
1 **THIRTY YEARS OF ARCHAEOLOGY AT CARACOL, BELIZE: RETROSPECTIVE AND PROSPECTIVE**

Diane Z. Chase and Arlen F. Chase

The Caracol Archaeological Project concluded its 30th consecutive field season in March 2014. While the site was noted as early as 1937, at the start of the Caracol Archaeological Project in 1985, Caracol was barely mentioned in literature dealing with Maya research; its archaeology, urban scale, and influence in the Maya region were largely unknown. In 2014, any comprehensive statement about the Classic Period in the Southern Maya lowlands includes reference to both the site and its impact. The longevity of the Caracol Archaeological Project is unusual for the Maya area and the contribution of the Caracol archaeological data to our understanding of the ancient Maya has been substantial. This paper presents an overview of the Caracol Archaeological Project and its results within the broader context of Maya archaeology. It shows how the additive long-term research at Caracol has permitted interpretations that would not be possible within a short time-frame. It demonstrates the significance of Caracol archaeological data on the field of Maya studies, including many of the once controversial interpretations that were derived from the site's archaeological data. With thirty continuous years of research at Caracol, it is appropriate both to look at the past retrospectively and to consider the collected data prospectively for what remains to be accomplished within the field of Maya studies.

Introduction

"... it's hard to reconstruct how a society fell if we can't even agree on what kind of society it was"
(Marcus 1983:477)

Maya archaeology as carried out in 2014 is somewhat different from Maya archaeology as carried out in 1983, the year in which we initially conceived of a long-term project at Caracol, Belize. Not only has our conceptualization of Caracol the site changed but so too has our perception about the nature of ancient Maya society. And, our own personal views about the ancient Maya have also evolved – as has the central place of Belize within changing interpretations of the field. In the late 1970s when we first conducted research in Belize, very few projects were actively excavating within the country. “British Honduras,” as Belize was then called, was viewed as being largely peripheral to the archaeology of the Maya heartland to its west.

When we formally initiated excavations at Caracol in the Spring of 1985, we brought with us a research design that incorporated a direct historic approach. We hoped to systematically move from the Historic Period back into earlier time periods. Both of us had undertaken active research on the Postclassic Period for our Ph.D. dissertations – at Tayasal, Guatemala and at Santa Rita Corozal, Belize. The archaeological investigations at both sites involved working

from the Historic Period back into the recent past to compare and contrast with the Postclassic Period material record. Our project at Santa Rita Corozal ran from 1979 through 1985 and was able to link the Historic Period Maya with their Postclassic material remains through the use of ethnohistory and archaeology. To most effectively move back in time to the Classic Period, we felt that we needed to work at a site that manifested its own historical record and to similarly use the material remains in conjunction with the hieroglyphic record to define linkages and patterns. Thus, archaeological work at Caracol was seen by us as being a logical next step in our understanding the ancient Maya.

Accordingly, in 1983 we began discussion with the Belize Department of Archaeology (now the IOA) about which site we would be the most appropriate for a long-term excavation project. Then archaeological commissioner Harriot Topsey brought us to Caracol, managing to drive all the way to the site epicenter in the early Fall of 1983, something we could not accomplish on our own for many years to come because of the condition of what was deemed to be a “road.” We would note, however, that, as we were leaving the site, Harriot paid a little too much attention to a rum bottle in the back of the Landrover and we ended up in a deep mud-hole, which we fought with for more than 4 hours before digging ourselves out. A second trip to Caracol with a young John Morris as our guide



Figure 1. Preliminary working visit to Caracol in January 1984: Mary Miller, Nancy Houston, Robert Schyberg, Stephen Houston, John Morris, Arlen Chase, and Diane Chase (from left to right).

was carried out in early January 1984 to undertake a brief reconnaissance and to secure new mapped data for a grant proposal (Figure 1). Our first field season at Caracol occurred a year later in January 1985, immediately followed by the last field season of the Corozal Postclassic Project in the Summer of 1985. Thus, the recently completed Spring 2014 represented our 30th consecutive season of excavation at Caracol.

The Ancient Maya through the lens of 1983

When we started at Caracol, there were major debates over how complex the ancient Maya were – debates that continue today. Positions in many of these debates were rooted in graduate training and archaeological heritage, something we colloquially referred to as the “Harvard” as opposed to the “Penn” traditions. The Harvard tradition was parodied (at least at Penn) as viewing the Maya as a two-level society of priests and peasants occupying sites that were still sometimes considered to be vacant ceremonial centers. The Penn (University of Pennsylvania) tradition characterized ancient Maya society as more nuanced and complex with the major sites viewed as fully occupied ancient cities. These different viewpoints were

enabled by a relative lack of collected archaeological data that could fully support or dispute either position and because of the research efforts and scholars situated at these two institutions.

