SAS BULLETIN

NEWSLETTER OF THE SOCIETY FOR ARCHAEOLOGICAL SCIENCES

VOLUME 39 NUMBER 1 SPRING 2016

Opportunities for Student Funding- R.E. Taylor Poster Award Competition

With the start of the new year we kick off the first issue of volume 39 of the *SAS Bulletin*. In this issue you'll find several announcements from our associate editors of upcoming publications, conferences and workshops, as well as past meetings, focusing on archaeological ceramics, archaeometallurgy, bioarchaeology and maritime archaeology. Associate editor Charles Kolb has included reviews of two new publications on ceramics: one which uses ceramic petrography to look at the interactions of the Hopewell communities; the other looks at ceramic production in the area known as Alta California. Also make sure to check out Katy Myers Emery's report on the use of digital methods to study human remains and a new initiative to look into the ethics of this approach and the creation of a "best practices" for digital archaeology.

SAS would also like to put out a call for applications for the R.E. Taylor Poster Award competition. This prestigious award acknowledges innovative student contributions to archaeological research through the use of scientific methods, and has enhanced the careers of prominent young scholars and professionals for more than a decade. The award is named in honor of Professor Emeritus R. Ervin Taylor of the University of California at Riverside for his outstanding contributions in the development and application of radiocarbon dating in archaeological research and his dedication to the founding of the Society for Archaeological Sciences; his leading role as President (1980) and General Secretary (1981-2002) of the Society; and his committed service as editor of the SAS *Bulletin*.

The award consists of $100 US, a one-year SAS membership and subscription to the SAS *Bulletin*. Entries will be judged on the significance of the archaeological problem, appropriateness of the methods used, soundness of conclusions, quality of the poster display, and oral presentation of the poster by the student, who should be the first author in order to be considered.

This year there are two opportunities available to apply for the R.E. Taylor Poster Award competition. The first competition is for student applicants presenting a poster at the **Society for American Archaeology's 81st Anniversary Meeting** (April 6-10) in Orlando, FL. The other award will be given to a student presenting a poster at the **41st International Symposium on Archaeometry** held in Kalamata, Greece (May 15-21). Instructions for how to apply for each is described below

R.E. Taylor Poster Award at the 2016 SAA Meeting
Students interested in applying for the competition at the SAA meeting should send application materials via email to Destiny Crider (cridde01@luther.edu) **by March 28, 2016.** Applications must include the title and abstract of the poster, evidence that you have registered for the SAA meetings (email from the SAA), and proof of your status as an undergraduate or graduate student (usually appears on your SAA registration). Email confirmation that your application has been received will be sent to you. Please keep this email confirmation. In order to give the judges adequate time to posters, students will also be required to submit a PDF version of their poster on or before **April 1, 2016.** Judges will be present in person at the SAA meetings to judge posters and to ask students questions about their research. Prizes will be awarded at the SAA meetings following the end of the last poster session.

R.E. Taylor Poster Award at the 2016 ISA Symposium
There will be an additional award given at this year's 2016 ISA Symposium. Students interested in applying must include the title and abstract of the poster, evidence that you have registered for the ISA meeting, and proof of your status as an undergraduate or graduate student. Email confirmation that your application has been received will be sent to you. Please keep this email confirmation. Judges will be present in person at the ISA meetings to judge posters and to ask students questions about their research. Prizes will be awarded at the ISA

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meeting following the end of the last poster session. Applications will be due in April 2016 with the PDF version of the posters due in May. Further details about how to apply for the Taylor Award at the ISA will be posted on the SAS website (http://www.socarchsci.org/awards.html) and blog (http://socarchsci.blogspot.com/) soon so please check back for more information.

ARCHAEOLOGICAL CERAMICS

Charles C. Kolb, Associate Editor

This issue contains four topics: 1) Book Reviews on Ceramics; 2) Previous Professional Meeting; 3) Forthcoming Professional Meeting; and 4) Internet Resource.

A Note from your Associate Editor for Archaeological Ceramics

New Year 2016 marked the beginning of my 21st year as editor of this column. Before taking on this duty at the request of Rob Tykot, at that time the editor of the *Bulletin*, I was already a Life Member of SAS and an appointed reviewer for the American Library Association's *CHOICE: Current Reviews for Academic Libraries* since 1992. Additionally I was (and continue to be) a book and film reviewer for the AAAS's *Science Books and Films* (1977-x) and professional journals including *American Anthropologist*, *Pennsylvania Archaeologist*, *American Antiquity*, *Ancient Mesoamerica*, *Ethnohistory*, *Historical Archaeology*, and *Ceramic Bulletin* (ACerS), among others, and a former abstractor for *Art and Archaeology Technical Abstracts* (Getty Conservation Institute), *and Ceramic Abstracts* (ACerS). With the spread of the Internet, I also wrote online reviews that were peer reviewed and published in *H-NET*. I also continue to review manuscripts for these and many other journals and nearly a dozen commercial and university presses.

