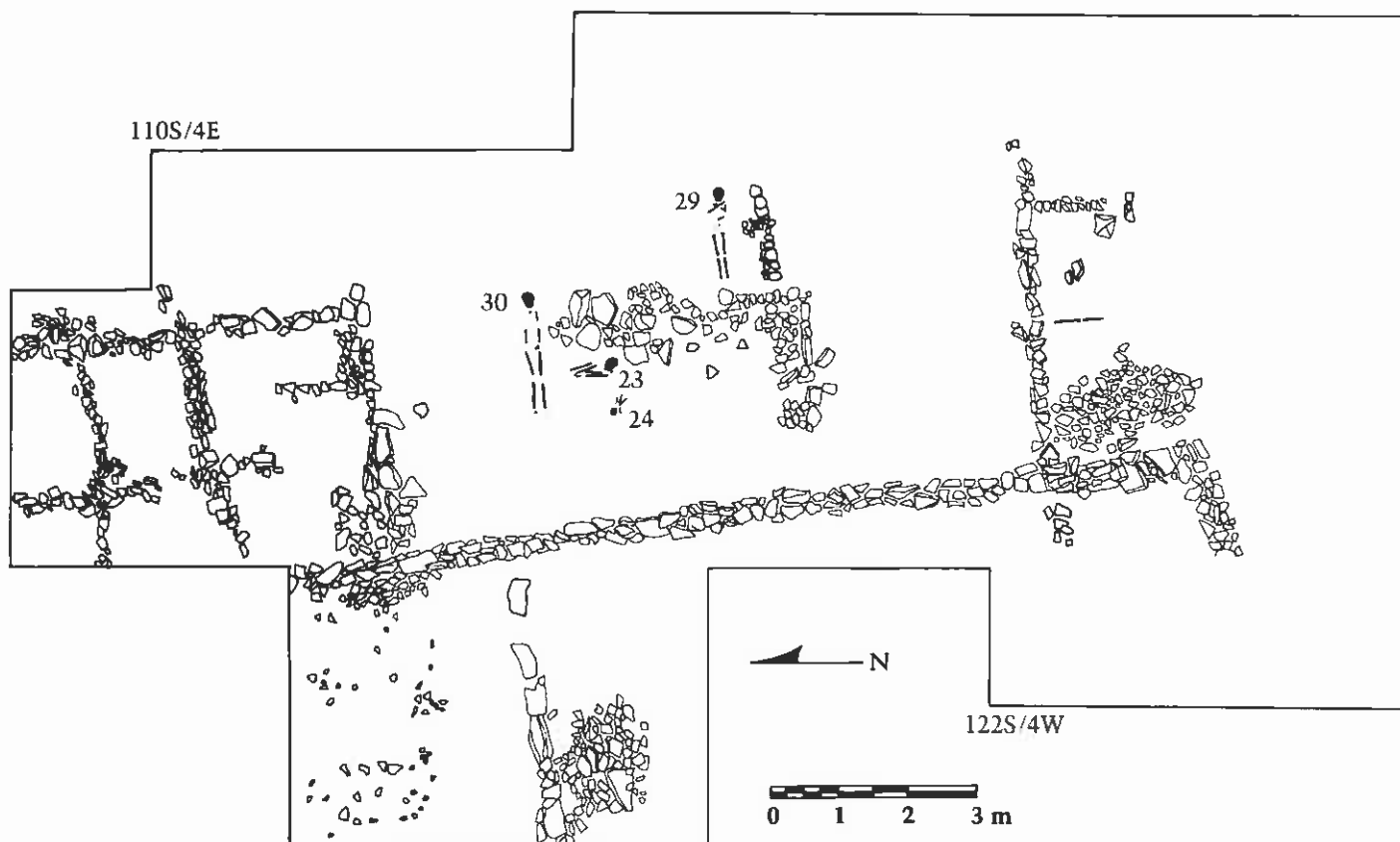


Figure 8.5. PC Structure 1, Stage d, showing locations of Burials 2–22, 26. Burial 1 (fragmentary) was located above Burial 2.



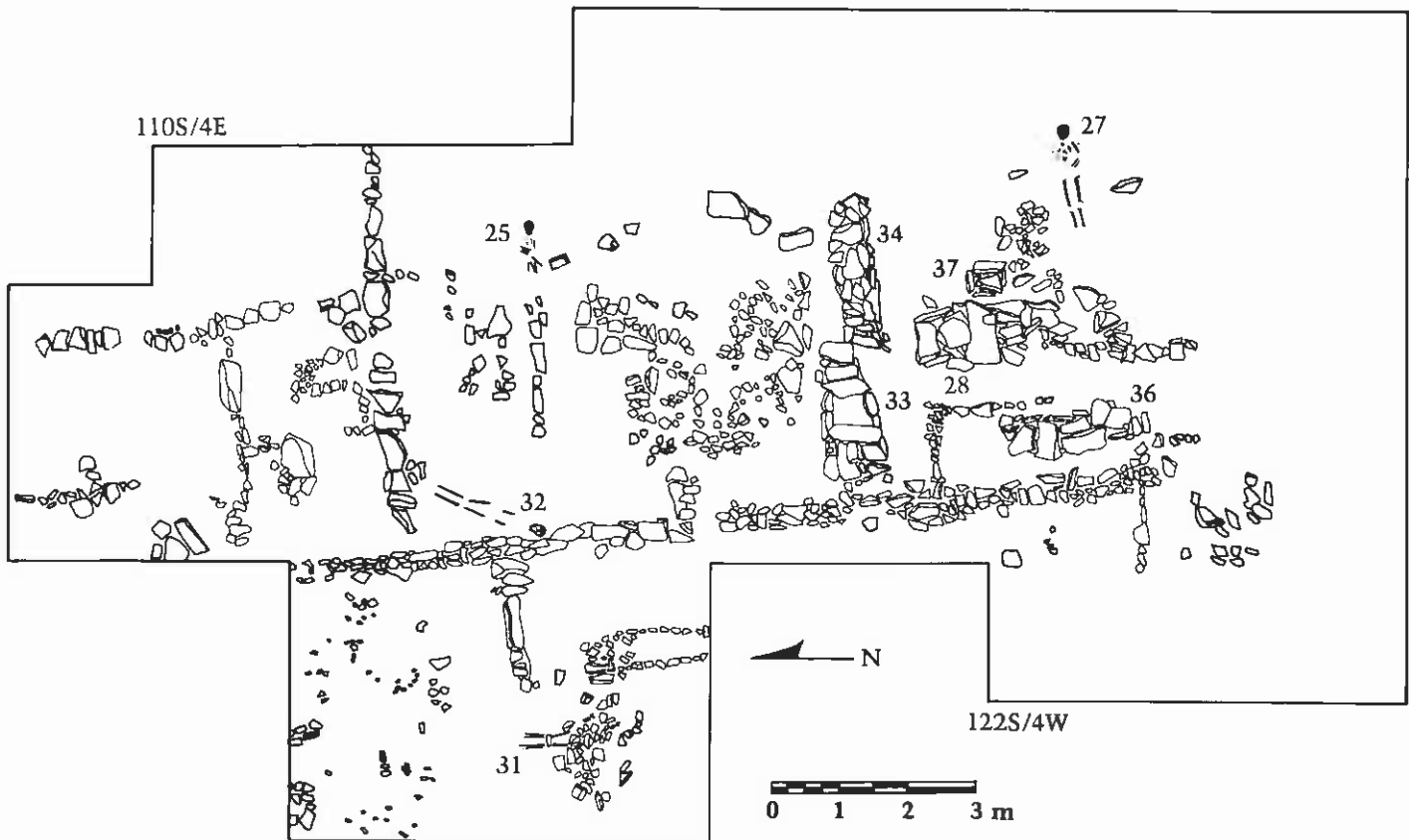


Figure 8.6. PC Structure 1, Stage c, showing locations of Burials 25, 27, 28, 31–34, 36, 37. Burials 35 and 38 too fragmentary to pinpoint.

extended and flexed burials in this structure has to do with the placing of small shallow bowls in the mouth-to-mouth position. Mouth-to-mouth shallow bowls occur only with PC Structure 1 burials, appearing with three of the flexed burials and three of the extended burials. This may indicate some association linking these individuals (see discussion below).

