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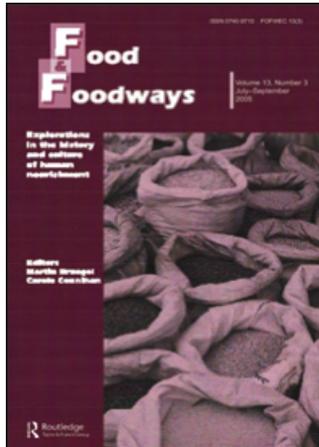
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TEJATE: *THEOBROMA CACAO* AND *T. BICOLOR* IN A TRADITIONAL BEVERAGE FROM OAXACA, MEXICO

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Although cacao is most familiar in industrialized Western societies in the form of a processed solid confection, for most of its history the seeds of Theobroma cacao have been most commonly used as ingredients in beverages. Today, in some of the more traditional communities of Mesoamerica, cacao continues to be used primarily in traditional local beverages. One such beverage is tejate, from the Central Valleys of Oaxaca, Mexico. Tejate is a culturally and socially significant beverage, and because it is made with maize and frequently consumed in some rural households, its nutritional contribution may be meaningful. However, tejate preparation is labor intensive and this, combined with changes in the Central Valleys, is leading to changes in the persistence and geographic distribution of this important form of cacao consumption.

Keywords: beverage, cacao, maize, Mexico, Oaxaca, *tejate*, *Theobroma*, traditional food

Although cacao is most familiar in industrialized Western societies in the form of a processed solid confection, for most of its history the seeds of *Theobroma cacao* (hereafter simply “cacao”) have been most commonly used as ingredients in beverages in the

We thank the three Castellanos sisters who taught us so much about *tejate*, Edith Aquino of the *Flor de Tejate* organization, and all of the farmers and market vendors of Oaxaca with whom we talked; for comments on drafts of this manuscript or suggesting sources of information, Flavio Aragón Cuevas, Jeanine Gasco, Elisabeth Randall, Ricardo Salvador, Kirsten Tripplett, Barbara Voorhies, Marcus Winter and the Interdisciplinary Humanities Center, UCSB for funding. Thanks to Barbara Kerr for permission to reproduce Figure 1.

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Amazon where it was domesticated, and in Mesoamerica, where it diversified and was widely cultivated. Today, in some of the more traditional communities of Mesoamerica, cacao continues to be used primarily as a part of traditional and local beverages. In this article we will introduce the continued use of cacao in Mesoamerican beverages and provide a contemporary example—*tejate*, a maize cacao beverage from in the Central Valleys of Oaxaca, Mexico. We will first provide some background to place *tejate* in historical context.

Cacao Beverages in Mesoamerica

Beverages containing cacao were an important part of ancient diets in the region, consumed especially by the elite, and used ceremonially. Figurative decorations on a late Classic Mayan vessel, the “Princeton Vase” (Kerr and Kerr 2005) from 1300 years before present (YBP) appear to depict the preparation of frothy cacao-based beverages by pouring the liquid from vessel to vessel from high above, aerating it to create the highly desirable surface foam (Coe and Coe 1996:50ff) (Figure 1). Residues taken from inside fourteen clay vessels from the pre-Classic Mayan (1750–2600 YBP) archeological site of Colha in northern Belize were analyzed with liquid chromatography and mass spectrometry and found to contain theobromine, a compound unique to cacao among Mesoamerican plants (Hurst et al. 2002). Combined with other evidence from the archeological context and the shape of the vessels, this provides strong evidence that cacao-containing substances have been consumed by native Mesoamericans for over 2500 years.

We also know that cacao and implements for cacao processing and consumption have been moving through some parts of the region for many years. Prior to the Spanish invasion, the Aztecs in central Mexico were trading cacao and collecting it as tribute from production areas in Chiapas (e.g., Soconusco) and other areas of present day Mexico. Also collected as tribute were special cacao beverage mixing and drinking vessels including *jícaras* (bowls made from the fruit of the trees *Crescentia cujete* and *C. alata*) similar to those used today in Oaxaca and the rest of southern Mexico for preparing and serving foaming cacao-based beverages (Gasco and Voorhies 1989).