Three newsletters/bulletins have been significant in ceramic studies and I have been fortunate to serve as a contributor to them. *La Tinaja: A Newsletter of Archaeological Ceramics* Volumes 2(4) (December 1989) through 22(1) (Spring 2011 [published in 2013]) – 76 columns/articles focusing on ceramic news, professional meetings, new book reviews, and tabulations of published book reviews. Shifted from print to online and print issues but has ceased publication. *The Old Potter's Almanack: Joint Newsletter of the Prehistoric Ceramics Research Group and the Ceramic Petrology Group (British Museum, London* Volumes 2(1) (March 1994) through 15(1) (May 2006) -- 50 columns on archaeological ceramic news from North and South America, professional meetings, and reviews of new books. The newsletter changed from print to online and became a *Bulletin* and a conduit for British Museum staff publications. Society for Archaeological Sciences Bulletin Volume 19 (1-2) (January-June 1996) to the present -- 67 columns thus far, focusing on reviews of new books, professional meetings, Internet resources, and other information. Materials on archaeological ceramics, ceramic ethnoarchaeology, ceramic archaeometry, and related topics have been included. Volumes through 2005 sometimes had combined numbers but the *SAS Bulletin* began consistent quarterly publication in 2006.

Book Reviews on Ceramics

Ceramic Petrography and Hopewell Interaction, James B. Stoltman, Tuscaloosa: University of Alabama Press. xix + 209 pp., 37 black-and-white illustrations (including 2 maps), 65 tables. ISBN 978-0-8173-1859-8, $69.95 (hardcopy); ISBN, 978-0-8173-8807-2, $69.95 (e-book). It is also downloadable from Project MUSE http://muse.jhu.edu/books/9780817388072 and available online:ftp://1-t.ru/.../%20Ceramic%20Petrography%20and%20Hopewell%20In...

Stoltman, a specialist on the prehistory of the Midwest, is the author of *Laurel Culture in Minnesota and Groton Plantation: An Archaeological Study of a South Carolina Locality* and the editor of *New Perspectives on Cahokia: Views from the Periphery*. He has also written numerous research articles and reviews and served as president of the Wisconsin Archaeological Society and Wisconsin Archaeological Survey. This volume has 11 chapters, "References Cited" (pp. 195-203) with 102 entries, and an "Index" (pp. 205-209). Readers are reminded that petrography is the microscopic examination of thin sections of pottery to determine their precise mineralogical composition. In this significant regional monograph, Stoltman applies quantitative as well as qualitative methods to the petrography of Native American ceramics and adapts refinements to petrographic techniques, resulting in a new set of tools that enables fact-based and rigorous identification of the composition and sources of pottery.

The author focuses on the cultural interaction among the Hopewell Interaction Sphere societies of the Ohio Valley region and contemporary peoples of the Southeast. Inferring social and commercial relationships between disparate communities by determining whether objects found in one settlement originated there or elsewhere is a foundational technique of archaeology. This technique,

however, is based on an informed but necessarily imperfect visual inspection of objects by archaeologists. Petrography greatly amplifies archaeologists' ability to determine objects' provenance with greater precision and less guesswork. Using petrography to study a "vast quantity" of pottery samples sourced from Hopewell communities, Stoltman is able for the first time to establish which items are local, which are local but atypical, and which originated elsewhere. If my math is correct, there are 586 thin-sections (there is no overall tabulation among the 65 tables). Another significant possibility with petrography is to further determine the home source of objects that came from afar. Thus, combining traditional qualitative techniques with a wealth of new quantitative data, ceramic petrography and Hopewell Interaction offers a map of social and trade relationships among communities within and beyond the Hopewell Interaction Sphere with much greater precision and confidence than in the past. The primary objective of his monograph is to use the technique of petrography to uncover and explain evidence of cultural interaction among Hopewell societies of the Ohio Valley region and contemporary people of the Southeastern United States, as evidenced by the circulation of pottery vessels among sites that bore evidence of participation in the Hopewell Interaction Sphere (Caldwell 1964, Seeman 1979).

The volume begins with the usual list of illustrations and acknowledgments and an "Introduction" (pp. 1-7) in which he outlines the goals of this research, the sample size (40 complete vessels from the Ohio Valley and 15 others from the Southeast), discusses the Ohio centers of Hopewell ceramics (dimple stamped, cordmarked, and plain), the Leake site (Swift Creek ceramics) and Mann site (unique complicated stamped pottery). Numerous black-and white microphotographs and illustrative maps accompany the discussions.