In 1983 the social realm of the Maya was poorly understood. Not only were we arguing over whether or not the Maya were urban and had cities, but we were also debating whether stone palaces were actually used for residential purposes (Thompson 1950:8). We were unsure about how big a Maya site was or how a Maya site was organized. The relationships between the individuals on the stone monuments and the rest of the population were also not well understood. Whereas Thompson and his generation had seen the Maya as possibly governed by priests, the epigraphic breakthroughs of Proskouriakoff (1960, 1963, 1964) gave rise to ideas about dynasties and successive rulers who documented important events within their lives having to do with birth, accession, and the capture of captives through warfare. But, how many levels were believed to have existed in ancient Maya society not only depended on one’s background, but on interpretations of ethnohistory. Those with primary adherence to ethnohistory saw nobles and commoners (Marcus 1992), much like the then coeval European societies that existed at the time of contact. Those approaching the topic predominantly from excavation at larger sites suggested that the situation was more complex (D. Chase 1992).

In spite of attempts to determine ritual elements in the archaeological record (Marcus 1978), religion was considered to be one of the most difficult areas to address through the use of archaeological data (Hawkes 1954). Some scholars believed that Maya farmers and peasants engaged in a very basic form of ritual based on subsistence needs and that state-level institutional religion was restricted to the elite (Borhegyi 1956). Thompson (1970:163) suggested “that the ‘state’ religion of the ceremonial center had little appeal for the Maya peasant, whose interest lay in the simple agricultural ceremonies of his own small outlying community” revolving around “his own gods of the soil, of the hunt, and of the village under village prayer-makers – a purely folk

religion.” How widespread participation in institutional religion was in Maya society remained a matter of debate. Some scholars believed that the Maya had a general pantheon of gods like the Greeks and Romans (Taube 1992:7-9); others did not (Marcus 1978; Proskouriakoff 1980). However, once the existence of rulers was recognized in hieroglyphic texts, other scholars argued that religion was centered on a “cult of the king” (Freidel and Schele 1988). Ritual objects such as modeled ceramic incensarios were specifically linked to the celebration of ruling dynasties by some analysts (Rice 1999).

Defining the economic realm for the Classic Period proved exceedingly problematic in 1983. While there were early arguments for the presence of markets at Tikal (W. Coe 1967), their existence was not firmly demonstrated in the archaeological record. Thus, it was unclear how goods were distributed throughout Maya society; there was an assumption of self-sufficiency by the bulk of the population with only limited trade in necessary items (e.g., Rathje 1971). Non-local materials like obsidian were assumed to have been in the purview of the elite and not generally available to the general public. However, some researchers argued that obsidian may have functioned as currency (Freidel 1986, Freidel and Reilly 2010). While jadeite and spondylus were also mentioned as potential items of currency based on historic texts, at the same time there was an assumption that these “prestige items” were only available to the elite (e.g., Inomata 2001; Rice 1987). Polychrome ceramics – and specifically polychrome cylinders (Figure 2) – were believed to have been restricted to the elite with the concomitant assumption that they were not used by general Maya society (A. Chase 1985; Coggins 1975:499). To some extent the remnants of this model continue in the Maya area with the emphasis that some researchers place on status-based “gifting” (Callahan 2014; Foias 2013).

The nature of Maya subsistence systems was also evolving. While most agreed that slash-and-burn or milpa agriculture solely revolving around maize could not have supported the populations that were inferred for sites like Tikal (Harrison 1977:479, 484), the



Figure 2. Polychrome figure cylinder recovered from a crypt interment in a Caracol residential group.

exact mechanisms that governed ancient Maya subsistence were unclear. Most Mayanists assumed that intensive agriculture and multi-cropping were employed to support the Classic Period Maya population (Harrison and Turner 1978). However, it was unclear to what extent individual centers were self-sufficient or whether agricultural products were differentially produced and traded. A broader argument raged over raised fields and whether these could be used to supply surplus bulk food at some distance from where it was produced (e.g., Drennan 1984). While agricultural terracing had long been noted, how widespread and extensive it was in some parts of the Maya area was not



Figure 3. Caracol Archaeological Project season photo for the 1989 field season.

fully recognized (e.g., Chase and Chase 1998; Chase et al. 2011; Turner 1983).

