

Mexican Metates in the 16th-Century Southeast: Marker Artifacts for the 1559 Luna Settlements?¹

By David Dodson

Archeologists determine the historic presence of 16th-Century Spaniards on archeological sites in the current Southeastern United States by the objects the Spaniards left behind. The most diagnostic types of Spanish artifacts consist of glass trade beads, iron chisels, iron wedges, and rarely—coins of silver and copper. However, these Spanish artifacts—without other supporting data—cannot always determine what expedition actually left them. Was it the Hernando de Soto expedition to la Florida in 1540 or was it from the Don Tristán de Luna expedition twenty years later? This article suggests that another artifact might be added to that list—particularly concerning the Luna Expedition—that would help pinpoint only the years 1559-1561. Those artifacts are Mexican-style *metates* (grinding stones).

The Luna colonization expedition of 1559 was launched from Mexico and the colonists brought their culture with them. Part of that culture included the New World tradition of grinding corn to make tortillas (a rolled-up pancake) stuffed with beans, other vegetables, available meats, and especially, to add spice—chili peppers. They used stone tools to grind the corn kernels. The large flat or slightly curved stone platform upon which the corn was placed for grinding was called a *metate* and the associated hand-grinding tool a *mano*, or hand tool. Today, the *mano* is also referred to as a pestle.

While metates were used especially for grinding corn kernels, they could also be used for grinding and processing other foodstuffs, including roots, as well as cleaning animal skins (Knight, personal com., 2016). The grindstone was an integral part of the corn-based subsistence of Native peoples of Mesoamerica, and have been found in archeological sites dating as early as 5,000-7,000 years ago when hunter societies in the New World began to delve into agriculture (Staller, 2006). Initially, naturally shaped stones were found wherever a rock formation or pile of rocks presented flat specimens, and rock formations that were naturally rounded made for superior manos.

Due to the dominance of corn as one of the primary food sources in Mesoamerica, by the 1500s metates had become one of the main “kitchen

¹ This is an abbreviated article from a much more in-depth and footnoted study by Mr. Dodson.

utensils” for food preparation. The Native populations—especially in Mexico—had begun to manufacture metates by chiseling them out of rocks to make specific shapes that afforded the grinder a more “ergonomic tool,” which helped ease the hard task of grinding. To feed a family tortillas and other corn-related porridges, several women in a household could spend up to four or five hours each day at the backbreaking task. The metate design the Natives developed in Mexico had a slightly concave platform supported by three integral legs that afforded a grinding platform with a built-in slope (Figs. 1 and 2).



Fig. 1. Typical three-legged Mexican-style stone metate with rounded mano.



Fig. 2. A young woman in Mexico being instructed in the use of a large metate with a mano to grind the maize to make tortillas.

(From the Codex Mendoza, Mexico, ca. 1540s)

Also, by chiseling the metate into the three-legged design, the mass, or weight, of the metate could be lightened by more than half, which afforded portability. The Natives sometimes used three different metates in a series; a rough-surfaced stone for the initial grinding, a second, less-rough stone for further refinement, and a smooth one to grind the maize into a fine *masa* (corn flour). Otherwise, a series of three metates in a Native household

weighing 50 to 60 pounds each would take up valuable living and sleeping space (Figs. 3 and 4).



Fig. 3. Series of three metates in a room designated just for grinding.



Fig. 4. Metates lined up for outside use. Note the different surfaces—rough to smooth.

Mobility also allowed for outdoor usage, which kept the household clean from scavenging rodents or insects. Semi-nomadic tribes of the American southwest would bury their heavy, cumbersome metates in mounds, and return to uncover and utilize them during seasons of harvesting corn (Knight, personal com., 2016). (Fig. 5) Likewise, mule drovers in Mexico and the American Southwest transported the lighter-weight metates within them on their caravans for preparing tortillas for their evening meals (Ruxton, 1847). (Fig. 6)



Fig. 5. A 55-pound metate from the Sonora Desert area, Arizona, with a mano (17.5 x 10.5 x 4 inches thick).



Fig. 6. Small, portable metate weighing only 15 pounds. Same mano as in Fig. 5 for scale (8 x 10 x 6.5 inches tall).