Chapter 1: "Methodology" (pp. 8-16, 1 illustration). Stoltman notes that thin-section petrography is a venerable geological technique that provides reliable identifications of minerals and rocks. In this role it is well suited for the analysis of pottery because, as a mixture of mineral and rock fragments, most of which are natural inclusions but some of which may also be intentional human additives (i.e., temper), pottery can effectively be treated as if it were a metamorphosed. He also discusses two liabilities: 1) the destructive nature of sample preparation, and 2) inability to identify individual clay samples. The author details point counting as a quantitative approach, discusses sampling and counting errors, and the physical characterization of each thin-section, and considers six indices: 1) bulk composition, 2) mineralogical indices, 3) ceramic bodies, 4) pastes, 5) sand-size indices, and 6) temper-size indices. Chapter 2: "Ohio Hopewell" (pp. 17-69, 12 illustrations, 22 tables). He reminds the reader that pottery recovered from Hopewellian contexts in Southern Ohio (Figure 2.1) is traditionally classified using a typology developed by Olaf Prufer (Prufer and McKenzie 1965; Prufer 1968). All sherds selected for thin sectioning in this study were derived from university and museum collections that had been inventoried under this system, so that consistent terminology has been employed in this study. Local pottery of the Chillicothe region of Ohio is detailed, tempers employed by Hopewell potters (igneous rock as grit temper) are considered, differential temper sizes and amounts, and clays employed in pottery fabrication, are reviewed as is the issue of the Turner Series of pottery as local vs. non-local. Next Stoltman examines local pottery from Eastern Ohio, focusing on specimens from the Marietta Earthworks, Knight Hollow Rockshelter, Newark Earthworks, Local pottery from Southern Ohio, notably from the Tremper site; local ceramics from Southwestern Ohio, the Turner site; and limestone-tempered pottery from Hopewell sites in Southern Ohio are documented. The chapter concludes with an overview of Southern Ohio Hopewellian pottery and a discussion about Ohio Hopewellian pottery recovered from sites elsewhere in the Eastern Woodlands.

In the subsequent seven chapters he presents thin section data from sites outside of Ohio for which evidence of Hopewell interaction exists. Figure 3.1 shows the locations of these sites. Chapter 3 "The Mann Site in Posey County, Indiana" (pp. 70-90, 4 illustrations, 9 tables). The Mann site is located near the confluence of the Wabash and Ohio Rivers in the southwestern corner of Indiana. As with the major Hopewell centers of southern Ohio, there is an impressive complex of earthworks. Stoltman documents the local pottery from this site, the use of local sediments, focuses on 13 of 54 thin-sections that are from "possibly from non-local" vessels, and Mann pottery found in other Eastern Woodland sites. Chapter 4: "Southern Illinois" (pp. 91-95, 1 table). Two sites near the lower Ohio River in southern Illinois are included in the present study, the Rutherford Mound in Hardin County and 11Mx109 in Massac County. Paste distinctions likely reflect distinct clay sources but the production technologies employs at these site is remarkably similar. Chapter 5: "The Blue Ridge Province of North Carolina and Tennessee" (pp. 96-113, 8 figures, 7 tables). Astride the border between Tennessee and North Carolina, and extending a little into north Georgia, is the southern end of the Blue Ridge physiographic province. The southern Blue Ridge is a rugged mountainous belt (more than 300 peaks rise above 5,000 feet) up to 113 km in breadth that is underlain by

igneous and metamorphic crystalline rocks. This region is home to two of the more celebrated Middle Woodland sites, Garden Creek in North Carolina and Icehouse Bottom in Tennessee. The author focuses on Mound 2 at Garden Creek (plain, simple stamped, cordmarked, and rocker stamped specimens) and a smaller sample of specimens from Icehouse Bottom (simple stamped, cordmarked, and rocker stamped)

Chapter 6: "The Appalachian Plateau and Ridge and Valley Provinces of Northwest Georgia" (pp. 114-127, 4 illustrations, 5 tables). Two important Middle Woodland sites located in the northwest corner of Georgia are included in this study: Tunacunnhee and Leake. The Tunacunnhee site specimens have three separate temper classes and decorative surface treatments are specific to some classes. Leake site sherds illustrate diversity among three mineral classes (limestone and grog-tempered sherds were excluded from the analysis). A consistent suite of metamorphic minerals was employed, but while each of these minerals are present, the percentages from thin-section to thin-section "vary wildly." Despite typological diversity Stoltman concludes that the majority of vessels were made following a consistent set of local practices. Chapter 7: "The Coastal Plain of Georgia and Florida" (pp. 128-137, 2 illustrations, 3 tables). Three sites from this region are included in the author's study: Mandeville and Kolomoki in southwest Georgia and Crystal River on the Florida Gulf Coast. All are well-known for their apparent participation in the Hopewell Interaction Sphere. Specimens came from specific type sites: Mandeville (9 Cla 1), Kolomoki (9 Er 1), and Crystal River (8 Ci 1). Surface treatments include simple stamped, check stamped, and complicated stamped, plus a few plain specimens from the latter site. Sand-size inclusions dominate the sample, and the distinctiveness of the Mandeville examples relate to alluvial source; monocrystalline quartz dominates the other thin-sections. Chapter 8: "Limestone-Tempered Pottery in Middle Woodland Contexts in the Southeast and the Ohio Valley Region" (pp. 138-150, 2 illustrations, 4 tables). Fifty-three limestone-tempered vessels from Middle Woodland contexts were thin sectioned for this study. Twenty-four from the Ohio Valley region have been considered—18 from Ohio (see Table 2.20), 5 from Mann (see Table 3.7), and one from Rutherford (see Chapter 4). Only paste indices were used in considering these vessels because of the incomparability of body indices for vessels with tempers as different as limestone, grit, and grog. Specimens of Tunacunnhee and Leake limestone-tempered wares from Northwestern Georgia and two specimens from the Pinson Mound in Western Tennessee were studied and compared to limestone-tempered pottery from the Southeast and Ohio Valley region. Compositional signatures indicate that vessels from the Leake, Pinson Mounds, and Turner were likely fabricated at or in the vicinity of the Icehouse site in Eastern Tennessee.

