

Pre-Columbian Foodways

John Edward Staller • Michael Carrasco
Editors

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Interdisciplinary Approaches to Food,
Culture, and Markets in Ancient
Mesoamerica

 Springer

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Claude Lévi-Strauss on the mythology of food and cultivated plants...

“It is not surprising that the acquisition of honey should go back to the mythical period when there was no difference between animals and men, since honey is a wild product belonging to the category of nature... it must have become the heritage of humanity when men were still living in a ‘state of nature’, before any distinction was made between nature and culture... myths about the introduction of cultivated plants... refer to a time when men knew nothing of agriculture and fed on leaves, tree fungi and rotten wood before the existence of maize... maize was like a tree in appearance and grew wild in the forest... men made the mistake of felling the tree, and they then had to share out the seeds, clear the ground for cultivation and sow maize, because the dead tree was not sufficient for their needs. This gave rise, on the one hand, to the different varieties of cultivated species, and on the other hand, to the differences between peoples, languages and customs...” (Lévi-Strauss 1973, p. 73)

Lévi-Strauss, Claude 1973. *From Honey to Ashes: Introduction to a Science of Mythology*: 2. Translated by J. and D. Weightman. New York: Harper & Row Publishers, Inc.

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Pre-Columbian Foodways in Mesoamerica

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This collaboration originates from our mutual participation in an invited session “The Role of Sustenance in the Feasts, Festivals, Rituals and Every Day Life of Mesoamerica” organized by Karen Bassie at the 40th Annual Chacmool Conference. *Eat, Drink, and Be Merry: The Archaeology of Foodways*. Hosted by the Chacmool Archaeological Association and the University of Calgary, Department of Archaeology, November 10–12, 2007 Calgary, Alberta. We are sincerely grateful to Karen Bassie for her encouragement in stimulating this collaboration and her support of this project.

Introduction

Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Mesoamerica assembles contributions from a wide range of fields to present current views on food, feasting, and markets in Mesoamerica. From the editors’ own work on Pre-Columbian societies, it was apparent that it was only through a holistic approach that it would be possible to gain an understanding of the complex cultural patterns surrounding food and cuisine, as well as the various social institutions that governed their production, redistribution, and consumption. It was such illustrious anthropological scholars as Claude Lévi-Strauss (1969) who observed early on that to view culture through the lens of foodways is a powerful methodological approach for understanding the social practices and ideology surrounding food.

The interdisciplinary approaches presented in this volume bring together numerous fields that would otherwise find little in common to provide ever-increasing detail and direct evidence on the antiquity, evolution, cultural importance and socioeconomic roles of foodways in Mesoamerica. In doing so, this volume also gives scholars insight into how disciplines generate interpretations and stand at

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varying degrees of distance from their object of study. For instance, while anthropologists directly interact with modern indigenous peoples, the descendants of the ancient cultures examined in this volume, providing a kind of access not enjoyed by archeologists or ethnohistorians, it is only through the archaeologist's spade that art historians and epigraphers encounter the ancient art, symbolism, and texts that they interpret and reconstruct. However, the interpretations and reconstructions of art historians and epigraphers are instrumental in directing and refining research on ancient politics and religion across a number of disciplines, and even influence research programs focused on modern peoples. By placing these diverse approaches in conversation this volume is geographically, topically, historically, and methodologically more comprehensive in scope than most of the previously published literature, which has largely dealt with specific regions, cultures, or cultigens in Mesoamerica (Benes 1984; Scarry 1993; Monaghan 1995; Mills 2004; see also, Coe and Coe 1996; Arnold 1999; González 2001; Anderson 2005; McNeil 2006; Staller et al. 2006; 2009). In contrast to these more focused studies *Pre-Columbian Foodways* investigates cuisines and food within the larger context of economic, political, and religious systems. Thus, for instance, feasting is examined not simply within the context of ritual or the specific foods involved but also as one of the major examples of political reciprocity, the timing of which was often based on an agrarian based ritual calendar. Contributors to this volume also examine how the cultigens, and the foods derived from them, are often embodied in mythological and religious symbolism, and how in many cases their production often determined when ritual festivals took place in the annual cycle. This holistic approach to foods and cuisines allows for a more complex and nuanced understanding of Mesoamerican foodways studies and demonstrates the growing importance of this inherently interdisciplinary field for understanding ancient American cultures.

The study of Mesoamerican foodways embraces a diverse range of methodologies. Following this conception of collaboration across fields, various scholarly approaches to Mesoamerican foodways are presented in three major sections, which include data from archaeology, anthropology, linguistics, iconography, economics, ecology, biology, and bone chemistry reflecting the synergy that results from truly interdisciplinary research. Here we introduce Mesoamerica as a cultural region, briefly outline the history of foodways studies of this region and highlight some of the important roles food and cuisines had and continue to have among regional cultures. We conclude this chapter with a detailed description of each of the three subsections. Briefly, each section is based on an overall theme, scope, and approach. Part I includes contributions that deal with general syntheses or topics relevant to food crops from all of Mesoamerica or cover the history of particular cultigens and explores how they were managed, tended, as well as consumed. Part II presents case studies of particular regions, periods, or cultigens from a number of different fields including archaeology, ethnobotany, epigraphy, and anthropology. Part III includes more interpretive analyses that rely to varying degrees upon information obtained through the methodological approaches discussed in the first two sections (Fig. 1).



