

Ancient Maya Urban Development: Insights from the Archaeology of Caracol, Belize

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Introduction

More than two decades of archaeological research at the site of Caracol, Belize have provided a detailed glimpse of this ancient Classic Maya urban community. Located approximately 600 meters above sea level in the jungle growth covering the Vaca Plateau of Belize, Caracol was initially settled around 500 B.C. Population grew and the construction of monumental architecture increased through the Early Classic (A.D. 250-550), at which point the site was a ritual innovator and members of the ruling dynasty maintained connections as far away as Copan, Honduras. In A.D. 562 Caracol's fortunes were impacted dramatically by a successful "star-war" over the Guatemalan site of Tikal. Over the next 100 years Caracol moved to the political forefront of events in the Southern lowlands.

The conquest of Naranjo between A.D. 626 and 636 served to consolidate Caracol's hold over the eastern Peten. At this same time, the site's settlement became more tightly integrated into a single urban system. The city built a fully planned causeway system, whose roads radiated out from monumental epicentral architecture to integrate agricultural fields, residential households, dispersed reservoirs, and outlying architectural complexes containing markets. Caracol's population of over 115,000 people was relatively wealthy,

ritually integrated, and stratified with differentiated diets that can be reconstructed through stable isotope analysis.

It is suspected that dynastic rule largely was supplanted by bureaucrats after A.D. 680, if only to run the mammoth metropolis that Caracol had become by that date. The stone hieroglyphic record remained relatively silent during this time of great prosperity. At its close some hundred years later, iconography portrayed on the site's resurgent stone monuments shows an overriding concern with the dynastic reassertion of authority. Artifactual materials from epicentral structures demonstrate flourishing long-distance trade and pan-Mesoamerican linkages just prior to the site's collapse; the center of Caracol was burned, presumably through an act of warfare, around A.D. 895. Shortly after this date, the site was abandoned - until the advent of modern loggers, archaeologists, and now tourists.

The almost quarter century of continuous archaeological research carried out at Caracol has shed new light on a number of inter-related topics. Research into the effects of Maya warfare on Caracol has demonstrated that the site enjoyed great prosperity and wealth following its successful bellicose engagements with Tikal and Naranjo. These events also resulted both in the development of a cohesive Caracol identity and in the urban planning for which

the site is now known. This Late Classic "Caracol identity" manifests itself through several archaeological indicators. Most residential groups have an east-structure focus that is usually associated with extensive mortuary ritual. Caracol's mortuary rituals involved the widespread use of tombs in combination with other kinds of interments to house multiple individuals, many of whom had "beautified their teeth with hematite and/or jadeite inlays. Many of the site's tombs became focal points for re-entry and re-interment episodes. The mortuary rituals are also associated with the deposition of ritual caches and, more infrequently, incense burners.

That Caracol utilized extensive city planning is evident in its spatial organization. The site's dendritic causeway structure promoted centralized economic control, especially as the causeways ended in specially constructed groups that functioned as markets and administrative nodes. Household residential plazuela group spacing must have been centrally enforced to achieve the regularity that is evident over the landscape. This regularity in household spacing helped promote health, water control, and agricultural sustainability. Garbage was recycled into the city's agricultural fields and drinking water was provided through hilltop aguadas attached to residential groups. The extensiveness of the agricultural fields and the regularized distribution of the site's residences provided for long-term agricultural sustainability. The scale of the spatial integration of Caracol reveals the site to have been a carefully planned metropolis that accords well with modern theory concerning the development and organization of urban areas. The data collected from Caracol have much to offer

any consideration of urbanism.