Chapter 9: "Pinson Mounds Revisited" (pp. 151-160, 3 illustrations, 3 tables). Stoltman next reconsiders the Pinson Mounds thin section data previously published (Stoltman and Mainfort 2002) in order to clarify some issues, to add mineralogical compositions not included in the earlier report, and to view the site in the larger context provided by the newer data in this volume. A certain amount of notoriety has accrued to the site because of a unique set of circumstances, at least at that time, involving the neutron activation. His more recent detailed analysis suggests that specimens he considered non-local on the basis of exotic decorations (Table 9.2) are probably made locally and he concludes that complex stamped decorations derived from wooden paddles (either the paddles themselves or the idea of creating such paddles) can be attributed not to the movement of pottery but to the movement of paddles or the idea as seen in Swift Creek sites in Coastal Georgia. He also briefly discusses and deflects a criticism by Neff et al. (2006:70). Chapter 10. "The Sources of the 'Possibly Nonlocal' Vessels Recovered from the Ohio Valley Sites" (pp. 161-186, 1 illustration, 11 tables). In attempting to distinguish 95 Southeastern imports from local Ohio Hopewell ceramics, two salient properties stand out; namely, Southeastern vessels are generally endowed with (1) a greater abundance of sand-size inclusions that are (2) finer in size. Tables 10.1 and 10.2 (documenting 15 sites) provide quantitative data to give substance to his observations. Among the non-local examples, monocrystalline quartz predominates, another group has rock/lithic prominence, and a third is characterized by feldspar/mafic/mice prominence, while a final group of non-locals have composite composition. The Leake and Mann sites are considered as prominent in pottery production and distribution

Chapter 11: "Summary and Conclusions" (pp. 187-194). One primary goal of Stoltman's study was to refine and apply several quantitative indices to the thin-section petrographic analysis of ceramic bodies. Traditionally primarily a qualitative technique, it is intended that the indices he has produced will enhance the potential of petrography to yield valuable insights into the behavior of past potters. For example, by identifying the natural resources present in ceramic bodies. Four results are significant: 1) Characterizing the composition of Ohio Hopewell ceramics: Scioto and Hopewell wares have distinct recipes, the use of grog temper at the Tremper site is unique, and that the Turner ceramic series and

limestone-tempered vessels are local products. 2) Southeastern pottery is distinguishable from Ohio Valley products: mineral inclusions and grain size differentiates the two. 3) The dispersal of pottery vessels among sites that participated in the Hopewell Interactions Sphere: 86 of the 586 specimens were identified as intrusive to the site of their recovery. 4) "The Leake-Mann Axis of Interaction." These two understudied sites appear to have been major regional centers that served multiple functions. Stylistic foreign pottery made with local raw materials and diversity of ceramic assemblages is cited as evidence.

This monograph is significant for prehistoric archaeologists primarily working in the Eastern United States Woodland periods and is a splendid example of what can be accomplished by thin-section petrography. The clear and concise explanation of petrographic methods is valuable by itself. Stoltman's findings about Hopewell and Southeastern ceramics in 15+ sites, and the interesting conclusion that visits to Hopewell centers by Southeastern Native Americans were not only for trade purposes but more for such purposes as pilgrimages, vision- and power-questing, healing, and the acquisition of knowledge.

Ceramic Production in Early Hispanic California: Craft, Economy, and Trade on the Frontier of New Spain by Russell K. Skowronek, M. James Blackman, and Ronald L. Bishop, with contributions by 10 others, Gainesville: University Press of Florida, 2014. xxxiv + 389 pp., 15 color plates, 72 figures, 47 tables. ISBN-10: 0813049814, ISBN-13: 9780813049816, $84.95 (hardcopy). It is also downloadable from Project MUSE: https://muse.jhu.edu/books/9780813048888 and Florida Scholarship Online: http://florida.universitypressscholarship.com/view/10.5744/florida/9780813049816.001.0001/upso-9780813049816

