

Linking Archaeological and Documentary Evidence for Material Culture in Mid-Sixteenth-Century Spanish Florida: The View from the Luna Settlement and Fleet

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Abstract

The recent discovery and archaeological investigation of the 1559-1561 settlement of Tristán de Luna on Pensacola Bay, in concert with ongoing nearby excavations at the second and third Emanuel Point shipwrecks from Luna's colonial fleet, has prompted new opportunities for research into the material culture of Spain's mid-sixteenth-century New World empire. In an effort to develop systemic linkages between the material traces left behind in different archaeological contexts, both terrestrial and maritime, and the amply-documented material culture of the many different types of people and activities that formed part of mid-sixteenth-century Spanish culture, a wide range of documentary sources is being consulted for both qualitative and quantitative data, including estate papers, ship manifests, warehouse accounts, and notarial records from both Spain and the New World. This paper outlines investigative strategies and techniques being employed, and presents preliminary results and promising avenues for ongoing research.

Paper presented at the 51st Annual Conference of the Society for Historical Archaeology, New Orleans, Louisiana, January 3-6, 2018.

In 1992, the discovery of the Emanuel Point I shipwreck in Pensacola Bay marked the first direct archaeological trace of the 1559-1561 colonial expedition of don Tristán de Luna y Arellano to Florida, the landing site of which had long been suspected to be somewhere on Pensacola Bay (Smith et al. 1995, 1998). In 2006, further survey by the University of West Florida (UWF) resulted in the discovery of the Emanuel Point II wreck just four hundred meters away (Cook et al. 2009). And in 2015, the discovery of the 13-hectare Luna settlement site itself less than a kilometer away on the terrace overlooking both wrecks led to additional maritime survey just offshore, leading to the discovery of the Emanuel Point III wreck even closer to the settlement shoreline (St. Myer 2015, 2016; Worth 2016a; Worth et al. 2017). As a result of this remarkable 24-year era of discovery, archaeologists have been presented with an unprecedented opportunity to conduct long-term study on a huge if short-lived mid-16th-century Spanish colonial settlement with a cluster of at least three directly-associated shipwrecks just offshore, all forming a terrestrial and maritime archaeological site district less than 1,300 meters in maximum diameter. In short, the Luna archaeological district on Pensacola Bay promises to give us an unparalleled opportunity to explore both the colony itself and as many as six of the ships that carried the colonists to Florida.

There are of course innumerable research topics that can and will eventually be explored at the Luna settlement and shipwreck sites, but one of the more important is to take advantage of the opportunity to explore the relationship between the documentary and archaeological record at this cluster of contemporaneous single-component archaeological sites. Specifically, the Luna expedition is remarkably well-documented in comparison to other mid-16th-century Spanish colonial endeavors, and the written record thus provides an important baseline of benchmark expectations that can be compared with the archaeological remains of Luna's settlement and fleet

(e.g. Ybarra 1564; Yugoyen 1569; Dávila Padilla 1625; Priestley 2010). Perhaps even more importantly, however, the truly massive documentary record of daily life and material culture both in Spain and throughout its increasingly far-flung colonial empire during the sixteenth century represents a dataset that can provide detailed insights into the nature, functions, frequency, value, and actual socioeconomic context of many items and categories of material culture that we archaeologists commonly use for our interpretations. Moreover, since the Luna sites can be defined as single-component “time capsules” spanning a maximum of 2 years on land and whatever handful of years constituted the use-life of each of the ships used in transporting Luna’s 1,500 colonists and supplies to Pensacola prior to the hurricane that destroyed the fleet, the archaeological traces of mid-16th-century material culture present at the Luna sites are ideally suited for comparative analysis with this broader documentary record. In this sense, the Luna settlement and shipwrecks can serve as an important laboratory for conducting multifaceted examination of the exact relationship between documentary and artifactual evidence. Not only does this apply to the Luna expedition in particular, which is significant in its own right as the first multi-year European settlement in the United States, but such studies also have potential application to the field of historical archaeology in general.

In many ways, the use of documentary evidence to identify and explore various facets of material culture in archaeological context is of course well-trodden ground, and indeed constitutes one of the fundamental and defining features of our discipline. Records employed for such research include not just textual narratives such as letters and diaries, period paintings, printed advertisements, and similar sources, but also incorporate more involved analyses of more easily quantifiable data in probate records, business ledgers, ship manifests, and other inventories and expense records (e.g. Noël Hume 1970; South 1977; Miller 1980, 1991; Klein 1991; Voss

2012). But in the United States, such sources are most commonly brought to bear on the American or English colonial periods between the 17th and 20th centuries, for which there are many readily-available documentary records in local, state, and national archival repositories, along with extensive English-language records in the United Kingdom, transcripts or copies of many of which are also available here in the United States. In contrast, however, the sixteenth century has only witnessed limited documentary research of this sort, in large part since pertinent Spanish-language records are almost entirely located outside the country in Spain and to a more limited extent in Mexico and Cuba, and most remain to this day in manuscript form accessible only to researchers with paleographic skills. To be sure, narrative and other textual accounts of early Spanish expeditions and colonial settlements in the Southeast and Southwest are widely available in English translations, but the types of documents most useful for detailed and systematic studies of material culture during the 16th century are almost never translated or even transcribed outright, and must therefore be mined directly in the original handwritten format. Digitization projects in recent decades are fortunately making more and more of these records accessible via the internet, but even these only represent a fraction of the available records.

