

Sacred Giants: Depiction of Bombacoideae on Maya Ceramics in Mexico, Guatemala, and Belize¹

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Sacred Giants: Depiction of the Malvaceae Subfamily Bombacoideae on Maya Ceramics in Mexico, Guatemala, and Belize This study categorized and identified plants depicted on Maya ceramics from the Classic Period (250 A.D.–900 A.D.). We chose art objects with a predominance of iconographic images of Malvaceae subfamily Bombacoideae, which are easily identified morphologically and have culinary, medicinal, ceremonial, economic, and cosmological significance to the Maya. Among ten species of Bombacoideae native to the Southern Lowlands region of Central America (Belize, parts of Guatemala, and Mexico), the Maya utilized at least six, which also have Maya names. We observed four or five bombacoid species depicted on Maya ceramics; most images were identifiable to genus. Burial urns and incensarios (incense burners) commonly had images of trunk spines of *Ceiba pentandra*, the Maya "World Tree." Flowers of *Pseudobombax ellipticum*, a plant used to make ceremonial beverages, were most similar to floral images portrayed on vessels, bowls, and plates, although the morphologically similar flowers of *Pachira aquatica* may also be depicted. Plants representing *Quararibea funebris* or *Q. guatemalteca*, which were used during preparation of cacao beverages, were discernable on drinking vessels.

Key Words: Malvaceae, Bombacoideae, Bombacaceae, bombac, bombacs, ceiba, ancient Maya, Maya.

Introduction

The interpretation of ceramics, including glyphs and figural depictions, has been at the forefront of Maya scholarship for decades (Reents-Budet 1994). Little from the Maya culture remains to enlighten modern Maya scholars to the life of this pre-Columbian culture because Spanish religious zealots burned most Maya codices (texts) as anti-Christian doctrine in the 1500s. Archaeologists and epigraphers have used stone stelae, architectural carvings, and ceramics to learn more of their political structure, religion, language, and use of natural resources.

Plants were significant to the Maya culturally, ritualistically, economically, and ecologically

(FLAAR 2008; Marcus 1982; Schlesinger 2001). Painted and sculpted images of whole plants, leaves, fruits, and flowers were represented on many Maya artifacts (Schele and Freidel 1990). For example, in Classic Maya art and writing, there is strong support for the identification of the breath soul with flowers; the Ahau glyph (= lord, flower, sun) appears commonly with depictions of flowers (Houston and Taube 2000). Plants depicted commonly on Maya ceramics include cacao, corn, calabashes, and water lilies; vessels also were made in the likeness of squash and gourds (Schele and Freidel 1990). We documented images of Malvaceae subfamily Bombacoideae (Angiosperm Phylogeny Group 2003) because of their relative ease of identification, inferred importance to the Maya, and known importance to the Maya in modern times (Schele and Freidel 1990). Botanical motifs on ancient Maya monochrome (black and white) and

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polychrome (multi-colored) ceramics, censurs, and burial urns have been observed (e.g., FLAAR 2008) but discussed minimally, despite common depictions of flowers and trunk spines of the ceiba tree (*Ceiba pentandra*) and other bombacoids (Bassie-Sweet 1991; Grube 2001; Sharer 1996).

This study focuses on the southern lowland region of the Maya, located in the modern countries of Belize, Guatemala, and Mexico (Fig. 1). Table 1 shows ten Bombacoideae species that are native to this region (Standley 1923, 1930; Standley and Steyermark 1949; Breedlove 1986; Balick et al. 2000). As also seen in Table 1, they represent the following six genera: *Bernoullia*

Oliv. (1 species), *Ceiba* Mill. (2 species), *Ochroma* Swartz (1 species), *Pachira* Aubl. (1 species), *Pseudobombax* Dugand (2 species), and *Quararibea* Aubl. (3 species). Several species are ecologically significant and are utilized economically in the region (Balick et al. 2000). Ceiba trees (*Ceiba pentandra*, *C. aesculifolia*) visually dominate many forests of Central America (Lentz et al. 1996) and are among the largest in the Mesoamerican wet forests. Provision trees (*Pachira aquatica*) are abundant in wetland habitats and often dominate in shallow open swamps (Standley and Steyermark 1949). Pollen and larger botanical remains of bombacoids have been identified from archaeolog-

