



Editorial

Ship Archaeology and Material Culture: Artifacts, Representations, Structures, Narratives, and Materialities (16th–19th Centuries)

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This Special Issue is a compilation of studies on underwater and maritime sites related to Early Modern ships and shipwrecks. The studies combine diverse methodological and theoretical perspectives of material culture and analyses of artefacts, covering a chronological scope from the 16th to the 19th centuries. The analysis encompasses various scientific methodologies in the framework of historical archaeology with a theoretical interdisciplinary focus on the remains of submerged ships and collections that can offer very valuable information about the material culture of the time, life on board, identity, habits at sea, networks, colonialism, behaviours, nautical knowledge, and processes derived from the sinking and subsequent formation and evolution of archaeological contexts. These local studies, although mostly focused on specific archaeological sites, are contextualised in globalized macro-narratives that are framed by social, cultural, technical, and economic structures and provide a background for the conclusions drawn by several authors.

Underwater archaeology and the interpretation of shipwrecks from the Early Modern and colonial centuries are based on a strict methodology of registration, analysis, and interpretation of both the site itself (through photogrammetry and other techniques) and the study of organic and nonorganic materials in the laboratory. The compiled articles encompass analyses of these diverse materials, as well as the timber hull structure in connection to shipbuilding knowledge during the era of oceanic expansion. Likewise, the study of the related maritime landscapes and the narratives derived from the interaction between human society and the ocean through these submerged archaeological remains are also covered.

The order of articles follows both chronological and thematic criteria through the inclusion of several examples of research conducted on the archaeological excavation of the shipwreck site of Ribadeo I (four articles in total). The article “The ‘San Giacomo di Galizia’ Warship Galleon (1597)—Building Narratives through an Archaeological and Historical Reading of the Ribadeo I Shipwreck” [1] develops the historical context of the ship, its military campaigns and its sinking on the Galician coast in 1597. This large ship, known as the Santiago or also the *San Giacomo*, was identified as the former in 2011 as a result of an archaeological survey designed to improve the navigation of the port of Mirasol in Ribadeo (Galicia), and was only discovered 414 years after it was wrecked. Several archaeological campaigns permitted a thorough registration of the wreck and the recovery of hundreds of the objects this ship carried on its final journey. These artefacts comprise ceramics, metal, glass, and wooden objects which reflect the ship’s military intent and life onboard during its short span. Combining an interdisciplinary approach based on artefacts, historic documents, and spectroscopic analysis, this paper aimed to reconstruct the itinerary with which this ship sailed during its life and to discuss how the artefact assemblages allowed the writing of new narratives about the activities which occurred onboard. The articles “The Ribadeo I Shipwreck, Galleon ‘San Giacomo di Galizia’—From Excavation to



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Interpretation" [2], and "The Ribadeo I Wreck—Multi-Year Photogrammetric Survey of a Spanish Galleon of the Second Armada" [3] explain the targeted photogrammetry that has been undertaken since 2015, aiming to record the wooden structure, changes to the bedform, and the potential threats, both anthropogenic and environmental. The results of the multi-seasonal photogrammetric survey have not only provided pre- and post-disturbance records but have also highlighted the data potential and limitations to understanding diverse aspects including the monitoring of short- and long-term change, the extrapolation of visible structural elements and dissemination among diverse audiences. These papers explore the workflows for collecting, developing and interpreting photogrammetric data as the basis for further 3D modelling which, in turn, may yield deeper insights into the archaeology of this internationally important shipwreck.

The article "Meat Supplies at the Ribadeo I Shipwreck (San Giacomo di Galizia galleon): Preliminary Results from Three Small Faunal Samples" [4] encompasses a zooarchaeological analysis. The 76 bones recovered so far from the 'San Giacomo di Galizia' shipwreck represent a very small part of the animals or animal carcasses it would have carried on board. Cattle, sheep, pig, and goose were identified in the three samples analysed. Cattle remains were the most common. Bulk-meat cuts from fore/hindleg quarters and the axial skeleton suggested that beef was an important source of protein for the crew. Mutton and pork followed. The frequency and location of butchery marks indicated the extensive processing of the carcasses into small manageable portions, particularly in the case of cattle. The recovery of a goose tarsometatarsal (lower leg bone without meat) suggested that these birds would have probably been carried alive. Finally, the scarce ageing data collected pointed to the consumption of tender meat provided by subadults and young individuals.