A full understanding of the ancient Maya political landscape was constrained by the limited mapping that had been undertaken. The number of sites mapped and the extent of mapping at individual sites was far less than today. While transects had been driven between Tikal and Uaxactun and Tikal and Yaxha, how these centers interacted with each other was difficult to define. Theissen polygons were applied in an attempt to determine how much area a given site controlled (Hammond 1974). Sites were ranked based on the presence or absence of ballcourts and other architectural features (e.g., Hammond 1975). Site hierarchies were built using the numbers of public plazas that existed (Adams and Jones 1981), even though these interpretations were skewed by a limited sample of incompletely mapped sites. Maya hieroglyphs provided additional information, but analyses suggested varied interpretations. One of the initial publications to tackle the subject used Maya hieroglyphic distributions of emblem glyphs to suggest the

existence of 4 primary centers that formed the major capitals for a broader Maya realm (Marcus 1976). Other researchers proposed that each emblem glyph represented its own capital and that the Maya region was dotted with over a hundred independent polities (Mathews 1991). Some investigators (Adams and Smith 1977) proffered the idea that the Maya area as organized into feudal domains with personal obligations binding various centers. Warfare was viewed as a ritual practice significant primarily for the upper levels of Maya society and not as having been carried out for territorial gain (Freidel 1986), a potential holdover from earlier views of a peaceful Maya focused on time and knowledge.

Finally, much Maya research focused either on the earliest Maya, following Hammond's (1977) discovery of Swasey levels in northern Belize or, alternatively, on issues related to the Maya collapse, following Culbert's (1973) masterful tome on the subject. The emphasis on early remains included efforts to encounter Archaic populations in northern Belize (MacNeish et al. 1980). This focus on

early populations led to greater recognition of the complexity involved in the development of Preclassic Maya society (Dahlin 1984; Hammond 1986). Like the interest in the earliest Maya, investigations and questions concerning the Maya collapse also continue today. But, in 1983, there were serious questions over: the temporal linkages between the Northern and Southern Lowlands (D. Chase and A. Chase 1982); the relationship between Classic and Postclassic populations and whether there was physical migration of people from the south to the north (Cowgill 1964); whether the Southern lowlands had been devastated by a marauding military force from elsewhere (Adams 1977); and, whether there had been environmental and political instability (Willey and Shimkin 1973). In short, the causes of the well-studied Maya collapse were even murkier than they are today.

Investigations at Caracol

From the very first seasons of work, investigations at Caracol have had an impact on how we view the Maya world. Our contextual approach, incorporating history and archaeology with large scale settlement study and a long-term excavation program (Figure 3) has sometimes led us to different and/or controversial interpretations of the past – some, but not all of which have, over time, become more mainstream. These include:

- Maya urbanism at Caracol (A. Chase and D. Chase 1996; A. Chase et al. 2011),
- recognition that tombs were not limited to the elite (A. Chase 1992; A. Chase and D. Chase 1992),
- documentation of the existence of prominent middle status levels rather than solely elites and commoners (A. Chase and D. Chase 1996; D. Chase and A. Chase 1992),
- identification of the built spaces as a model green city with sustainable agriculture, road systems, and markets (A. Chase 1998; A. Chase and D. Chase 1998, 2001; D. Chase and A. Chase 2014),
- acknowledgement of the utility of using ceramics and other material indicators to

identify co-existing status linked assemblages (A. Chase and D. Chase 2004),

- discovery that the success of the city was directly related to shared prosperity based in shared economic and ritual practice (A. Chase and D. Chase 2009; D. Chase and A. Chase 2004a),
- and, the recognition of the role of cyclical time in the deposition of caches and burials (A. Chase and D. Chase 2013; D. Chase and A. Chase 2004b, 2011).

Settlement work started with the initial visits to Caracol, but began in earnest in 1987 and maintained a series of phases and discoveries. The mapped extent of the settlement area grew over time as work continued. Initial efforts identified the extent of causeways through ground survey and the use of Landsat data (Chase and Chase 2001). Effort was spent documenting the density of household settlement throughout the site as well as the nature of built agricultural fields, first by studying sectors between causeways and then by expanding in block areas (Chase and Chase 1987, 2001, 2003; Jaeger 1994; Murtha 2009). We used funding from private donors and foundations (Ahau Foundation; Alphawood Foundation; FAMSI, Harry Frank Guggenheim, NSF). From these efforts we learned that the site grew in size and prosperity following a series of successful wars with the neighboring sites of Tikal and Naranjo that were described in the hieroglyphic record. By 2001, the epicentral portions of Caracol had been largely stabilized (Figure 4) both by our own efforts and by the efforts of the Belizean Tourism Development Project; 23 square kilometers of Caracol also had been mapped with causeways and settlement noted as extending up to 10 km from the site epicenter (A. Chase and D. Chase 2001).

The documented scale of Caracol's settlement drastically changed in 2009 with the advent of LiDAR (Chase et al. 2011, 2014). Two different LiDAR campaigns made clear the continuity of settlement within an area of over 200 sq km. This work definitively established the enormity of the ancient landscape modification efforts - road systems, agricultural



Figure 4. Caana, or “Sky Place,” the tallest ancient Maya construction in Belize and the epicentral palace complex comprising the center of urban Caracol.



Figure 5. Excavations being undertaken in a typical Caracol residential group.

terracing, reservoirs, household plazuela units, and civic-ceremonial space.