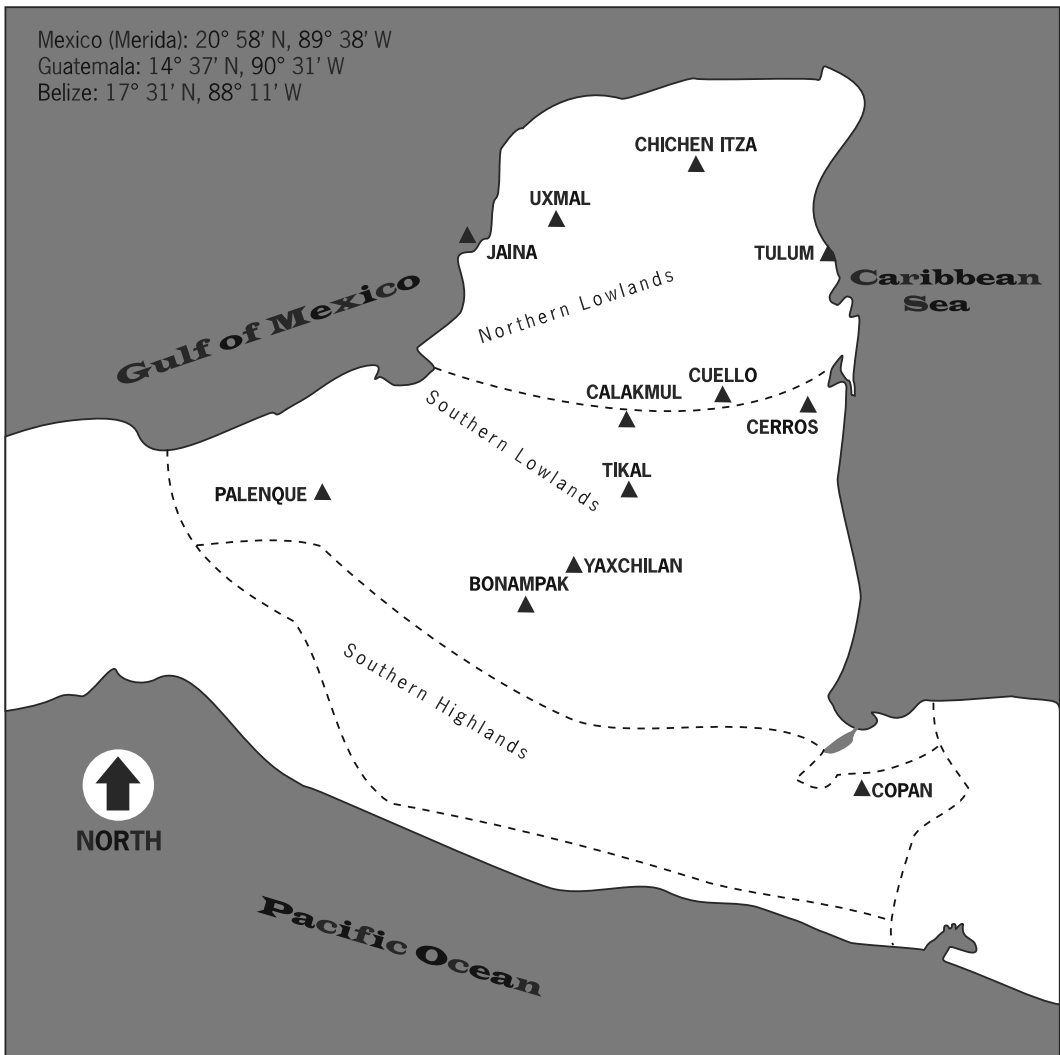


Fig. 1. Map of the Maya World and the southern lowland region of Mexico, Guatemala, and Belize.

TABLE 1. ETHNOBOTANICAL USE, GEOGRAPHIC RANGE, AND NAMES OF NATIVE SPECIES OF BOMBACOIDEAE OCCURRING IN THE LOWLANDS REGION OF MEXICO, GUATEMALA, AND BELIZE.¹

