

1. Details in the Archaeology of Caracol, Belize: An Introduction

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Our archaeological project at the Maya site of Caracol in the Vaca Plateau of Belize has been ongoing since 1985. This decade of archaeological investigation has resulted in a much better understanding of the extensive Maya city we now call "Caracol." And the data gathered by the project within these ten years have helped to augment our understanding of Classic Maya civilization in the Southern lowlands.

The studies contained within this volume represent but a small part of the archaeological data that has been collected at Caracol; it results from the efforts of more than four hundred individual project members who have each spent four or more months of their lives living on-site. Taken as a whole the twelve studies presented here provide a brief overview of many aspects of this once great Maya center, taken individually, however, each study documents important archaeological details that have applicability not just for Caracol, but also for our overall understanding of Maya civilization.

Changing Views of Caracol

Prior to the first field season of the Caracol Archaeological Project in 1985, the site of Caracol was viewed as a relatively small center with little impact on the Maya world. Caracol's primary significance lay in its supposed defeat of its neighbor, the Guatemalan site of Naranjo, after a series of wars in the 7th century A.D. (Stone et al. 1985). By the time the first Caracol monograph was published (Chase and Chase 1987a) discoveries had been made that somewhat altered this provincial view of the site. Not surprisingly, beginning fieldwork proved the site to be substantially larger than had been suggested by previously published maps (Beetz and Satterthwaite 1981); somewhat unexpected, however, was the discovery of a series of intrasite causeways radiating out from Caracol's epicenter, the longest initially believed to be some 3.5 kilometers in length. Yet, the one find that had the most impact on changing the archaeological view of Caracol was the A Group ballcourt marker encountered in 1986 (Chase and Chase 1987a; Chase 1991). The hieroglyphic text on this monument recorded a series of historic activities relating to Caracol's current king, Kan II, including Caracol's apparent defeat of the Guatemalan site of Tikal nearly 80 kilometers distant by Kan II's father, Lord Water (Houston 1987:93; 1991). Nevertheless, opinions about Caracol's impact on the Classic Maya world were sharply divided. A general Mesoamerican text referred to Caracol as a "relatively small city" and noted that "the massed demographic power of a regional state like Tikal far outmatched anything that Caracol could muster" (Adams 1991:196). On the other hand, another widely read book stated that "the bellicose rulers of this new kingdom, called Caracol by archaeologists, would take not only Tikal but the entire Peten region by storm, eventually controlling the politics of the Classic Maya heartland for more than a century" (Schele and Freidel 1990:171).

From an archaeological standpoint, it was not until after the 1987 field season that the real significance of Caracol relative to other lowland Maya sites began to become apparent. Intensive and extensive work at the site continued on a yearly basis with each season adding a new dimension to our emerging view of Caracol. During 1988 and 1989 the first formal settlement study was undertaken; this study provided data on the impact of war on the overall Caracol population as well as a tentative population history of the region (Chase and Chase 1989). It also resulted in the complete mapping of plaza groups and terraces for the part of Caracol lying between the Conchita and Pajaro-Ramonal causeways, permitting initial population estimates of between "34,514 and 61,354 people" to be made for the site (Chase et al. 1990:502) that were substantially larger than originally expected and, in fact, showed Caracol to be more densely occupied than Tikal. From 1989 through 1993 intensive excavations were undertaken on the monumental and residential architecture in the site's epicenter; these investigations uncovered massive architectural complexes and royal interments as well as use-related refuse on floors. Structural penetration provided time depth while analyses provided a fine-tuned chronology. All of these field seasons and the various specialized studies stemming from them, many of which are reported on here, have helped contribute to the creation of a much changed view of Caracol.

As it is now known, Caracol is a city with over 36 kilometers of internal site causeways that connect the epicenter with a series of widely-spaced special-function nodes of monumental scale (Figure 1.1). The settlement is continuous and dense within a city radius of at least 4 kilometers; however, transects undertaken in 1994 indicate that this density continues outward for at least another 2 kilometers. Causeways physically extend the urban radius of Caracol 5.5 kilometers to the southwest and northwest, 6.5 kilometers to the southeast, and nearly 8 kilometers to the northeast.