Skowronek is Professor of Anthropology and History, Department of Sociology and Anthropology, College of Social and Behavioral Sciences at the University of Texas-Pan American. As a research associate of the National Museum of Natural History, Smithsonian Institution he has spent the past three decades studying the Spanish colonial world. Dr. Skowronek has received a number of grants including some from the National Endowment for the Humanities. He is the author or editor of dozens of several books including *X Marks the Spot, the Archaeology of Piracy* (edited with Charles Ewen, Gainesville: University Presses of Florida, 2006), *HMS Fowey Lost ... And Found!* (with George R. Fischer, Gainesville: University Presses of Florida, 2009), *Beneath the Ivory Tower, the Archaeology of Academia* (with Kenneth Lewis, Gainesville: University Presses of Florida, 2010), *and Situating Mission Santa Clara de Asís: 1776-1851, Documentary and Material Evidence of Life on the Alta California Frontier: A Timeline* (with Elizabeth Thompson Berkeley: Academy of American Franciscan History, 2006). He has also published articles and reports and ceramics. M. James Blackman is senior research chemist emeritus at the Smithsonian Institution in the Department of Anthropology at the National Museum of Natural History. His research has focused on obsidian and ceramics the latter published in *American Antiquity*, *Latin American Antiquity*, *Paléorient*, *Oxford Journal of Archaeology*, *Accounts of Chemical Research*, *Archaeometry*, and *MASCA Research Papers*, among others. See 121 citations at Google Scholar: https://scholar.google.com/citations?user=FFcdHqcAAAAJ&hl=en Ronald L. Bishop is curator for Mexican and Central American archaeology and senior research archaeologist at the National Museum of Natural History, Smithsonian Institution. His research has focused on ceramics published in books, including *The Ceramic Legacy of Anna O. Shepard* (edited by Ronald L. Bishop and Frederick W. Lange, Niwot, CO: University Press of Colorado, 1991) and *Ceramics, Production, and Exchange in the Petexbatun Region: The Economic Parameters of the Classic Maya Collapse* (coauthored with Antonia E. Foias, Nashville, TN: Vanderbilt University Press, 2013 and reviewed in *SAS Bulletin* 37(1):9-11, 2014). His articles have appeared in *American Anthropologist*, *American Antiquity*, *Latin American Antiquity*, *Ancient Mesoamerica*, *Journal of Field Archaeology*, *Archaeology*, *Kiva*, *Journal of Archaeological Method and Theory*, *Historical Archaeology*, *Archaeometry*, *Journal of Archaeological Science*, *Archaeological Chemistry*, *Vinculos*, and *Cuicuilco*, among others. Articles and book chapters are tabulated in Google Scholar, see 147 citations at https://scholar.google.com/citations?user=pOGhAswAAAAJ&hl=en and 42 articles posted on Research Gate http://www.researchgate.net/profile/Ronald_Bishop .

This volume contains new information on the production, supply, and exchange of pottery in Alta California, which will likely be useful for years to come. Using the framework of World Systems Theory and Instrumental Neutron Activation Analysis, the authors have demonstrated the widespread production of both plain and glazed ceramics in Spanish California and the supply of other ceramic tablewares from Mexico. When situated with the other contributions to this book, the nuanced story of ceramics, the people who made them, and the nuclear and other scientists who studied them reveals a sophistication that far surpasses the wildest dreams of mission-era archaeology.

In the eighteenth and early nineteenth centuries, much of what is now the western United States was known as Alta California, a distant corner of New Spain. The presidios, missions, and pueblos of the region have yielded a rich trove of ceramics materials, though they have been sparsely analyzed in the literature. *Ceramic Production in Early Hispanic California* examines those materials to reinterpret the economic position of Alta California in the Spanish Colonial Empire.

The volume consists of 16 chapters divided into five parts, "References" (pp. 325-386) with 512 entries, "About the Authors and Contributors" (pp. 369-374) (the three senior authors and ten other contributors), and a detailed comprehensive "Index" including topics and proper nouns and, admirably, the illustrations and tables. There are15 color plates (clustered following p. 172), 72 figures, and 47 tables. In the "Foreword "(pp. xix-xxii), the senior authors note that "California has always been a land of contrasts, both internally and when compared with other areas of North America. The early Spanish explorers and settlers remarked how like their homeland it was, thus Iberian agriculture, architecture, and culture adapted to the California coastal environment." There is a "Preface" (pp. xxiii-xxviii) contextualizing the research and "Acknowledgments" (pp. xxix-xxxiv), in which the members of the research team acknowledge the staff of the Center for Neutron Research at the National Institute of Standards and Technology for their cooperation and assistance throughout this 12 year-long long project. English-Spanish language conventions used in the book are explained; for example, the use of *mayólica* rather than other similar terms. Some additional material is available: Skowronek, Blackman, Bishop, Imwalle, and Reyes "Ceramic Production, Supply, and Exchange in Spanish and Mexican Era California: A Progress Report on the Santa Clara University – Smithsonian Project" *SMRC* [Southwestern Mission Research Center] *Revista* [Review: News and Events], pp. 21-29 (Spring-Summer 2007).

Using neutron activation analysis, petrography, and other analytic procedures, more than 1,600 ceramic samples were examined. The contributors to this volume explore the region's ceramic production, imports, trade, and consumption. From artistic innovation to technological diffusion, a different aspect of the intricacies of everyday life and culture in the region is revealed in each essay. This book illuminates much about Spanish imperial expansion in a far corner of the colonial world. Through this research, they contend correctly, "California history has been rewritten."

Part: I A Study of Pottery (two chapters on Alta California, economics, and ceramic production and exchange). Chapter 1: "A Global Perspective" (pp. 3-11). The authors remind us that for ten millennia pottery has been a part of the material culture of humankind. Their comprehensive study includes bricks and tiles to ceramics for the preparation, presentation, and storage of comestibles. The chapter focuses on the definition of Alta California, documentary information, ethnohistory, ethnoarchaeology, and materials analyses as approaches to the past. Previous research is reviewed, including the chemical database started in 1999. The issues to be explored include: Who made the ceramics? Where were the ceramics made? What did they look like? How were they used? And what did they signify? Chapter 2: "Creating a New Europe in the New World" (pp.12-19). Prior to the era of European colonial expansion, people lived and largely interacted in a single region in large land-based empires. Their lands were largely contiguous and they were the dominant political and sociocultural entities. The colonial era dramatically changed this and the authors discuss the manifestations of the European-Centered world economy, productive/protective economic models, and the effects of Spain and Mexico on Alta California.