Scientific Name	Common Name(s)	Mayan Name(s)	Geographic Range	Mayan Utilization	Plant Part Used
<i>Bernoullia flammea</i> Oliv.	Locust tree, pojote, amapola, mapola	Uakuz, Uacut	Mexico to Costa Rica	Manufactures Food	Wood, for canoes Seed
<i>Ceiba aesculifolia</i> (H.B. K.) Britton & Baker f.	Pochote	<i>Pim, Choo</i>	Mexico to Costa Rica	Manufactures: fiber Food Also: medicine	Wood Immature fruit Seed
<i>Ceiba pentandra</i> (L.) Gaertn.	Ceiba tree, silk cotton tree, kapok, inup	<i>Ya'axche'</i> - "green tree" or <i>yáaxche'</i> - "first tree"	Mexico to Peru	Manufactures: cloth, stuffing Food Also: ritual, fuel, medicine, oil and construction	Wood Leaves Seed fibers Seed oil
<i>Ochroma pyramidale</i> (Cav. ex Lam.) Urb.	Balsa, polak	n/a	Mexico to Bolivia	Manufactures Also: medicine and construction	Wood Seed fibers
<i>Pachira aquatica</i> Aubl.	Provision tree, provision bark, santo domingo, sapote bobo, uacut, zapote bobo, zapoton	Cuyche, Zapotebobo	Mexico to Brazil	Food Also: medicine, dye, construction	Leaves Seed Immature bark Immature fruit
<i>Pseudobombax ellipticoideum</i> A. Robyns	n/a	n/a	Belize, Guatemala	Construction, medicine, fuel, other products	n/a
<i>Pseudobombax ellipticum</i> (H.B.K.) Dugand	Anapolla tree, shaving brush tree	<i>Chuliz, Mapola</i> <i>Zacucyche, Chacucyche, Cuyche, Kux che'</i>	Mexico to Nicaragua, West Indies	Beverage (intoxicating drink) Floral ornament	Sap Flowers
<i>Quararibea funebris</i> (La Llave) Vischer	Flor de cacao, madre de cacao	Used as <i>Q. guatemalteca?</i>	Mexico to Costa Rica	Similar to <i>Q. guatemalteca?</i>	Similar to <i>Q. guatemalteca?</i>
<i>Quararibea guatemalteca</i> (Donn. Sm.) Standl. & Steyerl.	Bass, bastidos, batidos, cincho, coco mama, swivel stick tree, swizzle stick tree	<i>Huyu</i>	Mexico to Honduras	Food Also: construction, rituals, other products	Branches Flowers used as a spice with cacao and for cacao frothers
<i>Quararibea yunkerii</i> Standl.	Black oak	n/a	Belize to Honduras	n/a	n/a

¹ n/a= no data known.

ical studies using flotation techniques at a variety of ancient Maya sites including Cerros and Cuello, both in Belize (Hammond and Miksicek 1981). Excavated bombacoid pollen has been dated to 1,000 years BP (Crane 1996), which supports the purported long history of human usage in the region.

The bombacoids represent a lineage of trees that are diverse in the Neotropics and are characterized by swollen and/or spiny trunks (Fig. 2a), alternate leaves that are simple or

palmately compound, conspicuous (up to 35 centimeters long) radially symmetrical flowers with few to many stamens (Figs. 3a,b and 4d), and capsules (Fig. 4e) containing one to many seeds often enveloped in silky endocarp hairs (Kubitzki and Bayer 2003; Smith et al. 2004). *Ceiba* and *Pachira* are New World genera that have trunk spines when young, but often lose them as they age (Gentry 1993; Kubitzki and Bayer 2003). Flowers typically have five sepals and five petals that often curl back revealing