Fig. 1 Mesoamerica includes the geographic area of present day Guatemala, Belize, El Salvador as well as western Honduras and Mexico extending into northern frontier. The various subregions are indicated by their associated cultures

Mesoamerican Conceptions of Food and Culture

*We live HERE on the earth [stamping on the mud floor]
 we are all fruits of the earth
 the earth sustains us
 we grow here, on the earth and flower
 and when we die we wither in the earth
 we are ALL FRUITS of the earth [stamping on the mud floor]
 We eat of the earth
 then the earth eats us.* (Knab cited in Broda et al. 1987:107)

Food and cuisine in Mesoamerica, a culturally unified region including central and southern Mexico, Guatemala, Belize, and El Salvador, as well as western Honduras (Evans and Webster 2001:ix), are inseparable from a worldview largely modeled on the life cycle of plants, particularly that of maize (Bassie 2008:19–31; Staller et al. 2006; 2009), directionality, agricultural practices, and systems of reciprocity (Taube 1994). Similar expressions of faith to the one cited above are found throughout Mesoamerica and over much of its known history (see Carlsen and Prechtel 1991). Like Europe or Asia which were culturally unified by Christianity and Buddhism/Confucianism, respectively, Mesoamerica was linguistically, ethnically and culturally diverse. Nevertheless, nearly all Mesoamerican societies had a 260-day Ritual Calendar, shared similar cosmologies and religious practices, and relied on maize as a staple food crop after approximately 900 BC. Most students of Mesoamerican

Table 1 Basic periods of Mesoamerican history

Early Preclassic (early formative)	2500–1000 BC
Middle preclassic (middle formative)	1000–400 BC
Late preclassic (late formative)	400 BC–AD 200
Early classic	AD 200–600
Late classic	AD 600–900
Early postclassic	AD 900–1200
Late postclassic	AD 1200–1492
Colonial	1521–1821
Contemporary Mesoamerican people	

history are familiar with the Olmec, Maya, the City-States of Monte Alban and Teotihuacan, and the Post-Classic cities of Central Mexico, such as Tula, Hidalgo and the Aztec Imperial Capital of Tenochtitlan. However, there were literally hundreds of cities and towns and dozens of autonomous groups throughout this culture area. Thus, from central Mexico to western Honduras we find peoples who possessed basic cosmological assumptions, religious practices, similar material cultures, artistic conventions, political structures, and foodways. This is not to minimize the great diversity found throughout this region; however, in order to understand Mesoamerican peoples it is important to acknowledge a shared cultural and social history. Mesoamerica has been divided chronologically into periods approximating those presented in Table 1.

Cosmology, Mythology, and Time

One of the major tangible elements of Mesoamerican high culture is a long-standing interest in time, which was in part quantified through the empirical observation of seasonal change and the life cycle of plants and humans (Stross 1994:29–31; see also Flannery 1973, 1986; Freidel 1996; see Rice 2007). The art history and epigraphic record demonstrate an early and sustained engagement with elaborate calendric systems, vestiges of which are still in use in the Guatemalan highlands (see Tedlock 1982; Aveni 2000). There were two major calendars in use in the Maya area during the Classic period: the Calendar Round and the Long Count. The Calendar Round was composed of the ancient, pan-Mesoamerican 260-day Ritual Calendar, which consisted of a number cycle from one to thirteen running concurrently with a twenty days name cycle (*tzolk'in* in Yucatec; *tonalpohualli* in Nahuatl, lit. count of days), interlocked with what is sometimes referred to as the vague year or *Haab*, a cycle of eighteen months of twenty days and a final five-day ritually dangerous month known as *Wayeb* in Mayan and *Nemontemi* in Nahuatl. In the Maya system the Ritual Calendar was embedded in the Long Count, a continuous count of days that were reckoned from the beginning of the present era on August 13, 3114.¹

¹This date is based on the Thompson correlation of 584,285 days. For a full discussion of the issues surrounding the correlation of Maya and Western calendars see Sharer (1994:755–762).

The Long Count was associated exclusively with the Epi-Olmec (e.g., La Mojarra Stela 1) and Maya cultures and appears to have originated in the first centuries of the Common Era and continued in use in the Maya area until the arrival of the Spanish² (Houston 2004). Central Mexican cultures did not use the Long Count; however, they made extensive use of the *tonalpohualli* and less frequently the 365-day “Solar” year (Boone 2000:39; Aveni 2000:255). The earliest documented use of the 260-day Ritual Calendar dates to c. 600 BC and is associated with the ancient cultures of Oaxaca, more specifically, the Zapotec at the site of San José Mogote (Marcus 1976:43–45) though. Various theories have suggested that the 260-day Ritual Calendar was originally based on agricultural cycles, astronomy, or human gestation, respectively (see Rice 2007:31–39). Regardless of the exact origins of the Ritual Calendar, it has a clear reference to maize agriculture, because each day-sign seems to refer to specific stages of maize’s development during the agricultural year (Stross 1994:29–31). If this analysis is correct then it provides insight into the fundamental religious importance of this cultigen and that ideation surrounding maize agriculture was incorporated into ancient Mesoamerican cosmologies.