Most document-aided studies of 16th-century Spanish material culture naturally focus on artifact identification and chronological placement, and to a lesser extent on identifying a range of probable and possible intended functions of objects recovered archaeologically (e.g. Goggin 1960, 1968; Lister and Lister 1982; Deagan 1987, 2002; South et al. 1988; Lyon 1992; Marken 1994). Sometimes documents provide far greater detail than is available from archaeological remains, while other times the opposite is true, with archaeological classifications far exceeding the documentary record in detail. This is particularly the case with Spanish ceramics, which were never recorded in documents with as great a specificity as archaeologists have developed

using the artifacts themselves. However with few exceptions, such studies are overwhelmingly particularistic and qualitative in nature, emphasizing the use of documents principally for the identification of artifacts found in archaeological contexts, while leaving assemblage-level quantitative analysis largely for the archaeological specimens.

There are two main problems with this approach, both of which result from the fact that it employs documentary data only as a supplement to archaeological analysis of artifacts. First, it tends to minimize or ignore other categories of material culture that are rarely found or do not preserve at all archaeologically, effectively detaching such objects from their broader material context. And second, it also further isolates these artifacts from their original social and economic context by failing to make use of available documentary evidence to examine their role within complete in-life material culture assemblages by conducting both qualitative and quantitative analyses using documentary inventories alone. In sum, conducting archaeological analyses of 16th-century Spanish artifact assemblages without simultaneously conducting thorough and systematic analyses of 16th-century Spanish material culture assemblages as revealed in the documentary record is to miss a golden opportunity to compare the documentary and archaeological records in order to test some of the basic assumptions we archaeologists make using artifacts alone.

What I am talking about here is conducting the same kinds of quantitatively-robust material culture analyses that we normally conduct on archaeological assemblages, but using documentary data (e.g. South 1977:190-198). For example, just as a researcher would compare the relative quantities of different types of artifacts in assemblages recovered from different proveniences on an archaeological site in order to learn about the people who used them, the same researcher can use documentary evidence to compare the relative quantities of different

types of material culture present in estate inventories from individuals of different occupations or wealth in order to provide a baseline for archaeological interpretation. And just as archaeologists continue to add artifact assemblages from different proveniences and sites to make their inferences more quantitatively robust long-term, the same can be done by accumulating a comparative database of estate inventories from many different individuals from different backgrounds in different places and times across the 16th-century Spanish empire, developing average profiles of the material culture assemblages of a wide range of people with differing identities and lifestyles. Many of the same kinds of anthropological questions can be explored with both datasets, including the relationship between material culture and social status, wealth, occupation, age, gender, and many other dimensions of social variability. But most importantly for our purposes here, it is in the systematic comparison of both archaeological and documentary portraits of material culture that we can truly augment and refine our models and assumptions regarding the interpretive potential of material culture in providing useful insights into many other dimensions of past human cultures.

To this end, as part of ongoing UWF research into the Luna archaeological site district in Pensacola, I have been conducting extensive documentary research using a wide range of documentary sources relating to the material culture of the Tristán de Luna y Arellano expedition and the people who comprised it, including both the soldiers and other colonists who populated the terrestrial settlement and the sailors who crewed the vessels that ultimately sank next to the settlement. Records I have consulted to date include probate records, ship manifests, treasury accounts, quartermaster accounts, and public notarial records, mostly housed in the Archivo General de Indias in Seville, Spain, but also including records in Mexico City, with increasing numbers of documents available digitally online (Worth and Bratten 2014; Worth 2016b, 2017;

Cook et al. 2016). In my remaining time here, I would like to highlight some of the more interesting initial results and most promising avenues for continuing research.

Despite the fact that the Luna expedition is one of the most well-documented of all 16th-century Spanish expeditions to Florida, including a massive and detailed treasury account audit that recounts royal expenditures for the construction and outfitting and crewing of the fleet, as well as the transport of huge quantities of food and other common supplies, both for the original expedition and four subsequent relief fleets, these records unfortunately do not provide any sort of detailed inventories of the more than 125,000 kilos of personal goods noted to have been transported in 67 separate parcels for all the officials, soldiers, friars, Aztec Indians, and others who comprised the expedition, nor details on the armaments and munitions, Indian trade goods, and other materials noted to have been transported. Nor do we have detailed ship-by-ship manifests for Luna's fleet, which means we have no inventories of the standard equipment, armaments, and supplies also present on the ships in addition to whatever colonial cargo was left on board when they sank in Pensacola. Furthermore, there is precious little detail in these documents regarding the vast numbers of containers, including ceramic, wooden, leather, and fabric, that were used to transport and store foodstuffs and other items, and essentially no detail regarding ceramic tableware and cookware, all of which actually comprise a substantial portion of the archaeological assemblage on land and underwater at the Luna sites in Pensacola. And probate records and estate inventories for only five people who died during the Luna expedition have been found, including inventories of personal possessions for only a ship captain and a sailor, and three soldiers, one of whom actually died shipboard before even arriving in Florida. What all this means is that if we are to understand the original cultural context of the entire assemblage of material culture that the Luna ships and colonists likely brought with them, we