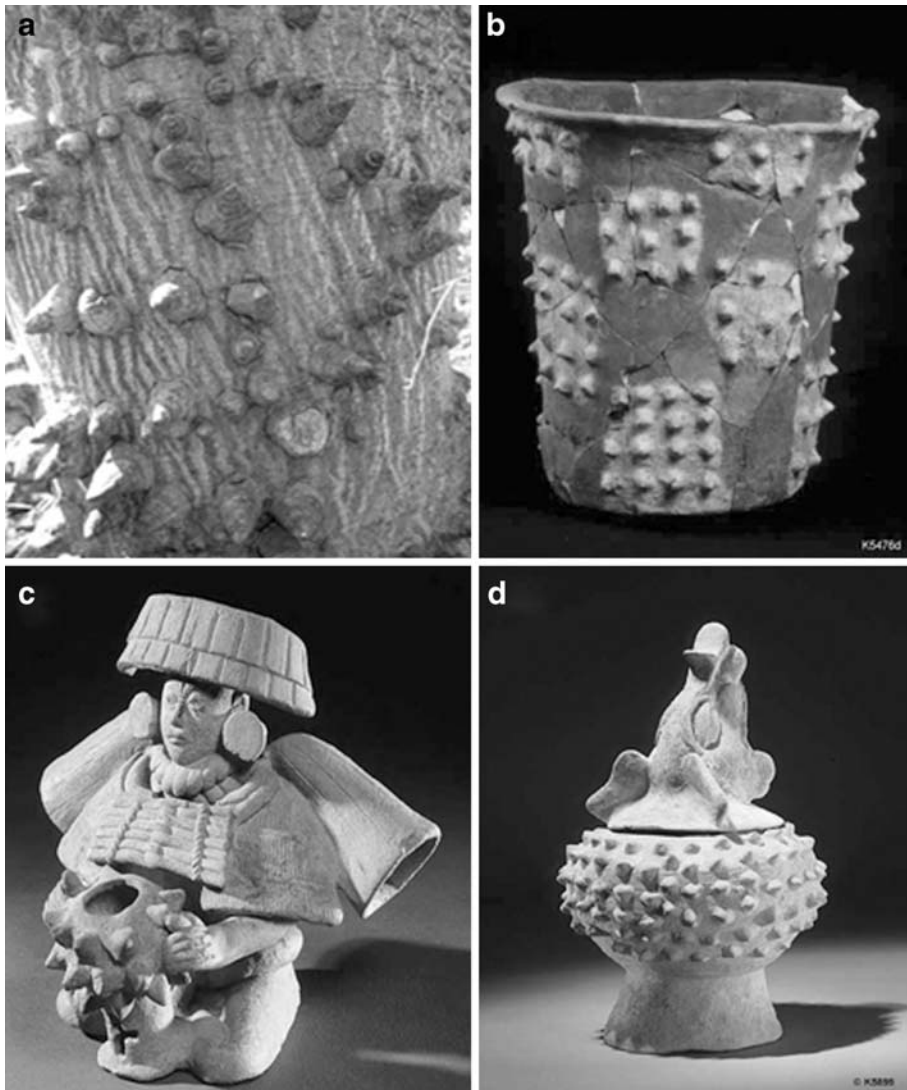


Fig. 2. Depictions of trunk spines of Bombacoideae on Maya ceramics. a. Trunk spines of *Ceiba pentandra*; Photo by Charles Zidar. b. Copan incensario (K-5476d). c. Seated figure with cape incensario (K-6479). d. Peccary incensario (K-5899). Photographs 2B–D courtesy of Justin & Barbara Kerr (FAMSI 2008).

stamens that number from 5 to more than 1,000 and many times have colored filaments. Petals are showy and often large; corollas are colored white, pink, red, yellow, orange, and purple (Smith et al. 2004). Trees of wet forests are characteristically evergreen, whereas those of drier forests are deciduous. *Ceiba* trees reach their flowering peak in January in Chiapas (Mexico)

and Guatemala, whereas many other bombacoids peak in April in this region (Freidel et al. 1993; Lobo et al. 2003). Pollinators are diverse and include bats, hummingbirds, bees, hawkmoths, and nonflying mammals (Smith et al. 2004). Animals appear often with depictions of bombacoid-like flowers on Maya ceramics (FAMSI 2008).