Part II: Tradition and Transformation of Alta California (two chapters on cultural transformations.) Pottery has long been associated with plant domestication and being sedentary; prehistoric coastal California was no exception. South of what would become Los Angeles, Native peoples grew corn, beans, and squash; lived in permanent villages; and made pottery vessels but further north, hunting and gathering and basketry were the norm. Chapter 3: "Craft and Commodities of Early California" (pp. 23-38, 5 figures, 1 table). The authors document post-1542 California, the Cabrillo expedition, Spanish incursion and the "Sacred Expedition" of 1769. Ten Native American cultures are described briefly, among then the Kumeyaay, Chumash, Salinas, Ohione, Miwok, and Yokuts. Chapter 4: "Incorporation into New Spain" (pp. 39-66, 1 figure, 1 table). In the last third of the eighteenth century, Alta California was annexed to New Spain in an attempt to forestall the seemingly inexorable southward expansion of Great Britain and Imperial Russia along the Pacific coast of North America. Four Presidio jurisdictions were established, each with a number of missions: Presidio San Diego (6 missions), Presidio Real de Monterey (6), Real de San Francisco (4), and Real de Santa Barbara (5). The chapter provides descriptions if the town, forts, and mission demographics. The significance of ceramics to the Spanish Colonial world is discussed (pp. 64-65).

Part III: The Creation of Ceramics (three chapters on the steps in ceramic production – resources through firing.) Documentary evidence shows that ceramic items were produced throughout the province of California, seemingly making them ubiquitous. Yet we know almost nothing about who made them, how they were made, and what forms were made. Chapter 5: "A Typology of Mission Pottery : Drawings and Descriptions of Low-Fire Earthenwares from Mission San Antonio de Padua, California" by Julia G. Costello (pp. 69-92, 7 figures). Costello provides a detailed discussion of the ceramic typology, focusing on the Howard Collection of locally made low-fire earthenwares "one of the largest and most diverse in California." Vessel types, forms of utilitarian wares, paste compositions, manufacturing techniques, functions, and decorations are noted; figurines and marbles were also produced. Chapter 6: "Fabrication and Replications: Fabrication and Replications: A Potter's View" by Ruben Reyes (pp. 93-113, 12 figures). The author discusses previous research on pottery produced in Colonial California, differentiating gender roles. In Mexico, males fabricated the pottery and women decorated them; in California women made the pottery. Two Mexican male potters practiced in Alta California. Local pottery is described and fabrication methods delineated. Replication studies of earthenwares and *mayólica* are reported, and research on glaze and paint replication, designs, and firing methods documented. Chapter 7: "Ceramic Firing Technology in Alta California" by Michael H. Imwalle (pp. 114-131, 8 figures). The author discusses issues of firing temperatures, durability, color, and pottery and brick and tile manufacturing using a two-chamber updraft kiln. He notes an unusual Mission San Antonio de Padua kiln built into the base of a slope (your reviewer suggests that this is what the Chinese call a Dragon or climbing kiln).

Part IV: Assessing Variation in Ceramic Composition (six chapters documenting the variations in ceramics assessed by thin-section petrography and INAA.) Ceramics are multi-component systems of natural raw materials selected and prepared according to social practices and technological requirements, ultimately transformed into finished products for use in a wide variety of social contexts. Chapter 8: "Selected Approaches to Ceramic Characterization" (pp. 135-151, 1 figure). Pottery making may have begun as early as 25,000 years ago, depending on how one interprets the figurines recovered from what is now the modern Czech Republic (see Vandiver et al. 1989). The authors discuss Japanese Jomon, Central Mexican Purron, and Soconusco Bara complex pottery studies, then focus on early scientific studies since 1774. Clay composition studies, the Provenience Postulate, and Anna Shepard's pioneering work in petrography are noted, and a simple description of INAA as an offshoot of the Manhattan Project is presented. XRF, AAS, and OES are mentioned in this overview of petrographic and chemical analytical methods. Chapter 9: "The Mineralogy of California Plain Wares: Technology and Social Reproduction in the California Spanish Missions" by Sarah Peelo (pp. 152-169, 2 figures, 2 tables). Prior to the establishment of Spanish missions along the coast of Alta California in 1769, most indigenous peoples of the California coast (excluding the southernmost groups, such as the Kumeyaay) did not have a ceramic tradition. Peelo focuses on the process of production rather than the product in reconstructing technological style. Style as decoration (Wobst 1977) is cited and she details style vs. technology vs. function. *Chaîne opératoire* is mentioned but not the methodology of ceramic ecology. She discusses plainwares from five sites, documnting mineralogical composition that used local raw materials, and points out the problem of naturally occurring paste vs. added temper. Chapter 10: "The Chemical Characterization of California Pottery" (pp. 170-177). INAA is a highly sensitive analytical technique also used in the Alt California ceramic analysis. Sample preparation, irradiation procedures, data analysis, and statistical procedures are discussed. The latter include numerical taxonomy, eigenvectors and eigenvalues, and Mahalanobis distance. Chapter 11: "Anchoring Ceramic Production: Bricks, Tiles, and Plain Ware" (pp. 178-217, 20 figures, 19 tables). Pottery was previously unknown to all but the southernmost groups in California. The need for utilitarian ceramics to meet the needs of the missions, presidios, and pueblos led to the development of what is generally referred to as mission-made ceramics, low-fired, plain earthenware. The authors discuss the evidence for overland transport for trade and examine source attributions of plainwares. In "mining the data," they examine missions, pueblos, and presidios, then focus on three base groups: San Diego, San Luis Rey, and San Juan Capistrano and three jurisdictions: Presidio Santa Barbara, Presidio Monterey, and Presidio San Francisco. One interesting issue is the "curious case" of Tizon Brown Ware which may have been produced in different areas of manufacture, or was made from different resources, or made at different times.

