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## 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-

cidated 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,  $1660 \pm 90$  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  $3 \times 1$  m test unit perforating the mound. In this instance, the character of the deposit is difficult to determine.

Date N-1413,  $1470 \pm 80$  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,  $1070 \pm 85$  BC, the earlier date, comes from the upper level, and N-1702,  $670 \pm 100$  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,  $620 \pm 85$  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

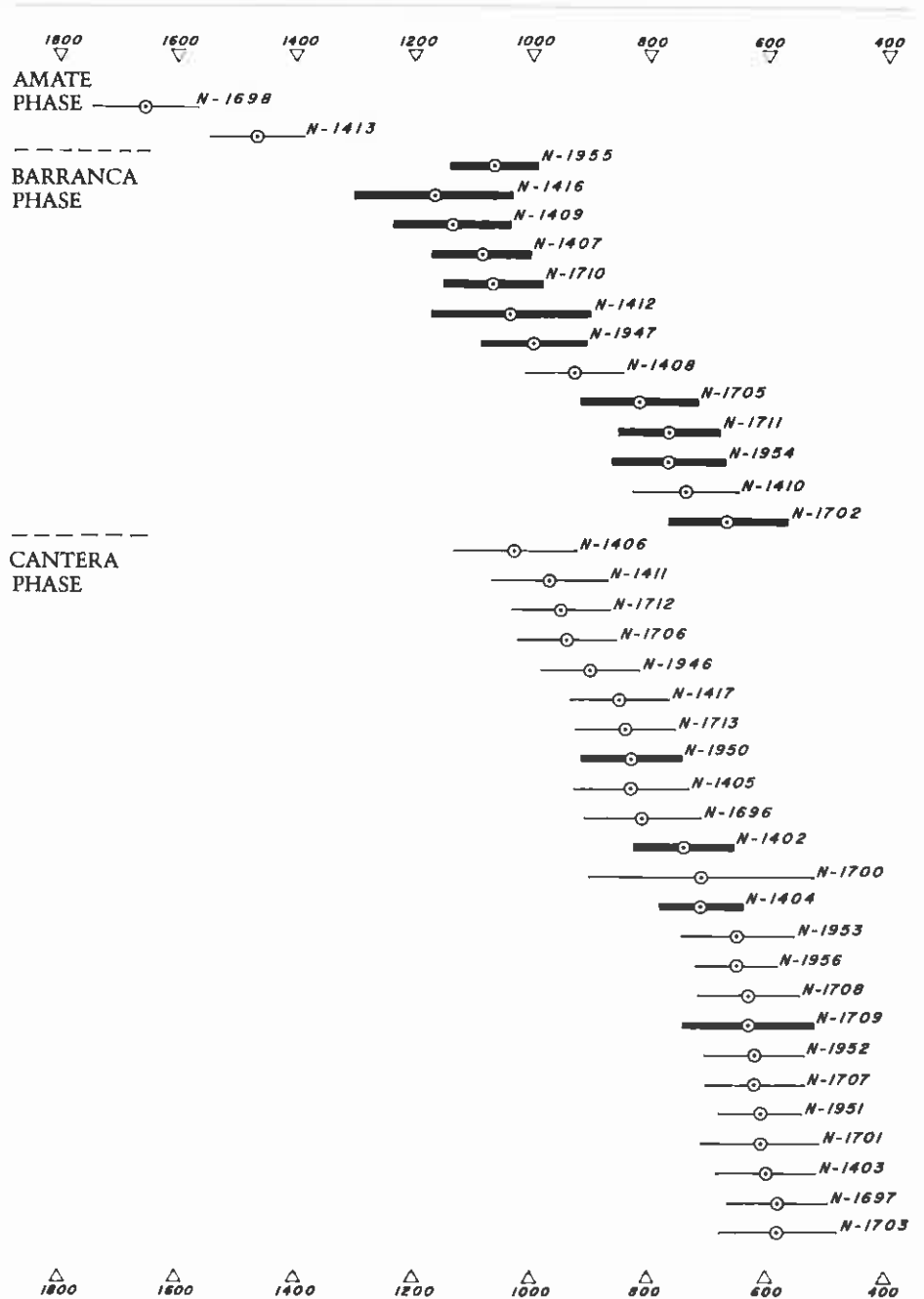


Figure 5.1. Radiocarbon dates. Wide lines are SSU units (Appendix B); line length equals the 1 Sigma variation range. Highly aberrant samples not included in this chart.

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 ± 100, and N-1704, 220 ± 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-11 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 estas tipas, 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 roldado.*

*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 <sup>a</sup>	Basin of Mexico <sup>b</sup>	Tehuacan Valley	Valley of Oaxaca	Chiapa de Corzo	Altamira	San Lorenzo <sup>c</sup>	La Venta-Tres Zapotes <sup>d</sup>	Lowland Maya	Chalchuapa
100 BC	Terminal Formative					Horcones					
200		Ticomán	Ticomán		Monte Albán I	Guanacaste		Remplás		Chicanel	Caynac
300	Late Formative (unphased)			Late Santa María		Francesa			Middle T.Z.		
400			Atoto-Cuautepec								Chul
500	Late Cantera	Cuautepec	Zacateco Totolca-La Pastora		Rosario	Escalera		Palangana	L.V.IV - Lower T.Z.		
600	Early Cantera	La Pastora		Early Santa María				(hiatus)		Mamón	Kal
700						Guadalupe					
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	Ocos	Chicharras			
1300		Nevada		Early Ajalpan	Tierras Largas			Bajo			
1400	Early Amate						Barra	Ojochi			
1500		Tlalpan		Purron							

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 Gilford 1970.

Figure 5.2. Comparative chronological sequences.