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The Life-Giving Stone: Ethnoarchaeology of Maya Metates

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THE LIFE-GIVING STONE

ETHNOARCHAEOLOGY OF MAYA METATES



MICHAEL T. SEARCY

The Life-Giving Stone

Ethnoarchaeology of Maya Metates

Michael T. Searcy

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Introduction

The metate is the reason we are alive.

—Maria Pop, Q'eqchi' Maya

DESCENDENTS OF THE ANCIENT CIVILIZATIONS of southern Mexico and Central America are one of the greatest sources of information on Maya life. Today the modern Maya live and work in the rural villages and towns spread out over this vast region. Many Maya communities continue to thrive culturally, while others, due to colonialism and civil war, have lost many of their traditions and customs. But even those groups ravaged by the strains of globalization and the industrial revolution have retained some thread of cultural patrimony that ties them to their prehistoric ancestors. This is manifest in many different forms of material culture, such as traditional clothing, ceremonial objects, and household tools.

Arguably, among the most important tools in ancient Mesoamerican houses were the mano and the metate, a pair of implements used to grind food (fig. 1.1). Their abundance in the archaeological record is evident in excavation reports from this region. As agriculture developed and intensified, the need for tools that could process harvested grains, especially maize, also increased. Even before cultivated foods, wild nuts and seeds were collected and processed on crude grinding stones.

Unfortunately, grinding stones are understudied and thus poorly understood. The contemporary study of these tools has the potential to yield knowledge that can serve as an analogy for archaeology, as with other classes of artifacts, such as ceramics (cf. Arnold 1971; DeBoer and Lathrap 1979; Krause 1985; Longacre 1991; Stark 2003). Despite the need to gather more ethnographic information on the life histories of grinding stones, including their use, storage, breakage, and loss, only a few studies have been conducted on these and other important aspects of such tools (c.f. Clark 1988:94; Hayden 1987a; Horsfall 1987).