The ancient Maya were urban dwellers and built many cities. Nevertheless, considerations of Maya urbanism have been the subject of more than a century of debate that reveals the growing pains of Maya archaeology and, indeed, of the field of anthropology. For many years, urbanism largely was cast in a distinctly Western form, as anthropological theory had a difficult time wrestling with diverse non-Western traditions. Maya archaeological interpretation was often predicated on this inexact anthropological background and also on a paucity of collected settlement data from large sites. Many archaeological projects focused on the monumental architecture that occurred in site centers, potentially neglecting the jungle- or scrub-covered countryside. Broad mapping programs at Tikal, Guatemala (Carr and Hazard 1961) and at Dzibilchaltun, Mexico (Kurjack 1974) revealed that extensive Maya settlement was dispersed over the landscape. But even these mapping projects did little to resolve issues concerning the composition or scale of Classic Maya sites, resulting instead in an extended debate over the existence of urbanism and cities in the Southern lowlands (e.g., Becker 1979). This paper derives from a body of long-term research data that have been collected in the course of more than 25 years of work at Caracol, Belize that may be used to answer questions concerning the composition, scale, and development of a Classic Maya city (e.g., D. Chase et al. 1990). These data also suggest that, in spite of differences between modern and past economic systems, ancient expressions of modern urban principles are reflected in the use of space at Caracol.

Ancient Maya Urban Development

Just as planned developments characterized the earliest Mesopotamian and later Roman cities, a general template exists for Maya urban developments in the Southern lowlands. Elsewhere, we (A. Chase and D. Chase 2006) have talked about this template in terms of a series of distinct "foundings," termed "initial," "ideological," "dynastic," and "administrative" (Figure 1). Initial occupation of any site does not mean that the locus was destined to become an urban place. Many locales were settled and witnessed little further elaboration. Caracol's "initial" settlement was during the Middle Preclassic Period. However, during the Late Preclassic Period, a recipe came to

be employed that is almost always reflected in the epicentral architecture of later Maya cities, albeit sometimes in distorted fashion through being engulfed in later "downtown" constructions. This recipe consisted of monumental architecture distributed about a broad plaza with a western pyramid and a raised platform supporting three independently spaced buildings on the east (Aimers and Rice 2006; A. Chase and D. Chase 1995).

Key centers in the Maya heartland area of western Belize and the Peten of Guatemala evince what has come to be referred to as a "Commemorative" or "E Group," named after its Uaxactun counterpart excavated by the Carnegie Institution of Washington