Two more articles refer to another important underwater Early Modern archaeological site. "The Mortella II Wreck, a Genoese Merchantman Sunk in 1527 in Corsica (Saint-Florent, France): A Preliminary Assessment of the Site, Hull Structures and Artefacts" [5] is the full study of the two wrecks of "La Mortella II and III" located in Corsica. The study is completed by the article "Post-Medieval Wrecks in the Western Mediterranean and Pottery: The Mortella II Wreck (1527) and the Chronology of Montelupo Tin-Glazed Earthenware" [6], which includes a preliminary study of the ceramics found in the 2021 excavation that was conducted in the area of the wreck of the Mortella II. The material found is of high interest for determining the chronology of the wreck (1527). The almost exclusive presence of Montelupo majolica reveals an important cargo since this is a form ceramic production among the most important ones in European trade between the sixteenth and seventeenth centuries, with a very wide distributive geography including extra-European regions. The variety of decorations of the majolica of Montelupo so far documented in the wreck (at least nine) make this a reference site for the study of this ceramic type, especially due to the precise date marking the end of the contextual period (1527). This contribution also reflects on the most significant concepts of context and an interdisciplinary approach and underlines the importance of investigations on post-medieval shipwrecks, for those wrecks of which archival documentation is also available. The case of the Mortella can be interesting in this sense and also shows how an exact dating of the wreck can allow a revision of the chronologies of the ceramic classes found on board. In the case of the majolica of Montelupo, the revision of the dating of these ceramics of great diffusion (Europe, Americas, Africa) evidently has significant repercussions on international archaeological research.

The article "Agency and Structure in Shipbuilding: Practice and Social Learning Perspectives" [7] highlights the importance of shipbuilding as a social process involving numerous craftsmen who utilised their own knowledge and skills while working together to produce a complex machine. The construction of a ship traditionally relies on a stratified apprenticeship system that entails a master teaching apprentices their trade. In this type of setting, the shipyard becomes the classroom in which the younger generations are participants in learning and mimicking the mannerisms of their instructors. Apprentices may begin by becoming familiar with tools and producing standardised products, such

as the treenails used in the assembly of the hull structure. The development of this technique is considered an individual practice that when bound together with a construction methodology and shared interactions reveals social structures within a specific society. Repetition of this type of practice may reaffirm an existing structure, which in this article relates to various communities of shipbuilders. Scholars rely on archaeological remains, palaeographic studies, and ethnographic research to interpret ship construction.

“Life on Board Portuguese Ships in the 16th–18th Centuries: Theorizing Households through History and Archaeology” by T.M. Casimiro and M. Borges [8] deals with the daily behaviours people displayed onboard ships. Recognising behaviours is among the most challenging objectives of anyone who writes narratives about the past, especially when the tales of such agents have been long-lost. Archaeologists look at material remains and reconstruct daily activities while historians read documents that manifest how agents interacted with their surroundings. This paper reconstructs, based on an interdisciplinary approach combining archaeology and history, how different types of relational ontologies, both human and non-human, existed and co-existed onboard Portuguese ships in the Early Modern age, within a household theoretical framework. These ships sailed across different oceans, with different purposes and destinations, carrying people, animals, and objects. All these agents developed specific relations that created specific ways of being.

Dealing with everyday life as well, the paper “From the Sea to the Land: An Archaeological Study of Iberian Footwear during the Early Modern Period” [9] extends the investigation of Iberian footwear in the Early Modern age. The limited number of shoes in museum collections has led to a paucity of research and a lack of studies on forms, materials, and techniques. Questions associated with the production, consumption, and materiality of footwear between the 15th and 17th centuries have seen scarce development with regard to these practices in Portugal and Spain, resulting in a significant gap in identification of and knowledge about their different typologies. Therefore, shoes found in archaeological excavations constitute evidence of the most significant relevance. The paper analyses three collections of shoes originating from the Angra D shipwreck in the Azores, a 16th century site, the Convent of Santa Clara a Velha in Coimbra (17th century), and from Campo das Cebolas, on the Lisbon waterfront (16th–17th century). All the sites are either submerged or in waterfront zones. This text is the first, and so far, most unique approach to the study of Early Modern Iberian footwear, based on contextualized archaeological material evidence discussing what kind of shoes were used on land and on board.