On the eight crypt burials discovered below PC Structure 1 (nos. 3, 5, 26, 28, 33, 34, 36, and 37), several comments should be made. First, Burial 37, though a crypt burial, contained only a skull. This is not a case of poor preservation; rather, the small crypt was built only to receive the skull.

At the pelvis area of Burial 3 was one of the most significant items placed as mortuary furniture with any Chalcatzingo burial, a stone anthropomorphic statue head (Mon. 17; Fig. 8.8). Grove, in his discussion of monument mutilation (1981b) has suggested that the stone head is from a portrait monument which probably represented the deceased.

Burial 33 (Fig. 8.9) was associated with a small, unslipped polished *cantarito* which had been placed within a shallow Amatzinac White composite bowl, a pattern which was discussed above. An important item found in association with this burial was a serpentine figurine in the were-jaguar style (Fig. 17.1). The figurine is within the La Venta–Olmec style, although it may be of highland manufacture (see Chapter 17). Also placed within the crypt were the point of a jade awl and five groups of small, rounded pebbles numbering five, nine, ten, eleven, and twelve respectively.

The distribution of the PC Structure 1 subfloor burials reveals an interesting pattern: burial furniture and orientation differ on either side of an imaginary line crossing the center of the house at grid coordinate 118.5S, a line which divides the house into northern and southern halves. There are 23 burials north of the line, and 15 to the south. Flexed burials were found only in the northern half, while seven of the eight crypt burials occur in the southern half. The seven PC

Figure 8.7. PC Structure 1, Stage b, showing location of Burials 23, 24, 29, 30.



Figure 8.8. Burial 3 with Monument 17 statue head in situ (lower right foreground) and destroyed remains of crypt, fragmentary skeleton, and *cantarito* (center).

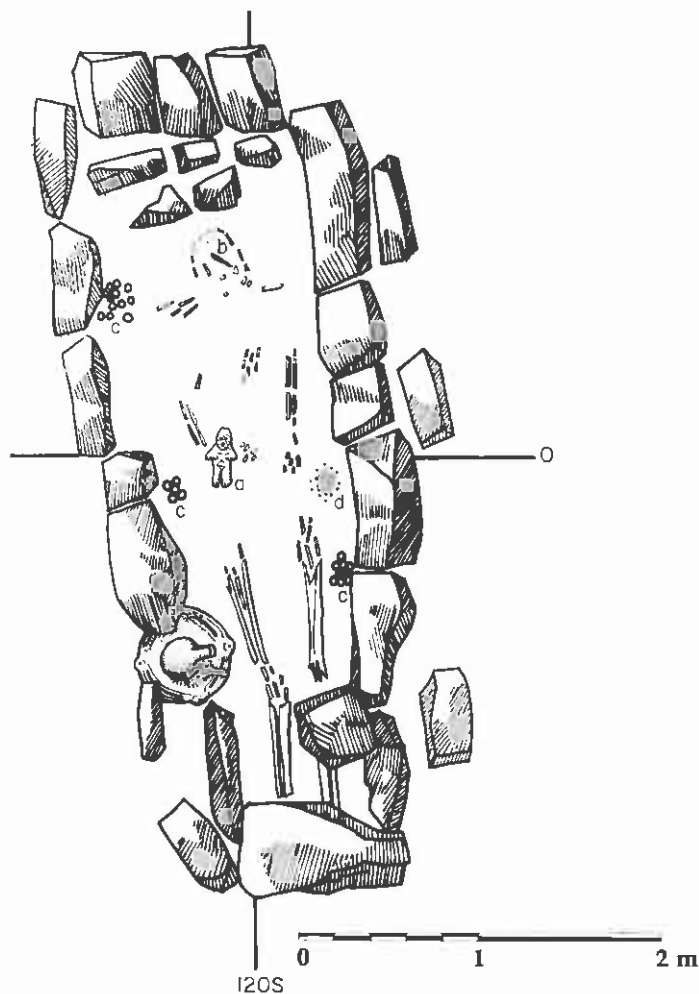


Figure 8.9. Burial 33 crypt: *a*, were-jaguar figure; *b*, jade awl; *c*, three groups of smooth pebbles within crypt; *d*, red pigment.

Structure 1 burials oriented with head to the south were all found in the northern half of the structure, while most of the north-oriented burials were south of the line.

Ceramic mortuary furniture is more abundant with interments in the southern half of the structure. Ten of the northern burials lack ceramics completely, whereas that is true of only three southern burials. In addition, seven of the eight burials associated with *cantaritos* occurred in the southern part, while five of the six occurrences of mouth-to-mouth shallow bowls were found to the north.

Other patterned distributions of furniture were evident in this structure, although they did not hold for the site as a whole. North- and south-oriented burials had the greatest range of ceramic

vessels as offerings. *Cantaritos* occurred only with extended burials oriented north or south. They are not found in extended east-west oriented interments or with any flexed interments. This same pattern is found for greenstone ornaments other than beads.

Flexed burials received the least variety of offerings, but they also follow a similar north-south dichotomy, with north-oriented flexed burials having only grey ware bowls and south- or west-oriented flexed burials only shallow bowls (e.g., Burial 9; Fig. 8.10).

Another burial pattern evident from some of the PC Structure 1 interments is the pairing of burials, which occur either adjacent to one another or as one overlying the other (although they are not always oriented in the same direction). While in a few instances the pairings

could be coincidental, most pairings appear deliberate. The burial pairs do not seem to represent individuals buried together at one time (i.e., a double burial) since normally several centimeters of earth separate them. Burials determined to occur in pairs are 3 and 33, 10 and 27, 5 and 34, 21 and 31, 19 and 32, and 15 and 30.

Any number of cultural distinctions could be responsible for the pairings. For instance, it is possible that the spouse of an already deceased high-ranking person was later buried in the same area, creating thereby a burial pair. Under better conditions of preservation this could have been partially tested by identifying the sexes of the paired individuals.

The most notable and intriguing pair consists of Burials 3 and 33, described above. Burial 3, the uppermost, was ap-

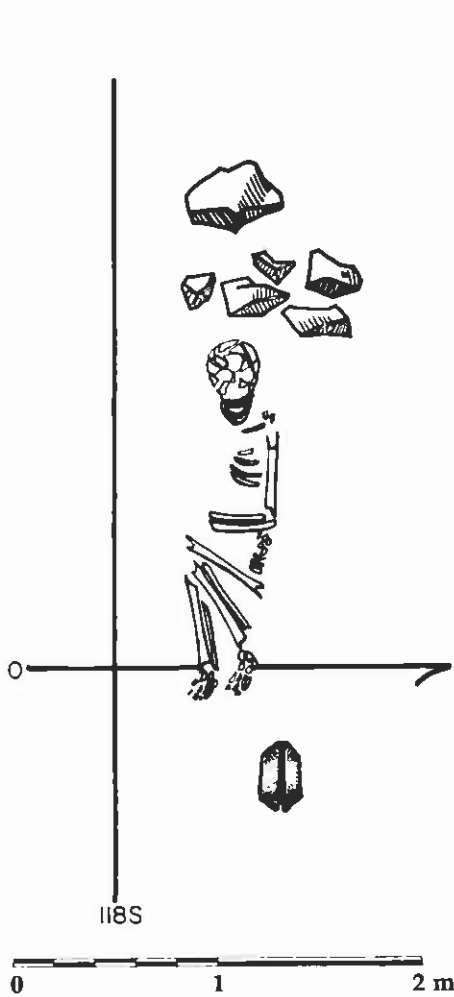


Figure 8.10. Burial 9, flexed, associated with two mouth-to-mouth shallow bowls.