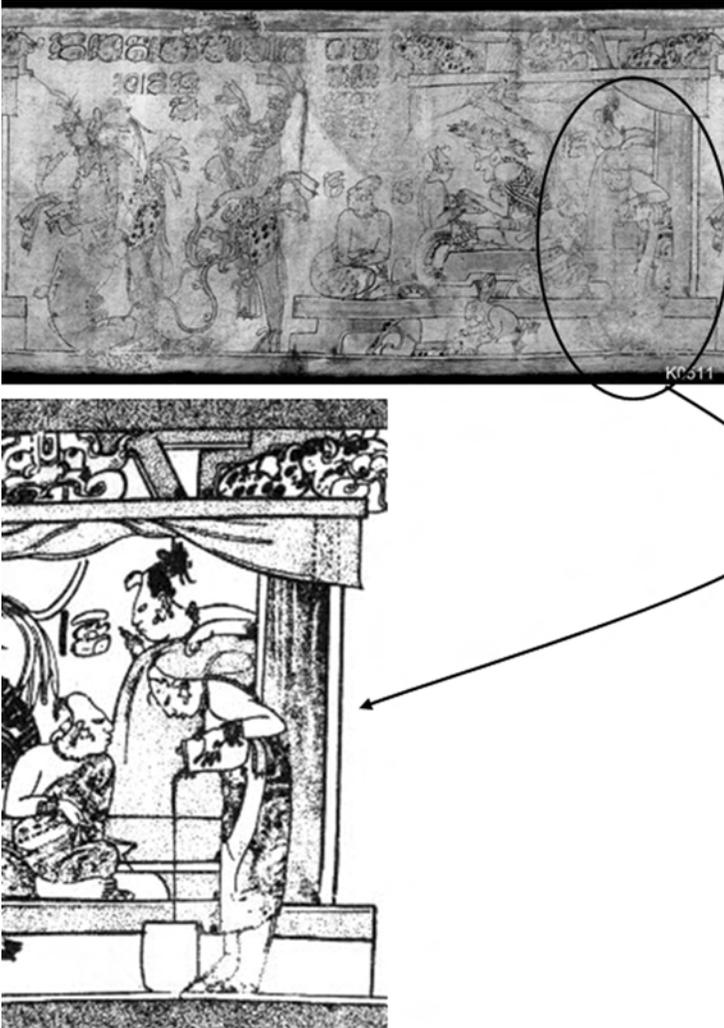


FIGURE 1 The “Princeton Vase,” Late Classic Maya, 1300 YBP, showing presumed preparation of foamed cacao beverage by pouring liquid into liquid from a height. Upper photograph (c)Justin Kerr, image K511.

Aztecs were drinking these beverages when the Spanish invaders arrived in the New World, as recorded by a number of early Spanish writers (Coe and Coe 1996:87). Some of the beverages contained maize, as is true today with a number of the traditional, frothed cacao drinks prepared in Mesoamerica (Chapa Benavides 2003). In his extensive *Historia General de las*

Cosas de Nueva España, 1547–1582, Sahagún (1988:626) describes the preparation of beverages by first grinding cacao beans, then regrinding them with cooked maize, after which a stream of water was introduced in order to create a foam-topped beverage. He also noted the addition of other ingredients to these beverages including honey, flower water, and aromatic spices (Sahagún 1988:626). Sahagún points out that when prepared properly and not diluted with too much water and plain maize *masa* or dough, “*cacao para beber*” (cacao for drinking) was a beverage only for the upper classes, “*solo los señores*.”