Caracol's causeways integrate settlement and agricultural fields in the site core with the site's epicenter (Figure 1.2). Certain causeways engulfed previously existing smaller sites (Cahal Pichik, Retiro) into a growing Caracol while others were established in conjunction with completely new termini (Conchita, Ramonal). Testing of causeways in the southeast sector of the site indicates that these were constructed during the early part of the Late Classic Period. Mapping of causeways and settlement in the Caracol core area has also provided information on the Caracol agricultural system. This work makes it evident that fields were extensive and must have provided substantial agricultural produce for the growing Caracol population. Fields were not organized around individual households; mapping instead indicates the existence of valley-wide systems, undoubtedly created and maintained by units larger than the nuclear or extended family.

While Caracol may have maintained a small population during the Late Preclassic and Early Classic Periods, information from epicentral excavations indicates that the site was well integrated into the general Southern lowland Maya ritual system and had full access to exotic trade items such as jadeite and *spondylous* shell. This is especially evident in a series of caches from Structure A6, The Temple of the Wooden Lintel (Chase and Chase 1987a, 1994a). Subsequent to the 6th and 7th century wars with Tikal and Naranjo, Caracol expanded its urban domain spatially by means of its causeway system, and its population increased dramatically. Not only did the number of residential plaza groups and public construction activities

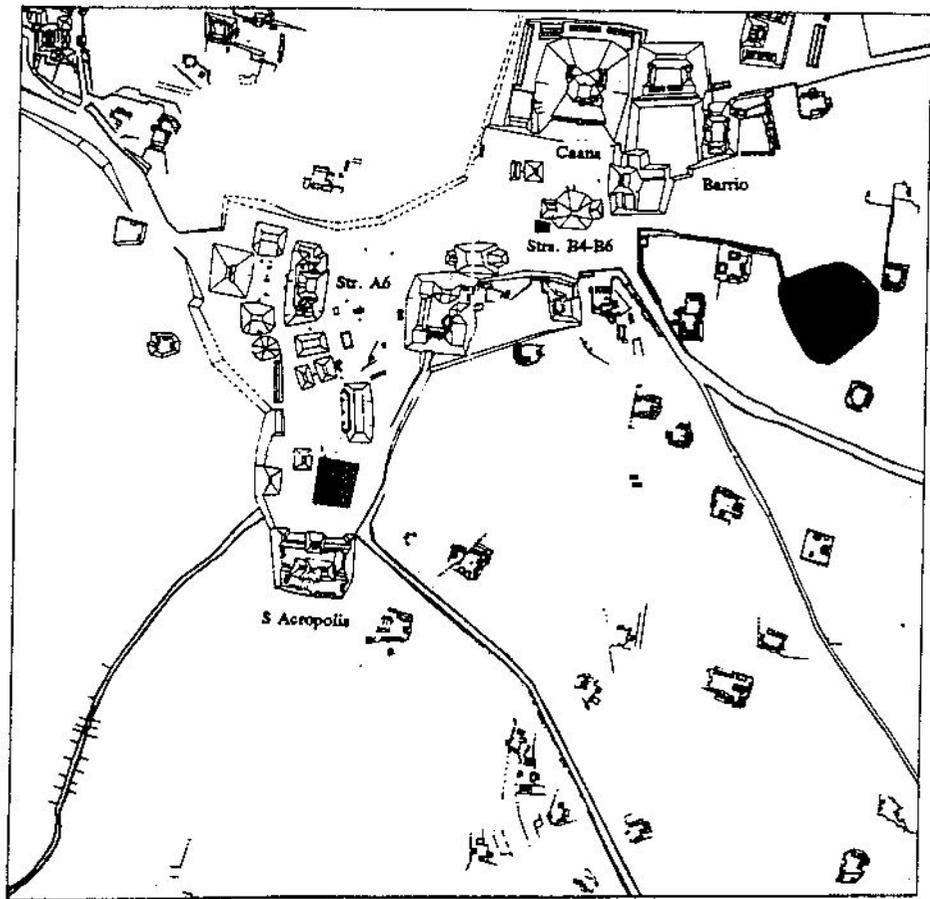
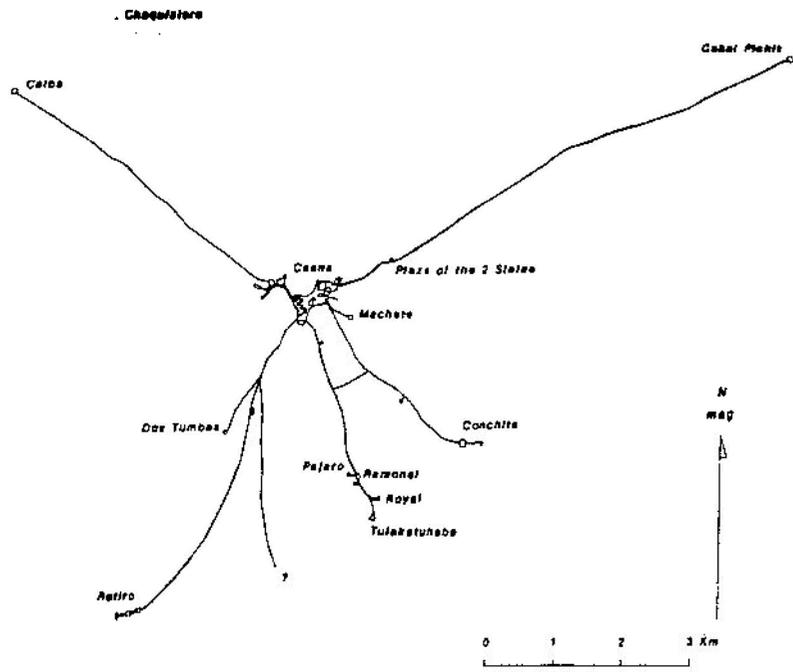