The article “Archaeological Classification of Age of Sail Shipwrecks Based on Genever’s Material Culture” [10] analyses archaeological evidence of genever (Dutch gin) in the Dutch Republic during the Age of Sail (1550–1850). Although excessive alcohol consumption among mariners is a common stereotype, there has been surprisingly little critical scholarly work on this assertion. Genever has been noted for its use on ships for medicinal purposes between the seventeenth and eighteenth centuries, but no thorough analysis of alcohol consumption broadly in a Dutch maritime context has been performed to date. Since the Dutch stored genever in a distinctive bottle, the archaeological record is helpful for examining Dutch genever consumption. This article theorises that material evidence of genever for personal consumption (in stoneware jugs) and as a commodity (in the form of case bottles) can be used to identify an unidentified shipwreck’s nationality, and this hypothesis is tested through analysis of a sample of European wrecks excavated to date along the global shipping routes of Dutch commercial and naval sailing vessels. There is a strong correlation between the presence of both case bottles and stoneware jugs with Dutch shipwrecks or maritime archaeology sites which archaeologists facing a shipwreck of unknown origin are strongly encouraged to consider.

In the article “The remains of a Manila Galleon compass: 16th century nautical material culture” by Flor Trejo Rivera and Roberto Junco Sánchez [11], the authors debate the discovery of a compass balance from a Manila galleon that was wrecked off the coast of Baja California, Mexico, and discuss the possibility that it was manufactured in Spain, supporting their research on the analysis of navigation treaties that were written in the

context of the training of pilots by the *Casa de Contratación* (the Spanish board of trade and navigation). Considering both archaeological and documentary evidence, it is concluded that the compass was the most important nautical instrument on board and that its simple design allowed any malfunction to be resolved during journeys.

The article “Ballasting a Mid-19th Century Chilean Navy Armed Transport: Archaeometallurgical Insights into Cast Iron Ingots Recovered from the Barque *Infatigable* (1855)” [12] also focuses on material culture; Ballast can be broadly defined as an extra-heavy weight introduced into the ship to lower its centre of gravity and therefore improve its stability and ease its motion during sailing. Different types of heavy materials were typically used as ballasts, depending on their availability, requirements, and costs. During the Modern period, this was an issue of particular concern for both authorities and ship owners and was subjected to increasing control, regulation, and standardisation. This was largely the situation, despite its particularities, with warships and large merchant ships destined for overseas territories. Ballasts are very common discoveries in shipwreck sites and their study deserves special attention, as their characteristics, distribution, and provenance can deliver valuable information for assessing the place of stowage, sailing routes, ship tonnage, and site formation processes. This article is centred around pig iron ingots, a ballast widely used during the first half of the 18th century by sailing warships and thereafter by merchant vessels. Data gathered from this type of ballast also allow discussions of off-site and non-nautical technological issues, such as the materials, knowledge, and techniques associated with metallurgical production during industrialisation. Through the study of the remains of the *Infatigable* (1855) wreck site, new data on the quality of pig iron used as ballast towards the mid-19th century are provided.

Finally, the article “What Is There to Do If You Find an Old Indian Canoe? Anti-Colonialism in Maritime Archaeology”, by S. A. Rich; Ch. Sievers-Cail and Kh. Patterson [13] is a beautiful study of colonial and anticolonial discourse in maritime history. Following Max Loboiron’s claim that pollution is colonialism, the anti-colonial maritime archaeologist’s role in the Anthropocene is to reframe research questions, so that focus is directed toward interactions between marine and maritime, and so that the colonial ‘resurrectionist’ approach that has dominated nautical archaeology is reconsidered altogether. This normative statement is tested with an illegally excavated 4000-year-old waterlogged dugout canoe from the Cooper River in South Carolina, USA. Upon retrieval, the affected tribal entities were brought into consultation with archaeologists and conservators to decide how to proceed with the canoe’s remains. Upon considering the alternatives, tribal representatives reached a consensus to preserve the canoe with PEG and display it in the state museum. This procedure follows the resurrectionist model typical of maritime archaeology in the West, now the dominant protocol globally, where the scholar acts as a saviour by lifting entire wrecks from watery graves and granting them immortality in utopian museum spaces. However, this immortalizing procedure is at odds with indigenous values, voiced by tribal representatives, which embrace life cycles and distributed agency. In the end, the desire to preserve the canoe as a perpetual symbol of intertribal unity was the basis of concerns surrounding the canoe’s own life, spirit, and autonomy, and plasticizing it would permanently alter its substance and essence. The authors argue that the object of the canoe has become subservient to its postcolonial symbolism of Indigenous unity, resilience, and resistance, but ironically, by subscribing to the resurrectionist model of maritime archaeology, the immortalized canoe may not be the anti-colonial metaphor that it was intended to be.

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