must conduct systematic documentary research into what constituted the “typical” material culture of 16th-century ships and military outposts and people of various types and in different places and times, and use this to explore the exact relationship between material culture and different axes of social variability during the era.

One major focus of my documentary research is the compilation of data on personal possessions from Spanish *bienes de difuntos*, comprising inventories and auctions of the goods of those who died in the Indies with heirs in Spain (e.g. Gutiérrez-Alviz Armario 1941, 1942; Fernández López 2015). A vast number of such probate records exist for the 16th century, and many include detailed inventories, some with appraisals, along with accompanying auctions, all of which provide an extremely fine-grained record of even the smallest personal possession. A large number of these pertain to sailors and soldiers of various ranks, many of whom were in-transit or only itinerant residents of assorted locations in the New World, and whose possessions were typically contained within one or more chests or trunks, just as would have been the case for Luna expedition colonists and Luna fleet sailors. Other *bienes* records include a range of craftsmen and merchants and other skilled workers, and yet others belong to higher-level officials including royally-appointed positions, many of whom had comparatively large estates including homes, workshops, offices, lands, and livestock. Many additional 16th-century probate records are also included in Mexico City’s notarial archives, and to this wide cross-section of New World estate records we can also add an even more extensive assortment of contemporaneous probate records in numerous archives across Spain itself, including vast inventories for estates belonging to Spanish nobility.

Naturally, sampling is the only way even to begin to tap into this immense record of 16th-century personal possessions, which unfortunately is for the most part penned in the most

difficult script for the era. Nevertheless, I have already made substantial progress in compiling raw data into spreadsheets for quantitative analysis, focusing on identifying the relative frequencies and proportions of different types of goods, ranging from clothing and arms to personal grooming and religious items, as well as the relative total values of estates, all comparable by profession and rank. While a full overview of results so far is beyond the scope of this paper, a few of the more notable insights are worth mentioning here. For example, tableware was only rarely included among personal possessions, including those made from ceramics, wood, and metal. Most of the ceramics archaeologists make such extensive use of in reconstructing social status and identity appear normally to have been anchored more to places rather than people, and in the cases of ships and military expeditions, they were generally held in common, and thus seem unlikely to be good reflections of individual identity. Moreover, as a group, ceramics were always among the cheapest items listed in inventories, also suggesting they are somewhat poor reflections of comparative wealth, contrary to many archaeological assumptions. Another somewhat surprising fact is the prevalence of both rosaries or strings of prayer beads and prayer books in Spanish or Latin, even among the poorest individuals with the fewest possessions. And contrary to what is often assumed, while rosaries and prayer beads were made from a variety of materials including wood, bone, jet, coral, crystal, jasper, amber, silver, and gold, glass beads are not normally among them, instead appearing most typically in the documentary record as *rescates*, or trade goods.

Another category of documentary records that has proved extremely useful to the study of the Luna shipwrecks are contained in *registros*, or manifests, for ships leaving Spain for the New World (e.g. Torre Revello 1943). Within each manifest are several official visitations during which the ship's armaments, galley equipment, and provisions were inventoried in order

to assure they met minimum standards for the ship's tonnage and crew. I have so far collected these data from several dozen ships between 1523 and 1613, and within these lists are extremely useful details regarding the exact types and relative amounts of artillery, munitions, and weapons and armor for hand-to-hand combat as military technology changed across the decades of the 16th-century, demonstrating for example the disappearance of crossbows after about 1570 and the increasing prevalence of arquebuses and muskets after that point. In addition, the standard mid-16th-century ship's complement of one or two dozen breastplates has direct relevance for the discovery of one of these items on the Emanuel Point I wreck. Beyond this, inventories of cooking and serving equipment for the ship's galley, in combination with standard provisions loaded for rationing the crew and passengers during the transatlantic voyage, provides extremely useful details regarding both dietary habits and food preparation practices, which seems to have been characterized by communal food preparation of predominantly liquid foods over fire in a small number of large metal pots, cauldrons, and kettles, with individualized food consumption on wood or ceramic tableware, including soup plates, drinking bowls and jars, and cups, all of which were part of the ship's standard equipment. This same pattern also seems to hold for military warehouse inventories for 16th-century St. Augustine and Santa Elena, suggesting the pattern is widespread.