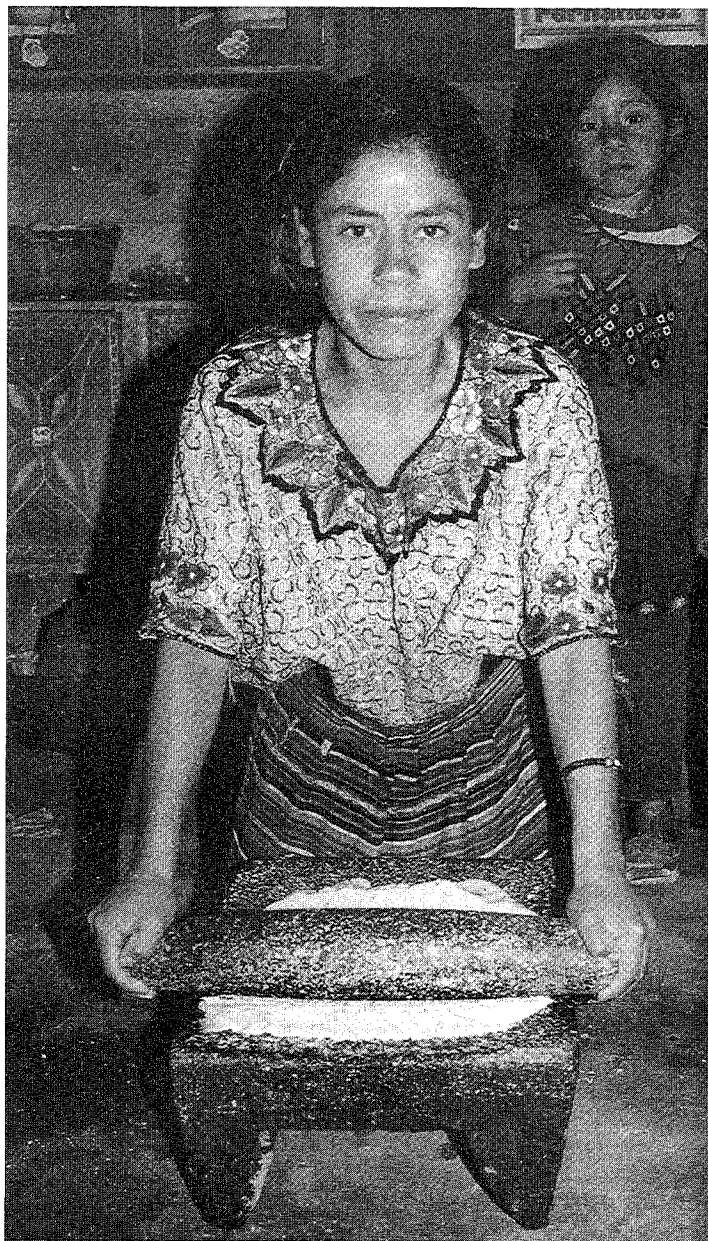


FIGURE 1.1. Maya woman grinding corn on her metate.

The ethnoarchaeological research project presented here addresses this lack of attention from archaeologists. My primary research goal was to describe all aspects of the modern metate life cycle to develop analogies applicable to grinding stones found in the archaeological record. To achieve this goal, I conducted fieldwork from 2003 to 2005 among three Maya groups, documenting behaviors associated with these tools during their procurement, production, acquisition, use, and discard.

Throughout the duration of this project, I discovered that manos and metates are costly tools valued by family members over many generations. Their continued production and distribution in the Maya region attests to their importance. Mayas encountered in my fieldwork consistently claimed that without the metate, there would be no food. This study led me to conclude that grinding stones were likely indispensable pre-Columbian tools employed daily by ancient Mayas. Their use has spanned centuries, and their value continues to hold steady in many Maya communities today.

Data generated by fieldwork revealed specific patterns that suggest modern analogies for archaeological interpretation. I identified wear patterns on manos and metates, usually formed during use, that provide evidence of the strenuous work involved in grinding maize. Ethnographic observations concerning the purchasing and gifting traditions of grinding stones offer cultural clues about how marital customs affected the acquisition of household tools. An analysis of the location of modern manos and metates also helps develop an interpretive model for identifying the likely use locations of grinding stones in the archaeological record.

Observing those who use and produce manos and metates, I also realized that gender was a prominent theme. Identifying gender roles in material culture is common in archaeological research, but while defining gender roles, I also found evidence of gender complementarity among the highland Maya in Guatemala. Gender complementarity recognizes different roles for females and males but considers these interdependent activities necessary for familial productivity and well-being (Schlegel 1977). This concept of interdependence has been applied to ritual and ceremonial phenomena (Hays-Gilpin 2000; Joyce 1996; VanPool and VanPool 2006), but my discussion focuses more on how gender complementarity is manifest within the realm of household production and consumption.

Researching the life histories of manos and metates generated much more information than I thought possible on the subject. The abundant data is likely a consequence of developing a research project with the broad goal of recording as much as possible on the life cycle of grinding stones, knowledge that adds significantly to the existing Mesoamerican literature. Furthermore, this study has allowed me not only to contribute to previous ethnographic research on the Maya but to do so with the “analogical needs of the archaeologist in mind” (David and Kramer 2001).

The Need for Ethnographic Research

Apathy toward the analysis of manos and metates is apparent in much of the archaeological literature. Few details have been recorded about their role in daily corn consumption; grinding stones have been discounted as mere quotidian tools with little information to offer (Haviland et al. 1985; Sheets and Dahlin 1978; Stiver 1992; Weeks 1983; Woodbury 1965). Stromsvik, in his 1931 study of the metates of Chichen Itzá, was one of the first to note this regrettable omission: “The metate . . . has failed to receive its just share of the attention of archaeologists” (1931:143). Three principal reasons may account for why archaeologists have neglected to describe and analyze manos and metates more comprehensively.

First, archaeological excavations of Mesoamerican sites tend to focus on large ceremonial architecture as well as elite residential structures. Typically, only mano and metate fragments are found at these sites, usually within the structural fill of large-scale architecture. Their provenience in the fill of ceremonial structures does not contribute much to the understanding of manos and metates used daily in prehistoric Maya homes. Alfred V. Kidder described his frustration with trying to complete a “thorough” analysis of ground stone excavated at Uaxactun in the late 1930s.