Excavations conjoined the settlement survey efforts (Figure 5) and documented the changing nature of social, ritual, and economic relationships among the various parts of the site over time that, combined with hieroglyphic texts, provided a nuanced picture of the ancient landscape and people. Early on it became evident that household specialization in production was taking place (Pope 1994); later, it became clear that households were producing items independently of elite control but exchanging materials within elite constructed and likely administered market locations (D. Chase and A. Chase 2014). Shared identity and prosperity - as marked by household tombs, caches, and the presence of external trade items - marked the height of site population during the



Figure 6. A royal tomb from within Caracol Structure B20 that dates to A.D. 537 and likely contains the remains of an important Maya woman.

Late Classic Period (D. Chase and A. Chase 2004a). Limited elite-dominated prosperity characterized both earliest and latest remains at the site (A. Chase and D. Chase 2009).

Not only were tombs associated with non-elite households, but multiple individual interments characterized all status levels (D. Chase and A. Chase 1996), and the remains of women were found prominently located in royal chambers (Figure 6). Careful study of the contexts of burials and caches ultimately showed that these deposits were generally placed in concert with key temporal transitions - such as katuns - rather than to commemorate the construction of buildings per se or the death of a specific individual (D. Chase and A. Chase 2011). Also, as was the case in Postclassic Period Santa Rita Corozal (D. Chase and A. Chase 2008), incense burners were often found paired, potentially reflecting calendric ritual (A.

Chase and D. Chase 2013). Building complexes themselves were sometimes temporally focused as well - as was the case of eastern structure of the A plaza E Group - where the major building and caching efforts (Figure 7) coincided with the onset of the 8th baktun (Chase and Chase 2013).

Our current efforts are focused on analyzing expanded LiDAR data which has already revealed new settlement and causeways and helped suggest an initial economic driver for the site. Our recent investigations have also been localized to provide more detail on the similarity and variations evident "neighborhoods" at the site in order to better understand the integration of the ancient city and polity as a whole.

The Ancient Maya Through the Lens of Caracol in 2014

If one looks at the field of Maya archaeology in 2014, one would discover that there have been some significant changes in our understanding of the social realm of the Maya. Hieroglyphs have now yielded a series of titles that were applied to individuals other than the ruler (e.g., Biro 2012; Jackson 2013), indicating a diversity of social levels within Classic Maya society. While initially thought to have been relevant to a European-style "royal" court (Inomata and Houston 2000), the archaeological data that have been collected indicate that these diverse social levels likely permeated the entire society. We now recognize that Classic Maya were organized in different ways throughout the Southern and Northern Lowlands; there was no single social and political organization, just as there was no single Maya language (e.g., Chase and Scarborough 2014). Some sites are small and independent. Some sites are small and focused on resource production, dependent on other larger centers (e.g. Colha; Shafer and Hester 1986). We now know that some of the larger Maya sites, like Caracol are consistent with a tropical phenomenon known for other early low-density cities (A. Chase et al. 2011, 2014; Fletcher 2009).

Institutional religion can also be recognized as penetrating all levels of Maya society. Commoners were just as likely to be engaged in religious practice related to ancestor worship and cyclical time as elites. Again,



Figure 7. The interior of a cache placed within a geode deep in the core of Structure A6-1st.

exactly what was practiced varies by region and even site. Temporally-based ceremonies clearly formed an important part of religion. The focus on the celebration of temporal cycles can be seen in the archaeological records of both the Classic and Postclassic Periods (D. Chase and A. Chase 2009). From the standpoint of Caracol, the focus on time by the ancient Maya can be seen in the A Group buildings (A. Chase and D. Chase 2006) and in the archaeological record of the site's residential groups where the ancient Maya placed special ceramic containers (Figure 8) associated with rituals having to do with 20-year katun counts (A. Chase and D. Chase 2013).

Some of the biggest changes in our perception of Maya society have occurred in the economic realm. We have moved from seeing the ancient Maya through a Polyani-style lens (Feinman and Garraty 2010) to a recognition of the complexity of their systems and their reliance on markets (D. Chase and A. Chase



Figure 8. A typical face cache from a Caracol residential group; these caches were deposited in various residential groups in association with katun ceremonies.

2014; Dahlin et al. 2007, 2010). We also have recognized that this complexity extended to their subsistence base, not only in terms of the wide variety of crops that they cultivated but also in terms of the extent to which they modified their landscape. No longer do we view their agricultural terracing as crude attempts at soil retention; rather, we recognize that these features were actually engineered so as to control the flow of water over the landscape (A.S.Z. Chase, personal communication, 2013). The extent of environmental modification by the Maya in support of basic subsistence needs is truly impressive.