Ship manifests also contain an amazingly detailed and complete record of commercial merchandise shipped from Spain to the New World, individually listed by sender and recipient, with detailed descriptions of individual containers and their itemized contents, including owner's marks as well as the total declared value of each shipment. While the information is usually so voluminous that transcribing complete manifests is naturally daunting, I have done so for several mid-16th-century vessels, and the results have been extremely useful in understanding the range

of variation in all types of goods brought from Spain to its colonies, and particularly with regard to the nature and capacity of a diverse range of shipping containers, including precisely what types of goods were normally transported in each type and size container. For example, within the cargo on one 1557 ship to Honduras (Cabrera 1557), less than 10% of the *botijas*, called olive jars by archaeologists, actually carried olives, while 58% held olive oil in half-*arroba* size jars and 28% held wine in full-*arroba* jars, with a small minority containing vinegar, almonds, and hazelnuts. About half the ship's olives were instead carried in barrels and boxes, while more than 96% of the wine transported on the ship was actually carried in huge barrels called *pipas*.

Ordinary barrels in assorted sizes measured both by volume and weight were used in ship's cargo for a wide range of contents including food, supplies, and hardware, and in this latter category, the specification of the exact number of specific named types of nails that fit in such containers, along with assorted sizes and varieties of axes, horseshoes, and other tools and hardware, provides very useful information for archaeologists attempting to correlate archaeological specimens with specific documented items.

In all of these and other inventories of material culture, the relative price structure for both used and new goods in Spain and the New World is naturally pivotal for assessing their broader economic context, especially when compared to documented pay rates for soldiers, sailors, and other officials of the sort that accompanied the Luna expedition. Though prices for used goods are well-documented in estate auctions, prices for new goods can also be documented in a variety of ways, including notarial records on both sides of the Atlantic. Particularly useful are the 16th-century notarial records of Mexico City, many of which have been transcribed online. Included among these are itemized purchase lists from merchants receiving goods from

Spanish ships, as well as local store inventories provided upon the formation and dissolution of private companies, and also inventories of goods in dowries.

Ultimately, by reconstructing the prices and availability of a wide range of items of material culture in mid-16th-century New Spain, where the Luna expedition was organized, it should be possible to propose answers to some very important questions that bear directly on the archaeological record at the Luna site cluster in Pensacola. When infantry soldiers were issued their 100-*peso* allowance in 1559, and cavalry soldiers their 150 *pesos*, what might they be expected to have possessed already in the way of material goods and liquid cash, and what might they have spent this allowance money on? Would they have been able to afford mail armor instead of simply leather or padded armor? Could they have bought a horse and accompanying equipment? What about hiring servants or purchasing slaves? What is likely to have been a “typical” assemblage of material culture for Luna’s soldiers when they embarked? And what additional items might have been brought by soldiers with wives and children, or servants or slaves?

To these personal inventories of the Luna colonists we must also add the munitions, cooking gear, and food, and other supplies purchased and used in common by the expedition as a whole or by individual infantry and cavalry companies. And as discussed above, we cannot forget that the terrestrial settlement is only one component of the Luna site cluster; the Emanuel Point shipwrecks are also repositories for shipboard assemblages of material culture either housed on board or belonging to individual sailors and officers, potentially also including traces of previous commercial cargos that settled into the hold long before the Luna expedition. All these and many other questions can best be addressed using the kinds of systematic documentary analyses of 16th-century Spanish material culture that I have briefly outlined above. And while

this is clearly a long-term project just in its infancy, I believe the results will be of immense benefit to the ongoing archaeological study of not just the Tristán de Luna y Arellano archaeological district, but will also contribute to the discipline of historical archaeology in general.