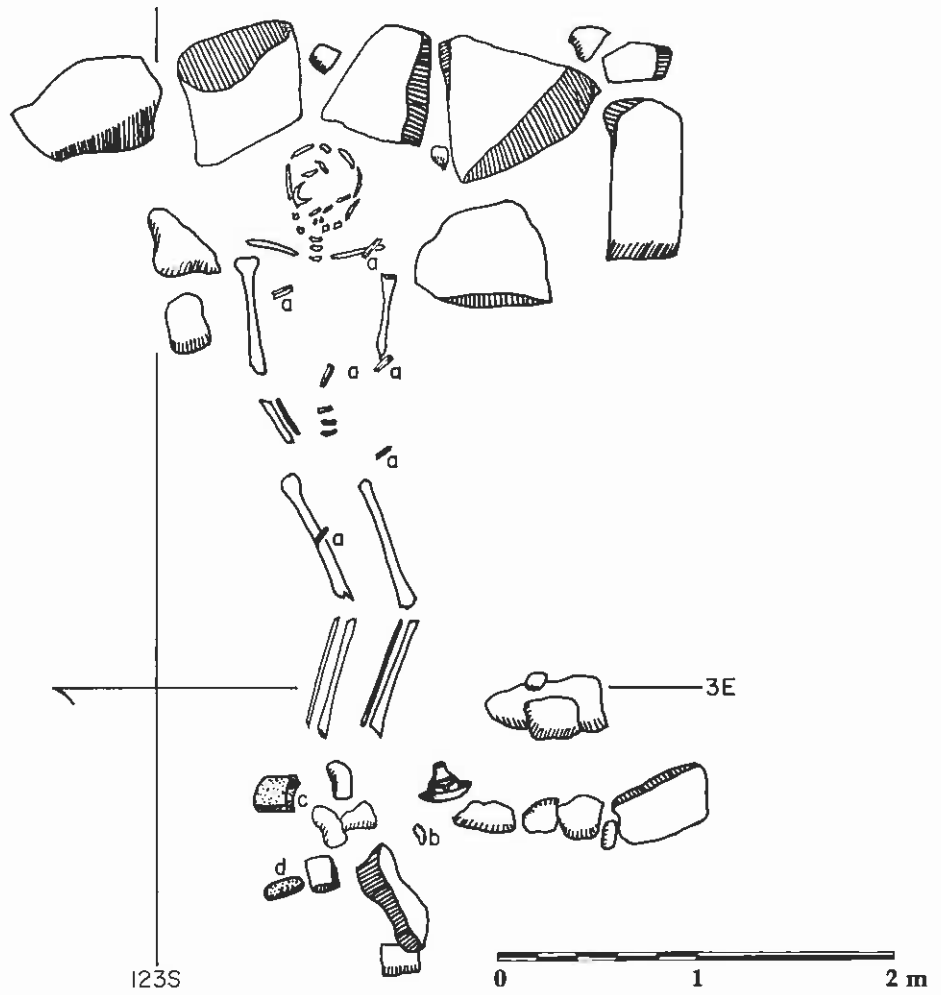


Figure 8.11. Burial 10: a, prismatic blades; b, flake; c, metate fragment; d, mano.

parently once a complete crypt, but at the time of its excavation it lay within the plow zone and was missing its stone cover. The mortuary goods associated with Burial 3 included a small *cantarito*, a Peralta Orange punctate bowl, a mano at the individual's feet, and Monument 17, the stone head which had been removed from a statue. Underlying Burial 3 was the complete crypt of Burial 33, at right angles to the upper burial. Offerings consisted of a *cantarito* within an Amatzinac White shallow bowl and the stone were-jaguar figurine.

These two crypts contain the most truly Olmec artifacts found during the project's excavations, the statue fragment and the figurine. The mano at the feet of the barely visible skeletal remains of Burial 3 does not serve to identify that burial as female. Nonetheless, it is pos-

sible that Burials 3 and 33 were a related pair of individuals, possibly husband and wife, connected to Gulf Coast Olmec culture or its symbolism within the society.

Another pairing consists of Burials 10 and 27. Both burials were directly interred in an extended supine position, heads oriented to the east. Burial 10 (Fig. 8.11) was associated with a mano, obsidian blades, and a *cantarito* placed within a shallow bowl. Burial 27 (Fig. 8.12) also had a mano and obsidian blades, but the vessels in this instance were two double-loop handle censers. Burial 10 is directly above Burial 27, and the two are separated by a depth of only 5 cm. If it is found that grinding stones were associated only with female burials, then both these individuals are female.

Burial 5, a crypt grave in the plow

zone, overlies Burial 34, also a crypt burial, by 40 cm. Although these burials have different orientations, the head area of Burial 5 overlaps the head area of Burial 34. Burial 5 is a child and is oriented with the head to the north. It was associated with a single Carrales Coarse Grey vessel. Burial 34, an adult, is oriented with the head to the east and had two double-loop handle censers placed along the exterior of the crypt. Perhaps these two individuals represent a parent and child.

Burials 21 and 31 are disturbed, and only the lower limbs of each remain. These are extended burials, directly interred. They were originally oriented with heads to the south. Burial 21 is 30 cm directly above Burial 31. Each burial was associated with a mano placed east of the legs. Burial 21 had a partial Peralta

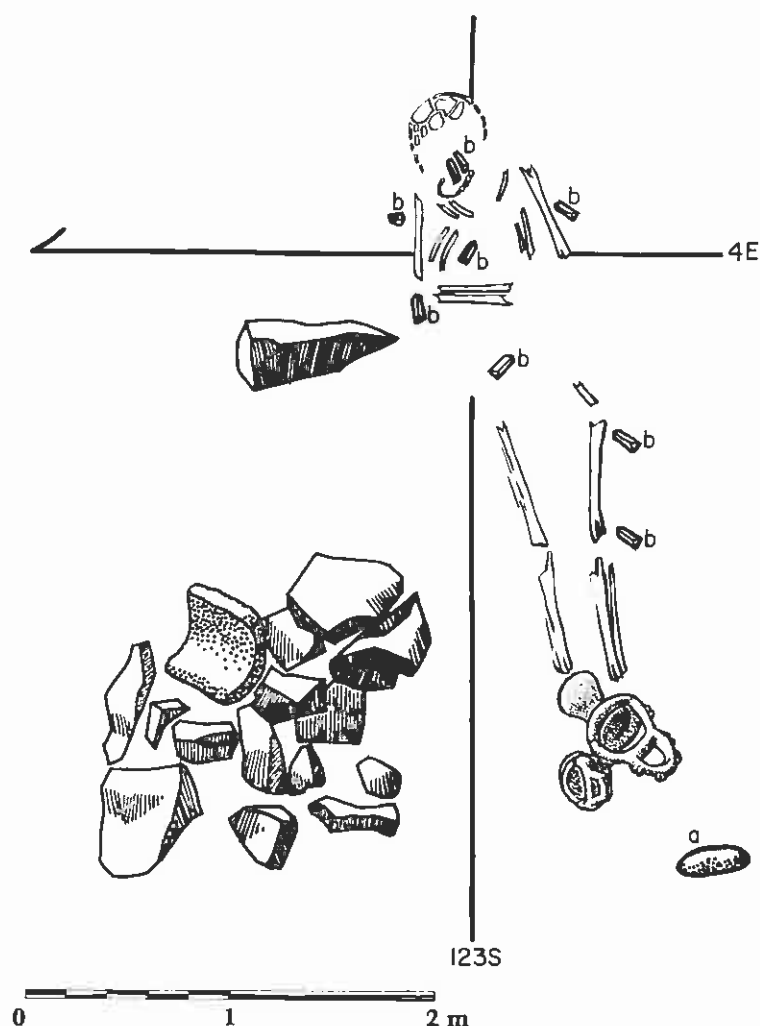


Figure 8.12. Burial 27: *a*, mano; *b*, prismatic blades and flakes.