Figure 1.1. Map of Caracol, Belize showing extent of known causeway system as of 1992 and the central square kilometer of the site as known in 1991.

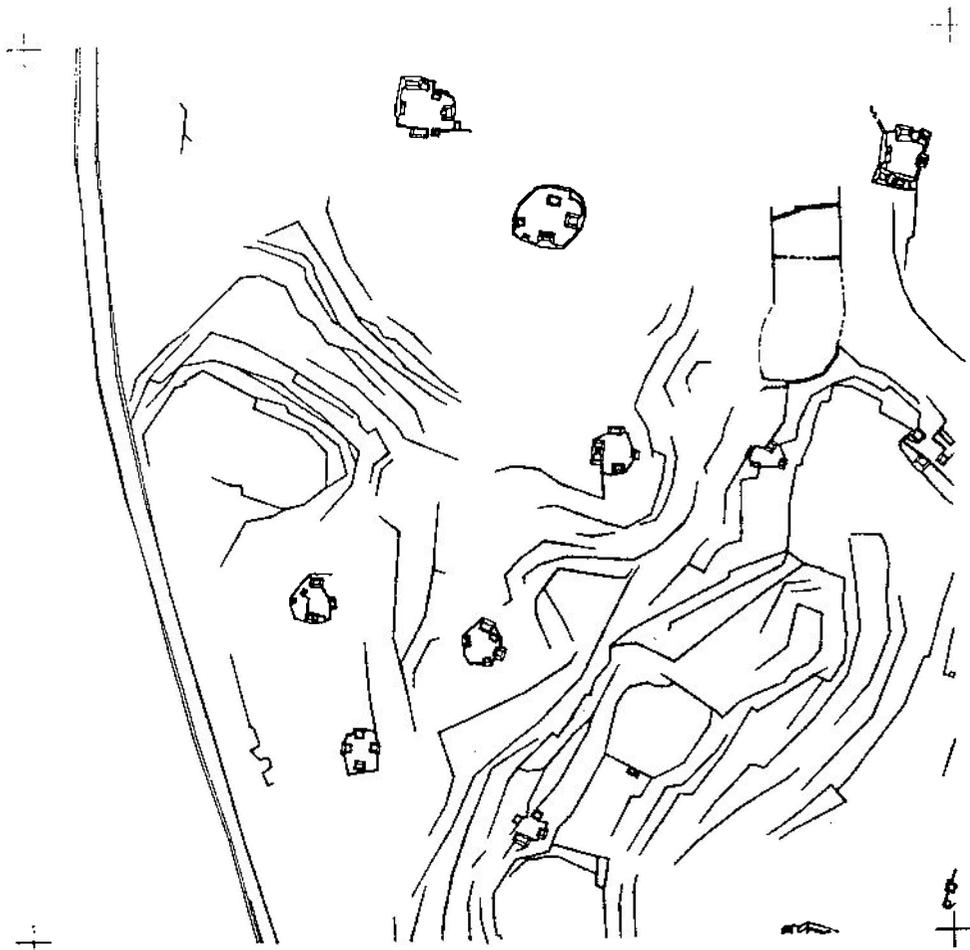


Figure 1.2. Caracol Map Quadrangle 3G as of 1989 demonstrating the articulation of settlement and terrace systems at the site; a total of 10 plaza groups and 54 structures are illustrated. No survey work has been undertaken to the west of the causeway. The quadrangle measures 500 meters by 500 meters and magnetic north is to the top of the page.

(causeways, termini, and agricultural terraces) increase substantially during this time, but a large middle status/level group of people, with access to tombs and "exotic" artifacts, also is evident; this raises questions about the traditional two-level social system often used to describe the Maya (see Chase 1992; Chase and Chase 1992; and Marcus 1992). Late Classic occupation at Caracol was also found to be characterized by broad participation in a ritual complex of interments and caches associated with an eastern construction (Chase and Chase 1994b). The archaeological data all indicate that Caracol grew and prospered during and immediately after the Tikal and Naranjo wars (Chase and Chase 1989).

Current estimates of Caracol's Late Classic population place the site among the largest of the known Classic Maya and Mesoamerican centers. Caracol's population has been estimated using the standard methodology outlined by Culbert and Rice (1990). Structure groups at Caracol often contain 5 or more structures per group. In many cases the Caracol residential groups are densely packed on the landscape. In an area south of Caracol, 0.5 to about 2.0 kilometers distant from the epicenter,