Time, as manifested in the cyclical movement of celestial bodies, was perceived of spatially and informed the geography of the sacred landscapes presented in Mesoamerican mythology and worldview (Aveni 2000; Sachse 2008). Mesoamerican cultures perceived a horizontal world divided into four quadrants with each side oriented to a specific direction (Thompson 1970; Freidel et al. 1993; see also Christenson, this volume). The rising and setting points of the sun during the solstices possibly defined the corners of the terrestrial square, while the equinox defined the location of the critically important fifth direction of the world center. In art and mythic imagery a tree, mountain or hearth (Freidel et al. 1993; Carrasco, this volume) represented this central point or *axis mundi*. The union of space and time is well-illustrated in the first page of the Codex Fejérváry-Mayer (see Boone 2007:Fig. 65). This image depicts a quadripartite cosmos where each direction is associated with particular deities, trees, birds, and dates in the *tonalpohualli* (Boone 2007:114–116). Among the Maya, the quadripartite world was symbolized by the quincunx pattern, which in the syllabary of Maya phonetic signs represents the phoneme *bi*. It is suggestive that this sign was used to write the word for “road,” *bih*, in Classic Ch’olan, the language preserved in the Maya Hieroglyphic script. Several inscriptions speak of the four roads of the Sun God presumably again referring to the solstices (Carrasco 2005:218–219).

Foods and plants figure prominently in Mesoamerican cosmological schemes and creation mythologies, particularly in descriptions of the four ages preceding the present era. Townsend (1992:120) notes:

There is also the sense of a search for progressively better foodstuffs: in the first era the giants ate roots and wild fruit; the second era lists *acocentli*, pine nuts; the third era names *ace centli*, millium; and the fourth names *cencocopi*, or *teocentli*, a wild grasslike plant with seeds similar to that of primitive maize.

²It is commonly believed that the use of the Long Count ceased with the abandonment of lowland Classic Maya cities; however, the presence of k’atun and bak’tun signs in the Dresden codex suggest that the Long Count was probably still in use or understood until the Conquest.

This ancient cosmology describes the development of foods over the course of the four ages preceding the present era. Interestingly, it mirrors in some respect our scientific understanding of the Mesoamerican dependence upon distinct foodstuffs prior to domestication and a widespread reliance upon maize and other food crops, a time when root crops, such as manioc (*Manihot esculenta* Crantz), appear to have been the staple (see Brown, this volume). It is interesting that in this description the Nahuatl root *centli*, “dried ear of maize” figures in all but one of the foods listed. In fact, as Stross (2006:596) notes terms for maize were used as labels for other edible plants such as *ramón* nuts (*Brosimum alicastrum* L.), known by the name *iximte’* in Tzotzil, literally “maize tree.” Among the Huastecs of San Luis Potosí various maize terms, particularly *thipaak*, also the name of the deity who brought maize to humans (Alcorn et al. 2006; see Ochoa, this volume), label the indigenous edible cycads *Dioon spp.* (Bonta et al. 2006) and *Zamia spp.* (Bonta and Osborne 2007). The use of maize terms as a metatags for other edible foods or plants bearing a mimetic relationship to maize presents evidence for Pre-Columbian systems of classification, wherein maize was not only important to mythology, but also became a key *emic* category, possibly conveying the idea of “edible” (see e.g., Berlin 1992).

With the domestication of maize and its increasing cultivation in the Early Formative period evidence for Mesoamerican metaphoric extensions of food are squarely focused on agriculture and more generally the life cycle of plants, as well as hunting and predation. Throughout Mesoamerica maize in a variety of forms was and still largely is the major staple crop (Anderson and Tuxill, this volume). It is comparable to bread in the West and rice in East Asia (see Ohnuki-Tierney 1993) and, as with these staples, served as a key cultural metaphor. Like Christian religious metaphors in which bread and wine are analogous to the body and blood of Christ, maize was the substance from which humans were formed as well as a major deity in most Mesoamerican religions (Staller, this volume). In indigenous thought, maize becomes human flesh through its consumption, or in myth by a deity modeling it into human form (e.g., Christenson 2003; see also Christenson, this volume). This is in contrast to bread, which like the lamb, is seen as the body of God’s son, the consumption of which is celebrated in the rite of Eucharist, where bread becomes flesh in the act of transubstantiation. For Indo-European and Semitic peoples animal husbandry offered an analogy for the relationship between humanity and god, as seen in Judeo-Christian mythology, especially in the metaphor of the Good Shepherd. Lacking large domesticated animals in Mesoamerica, the hunt or perhaps more generally predation took on a more dominant role as a structuring analogy in Mesoamerican thought, informing foodways, mythology and even warfare (e.g., the Jaguar and Eagle Warriors of the Aztec). For instance, the Deer (white-tailed, *Odocoileus virginianus* or of possibly less importance, the brocket deer, *Mazama americana*) is often associated with the Sun in Mesoamerican cultures (see Borgia Codex Page 5, Díaz and Rodgers 1993:Plate 33) and the gods of the hunt (Miller and Taube 1993:74–75). Among the Huichol, the harvesting of peyote was likened to a deer hunt, which also has associations with maize (Myerhoff 1976). So much so that Peter T. Furst (1971:182) states, “deer, maize and peyote

are fused into a single symbol complex.” In this instance, it is relevant to note that a prey animal is likened to a harvested plant item. This is in contrast to the role predatory animals played in Mesoamerican cultures, whose names identified the major military orders (Headrick 2007:Chap. 4) or occurred as part of royal names.³