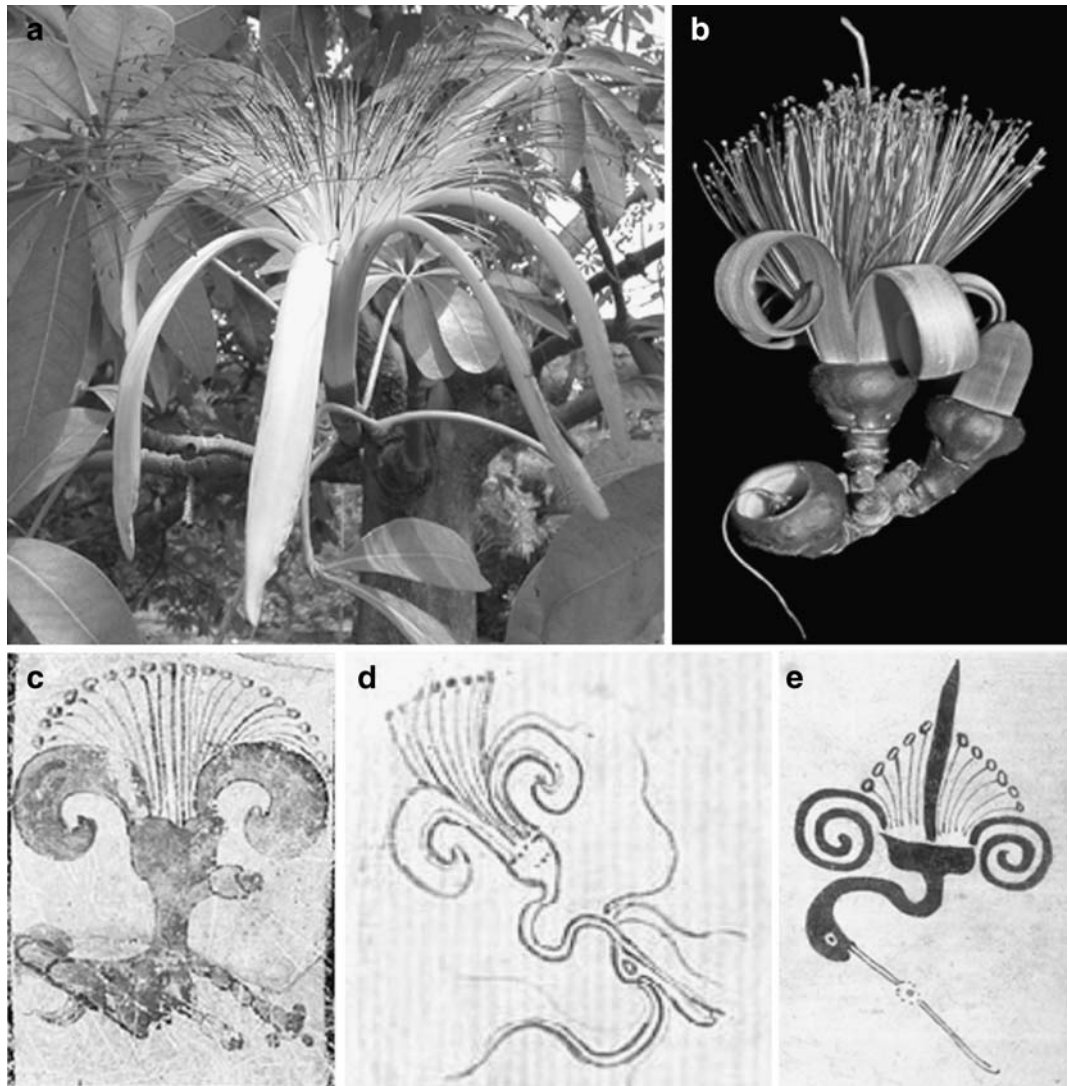


Fig. 3. Depictions of flowers of Bombacoideae on Maya ceramics. a. Flower of *Pachira aquatica* (courtesy of D. W. Stevenson). b. Flower of *Pseudobombax ellipticum* (courtesy of G. D. Carr). c. Bombacoid flower depicted on a ceramic cacao pot with corn god Yum Ka'ax opposite flower (courtesy of FLAAR, Nicolas Hellmuth). d. Bombacoid flower represented on a black and white ceramic plate (K-4669). Note crane depicted opposite flower. e. Bombacoid flower represented on a polychrome vessel (K-7610). Note hummingbird depicted opposite flower. Photographs 3D-E courtesy of Justin & Barbara Kerr (FAMSI 2008).



Fig. 4. Depictions of flowers, seeds, and endocarp hairs of Bombacoideae on Maya ceramics. a. Floral image of species of *Quararibea* (*Q. guatemalteca* or *Q. funebris*) on a cylindrical vessel used for sacred chocolate drink ingested by ancient Maya elite (K-6641). b. Bombacoid-like flower associated with a Maya headdress of an elite male depicted on a cylindrical cacao pot (K-2345). c. Flower of *Quararibea* sp. (courtesy of G. D. Carr). d. Flower of *Pseudobombax ellipticum* (courtesy of K. C. Nixon). e. Dehiscent fruit and seed with fibers (kapok) of *Ceiba pentandra*. Photo by Charles Zidar. f. Polychrome image on a cylindrical cacao pot depicting a palace scene with kneeling pads stuffed with kapok (K-5456). Photographs 4A–B, 4F courtesy of Justin & Barbara Kerr (FAMSI 2008).

The primary goals of this study were to examine ceramic iconography to identify depictions of plants in the subfamily Bombacoideae and to elucidate their cultural significance to the Maya people of the Classic Period (250 A.D.–900 A.D.). Ceramics were an integral part of Maya daily and ceremonial life and had various forms and uses. Ornamentation of ceramics was provided by sculpting, appliqué (the application of decorative items), or painting. Incensarios and burial urns took the form of large cylinders. Cylinders, bowls, and plates were the three main forms for smaller ceramics. A cylinder was used to hold cacao drinks, bowls often held corn (atole/pozole), and plates usually held tamales (Reents-Budet 1994). Monochrome ceramics were found typically on everyday wares, whereas polychrome ceramics were used primarily for ceremonial and ritualistic purposes (Reents-Budet 1994). Handles, tripods, or additional types of ornamentation were provided by appliqué and sculpting.

Materials and Methods

We identified plant images on Maya ceramics as bombacoids based on their distinctive morphological features such as palmately compound leaves, trunk spines, five-parted flowers with recurved petals, and numerous stamens. When the depictions were naturalistic, we identified the genus of the plants by comparing the depictions to published plant descriptions (e.g., Kubitzki and Bayer 2003; Standley 1930), illustrations, and/or images (e.g., USDA/NRCS 2008 and the University of Hawaii Botany Department Plant Families Image Gallery [University of Hawaii at Manoa 2008]). We examined preserved plant specimens at the herbaria of the University of Michigan, the Missouri Botanical Garden, and the University of Oklahoma. Living plants native to the Maya southern lowland region were examined at Fairchild Tropical Gardens in Miami (Florida), the Fruit and Spice Park in Homestead (Florida), and the National Botanic Garden in Washington, D.C.