²http://www.nationalparkstraveler.com/sites/default/files/styles/panopoly_image_original/public/media/meve_rebeccalatson_c2c6410_spruce_tree_house_mano_and_metate_stones.jpg?itok=Jt6BBsnB

³<http://www.lithiccastinglab.com/gallery-pages/millingstonesinboxssw.jpg>

⁴ Owned by the author.

⁵ Owned by the author.

When the Luna expedition set out from New Spain (today's Mexico) in 1559 to establish a series of settlements in the current Southeastern United States, they brought a great quantity of metates with them on their journey to Pensacola Bay to grind the massive amount of corn they had brought along to make their main meals of tortillas. Another shipment of metates arrived at the colony in the first resupply mission in the fall of 1559 (Childers, 1999).

Most of the supplies from the initial eleven-ship fleet anchored in Pensacola Bay were unloaded and stored at the colony on land weeks before the major storm wrecked the fleet (Priestley, 1928; Contact Archeology Inc, 2016). Though it was not stated in the Spanish documents, it is likely that the valuable food-processing metates were among the first items to be off-loaded. Feeding a cadre of 1,500 people two to three times a day was no easy task, and probably kept any designated cooks busy from before sunrise till sunset. The metates would have been required almost immediately to grind the corn kernels they had brought with them into making the main meals of tortillas and the evening meals of porridges.

The Archeological Record of Metates in the Southeast

The major focus and question of this article now comes into play. Can Mexican-style metates be considered a marker artifact of the Luna Colony on Pensacola Bay and the interior settlement of Santa Cruz de Nanipacana on the Alabama River?

We know from Spanish documents of the Luna expedition that somewhere between 100-200 metates were brought with the fleets from Mexico (Childers, 1999). The metates of the period are diagnostic; sloping stones with three legs and an accompanying stone pestle. To find them—whole or in fragments—in archeological context could be significant.

The composition of the stones themselves might also be diagnostic. Microscopic analysis might show the origin of the stones, perhaps from Mexico, or at least confirm or reject their origins from being from elsewhere other than the southeastern United States.

There are at least four primary questions concerning potential remnants of metates in archeological context in the Southeast.

- 1) Did the Native Americans of the Southeast employ similar metates to prepare their corn for consumption?

2) Did 16th-Century Spanish expeditions other than the Luna Expedition bring metates to the Southeast?

3) Have Mexican metates been found at any 16th-century archeological sites in the Southeast?

4) Were the metates brought to the Southeast with the Luna Expedition taken back with the colony survivors to Mexico?

The answer to the first question is “No.” Southeastern Native mortar and pestle grinding stones were typically made of wood (Fig. 7) or improvised utilizing natural indentions or curves in stone slabs or rounded stone (Figs. 8 and 9). Natural, rounded pockets in bedrock also served as communal mortars (Fig. 10). The Spanish referred to a mortar as a *mortéro*.



Fig. 7. Carved wood pestle and mortar. ⁶



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Figs. 8 and 9. Naturally formed concave receptacles used as grindstones (mortars).

⁶ <https://s-media-cache-ak0.pinimg.com/236x/b7/19/4b/b7194bcb6164f93a2c0bf6c7ce0394c9.jpg>

⁷ https://encrypted-tbn3.gstatic.com/images?q=tbn:ANd9GcT-NS0yEWfVyb7Ig4GePy6MkCwsbmGYf5nf38CMN4rVB_FsXbgC

⁸ <https://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcTPcwA4akRzT-hVRjwRgw0EQHBRyFeQVWB6rnYO4JDAH5aSgM65g>



Fig. 10. Rounded pockets in a natural rock formation used as mortars.

Further, most of the Native chiefdoms in the Southeast appear to have preferred the simpler method of cooking by just roasting corn ears over hot coals with the kernels still on the cob within the husk (Swanton, 1979). (Fig. 12)



Fig. 11. Mexican-style mortar with three legs and shaped pestle for ergonomic grinding.



Fig. 12. Ears of corn roasting over hot coals.

As to the second question, while other Spanish expeditions might have brought mortars with them—especially for mixing medicines—the documental and archeological records do not mention metates, much less Mexican-style metates.