The social ubiquity of these ideas made them ideally suited for the articulation of political power, wherein the ruler or ruling elite either inculcated themselves or their ancestry into the life-cycle of plants, as is graphically illustrated on the sides of the sarcophagus of the Palenque ruler K'inich Janaab Pakal (Schele and Mathews 1998:119–123), or used predation and hunting as an analogy for their own exercise of power. The scenes of captive taking illustrated in much of Mesoamerican art were also likely meant to bring to mind hunting as well as predation. An idea given credence by the analogy made between the ruler and predatory animals, particularly the jaguar (*Panthera onca* L.) (McAnany 1995:149). Likewise, Sahagún recorded that, “[Spiny, Thorny] was said of some ruler, or of a nobleman, of one worthy of great honor. No one could draw very near to him: he was considered as a wild beast” (cf. Townsend 1979:60). Given the importance of the key metaphors of agriculture and hunting/predation, it is not surprising that rulers are both presented as maize embodied (Freidel and Reilly, this volume) as well as a hunter or predator either through scenes of capture or in ritual costume.

The above observations are largely a result of a greater anthropological and archaeological engagement with Mesoamerican peoples over the last century, the decipherment of writing systems and pictorial codices and a clearer, more comprehensive understanding of Mesoamerican iconographic systems (Marcus 2003; Houston 2000; Boone 2000, 2007). It is important to note that Mesoamerica was the only region in the Americas in which a highly specialized literary tradition existed prior to the Contact Period (Houston 2004; Anderson et al. 1976). Native documents, as well as early colonial sources produced by native scribes, have been invaluable for scholarship on Mesoamerica foodways, as the contributions to this volume demonstrate. As our understanding of these indigenous documents improves, we will no doubt be able to explore in greater detail how foods, cuisines, and their production served as larger cultural metaphors. As we will see in the next section, while Europeans were duly impressed with indigenous botanical knowledge and saw the value of traditional cuisines and plant resources, the cultural metaphors discussed above were exotic to Western sensibilities. Consequently, they were largely ignored or lost in time, in part, because they were incongruent with European worldviews and cultural metaphors, since in some cases they were anathema to their religious values (Fabian 1983). Moreover, the colonial government was actively seeking to convert indigenous populations to Christianity and suppressing practices, rituals, festivals, etc., perceived as idolatrous (see e.g., Traboulay 1994; Las Casas 1992).

³Jaguar, *Bahlam*, is particularly a common name among the Maya, but is also the given name of Lord 8 Deer (8 Deer is his name based on his birthday in the *Tonalpohualli*).

Colonial Sources and Perspectives on Mesoamerican Foodways

The beginning of the European study of Mesoamerican foodways, botanical knowledge and associated beliefs dates to the early Colonial descriptions and codices produced by missionaries and their indigenous informants and students.⁴ These documents provide among the most detailed accounts of the uses of food crops, economic plants, tribute systems and dietary habits among the indigenous cultures of Mesoamerica at the time of European contact, as well as the cosmological systems through which indigenous foods and cultural institutions were rationalized (see e.g., Carrasco 1999; Schwartz 2000). Europeans were highly impressed with indigenous botanical knowledge so much so that Cortés could write of the Imperial gardens of Huaxtepec that they were,

... the greatest and most beautiful and fresh ever seen, because it has two circuitous tongues of land, and through the middle runs a gentle stream, ... There are small dwellings and very fresh gardens and an infinite amount of trees of a wide variety of fruits and many herbs and odoriferous flowers, and surely the elegance and greatness of this garden deserves admiration. (cf. Granziera 2005:87)

Huaxtepec was among the most ancient botanical gardens in the world (Maldonado 2000:170–177) and appears to greatly surpass what then existed in Europe. The clear importance of indigenous medicinal knowledge to colonial powers prompted the production of the *Codex Bodiano* (Gates 2000), a bilingual treatise in Nahuatl and Latin on medicinal plants interesting also for the continued use of a native pictorial idiom.

While European explorers and clerics saw the value in American plant resources and indigenous knowledge they also rationalized the cultural institutions in which this knowledge was embedded through the lens of their own worldview. Needless to say, the sixteenth century worldview, conditioned as it was by traditional medieval folklore, Holy Scripture, and classical literature saw little value in native cultural institutions.⁵ Nevertheless, the discovery of the Americas had a profound impact on European and Asian foodways even if these imported foods were stripped of their original cultural context (Coe 1994; Schiebinger 2004) or their source cultures viewed unsympathetically (Sauer 1969).