up to 25 groups occur in a 500 meter by 500 meter area (100 groups per square kilometer), but overall this area averages about 70 groups per square kilometer; such a density can be seen in the partially mapped Quads L, M, N, and O published in 1987 (Chase and Chase 1987a). Liepins (this volume) reports an average of 62.5 occupied groups per square kilometer for her sample area along the Conchita causeway. In this same southeastern area, however, at a distance of 2.0 to 4.0 kilometers from the epicenter, an average density of just over 45 groups per square kilometer exists; mapping of 4.5 square kilometers undertaken during 1994 in the northeastern part of the site in extreme karst topography also yielded 45 groups per square kilometer. No drop-off in this settlement density occurred in a transect that ended 6 kilometers from the epicenter and 4 kilometers—prior to applying correction factors—would indicate that 135,139 Maya lived within this 113 square kilometer area. To some this projected figure will appear high; however, Caracol's population—like Tikal's—extended even further out from the site epicenter, at least to a distance of 7.5 kilometers. Assuming a very conservative (for Caracol) density of 25 groups per square kilometer for the distance of 6 to 7.5 kilometers from central Caracol could add an additional 39,781 people to the city's population, indicating that 174,920 people could have resided within a 177 square kilometer area around Caracol. Culbert and others (1990:116) use an effective figure of 83.35% occupation for the site of Tikal, arguing that 78.5% of Tikal's mounds served as residences at any one time but that use of other residential palace buildings would inflate the overall population figure by 4.85%; thus, they arrive at a population estimate of some 62,000 people in the 120 square kilometers of bounded Greater Tikal. Archaeological data suggests that at least a similar percentage of Caracol's structures were also occupied during the Late Classic, translating the "raw" Caracol figure into 145,796 people.