In spite of the great amount of work that was done at Uaxactun, the total “take” of nonceramic utilitarian artifacts was very small. Scarcity of such artifacts has also been obtained at all other Lowland Maya sites that have been investigated. To some extent this is doubtless the result of the limited attention which has so far been paid to house sites and middens, archaeologists having confined themselves almost exclusively to

the excavation of temples and other ceremonial structures in and about which implements for daily use would naturally not have accumulated in quantity. (Kidder 1947:2)

Hattula Moholy-Nagy, who compiled Tikal Report No. 27, which highlighted the utilitarian artifacts of Tikal, remarked on the widespread apathy toward these types of artifacts: “A shortcoming of the sample reported here is that it was excavated and recorded in the 1960s, when there was even less interest than there is today in the objects used to facilitate daily life” (2003:1). Her report includes ethnographic interpretations of the manos and metates found at Tikal, although these are brief descriptions. Moholy-Nagy (2003:38) noted that vesicular basalt manos and metates may have been imported from the Guatemalan highlands in pre-Columbian times, an assertion derived from the ethnoarchaeological work of Hayden (1987a, 1987b), Cook (1982), and Nelson (1987a; 1987b).

A second reason why manos and metates are accorded little attention is that archaeologists think these tools can yield little information beyond their use in processing foods and other items (Schortman 1993; Woodbury 1965). The fact that manos and metates were used daily to process maize, the most important food to the Maya, would seem to belie this assumption. In addition, these tools were used to process many other food items such as cacao, beans, squash seeds, tomatoes, and chiles, as well as non-food materials such as ceramic clay, temper, paint pigments, and lime. Some archaeologists have developed methods for identifying these items through microscopic analysis. Piperno and Pearsall (1998), for example, identified phytoliths and pollen grains of foods recovered from cracks and crevices in grinding stones. This type of study enhances our understanding of the diets of ancient peoples and suggests other ways grinding stones can be used to piece together the prehistoric puzzle.

A third reason for neglecting to thoroughly analyze manos and metates is their size and weight. Grinding stones can be difficult to transport, and they quickly fill up laboratory and storage space. I have seen metate upon metate carelessly stacked in a repository in Mexico, and due to their capacity to overwhelm storage space, they often serve secondary purposes such as doorstops in museums. Martin Biskowski, who has worked extensively with grinding stones in Central Mexico, pronounced a common

sentiment when he noted that many archaeologists simply consider them “a huge pain in the ass” (pers. comm. 2003).

In addition to these reasons, little ethnographic data exists to help archaeologists understand behaviors associated with the use of manos and metates. Scholars engaged in this type of research have made valuable contributions that can strengthen archaeological interpretations of groundstone artifacts. Most of this ethnoarchaeological research has focused on the production of manos and metates (Cook 1982; Dary and Esquivel 1991; García Chavez 2002; Hayden 1987b), and a few studies have examined other aspects of their life cycle (Hayden 1987a, 1987b; Hayden, ed. 1987; Clark 1988).

Brian Hayden (1988, ed. 1987) directed a group of anthropologists during the Coxoh Ethnoarchaeological Project in the study of Maya material culture (Hayden and Cannon 1984), which included gathering household data on grinding stones. They also documented the production of manos and metates by men still using chipped-stone tools (Hayden 1987b; Nelson 1987b). John Clark (1988) collected ethnographic data on grinding stones to explain the physical variability found among prehistoric manos and metates. His monograph includes the most extensive analysis of manos and metates in the Mesoamerican region. Although these studies have documented a wealth of information, certain stages of the life cycle of grinding stones still merit closer attention, including use, storage, reuse, and discard.