Our political models for the ancient Maya have also changed – and are in the process of being transformed again. Over the past 30 years the field has been dominated by epigraphic paradigms that portrayed the Maya in terms of familial dynasties ruled by divine kings with little infrastructural support and control (e.g., Martin and Grube 2000). Archaeological data have begun to modify this view. Maya polities were initially viewed as secondary developments based on direct intervention from Teotihuacan (Sanders and Price 1967; Stuart 2000). The

archaeology now shows that the Maya maintained trade relationships throughout Mesoamerica that included Teotihuacan far earlier, and probably more impactfully, than the hieroglyphic story indicates (A. Chase and D. Chase 2011). Warfare is recognized as having been for political, economic, and territorial control, bringing the Maya into line with other civilizations (Webster 2000). Short-lived empires that combined more than one state are also indicated in the hieroglyphic record. Importantly, the archaeological record also signals that the all-powerful divine king may not have been politically important at some sites during the Late Classic Period (A. Chase et al. 2009), indicating that alternative forms of governance existed for some Maya groups.

Finally, the Classic Maya collapse still remains a topic of investigation, although again the complexity of the social and political situations in the Maya lowlands are recognized as being complicit in what is also now recognized as being a transitional era (Turner and Sabloff 2012). While drought and other environmental factors are pointed to in the popular literature (Diamond 2005), the archaeologically researched questions for the collapse are now focused on the process involved in this transition and not on a single impact point.

Conclusion

As in many disciplines, Maya archaeology has gone through growing pains over the last 3 decades in the search for knowledge and elusive “truth.” Various models and paradigms have been tried by various researchers and, while perhaps not always successful *in toto*, parts of each have become incorporated into our current worldviews. This interplay between archaeological data and broader interpretive theory has a helical motion in which views shift back and forth, often with some turmoil, but always with progress. We have immersed ourselves in research at a single Maya site for the past 30 years, trying to define and operationalize strategies to be tested in the archaeological record in order to answer broad questions and help to move our discipline forward. We would hope that our meager efforts on the part of this once great city have been

successful and that the archaeology of Caracol, the “3 Stone Place,” slowly gathered over some 3 decades have helped to advance an overall understanding of the ancient Maya.

References

- Adams, Richard E.W.
1977 *Prehistoric Mesoamerica*. Little, Brown, and Company, Inc., Boston.
- Adams, Richard E.W. and R.C. Jones
1981 Spatial Patterns and Regional Growth among Maya Cities. *American Antiquity* 46:301-322.
- Adams, Richard E.W. and W.D. Smith
1977 Apocalyptic Visions: The Maya Collapse and Mediaeval Europe. *Archaeology* 30:2392-301.
- Biro, Peter
2012 Politics in the Western Maya Region (III): The Royal and the Non-Royal Elite. *Estudios de Cultura Maya* 39:31-66.
- Borhegyi, Stephan F. de
1956 The Development of Folk and Complex Cultures in the Southern Maya Area. *American Antiquity* 21:343-356.
- Callaghan, Michael
2014 Maya Polychrome Vessels as Inalienable Possessions. In B. Kovacevich and M. Callaghan, Eds. *The Inalienable in the Archaeology of Mesoamerica*. AP3A Paper 23(1) pp. 112-127. American Anthropological Association, Arlington, VA.
- Chase, Arlen F.
1985 Contextual Implications of Pictorial Vases from Tayasal, Peten. In M.G. Robertson and E. Benson, Eds. *Fourth Palenque Round Table, 1980, Vol. 6*. pp. 193-201. Pre-Columbian Art Research Institute, San Francisco.
- 1992 Elites and the Changing Organization of Classic Maya Society. In D. Z. Chase and A. F. Chase, Eds. *Mesoamerican Elites: An Archaeological Assessment*. pp. 30-49. University of Oklahoma Press, Norman.
- 1998 Planeacion Civica e Integracion de Sitio en Caracol, Belice: Definiendo una Economia Administrada del Periodo Clasico Maya. *Los Investigadores de la Cultura Maya* 6(1):26-44 (Universidad Autonoma de Campeche, Campeche).
- Chase, Arlen F. and Diane Z. Chase
1987 *Investigations at the Maya City of Caracol, Belize: 1985-1987*. Monograph 3. Pre-Columbian Art Research Institute, San Francisco.
- 1992 Mesoamerican Elites: Assumptions, Definitions, and Models. In D. Z. Chase and A. F. Chase, Eds. *Mesoamerican Elites: An Archaeological Assessment*. pp. 3-17. University of Oklahoma Press, Norman.
- 1996 A Mighty Maya Nation: How Caracol Built an Empire by Cultivating its ‘Middle Class.’ *Archaeology* 49(5):66-72.
- 1998 Scale and Intensity in Classic Period Maya Agriculture: Terracing and Settlement at the ‘Garden City’ of Caracol, Belize”. *Culture and Agriculture* 20(2):60-77.
- 2001 Ancient Maya Causeways and Site Organization at Caracol, Belize. *Ancient Mesoamerica* 12(2):273-281.
- 2003 Minor Centers, Complexity, and Scale in Lowland Maya Settlement Archaeology. In G. Iannone and S. Connell, Eds. *Perspectives on Ancient Maya Rural Complexity*, pp. 108-118, Monograph 49, The Cotsen Institute of Archaeology, University of California, Los Angeles.
- 2004 Terminal Classic Status-Linked Ceramics and the Maya “Collapse:” *De Facto* Refuse at Caracol, Belize. In A. Demarest, P. Rice, D. Rice, Eds. *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation* pp. 342-366, University Press of Colorado, Boulder.
- 2006 Before the Boom: Caracol’s Preclassic Era. *Research Reports in Belizean Archaeology* 3:41-67.
- 2009 Symbolic Egalitarianism and Homogenized Distributions in the Archaeological Record at Caracol, Belize: Method, Theory, and Complexity. *Research Reports in Belizean Archaeology* 6:15-24.
- 2011 Status and Power: Caracol, Teotihuacan, and the Early Classic Maya World. *Research Reports in Belizean Archaeology* 8:3-18.
- 2013 Temporal Cycles in the Archaeology of Maya Residential Groups from Caracol, Belize. *Research Reports in Belizean Archaeology* 10:13-23.
- Chase, Arlen F., Diane Z. Chase, Jaime J. Awe, John F. Weishampel, Gyles Iannone, Holley Moyes, Jason Yaeger, M. Kathryn Brown, Ramesh L. Shrestha, William E. Carter, and Juan Fernandez Diaz
2014 Ancient Maya Regional Settlement and Inter-Site Analysis: The 2013 West-Central Belize LiDAR Survey. *Remote Sensing* 6(9): 8671-8695.
- Chase, Arlen F., Diane Z. Chase, and Michael E. Smith
2009 States and Empires in Ancient Mesoamerica. *Ancient Mesoamerica* 20(2):175-182.