What then forms a best guess of Caracol's Classic Period population? Even using the most conservative estimates (4 structures per group; 0-2 kilometer radius = 60 groups; 2-6 = 40 groups; 6-7.5 = 20 groups; 83.35% occupation), at least 100,854 Maya would have lived within a 7.5 kilometer radius from the epicenter of Caracol. Applying slightly more realistic numbers to the general population formula (0-2 kilometer radius with 5 structures per group and 60 groups per square kilometer; 2-6 with 4.5 and 40; and 6-7.5 with 4.5 and 20; 83.35% occupation), we feel secure that at least 115,032 Maya called the city of Caracol "home" during the Late Classic Period. These figures indicate that the total population for Greater Tikal was only 65% that of an equivalent area at Caracol.

Caracol continued to thrive long after many other Maya centers had been abandoned. Caana, the most massive architectural complex at the site, was apparently rebuilt following A.D. 800. Carved monuments with hieroglyphic texts from the same time indicate renewed warfare and taking of captives (Chase et al. 1991). Indications of increased warfare are also seen in scenes on model-carved pottery (Fig. 13.11m) and in weapons (many stemmed points and a possible mace head) found on building floors. Partial human remains are also found with refuse on palace floors. And the unburied remains of a child on Caana suggest that the final abandonment of Caracol may have been quite sudden. Importantly, however, occupation at the site continued well beyond the latest carved monuments (mid 9th century) into the 11th century; these late dates are confirmed both by radiocarbon

determinations from Caana and the A Group as well as by the kinds of pottery found in the epicenter (especially in the A Group).

Current research at Caracol, begun in 1994, seeks to further understand the nature of Caracol's outlying settlement. As noted above, this work is documenting the settlement extent and density for a different part of the site than that sampled during 1988 and 1989. Particular emphasis, however, is being placed on two goals. One goal is to examine archaeological indications of prosperity relative to Caracol's two periods of well-documented warfare (A.D. 550-650 and post A.D. 800). A second related goal is to better define the nature of Caracol's occupation immediately prior to the site's final abandonment.

Studies in the Archaeology of Caracol

The twelve studies in this volume may be loosely grouped into three sets. The first set of three papers is concerned with Caracol's environmental setting and the impact that this setting had on the Maya who once occupied the site as well as on the preservation of the archaeological remains themselves. The second set of four papers presents information from detailed archaeological studies undertaken at the site that focused on specific features of archaeological interest (architectural style, causeway settlement, chultuns, and caves). The third set of five papers looks at specific archaeological data classes (hieroglyphs, burials, shell, small chert tools, and ceramics) and their distribution at the site through time and/or space.

Caracol's Environment: Its Definition and Impact

Of clear interest is the environment in which the Maya lived and understanding how they exploited and modified that environment for their own use. Bruce and Carolyn Miller and their colleagues have collected extensive data related to the biological aspects of Caracol and the surrounding Chiquibul Forest. These modern data reveal that the forests around Caracol have been severely impacted by relatively recent hurricanes and that the environment was probably significantly different during the height of the Classic Period. Given the substantial settlement that occurs at Caracol, much of the site's terrain would have been devoid of trees; only small islands of forest would have remained. As the site expanded, the Maya would have had to go further and further into the hinterland in search of game and forest products. Caracol's many causeways would have served as conduits for the transportation of these foodstuffs and raw materials within the city.

Beneath the present forest canopy, stone terraces dominate the terrain and are intricately integrated with the ancient Maya settlement of Caracol (Figure 1.2). Most valleys and hills in the region are covered by regular sets of these constructed features. In fact, terraces may be considered as a defining archaeological feature of the Caracol polity. Terraces are assumed to have served agricultural purposes (cf. Lundell 1940; Turner 1979; Healy et al. 1983). Thus, an understanding of terrace soils is important step in outlining the potential productivity of terraced areas. The paper by C. Lynn Coultas, Mary Collins and Arlen Chase characterizes the terrace soils of Caracol relative to non-terrace soils at the site in an attempt to explore matters of fertility and composition. From this data it is clear that most soils at Caracol were extremely fertile; soils were also extensively manipulated by the Maya

to enhance and maintain productivity both through physical movement and most likely through the application of nightshade.