The Spanish expedition of Pánfilo de Narváez (1528) originated in Santo Domingo on the island of Hispaniola. The Hernando de Soto expedition (1538-1542) originated in Spain and was outfitted in both Spain and Cuba. Subsequent Spanish settlements on the east coast of Florida, including St. Augustine (1565) and Santa Elena (1566-1587), also originated and were

⁹ <https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQIsFcq9bD9WvTcf7XnfoiBi8anQ4hnXVGcyU8s6UfShUNflqj0>

¹⁰ https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRs979yFKXccHp_7R1t4X5Bfb-Tiqgw3bC-yfB5fvPMsMQLbqSf

¹¹ <https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcSB9B5HIQmwnIo3r0ROLI-YHwmv0Rjdd7WLea1sBsThHmosR6riyw>

outfitted in Spain. Later, supplies were also eventually augmented via Cuba. But Spain and all those recently conquered island cultures and Florida settlements by the Spanish did not have maize (or tortillas) as their primary food source. Most of the Spanish soldiers and colonists on all these endeavors originally came from the inland areas of Spain where the main diet included beef and pork grilled or roasted over an open flame, with vegetables seasoned with oils and spices in cooking pots.

A chronicler on the Soto expedition—The Gentleman of Elvas, who published his adventures in 1557—related the Spanish preference for meat and wrote:

The Cacique sent him a present, by two thousand Indians, of many conies and partridges, maize bread, many dogs, and two turkeys. On account of the scarcity of meat, the dogs were as much esteemed by the Christians as though they had been fat sheep. There was such want of salt also, that oftentimes, in many places, a sick man having nothing for his nourishment, and was wasting away to bone, of some ailment that elsewhere might have found a remedy, when sinking under pure debility he would say, “Now, if I had but a slice of meat, or only a few lumps of salt, I should not thus die!” (Smith, 1968)

Soto spent nine months in Cuba preparing for the sail to la Florida, with the eventual food supply list including great amounts of salted meat and fish, hundreds of swine, 7,500 bushels of corn, 3,000 loads of cassava, 2,500 shoulders of bacon, and other miscellaneous food provisions (Avellaneda, 1997). However, there is no mention of any type of grinding stone to process the maize, but only a reference to wooden mortars.

Another chapter by The Gentleman from Elvas related the following after the Soto expedition had only been weeks of going ashore and venturing inland on the peninsula of Florida:

And because there was still no one who could provide the service, the bread that each one had to eat was ground in a mortar made in a log, with a hand tool [or pestle] shaped like a window bar [that locks closed shutters tight] and those with coats of mail sifted through the flour. They cooked the bread in some earthen [or clay] pots that they put upon the fire, in the manner of what I have already said that is done in Cuba. It's so laborious to grind [the corn], that there were many who did not want to grind it before eating it, and they ate corn parched [or toasted] and boiled (Trans. Dodson, 2016). (See Figs. 11 and 12)



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Fig. 11. Carved log mortar with a long wood pestle, probably made from a small tree or tree limb “like a window bar...” that would secure closed shutters.



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Fig. 12. Log mortar with a stone pestle grinding corn.

Also, written by Elvas about the trek towards Napetaca in Florida and the abuses by the Spanish and subsequent revolt of the Natives:

And then they all rebelled. He that could arm himself with a mano, or the mace [a long, wooden pestle] with which they grind the corn, worked very well enabling for to kill his master or the first person that he confronted (Trans. Dodson, 2016).

Further:

These Indians they took them in chains, with collars around the neck, and they served for to carry the goods and to **grind the maize** and for other tasks that such prisoners were able to do (Trans. Dodson, 2016).

Also, to substantiate the lack of grinding stones, it was recorded in 1544 by Luys Hernandez de Biedma—secretary to Soto—that on the twenty-day plus trek towards Cofitachique in today’s South Carolina that the men ate only plants and **parched corn**. And although the Spanish had brought a large herd of hogs along to satisfy their satiability of pork meat, rationing was saved for the last measure. On other treks, it was the Natives that furnished the corn flour, which is referred to as *harina de maize* (Smith, 1968). But nothing is mentioned concerning any type of grinding stones.

¹² http://knowyourgrinder.com/wp-content/uploads/2015/01/wooden_mortar_pestle.jpg

¹³ <https://natureintoaction.files.wordpress.com/2015/09/log-mortar-and-rock-pestel.jpg?w=775>

Concerning the archeological record of the Soto expedition, in 1987—during the excavation of a possible Soto site in Tallahassee, Florida—a small, flat, hand-sized grinding stone [a mortar] was excavated, but it was attributed to the Native American village upon which the Soto artifacts were discovered. Its apparent use was to help crack open nuts and acorns (O’Neil, 1987).

