Investigations at sites across northwestern Honduras—inside and outside the Maya area—have revealed a wide diversity of food practices and ingredients. We see a dynamic overlap between the foodways of Maya societies to the north and Ulúa Valley societies just to the south, with northwestern Honduras serving as a sort of crossroads between culinary traditions. The trajectories of individual ingredients are not straightforward, however: some culinary elements were never adopted in regions where they were readily available (considering the flow of other species and materials), whereas other culinary elements were quickly adopted but sometimes in novel ways.

When looking across the Maya landscape, we see evidence that bears out Scott Fedick’s description (1996:14) of a “managed mosaic,” although when he edited his seminal volume in 1996, only a small handful of actual
paleoethnobotanical studies had been completed (Bloom et al. 1983; Cliff and Crane 1989; Hammond and Miksicek 1981; Hather and Hammond 1994; Lentz 1991; McKillop 1994; Miksicek 1983, 1991; Turner and Miksicek 1984). In the intervening years, the work of David Lentz at the Joya de Céron and Aguateca sites has given us fine-grained views of foodways under conditions of rapid abandonment. Meanwhile, paleoethnobotanical work at a host of other Maya sites has provided insight into food practices (e.g., Cagnato and Ponce 2017; Lentz 1999; Lentz et al. 1997; McKillop 1996; Morehart and Helmke 2008; Simms et al. 2013), human–environmental relationships (e.g., Abramiuk et al. 2011; Crane 1996; Hageman and Goldstein 2009; Lentz and Hockaday 2009; Lentz et al. 2012; McNeil 2012; McNeil et al. 2010; Pohl et al. 1996; Sheets et al. 2011, 2012; Trabanino García 2008, 2012a; Wyatt 2008), and ritualized practices (e.g., Bozarth and Guderjan 2004; Goldstein and Hageman 2010; Lentz et al. 2005; McNeil 2006; Morehart and Butler 2010; Trabanino García and Núñez 2013).

In this article, we compare cuisines from several ancient communities in northwestern Honduras. The work we present here includes new data from a scan of 207 macrobotanical samples and microbotanical analysis of residues from 22 artifacts, all recovered from areas within and nearby the Maya site of Río Amarillo. We compare our new findings from the Río Amarillo area with those from the nearby Maya site of Copan and several Ulúa Valley sites (100 km distant), using previously published datasets. Given variations in data collection methods by each researcher and the limitations of samples in each study, we focus on the presence and absence of various taxa across the northwestern Honduras region while acknowledging that differences between these datasets may also be attributable to varying taphonomic regimes and, of course, variations in human practice.

The wealth of botanical data available in northwestern Honduras has already led to provocative interpretations about the movement and sharing of foodstuffs, alongside other recent research into shared principles of culinary equipment (Hendon 2020) and architecture (see the following discussion). The three areas we compare in this article have very similar ecologies with nearly identical plant availability. Although paleoethnobotanical analysis is ongoing, preliminary data suggest that people in each area were not only embedded in different historical traditions but may have also manifested different plant preferences.

Plants on the Move

When we follow the itineraries of different taxa, we see plants making their way into the landscape through a variety of human tactics and strategies (somewhat in the sense of Michel de Certeau [1984]). These pathways include formal trade, required tribute, and neighborly exchange. Plants also flow through human households, as seeds and cuttings pass along from parents to children and move into other households through intermarriage and migration. The iterative practices linked to these plants (sensu Judith Butler 1997) unfold across time and space, as migrants replicate past practices in new and sometimes very foreign ecologies. In the Caribbean (Berman and Pearsall 2008; Siegel et al. 2015), this process has been described as “transporting landscape,” where the incorporation of familiar plants or plant practices in new places is a mode of re-creating homelands in new territories. Plants also shift into new social contexts when people create novel recipes using traditional ingredients or adhere to traditional recipes using new ingredients (Morell-Hart 2020a). Such efforts add variety to repetitive cuisine or re-create treasured foodstuffs with substituted plants.

Through all of these processes, we see both concordances and disjunctures when we consider food ingredients, food meanings, and food practices. First, we find cases where culinary practices and meanings are the same, but the taxa are substituted. For example, for bean makers there is enormous variety in what constitutes the appropriate herbal inclusion. Bay leaves, epazote, or oregano has been proclaimed by friends of the authors as absolutely and without a doubt the core and critical ingredient for flavoring beans properly. Moreover, different regions of contemporary Mesoamerica have their favorites—the red beans in baleadas so popular in Honduras are distinct from the refried...
pintos in northern Mexico, which are distinct from the stewed black beans found throughout Guatemala.

Moreover, meanings change, even where culinary taxa and practices remain the same. In the highlands, pine (*Pinus* spp.) is a common fuel and construction source, whereas in the northern lowlands it has been cited as an indispensable component of ritualized practice yet is more rarely found overall (Dussol et al. 2016; Lentz et al. 2005; Morehart et al. 2005). At Copan, on the eastern margins of the Maya area, pine was the primary ritual wood but was also favored for household activities and thus is very abundant overall in botanical assemblages (McNeil 2006:116). In some cases pine was treasured for its fragrant smoke, in other cases it was a daily mainstay of simple cookfires, and in yet other cases it contributed heavily to both ritualized and quotidian practice. The “ingredients” and the activities were the same—pine wood was burned—but the meanings sometimes differed significantly from region to region. This semiotic difference was likely related to the relative local scarcity of pine tree stands, among other factors, and the effects of this local scarcity on perceived value.

Finally, we have cases where the meanings and taxa were the same, but culinary practices changed. Maize (*Zea mays*) for many centuries appears to have been used primarily in tamale and atoles and only in late stages for tortillas (Brumfiel 1991). As Elizabeth Brumfiel noted, this difference in maize preparation had enormous implications for labor, even though the staple ingredient itself—maize—remained consistent. Furthermore, David Webster and coauthors (2011) argued that maize (and its progenitor, teosinte) may have first been tended and consumed for nongrain purposes as a green vegetable or sugary stalk (see also Smalley et al. 2003).

Over time, plants were on the move, and they were not bundled into a single agricultural “package” crossing the landscape. They trickled northward or southward at varying paces and for various reasons. What were staples in some places became novelties in other areas, and vice versa. In addition to the difficulty of approaching ingredients as objects with entangled biographies, the very nature of physical consumption complicates interpretation even further. Some ingredients, like cacao, were elements with active meanings instead of simply inert ingredients: they were equal parts sign and sustenance (McNeil 2010; Morell-Hart 2020b).