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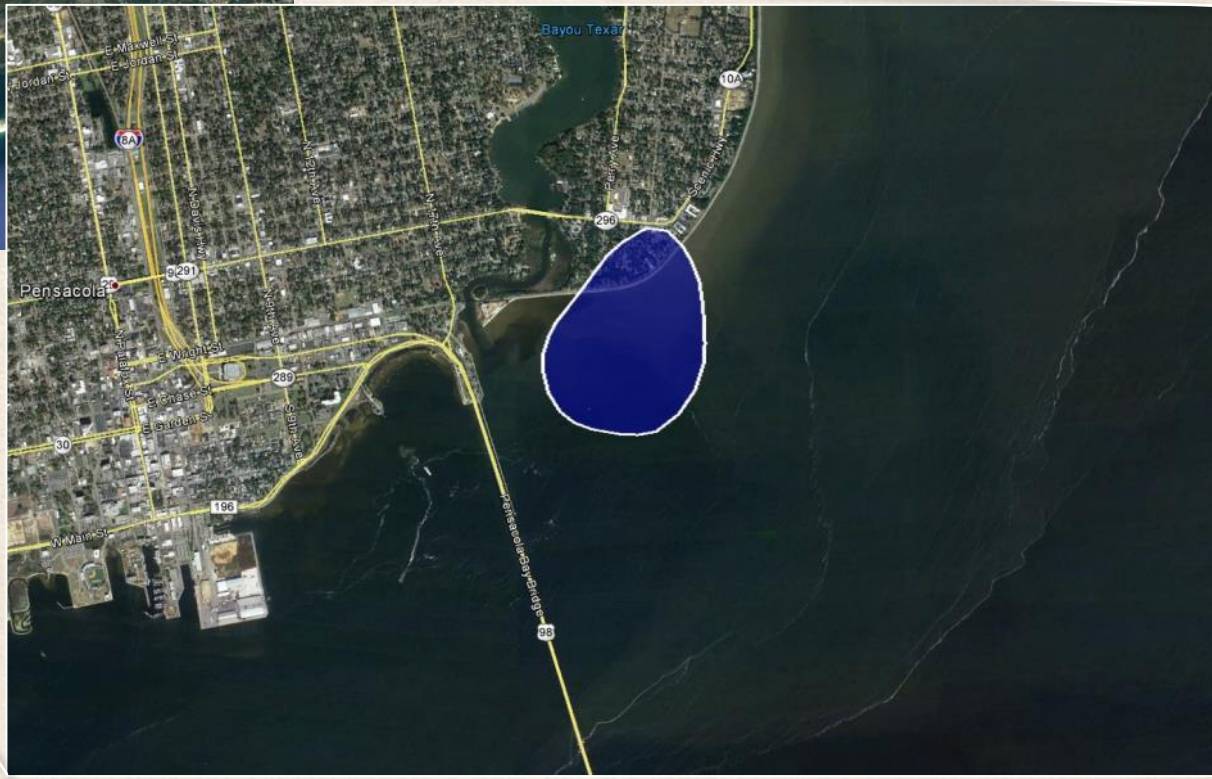
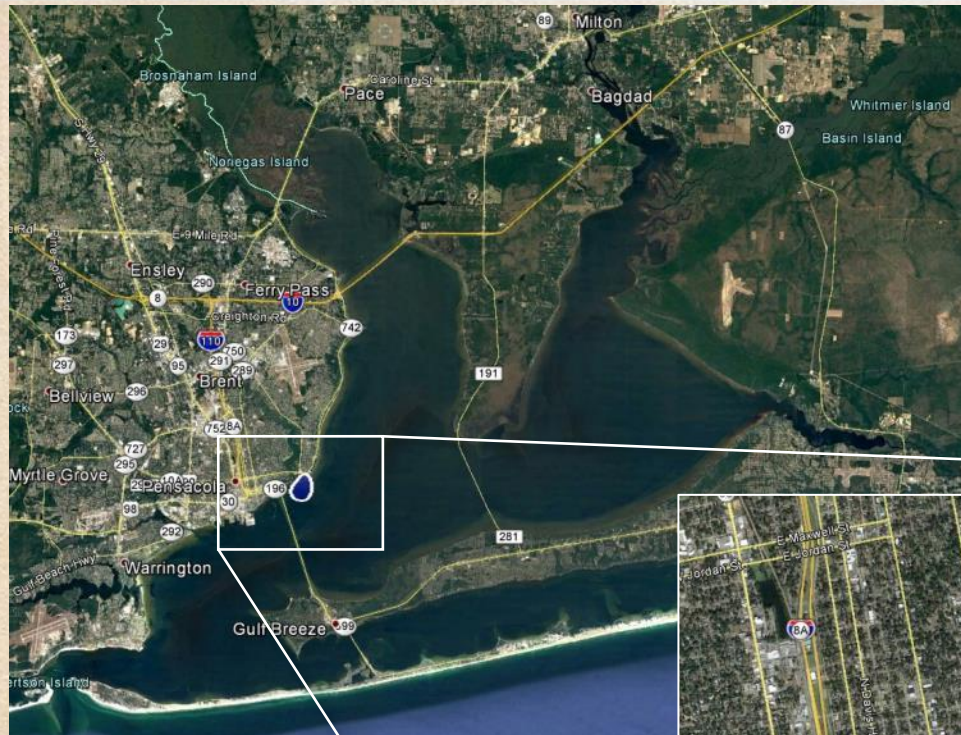
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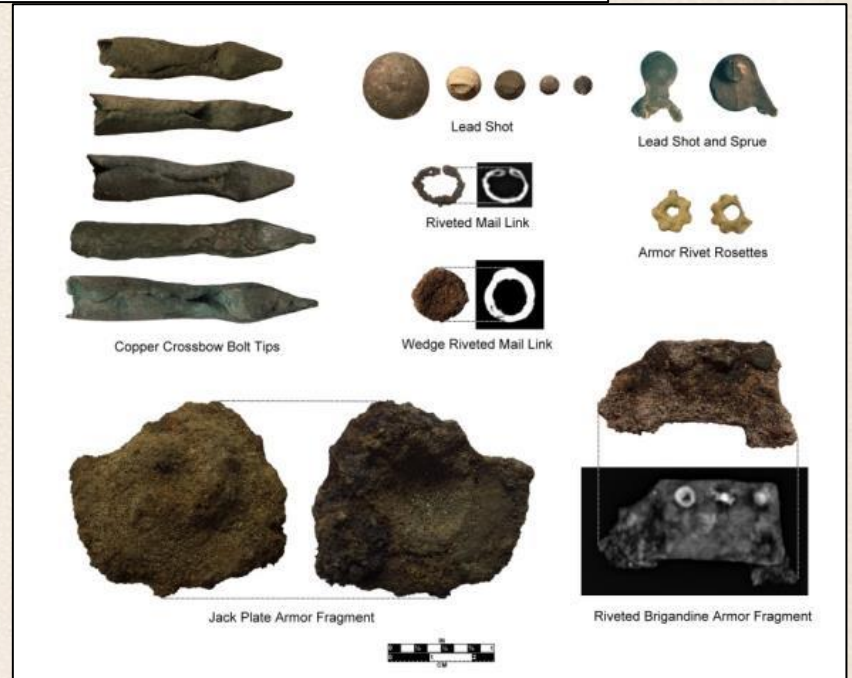
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The Tristán de Luna y Arellano Archaeological Site District