- Chase, Arlen F., Diane Z. Chase, John F. Weishampel, Jason B. Drake, Ramesh L. Shrestha, K. Clint Slatton, Jaime J. Awe, and William E. Carter
2011 Airborne LiDAR, Archaeology, and the Ancient Maya Landscape at Caracol, Belize. *Journal of Archaeological Science* 38:387-398.
- Chase, Arlen F. and Prudence M. Rice
1985 Eds. *The Lowland Maya Postclassic*. University of Texas Press, Austin.
- Chase, Arlen F. and Vernon L. Scarborough
2014 Eds. *The Resilience and Vulnerability of Ancient Landscapes: Transforming Maya Archaeology through IHOPE*, AP3A Paper 24 (1), American Anthropological Association, Arlington, VA.
- Chase, Diane Z.
1992 Postclassic Maya Elites: Ethnohistory and Archaeology. In D.Z. Chase and A.F. Chase, Eds. *Mesoamerican Elites: An Archaeological Assessment*. pp. 124-135. University of Oklahoma Press, Norman.
- Chase, Diane Z. and Arlen F. Chase
1982 Yucatec Influence in Terminal Classic Northern Belize. *American Antiquity* 47:596-614.
- 1992 An Archaeological Assessment of Mesoamerican Elites. In D.Z. Chase and A.F. Chase, Eds. *Mesoamerican Elites: An Archaeological Assessment*. pp. 303-317. University of Oklahoma Press, Norman.
- 1996 Maya Multiples: Individuals, Entries, and Tombs in Structure A34 of Caracol, Belize. *Latin American Antiquity* 7(1):61-79.
- 2004a Archaeological Perspectives on Classic Maya Social Organization from Caracol, Belize. *Ancient Mesoamerica* 15:111-119.
- 2004b Patrones de Enterramiento y Ciclos Residenciales en Caracol, Belice. In R. Cobos, Ed. *Culto Funerario en la Sociedad Maya: Memoria de la Cuarta Mesa Redonda de Palenque*. pp. 203-230. INAH, Mexico, D.F.
- 2008 Late Postclassic Ritual at Santa Rita Corozal, Belize: Understanding the Archaeology of a Maya Capital City. *Research Reports in Belizean Archaeology* 5:79-92.
- 2011 Ghosts amid the Ruins: Analyzing Relationships Between the Living and the Dead Among the Ancient Maya at Caracol, Belize. In J. Fitzsimmons and I. Shimada, Eds. *Living with the Dead: Mortuary Ritual in Mesoamerica*. pp. 78-101. University of Arizona Press, Tucson.
- 2014 Ancient Maya Markets and the Economic Integration of Caracol, Belize. *Ancient Mesoamerica* 25(1):239-250.
- Coe, William R.
1967 *Tikal: A Handbook of the Ancient Maya Ruins*. Asociacion Tikal, Guatemala.
- Coggins, Clemency C.
1975 Painting and Drawing Styles at Tikal: An Historical and Iconographic Reconstruction. Ph.D. dissertation. Harvard University, Cambridge, MA.
- Cowgill, George L.
1964 The End of Classic Maya Culture: A Review of Recent Evidence. *Southwestern Journal of Anthropology* 20: 145-159.
- Culbert, T. Patrick
1973 Ed., *The Classic Maya Collapse*. University of New Mexico Press, Albuquerque.
- Dahlin, Bruce
1984 A Colossus in Guatemala: The Preclassic City of El Mirador. *Archaeology* 37(5):18-25.
- Dahlin, Bruce H., Baniel Bair, Tim Beach, Matthew Moriarty, and Richard Terry
2010 The Dirt on Food: Ancient Feasts and Markets among the Lowland Maya. In J.E. Staller and M.D. Carrasco, Eds. *Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*. pp. 191-232. Springer Publishers, New York.
- Dahlin, Bruce H., Christopher T. Jensen, Richard E. Terry, David R. Wright, and Timothy Beach
2007 In Search of an Ancient Maya Market. *Latin American Antiquity* 18:363-384.
- Diamond, Jared
2005 *Collapse: How Societies Choose to Fail or Succeed*. Viking, New York.
- Drennan, Robert D.
1984 Long-distance Movement of Goods in the Mesoamerican Formative and Classic. *American Antiquity* 49(1):27-43.
- Feinman, Gary M., and Christopher P. Garraty
2010 Preindustrial Markets and Marketing: Archaeological Perspectives. *Annual Review of Anthropology* 39:167-191.
- Fletcher, Roland
2009 Low Density, Agrarian-Based Urbanism: A Comparative View. *Insights* 2:2-19.
- Foias, Antonia
2013 *Ancient Maya Political Dynamics*. University Press of Florida, Gainesville.