Northwestern Honduras Arrivals

Researchers have carefully tracked many plant taxa from their likely origins to their introduction into new environments throughout the Americas (Supplemental Table 1). Maize was first domesticated in the Balsas region of central Mexico (Hufford et al. 2012; Piperno et al. 2009) and then spread as far north as Canada and as far south as Chile. Domesticated maize likely arrived in northwestern Honduras from the north, although it is possible that it made its way south first and looped back northward. Domesticated beans and squashes have multiple origin points, both in Mesoamerica and South America, with some squash domestication posited for North America (Chacón Sánchez et al. 2005; Lombardo et al. 2020; Martínez et al. 2018; Pickersgill 2007, 2016). Thus far, the earliest archaeobotanical specimens of these taxa in Honduras were recovered from Early Formative period deposits at El Gigante cave (Scheffler et al. 2012), although maize or teosinte pollen grains may have been identified in Archaic period deposits from western Honduras (Rue 1989).

Prized fruit trees also arrived in Honduras from a variety of locations. Cacao (*Theobroma cacao*) likely traveled from the Amazon basin to Mesoamerica as a domesticate or proto-domesticate—perhaps initially for its fruit—and was then cultivated in Mesoamerica (Clement et al. 2010). Cacao beans eventually made their way as far north as Chaco Canyon in northwestern New Mexico (Crown and Hurst 2009), though the actual growing range of cacao trees ends much farther to the south. Cultivated palm tree genera including coyol (*Acrocomia* spp.), cohune (*Attalea cohune*), and peach (*Bactris* sp.) have diverse origins. The domesticated peach palm likely comes from South America (Clement et al. 2010; Lombardo et al. 2020), the coyol is likely from Brazil specifically (Lanes et al. 2014), and the cohune seems to have been naturally distributed along the entire...
Pacific coast of Mexico and into Central America (Grellar 2000). Avocado (Persea americana) and hogplum (Spondias sp.) appear first at El Gigante in the Early Archaic period, whereas custard apple (Annona sp.) and hackberry (Celtis sp.) appear in Middle Archaic deposits at the site (Scheffler et al. 2012).

Root and tuber crops were also extensively transported across early landscapes and persist in contemporary gardens (Poot-Matu et al. 2002). Sweet potato (Ipomoea batatas) may have had two separate points of domestication—in Mesoamerica and in South America (Roullier et al. 2013). Manioc (Manihot esculenta) appears to have been domesticated in the Amazon Basin, the home of its closest wild relative, and then moved northward (Olsen and Schaal 2001). Domesticated lerén (Calathea allouia) also likely originated in northern or central South America (Piperno 2011), although non-domesticated Calathea species are widely dispersed in Central America. The use of domesticated lerén in contemporary times is more frequently documented in northern South America and the Caribbean than in Mesoamerica (Chandler-Ezell et al. 2006; Lombardo et al. 2020; Martin and Cabanillas 1976; Poot-Matu et al. 2002). Similarly, achira (Canna edulis) is more commonly recovered from ancient South American culinary contexts (Piperno 2011; Urgent et al. 1984) than from those in Mesoamerica, although the plant is frequently used in contemporary times as an ornamental. Cultivated arrowroot (Maranta arundinacea), first domesticated in South America (Piperno 2011), has been documented archaeologically in the northern Yucatan (Simms 2014), and wild species of Maranta occur throughout Central America (Pickersgill 2016). The difficulty of recovering root and tuber remains in semitropical Mesoamerican environments has been noted since at least the 1950s (Bronson 1966), and thus the importance of these crop plants has likely been underestimated.

It is no surprise that many of these delicious plants were passed along, from hand to hand and family to family, eventually making their way into Honduran gardens and fields. But some plants appear to have bypassed certain areas, while others took root in a variety of places. We turn now to the presence and absence of these diverse ingredients at archaeological sites in northwestern Honduras.

### Cuisine of the Copan Area

Cuisine at Copan has been studied for several decades. Given the work of (coauthor) Cameron McNeil (2006, 2010, 2012), David Lentz (1991), and B. L. Turner and Charles Miksicek (1984), this is one of the best-studied regions—botanically speaking—in Mesoamerica. Michael Haslam (2003, 2006) also carried out residue analysis of 150 lithic tools, though his studies targeted maize starch grains only. In addition to the study of botanical residues, there have been skeletal analyses directed at nutrition (Reed 1994; Storey 1999; Whittington 1999; Whittington and Reed 1997), chemical residue analyses, and other analyses directed toward understanding paleoecology (Rue et al. 2002).

Although all of these investigations are important contributions to our understanding of foodways and ethnoecology, we focus our comparisons on work by McNeil, Lentz, and Turner and Miksicek, because these datasets can best be compared to those from the Ulúa Valley and Río Amarillo areas.

Maize, coyol, peach and cohuhe palms, cacao, various squashes (Cucurbita sp. and Sechium sp.), chile pepper (Capsicum annum), and the common domesticated bean Phaseolus sp.) have all been recovered as macrobotanical remains, pollen, or both at Copan. Copan residents also extensively used various herbaceous species and secondary growth species such as bean family trees and mint family annuals. Wild grape (Vitis sp.) has been documented, along with hogplum (Spondias sp.), avocado (Persea sp.), hackberry (Celtis sp.), guava (Psidium guajava), and nance (Byrsonima crassifolia). In terms of root and tuber crops, no lerén, achira, sweet potato, arrowroot, or manioc has thus far been documented at the site of Copan, although these absences likely correspond with the small number of systematic microbotanical analyses of artifacts.

### Cuisine of the Ulúa Valley

At sites around the Ulúa Valley, just two valleys away from Copan, we find not only some
significant differences in cuisine but also many expected similarities. This region includes four sites—Puerto Escondido, Currusté, Los Naranjos, and Cerro Palenque—where one author of this article carried out previous research (Morell-Hart 2011, 2015a; Morell-Hart et al. 2014, 2019). Though only within a few days’ walking distance of Copan, the Ulúa Valley sites were not inhabited by Maya people, as indicated by the distinct artifact and architectural evidence. Instead, these communities may have been populated by ancestors of the Lenca-speaking people who were living in the Ulúa Valley at the time of Spanish contact (Sheptak 2019). Although from different groups and likely speaking different languages, people in these two regions exchanged goods regularly as trade partners (see Hendon 2010; Joyce 1988, 1991; Lopiparo et al. 2005).

In the Ulúa Valley sites, analyses have focused on starches, phytoliths, and seeds. As at Copan, maize, chile, common domesticated beans, and squash emerged from Ulúa samples, although there was no evidence of chayote squash (Sechium sp.) such as that found at Copan. Cohune and coyol palms were encountered, but no peach palm. As at Copan, people at these sites used various herbaceous species and secondary growth species such as bean family (Fabaceae) perennials and mint family (Lamiaceae) annuals. Evidence of cacao was recovered from ceramic vessels using chemical analysis (Henderson and Joyce 2006; Henderson et al. 2007; Joyce and Henderson 2010) but did not emerge in microscopic analyses. In terms of other succulent fruits, avocado, hackberry, and nance were found both in the Copan and Ulúa Valley samples, but hogplum, guava, and wild grape were not documented in the Ulúa Valley area. Other fruits appeared, however, including various cactus fruits (Cactaceae spp., Mammillaria sp.) and papaya (Carica papaya)—all absent from Copan samples. Furthermore, a wide array of root and tuber crops emerged from the Ulúa Valley residues, including lerén (Calathea sp.), achira (Canna edulis), sweet potato (Ipomoea batatas), arrowroot (Maranta arundinacea), and manioc (Manihot esculenta), all absent thus far from the large Maya center.