Building Analogies from Modern Life Histories

Because archaeology depends on analogy for the interpretation of materials found during excavation, greater efforts should be made to record ethnographic information on material culture that has survived since prehistoric times. Due to the widespread adoption of more durable materials such as metal and plastic, the production and use of ceramic goods and stone tools have rapidly disappeared throughout the Americas. Although globalization has affected many aspects of the material culture of the Maya, the continued production and use of manos and metates offer anthropologists a rare opportunity to learn more about their life histories and their role in Maya households.

Behavioral archaeology has emphasized the study of the life histories of artifacts (Hegmon 2003:215; Schiffer 1972, 1976, 1995; Skibo and Schiffer 2008:9–10). Schiffer (1972, 1976:43–48) introduced the development of flow models illustrating the life cycle of artifacts to aid in the interpretation of material transformations. These transformations result from natural geologic forces affecting the artifact after it has been discarded and enters an archaeological context (n-transforms), as well as the interaction of humans with artifacts throughout their lives (cultural formation processes or c-transforms) (O’Brien et al. 2005:213).

The five basic cultural formation processes through which durable materials typically pass before being discarded and entering the archaeological record are procurement, manufacture, use, maintenance, and discard (Schiffer 1972:158; Schiffer 1976:46). These basic processes, which have also been examined in other research (Shott 1996; Skibo and Schiffer 2008; Walker 2002; Walker and LaMotta 1995; Walker and Lucero 2000; Zedeño 1997), allow archaeologists to better understand how an object may be transformed before it enters the archaeological record.

Schiffer (1976:47) originally presented these processes in a flow model that could be modified according to the “specific materials and questions” of the investigator (c.f. Schiffer 1972:159). Figure 1.2 is a modified version of this model for the manos and metates that were the focus of my study. The cultural formation processes associated with manos and metates have not all been explored in depth. There is a paucity of data pertaining to use, maintenance/reuse, and discard. This ethnoarchaeological study of modern metates was designed to learn more about these areas.

Ethnoarchaeology gives archaeologists the opportunity to develop analogies based on inquiries with the explicit purpose of interpreting prehistoric artifacts. In addition, the inherent functional and stylistic similarities of manos and metates used by the modern and ancient Maya make them a perfect candidate for developing analogies about the processing and consumption behaviors of prehistoric peoples. David and Kramer (2001:11) define ethnoarchaeology as “research that includes an ethnographic component and is carried out with the analogical needs of the archaeologist in mind.”

The ethnoarchaeological method is founded on middle-range theory, integrated into archaeology by Lewis Binford (1967, 1975, 1977, 1978).

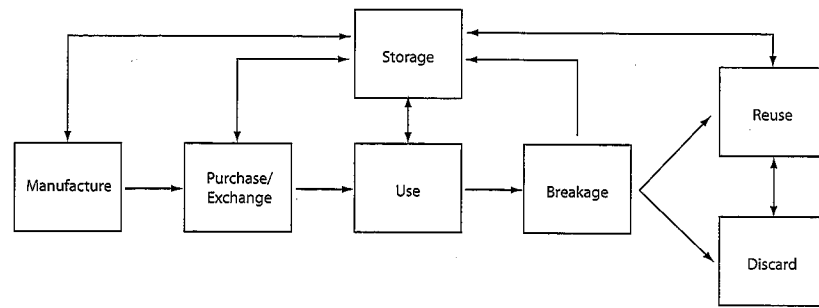


FIGURE 1.2. Life cycle of manos and metates.

Sociologist Robert K. Merton (1968) originally developed middle-range theory in the late 1940s to bridge the gap between high-level theory and testable theories. The definition of middle-range theory in archaeology is somewhat different but employs the same concept of bridging a gap. That gap exists between the present archaeological record (static data) and past dynamics, those associated with prehistoric behavior and social structure. Ethnoarchaeology uses ethnographic observations to create a link between present archaeological observations and past behavior.

Although the ethnographic present allows archaeologists to better understand prehistoric behaviors, what happened in the past can never be directly accessed and viewed. Inference is therefore necessary to determine any relationship between present and past behaviors. Clark (2002:262) notes “everything that can pass for valid ‘knowledge’ or ‘fact’ in archaeology is inferential, and the basis of all valid inferences is observation of material traces surviving from the past.” Ethnographic analogies also permit archaeologists to test and validate hypotheses about the formation of the material record of past peoples. But ultimately, archaeological “facts” are the product of the archaeologist’s inferences.