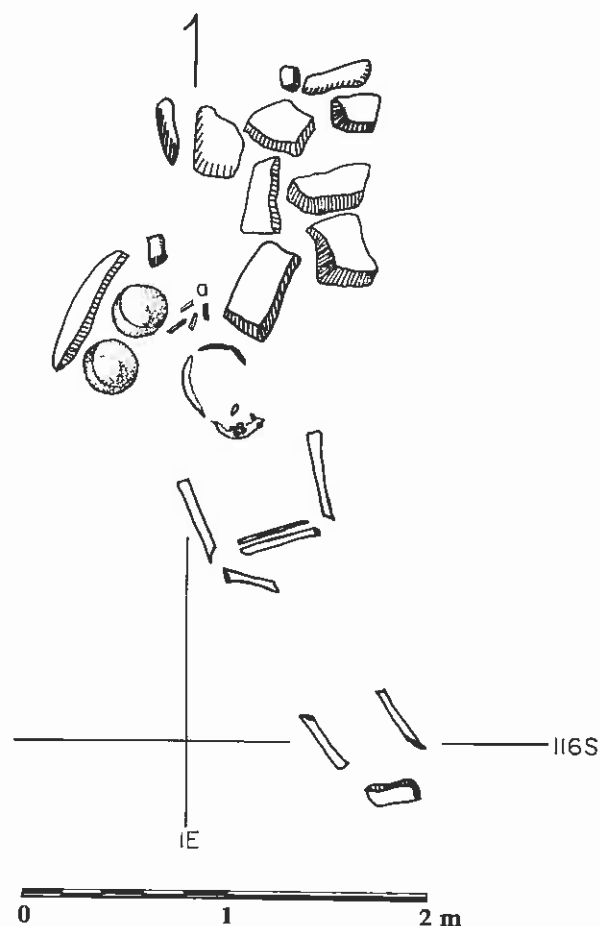


Figure 8.13. Burial 15: *a*, prismatic blades.

Orange punctate bowl in association. Other offerings may have been destroyed when the burials were disturbed.

Both Burials 19 and 32 were direct interments, extended, with heads oriented to the south. Burial 19 lay 28 cm above Burial 32. Burial 32 was associated with a small *cantarito*, two jade objects (a fang pendant and a broken awl point), and a ground smoothing stone. Burial 19 had two shallow bowls placed mouth to mouth.

Burials 15 and 30 occur almost perpendicular to each other and are separated by a depth of 39 cm. Both are direct, extended interments. Burial 15 (Fig. 8.13), head oriented to the northwest, was found with two small shallow bowls and four prismatic obsidian blades. Burial 30 (Fig. 8.14) likewise had two shallow bowls as offerings, but these had been

placed mouth to mouth. A double-loop handle censer was also in association.

Analysis of the mortuary furniture of the paired burials within PC Structure 1 reveals that members of each burial pair differed in their associated ceramic artifacts (see Table 8.2). Although this may be due to chance, it is possible that certain vessels were used as markers to distinguish individuals in each pair. Interestingly, not only vessel forms and ceramic types but also vessel combinations may have served this function. The mouth-to-mouth position of small shallow bowls may have been viewed as conceptually distinct from the shallow bowls placed singly, and the *cantarito* in a shallow bowl may have been considered different from the *cantarito* alone.

Even though the members of the burial pair probably did not die at the same

time, each has its own ceramic markers which do not co-occur in the two interments. This seems to imply that the first interment was remembered, and that the second was placed to be near the first and form its complement in the pairing. It is possible that we are seeing evidence of some type of social dichotomy, although the actual differences the individuals within a pair may express (e.g., sex, moiety) cannot be determined at this time. Nevertheless, the dichotomy within the burial pairs here and possibly elsewhere on the site remains an interesting problem for future research.

In addition to the burial pairs, there are two sets of double burials. Burials 11 and 12 and Burials 23 and 24 are interesting in that each pair represents an adult and infant, possibly parent and child. The 11–12 double burial has no associ-

Table 8.2. Burial Pairs on PC Structure 1

Burial Pair	Mortuary Furniture (Ceramic)					
	Double-loop Handle Censer(s)	Shallow Bowl(s)	Shallow Bowls Mouth-to-Mouth	Cantanto	Cantanto in Shallow Bowl	Composite Bowl
27 10	X				X	
30 15	X	X	X			
34 5	X					X
3 33				X	X	X
19 32			X	X		
21 31						X

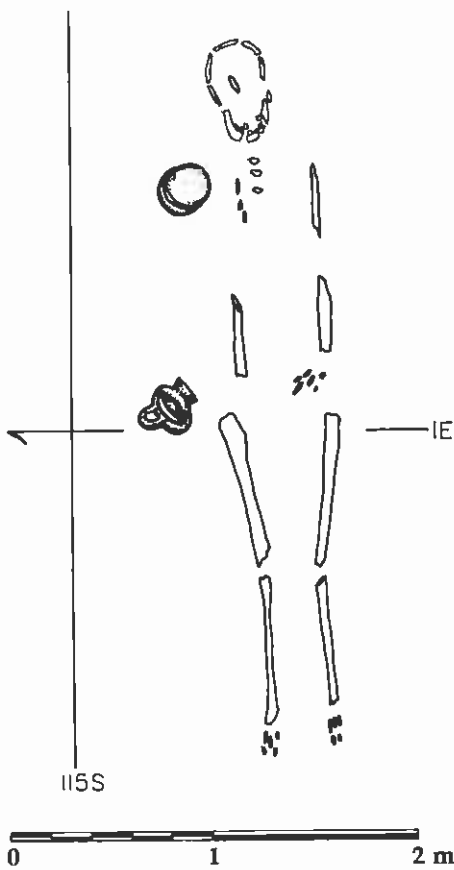


Figure 8.14. Burial 30.

ated ceramic offerings, but a greenstone bead was found at the mouth of the infant (Burial 12). An Atoyac Unslipped Polished II bowl lay near Burials 23 and 24, and a jade bead was found at the mouth of the adult (Burial 23; Fig. 8.15). It may be significant that both of these adult-infant burials occur within one restricted area of the house and in close proximity. It should also be noted that an extended burial (Burial 13) lies very near to the 23–24 group (but 50 cm higher), and that Burial 29 lies near the 11–12 group. These associations could be circumstantial due to the limited burial space available, or they may have some as yet undetermined significance.

PC Structure 2

A structure that possibly served the function of both residence and workshop area, PC Structure 2 is located west of

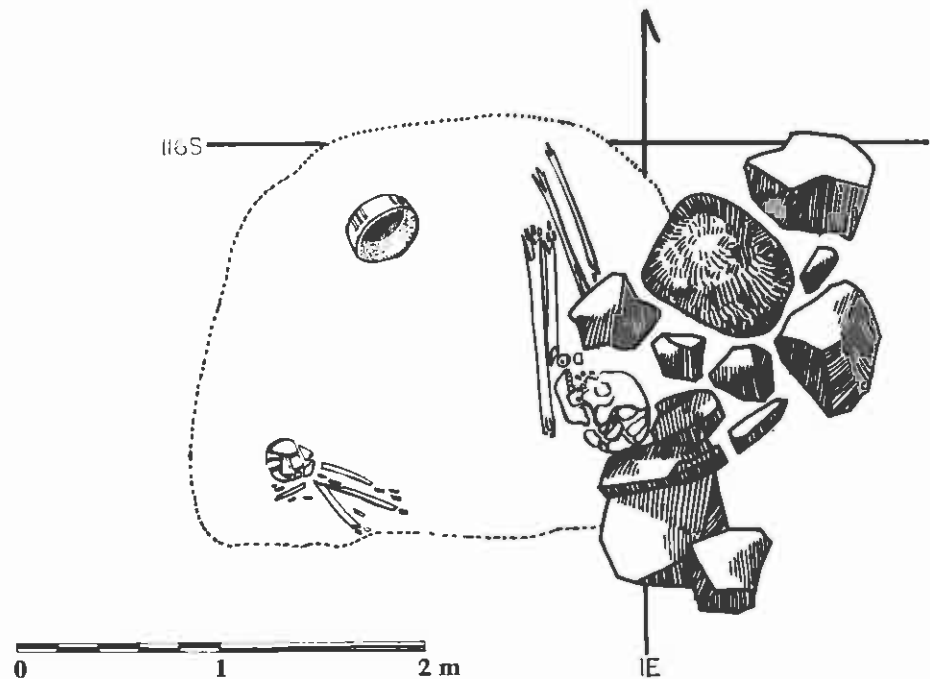


Figure 8.15. Burials 23 and 24: a, jade bead.