Cuisine of the Río Amarillo Area

In the Río Amarillo area (Figure 1), people shared certain culinary traditions with residents of Copan and the Ulúa Valley, as well as enjoyed some unique elements. The botanical residues of foodstuffs described in this section come from three nearby sites in the Río Amarillo area of the Copan Valley: the Río Amarillo site center, Site 29, and Site 5. These areas have been under investigation by this article’s coauthors Cameron McNeil and Edy Barrios for more than a decade (Barrios 2014, 2015; McNeil and Barrios 2012, 2013, 2014).

The Río Amarillo site center is a Type 4 site, defined here as having elite households, complex mound groupings of 40 or more, one or more plazas, sculptures, and constructions with high-quality shaped stone and vaulted ceilings (Webster et al. 2000:31 based on Willey and Leventhal 1979:82–83). The Río Amarillo site center lies 20 km to the east of Copan, a Type 5 urban site with an enormous civic–ceremonial complex. Site 29, formerly known as Río Blanco, lies between Río Amarillo (1.7 km distant) and the nearby site of Quebrada Piedras Negras (1.2 km distant). This site was the target of a salvage archaeology project in preparation for a contemporary airstrip. Excavations at Site 29 revealed two patio groups with four structures. Site 5 of the Río Amarillo East Pocket of the Copan Valley is found to the north around a hill near the site center of Río Amarillo. It consists of a series of household groups, some of which demonstrate an uninterrupted occupation from the Late Classic period through the Early Postclassic period. Although the structure style and artifacts are largely Maya, some architectural anomalies are more reminiscent of structures and platforms found farther into Honduras.

The new archaeobotanical evidence we present here draws from analyses of bulk flotation samples and artifact residues, in which we identified food starches, phytoliths, and seeds. The macrobotanical residues in our study all come from flotation samples obtained from Site 5, and the microbotanical residues come from all three sites. In this section we also describe very
briefly the methods of microbotanical and macrobotanical recovery.

**Charred Remains of Food Residues**

The scan of Site 5 macrobotanical remains by Morell-Hart (2015c) yielded a wide assortment of botanical materials (Figure 2). A minimum of 42 species were identified in the samples from at least 22 different families (Supplemental Table 1), revealing diverse ethnobotanical practices including foodways. Even with the limitations of rapid scanning analysis, this range of botanical species demonstrates broad human–plant interactions in the Río Amarillo region, interactions not related wholly to cultivation and the use of domesticated species.

In terms of common crop plants, a great deal of maize was recovered from the light fraction samples, including both charred kernels and cupules; common domesticated beans were present in small quantities. There were no seeds or seed fragments consistent with cacao, chile peppers, or squash. In addition to the expected annual crop plants, several palm family (Arecaaceae) endocarp fragments were recovered, some likely from coyol and others from cohune. In terms of non-domesticated herbaceous species, catchfly (Silene sp.), goosefoot (Chenopodium sp.), passionflower (Passiflora sp.), false pennyroyal (Hedeoma sp.), goosegrass (Eleusine sp.), wood sorrel (Oxalis sp.), evening primrose (Oenothera sp.), and skullcap (Scutellaria sp.) were all recovered. Other taxa included plants in the families of amaranth, aster, bean, ceiba, borage, cotton, rose, morning glory, nightshades, poppy, grass (including foxtail, millet, and goosegrass genera), and mint (including false pennyroyal). Identified fruit species included nance, hogplum, wild grape, pin-cushion cactus, and ramon. This roster of economic species was amplified using methods to recover microbotanical residues.

**Microscopic Food Residues**

During the 2015 field season, microbotanical residues were extracted at the laboratory at Copan from 51 artifacts, including groundstone,
chipped-stone tools, and ceramic sherds representing a variety of vessel morphologies. These extractions resulted in a dataset of 153 samples, after taking a dry wash, wet wash, and sonicated wash sample from each artifact. The first and third washes identify material related to surrounding matrices and artifact use, respectively, whereas the second wash tracks the movement of material between the artifact and surrounding sediments. In the laboratory analyses, Morell-Hart (2015b) and Pugliese (2020) targeted plant residues including starches, phytoliths, and other botanical detritus. Here, we discuss findings from residue extractions of 22 of the 51 artifacts: four ceramic vessel sherds, a retouched chert flake, a machacador, five manos, two metates, seven obsidian blade fragments, an obsidian flake, and an obsidian microblade (Supplemental Table 2). We focus on evidence from the sonicated residues, because this is the material most likely associated with artifact use.

A minimum of 34 taxa from at least 12 identified families were revealed in these analyses (Figures 3–5). In terms of culinary ingredients, 12 artifacts yielded potential culinary taxa. These taxa include milpa annual crop plants (maize and beans), palm family species, non-domesticated plants with edible flowers (costus) and fruits (hackberry), and tentatively identified root and tuber foods (lerén, sweet potato, and achira). Two ceramic artifacts (#15 and #16),
an obsidian blade (#28), and a chert retouched flake (#51) yielded palm family phytoliths, taxa potentially overlapping with the cohune and coyol endocarp fragments noted in the macrobotanical scan. Tentatively identified edible root and tuber plants included lerén genus (*Calathea*...
Uses of Culinary Equipment

In terms of culinary equipment, there were some surprising results. One mano had the greatest variety of material (at least four distinct taxa) but few identifiable taxa and none of the expected culinary taxa, including maize. The metates, in contrast to the mano, yielded no identifiable starch grains or phytoliths, following a pattern one author (Morell-Hart) has noted at many other sites in southeastern Mesoamerica. This odd phenomenon is likely a taphonomic issue, caused by the frequent reuse of metates as building materials and the high porosity of the basalt and limestone used in making these grinding stones. The machacador (#3) yielded maize leaf phytoliths, likely related to the pounding of maize leaves for unknown reasons, perhaps medicinal, along with other Panicoideae subfamily leaf phytoliths.

Only three of the ceramic vessels sampled yielded potential culinary species. The small jar (cantaro, #12) contained maize, one bowl (cuenco, #15) contained palm phytoliths and potentially lerén, and the cylindrical vessel (#16) contained palm phytoliths and potential bean family starch grains. These vessels appeared more consistent with serving and preparation than with storage (vessels are generally larger) or cooking (they are generally scorched-
marked). The identified palm phytoliths originate in leaves, not fruits, so it is likely that the presence of palm in these vessels is related more to serving (basketry, etc.) or preparation (utensils, etc.) than direct consumption.