Our current perceptions of Mesoamerican foodways are complicated by these initial cross-cultural exchanges in foods. Commodities such as maize, chocolate, vanilla, potatoes, chilies, and many other plant resources quickly spread through-

⁴Among the most important of these documents are the *Codex Mendoza* (1541), *Codex Badiano de la Cruz 1552* (De la Cruz 1552 [1991]), and *Florentine Codex* (1590).

⁵The literate population of sixteenth century Europe was incredibly small, consisting primarily of clerics and members of the aristocracy and all were literate in Latin. The ways of life of most of the population continued to follow patterns typical of the Medieval world until the industrialization and the formation of the modern European nation states. However, most of the missionaries and a number of the conquistadors were from educated classes and therefore saw the world through a literary knowledge of biblical and the classical literature.

out the world by Spanish and Portuguese explorers (Schiebinger 2004). However, each cultural system tended to categorize these foods according to its own classificatory system (see e.g., Hopkins 2006). Thus, for much of European history maize was referred to as Turkish Corn and also “Turkey wheat,” because Turkish traders spread the plant throughout the Mediterranean and were said to have planted it when other grains were scarce (Finan 1950:159–160). For many centuries, European commoners believed maize was brought to Europe from the Far East instead of the Americas (Finan 1950; see also Camporesi 1993). The tomato was thought to be indigenous to the Old World, where it was called “apple of love” and “wolf apple” because of an association to Roman and Greek mythology (Gerard 1975[1633]:Chap. 60:346; Camporesi 1993; Coe 1994). Such misconceptions were, in part, derived from the reading of classical literature (Staller, this volume). Despite differences in European and indigenous conceptions of food, cuisines, and religious systems the colonial documents are a remarkable resource to modern scholarship, which is still heavily dependant upon these first- and secondhand accounts. Ethnohistoric documents were primarily written to be part of history, and are generally narrative and descriptive, and their value to the topic of Pre-Columbian foodways is that they provide a relatively pristine picture of Native culture (Carmack 1973; Carmack et al. 1996). Such documentary and historical evidence provides a basis to project cultural patterns and traditions into the past and, with ethnographic data, a basis to measure how certain customs and beliefs have changed over time in Mesoamerica (Serra and Lazcano, Ochoa, this volume).

Modern Research on Mesoamerican Foodways

Modern investigations of Pre-Columbian foodways have been largely focused on the cultural, economic, ritual, and political significance of consumables as a means to express status and hierarchical relationships within a culture, or among interrelated cultures. Since the manipulation and redistribution of food crops were often the basis of ancient Mesoamerican economies, archaeologists and anthropologists have used foodways and economic resources as windows onto issues of social hierarchy, the origin of civilization, and the development of complex social organization (Tannahill 1973; Goody 1982; Montanari 1994; Wiessner and Schiefenhövel 1996; Dietler and Hayden 2001; Bray 2003). Anthropological research on the role of food and feasting to marking status and hierarchy has historically been focused upon how high ranking elites manipulated consumables to reify status and consolidate labor, redistribution, and tribute systems (Dahlin et al., Freidel and Reilly, this volume). Accordingly, the recent literature has explored the economic significance of consumables, ritual feasting, and food’s importance to status and hierarchical relationships within cultures or among interrelated societies (Dietler and Hayden 2001; Bray 2003; Heine 2004). Since the manipulation, storage, and redistribution of food crops were often the basis of ancient complex economies, archaeologists

and anthropologists have also used food and feasting to explore issues of adaptation, social hierarchy, the origin of civilization, and the development of complex social organization (Parsons, Williams, Cheetham and Freidel and Reilly, this volume; see also Tannahill (1973); Wiessner and Schiefenhövel 1996; Dietler and Hayden 2001; Bray 2004).

The literature on Old World cuisines have often been concerned with religious and symbolic themes (Simoons 1961; June and Parks 1981; Grimm 1996; Ohnuki-Tierney 1993; Adamson 2002; Allen 2002; Ruitter 2003; Halstead and Barrett 2004; Faas 2005; Fagan 2006). Like the West, where there has been a long history of religious prohibitions against the consumption of certain kinds of foods and plants (Hill 1761; Apperson 1916; Terry and Pellens 1928; Simoons 1961, 1968, 1998; June and Parks 1981; Heine 2004), research on Pre-Columbian foodways indicates that food restrictions and ritual fasting were also observed among cultures throughout this hemisphere. Many sixteenth century accounts from Mesoamerica emphasize that the consumption of certain dishes and drinks were restricted to a particular feast day in the annual cycle, or to the veneration of particular deities and mythological beings (Staller, Serra and Lazcano, Ochoa, this volume).

Foodways studies have also considered the role of specific plants, particularly economic staples, medicinal plants and herbs, and their various roles in both ancient and modern societies (Weatherwax 1954; Andrews 1982; Long-Solís 1986; Simoons 1998). With increasing access to and analysis of colonial accounts, medieval and ancient documents on Old World and Asian cuisines, the study of the kinds of foods consumed, their cultural contexts and significance continue to inspire considerable scholarly research (Kirsch 1973; Tannahill 1973; Rose 1989; MacLeod and Rawski 1998; González 2001; Halstead and Barrett 2004; Heine 2004; Freedman 2007).