We based the determination of species native to the southern lowland region of the Maya on floristic and taxonomic treatments (Arvigo and Balick 1998; Balick et al. 2000; Lentz et al. 1996; Schlesinger 2001; Standley 1923; Standley and Steyermark 1949). Scientific names followed the International Plants Names Index (IPNI 2008); determination of synonymy was aided by TROPICOS (Tropicos.org 2008). Determination of

Bombacoideae and other plants used historically by the Maya were obtained from various sources. Archaeo-palynological studies have been conducted in Belize (Fedick 1996). Modern Maya plant usage has been inferred with the assistance of Maya healers in the region by Arvigo and Balick (1998).

The primary source for locating plant images of Maya ceramics was the Justin and Barbara Kerr image collection that is available on the Web site of the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI 2008) and the Web site of the Foundation for Latin American Anthropological Research (FLAAR 2008). The Kerr collection contains the largest collection of ceramic images accessible to scholars and contains Mr. Kerr's rollout photos, which captured continuous and complete Maya scenes painted on cylindrical vessels. We also consulted additional sources in the search for bombacoid images (e.g., Schele and Miller 1986; Schmidt et al. 1998). Approximately 2,638 images were examined for depictions of Bombacoideae on Maya ceramics.

Results and Discussion

The Maya used seven of the ten species of Bombacoideae native to the southern lowland region (Table 1). We list Maya names for six of the seven species; it is uncertain whether the Maya distinguished between *Q. funebris* and *Q. guatemalteca*. We observed species from four genera represented on Maya ceramics: *Ceiba pentandra*, *Pachira aquatica*, *Pseudobombax ellipticum*, and *Quararibea guatemalteca* or *Q. funebris*. Representations of *Bernoullia flammea*, *Ceiba aesculifolia*, and *Ochroma pyramidale* were not observed on our sampling of Maya ceramics. It is not known whether *Pseudobombax ellipticoideum* or *Quararibea yunckeri* were used or distinguished by the Maya.

Depictions of tree forms, trunk spines, and flowers were represented most often (Figs. 2, 3 and 4a–d), with images of silky fruit hairs depicted infrequently (Fig. 4e–f). While we did not observe representations of bombacoid leaves and fruits, we noted some fruit depictions (e.g., FAMSI 2008, Kerr Collection K-1226, K-4546) that appeared to be similar to those of Bombacoideae, but most likely represented the indehiscent fruits of the Calabash tree (*Crescentia cujete* L., Bignoniaceae). Trunk spines were depicted by appliqué and were observed on

incensarios and burial urns (Fig. 2b–d). Depictions of flowers were painted on cylindrical vessels, bowls, and plates (Figs. 3c–e and 4a,b). Sculpted representations of Bombacoideae were not observed. Portrayal of the ceiba tree (*Ceiba pentandra*) was the most common followed by images of the shaving brush tree (*Pseudobombax ellipticum*) or the provision tree (*Pachira aquatica*); depictions of the swizzle stick tree (*Quararibea guatemalteca* or *Q. funebris*) were infrequent.

SPECIES OF BOMBACOIDEAE DEPICTED
ON MAYA CERAMICS

Ceiba pentandra (Silk Cotton or Kapok Tree)

Ceiba trees can attain 50 meters (m) in height and are characterized by large buttress, swollen trunks, spreading crowns, stout spines on trunks and branches, and palmately compound leaves with five to seven leaflets. The flowers of *C. pentandra* are abundant on mature trees, but are inconspicuous with comparatively small petals (≤ 3.5 centimeters long) and only five stamens. No depictions of flowers were observed of *C. pentandra* nor of *C. aesculifolia*, which also has flowers with few stamens but with larger petals that are up to 16 centimeters (cm) long. Fruits of *C. pentandra* are elliptic in shape and up to 12 cm in length; they contain large brown seeds enveloped in silky hairs (Fig. 4e,f) that were used by the Maya for stuffing pillows and cushions (Schlesinger 2001).

To the Maya, the ceiba (*yaxche*) was a sacred tree that mapped out the upper, middle, and underworlds, represented the five directions, and stood in the exact center of the Earth (Thompson 1970). The ceiba tree was the “World Tree” (*Ya’axche*, “green tree,” or “first tree”) (Schele and Mathews 1998). Representations of the ceiba tree as a “cross-like” image (e.g., Temple of the Cross of Palenque) were common on sculpted elements such as palace walls, stelae, and sarcophagus lids (Grube 2001; Schele and Mathews 1998). The stylized cross-like form of the ceiba tree appeared infrequently on ceramics.