Chipped-stone tools on average yielded the largest number of identifiable microremains. Obsidian blades, as has been noted elsewhere (Morell-Hart et al. 2014, 2019), appeared to have the greatest variety of uses (Figures 3–5). A set of residues from one blade alone (#28) contained phytoliths from the palm and costus families, as well as starch grains from the bean family and maize. Maize starch was recovered from two other blades (#30, #32), likely indicating the fairly frequent use of blades in processing maize foodstuffs. These starch grains were both undamaged (#28, #30) and damaged (#32), probably indicating that people used these blades for processing both cooked (e.g., tamales) and uncooked (e.g., young corn) maize foods. A fourth obsidian blade (#29) contained only damaged starch grains, some from the bean family and one enormous starch grain likely from achira. The microbotanical evidence here points toward the use of this obsidian blade for processing cooked foods, perhaps cooked achira rhizomes and beans. The chert retouched flake (#51) appears to have been used only for palm leaf processing, given the phytoliths recovered, whereas the obsidian macroblade (#39) residues contained a tentatively identified maize starch grain.

**Cuisines at the Crossroads**

When we make side-by-side comparisons of northwestern Honduran sites, unsurprisingly the Río Amarillo area has a great deal in common with nearby Copan and some overlap with typical culinary practices at Ulúa Valley sites (Supplemental Table 2). All three areas show evidence of annual milpa crops of maize and beans, but residues of the chile peppers and squashes are found only at Copan and the Ulúa Valley sites and not in the Río Amarillo area. Cohune palm endocarps were recovered from both the Río Amarillo and Ulúa Valley sites. But no peach palm residues have appeared at the Río Amarillo area like those found at Copan, and coyol palm endocarps have only tentatively been identified during excavations in the Río Amarillo area (in this case, Site 5), in contrast to the Ulúa Valley locations where palm fruits were relatively abundant. In terms of root and tuber crops, manioc and arrowroot are both absent from the Río Amarillo area and Copan, and we have only one tentative identification of *lerén* thus far at Río Amarillo, whereas Ulúa Valley sites have evidence of all three. However, the Río Amarillo area does have sweet potato in common with Ulúa Valley sites and is the only site in the region with any evidence of achira.

In terms of other fruit species, we have evidence that Río Amarillo area residents enjoyed hogplums and wild grapes as they did at Copan but not in the Ulúa Valley. They also enjoyed cactus fruits and nances like the residents of Ulúa Valley sites but not of Copan. There is no evidence of papaya and scant evidence of custard apple in the Maya sites, unlike the Ulúa sites where both plants were found. Meanwhile, residents of Copan are thus far unique in the use of chayote squash and avocado. Ramon, like achira, represents a taxon unique to the Río Amarillo area. Cacao is so far absent in Río Amarillo sites, unlike the other two areas, but chemical signature or palynological analysis may change this picture as well. Hackberries appear to have been enjoyed across northwestern Honduras and were recovered from all these sites. Many other herbaceous species still await detailed identifications, but as with the other two areas the Río Amarillo area demonstrates extensive use of wild, managed, and fallow-dwelling taxa.

Almost all of the identified food plants were found in Classic Period deposits, whereas no taxa were present only in the Formative Period (Supplemental Table 2). Ramon and potentially achira were only recovered in Early Postclassic deposits and only in the Río Amarillo area. A few food plants are found across Formative, Classic, and Early Postclassic residues (common bean, maize, and palm fruits all from all three areas and possibly *lerén* and sweet potato).

Much work is still pending at Río Amarillo area sites in terms of microbotanical and macrobotanical analysis. The current picture of culinary ingredients may change after more artifact extractions have been analyzed and more...
flotation samples have been scanned. Even so, our comparison of plant ubiquities paints a picture of culinary practice that cannot be cleaved neatly into “Maya” and “non-Maya.” We see the overlap of rich food heritages and the sharing of food knowledge and plant species, indicating persistence in culinary traditions and the development of fusion foods. Our findings situate northwestern Honduras at a crossroads of culinary practices, between more western sites in the Maya heartland and more eastern sites in probable ancestral Lenca territories.

More broadly, we see northwestern Honduras situated at the intersection of culinary practices between Mesoamerican societies to the north and Central and South American societies to the south. Lerén, for example, is popular in northern South America but virtually unused in the heart of Mesoamerica. Its presence in northwestern Honduras may mark a sort of culinary boundary—though a boundary only for this foodstuff. In contrast, yam species—recovered at the Maya sites of Kiuic farther to the north (Simms 2014) and Chinikihá farther to the west (Trabanino García 2012a, 2012b)—have not been identified in any of the northwestern Honduras paleoethnobotanical records. Manioc, chile pepper, and maize—all crops noted at the northwestern Honduras sites—were identified at the site of Barillas in central Nicaragua (Ciofalo et al. 2020) and at Joya de Cerén in El Salvador (Farahani, Chiou, Harkey, et al. 2017). In this way, frontiers between culture regions appear blurred, and we see the culinary paths of plants as they make their way from the south northward and from the north southward. Some plants stop in northwestern Honduras, while others simply pass through.

Payson Sheets (2000), working at the site of Joya de Cerén in El Salvador, has described the movements of goods through different sorts of economies—vertical, village, and household. Julia Hendon (2020) identified great culinary overlap between the Ulúa and Copan areas in faunal resources; in the use of culinary equipment such as metates, manos, and obsidian blades; and in ceramic vessels, suggesting some of the movement of goods described by Sheets (2000). We find similar movements for the plants of northwestern Honduras, even though plants are generally less visible components of the archaeological record. As with durable artifacts, the movement and use of plants had to do with ideologies of the ruling class (Beliaev et al. 2010; McNeil 2010; Morehart et al. 2005; Stuart 2006), local dynamics (Fedick 2017; Guderjan et al. 2017; Lentz 1991; Lentz et al. 2014), and everyday household activities (Dedrick 2014; Farahani, Chiou, Cuthrell, et al. 2017; Farahani, Chiou, Harkey, et al. 2017; Simms 2014).

Alongside macroscale perspectives, through the microtransactions of the day to day—what was eaten and who shared it—we can trace parallel or intersecting relationships usually tracked through more durable goods such as obsidian, jade, and ceramics. “We only trust people who eat what we eat,” noted Rigoberta Menchú Tum to Elisabeth Burgos-Debray (1983:xvii). The sharing of foodstuffs, whether through trade, tribute, migration, or intermarriage, testifies to a set of culinary relationships that are not distant from politico-economic relations (Appadurai 1981, 1988). In ancient northwestern Honduras, people may have marked regional political affiliations and conflicts as much through expressions of food as through texts carved into stone and painted onto ceramic.