Chapter 12: "Native American Ceramics Found at Old Town San Diego: Trade or Local Manufacture?" by D. Larry Felton, Glenn Farris, and Eloise Richards Barter (pp. 218-241, 2 figures, 2 tables). Old Town San Diego State Historic Park, located about 20 miles from the Mexican border, marks an important crossroad in California history. It is adjacent to the site of the earliest permanent Spanish colonial settlement in Alta California,

the mission and presidio established nearby. The area, originally occupied by Kumeyaay Indians and later by retired Spanish soldiers and their families has yielded a "large number" of Indian-made sherds (23,601). The authors discuss four household excavations: Fitch-Carillo, Osuna, Snook, and Silvas. The Spanish had Indian servants who may have fabricated pottery. The archaeological contexts, details on the ceramic collection (forming, firing, distribution, use, and reuse) and analyses are reported (100 thin-sections and 39 samples for INAA). Chapter 13 "Supplying Glazed Ceramics to Alta California" (pp. 242-280, 17 figures, 12 tables). The examination of the lead-glazed ceramics added a second dimension to understanding pottery circulation within the Alta California mission and Presidio system, as these ceramics were generally thought to have been imported from Mexico. Land and seaborne commerce are discusses as are shipping containers. The chapter focuses on *mayólica* (tin-opacified lead-glazed ceramics. Specimens from Mexico City, Puebla, Oaxaca, Panama, and Seville/Triana, were examined and compared with sherds locally recovered; chemical compositions are detailed using bivariate plots and 14 reference groups defined. Lead-glazed earthenwares from four jurisdictions are detailed. The chapter also documents burnished ceramics and olive jars as utilitarian containers. The authors point out that there remains much work to do on glaze ceramics.

Part V: Pottery as an Active Component of Colonial Economics (three chapters on pottery as a component of Colonial California economics.) In Chapter 13 readers learned how has provided a vital source of information about the complexity associated with the manufacture and supply of pottery to Alta California. Compounding this complexity are the myriad names archaeologists use to define ceramic types. Chapter 14: "*Losa Sortida*: Historical and Archaeological Perspectives on Imported Ceramics in Alta California" by Barbara L. Voss (pp. 280-300, 3 figures, 1 table). *Losa sortida* translates as "assorted pottery." Colonial settlements in Alta California imported substantial quantities of ceramics from Mexico, China, and Europe. Archaeologists have given these imported wares, which were usually glazed and often quite beautifully decorated, a wealth of attention since the early 1900s. Voss provides a history and define functions of 65 sherds of imported ceramics, defining archaeological and folk classifications of specimens of imported tablewares recovered at Presidio San Francisco. The majority of the pottery was made in Puebla but Bruñida de Tonala, Chinese porcelain, and British whiteware are also found in this collection. Chapter 15: "Reconstructing *Mayólica* Use Patterns from Colonial Sites in Southern California" by Jack S. Williams (pp. 301-313, 6 tables). By the middle of the sixteenth century, Spanish explorers had penetrated the coastal areas of what is today the state of California. Williams discusses the results of contexts and excavations from three projects: San Diego Presidio, Mission San Diego, and Mission San Luis Rey. Nine *mayólica* types and 25 variants were defined based on the study of 9,642 sherds. Two chronological periods (early: 1759-1800 and late: 1800-1835) were determined. Puebla [Mexico] blue on white dominates the early period and Williams discusses behavioral implications, noting that *mayólica* was a low-frequency phenomenon in California sites. Lastly, Chapter 16: "Concluding Comments: Pottery and the Transition from Colonial Life" (pp. 314-323, 2 tables). After more than 14 years of involvement with the ceramics associated with the missions, presidios, pueblos, and adobes of California's Hispanic past, the authors' state that it seems appropriate to assess what has been learned, take stock as to where we are, and consider what lies ahead. Compositional groups of brick and tile and pottery have been determined and documentary evidence in the form of invoices for imported ceramics at the Santa Barbara Presidio and Mission Santa Clara provide evidence of consumption periods and choices. One issue that needs further investigation is that Missions San Juan Batista and San Carlos, both in the Monterey Presidio, used Panamanian *mayólica*. Potential future studies will use ICPMS to discern glaze recipes in Alta California.