What was produced on the agricultural terraces of Caracol? Were staples sowed or were other more specialized crops grown? The archaeological presence of large numbers of spindle whorls throughout the site suggests the possibility of cotton. It was hoped that pollen and phytolith analysis of Caracol's soils would help answer these questions. But, unfortunately, as John Jones demonstrates, the agricultural soils of Caracol preserve neither pollen nor phytoliths and thus cannot be utilized to infer crop production as they are in other parts of the world. The excavated building floors of Caracol were similarly devoid of phytoliths and pollen, thus also negating this potential avenue for examining a structure's function.

Detailed Studies of Caracol's Archaeological Features

Maya architecture is exceedingly complex with varying building types as well as distinct styles characterizing different sites and regions. "Palaces," "temples," "ball-courts," and "sweatbaths" were all carefully documented as building types for Piedras Negras by Satterthwaite (1943-54). While variations of these basic structure types occur at many Maya sites, other site or region-specific building combinations have also been noted. For example, Pendergast (1981:35-36) defines a "Lamanai Building Type" that consists of one or more chambered structures set amid the stair of a pyramid that exhibits no summit building.

Some architectural features may also be sensitive indicators of building functions and/or specific styles. While palace-type buildings are viewed as having been used for a multiplicity of purposes (cf. Harrison 1969, 1986), benches within palace rooms have been interpreted as sleeping areas and used to calculate the size of a site's "elite" (Adams 1974). Both rounded and squared corners are in evidence on building substructures at Caracol. However, all known "palaces" (range buildings with conjoined independent rooms) at the site exhibit squared corners. And all raised "temples" (usually a tandem-roomed building with one or three frontal doorways and only a single interior doorway) at Caracol have rounded corners on their substructural levels. Thus, the archaeological recovery of a rounded corner at Caracol serves to provide some insight into a given building's function, indicating that it was probably not residential. But not all non-residential buildings exhibited rounded substructure corners. Structure A38, a building interpreted as a special-function mausoleum, has squared substructure corners. Thus, architectural style is extremely important for interpretation, but needs to be placed within a broader context to be understood. This is precisely what Joseph Ballay attempts for Caracol's main epicentral building complex, Caana. Like Pendergast for Lamanai (1981:35-36), he has similarly begun to define an architectural style that characterizes Caracol by focusing on Structure B20, the summit of Caana, and the ways in which this buildings has been maintained and modified over time.

Besides terraces and a specific architectural style, causeways and vias also typify the site of Caracol. Eleven causeways, representing an internal road system of over 36 kilometers, have been identified at Caracol (Figure 1.1); others will undoubtedly be found in the future. Only the sites of Mirador (Graham 1967:40) in the Central lowlands and Coba (Garduno A. 1979; Folan 1983:6) in the Northern lowlands have causeway systems as extensive as those at Caracol. Researchers looking at causeways in the Northern lowlands have suggested that these roadways served to link

elite groups (Kurjack and Andrews 1976) or functioned largely as routes for ritual pilgrimages (Freidel 1981). At Caracol the causeways served primarily as routes for intra-site transportation and communication. They link the epicenter with two kinds of termini—large, special-function non-residential plazas (Cahal Pichik, Ceiba, Conchita, Ramonal, Retiro, Sapote) and high-status residential groups (Dos Tumbas, Machete, Plaza of the Two Stelae). The special-function termini at Caracol are again linked by smaller causeways to other high-status residential groups. Some vias also connect groups that are not of the highest status directly to a causeway. And at least one cross-causeway facilitated movement between road systems.

In an attempt to characterize the settlement that occurred along one of Caracol's causeways, Susan Liepins undertook survey and excavation for 200 meters to either side of the Conchita Causeway. A synopsis of the results of her multiple field seasons at Caracol are presented here. In general, her data support the characterization of Caracol's archaeological population as being dense and exceedingly complex. Just as was found for sites in the central Peten of Guatemala (Haviland et al. 1985; Tourtellot 1988), Liepin's work underscores the fact that there are no simple correlations between archaeological data and the prediction of status; this appears to include access to the causeway itself. When viewed within a larger context, it also convincingly demonstrates the existence of mid-level social groups at Caracol (cf. Chase 1992). As has been noted elsewhere many of these mid-level groups participated in the same "cult of the dead" that is found in the site's epicenter (Chase and Chase 1994b).