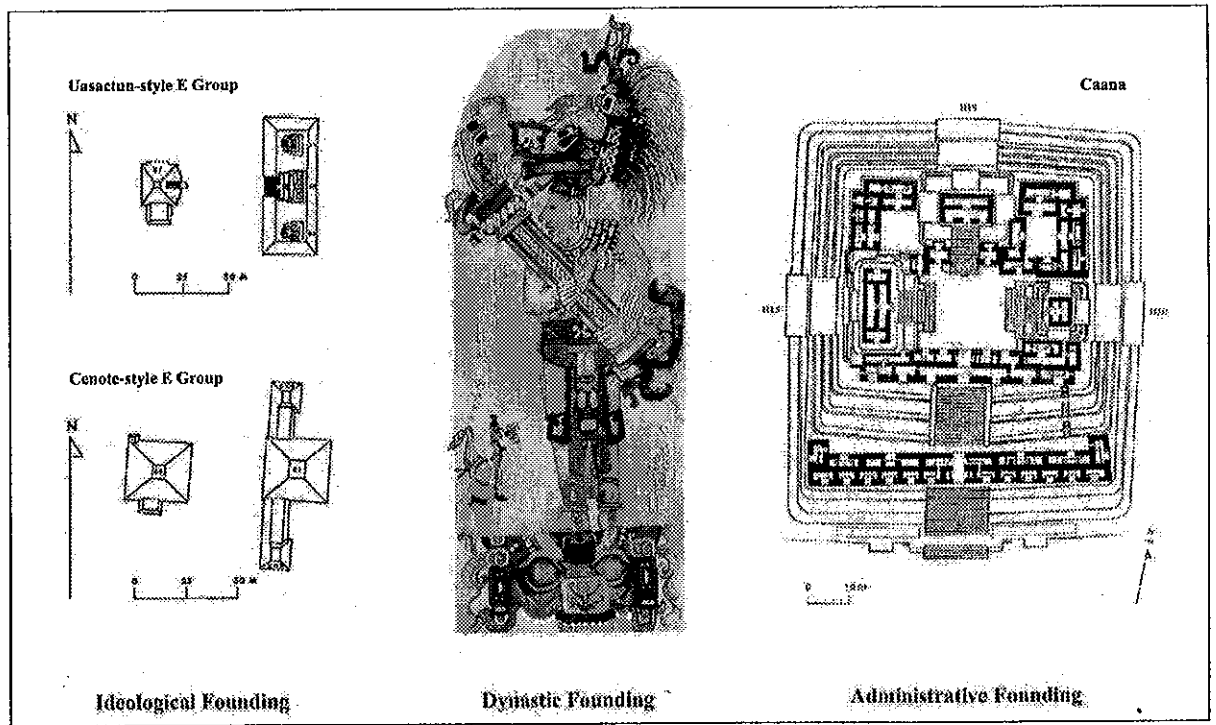


Figure 1. Types of site foundations found in the Maya Southern lowlands: Ideological [represented by E Groups]; Dynastic [represented by stela portraits]; Administrative [represented by complex palaces; Caana illustrated] (after A. Chase and D. Chase 2006:48).

(Ricketson and Ricketson 1937). These E Groups served as the initial focal points at their respective centers and represent their cosmological or "ideological" founding. Deposits in this monumental architecture served to center each site in terms of the Maya universe. At each place that it occurs, the E Group architecture established a central area that often became the "downtown" of future urban developments. Although initially broadly cosmological in function, these E Groups anchored downtown areas that later became political and economic in function.

Caracol's E Group remained in use throughout the site's history. It was established by BC 300 and presumably remained the most important group at the site through the middle of the Early Classic Period. Its construction represents the ideological founding of the site. Its central eastern building, Structure A6-1st, was a continuous focal point for the site for over 800 years; in fact, the excavated final building was used over the course of this temporal span (Figure 2). It had originally been constructed in AD 70 to celebrate and "center" the calendric shift to the Eighth Baktun (A. Chase and D. Chase 2005) and was still in use at the time of the site's abandonment in the Tenth Baktun.

The Caracol E Group was also associated with the "dynastic" founding of the site in the Early Classic Period. As is the case with dynastic records elsewhere (A. Chase 1985), the earliest monuments for Caracol were associated with this architecture and several early elite were also buried within this sanctified area. However, with the onset of Caracol's formal dynasty, the urban dynamics shifted as a generalized cosmological locus was eventually

surrendered for a grander and more specific architectural complex at Caracol known as "Caana" (Figure 3), which became the final locus for Caracol's Late Classic "administrative" founding.

Caana was the seat of Caracol's political and economic power during the Late Classic Period. It housed the royal court and formed the central node for the administration of Caracol through a dendritic causeway system. Private temples, housing honored dead, and private palaces, presumably housing the royal family, crowned Caana's summit (A. Chase and D. Chase 2001a). Originally conceived as an elevated royal residence, by the later part of the Late Classic Period, Caana was rebuilt, becoming a true administrative center as the site's governance system supplanted the royal dynasty. Audencias, presumably for bureaucratic purposes, bifurcated the complex's front face and separated the elevated royal residences from the public plazas below.

The use of Caana as a bureaucratic hub by the royal court coincided with urban planning that also transformed the scale and composition of the ancient Maya city.

Ancient Maya Urban Scale

The scale of Caracol, the "city," is truly massive. The Late Classic Period settlement covered over 177 square kilometers. Yet, this broad region was integrated into a cohesive whole by a set of dendritic causeways (Figure 4). All roads led directly to the epicenter and the causeway system indicates that the site had a highly administered economy (A. Chase and D. Chase 2001b). Within this economy, distribution, but not production, was tightly controlled. Causeway termini were constructed as specialized plazas to



Figure 2. Photograph of the eastern platform of Caracol's "E Group," the A Plaza; Structure A2 (not shown) constitutes the western pyramid; the heavily modified eastern platform is dominated by the centrally located Structure A6; the Caracol Project camp is in the background. The majority of the stabilization was undertaken by a GOB-TDP effort from 2000-2003 [directed by J. Awe] following initial stabilization of Structure A6 by a UCF-GOB-USAID effort from 1989-1994 [directed by A. Chase and D. Chase].



Figure 3. Photograph of Caana, showing audencia on southern pyramid face and Caracol's royal compound on the summit; stabilization of this complex was undertaken by a UCF-GOB-USAID effort from 1989-1994 [directed by A. Chase and D. Chase] and a GOB-TDP effort from 2000-2003 [directed by J. Awe].