Structure 1, and like it is Late Cantera subphase in date. The ten subfloor burials here all occurred beneath one room (Fig. 4.7). They were directly interred in extended positions (eight supine, two prone). Most had their arms slightly flexed with the hands placed over the stomach area. Four of the burials (nos. 41, 43, 48, 49) are disturbed and fragmentary.

Jade beads had been placed in the mouths of two individuals, Burials 43 and 47. Burial 45, a child, had two complete figurines in association (Fig. 8.2), a rare occurrence at this site. No obsidian appeared as mortuary furniture.

Although near Structure 1, Structure 2's burials differ from those of the elite residence in several respects. They occur in a limited area of the structure. Crypt and stone-associated graves are absent, as are flexed burials. There are also no mouth-to-mouth vessels among the grave offerings. The absence of mouth-to-mouth vessels and flexed burials suggests that these traits may be more subtle status or social markers within the more general ranking and social markers already discussed, referring to positions perhaps restricted to PC Structure 1 residents.

T-25

Twenty-three Formative period burials were uncovered by excavations on T-25. Of these, four (nos. 107, 109, 112, and 113) were Barranca phase in date (see discussion of Barranca phase burials below), two (96 and 103) are Late Barranca or Early Cantera, and the remaining seventeen date to the Cantera phase. Their association with the T-25 altar patio and platform is discussed in Chapter 7, and only a few comments about them are necessary here.

Two Cantera phase burials were found within the stone altar structure. These two individuals, who may be considered to form a burial pair, probably held high ranks during their lifetimes. The deeper of the two, Burial 105 (Figs. 7.13–7.15), was interred in a stone crypt, extended, in a supine position with head to the east. Two unusual vessels were found with the burial, as was a Peralta Orange olla. The uppermost interment within the altar, Burial 95 (Fig. 7.19), had been placed within a partial crypt in an extended position, but with the head to the west. Along with a tubular jade bead, a Peralta Orange and a Tenango Brown olla made up the mortuary furniture. It is possible that the people buried within the patio area are descendants or rela-

tives of the individuals enshrined within the altar (see Chapter 7).

Three possible burial pairs exist among the Cantera phase burials interred within the patio area. Interestingly, two of the pairs are composed of children. One of these pairs, Burials 98 and 99, is really a double burial and the other, Burials 100 and 101, may be a double burial. The third pair, Burials 97 and 102, consists of two adults. A disturbed child's burial (no. 108) with four vessels and a tubular greenstone bead may also be associated with this last pair.

While most of the burials appear to represent individuals who died natural deaths, several may represent sacrifices associated with the altar. The most probable sacrifice is Burial 93 (Fig. 7.16), a child burial below the northeast corner of the altar. This child was probably sacrificed at the rebuilding of the altar structure. The child burial pair, nos. 98–99, may represent a sacrifice because the individuals appear to have been interred simultaneously. Burial 111 (Fig. 7.22), a skull associated with a ring of stone, may be an example of a decapitation sacrifice.

T-23

Burials within regular (non-elite) houses are best epitomized by T-23 Structure 1's subfloor interments. This house follows the pattern of other non-elite houses on the site: burials lack elaboration in the form of stone crypts, they rarely contain even a solitary jade bead, and they always lack more elaborate greenstone artifacts. The only preserved mortuary furniture is ceramic.

Seven burials were found during the T-23 excavations (nos. 79–85). Four occurred in extended position, and three were too disturbed to reconstruct the original position. The adult burials were all found in the northeast corner of the structure, while two child interments (Burials 80 and 82) had been placed beneath the floor of interior rooms.

An important question, which unfortunately cannot be tested from the current data, is whether the main personage in each non-elite house would be buried beneath the floor of the house or in some other location, such as PC Structure 1 or 4, as occurred at Classic Maya centers (e.g., Rathje 1970:366–367). It is certainly obvious that PC Structure 1's thirty-eight burials far outnumber the subfloor burials at any regular house structure. In view of the discussion of periodic purposeful destruction of house

structures by their inhabitants (Chapter 6), it would be important to know if houses were destroyed at the death of the house's main personage, just as monuments were apparently destroyed at the death of the site's main personage (Grove 1981b).

S-39

The archaeological deposits on S-39 are difficult to interpret in terms of their original nature. While probably a combination of household and workshop debris, the slightly sloping hillside here on the southwest edge of the site shows no traces of house foundation walls, although the area of concentrated deposit is delineated by large, partially buried boulders. Six adult burials and one infant were found associated with the artifact concentration (Fig. 4.36). Because nearly all the burials were found at quite shallow depths, they were disturbed by plowing.

Only four of the burials (nos. 142, 143, 147, and 148) had associated ceramic vessels. A fifth, the infant burial (no. 146), had a figurine in association but lacked vessels. Burials 142 and 143 had several stones placed along the sides of the grave. Burial 142 in addition contained small clusters of smooth pebbles, an "artifact" also found within the crypt of Burial 33 beneath PC Structure 1.

Cave Burials

Seven burials of apparent Cantera phase date were encountered during excavation of two of the Cerro Delgado caves. In Cave 1, Burials 152–155 were highly disturbed but may represent up to four child and infant interments. Associated with this cluster of disturbed skeletal material were four vessels.

Three Cantera phase burials were excavated in Cave 4. Burials 156 and 157 were in fair condition, but only traces of Burial 158 remained. Burial 156 was associated with four vessels and a thin obsidian needle, apparently a "blood-letter" used in auto-sacrifice, found at the pelvis. Stones were placed at either side and one on top of the head. Burial 157's head rested against the cave wall, and the body was partially outlined by stone slabs placed at intervals around the edge of the grave. A metate fragment covered the head, and a mano fragment had been placed near the left shoulder. One Carales Coarse Grey vessel had been placed near the left shoulder as well.

Barranca Phase Burials

Only ten Barranca phase burials were recovered during the Chalcatzingo excava-

tions. Due to their rarity, few data are provided relating to changes in burial practices through time. Most of the burials are disturbed and have few or no mortuary artifacts. No crypts were found among the burials, but jade was present in some of them.

The T-9B Barranca phase house structure (Fig. 4.20) yielded three burials. Burial 63, located on the west side of the house, was manifested only through a scattering of a few human bone fragments, and it was apparently highly disturbed. No burial furniture was found in association. Burial 64 was likewise highly disturbed and is present only as a scatter of bone. However, the bone concentration lay adjacent to an inverted Amatzinac White shallow bowl. Burial 65 was interred within a grave marked by three large stones (part of the house foundation) near the foot of the grave. A stone slab had been placed over the pelvic area, and a Peralta Orange olla occurred as a mortuary offering.

The four Barranca phase burials of the T-25 area are discussed in Chapter 7. Burial 107 had been interred within the Barranca phase trash pit on T-25. The burial was associated with an Amatzinac White cylindrical jar and a stingray spine. Burial 109 is a disturbed burial which underlies the area of the Cantera phase rebuilding of the altar. It therefore also underlies Burials 95 and 105, the Cantera phase burials placed within the altar interior. No ceramic offerings were found with Burial 109, perhaps because it had been disturbed. However, a tubular jade bead was found in association with this burial.