In Pre-Columbian studies, a growing number of anthropologists, archaeologists, and art historians have produced extensive field research on the significance of food and cuisine to culture, ancient economy, and ethnic identity. These studies have generally revealed that the cultural roles that foods and cuisines played are complex and diverse, in some cases, they differ dramatically from culture to culture. This is due in part to the role that certain food plants play in the construction of ethnic identity (Tuxill et al., this volume). They demonstrate that food, like art, conveys an array of social meanings and offers testament to ancient economy and social complexity (Coe 1994; Taube 1989, 1996, 2004). The purpose of this volume is to introduce prospective readers to state-of-the-art, interdisciplinary research on Mesoamerican foodways. This volume presents various scholarly approaches and perspectives on food, culture, and markets in Mesoamerica divided into three major sections each organized by theme and scope as well as approach. The editors' goal is to present differing emphases and kinds of data generated among and between fields, in order to illustrate the comprehensive breadth and scope generated by truly interdisciplinary research.

Part I: Agriculture and Social Complexity: The Roles of Feasting and Ritual Economies

The contributions presented in the first section focus largely upon adaptation, cultivation, the management of plants and food crops, and the ethnohistoric information surrounding such themes. It also includes syntheses of plants that were of particular importance to Mesoamerican societies because of their association with elite status and their consumption in the context of rituals and feasts marking the annual cycle (Serra and Lazcano, and Joyce and Henderson, this volume). Cecil Brown explores the linguistic history of forty food crops through a glotto-chronological study of terms from many Mesoamerican languages. His conclusions regarding the antiquity and spread of certain crops is in most cases consistent with the archaeological evidence reported thus far. Historical linguistics provides a basis for the earliest presence of certain food crops among various cultural groups and indirectly addresses questions surrounding the dependence upon agricultural economies in different regions of Mesoamerica (Brown, this volume). Contributions also explore the many roles of domesticated and wild plants to the development of complex sociocultural institutions in Mesoamerica. The chapter by Jeffrey Parsons challenges our current understanding of domestication and the role of domesticated plants and animals in the rise of civilization. The scale and extent to which wild species such as maguey were managed and cultivated, and the degree to which aquatic insects and algae were intensively exploited, distinguishes central highland Mesoamerican civilization from other New World civilizations. The pastoral niche in Mesoamerica involved economic resources that were of secondary significance to agro-pastoral societies in other parts of the world (Parsons, this volume). The large-scale management and consumption of the maguey cactus, aquatic resources, and algae questions how scholars define the parameters of cultivation, the domestication process, and more generally an agricultural economy. These contributions present a general overview of the region, early European perceptions of Mesoamerican cultures, and explore the nature of the prehistoric economy across time and space. The appearance of both Native and European words and names referring to certain food crops, provide readers with a basis for estimating their antiquity within specific Mesoamerican cultures. These terms also provide insight into how and why Western cultures perceived them in the past and present day (Staller and Brown, this volume). Much has been written regarding how certain food and drink associated with ritual feasting were preserved and filled the markets and warehouses as forms of tribute (Staller and Dahlin et al., this volume). Authors pose questions and present evidence on the role of foodways to the ancient agricultural economy and how ritual economies and tribute in the form of consumables were critical to cultural complexity. These chapters analyze how foodways had a generative and dynamic relationships with ideological expression and symbolic associations,

which directly reference ethnic and cultural identity (Serra and Lazcano and Joyce and Henderson, this volume).

Ethnohistoric documents and accounts explore the social, ritual, and symbolic significance of foodways since the conquest period. The different roles of food and cuisine as well as their preparation and social and symbolic importance are explored in diverse chronological and cultural settings. Researchers also discuss the economic importance of Mesoamerican foods in the modern world and how their preparations and uses contrast and compare to what is revealed in the colonial accounts and archaeological record (Staller, Serra and Lazcano, Parsons, and Williams, this volume). Although Western culture generally measures the importance of food crops by their economic potential, plants such as maguey, maize, and cacao appear to have had complex and varied relationships to deities, mythological beings, as well as to status and cultural identity in ways that have few equivalents in the secular modern world.

Part II: Ethnography, Ethnobotany, Language and Diet

Part II presents archaeological, anthropological, linguistic, and ethnobotanic approaches to specific cases. Enormous strides have been made toward deciphering the symbolic and literal association of food plants, and beverages to ancient Mesoamericans (e.g., Taube 1989, 1996; Houston et al. 1989). Ceramicists and art historians have long studied ancient pottery to identify distinct levels of status and rank in ancient Mesoamerican societies. Contributors to this volume employ ceramic analysis and linguistic and iconographic interpretation on ancient pottery to offer considerable insights into the diet of ancient Mesoamericans (Cheetham, Beliaev et al., and Hull this volume). Some of the contributors explore how food and drinks were recorded in ancient hieroglyphic texts painted on ceramic vessels (Beliaev et al., and Hull, this volume). This research has also revealed “ancient recipes,” as well as the social context of the consumption of the food and drink that these vessels contained. Chapters also explore how certain plants were prepared and consumed, and highlight the continuity of particular cuisines and beverages from Pre-Columbian times to the present. Data from experiments on cacao beverages, using ingredients from Tabasco and Oaxaca, indicate that ritually prepared “calcified” *pataxte* (*Theobroma bicolor*) was successful in raising foam (Strupp Green, this volume). Scholars focused upon cacao and the various beverages associated with its consumption have long been puzzled by how ancient Mesoamerican cultures created the height and density of the foam in their beverages. These data suggest that it was probably related to the preparation and fermentation of this related species. Authors also present macrobotanical evidence and data on the chemical and psychotropic properties of certain plants and how this plays a central role in their consumption (Strupp Green, Goldstein and Hageman, this volume). Amber O’Connor presents ethnographic evidence, which indicates that food in Mesoamerica is not simply