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Data Availability Statement. All primary data were generated by the authors or are available in published literature where referenced. The primary Río Amarillo data (tabular,
imagery) on which this article is based are held by the authors and are available to interested researchers on request to the lead author. Microbotanical residues were analyzed on disposable slides at the McMaster Paleoethnobotanical Research Facility. Macrobotanical residues are housed in the archaeology laboratory at Copán Ruinas, Honduras, and correspond with the PRARA and PARAC materials curated by project directors Cameron McNeil and Edy Barrios.

**Supplemental Materials.** To view supplemental material for this article, please visit [https://doi.org/10.1017/laq.2021.34](https://doi.org/10.1017/laq.2021.34). 

Supplemental Table 1. Taxa Identified in Scanned Macrobotanical Samples from Río Amarillo.

Supplemental Table 2. Microbotanical Samples from the Río Amarillo Area.

**References Cited**

Abramiuk, Marc A., Peter S. Dunham, Linda Scott Cummings, Chad Yost, and Todd J. Pesek. 2011 Linking Past and Present: A Preliminary Paleoethnobotanical Study of Maya Nutritional and Medicinal Plant Use and Sustainable Cultivation in the Southern Maya Mountains, Belize. *Ethnobotany Research and Applications* 9:257–273.

Appadurai, Arjun 1981 Gastro-Politics in Hindu South Asia. *American Ethnologist* 8:494–511.

1988 How to Make a National Cuisine: Cookbooks in Contemporary India. *Comparative Studies in Society and History* 30:3–24.

Barrios, Edy 2014 *Informe preliminar de investigaciones del proyecto rescate aeropista de Río Amarillo (PRARA), 1era. Fase. Investigaciones en el Sitio 29 de Río Amarillo (ARA–Río Blanco 01).* Report submitted to the Instituto Hondureño de Antropología e Historia (IHAH), Tegucigalpa, Honduras.

2015 *Informe preliminar de investigaciones del proyecto rescate aeropista de Río Amarillo (PRARA), 2da. Fase. Report submitted to the Instituto Hondureño de Antropología e Historia (IHAH), Tegucigalpa, Honduras.*

Beliaev, Dmitri, Albert Davletshin, and Alexandre Tokovinine 2010 Sweet Cacao and Sour Atole: Mixed Drinks on Classic Maya Ceramic Vases. In *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*, edited by John E. Staller and Michael D. Carrasco, pp. 257–272. Springer, New York.

Berman, Mary Jane, and Deborah M. Pearsall 2008 At the Crossroads: Starch Grain and Phytolith Analyses in Lucayan Prehistory. *Latin American Antiquity* 19:181–203.

Bloom, Paul R., Mary D. Pohl, Cynthia Buttleman, Frederick M. Wiseman, Alan Covich, Charles H. Miksicek, Joseph Ball, and Julie Stein 1983 Prehistoric Maya Wetland Agriculture and the Alluvial Soils Near San-Antonio Rio-Hondo, Belize. *Nature* 301:417–419.

Bozarth, Steven R., and Thomas H. Guderjan 2004 Bissilicate Analysis of Residue in Maya Dedicatory Cache Vessels from Blue Creek, Belize. *Journal of Archaeological Science* 31:205–215.

Bronson, Bennet 1966 Roots and the Subsistence of the Ancient Maya. *Southwestern Journal of Anthropology* 22:251–279.

Brumfiel, Elizabeth M. 1991 Weaving and Cooking: Women’s Production in Aztec Mexico. In *Engendering Archaeology: Women and Prehistory*, edited by Joan M. Gero and Margaret W. Conkey, pp. 224–251. Blackwell, Oxford.

Burgos-Debray, Elisabeth 1983 Editor’s Introduction. In *I, Rigoberta Menchu, an Indian Woman in Guatemala*, pp. xi–xxiii. Verso, London.

Butler, Judith 1997 *Excitable Speech: A Politics of the Performative*. Routledge, New York.

Cagnato, Clarissa, and Jocelyne M. Ponce 2017 Ancient Maya Manioc (*Manihot esculenta* Crantz) Consumption: Starch Grain Evidence from Late to Terminal Classic (8th–9th Century CE) Occupation at La Corona, Northwestern Petén, Guatemala. *Journal of Archaeological Science: Reports* 16:276–286.

Chacón Sánchez, María L., Barbara Pickersgill, and Daniel G. Debooch 2005 Domestication Patterns in Common Bean (*Phaseolus vulgaris* L.) and the Origin of the Mesoamerican and Andean Cultivated Races. *Theoretical and Applied Genetics* 110:432–444.

Chandler-Ezell, Karol, Deborah M. Pearsall, and Jason A. Zeidler 2006 Root and Tuber Phytoliths and Starch Grains Document Manioc (*Manihot esculenta* Arrowroot (*Maranta arundinacea*) and Llrén (*Calathea sp.*) at the Real Alto Site Ecuador. *Economic Botany* 60:103–120.

Cifolfo, Andy J., Natalia R. Donner, Corinne L. Hofman, and Alexander Geurds 2020 Uses of Pre-Hispanic Kitchenware from Central Nicaragua: Implications for Understanding Botanical Foodways. *Archaeological and Anthropological Sciences* 12:Article 13.

Clement, Charles R., Michelly de Cristo-Araújo, Geo Coppens D’Eeckenbrugge, Alessandro Alves Pereira, and Doriane Picanço-Rodrigues 2010 Origin and Domestication of Native Amazonian Crops. *Diversity* 2:72–106.

Cliff, Maynard B., and Cathy J. Crane 1989 Changing Subsistence Economy at a Late Preclassic Maya Community. In *Prehistoric Maya Economies of Northern Belize*, Research in Economic Anthropology Supplement Four, edited by Patricia A. McNaney and Barry L. Isaacs, pp. 295–324. JAI Press, Greenwich, Connecticut.

Crane, Cathy J. 1996 Archaeobotanical and Palynological Research at a Late Preclassic Maya Community, Cerros, Belize. In *The Managed Mosaic: Ancient Maya Agriculture and Resource Use*, edited by Scott L. Fedick, pp. 262–277. University of Utah Press, Salt Lake City.

Crown, Patricia L., and W. Jeffrey Hurst 2009 Evidence of Cacao Use in the Prehispanic American Southwest. *PNAS* 106:2110–2113.

de Certeau, Michel 1984 *The Practice of Everyday Life*. Translated by Steven Rendall. University of California Press, Berkeley.

Dedrick, Maia 2014 The Distributed Household: Plant and Mollusk Remains from K’axob, Belize. Master’s thesis,
Department of Anthropology, University of North Carolina, Chapel Hill.

Dussol, Lydie, Michelle Elliott, Grégory Pereira, and Dominique Michelet

2016 The Use of Firewood in Ancient Maya Funerary Rituals: A Case Study from Rio Bec (Campeche, Mexico). *Latin American Antiquity* 27:51–73.