Burial 112 was uncovered during excavations behind (south of) the altar within an area presumed to be related to an earlier Barranca phase structure. This burial may therefore have originally been a sub-floor burial to that construction. The skull is missing and the burial lacks ceramic offerings. Burial 113 is heavily disturbed and no mortuary offerings were found.

Burial 149 was found during excavations on N-2 (Fig. 4.37). Fragments of an eroded *cantarito* were found at the feet. Burial 150, uncovered on N-5, consists only of the upper torso, arms, and skull of the skeleton. The lower body was missing, apparently through rodent disturbance. Burial 159 was associated with the Barranca phase structure on T-29 (Structure 1). Five other burials may be either Late Barranca or Early Cantera in

date: 56, 58, and 60 from T-9A, and 96 and 103 from T-25 (see Appendix C).

Late Formative Burials

Fourteen Late Formative burials were found during excavations on T-27. Three sets of double interments were included within this group (Burials 117–118, 123–124, and 133–134). The associated mortuary furniture and burial patterns are different from those of the Barranca and Cantera phases, suggesting perhaps a hiatus in occupation at the site.

A Middle Formative platform structure exhibiting several rebuildings was excavated on T-27. The Late Formative burials were intruded into the platform structure, which at the time of our excavations was completely buried and undetectable from the surface. Seven Late Formative burials, including the three sets of double interments, were discovered within slab-lined graves. The remaining seven Late Formative interments are direct burials. Most burials were found in supine positions, but with the legs flexed. Exceptions to this include Burial 119, which was loosely flexed and lying upon its left side, and Burial 124, which was part of a double interment and had been buried in a tightly flexed sitting position.

Burials 117 and 118 (Fig. 8.16), both adults, are buried together in a flexed supine position, with heads to the south. Five ceramic vessels, including four black ware pots, were found with the burials. In addition, a group of three unusual figurines occurred within the cluster of mortuary ceramics. These figurines, handmade but essentially identical in all details, depict seated anthropomorphic figures, heads tilted upward, wearing elongated Ehecatl-like masks (Fig. 8.17). Whether these figurines represent the Ehecatl (wind-god) concept at this time is purely speculative, but anthropomorphic figurines wearing duck-bill masks are known to occur in Late Formative art (e.g., the Tuxtla statuette).

Burials 123 and 124 (Fig. 8.18) were found together within a rectangular, stone-lined grave. Both were adults. Burial 123 was supine and loosely flexed, while 124 was a bundled secondary interment. Four ceramic vessels were found within the grave.

Double interment 133–134 likewise consisted of two adults. However, the grave was circular, and the top of the grave was outlined by a ring of flattish stones. Burial 133 was in a supine, flexed

position, while no. 134 was seated. Three grey ware vessels, all very well made and displaying different decorative techniques (fine-line incising, cursive incising, and traces of orange-on-white fresco decoration), were found in the grave. A “capped, hollow” ceramic earspool was associated with the skull of Burial 133 (Fig. 16.2f).

Individual interments with associated ceramics include Burial 119, which contained two vessels; Burial 120, which had three vessels, one with mammiform supports, in a rock-covered grave; and Burials 122 and 130, both direct interments with only one vessel in association with each. The vessel found with Burial 122, a grey ware, appears to be a nonlocal import.

In addition to the T-27 burials, two burials on T-4, nos. 53 and 56, seem to be Late Formative. Burial 53, a young adult, had been placed in a flexed position, the interment intruding into a Cantera phase structure foundation. No ceramics were present with the burial, making exact chronological placement tenuous. The only mortuary item was a metate fragment placed over the head. Burial 56, also a flexed burial, had been disturbed. It also lacked any grave goods except for a mano, which occurred in a dubious association.

The only other definite Late Formative burial recovered on the site, Burial 151, shares many traits with the T-27 burials, but was found in Cerro Delgado Cave 1 excavations. The interment is that of a young adult in a flexed position. Two ceramic vessels, both Late Formative, serve to place the burial chronologically. In addition, a solid cylindrical earspool with a polished red slip was found within the grave fill.

Classic Period Burials

Nine Classic period interments occur near the Classic period structure on T-20. These burials are unusual in that six of the nine are children, a situation not found with any other Chalcatzingo structure or burial group. Burials 67 and 68 represent a double interment of an adult and infant. The adult occurs in a flexed but supine position; the infant's burial position was difficult to ascertain. No ceramic mortuary furniture was present with this double interment, but it can be dated from the level of its intrusion.

A quadruple burial of children (Burials 69–72) was associated with two Classic period vessels. All the burials had been

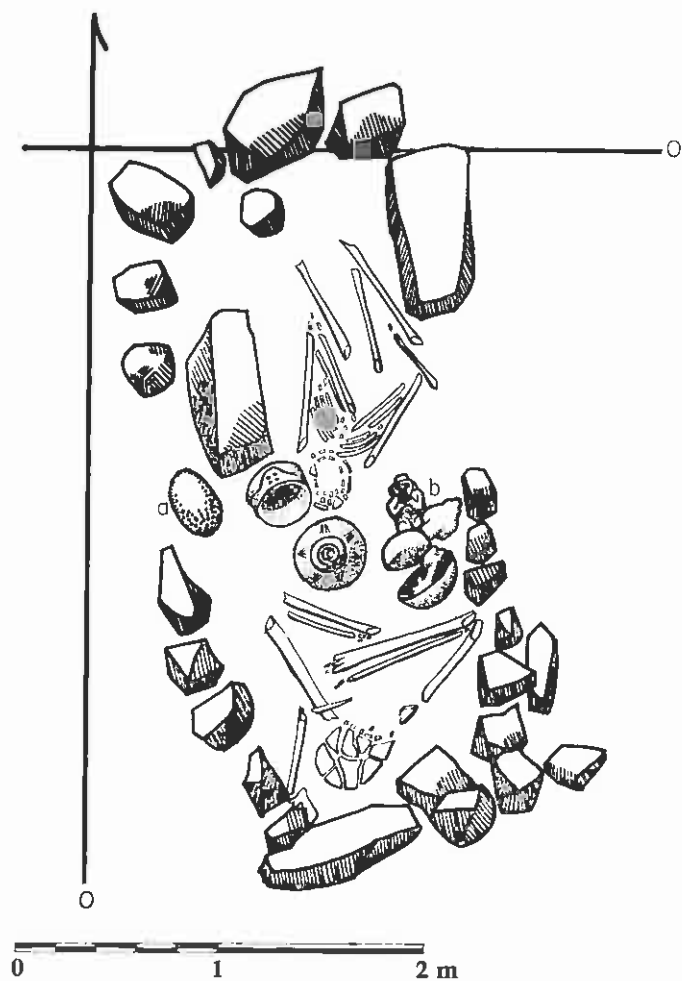


Figure 8.16. Burials 117 and 118: *a*, mano; *b*, three figurines.

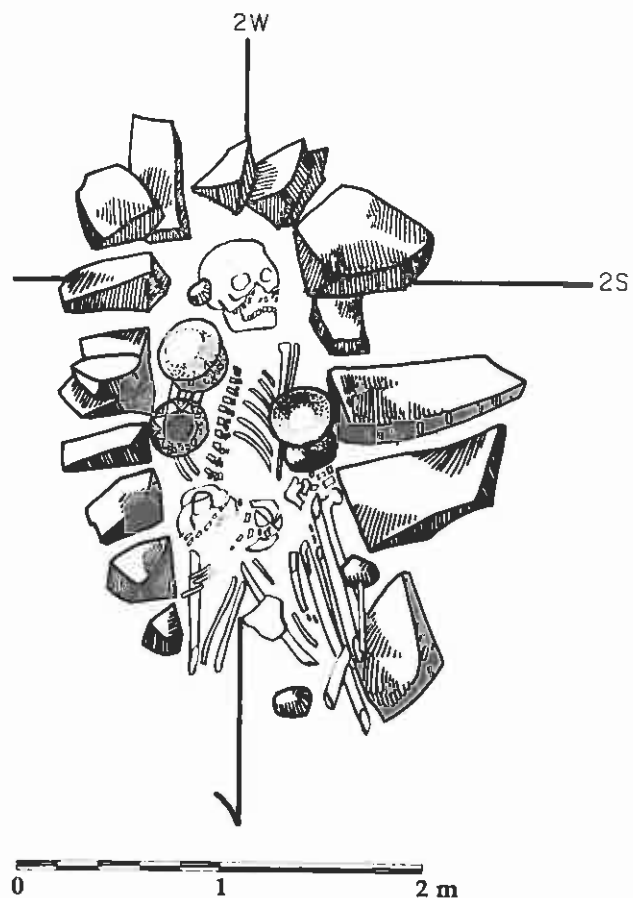


Figure 8.18. Burials 123 and 124 (secondary, bundled burial at lower right).