- Freidel, David A.
 1986a Terminal Classic Lowland Maya: Successes, Failures, and Aftermaths. In J.A. Sabloff and E.W. Andrews V, Eds. *Late Lowland Maya Civilization: Classic to Postclassic*. pp. 409-430. University of New Mexico Press, Albuquerque.
- 1986b Maya Warfare: An Example of Peer Polity Interaction. In C. Renfrew and J.F. Cherry, Eds. *Peer Polity Interaction and Socio-Political Change*. Pp. 93-108. Cambridge University Press, Cambridge.
- Freidel, David A. and F. Kent Reilly
 2010 The Flesh of the God: Cosmology, Food, and the Origins of Political Power in Ancient Southeastern Mesoamerica. In J.E. Staller and M. Carrasco, Eds. *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Mesoamerica*. pp. 635-680. Springer, New York.
- Freidel, David A. and Linda Schele
 1988 Symbol and Power: A History of the Lowland Maya Cosmogram. In E.P. Benson and G.G. Griffin, Eds. *Maya Iconography*. pp. 44-93. Princeton University Press, Princeton.
- Hammond, Norman
 1974 The Distribution of Late Classic Maya Major Ceremonial Centers in the Central Area. In N. Hammond, Ed. *Mesoamerican Archaeology: New Approaches*. pp. 313-334. Duckworth, London.
- 1975 Maya Settlement Hierarchy in Northern Belize. *Contributions of the University of California Research Facility* 27:40-55.
- 1977 The Earliest Maya. *Scientific American* 236(3):116-133.
- 1986 The Emergence of Maya Civilization. *Scientific American* 254(8):106-115.
- Harrison, Peter D.
 1977 The Rise of the Bajos and the Fall of the Maya. In N. Hammond, Ed. *Social Process in Maya Prehistory*. pp. 469-508. Academic Press, New York.
- Harrison, Peter D. and Billie L. Turner
 1978 Eds. *Pre-Hispanic Maya Agriculture*. University of Texas Press, Austin.
- Hawkes, C.F.
 1954 Archaeological Theory and Method: Some Suggestions from the Old World. *American Anthropologist* 56:155-168.
- Inomata, Takeshi
 2001 The Power and Ideology of Artistic Creation: Elite Craft Specialists in Classic Maya Society. *Current Anthropology* 42(3): 321-349.
- Inomata, Takeshi and Stephen D. Houston
 2000 Eds. *Royal Courts of the Ancient Maya: Volume 1: Theory, Comparison, and Synthesis*. Westview Press, Boulder.
- Jackson, Sarah
 2013 *Politics of the Maya Court: Hierarchy and Change in the Late Classic Period*. University of Oklahoma Press, Norman.
- Jaeger Liepins, Susan
 1994 The Conchita Causeway Settlement Subprogram. In D.Z. Chase and A.F. Chase, Eds. *Studies in the Archaeology of Caracol, Belize*. pp. 47-63. Monograph 7. Pre-Columbian Art Research Institute, San Francisco.
- MacNeish, Richard S., S. Jeffery K. Wilkerson, and Antoinette Nelken-Turner
 1980 *First Annual Report of the Belize Archaic Archaeological Reconnaissance*. Robert F. Peabody Foundation for Archaeology, Phillips Academy, Andover.
- Marcus, Joyce
 1976 *Emblem and State in the Classic Maya Lowlands*. Dumbarton Oaks, Washington, D.C.
- 1978 Archaeology and Religion: A Comparison of the Zapotec and Maya. *World Archaeology* 10:172-191.
- 1983 Lowland Maya Archaeology at the Crossroads. *American Antiquity* 48:454-488.
- 1992 Royal Families, Royal Texts: Examples from the Zapotec and Maya. In D.Z. Chase and A.F. Chase, Eds. *Mesoamerican Elites: An Archaeological Assessment*. pp. 221-241. University of Oklahoma Press, Norman.
- Martin, Simon and Nikolai Grube
 2000 *Chronicle of Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Thames and Hudson, London.
- Matthews, Peter
 1991 Classic Maya Emblem Glyphs. In T.P. Culbert, Ed. *Classic Maya Political History*. pp. 19-29. Cambridge University Press, Cambridge.
- Murtha, Timothy
 2009 *Land and Labor: Maya Terraced Agriculture: An Investigation of the Settlement Economy and Intensive Agricultural Landscape of Caracol, Belize*. DM Verlag Dr. Muller, Saarbrücken, Germany.