Cacao containing beverages have persisted in some areas of Mesoamerica, particularly among indigenous populations, with the production of abundant foam an important esthetic and gastronomic criterion. In 1919 Popenoe described *batido*, a Guatemalan drink very similar to that described by Sahagún, though without maize, and *pinol*, made with toasted maize and cacao (Popenoe 1919). There are a number of traditional cacao beverages from southern Mexico made with lime-treated maize. *Pozol* refers to a group of beverages made with maize and cacao, occasionally with other flavorings, in Tabasco (Javier Quero 2000:36ff), with similar variants in other areas. *Tascalate* in Chiapas is made with *achiote* (*Bixa orellana*). *Chorote* is another Tabascan drink made with maize and approximately 6% toasted, fermented cacao beans that are combined with the maize *masa* and then fermented further (Castillo-Morales et al. 2005).

Cacao in Oaxaca

The possibility of cacao reaching central Oaxaca as early as the early pre-Classic period (4000–3200 YBP) is supported by archaeological evidence that long distance trade was occurring at that time between the Mixteca people just northwest of the Central Valleys and both Pacific and Atlantic coasts (Evans 2004:171). These trade routes likely included or crossed zones where cacao was and is still grown, for example Soconusco on the Pacific coast of Chiapas. Indeed, the particular spouted vessel form associated with cacao beverages in the pre-Classic Maya is also present in late pre-Classic (2200 YBP) contexts in the Central Valleys of Oaxaca such as at Monte Alban (Powis et al. 2002, Winter 2006). There

is circumstantial evidence that *tejate* or something similar may have been an important ceremonial beverage in ancient Zapotec culture—vessel types associated with consumption of frothed cacao beverages by royal classes and for ceremonies among other cultures in the region (e.g., Mayan and Aztecan), are also present in the archeological record of the Zapotec civilization in the Central Valleys of Oaxaca (Coe and Coe 1996, Powis et al. 2002).

Images in some of the Mixtecan codices from what is now central Oaxaca, depict consumption of foaming beverages, including ones containing what appear to be white blossoms, and with foam of different colors (e.g., Anders et al. 1992), making them similar to contemporary *tejate* (as described below). Although cacao and maize are represented in the codices, references to a maize-cacao beverage have not been confirmed, nor have the archeological or historical records been systematically reviewed for evidence of *tejate*.

People in the Central Valleys and surrounding mountains of Oaxaca continue the tradition of foamed cacao beverages in their typical morning drink—*chocolate*—made with cacao beans, and three ingredients that originated in the Eastern hemisphere and were unavailable before the Spanish invasion—granulated sugar, cinnamon, and almonds ground together at home or in small local mills. This is heated with water and then mixed and frothed just before serving using a wooden stirring device (*molinillo*—probably introduced by the Spaniards), to incorporate air into the liquid to produce the foam.

Tejate

Tejate—or a very similar beverage known by a different name—is found primarily in the Zapotec region that centers around the Central Valleys of Oaxaca, where 26% of the population is indigenous and 44% of those are Zapotec speakers (INEGI 2005). There are a number of similar beverages in the surrounding areas of Oaxaca, and in some nearby states such as Chiapas and Tabasco as mentioned above. For example, a similar beverage in the Sierra Norte of Oaxaca is *pozonque*, probably derived from the Nahuatl term *pozocli* for foam (all definitions for Nahuatl words are from Karttunen 1992, Salvador 2005). Though we found nothing published on this, Ricardo Salvador, a maize physiologist

and native Zapotec speaker, has suggested that *tejate* may be derived from the Nahuatl words *textli* (flour) and *atl* (water), combined as *texatl* (floury water), and then Hispanicized into *tejate*. Today in the Mitla Valley, Zapotec speakers refer to *tejate* as *cu'uhb* (Munro and Lopez 1999), and the foam as *ghilo cu'uhb*, or flower of *tejate* (Martinez Martinez 2006). The brief description of the use of *Theobroma* spp. in *tejate* that follows is based on our extensive discussions and participant observation over the past ten years with one farming family that continues to make traditional *tejate*, and on preliminary research in the Central Valleys as part of a study of maize agriculture. In that study we also asked about *tejate* consumption in surveys with a random sample of 30 farming families in each of two Central Valley communities, one indigenous and the other mestizo, in 2002 and 2003 (Soleri and Cleveland n.d.).