Figure 8.17. Figurines associated with Burials 117 and 118.

interred in tightly flexed positions. Burial 76 is likewise that of a child, associated only with a metate fragment.

The only other adult burials uncovered are nos. 74 and 75. Burial 74, tightly flexed in a seated position, may be a secondary burial. A jade bead was found near the neck area. Burial 75, interred in a flexed, prone position, had an obsidian spear point at the chest area, apparently as an offering. No ceramics had been placed with these burials.

One Classic period burial was found intruded into the subfloor area of T-24's Cantera phase house structure (Fig. 4.32). This interment (Burial 92) was in a flexed position with the head to the east. A jade pendant (Fig. 17.4k) and Classic period brown ware vessel were in association. Of interest with this individual was the dental mutilation present on the incisors. The upper front incisors were notched on the sides, while three of the four lower incisors had V-shaped notches.

A child burial (Burial 115) was uncovered during excavations at the north end of T-25 (Fig. 7.23). Like the other Classic period burials, it had been interred in a flexed and, in this instance, seated position. A small jadeite pendant (Fig. 17.7c) was associated with the child, but the interment lacked ceramic offerings.

Excavations of T-27 Structure 2, a Late Classic structure, uncovered a cache of thirteen vessels (Fig. 24.13), primarily orange ware bowls with ring bases, plus a human mandible and scattered human bone fragments (Burial 135). These were placed within a small, almost square stone-lined box. Two polished stone beads were also included with the cache. This group of ceramics represents the most elaborate offerings associated with a Classic burial at the site. Two other Classic burials from the same area, nos. 121 and 125, had only minor burial furniture.

The final Classic period burial recovered during the excavations—also Late Classic in date—is Burial 140, found on T-37. It is a child burial, interred in a flexed position. An orange ware bowl was placed over the skull and a small jadeite pendant (Fig. 17.4i) under the chin.

Two points can be made in summarizing Classic period burials at Chalcatzingo. First, of the fifteen recovered, over half (eight) were children. Second, of the fifteen, all for which position could be determined had been interred in a flexed position.

Postclassic Period Burials

The only Postclassic burials found at the site were uncovered during the excavations at Tetla. Both burials (nos. 160 and 161) are cremations. Burial 160 was a subfloor burial within the excavated Middle Postclassic house structure (Chapter 25). The cremated remains were associated with a black-on-red vessel fragment, a cache of obsidian blades, a jadeite bead, some mold-made figurine fragments, and three spindle whorls. The lithic artifacts and the spindle whorls may suggest that this was the burial of a female who used these items.

Burial 161 was discovered during the excavation of a stratigraphic pit northwest of the house structure. The remains were found within a Black on Red Polished bowl which had been covered with one-half of a Polychrome Resist Red dish with a tripod support (only two supports remained). A necklace fashioned from triangular shell sections was associated with the cremation.

EXTERNAL SIMILARITIES

The majority of the ceramic vessels associated with Chalcatzingo's burials show general similarities to vessels of the Middle Formative Zacatenco phase (e.g., Tolstoy and Paradis 1970; Vaillant 1930) in the Valley of Mexico. The crypt and stone-associated burials likewise have counterparts at El Arbolillo in the Valley of Mexico (Vaillant 1935: 168–180, Fig. 8). Several traits of the high-ranking Cantera phase burials also co-occur at La Venta, as was previously discussed. Some of these traits are generalized (e.g., associated jade) and are in fact present at other sites in both the highlands and lowlands. Other traits are of a more restricted nature and suggest that the trait co-occurrence may be due in part to some form of interaction between the two areas, such that Chalcatzingo's high-ranking individuals sought to emulate their Gulf Coast counterparts. These restricted traits are found among the PC Structure 1 and Structure 4 burials.

Jade in association with burials is not uncommon during the Formative period. Some El Arbolillo burials yielded greenstone jewelry (e.g., nos. 140, 148, 153; Vaillant 1935: 170–171), as have Formative period burials in Oaxaca (Kent V. Flannery, personal communication) and in other areas. The actual and pseudo burials recovered at La Venta (P. Drucker 1952: 25–27, 67–73; P. Drucker, Heizer,

and Squier 1959: 162–174) were usually richly endowed with jade.

Jade cannot be considered an "Olmec" trait, since its use in Formative period Mesoamerica is widespread. However, La Venta's burials and extraordinary caches indicate that the Gulf Coast Olmec elite had the ability to acquire this imported luxury item in quantity and the wealth to "consume" it and remove it from circulation. Using present data it can be surmised that Chalcatzingo too consumed more jade in its elite burials than did other central Mexican sites, but the quantity nowhere equals the La Venta consumption.

Although far more limited in quantity, another obvious parallel between Chalcatzingo's elite burials and traits at La Venta is the previously mentioned mortuary offering consisting of a *cantarito* placed within a shallow bowl (Chalcatzingo Burials 10, 33, 39, 40; La Venta Offering 5). Although it is uncertain if La Venta Offering 5 is a real or pseudo burial (P. Drucker, Heizer and Squier 1959: 162), three of the four Chalcatzingo examples are without question among the highest-ranking individuals at that site.

Elaborate stone cist graves at La Venta (e.g., Feature A-3-a; P. Drucker 1952: 67–73) may be crudely mirrored by Chalcatzingo's stone crypts. Both seem to have functioned as graves for high-ranking individuals. While stone-elaborated graves were not found at Zacatenco (Vaillant 1930: 188–189, but see Pl. 54-1), stone crypts and stone-associated graves were excavated at El Arbolillo (Burials 112, 116, 117, 118–119, 127, 129, 130, 139, 146; Vaillant 1935: 168–179, Figs. 7–9). Chalcatzingo's crypts seem, in construction, far more similar to El Arbolillo's than to the La Venta cists. On the other hand, the burial furniture within the Chalcatzingo crypts is more comparable to artifacts recovered in general excavations at La Venta. Some of these similarities are detailed in individual burials discussed below.

Burials 39 and 40, both wearing a large quantity of jade ornaments, probably represent the highest-ranking individuals found during our excavations. They were interred on the upper surface of the site's large platform mound, PC Structure 4. Looted crypts and a plundered stone-faced tomb atop the same structure indicate that other high-ranking individuals were also buried there. The actual and pseudo burials recovered at La Venta (P. Drucker 1952: 23–27; P. Drucker,

Heizer, and Squier 1959:162–174) also come from Middle Formative platform mounds. Whether this is an Olmec pattern only, or is more widespread remains to be tested at sites both on the Gulf Coast and elsewhere.

Chalcatzingo Burial 40 is unique in being the only Middle Formative period burial (highland or lowland) of an individual wearing a concave iron ore mirror. Such mirrors are found at Gulf Coast sites (e.g., P. Drucker, Heizer, and Squier 1959:Table 1, Pls. 43–46), but they are also known from Oaxaca, Guerrero, and other areas (Carlson 1981; Pires-Ferreira 1976b:317–325). The Chalcatzingo mirror is manufactured from high-purity magnetite and does not match any known magnetite sources (Chapter 23).