Recording the modern life cycle of manos and metates to create archaeological analogies was the purpose of this research. The following chapters develop this premise, positing analogies that should serve to bolster archaeological interpretations. Observations about the modern Maya provide anthropologists with further evidence of how a changing cultural and physical landscape continues to affect the material culture of these

people. As globalization continues to erode indigenous traditions, it is our job to record and preserve this information for future generations.

Ethnographic Fieldwork among the Modern Maya

In the Guatemalan highlands, I collected data on three modern Maya groups: the Q’eqchi’, K’iche’, and Poqomam. This project occurred during three field seasons, the first being an initial visit in June 2003, whose main purpose was to identify appropriate research communities for this study. The second field season took place from May to June 2004 and involved surveying the Q’eqchi’ and K’iche’ communities as well as interviewing metate manufacturers (*metateros*) in Sololá. Finally, I returned to Guatemala a third time in 2005 to collect data on the Poqomam metateros and to survey members of the Poqomam community. Surveys were conducted to collect information from owners of manos and metates. During the 2004 and 2005 field seasons, a total of 127 surveys were completed.

Most of the project’s data was generated from these survey interviews with members of two Q’eqchi’ communities, one Poqomam community, and one K’iche’ community. Each interview followed a questionnaire (see appendix 1) developed after the initial research trip to these areas in 2003. During the first field season, I located a family in each community that would be willing to provide room and board, and I contracted with a local guide to lead me to the homes of those who would be willing to participate in the survey.

Another reason for this initial visit was to track the routes of manos and metates in reverse order, from the homes of consumers to the quarries where the manufacturers work. First, I identified a number of marketplaces in several municipalities in Alta Verapaz, including Carcha, Chamelco, and Cobán (fig. 1.3). Subsequently, retailers in these markets guided me to Don Marco Hu, the major distributor/wholesaler of grinding stones in Alta Verapaz, who lives in the town of Chamelco. Finally, I was directed to San Luis Jilotepeque in the department of Jalapa in eastern Guatemala, where metates are still produced by Poqomam metateros.

In 2003 I also familiarized myself with areas around the quarries of Nahualá where K’iche’ metateros continue to produce manos and metates. While investigating the quarries, I searched for a nearby



FIGURE 1.3. Guatemala and areas included in the research.

community where I could conduct surveys among the K'iche', preferably one where members still used their grinding stones to process foods. I selected Santa Catarina Ixtahuacán as the community for the 2004 survey (fig. 1.3). Fortunately, it was located only forty-five minutes by car from the quarries, allowing me to work in both Ixtahuacán and Nahualá without spending considerable time traveling between these two locations.

During my preliminary research, two distinct forms of modern manos and metates were noted. Further observations gleaned from visiting houses in all parts of the country led me to conclude that these two types of grinding stones are the principal styles represented in Guatemala today and are generally found on opposite sides of the country. I will use the distinction of Western style (fig. 1.4) to describe grinding implements used by the K'iche' in Sololá and Eastern style (fig. 1.5) to indicate those used by the Q'eqchi' of Alta Verapaz and the Poqomam of Jalapa. These two styles of grinding stones are also found in several areas of Mexico, Honduras, and El Salvador.

Among the K'iche' of Sololá, Guatemala, the Western-style metate is characterized by an unrestricted grinding surface (fig. 1.4). The distal legs of the metate are flat on the outer edges but rounded on the inner edges. The proximal leg also displays a semi-conical shape with a flat outer edge. This style of metate employs a mano that extends beyond the width of the metate grinding surface (fig. 1.4). This is traditionally called a *brazo* (arm), most likely because it is longer than manos for basin or trough metates. These unrestricted metates and brazos have also been produced and used in Oaxaca, Mexico (Clark 1988; Cook 1982), as well as western Guatemala (Hayden 1987b; Horsfall 1987; Nelson 1987a).