Tejate Ingredients

The most common version of *tejate* is made with maize dough ground from grain processed with ashes, seeds of cacao (*cacao rojo*), *pizle* (the seed of mamey, *Pouteria sapota*), and the aromatic blossom of a large, long-lived evergreen tree, *Quararibea funebris* known as *rosita* or *flor de cacao*, and often sweetened with cane sugar. This *tejate* is also sometimes made using *cacao blanco*, the seeds of *T. bicolor*. All of the ingredients used, except cane sugar when added, are from plants domesticated in the Americas, and still grown today in Mesoamerica by small-scale farmers.

Although most rural households in the Central Valleys grow their own traditional varieties of local maize, or obtain it from local markets or nearby households, other *tejate* ingredients are not typically locally grown. One exception is the Central Valley town of San Andrés Huayapam, which is a major growing area for *rosita de cacao* (Cervantes Servin n.d.). Aside from maize, vendors known as “*patlazleras*”—usually women—sell all of the other *tejate* ingredients at weekly markets, or at major daily markets such as those in Oaxaca City.

Theobroma spp in Tejate

Following domestication in the Amazon (Motamayor et al. 2002), seed of one type of *T. cacao*, now known as *cacao criollo*, traveled

north into Central and Mesoamerica with human migrants. Today several types of *cacao rojo* including *criollo*, *forastero*, and *trinitario* are grown in different areas of the world, including La Chontalpa, Tabasco, and Soconusco, Chiapas, in Mexico, the source of the cacao sold by the *patlazleras* we interviewed in the Central Valleys of Oaxaca.

The *cacao rojo* used in Oaxaca undergoes its initial processing where it is grown, before being transported to Oaxaca. Beans ferment in the pod as the flesh of the sweet fruit around them decomposes. After fermentation they are dried and roasted (Young 1994), after which they are ready for sale to wholesalers who bring them to Oaxacan retailers and markets. In Oaxaca *cacao rojo* beans are used to make *tejate* or similar beverages, drinking chocolate, and *mole*, a rich savory sauce made with cacao, seeds, nuts, herbs, and spices, including chiles.

Even though not used in all *tejate* recipes, *cacao blanco* (*T. bicolor*), a different species of cacao, is closely associated with *tejate* in the market place as part of the suite of beverage-making ingredients sold by the *patlazleras*. *T. bicolor* is a semi-domesticated species, sometimes used as a shade tree for *T. cacao* (Young 1994). While the seed of *cacao blanco* can be processed like that of *cacao de chocolate* to make chocolate, it is generally considered inferior, due to slight biochemical differences which are critical for formation of the aromas that define chocolate flavor (Reisdorff et al. 2004). However, the fat (cocoa butter) extracted from the seed of *cacao blanco* is of good quality and is widely used in some areas, as is the fruit that surrounds the seeds (FAO 1986). Unlike *cacao rojo*, *cacao blanco* is not fermented or roasted, and the beans are larger, more circular in shape, with husks that can be pale green to red or brown in color, and with waxy white flesh inside. This is the form in which *cacao blanco* is used for *tejate*.

Tejate Preparation

Tejate is typically made in two parts: the *masa de pizle* (*pizle* dough), and the *masa blanca* (white maize dough, so-called even when made using other colors of maize). *Masa de pizle* is made by first toasting the *pizle*, the two types of cacao beans and the *rosita de cacao*. Toasting brings out their individual flavors and also makes them easier to grind (Figure 2), the next step in making *masa de*