Burial 33 is also unique. While this crypt grave was associated with a *cantarito*–shallow bowl combination, it also contained the small greenstone were-jaguar figure. This figure bears a striking resemblance to other were-jaguar figures (e.g., Coe 1965a:14; Covarrubias 1957:56–57), including those found at La Venta (see Chapter 17; P. Drucker, Heizer, and Squier 1959:Pls. 26, 33–36). The Chalcatzingo figure is important because it is the only figure of this type to have been found in the context of controlled excavations at a site in the central highlands (not including one recovered from a Post-classic period floor at Coxcatlan, Puebla; Sisson 1974:48, Fig. 19 lower right). Similar stone figurines have emerged from Guerrero and also are alleged from Morelos, Puebla, and the Valley of Mexico (including Tlatilco), but these are not from controlled excavations.

Burial 3, highly destroyed and in the plow zone, forms a burial pair with Burial 33. The significant artifact from the crypt of Burial 3 is a carved stone head, forcibly removed from a statue and damaged in the process. Decapitated statue heads are rarely found archaeologically. Some have been recovered at La Venta (Mons. 28, 44, 64; Clewlow and Corson 1968) and other sites (San Lorenzo Mon. 6, Estero Rabón Mon. 5; de la Fuente 1973), but none in association with a burial. The presence of such a head with Burial 3 suggests that future excavations at Middle Formative Gulf Coast centers may uncover similar associations. As previously mentioned, Grove (1981b) believes the statue head may be a portrait head of the person buried within the crypt of Burial 3.

A final artifact found at Gulf Coast sites and at Chalcatzingo is the stingray spine. Again, this cannot be considered an Olmec marker since it is also found at non-Olmec sites (e.g., Huitzo, Oaxaca; Drennan 1976:Table 11.4), but its distribution may be significant. Two stingray spines were found in archaeological contexts at Chalcatzingo, one with Barranca phase Burial 107 (Fig. 7.11). La Venta examples include true spines and a jade replica, all from a bundle burial (P. Drucker 1952:26).

It is unfortunate, as previously noted, that the Chalcatzingo skeletal material was too poorly preserved for any detailed morphological analysis. One hope of the project was to check the morphological variability of the skeletal population on the possibility that some Gulf Coast individuals were residing at the site and might be morphologically distinct from the site's indigenous inhabitants. The skeletal data provided no clues of that nature, and, of course, no preserved skeletal remains are available from Gulf Coast Formative period sites for comparisons.

The individuals whose graves carry traits which co-occur on the Gulf Coast may be local Chalcatzingo elite bearing certain symbols of rank which appear Gulf Coast-like, or indeed one or many of them may be actual Gulf Coast persons, who likewise bear special symbols in their burial furniture. Whatever the ultimate resolution of this problem by future research, it is clear that the vast majority of the burials, those which can be classified as ranked below the uppermost elite, carry no special "external" traits and seem quite clearly part of the Middle Formative culture of the central Mexican highlands, as is also reflected in burials and artifact content at sites such as El Arbolillo and Zacatenco.

RESUMEN DEL CAPÍTULO 8

Los mejores datos para establecer la diferenciación social in Chalcatzingo provienen de las prácticas de enterramiento. Desafortunadamente, debido a la poca conservación de los restos esqueléticos, no se pudieron determinar las edades, los sexos, y las enfermedades, por lo que en general la información proveniente de los entierros se limitó a los datos acerca del tratamiento recibido en el entierro, tales como la naturaleza de la tumba y de los objetos asociados a ella. La mayoría de los entierros ocurren bajo los pisos de las casas, aún cuando varios fueron encontrados en el área del patio de T-25, dentro del altar T-25 mismo, y dentro del montículo de plataforma PC Str. 4.

Basados en la preparación de la tumba, se clasificaron 161 entierros en tres tipos: simple o directo, en el cual el individuo aparece colocado en un agujero sin modificaciones en el piso; asociado a piedras en el cual algunas piedras se colocan alrededor de las orillas o cubren parcialmente al cuerpo; y en cripta en el cual la tumba se encuentra delineada y cubierta con tabletas de piedra. Las ofertas mortuorias están constituidas principalmente por vasijas de cerámica con artefactos de piedra verde, objetos utilitarios de piedra, obsidiana, y otros objetos menos frecuentes. No surgió patrón alguno suficientemente definido para relacionar entre sí algunos de los artefactos con los diferentes tipos de entierros.

Casi todas las vasijas de cerámica son del tipo Amatzinac Blanco. Las formas principales son la del tazón somero y la de incensario con doble asa. Ocurren con frecuencia cantaritos con los tazones someros, lo que también ocurrió en un entierro en La Venta, el cual presentó esta misma asociación. Los objetos de piedra verde son de ornamento generalmente—orejeras, cuentas, y pendientes. De éstos, todos excepto las cuentas frecuentemente presentan ruptura intencional.

Las prácticas mortuorias sugieren que la organización social en Chalcatzingo no fué egalitaria desde la fase Barranca. Como prueba de la existencia de rangos y estados diferentes, se consideró el acceso desigual a los artículos escasos y valiosos, y al trabajo de otras personas en la comunidad. En este caso la presencia de objetos de piedra verde o de jade, los cuales no son de la localidad y son

relativamente raros, así como la presencia de tumbas de cripta que requieren trabajo extra, fueron indicativos de la existencia del estado elitista.

Los entierros que exhiben estos criterios elitistas se encuentran generalmente restringidos a la Plaza Central, en particular a las Str. 1 y Str. 4, y a T-25. Se presume por lo tanto que estas áreas hayan sido el foco de la actividad ceremonial-administrativa o de residencia de la elite. Dentro de este grupo, los entierros de mayor rango son los dos encontrados dentro del montículo plataforma PC Str. 4. Probablemente los atuendos y los cuerpos mismos de los "jefes" eran recubiertos con barniz de hematita, ya que al momento de su entierro estos individuos llevaban cantidad de joyería de piedra verde encima.

La mayoría de los entierros entran en esta categoría de alto rango. La gran variedad en la cerámica y otros objetos mortuorios esbozan intentos de refinar más los rangos menores, pero ocurren algunas correlaciones. Los cantaritos colocados dentro de los tazones poco hondos y los incensarios de doble asa, parece ser, estaban asociados a los individuos de mayor rango; en tanto que el tipo Carrales Gris Burdo se encuentra con mayor frecuencia en los entierros de rango menor. Curiosamente la mayoría de los entierros de rango menor contiene mayor número de vasijas de cerámica que los entierros de rango superior.

La residencia elitista, PC Str. 1, mostró treinta y ocho entierros bajo el piso, con lo que produjo la exhibición de la variación total posible en los tipos de entierro, así como de las posiciones y orientaciones de los mismos. Se pudo observar que tanto los objetos asociados como la orientación difieren entre sí en las mitades sur y norte de esta estructura. Estos entierros también revelan otro tipo de patrón—la ocurrencia de seis pares de entierros, posiblemente esposo y esposa. Uno de estos pares presentó los artefactos más "Olmecas" encontrados en el sitio, consistentes en una cabeza desprendida de una estatua y una figurilla de piedra semeando un jaguar. Dentro de los entierros pareados, parece ser que se hayan utilizado ciertas formas o tipos de cerámica para distinguir con estas marcas a los miembros de cada par. También ocurren los entierros pareados en T-25.

La similitud entre los entierros eliticos de Chalcatzingo y los Olmeca de la costa del Golfo incluyen la presencia

de jade en la tumba, la construcción de criptas de piedra, el entierro en montículos plataforma, y la combinación de un cantarito en un tazón poco profundo. Los individuos de alto rango, por lo tanto, pueden haber sido personajes locales que copiaban a sus contrapartes de la costa del Golfo, o en realidad inmigrantes de afuera que gobernaban en Chalcatzingo. De todos modos, la enorme mayoría de los entierros, aquellos de la población no elitica, claramente forman parte de la cultura del centro de México perteneciente al período Formativo Medio, con expresiones tan claras como las encontradas en El Arbolillo y Zacatenco.