The Q'eqchi' and other indigenous groups of eastern Guatemala own Eastern-style metates with a restricted or trough basin (fig. 1.5). The distal legs of these metates are short and are cut at 45 degree angles on their outer edges and 90 degree angles on the inner edges. The proximal leg is longer than the distal legs, and the flat, outer portion of the proximal leg is cut in a V-shape, the point of which rests on the surface of a table or in a post. These metates have a two-handed mano that fits within the recessed trough (fig. 1.5). The mano is lenticular in longitudinal cross-section and rectangular in transverse cross-section. The two broad, flat surfaces of the mano are used during grinding and exhibit the most wear. These restricted, trough-style metates are distributed to El Salvador, Honduras, and many parts of Eastern Guatemala (Don Marco Hu, pers. comm. 2003).

My research, tracing the life history of manos and metates, required an understanding of all the factors that influence their handling over time, including their various uses, storage, maintenance of the grinding surfaces, breakage, and recycling. Questions were designed to examine

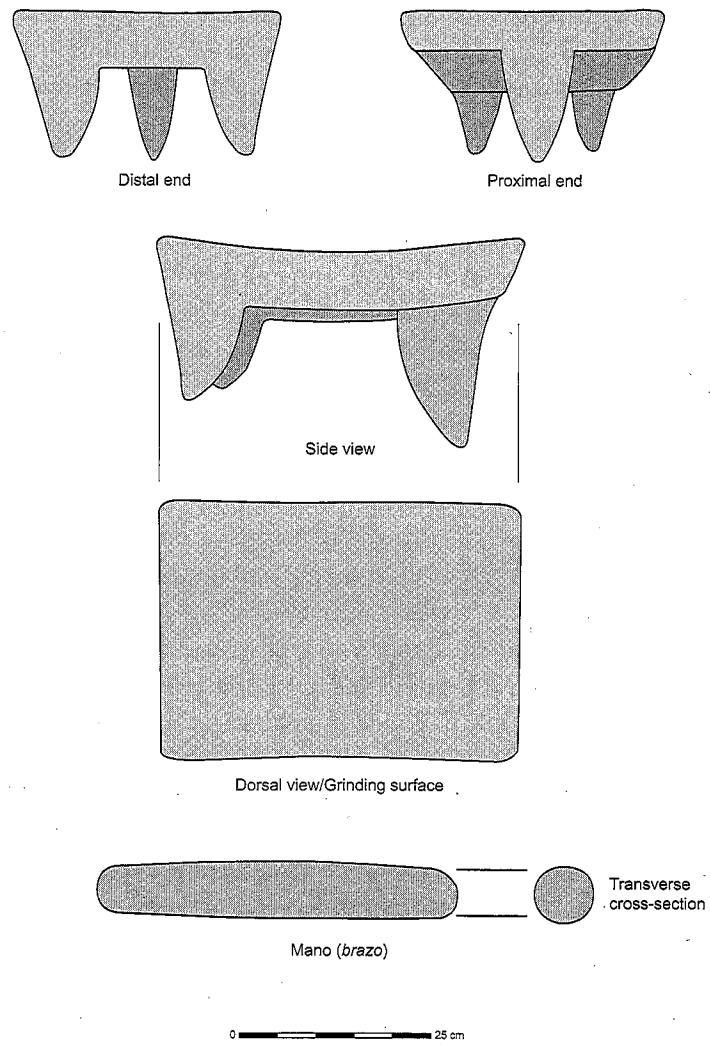


FIGURE 1.4. Western-style (unrestricted) mano and metate.