about nutrition, but can also be manipulated to symbolically express aspects of religious belief and gender relations. Maize, cacao, chiles and other important economic floral and faunal resources were commonly left as offerings at major Mesoamerican temple centers (Long-Solís 1986; López-Luján 1994; Taube 1996). Researchers also explore the kinds of plants and animals that were commonly left as offerings at sacred centers during ancient times and how these cultural patterns vary across time and space (McNeil 2006; McNeil et al. 2006; see also McNeil, this volume). Other contributors present evidence from contemporary societies dealing with the role of foodways and certain food crops in the preservation of cultural traditions and identities. Eugene Anderson traces the development of the cuisine of the Maya of Quintana Roo to show how syncretism and acculturation by Spanish colonialism and later integration into a world economy have changed cuisines and foodways (see also Fedick et al. 2003). John Tuxill and his collaborators present ethnographic evidence from the Yucatan, where slash and burn *milpa* agriculture still provides most of the basic foodstuffs. Their research has identified over fifteen distinct maize varieties or landraces. They discuss the importance of these landraces in marking ethnic identity and the Yucatec Maya's struggle to balance the phenotypic integrity of certain varieties with the need to introduce more biologically productive and diverse landraces (Tuxill et al., this volume). These chapters demonstrate the enduring importance of regionally and locally distinct foodways to ethnic identity. They lend support to the idea that unique maize varieties are still a living agricultural heritage integral to the Yucatec Maya sense of self and community.

In recent years, paleodietary research using a variety of methods and techniques in stable carbon and strontium isotope analysis has clarified and provided detailed data on the dietary importance of certain plants and other resources in distinct regions and time periods (see e.g., Chisholm and Blake 2006; White et al. 2006; Mansell et al. 2006). Strontium isotopes and elemental analyses of biochemistry involving human skeletons as well as plants and animals can determine whether people, plants, or animals were displaced or brought from areas other than where they are identified archaeologically (Freiwald, this volume). Howie and her collaborators use stable carbon isotope approaches to explore the social biographies of individuals as well as compositional analysis of funerary vessels to provide information on the movement of finely crafted ceramics in the ceremonial center at Altun Ha, Belize. Authors also combine isotopic approaches with microscopic analysis of ceramics associated with Maya burials, to explore ways in which food and ceramics were used in ritual and as funerary offering to signal ethnic and class identity (McNeil, Howie et al., this volume). Such data and integrated approaches greatly expand our understanding of how animal species and certain food crops were manipulated and used by ancient societies and their relationship to ethnic identity. Isotopic research has also increased our understanding of human adaptation, and in some cases challenge long-held theories about the spread and impacts of domesticated and wild plants, aquatic, and terrestrial resources to the development of civilization. Such paleodietary data have provided direct dietary evidence that challenges previous published research of the economic role of particular food staples and their role to development of Mesoamerican civilization.

Part III: Food as Metaphor: Mythology and Iconography

The third section explores symbolic, mythological, and art historical evidence from Mesoamerica. Much of the current scientific literature on Mesoamerican foodways presented in Parts I and II and in other venues is focused upon language, ecology, archaeology, ethnohistory, ethnobiology, ethnobotany (Berlin et al. 1974; Alcorn 1984; Alcorn et al. 2006; Anderson and Tzuc 2005; Lentz 2000; Ortiz de Montellano 1990) and, especially in the case of ancient societies, on the reconstruction of diet (White et al. 2006). These studies have been critical for our current understanding of Pre-Columbian societies and have greatly expanded the discourse on this important topic. However, with notable exceptions, particularly involving maize and chocolate,⁶ current literature does not always address the greater cultural dimensions of food, as is the case in the study of foodways in other cultural contexts (see Ohnuki-Tierney 1993).⁷ Studies focused on these issues reveal precisely how food and eating can be as taboo laden as sex, as communicative and symbolically rich as art, and as fundamental to religious and mythological thought as ultimate sacred propositions. These aspects of foodways were never separate from ancient economies, markets, and political power, no matter how much we view these institutions as separate in the modern world. The studies presented in Part III explore many of these important issues in the context of Mesoamerican. The religious and ideological basis of foodways is explored particularly with reference to their roles in myth and as larger cultural metaphors.