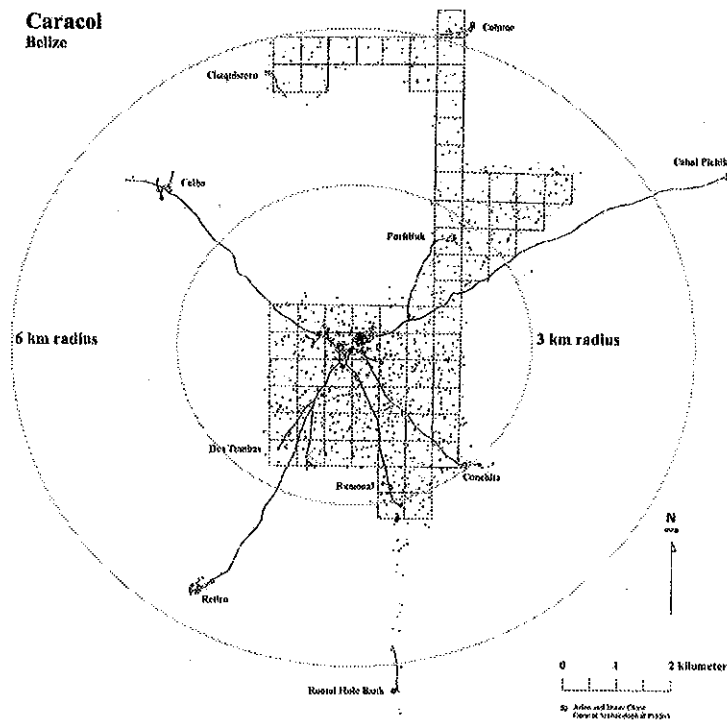


Figure 4. Map of Caracol, Belize, showing the site's settlement and causeway system; the termini approximately 3 kilometers distant from the epicenter were constructed at the beginning of the Late Classic Period and served as market locales; the termini at the 6 kilometer ring represent once independent sites incorporated into the Caracol metropolis in the Late Classic, complete with constructed market plazas (after A. Chase and D. Chase 2006:56).

function as market areas, possibly on a solar cycle.

The causeways of Caracol are of two kinds. Longer causeways, ranging from 5 to 7 kilometers in length, connected pre-existing centers, which were engulfed in Caracol's Late Classic settlement, to the Caracol epicenter. Where a causeway articulated with these earlier complexes, a special market plaza was constructed. These large plazas were bounded by long low buildings and served as control points for the earlier centers. The positioning of these groups also reflects the importance of the economic and administrative control exerted

by the centralized bureaucracy. Free-standing markets were linked directly to the epicenter by shorter causeways. Located only 3 to 3.5 kilometers from the epicenter, these termini groups were purposefully placed and built at the beginning of the Late Classic Period. They represent large-scale urban planning and were placed in areas that were previously only lightly inhabited. Late Classic elite residential groups were joined in turn to these market plazas by shorter vias. Interestingly, the placement of this inner ring of termini effectively bypassed and potentially severed links with some earlier elites that had maintained large palace

complexes in the outlying landscape, illustrating the fluidity of political dynamics for early Late Classic Caracol.

How did Caracol come to undergo such a planned urban expansion? The answer perhaps lies in its successful warfare bids. Hieroglyphic texts provide a history not only of the site's dynastic rulers, but also of the warfare events in which these leaders were engaged. An initial Caracol victory is recorded as a "star-war" defeat of Tikal, Guatemala in AD 562. Such an event could surely have been responsible for the site's massive urban expansion. Elsewhere, we (A. Chase and D. Chase 1998a) have noted that the 76 kilometer distance between Caracol and Tikal meant that direct territorial control was problematic because of military marching limitations. However, Caracol remedied this situation by establishing a secondary capital at the Guatemalan site of Naranjo, some 42 kilometers distant, through a series of warfare events carried out between AD 626 and AD 631. From the vantage point of Naranjo, Caracol was able to bring Tikal under its territorial sway, effectively muzzling the political ambitions of that site until the later part of the Late Classic Period (AD 692). These successful warfare events relative to Caracol's powerful northwestern neighbors are viewed as catalysts for the Late Classic urban transformation of the site.