The lack of grinding stones on the expedition is further supported in the fact that they never were lacking Natives—voluntarily or conscripted—to carry all the supplies and personal belongings the Spanish had brought (Smith, 1968).

Therefore, it was not the lack of the ability to transport grinding stones, it was just that the Spanish from Spain had not brought any with them, nor perhaps even had a need for the utensil in preparing their meals. This is not to insinuate that the Spanish did not search out fields of corn for themselves and their horses to eat. On the contrary, once the Spanish were assured that the Natives of la Florida had fields of corn, the Spanish became dependent upon the Natives “furnishing” the corn for their subsistence, especially their labor to grind the corn into flour to make their bread, or they did without, and just ate the corn parched or roasted for their meals.

Conversely, practically all the participants on the Luna Expedition had been born in Mexico, or like a few of the senior soldiers, had come from Spain and been in the conquest of Peru, and others who survived the Soto expedition, which ultimately straggled into Mexico. Those destitute survivors had, for the most part, remained in Mexico and most likely adapted to the Mexican culture. The records indicate that Viceroy Velasco sent eight soldiers back to la Florida that had been with Soto (Padilla, 1596), which is nowhere enough to “influence” or change the daily dietary preference of foodstuff for meals concerning the other 1,500 other peoples on the expedition. The old saying, “adapt or die,” is most applicable. Ground corn made into tortillas was the preferred meal on the Luna expedition.

This fact is reinforced by an order from Luna himself, whereby he delineates the foodstuffs that one hundred soldiers should take on his proposed journey to find the reconnaissance expedition that had been sent to Coosa in April of 1560. The memoir states the requirement for fifty days of travel:

To one hundred soldiers, giving them each day six pounds of biscuit so they may eat two ounces a day.

To fifty servants two pounds to each one, so that he may eat one scant ounce daily to make it last him fifty days.

As to corn, each one must be given four *almudes* for fifty days,

which will make **nine tortillas** each a day.

The fifty servants will eat half as much.

Of dried beef they may be given forty arrobas for fifty days to one hundred persons, which will provide each person with two ounces, and the servants may be given the third one.

So that each soldier will have to eat every day two large ounces of bacon, two of biscuit, **nine tortillas**, and six ounces of dried beef.

Each servant may eat daily according to the reckoning one ounce of bacon, one of biscuit, **four tortillas**, and thee ounces of dried beef (Priestley, 1928).

Therefore, metates were not a common “kitchen utensil” of those previous expeditions or settlements. This is also true of the earliest Spanish settlements on the islands of Santo Domingo, Puerto Rico, and Cuba. While maize was introduced to those islands prior to Columbus, it was still not a predominant mainstay of the islander’s diet, which also consisted of waterfowl, manioc, potatoes, peanuts, peppers, squashes, beans, and arrowroot (Meditz, 1987). It was only when Spaniards ventured onto the mainland of Meso-America did they find corn cultivated in vast fields and utilized as a main food source. Stone metates were likewise common and part of every household (Gibson, 1964). While some historians and archeologists refer to “metates” on the aforementioned Caribbean Islands, the archeology is scant with most known ancient metates being ornately carved and held today as artwork by private collectors. Their ornate designs indicate that they were not employed in preparing foods, but were used as low tables or stools. Some were even made from ornately carved wood, typically with four legs, and used as ceremonial thrones by *caciques* or chiefs; and as such, are primarily referred to as *dujos*—not metates. It is recorded that the Great Taino cacique of Puerto Rico gave the Spanish Crown a dozen of these special *dujos* to the Spanish Crown in the 1490s (Balletto, 2003). They were a symbol of prestige (Figueroa, 1996). (Figs. 13 and 14)



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Fig. 13. Dujos carved from wood.



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Fig. 14. Ornate dujo carved from stone.

¹⁴ <https://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcSnqT3kguMF6ltedmahIzYorTicIguwV8NDfrcdfCPHSCZjDBeyPA>

¹⁵ <http://2.bp.blogspot.com/-NrK31YAfig/Tqn4u4K7ZbI/AAAAAAAAA54/6Qh3wPbmjTc/s1600/97401.jpg>

Thus, any utensils used for grinding maize on the Caribbean Islands as well as beans, squashes, sweet potatoes, cassava or any other root or stem food were simply a curved or concave rock basin—a mortar—with a pestle. These grinding stones were typically smaller and not of the tried and true design of the larger, tray-like metate developed by Meso-Americans over the centuries that helped feed the mighty Maya- and Aztec-related civilizations of the mainland.