Carolyn Tate tracks the social, dietary, and symbolism of the *axolotl*, a kind of amphibian (*Ambystoma mexicanum*), to reveal how an important aquatic resource became an important symbol in the iconography of the Early Formative. Using ethnographic and ethnohistoric data, Lorenzo Ochoa analyzes the importance of landscape and place to foodways in his examination of the connection between Huastec regional cuisine, place and cultural identity through the intriguing theoretical approach developed in cultural geography called *topophilia*. He suggests that through *topophilia* it is possible to delimit micro-cultural subregions on the basis of the distribution of certain ingredients from specific Huastecan dishes.

The chapters of Stross, Christenson, and Carrasco examine how ritual, myth, and daily practices, such as cooking, eating, and feasting become encoded in myth, religion, and other cultural metaphors. Brian Stross examines the role of food in Maya religion. He observes that food was classified into three major categories: food for

⁶Houston et al (2006:Chap. 3) have examined ingestion as a concept in ancient Maya culture; however, there is little additional literature dedicated to the examination of concepts surrounding agriculture, animal husbandry, hunting, cooking, and eating. By contrast, the scholarship on the symbolism of maize (see Staller et al. 2006; 2009) and chocolate (see McNeil 2006) as well as their use in both ancient and modern ritual is vast (e.g., Coe and Coe 1996).

⁷While it is true that Claude Lévi-Strauss (1971) focused on food in his *Mythologiques* nevertheless he looks more to food in mythology as opposed to the symbolic implications of food in the ebb and flow of daily life. Lévi-Strauss (1978) also considered the role of food and feasting to status and hierarchy and has emphasized importance of foods to memory and to particular festivals in the annual cycle.

people, including topics such as feasting, fasting, and forbidden foods; foods for or otherworld inhabitants; and food for the soul. His analysis demonstrates the complex roles of foodways in many spheres of cultural ideation. Christenson approaches similar issues through the lens of feasting in the Guatemalan highlands. He underscores the importance of ritual and feasting not only as part of myth, symbolism and ritual practice, where, for instance, a *cofradía* house can be transformed into the interior of the sacred mountain, but also as a means of consolidating community among living members, ancestors, and even strangers. Carrasco looks to the importance of agriculture and domestic practices, particularly the fundamental act of the changing or building of a three-stone hearth, to argue that these acts were perhaps as formative of Maya and Mesoamerican mythology as astronomical phenomena. The important chapter of Freidel and Reilly investigates how myth and symbolism can be used to understand ancient market-based economies and how storage and tribute played roles in the development of Mesoamerican civilization. They challenge the prevailing perception that Mesoamerican social hierarchies were primarily achieved through coercion, and instead present evidence that the basis of Mesoamerican economies was a symbiotic interdependence among ruling dynasties and their subject populations. Through this examination they present a compelling analysis of the recently discovered Cascajal block and propose that instead of representing a glotographic script that it presents the contents of sacred bundles.

Conclusions

In this volume, we have brought together specialists from a wide range of fields to reflect on the current state of foodway studies in Mesoamerica. *Pre-Columbian Foodways* incorporates detailed evidence regarding paleodiet, plant domestication, early agriculture, cultural geography, ethnobotany, anthropology, art history, epigraphy, and especially archaeology. It is a testament to the vitality of this area of study that, while we have tried to be as comprehensive as possible, this volume is much more a selection of exquisite *hors d'oeuvres* than a complete meal. For this we make no apologies. Consideration of the psychotropic and medicinal properties of plants is beyond the scope of this volume, and the contributions only begin to address the extensive faunal resources that supplemented the ancient Mesoamerican diet (Freiwald, Goldstein, and Hageman, this volume). Likewise, the foods and plant and animal resources represented in the art historical record are only touched upon and unrepresentative of the extensive literature on such data.

We believe that this volume underscores a trend in recently published research that indicates that the study of foodways is presently at a crossroads. There appears to be a shift from research focused on certain important food crops and plants, which had considerable symbolic and economic importance to Pre-Columbian cultures, to a more holistic approach that incorporates the metaphorical and economic importance of a whole host of cultigens and other species central to Mesoamerican foodways. It is apparent that the study and analysis of Pre-Columbian foodways only begins to become intelligible through interdisciplinary

approaches and collaborative research strategies that make use of the vast ethnobotanical, biological, and historical data available for this region.

This volume provides a comprehensive overview of the various disciplines that touch on the potential for foodways studies and will be of value to students and scholars of Pre-Columbian studies working in Mesoamerica on this topic. Scholars and students will find that *Pre-Columbian Foodways* provides state-of-the-art research on a variety of topics that are critical to the field on a number of different levels. The various contributions provide examples of the value of interdisciplinary research and collaboration, and demonstrate that the roles of foodways in Mesoamerica are complex, diverse, and play a central role in all areas of culture from basic dietary needs, to revealing the nature of ancient economies, agricultural and domestic practice, and the ritual and mythological importance of food crops and cuisines to ethnic and group identity. These spheres of ideation are interconnected to varying degrees through foodways. While each chapter is autonomous, the three sections of the volume, as well as the arrangement of the chapters build on one another, from general to more specific or provide different disciplinary views of how food crops, cuisines, and the manipulation and management of such resources were critical to understanding Mesoamerican culture past and present.

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