In contrast to the paucity of representations of the ceiba growth form, trunk spines were depicted commonly on ceramic incensarios and burial urns (Schele and Mathews 1998). The ceiba was associated with creation myths as well as with rituals and beliefs concerning death: Its roots connected the underworld (home of the nine gods of sorrow and pain) to the middle (human) world

and the upper world (home of 13 benevolent gods) where the dead could climb its trunk and branches to the highest sky (Thompson 1970; Schlesinger 2001). The ceiba tree is still held in high regard in the southern lowland region by indigenous people who often leave ceiba trees unharmed when forest wood is harvested and areas are otherwise clearcut (Schele and Freidel 1990). The ceiba is used in present-day festivals and ceremonies throughout Central America (Freidel et al. 1993; Schlesinger 2001; Williams 1981).

Pachira aquatica (Provision Tree)

The provision tree or Guiana chestnut also has trunk spines and is common in wetland habitats in the southern lowland region. A tea can be made from the bark (Arvigo and Balick 1998) and its large seeds, which often exceed 2 cm in diameter, are edible after roasting (Standley 1923). Even though *P. aquatica* shares palmately compound leaves with five to eight leaflets with regional species in *Ceiba* and *Pseudobombax*, the fruits and flowers of *P. aquatica* are distinctive in the southern lowlands, because of their large size (fruits and petals to 30 cm long), numerous stamens (to several hundred; Fig. 3a), and recurved greenish to yellowish petals at anthesis. In Belize, Arvigo and Balick (1998) reported that the provision tree was used as a food source during times of drought or crop failure as well as for its medicinal uses for blood disorders, kidney pain, anemia, and low blood pressure. We observed several images of bombacoid flowers on Maya ceramics that had recurved petals and numerous stamens resembling those of *P. aquatica* (e.g., Fig. 3c–e).

Pseudobombax ellipticum (Amapolla or Shaving Brush Tree)

This species lacks trunk spines but has palmately compound leaves with five to seven leaflets as do the regional species of *Ceiba* and *Pachira*. The large fruits (10 to 12 cm long) produce small seeds enveloped in silky hairs as in *Ceiba*. The flowers of *Pseudobombax ellipticum* have hundreds of stamens and five petals that are large (7 to 13 cm long) and recurved at anthesis (Figs. 3b and 4d). Although smaller, the flowers of *P. ellipticum* are similar in overall appearance but more colorful compared to those of *Pachira aquatica*. The showy white or pink-to-red

flowers of *P. ellipticum* are used commonly for ornament in Mexico and Guatemala (Standley 1923; Standley and Steyermark 1949) where they are esteemed for their beauty (Fig. 4d) and where there is a long history of medicinal and ornamental usage. Standley (1923) noted that *P. ellipticum* (synonym *Bombax ellipticum* H.B. & K.) was most likely the tree described and illustrated by Francisco Hernandez as Tlaxoxiloxochitl or Xiloxochitl (flor barbada) in his Thesaurus (Hernández and Ximénez 1615, F. 68).

For the Maya, the amapolla or shaving brush tree was used to make an intoxicating drink in religious ceremonies such as those for sacrifice and self-mutilation (Flannery 1982). Sap was drained from the tree and fermented to make the drink. Because of their large size and history of ceremonial and ornamental usage, the flowers depicted on plates and vessels in Figs. 3c–e and 4b most likely represented *P. ellipticum*.

Quararibea guatemalteca and *Q. funebris*
(*Flor de Cacao, Swizzle Stick Tree*)

The three species of *Quararibea* occurring in the southern lowlands region are trees or shrubs without trunk spines and are characterized by simple leaves, which distinguish them easily from the palmately compound leaves found among species in *Ceiba*, *Pachira*, and *Pseudobombax*. Flowers of *Quararibea* spp. are differentiated readily from these latter genera by their smaller size (white recurved petals less than 5 cm long) and stamens numbering 10 or 15 and united into an elongated staminal tube (Fig. 4c). Species of *Quararibea* are often differentiated by ovary locule number and leaf pubescence type—characters that may not have been significant to the Maya. Consequently, there has been some confusion in the literature concerning what species occur in this region (e.g., Standley and Steyermark 1949; Balick et al. 2000) and what species were used by the Maya.