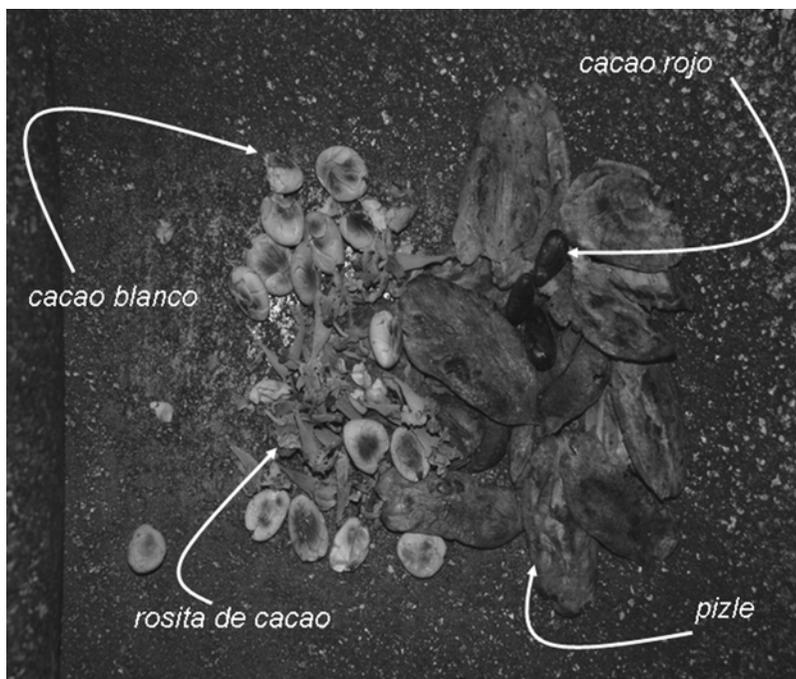


FIGURE 2 The ingredients for *masa de pizle* after toasting, ready to be ground. *Cacao rojo*, *cacao blanco*, *rosita de cacao*, and *pizle*. Photograph D.A. Cleveland.

pizle. Whether using a *metate* or a hand mill followed by further grinding on a *metate*, to achieve the correct, fine consistency, *masa de pizle* ingredients may be ground 10 or more times on the *metate*.

Both *tejateras* (women who make *tejate* for sale) and households who make *tejate* for home consumption have stated that local maize varieties (*maíz criollo*) must be used to make the *masa blanca*, and not modern maize varieties. The pervasiveness of this view and its significance remains to be investigated. To make *masa blanca* maize is boiled in water with ashes. The end product of this cooking is called *conesle*. *Conesle* is washed with water and then ground until all the *masa blanca* is uniformly smooth and very finely ground, again as many as ten passes on the *metate*. The last grinding step is to combine the two *masas* (*pizle* and *blanca*), and grind them together to ensure they are well mixed.

The final step in the preparation of *tejate* is mixing the *masas* with cool water to produce a milky, froth-topped liquid. The combined *masa* mixture is placed in a bowl, and water poured

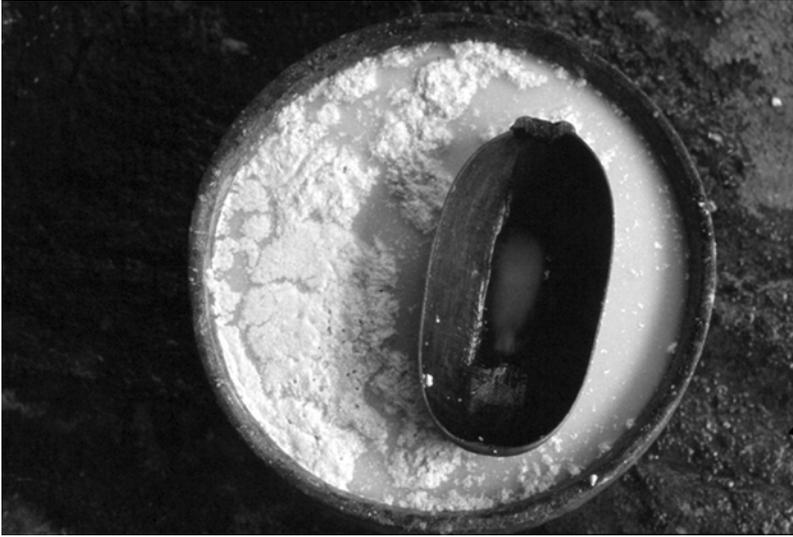


FIGURE 3 Home prepared *tejate* is ready to drink. A mixing and serving *jícara* floats on the surface. Photograph D.A. Cleveland.