We have tested archaeologically the effects of successful warfare at Caracol through two different sub-projects (D. Chase and A. Chase 2002, 2003). The first, sponsored by the Harry Frank Guggenheim Foundation in 1988 and 1989, tested residential groups in the southeastern portion of the site in the vicinity of the Pajaro-Ramonal and Conchita Causeways (A. Chase and D. Chase 1989). These investigations

revealed a high degree of prosperity in this portion of the site and a massive population explosion on the order of 325% following Caracol's hieroglyphically recorded defeat of Tikal. The second sub-program of investigation ran from 1993 through 1996 in the northeastern portion of the site and was sponsored by the National Science Foundation. A similar population explosion was encountered in the archaeological settlement, but with some variability in artifactual materials from the other tested sector (D. Chase and A. Chase 2003). Based on these and subsequent investigations it seems likely that status differences and market distribution systems played a role in this variation. Nevertheless, both sectors demonstrated that the urban sprawl of Caracol immediately followed dateable events recorded in the hieroglyphic texts as successful warfare.

To a large degree, the immense scale achieved by the city of Caracol may be ascribed to an influx of people to a successful center, presumably attracted there because of political and economic success. These new inhabitants were settled within a managed region that was linked together by a highly functional causeway and termini system. Inhabitants of Caracol were then socially integrated into the city through the use of a consciously fostered social identity (Figure 5) that set them apart from other Maya populations (D. Chase and A. Chase 2004). This identity was focused on a series of symbolic items, most having to do with mortuary contexts that presumably provided jural rights to the occupants of the residential groups. The vast majority of residential groups at Caracol (some 85%) evince an eastern shrine or mortuary construction (that can also be referred to as a "mausoleum" [A.

Chase and D. Chase 1994]). These shrines housed formal tombs that often contained multiple individuals, many of whom were there as a result of a double funeral (D. Chase and A. Chase 1996). A number of these individuals displayed formal dental decoration that appears to have been in vogue at Caracol during the Late Classic Period, but that also may have reflected occupation and, possibly, role or status in life. Some 21% of Caracol interments contained individuals whose teeth were once inlaid with jadeite or hematite. The honored dead, who were placed in the eastern structures, also appear to have been commemorated through the placement of special ceramic cache containers; normally restricted to epicentral contexts at many other Maya sites. There was a clear extension of both ritual practices and status indicators to a broad segment of Caracol's urban population. Thus, integrative measures are seen in the archaeology of Caracol with regard to spatial planning, economic access, ritual systems, and social control. To some extent, both the spatial and status measures at Caracol can be viewed as correlating with Joel Garreau's (1991) model of urban expansion in which multi-nodal centers, or edge-cities, for marketing, administration, and high-wage earners are established some distance from the original downtown area. An argument can be made that ancient Caracol's urban history mirrors Garreau's modern urban developmental processes (A. Chase et al. 2001), albeit on a different scale.

Ancient Maya Urban Composition

Caracol's population was heterogeneous in composition, which would have been in accord with the center's cosmopolitan urban nature. Several lines of

evidence can be utilized to demonstrate this. In particular, dietary data indicate the stratified nature of Caracol's society and artifact distributions indicate that status and wealth were widely distributed.

Caracol also can be framed in terms of Burgess's (1923) concentric model for a modern industrial city. In Burgess's model, which was based on settlement patterns for Chicago, poor industrialized workers lived in a zone surrounding the downtown monumental architecture and the urban elite; wealthier folks lived further afield. Caracol's settlement pattern matches this description (A. Chase et al. 2001). People who inhabited the site's epicentral palaces evince the best diet in the city, consistently high in maize and protein. Elites associated with the termini similarly share a high status diet. However, ringed about the epicenter are individuals whose diet is among the worst in the city, presumably because these individuals did not grow their own crops; these individuals probably represent an "industrialized" labor force, producing goods, constructing buildings, and creating stucco sculptures for the site's elite. Settlement immediately about Caracol's termini groups mimics these downtown patterns. The rest of the residential settlement located among the fields of this "green" (Graham 1999) or "garden" (A. Chase and D. Chase 1996, 1998b) city evinces a good diet that is variable, but intermediate to the other two groups. Dietary variation also appears to correlate with construction mass and artifact distribution, suggesting additional heterogeneity even among nearest neighbors. Thus, stratification based on unequal access to basic resources, as defined by Fried (1967), is evident in differential diets at Caracol. Recognition of this underscores the