Pope, Cynthia

- 1994 Preliminary Analysis of Small Chert Tools and Related Debitage at Caracol, Belize. In D.Z. Chase and A.F. Chase, Eds. *Studies in the Archaeology of Caracol, Belize*. pp. 148-156. Monograph 7. Pre-Columbian Art Research Institute, San Francisco.

Proskouriakoff, Tatiana

- 1960 Historical Implications of a Pattern of Dates at Piedras Negras. *American Antiquity* 25:454-475.

- 1963 Historical Data in the Inscriptions of Yaxchilan (Part I). *Estudios de Cultura Maya* 3:149-167.

- 1964 Historical Data in the Inscriptions of Yaxchilan (Part II). *Estudios de Cultura Maya* 4:177-202.

- 1980 Maize-God; The Symbol of Symbols. *Symbols* 8:8-10.

Rathje, William

- 1971 The Origin and Development of Classic Maya Civilization. *American Antiquity* 36:275-285.

Rice, Prudence M.

- 1987 Economic Change in the Lowland Maya Late Classic Period. In E.M. Brumfield and T.K. Earle, Eds. *Specialization, Exchange, and Complex Societies*. pp. 76-85. Cambridge University Press, Cambridge.

- 1999 Rethinking Classic Lowland Maya Pottery Censers. *Ancient Mesoamerica* 10:25-50.

Sanders, William T. and Barbara J. Price

- 1968 *Mesoamerica: The Evolution of a Civilization*. Random House, New York.

Shafer, Harry J. and Thomas R. Hester

- 1986 Maya Stone-Tool Craft Specialization and Production at Colha, Belize: Reply to Mallory. *American Antiquity* 51(1):158-166.

Stuart, David

- 2000 'The Arrival of Strangers': Teotihuacan and Tollan in Classic Maya History. In D. Carrasco, L. Jones, and S. Sessions, Eds. *Mesoamerica's Classic Heritage: From Teotihuacan to the Aztecs*. pp. 465-513. Colorado University Press, Niwot.

Taube, Karl

- 1992 *The Major Gods of Ancient Yucatan*. Studies in Precolumbian Art and Archaeology 32. Dumbarton Oaks, Washington, D.C.

Thompson, J. Eric

- 1950 *Maya Hieroglyphic Writing: An Introduction*. Publication 589. Carnegie Institution of Washington, Washington, D.C.

- 1970 *Maya History and Religion*. University of Oklahoma Press, Norman.

Turner, Billie Lee

- 1983 *Once Beneath the Forest: Prehistoric Terracing in the Rio Bec Region of the Maya Lowlands*. Westview Press, Boulder.

Turner, Billie Lee and Jeremy A. Sabloff

- 2012 Classic Period Collapse of the Central Maya Lowlands: Insights about Human-Environment Relationships for Sustainability. *Proceedings of the National Academy of Sciences* 109:13908-13914.

Webster, David

- 2000 Not So Peaceful Civilization: A Review of Maya War. *Journal of World Prehistory* 14(1):65-119.

Wiley, Gordon and D.B. Shimkin

- 1973 The Maya Collapse: A Summary View. In T.P. Culbert, Ed. *The Classic Maya Collapse*. pp. 457-502. University of New Mexico Press, Albuquerque.