Farahani, Alan, Katherine L. Chiou, Rob Q. Cuthrell, Anna Harkey, Shanti Morell-Hart, Christine A. Hastorf, and Payson D. Sheets

2017 Exploring Culinary Practices through GIS Modeling at Joya de Cérén, El Salvador. In *Social Perspectives on Ancient Lives from Paleoethnobotanical Data*, edited by Matthew P. Sayre and Maria C. Bruno, pp. 101–120. Springer, New York.

Goldstein, David J., and John B. Hageman

2009 Tikal Timbers and Temples: Ancient Maya Agroforestry and Starch Research in the Australian-Pacific-Asian Regions: The State of the Art: Papers from a Conference Held at the ANU, August 2001, Canberra, Australia, Vol. 19, edited by Diane M. Hart and Lynley A. Wallis, pp. 153–161. Pandanus Press, Australian National University, Canberra.

2006 An Archaeology of the Instant? Action and Narrative in Microscopic Archaeological Residue Analyses. *Journal of Social Archaeology* 6:402–424.

Hather, Jon G., and Norman Hammond

1994 Ancient Maya Subsistence Diversity: Root and Tuber Remains from Cuello, Belize. *Antiquity* 68:330–335.

Henderson, John S., and Rosemary A. Joyce

2006 Brewing Distinction: The Development of Cacao Beverages in Formative Mesoamerica. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 140–153. University Press of Florida, Gainesville.

Henderson, John S., Rosemary A. Joyce, Gretchen R. Hall, W. Jeffrey Hurst, and Patrick E. McGovern

2007 Chemical and Archaeological Evidence for the Earliest Cacao Beverages. *PNAS* 104:18937–18940.

Hendon, Julia A.

2010 *Houses in a Landscape: Memory and Everyday Life in Mesoamerica*. Duke University Press, Durham, North Carolina.

2020 Cuisine and Feasting in the Copán and Lower Uluá Valleys in Honduras. In *Her Cup for Sweet Cacao: Food in Ancient Maya Society*, edited by Traci Ardren, pp. 219–241. University of Texas Press, Austin.

Hufford, Matthew B., Enrique Martínez-Meyer, Brandon S. Gault, Luis E. Eguiarte, and Maud I. Tenaillon

2012 Inferences from the Historical Distribution of Wild and Domesticated Maize Provide Ecological and Evolutionary Insight. *PLoS ONE* 7(11):e47659.

Joyce, Rosemary A.

1988 The Uluá Valley and the Coastal Maya Lowlands: The View from Cerro Palenque. In *The Southeast Classic Maya Zone*, edited by Gordon R. Willey and Elizabeth Boone, pp. 269–295. Dumbarton Oaks, Washington, DC.

1991 *Cerro Palenque: Power and Identity on the Maya Periphery*. University of Texas Press, Austin.

Joyce, Rosemary A., and John S. Henderson

2010 Forming Mesoamerican Taste: Cacao Consumption in Formative Period Contexts. In *Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica*, edited by John E. Staller and Michael D. Carrasco, pp. 421–440. Springer, New York.

Lanes, Éder C. M., Sérgio Y. Motoike, Karolina A. Hastorf, and Renata D. Freitas

2014 Molecular Characterization and Population Structure of the Macaw Palm, *Acrocomia aculeata* (Arecaceae), ex situ Germplasm Collection Using Microsatellites Markers. *Journal of Heredity* 106:102–112.

Lentz, David L.

1991 Maya Diets of the Rich and Poor: Paleoethnobotanical Evidence from Copán. *Latin American Antiquity* 2:269–287.

1999 Plant Resources of the Ancient Maya: The Paleoethnobotanical Evidence. In *Reconstructing Ancient Maya Diet*, edited by Christine D. White, pp. 3–18. University of Utah Press, Salt Lake City.

Lentz, David L., and Brian Hochkaday

2009 Tikal Timbers and Temples: Ancient Maya Agroforestry and the End of Time. *Journal of Archaeological Science* 36:1342–1353.
Lentz, David L., Brian Lane, and Kim Thompson 2014 Food, Farming, and Forest Management at Aguacateca. In Life and Politics at the Royal Court of Aguacateca: Artifacts, Analytical Data, and Synthesis, edited by Takeshi Inomata and Daniela Triadan, pp. 201–215. University of Utah Press, Salt Lake City.

Lentz, David L., Carlos R. Ramirez, and Bronson W. Griscom 1997 Formative-Period Subsistence and Forest-Product Extraction at the Yanumela Site, Honduras. Ancient Mesoamerica 8:63–74.

Lentz, David L., Sally Woods, Angela Hood, and Marcus Murph 2012 Agroforestry and Agricultural Production of the Ancient Maya at the Chan Site. In Chan: An Ancient Maya Farming Community in Belize, edited by Cynthia Robin, pp. 89–112. University Press of Florida, Gainesville.

Lentz, David L., Jason Yaeger, Cynthia Robin, and Wendy Ashmore 2005 Pine, Prestige and Politics of the Late Classic Maya at Xunantunich, Belize. Antiquity 79:573–585.

Lombardo, Umberto, José Iriarte, Lautaro Hilbert, Javier Ruiz-Pérez, José M. Capriles, and Heinz Veit 2020 Early Holocene Crop Cultivation and Landscape Modification in Amazonia. Nature 581:190–193.

Lopiparo, Jeanne, Rosemary A. Joyce, and Julia A. Hendon 2005 Terminal Classic Pottery Production in the Ulua Valley, Honduras. In Geographies of Power: Understanding the Nature of Terminal Classic Pottery in the Maya Lowlands, edited by Sandra L. López Varela and Antonia E. Foias, pp. 107–119. BAR International Series 1447. Archaeopress, Oxford.

Martin, Franklin W., and Eugenio Cabanillas 1976 Leren (Calathea allotia), a Little Known Tuberous Root Crop of the Caribbean. Economic Botany 30:249–256.

Martínez, Analía, Verónica Lema, Aylen Capparelli, Carlos Bartoli, Fernando López Anido, and S. Iván Pérez 2018 Multidisciplinary Studies in Cucurbita maxima (Squash) Domestication. Vegetation History and Archaeobotany 27:207–217.

McKillop, Heather I. 1994 Ancient Maya Tree Cropping: A Viable Subsistence Adaptation for the Island Maya. Ancient Mesoamerica 5:129–140.

1996 Prehistoric Maya Use of Native Palms: Archaeobotanical and Ethnobotanical Evidence. In The Managed Mosaic: Ancient Maya Agriculture and Resource Use, edited by Scott L. Fedick, pp. 278–294. University of Utah Press, Salt Lake City.

McNeil, Cameron L. 2006 Maya Interactions with the Natural World: Landscape Transformation and Ritual Plant Use at Copan, Honduras. PhD dissertation, Department of Anthropology, City University of New York, New York.

2010 Death and Chocolate: The Significance of Cacao Offerings in Ancient Maya Tombs and Caches at Copan, Honduras. In Pre-Columbian Foodways: Interdisciplinary Approaches to Food, Culture, and Markets in Ancient Mesoamerica, edited by John E. Staller and Michael D. Carrasco, pp. 293–314. Springer, New York.