Given the heavy focus on the "cult of the dead" that is found in the archaeology of Caracol and the association of this cult with the Maya underworld, two specific features which form entryways into the ground (or underworld) were selected for investigation—chultuns and caves. Very few chultuns were known from the site of Caracol until the 1994 field season when scores of these features were found in the northeast quadrant of the site. The mapping of the settlement area between the Conchita and Pajaro-Ramonal Causeways undertaken from 1986 through 1990 produced evidence for less than a dozen chultuns. Seven of these chambers were excavated by Clarissa Hunter-Tate and she recovered the remains of burials in six of them, raising questions as to their presumed storage or food-processing functions (Puleston 1971; Dahlin and Litzinger 1986). In fact, based on the data from the Southeast quadrant of Caracol, the site's chultuns would appear to have constituted the earliest tomb form known at the site and, as such, provide some time depth for Caracol's distinctive mortuary complex (Chase and Chase 1994b).

Caves constituted locales for Maya ritual and were closely linked with Maya concepts pertaining to the underworld (MacLeod and Puleston 1978). Caves that were of importance to the Maya are known from elsewhere in the Chiquibul region (Pendergast 1969, 1971). A ruler of Caracol is referenced in a hieroglyphic text within the cave at Najtunich, Guatemala (Grube, this volume). The survey work at Caracol revealed numerous caves within the settlement area and many of these were explored by William Feld. Most of the caves in the immediate vicinity of Caracol are small and reconnaissance showed that they contained relatively few artifactual remains. Even though the caves thus far recorded within the Caracol settlement area are not impressive, they surely formed an important component in Maya ritual at the site. One Caracol cave, in fact, was used as an ossuary for human remains apparently cast into an inner chamber from above. Landa (Tozzer 1941:44, 119-200)

recorded that the Maya placed the bodies of sacrificial victims in caves, thus providing one possible interpretation for this deposit.

Detailed Studies of Caracol Data Subsets

Epigraphy, or the study of Maya hieroglyphic writing, has been closely integrated into the archaeological research design at Caracol. Caracol has a large number of carved monuments (Beetz and Satterthwaite 1981) and this corpus has been expanded through the efforts of the current project (Chase and Chase 1987a; Houston 1987; Chase et al. 1991). Nikolai Grube provides drawings and interpretations of several new monuments in his chapter. The hieroglyphic corpus that is generally associated with carved stone monuments is also found on stuccoed building facades, on tomb walls and capstones, and on smaller artifacts at Caracol. Grube has worked all of these materials into a dynastic synthesis and has also attempted to place the texts of Caracol into broader contexts.

Given Caracol's massive population, it is not surprising that a large number of burials have been recovered from both looted and excavated contexts. Diane Chase weaves all these data into a comprehensive whole, placing the burials into a broader archaeological context which helps with their interpretation. Several factors pertaining to Caracol's burials stand out in comparison to samples from other sites in the Southern lowlands (cf. Welsh 1988). A high proportion of Caracol's interments are of multiple individuals. There is an extremely high percentage of inlaid teeth in the Caracol sample. And, the large number of recorded tombs at Caracol is unknown from most Maya sites. These factors may be combined with other archaeological data to suggest that Caracol's "cult of the dead" reflects the conscious use of ethnicity at the site as a means of unifying (and controlling) Caracol's population (Chase and Chase 1993a).

Given Caracol's inland position, it is surprising to find so much marine shell in the archaeological investigations. To date, Caracol has produced one of the largest samples of marine shell known from a Maya site. Many of Caracol's burials contain objects of shell and a shell workshop that concentrated on *strombus* is known from one outlying residential group. Carved shell objects were used by most mid-status members of Caracol's population. Rafael Cobos identified the shell recovered at Caracol as to species and presents a summary of these results. His data suggest that most of Caracol's shell was gathered from the Belizean sea coast. When placed in their archaeological contexts, his identifications also suggest that Preclassic and Early Classic shell frequently derived from Pacific sources while Late Classic shell was almost exclusively of Caribbean origin, thus hinting at significant changes in Caracol's procurement relationships over time.