Selected Artifacts from the Luna Settlement Site





Botijas pezulezas.



alfileres



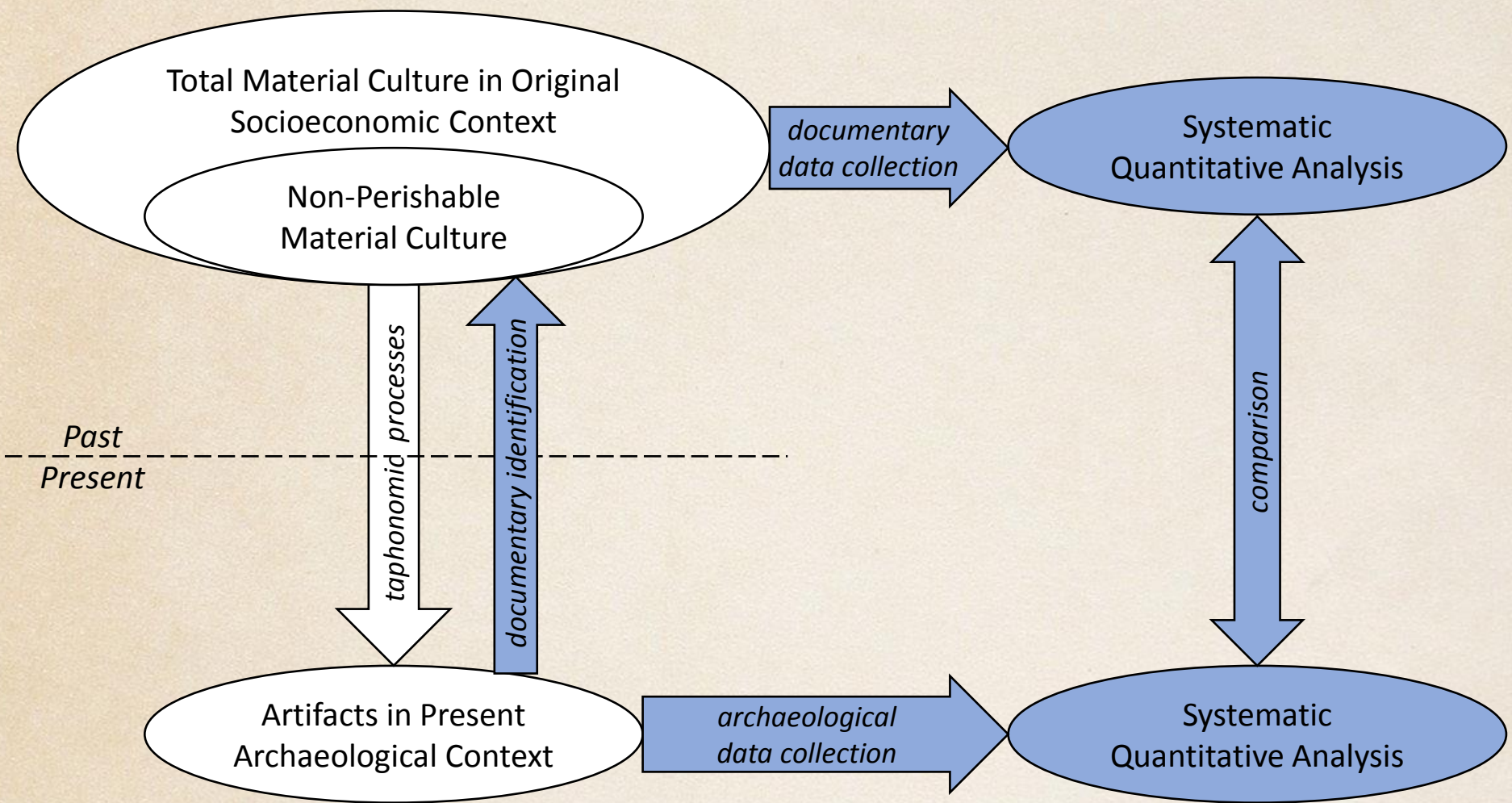
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PESAS

La quarta es de 10. castella-
nos o 80. tomines o 960. granos.