2012 Deforestation, Agroforestry, and Sustainable Land Management Practices among the Classic Period Maya. Quaternary International 249:19–30.

McNeil, Cameron L., and Edy Barrios 2012 Informe preliminar de la 1ra. temporada de investigaciones en Río Amarillo, Proyecto Arqueológico Río Amarillo-Copán (PARAC). Report submitted to the Instituto Hondureño de Antropología e Historia (IHAH), Tegucigalpa, Honduras.

2013 Informe preliminar de la 2da. temporada de investigaciones en Río Amarillo, Proyecto Arqueológico Río Amarillo-Copán (PARAC). Report submitted to the Instituto Hondureño de Antropología e Historia (IHAH), Tegucigalpa, Honduras.

2014 Informe preliminar de la 3ra. temporada de investigaciones en Río Amarillo, Proyecto Arqueológico Río Amarillo-Copán (PARAC). Report submitted to the Instituto Hondureño de Antropología e Historia (IHAH), Tegucigalpa, Honduras.

McNeil, Cameron L., David A. Burney, and Lida Pigott Burney 2010 Evidence Disputing Deforestation as the Cause for the Collapse of the Ancient Maya Polity of Copan, Honduras. PNAS 107:1017–1022.

Miksicek, Charles H. 1983 Macrofossil Remains of the Pulltrouser Area: Settlements and Fields. In Pulltrouser Swamp: Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize, edited by Billie L. Turner and Peter D. Harrison, pp. 94–104. University of Texas Press, Austin.

1991 The Natural and Cultural Landscape of Preclassic Cuello. In Cuello: An Early Maya Community in Belize, edited by Norman Hammond, pp. 70–84. Cambridge University Press, New York.

Morehart, Christopher T., and Noah Butler 2010 Ritual Exchange and the Fourth Obligation: Ancient Maya Food Offering and the Flexible Materiality of Ritual. Journal of the Royal Anthropological Institute 16:588–608.

Morehart, Christopher T., and Christophe G. B. Helmke 2008 Situating Power and Locating Knowledge: A Paleoethnobotanical Perspective on Late Classic Maya Gender and Social Relations. Archaeological Papers of the American Anthropological Association 18:60–75.

Morehart, Christopher T., David L. Lentz, and Keith M. Prufer 2005 Wood of the Gods: The Ritual Use of Pine (Pinus spp.) by the Ancient Lowland Maya. Latin American Antiquity 16:255–274.

Morell-Hart, Shanti 2011 Paradigms and Syntags of Ethnobotanical Practice in Pre-Hispanic Northwestern Honduras. PhD dissertation, Department of Anthropology, University of California, Berkeley.

2015a Paleoethnobotanical Analysis, Post-Processing. In Method and Theory in Paleoethnobotany, edited by Jade D’Alpoim Guedes, John M. Marston, and Christina Warinner, pp. 371–390. University Press of Colorado, Boulder.

2015b Proyecto Arqueológico Río Amarillo Copán (PARAC): 2015 Microbotanical Extractions from Artifacts. McMaster Paleoenthobotany Research Facility (MPERF), Hamilton, Ontario.

2015c Proyecto Arqueológico Río Amarillo Copán (PARAC): Macrobotanical Scan of 2011 Excavation Samples. McMaster Paleoenthobotany Research Facility (MPERF), Hamilton, Ontario.
2020a The Dish of Theseus. Semiotic Review: Intematerialities 4. https://www.semioticreview.com/ojs/index.php/sr/article/view/60/110, accessed June 1, 2021.

2020b Plant Foodstuffs of the Ancient Maya: Agents and Matter, Medium and Message. In Her Cup for Sweet Cacao: The Social Uses of Food in Ancient Maya Society, edited by Traci Ardren, pp. 124–160. University of Texas Press, Austin.

Morell-Hart, Shanti, Rosemary A. Joyce, and John S. Henderson
2014 Multi-Proxy Analysis of Plant Use at Formative Period Los Naranjos, Honduras. Latin American Antiquity 25:65–81.

Morell-Hart, Shanti, Rosemary A. Joyce, John S. Henderson, and Rachel Cane
2019 Ethnoeconomy in Pre-Hispanic Central America: Foodways and Human-Plant Interfaces. Ancient Mesoamerica 30:535–553.

Olsen, Kenneth M., and Barbara A. Schaal
2001 Microsatellite Variation in Cassava (Manihot esculenta, Euphorbiaceae) and Its Wild Relatives: Further Evidence for a Southern Amazonian Origin of Domestication. American Journal of Botany 88:131–142.

Pickersgill, Barbara
2007 Domestication of Plants in the Americas: Insights from Mendelian and Molecular Genetics. Annals of Botany 100:925–940.

2016 Domestication of Plants in Mesoamerica: An Archaeological Review with Some Ethnobotanical Interpretations. In Ethnobotany of Mexico: Interactions with People and Plants in Mesoamerica, edited by Rafael Lira, Alejandro Casas, and José Blancas, pp. 207–231. Springer, New York.

Piperno, Dolores R.
2011 The Origins of Plant Cultivation and Domestication in the New World Tropics: Patterns, Processes, and New Developments. Current Anthropology 52:453–470.

Piperno, Dolores R., Anthony J. Ranere, Irene Holst, Jose Iriarte, and Ruth Dickau
2009 Starch Grain and Phytolith Evidence for Early Ninth Millennium BP Maize from the Central Balsas River Valley, Mexico. PNAS 106:5019–5024.

Pohl, Mary D., Kevin O. Pope, John G. Jones, John S. Jacob, Dolores R. Piperno, Susan D. DeFrance, David L. Lentz, John A. Gifford, Marie E. Danforth, and J. Kathryn Josserand
1996 Early Agriculture in the Maya Lowlands. Latin American Antiquity 7:355–372.

Poot-Matu, José E., Dora Centurión Hidalgo, Judith Espinosa Moreno, Jaime G. Cázares Camero, and Martín A. Mijangos Cortés
2002 Rescate e identificación de raíces y tubérculos tropicales subexplotados del estado de Tabasco, México. Entomobiología 2(1):61–75.

Pugliese, Melanie
2020 Elucidating Foodways and Ethnobotany in Río Amarillo, Honduras from Artifact Residues. Bachelor’s thesis, Department of Biology, McMaster University, Hamilton, Ontario.

Reed, David M.
1994 Ancient Maya Diet at Copan, Honduras, as Determined through the Analysis of Stable Carbon and Nitrogen Isotopes. In Paleomammals: The Diet and Health of Prehistoric Americans, edited by Kristin D. Sobolik, pp. 210–221. Occasional Paper No. 22. Center for Archaeological Investigations, Southern Illinois University, Carbondale.