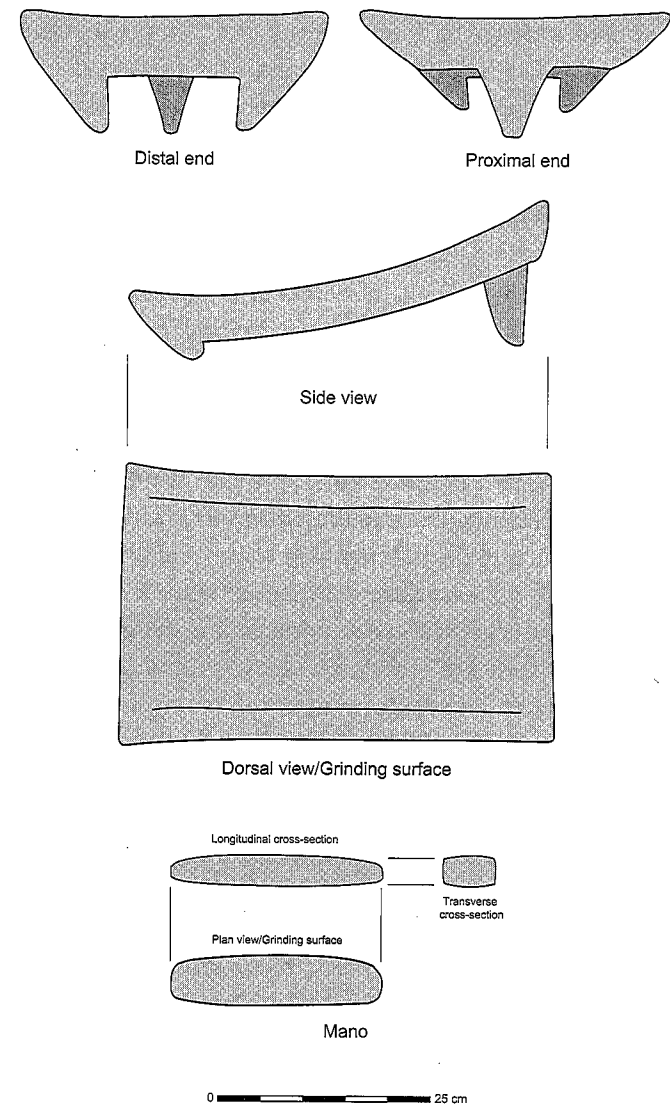


FIGURE 1.5. Eastern-style (restricted) mano and metate.

these processes (appendix 1). The first section of the survey included a questionnaire for informants about the use lives of grinding stones. The second section addressed morphological and historical information on the manos and metates found in each house; historical information refers to how the grinding stones were received, from whom they were received, when they were received, and their age. The last section solicited information on the use location of grinding stones in homes. A rough sketch was drawn of the use area relative to other household items and features.

Typically, my guides took me to homes where they knew individuals. Familiar people were more inclined to participate in the survey. These willing informants also provided more detailed information than people we did not already know. The visit usually began with my guide briefly introducing the purpose of the research and then asking for permission to proceed with the survey. Among the Q'eqchi', I would conduct the rest of the survey. Because I was not familiar with the K'iche' language, I worked with an interpreter. This made the process more difficult, and visits took twice as long. I would usually dictate the question to my interpreter in Spanish, which he would repeat to the informant in K'iche', whose answer would then be repeated to me by the interpreter in Spanish. Among the Poqomam, I conducted most of the interviews in Spanish due to the bilingual capabilities of the community.

Although the results were largely positive, this type of survey was not without certain pitfalls. I was required to read all the questions and was unable to leave the survey with household members to complete due to the illiteracy of the majority of participants. As I conducted the survey, and even after the first few interviews, it was obvious that I had written some of the questions poorly. These were eventually omitted from the questionnaire. Some questions did not translate well into the Mayan dialects and were not well understood by all the interviewees.

Questions were left unanswered for these and other reasons. Interviewees could not recall or simply did not know the answer to certain queries. For example, many people who had purchased their metate years or decades earlier could not remember the day's wage at the time. Many could not remember when grinding stones were purchased or how much they cost. Others felt uncomfortable in an interview situation, bombarded with over forty questions. Those who seemed apprehensive

or uneasy were more reluctant to let us into their home, or if they did agree to submit to our inquiries, they answered our questions reluctantly. This usually resulted in a brief visit with little elaboration on responses to the survey questions.