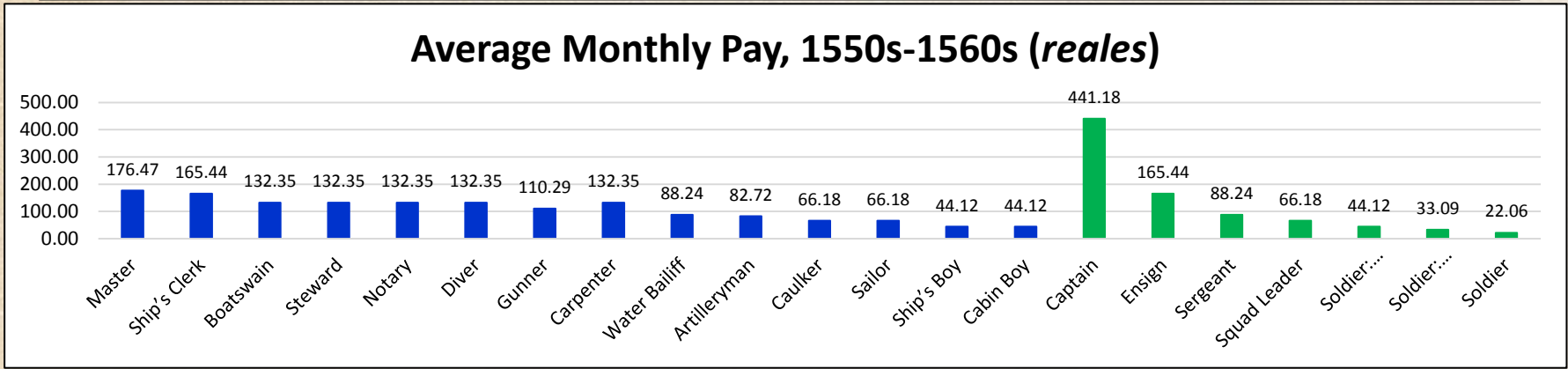
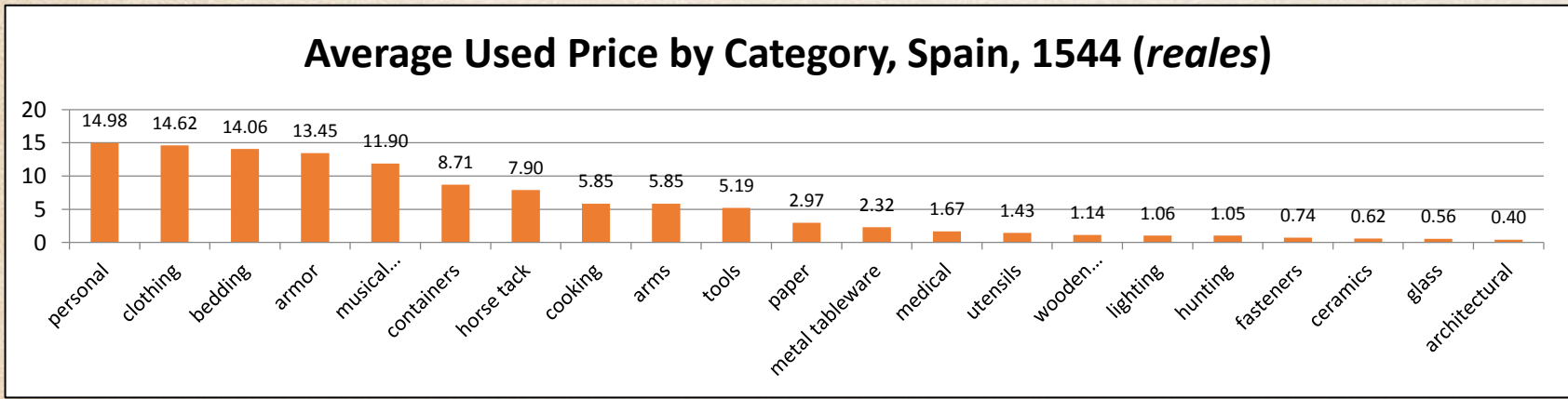
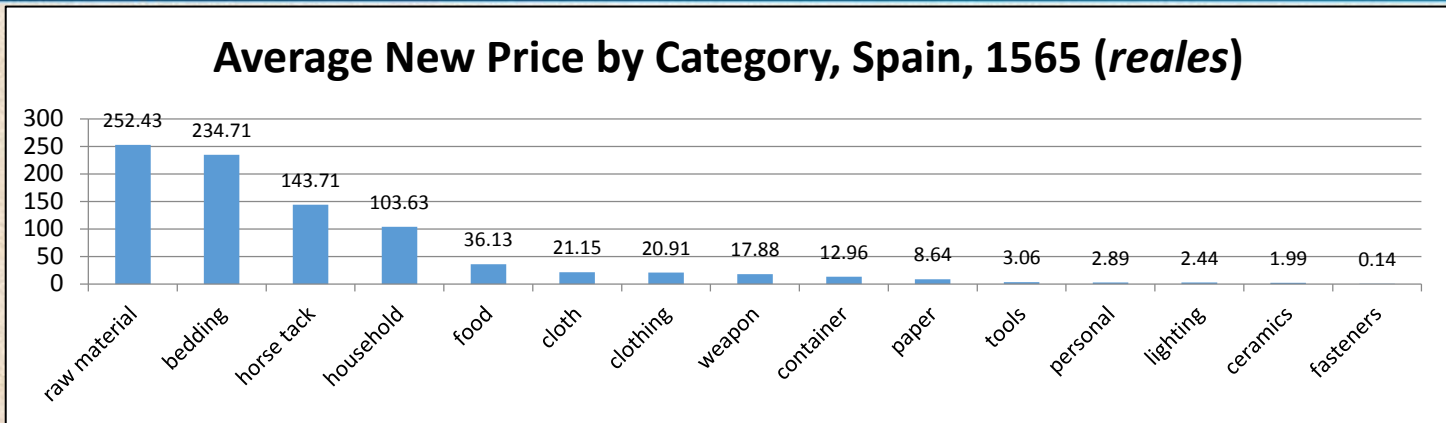
Luna Settlement Artifacts in the Documents