Ancient Maya Urban Development: Insights from the Archaeology of Caracol, Belize

Indicators of a Caracol Identity

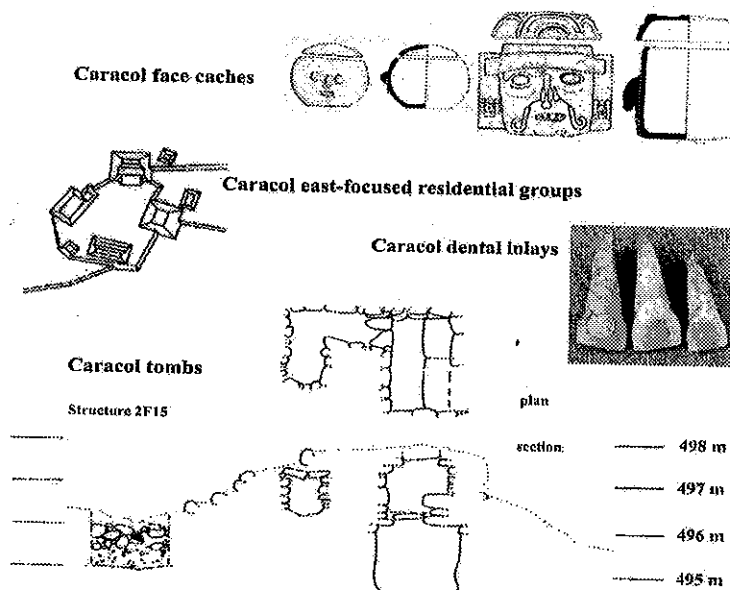


Figure 5. Archaeological indicators of a Caracol identity include: special purpose cache vessels; east-focused residential group; tombs in eastern residential buildings; and, dental inlays. Not shown are incense burners (after A. Chase and D. Chase 2004:140).

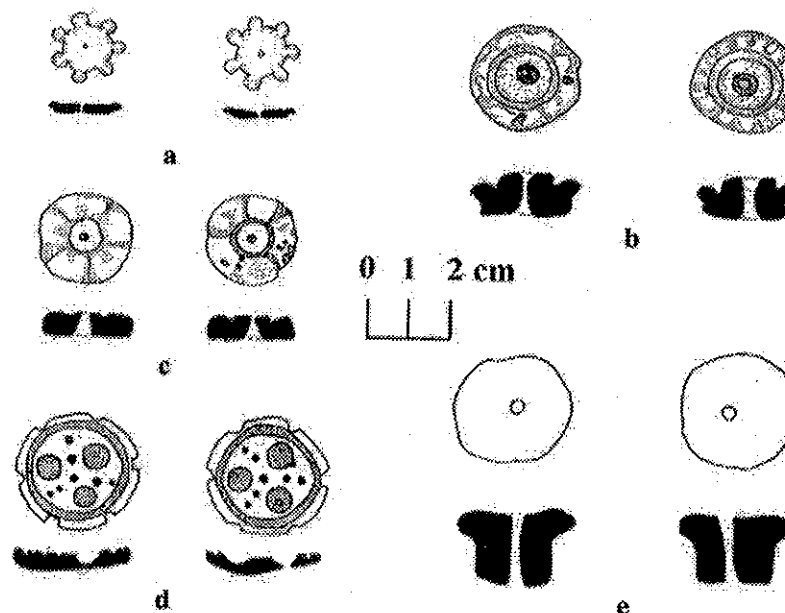


Figure 6. Examples of shell ear ornaments from burials in Caracol's settlement area: a. Operation C171B; b. Operation C59A; c. Operation C53B; d. and e. Operation C29A.

fact that more than two social-economic groups existed within the city, indicating that ethnohistorically-based arguments about a two-class society among the ancient Maya are not supported by the archaeological data.