Some of the measurements on manos and metates were also left unrecorded due to the informants' unwillingness to show us all the grinding stones in the house. Usually, the owners did not want to retrieve them from storage in another room. Beck (2009:93), who conducted ethnoarchaeological research on ceramic vessels among the Kalinga in the Philippines, also encountered this obstacle when creating household inventories of material goods. She noted that some informants were reluctant to move large ceramic vessels stored in inaccessible locations.

The survey generated data on the life history and description of 220 metates and 217 manos. In addition, it yielded valuable information on the frequency of grinding-stone use, procurement, discard, and reuse, as well as the beliefs and customs associated with manos and metates. A summary of this data is presented here, but all the data collected during fieldwork in 2004 can be found in the original study (Searcy 2005).

In most cases a female in each house was interviewed. Occasionally, however, male members of the households would answer all my queries. Because surveys were conducted during work hours of the day when most Maya men are not home, only 17 (13 percent) of the 127 interviewees were men. But in cases where both men and women were present, women, who are most often in charge of household consumption and grinding, commonly answered the questions. Many Mayas saw women as the natural interview source, given that the survey questions focused on their toolset, the mano and metate.

To further explore the use of metates, I asked six women to participate in a grinding exercise (three Q'eqchi' and three K'iche'). Designed to determine the amount of time ancient Mesoamerican women may have dedicated to grinding maize daily, this study documented in detail the time for each stage in the process of preparing/grinding corn for tortillas. Only four of the six women completed the task within the bounds I originally set. Behavioral markers related to grinding, such as wear patterns left on manos and metates after extended use, became evident during this exercise.

Also during the 2004 field season, I visited the Nahualá basalt quarries, where the Western-style mano and metate are produced. I informally interviewed seven metateros, who answered various questions concerning the production and sale of grinding stones. They were excellent resources who enhanced my understanding of certain aspects of metate manufacture, such as the characteristics that define quality raw stone material and a well-made metate, the time required to produce one set, the locations where metates are sold, and their value.

My work during the 2003 field season included locating the Jilotepeque quarries, where I was able to interview two metateros about the production of Eastern-style manos and metates. I was able to continue research among the Jilotepeque metateros in May 2005 and add significantly to the data when I took the opportunity to work with Rafael Ramirez, a metatero from San Luis Jilotepeque. This research produced detailed information on the standardization of manos and metates, in addition to revealing other manufacturing techniques and characteristics of the craft.

Summary of Chapters

The following chapters that report the results of my research are accompanied by a number of illustrations highlighting the behaviors associated with metates throughout their life history. Chapter 2 describes the cultural landscape of the highland Maya, specifically the three language communities included in this project. The remainder of the book is dedicated to describing the details of my findings.

Chapter 3 begins with a discussion of the production of Maya grinding stones, derived from the interviews conducted with the metateros from both the Jilotepeque and Nahualá quarries. Chapter 3 continues with research on their sale and distribution, including customs and behaviors related to gifting. The use life of manos and metates is described in chapter 4, including a discussion of use frequency, metate resurfacing/resharpening, and the time dedicated to daily grinding. I also discuss the value of grinding stones and the taboos and rules that regulate their handling and use. This section concludes with a summary of discard and reuse data collected during fieldwork.

Archaeological analysis and the implications of this project are reported in chapter 5, where I first address wear patterns and the behaviors

observed during fieldwork that contribute to the interpretation of patterns found on ancient manos and metates. Economic statuses of the Q'eqchi', K'iche', and Poqomam are compared to the number of manos and metates in the house to assess whether a correlation exists between these two variables. Use locations and patterns of discard are discussed, as well as how the study of modern grinding stone locations can aid in interpreting the locations of manos and metates in ancient contexts. I use Cerén, El Salvador, as an example of how this data can be used to interpret the archaeological record. In conclusion, this chapter describes how the surface area of a metate may indicate its function and discusses how the standardization of craft specialization can be identified for pre-historic systems of metate production.

Finally, chapter 6 explores the broader theme of gender implicated throughout the study. I also consider how future research can further develop analogies derived from this project, and I make suggestions for analytical procedures that can benefit the study of manos and metates.