Category	Average No. Items Per Individual
Clothing-Torso	8.08
Clothing-Legs	4.23
Clothing-Head	1.85
Clothing-Feet	1.92
Clothing-Hands/Arms	0.15
Clothing-Fasteners	0.31
Weapons	2.00
Horse Tack	4.15
Tableware	0.77
Personal	8.54
Bedding	1.81
Containers	1.77
Cash (<i>reales</i>)	7.88

Category	Item	1520s	1530s	1540s	1550s	1560s	1570s	1580s	1590s
Artillery	lombardas								
Artillery	pasamuros/pasabolantes								
Artillery	versos								
Artillery	piezas/falcones/sacres								
Ranged	ballesta								
Ranged	escopeta								
Ranged	arquebus								
Ranged	mosquete								
Polearm	lanza								
Polearm	pica/media pica								
Polearm	pica larga								
Polearm	alabarda/templón								
Spear	dardo/gorguz								
Body Armor	coselete								
Body Armor	peto/cuerpo de arma								
Shield	paveses								
Shield	rodela								
Helmet	morion								

<i>Barriles: By Weight</i>	Documented Fit	Types of Goods
100 lbs. (<i>quintaleño</i>)	96 large axe heads	almonds, anis, hardtack, chickpeas, axe heads, figs, soap, raisins
50 lbs. (<i>medio quintaleño/2 arrobas</i>)	89 small axe heads 65-66 axe heads of all sizes ½ fanega (27.75 liters) unshelled almonds 2,888-4,000 scantling nails 120 horseshoes 58.25 lbs. rice 12,200 horseshoe nails	almonds, anis, rice, hazelnuts, nails, preserves, axe heads, horseshoes, figs, soap, raisins, rosemary, sublimate of mercury
<i>Barriles: By Volume</i>	Documented Fit	Types of Goods
55.5 liters/14.7 gallons (<i>fanega</i>)		olives
27.75 liters/8.3 gallons (<i>media fanega</i>)		olives, chestnuts
9.25 liters/2.4 gallons (2 <i>almudes</i> : also known as <i>barrilico</i>)	10-21.5 lbs. turpentine	olives, rose-water, theriac, turpentine, varnish
<i>Pipas*</i> (typically 6-hoop)	Documented Fit	Types of Goods
444 liters/117 gallons (<i>pipa @ 27.5 arrobas</i>)		wine
<i>Botijas</i>	Documented Fit	Types of Goods
16.1 liters/4.3 gallons (<i>perulera/arroba</i>)		wine, olives, vinegar, almonds, hazelnuts
6.3 liters/1.7 gallons (<i>media perulera/arroba</i>)		olive oil, olives, syrup, vinegar
unspecified (6.3 or 16.1 liters)		olive oil, hazelnuts, almonds



Item	Average Price (<i>pesos @ 8 reales</i>)	Average Price (<i>reales</i>)	Number of Day's Pay (arquebusier @1.45 <i>reales</i>)
slave	212.36	1698.88	1171.64
mail, coat, new	68.00	544.00	375.17
arquebus, new	53.75	430.00	296.55
horse	39.00	312.00	215.17
saddle	33.39	267.12	184.22
sword with dagger	30.33	242.64	167.34
arquebus, used	24.63	197.04	135.89
sword	24.08	192.64	132.86
crossbow, used	10.42	83.36	57.49
helmet, iron, used	8.33	66.64	45.96
lance	6.00	48.00	33.10
hatchet, new	0.88	7.04	4.86
prayer book	0.70	5.60	3.86
butcher knife, new	0.50	4.00	2.76
machete, new	0.39	3.12	2.15
soap (1 lb.)	0.25	2.00	1.38