Apart from diet, various artifactual distributions also indicate the existence of multiple groups and statuses within the city. For example, earflares may be taken as an excellent marker of status. These earring assemblages are differentially distributed among the city's population. Lower status members of Caracol used ceramic-backed earrings that were rarely placed in mortuary contexts. The highest status groups at Caracol used jadeite or obsidian earflares that were included in tombs; these earring assemblages were limited to the site epicenter. Intermediate status groups used shell earrings or backings that are distributed throughout the city in burials (Figure 6), also indicating the relative wealth of much of Caracol's population.

Different parts of the city also had access to different goods, presumably as a result of a distribution system that internally differentiated segments of the population. While production would have been carried out on a household level, distribution of goods was tightly controlled at the various termini. This was where and how the central elite maintained their economic and political power. For example, finished high status cloth products would have been used to economic advantage. Production of such cloth items, as represented by stone spindle whorls, was clearly centered about the epicenter, but also in production pockets located in the surrounding settlement (A. Chase et al. 2007). However, production locales for other artifacts, such as chert tools or shell jewelry, were located at some

distance from the site epicenter.

The entire population was afforded ritual vessels that were utilized in commemorative mortuary rituals of individual family units. The practice and the forms involved were shared by the entire Caracol community, presumably as part of the ritual integration of the population into a common identity (D. Chase and A. Chase 2004). Yet, the distribution of other ritual objects was tightly controlled which can be seen in the distribution of serving vessels that were important items for inclusion in Late Classic burials. Cylinder vases that were incised and/or painted were made available to the entire population. But, different sub-identities can be perceived in the spatial distribution of the population - for while the northeast sector of the site used cylinder vases, it did not have access to Belize Red tripod plates, which were common in the southeastern sector of the site. Thus, the distributional pattern of coeval artifacts at Caracol is proving to be very revealing about the socio-economic system operating within the city.

Conclusion

Our understanding of Maya urbanism is not as robust as it should be because archaeological research has not kept pace with anthropological theory. In particular, our knowledge of the scale and composition of ancient Maya cities has been hindered by research methodologies, which are not congruent with archaeological realities. Maya archaeological projects are generally not regional in scale, yet Maya cities were. Almost two-dozen Maya cities can be identified as having been large metropoli. Yet, the majority have not witnessed adequate mapping in their outlying

Ancient Maya Urban Development: Insights from the Archaeology of Caracol, Belize

settlement areas. Large-scale archaeological sampling programs generally have not been undertaken to document the variability that existed in the social composition and in the economic articulation of populations located with the suburban sprawl of a Maya city.

Maya urbanism was regional in scope, even if widely dispersed over the landscape. To some degree, Maya urbanism resembled today's suburban settlement patterns. The archaeological data that have been collected at Caracol are reminiscent of the composition of some early 20th century western cities: well-to-do housing (in the form of palaces) was located downtown; a concentration of relatively low status support population was located immediately adjacent to the downtown epicenter; and, upper-middle status residences were located in areas at a slightly greater distance from the center of the city. Excavations and analyses demonstrate that nearest neighbors often were of different status, that sacrificial victims were not fed high-status diets, and that some palace workers, who presumably ate food in the royal kitchens, were buried at home in their own residential groups. Thus, in a primate city, like Caracol, a highly integrated infrastructure, consisting of excellent roads and conveniently located administrative and economic nodes, organized the widely distributed population. The allocation and manipulation of otherwise restricted religious rituals and symbols to the bulk of the city's population provided a unique identity that fostered a sense of the city as a special place. The political fortunes of Caracol were directly linked to its successful warfare and social policies.

In the ninth century Caracol and other Maya cities were confronted with an onslaught of negative factors relating to a

drier climate, changing social orders, and participation in an external world system. Caracol's internal social policies were compromised and the city slipped into the shadows of time at the beginning of the tenth century. But, Caracol had survived as a successful tropical urban environment for minimally 400 years (from AD 500 until AD 900). And, it serves as an example of a non-western city that can inform anthropological theory on urbanism and urban development.

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Arlen F. Chase and Diane Z. Chase

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Ancient Maya Urban Development: Insights from the Archaeology of Caracol, Belize

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