Roullier, Caroline, Anne Duputié, Paul Wennekes, Laure Benoit, Víctor Manuel Fernández Bringas, Genoveva Rossel, David Tay, Doyle McKey, and Vincent Lebot
2013 Disentangling the Origins of Cultivated Sweet Potato Ipomoea batatas (L.) Lam. PLoS ONE 8(5): e62707.

Rue, David J.
1989 Archaic Middle American Agriculture and Settlement: Recent Pollen Data from Honduras. Journal of Field Archaeology 16:177–184.

Rue, David J., David Webster, and Alfred Traverse
2002 Late Holocene Fire and Agriculture in the Copan Valley, Honduras. Ancient Mesoamerica 13:267–272.

Scheffler, Timothy E., Kenneth G. Hirth, and George Hasemann
2012 The El Gigante Rockshelter: Preliminary Observations on an Early to Late Holocene Occupation in Southern Honduras. Latin American Antiquity 23:597–610.

Sheets, Payson D.
2000 Provisioning the Cerén Household: The Vertical Economy, Village Economy, and Household Economy in the Southeastern Maya Periphery. Ancient Mesoamerica 11:217–230.

Sheets, Payson D., Christine Dixon, Mónica Guerra, and Adam Blanford
2011 Manioc Cultivation at Cerén, El Salvador: Occasional Kitchen Garden Plant or Staple Crop? Ancient Mesoamerica 22:1–11.

Sheets, Payson D., David L. Lentz, Dolores R. Piperno, John Jones, Christine C. Dixon, George Maloof, and Angela Hood
2012 Ancient Manioc Agriculture South of the Cerén Village, El Salvador. Latin American Antiquity 23:259–281.

Sheptak, Russell N.
2019 Moving Masca: Persistent Indigenous Communities in Spanish Colonial Honduras. In Indigenous Persistence in the Colonized Americas: Material and Documentary Perspectives on Entanglement, edited by Heather Law Pezzarosi and Russell N. Sheptak, pp. 19–38. University of New Mexico Press, Albuquerque.

Siegel, Peter E., John G. Jones, Deborah M. Pearsall, Nicholas P. Dunning, Pat Farrell, Neil A. Duncan, Jason H. Curtis, and Sushant K. Singh
2015 Paleoenvironmental Evidence for First Human Colonization of the Eastern Caribbean. Quaternary Science Reviews 129:275–295.

Simms, Stephanie R.
2014 Prehispanic Maya Foodways: Archaeological and Microbotanical Evidence from Escalera al Cielo, Yucatan, Mexico. PhD dissertation, Department of Anthropology, Boston University, Boston.

Simms, Stephanie R., Francesco Berra, and George J. Bey
2013 A Prehistoric Maya Pit Oven? Microanalysis of Fired Clay Balls from the Puuc Region, Yucatan, Mexico. Journal of Archaeological Science 40:1144–1157.

Smalley, John, Michael Blake, Sergio J. Chavez, Warren R. DeBoer, Mary W. Eubanks, Kristen J. Gremillion, M. Anne Katzenberg, Augusto Oyuela-Caycedo, Deborah M. Pearsall, and Dolores R. Piperno
2003 Sweet Beginnings: Stalk Sugar and the Domestication of Maize. Current Anthropology 44:675–703.
Storey, Rebecca
1999 Late Classic Nutrition and Skeletal Indicators at Copán, Honduras. In *Reconstructing Ancient Maya Diet*, edited by Christine D. White, pp. 169–182. University of Utah Press, Salt Lake City.

Stuart, David
2006 The Language of Chocolate: References to Cacao on Classic Maya Drinking Vessels. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeill, pp. 184–201. University Press of Florida, Gainesville.

Trabanino García, Felipe
2008 Vegetación y ruinas mayas: Evidencias paleoetnobotánicas de la pirámide La Danta, en el Clásico Tardío Terminal (850–1000 DC). El Mirador, Petén, Guatemala. Informe final, SRE–MEXICO and SEGEPLAN GUATEMALA, Beca Estancia de Investigación 2008-2009. Proyecto Arqueológico Cuenca Mirador—FARES. Estancia de Investigación: Laboratorio de Paleoetnobotánica y Paleoambiente Instituto de Investigaciones Antropológicas UNAM–MEXICO.

2012a Sistema de manejo del bosque tropical en Chinihá a través de la etnoecología y la paleoetnobotánica. In *XXV Simposio de investigaciones arqueológicas en Guatemala*, edited by Barbara Arroyo, Lorena Paiz Aragón, and Hector E. Mejía, pp. 798–804. Ministerio de Cultura y Deportes, Instituto de Antropología e Historia y Asociación Tikal, Guatemala City.

2012b Paleoetnobotánica y paleoambiente. In *Informe, cuarta temporada, Proyecto Arqueológico Chinihá, 2011*, edited by Rodrigo Liendo Stuardo, pp. 225–238. Instituto Nacional de Antropología e Historia, Mexico City.

Trabanino García, Felipe, and Luis Fernando Núñez
2013 Guadua como elemento mortuorio en sepulturas mayas. *Boletín de Antropología* 29(48):144–163.

Turner, Billie L., and Charles H. Miksicek
1984 Economic Plant-Species Associated with Prehistoric Agriculture in the Maya Lowlands. *Economic Botany* 38:179–193.

Ugent, Donald, Shelia Pozorski, and Thomas Pozorski
1984 New Evidence for Ancient Cultivation of *Canna edulis* in Peru. *Economic Botany* 38:417–432.

Webster, David L., Bruce F. Benz, Michael Blake, Richard Leslie, Emily McClung de Tapia, Payson Sheets, and Carl J. Wendt
2011 Backward Bottlenecks: Ancient Teosinte/Maize Selection. *Current Anthropology* 52:77–104.

Webster, David, AnnCorinne Freter, and Nancy Gonlin
2000 *Copán: The Rise and Fall of an Ancient Maya Kingdom*. Harcourt, Orlando, Florida.

Whittington, Stephen L.
1999 Caries and Antemortem Tooth Loss at Copan: Implications for Commoner Diet. In *Reconstructing Ancient Maya Diet*, edited by Christine D. White, pp. 151–168. University of Utah Press, Salt Lake City.

Whittington, Stephen L., and David M. Reed
1997 Commoner Diet at Copan: Insights from Stable Isotopes and Porotic Hyperostosis. In *Bones of the Maya: Studies of Ancient Skeletons*, edited by Stephen L. Whittington and David M. Reed, pp. 157–170. University of Alabama Press, Tuscaloosa.

Willey, Gordon R., and Richard M. Leventhal
1979 Prehistoric Settlement at Copán. In *Maya Archaeology and Ethnohistory*, edited by Norman Hammond, pp. 57–102. University of Texas Press, Austin.

Wyatt, Andrew R.
2008 Pine as an Element of Household Refuse in the Fertilization of Ancient Maya Agricultural Fields. *Journal of Ethnobiology* 28:244–258.

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