As to the third question concerning whether found Mexican-style metates have been in the Southeast, the answer is a simple “No,” at least to the present knowledge of Contact Archeology, Inc. We are currently contacting Southeastern archeologists, historians, and museums to determine if Mexican-style metates have ever been found in the region. While very large, heavy, legless grinding stones have been unearthed from Native settlement sites in the Southeast, these instruments have been referred to as “mortars” with the appropriately shaped pestles employed in mortars (Curren, personal com., 2016). It is hoped that closer analysis of these grinding stones might reveal evidence of a broken-off leg indicative of a Mexican-style metate.

Further, while variously sized stone metates were used extensively in today’s American Southwest, archeologists and amateur collectors of metates for over half a century have only found a few Mexican-style metates around El Paso, just over the Rio Grande and today’s Mexican border (Knight, personal com., 2016). This would indicate that barter in inexpensive Mexican-style metates—chiseled rocks—was not a popular trade item, nor perhaps even considered as such by the Native populations. Good, flat rocks were just too common and accessible to everyone—for free!

As to the fourth question concerning whether the Spanish brought back the metates when the Luna colonists and soldiers returned to Mexico, it is highly unlikely. Metates were very common in Mexico. Also, metates were not needed aboard ships to prepare food due to the fact that while at sea the returning people were on a prescribed diet of simpler food rations consisting mainly of biscuits, salted meats, and porridges that did not require grinding of corn.

Further, a majority of the metates brought to la Florida by the Luna expedition appear to have been given as part of the Indian tribute and not actually purchased by crown monies; and to actually purchase one metate was only around 10 pesos (Childers, 1999). Therefore, if you add up all the hard and intangible costs to return, record, transport, resell, and record the

final transaction of the income for the crown, bringing back metates in a country that was basically saturated with that utensil, was perhaps a losing business proposition. (Figs. 15 and 16)



Fig. 15. Modern market in Mexico with decorated metates.



Fig. 16. Abandoned metates guarded at an archeological site. (Photo by Dave Yoder)

While expensive military hardware brought to Pensacola by the Luna expedition was ordered by Viceroy Luis Velasco to be deposited with the fortification at Havana (Priestley, 1928), returning cooking utensils made from stones back to Mexico would only make sense if the ships needed ballast!

Conclusion

Metates in the New World are a typical marker artifact of a corn-based agricultural society. The metates of 16th-century Mexico are physically distinct from Native American grinding stones. The documents of the Luna Expedition of 1559 record that a great number of grinding stones were brought to Pensacola Bay from Mexico. Other Spanish expeditions of the 1500s were not launched from Mexico, rather from Spain and the Caribbean. Metates were not mentioned in their records. Therefore, might Mexican-style metates be marker artifacts to the locations of the Luna colony on Pensacola Bay and the interior settlement along the Alabama River? The present hypothesis seems to indicate that they could be. The hypothesis is being tested for the first time.

NOTE: At the time of this posting, the University West Florida had recently discovered a third Luna shipwreck in Pensacola Bay, and has active plans to excavate it as well as further excavate the second shipwreck discovered in 2006. The finding of metates in either of these wrecks might contribute to clarifying the question of “how much foodstuff had actually been unloaded

¹⁶ <http://www.lithiccastinglab.com/gallery-pages/grindingstonesmetatemarketlrg.jpg>

¹⁷ <http://ngm.nationalgeographic.com/2015/10/lost-city/img/08-guarding-unexcavated-metates-670.jpg>

when the Luna fleet arrived to Pensacola?” In *The Luna Papers*, it is recorded that it was “the rains” of the subsequent hurricane that destroyed the food supply, whereas *Historia* by Dávila Padilla records that “for greater security [the food supply] had remained in the ships” and lost during the storm. Therefore, if metates had not been unloaded, then it would follow that some food was still on board the vessel when it sank. Importantly, the loss of metates in sinking ships in deep water would also account for the shipment of metates in the first resupply or Aid, which finally arrived in late fall of 1559. Subsequent resupply records do not mention any more shipments of grinding stones. Again, the metates could be marker artifacts.

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