over it in small increments, traditionally with a *jícara*. As the water is introduced the person mixing the *tejate* uses her fingers to rapidly squeeze and then whip the *masa* and water together, pressing it against the side of the container. The foam forms as the fat of the cacao and *pizle* become emulsified with the water. When made in the home, *tejate* may be slightly sweetened by dissolving sugar in water and slowly mixing this syrup into the *masa* liquid before the final frothing. Commercial *tejateras* often leave their *tejate* unsweetened and add some syrup to taste to individual servings. The remaining water is added a little at a time from a *jícara* held at arm's length above the bowl. The force of this stream of water helps incorporate more air into the mixture, adding to the foam that is so sought after, and the sign of good *tejate*. As more water is added the speed and vigor of the one-handed whipping increases, until it reaches the desired consistency and soft mounds of foam have risen to the surface (Figure 3). Finally, *tejate* is served by pouring it from the serving *jícara* into the individual drinking *jícaras*.

***Tejate* in Transition**

Tejate used to be a much more important part of the rural diet in the Central Valleys, according to households we have spoken

to. It was also a required part of the meal that comprised part of the “payment” to day laborers helping with tasks such as maize planting, weeding and harvesting, and is still expected as payment in some communities. Today some people make *tejate* every few days, some only occasionally and others not at all. Those no longer making *tejate*, or doing so rarely, often state that the time and work required are the primary reasons for their reduced production. A number of households pointed out that *tejate* is being replaced by cheap, increasingly ubiquitous commercial soda drinks. Changing production and consumption patterns, and the implications for Oaxacan diets and health, are among the topics to be addressed in a new interdisciplinary study of *tejate* in Oaxaca (Soleri 2006), but for now we can only speculate as to the reasons for the changes and their effects. For example, it may be that an increase in national and international migration and local off farm work reduces *tejate* preparation because of labor shortages or greater availability of cash to purchase alternatives as suggested by some of the families we spoke with.

Reduced frequency of home preparation of *tejate* cannot be assumed to indicate the demise of the beverage, because consumption of commercially prepared *tejate* appears to be increasing, and the cultural significance of this shift is unknown. We do know that cacao and maize beverages were being commercially produced when the Spanish arrived in Mesoamerica, as described by Sahagún (1988:626). Households may continue to purchase *tejate* from *tejateras* in towns and cities of the Central Valleys, and this may increase if household disposable income increases and the availability of commercial *tejate* increases. Efforts by groups such as the *Flor de Tejate* association of *tejateras* from San Andrés Huayapam, who established an annual *Fiesta de Tejate* in their community in 2000 (Santiago Santiago 2002), may increase both availability of *tejate* and its popularity among people who had not previously been *tejate* drinkers. In addition, the contribution of *tejate* sales to *tejateras*’ incomes in San Andrés is already known to be substantial (one estimation of annual sales for a *tejatera* is approximately \$4000USD) (Cervantes Servin n.d.:52) and may be a reason that *tejate* will continue to be offered commercially. *Tejate* is also associated with some celebrations such as those related to the holy week of the Christian holiday Easter, and is still produced

for that occasion, not only for consumption at home, but also at church (Castellanos 2006).

Clearly there remain many questions about the role of *tejate* in Oaxaca, and much research is needed to answer them. Still, what is known to date suggests this beverage may be an enduring cultural icon of great antiquity, contribute to nutritional and economic well-being of some communities, and help us begin to understand the relationship between traditional foods and the crop biodiversity that supports them, in this case the traditional maize varieties that are used in making the drink. For now it is obvious that the persistence of *tejate* and similar traditional beverages of Mesoamerica represents a long history of consuming *T. cacao* and *T. bicolor* in the region, primarily as ingredients in foam-topped drinks with delicious, complex flavors.

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