Whereas only one shell workshop has been encountered at Caracol, almost a dozen chert workshop areas have been identified at the site based on the presence of large numbers of certain lithic tool types, usually small drills. Cynthia Pope has studied the lithic materials that have been recovered in nine residential groups between the Conchita and Pajaro-Ramonal causeways. She notes that the quality and use patterns of the chert tools differ among residential groups, suggesting that they were either independently made, obtained from different sources, and/or used to make different products. None of the workshop areas that Pope looked at served to make large numbers of tools for broad distribution; rather, most consisted of the remains of broken and reworked tools that had been made for a specific purpose;

she suggests that the original tools (in most cases, drills) were made in each residential group from either cores or preforms. In 1994 a different kind of workshop was encountered in the northeast part of Caracol. It contained thousands of chert flakes and few tools, suggesting that this residential locale manufactured finished tools or preforms which were then provided to other groups, possibly resulting in some of workshop debris that Pope examined.

The distribution of shell and chert workshops at Caracol has important implications for ancient Maya economics. These workshops correlate with specific residential groups scattered throughout Caracol's settlement that are sometimes quite distant from the epicenter, a causeway, or a causeway termini. There are both primary workshops, where the basic raw material is turned into tools or preforms for distribution, and secondary workshops, where large numbers of standardized small tools are produced, used, and reworked in the production of something else. The distribution of these workshops and their archaeological context suggest that, in cases of secondary workshops, the activities carried out were ancillary to whatever else a given household did; whether this is also the case with residential groups that functioned as primary workshop areas is unknown. However, these are not "attached specialists." The distribution of the identified workshops in the context of the overall settlement resembles what might be archaeologically expected for patterns defined in relation to solar markets in the Guatemalan highlands (Tax 1953; Reina and Hill 1978). It is tempting to see Caracol's causeway termini serving as marketplaces both for the exchange of raw materials and finished products produced by individual households and for the acquisition of other items imported from farther afield, all under the bureaucratic control and taxation of the Caracol state.

Finally, Arlen Chase presents an outline of Caracol's ceramic sequence, opting to present this information in terms of a contextual, rather than a strictly type-variety-mode, approach. The earliest known ceramics from Caracol can be dated to around 300 B.C. and the latest from approximately A.D. 1050. The sequence is temporally well-anchored by the half-dozen cases of dated tombs at Caracol that co-occur with mortuary pottery. A contextual approach to ceramics is significant in that, besides its use for chronological purposes and for inter-site comparisons, it can place ceramics within a behavioral framework. For example, at Caracol this analysis has demonstrated that most elaborate Late Classic polychrome ceramics are associated with non-tomb burials. It has also shown that the occurrence of broken pottery in tombs, and presumably in other burials, was not accidental, but was rather part of purposeful ritual. Concentrating on the latest ceramic remains left on building floors has both permitted functional interpretation of these structures and revealed substantial variability in analogous building types. These same late deposits provide evidence for continuing occupation at Caracol well into the 11th century.

Conclusion

This volume is intended as an accessible interim source of information on the archaeological work that we have carried out at Caracol. It is to be complemented by a companion monograph focusing on the epicentral and core excavations as well as on the mapping program undertaken at Caracol between 1988 and 1993 (Chase and Chase 1995). Each of the following studies provides information on a selected topic pertaining to the archaeology of Caracol. Many of the authors are currently updat-

ing analyses with information from ongoing fieldwork. Further studies are also being undertaken by other analysts on tropical ecology, faunal remains, human diet, and ceramic composition and production. Even though the archaeological program at Caracol is ongoing, this volume provides valuable insights into the results of a decade of research at the site. Each detailed study provides a part of the picture of Caracol; together they help to tell a complex story of life and death in this populous ancient Maya city.