Flowers from both *Q. funebris* and *Q. guatemalteca* are used to flavor beverages made from cacao (Standley 1923; Standley and Steyermark 1949). Species in this genus also were important to the Maya; flowers were used as a spice in preparation of the sacred cacao drink and branches were used as stirring/frothing sticks to prepare the libation (Flannery 1982). Figure 4a portrays images from a vessel used for cacao beverages that depict flowers with recurved petals

and an elongate staminal column with comparatively few stamens similar to species of *Quararibea*. Because *Quararibea* spp. were used twice in preparation of the Maya cacao beverage, their representation on the vessel appears appropriate.

PLANT PARTS OF BOMBACOIDEAE DEPICTED
ON MAYA CERAMICS

Trunk Spines

Trunk spines (Fig. 2a) are depicted on Maya incensarios or censos (incense burners), burial urns, and other ceramics (Fig. 2b–d). Spines are commonly present on smaller trunks and branches of three species found in the Maya lowland region: *Ceiba pentandra*, *C. aesculifolia*, and *Pachira aquatica*. Of these three species, *C. pentandra* has much cultural significance to the Maya and is associated with cosmological beliefs. Bombacoid trunk spines have a distinct cone shape, which distinguishes them from spines of other woody plants growing in the region. *Ceiba* trunk spines are the closest morphological match to the protuberances commonly found on Maya ceramics. Trunk spines are represented most often as appliquéd decoration on unpainted or simply painted ceramics such as burial urns and incensarios (Fig. 2b–d) that are associated with Maya rituals of death and sacrifice. Vessels with spikes or “spines” are associated commonly with animals (Fig. 2d); lords and gods also appear on these ceramics (Fig. 2c).

Flowers

Bombacoid flowers are depicted commonly on ancient Maya monochrome and polychrome ceramics such as cacao pots and laks (= hawte’), which are plates used to hold tamales. Vessels depicting flowers of the Bombacoideae were used primarily for ritual meals or food offerings (Reents-Budet 1994). We observed depictions of flowers of either *Pseudobombax ellipticum* or *Pachira aquatica* on cacao pots (Figs. 3c,e and 4b) and on a plate for holding tamales (Fig. 3d). Flowers of both species are large and have long recurved petals that reveal a “brush-like” group of numerous exerted stamens. The combination of the large and colorful flowers of *Pseudobombax ellipticum* with hundreds of colorful stamens make it the most likely candidate for the bombacoid floral image associated with a Maya headdress of an elite individual painted on the

cacao pot in Fig. 4b. Other bombacoids utilized by the Maya, such as the species of *Bernoullia*, *Ceiba*, and *Quararibea*, have flowers with fewer stamens and smaller petals. Flowers of *Pachira aquatica*, though larger than those of *Pseudobombax ellipticum*, are not nearly as colorful.

Gods and animals often are an integral part of bombacoid flower images and appear attached to the floral stalk (peduncle) in our examples. We observed three depictions of gods or animals. Figure 3c depicts Yum Ka'ax, a youthful god of maize/agriculture with maize foliage growing from his head. This image was from a polychrome pot excavated in the Petén region of Guatemala. Figure 3d depicts a crane-like bird associated with a flower on a black-and-white plate from an unknown site (FAMSI 2008, Kerr Collection K-4669). The plate was 35.5 cm in diameter and depicted two similar floral/bird images separated by vertical text. Figure 3e depicts a hummingbird with a flower on a polychrome vessel from an unknown site (FAMSI 2008, Kerr Collection K-7610). The vessel was 30.5 cm in diameter and depicted two similar floral/bird images with a border of horizontal text at the rim.

The smaller, white-flowered blossoms of *Quararibea funebris* or *Q. guatemalteca* appear to be represented on a cylindrical vessel used for cacao drinking (Fig. 4a,c). This species was used to flavor and froth cacao beverages so it is appropriate for representation on a cacao vessel.

Seeds and Endocarp Hairs

Silky nonwetable hairs envelop the seeds of several bombacoid genera in the southern lowlands: *Ceiba*, *Ochroma*, *Pachira*, and *Pseudobombax*. Among these genera, the endocarp hairs of *Ceiba pentandra* are particularly copious and impervious to water (Fig. 4e). Their use by the Maya as a stuffing material is depicted in Fig. 4f, where seeds and the hairs (kapok) are possibly used in kneeling pads.

Our observations indicate that bombacoids were culturally significant to the Maya and as such were represented frequently on ceramics. Images of the growth form, trunk spines, flowers, and fruit/seed hairs appeared on artifacts associated with everyday life and with important rituals and beliefs. Along with cacao, corn, cucurbits (squash), and water lilies, it is apparent that the Bombacoideae represent a plant group of great importance to the Maya. We encourage additional investigations of the ethno-

biological iconography of Maya material culture and hope they contribute significantly to our understanding of this remarkable culture.

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