This is a masterful presentation of a large body of work undertaken over more than 14 years. Some of the information has been previously published, some has been revised and updated from prior research, and much is new and unpublished. Investigating mission- and presidio-associated ceramics, the authors have redefined the history of California as a remote area of New Spain that eventually was integrated into a larger world economic system. Human behaviors and interactions have been determined from the longitudinal and diachronic ceramic studies and the volume will remain a benchmark for the presentation of methodologies, analyses, and interpretations for decades to come.

Previous Professional Meetings

Workshop: The Achaemenid Horizon in the Light of Ceramic Data: Production-related Issues and Cultural Interactions from the Ancient Near East to Central Asia was held on Monday, 25 January 2016 at Università degli Studi di Napoli "L'Oriental," Dipartimento "Asia, Africa e Mediterraneo," Napoli, Italia. Organized by Giulio Maresca and Fabiana Raiano, scholars involved in archaeological studies on Iran, Near East and Central Asia convened to discuss the complex issue of the cultural interactions within the broad geographic area

under the political control of the Achaemenid dynasty, in the light of recent researches on ceramic data from archaeological contexts both in "central" and "peripheral" territories of the Empire. The topic focused on ceramic repertoires from the previous local traditions and subsequent developments in the ceramic evidence, examining diachronic perspectives of the issue. This workshop was conceived as a one-day colloquium involving scholars in the early or middle stage of their careers, with the aim to develop a network to confront fieldwork experiences and research methodologies, to share information, learning and conclusions stemming from new investigations, to open new research scenarios and to foster scientific cooperation. Giulio Maresca can provide additional information on the workshop: guliomaresca@hotmail.com.

The one-day session began with brief welcoming speeches by the Organizing Committee, Michele Bernardini (Head of DAAM: Dipartimento Asia Africa e Mediterraneo), and Adriano V. Rossi (Scientific Director of ISMEO: Associazione Internazionale di Studi sul Mediterraneo e l'Oriente). The morning presentations were chaired by Remy Boucharlat and began with a Keynote Lecture by Bruno Genito. The five oral presentations were by Alessandro Poggio "From Monumental to Portable. The Achaemenid Horizon in the Anatolian Material Evidence"; Rocco Palermo "Living and Dining in «No Man's Land»?: Settlement Patterns and Pottery Horizon from the Achaemenids to the Seleucids in the Heartland of Assyria"; Roberto Dan, Priscilla Vitolo, Manuel Castelluccia "From Urartu to Media: A Reassessment of «Post-Urartian» or «Median» Pottery"; Manuel Castelluccia "Local Tradition and Imported Types: Achaemenid-time Pottery Assemblages from Transcaucasia"; and Marco Galuppi: "Pottery of the Achaemenid Period in Fars (Iran): A Preliminary Study on the Basis of Recent Excavations by the Iranian-Italian Joint Archaeological Mission in Fars."

The afternoon session was chaired by Bruno Genito and included five papers: Giulio Maresca "The Achaemenid Ceramic Horizon as seen from Ancient Zranka: an Overview"; Jacopo Bruno "Between the Iranian Plateau and Central Asia: the Ceramic Complex of the Upper Atrek Valley during the Achaemenid Period"; Fabiana Raiano "In Search of an Achaemenid Horizon in Sogdiana according to the Ceramic Data from South-Western Area of Samarkand (Uzbekistan)"; Gian Luca Bonora "The Cultural Achaemenid Evidence in the Inner Syrdarya Delta (Chirik Rabat, Sengir Tam and Surrounding Sites)"; and Elisa Iori "Local persistence and Iranian legacy in Gandhāra." Remy Boucharlat gave a final Keynote Lecture followed by a Discussion and Concluding Remarks.

Revisiting the Pottery of the Late Bronze Age Shephelah: A Hands-On Workshop for the Study of LB Ceramics took place at Ariel University, an Israeli university located in the Israeli settlement of Ariel in the West Bank on 28 January 2016. Four presentations were given: Rachel Ben-Dor "The Tel Miqne-Ekron LB Pottery Assemblage"; Itzick Sha "Two Cypriot Pithoi from Late Bronze Age Tel Burna"; Itamar Weissbein, Igor Kreimerman and Yossi Garfinkel "Pottery in Cultic Context: Assemblage from Level VI Temple at Lachish"; and Sabine Metzer "The 13th and 12th Century BCE at Tel Azekah - A View from the Local Ceramics." The Chair, Ayelet Gilboa, led a discussion and hands on with selected pottery from Azekah, Lachish, and Ekron. Following lunch, the attendees visited the Tel Burna Lab. The Tel Burna Archaeological Project is directed by Itzhaq Shai (The Israel Heritage Department, Ariel University and The Institute of Archaeology, Ariel University). More information about the site and a list of publications may be found at https://telburna.wordpress.com/ .

Forthcoming Professional Meetings

The Society for American Archaeology 81st Annual Meeting is scheduled 6-10 April 2016 in Orlando, FL, USA. The Preliminary Program and Registration Information is available online at http://www.saa.org/Portals/0/SAA/annualmeeting/PrelimProgram2016.pdf The Final Program with the titles of presentations and presenter affiliations as well as abstracts should be available online by early March There are numerous sessions with oral papers and posters on ceramics and archaeometry. Session titles and names of participants are tabulated below. Thursday is especially busy with six separate events (and an unfortunate overlap in the afternoon).

Thursday: Symposium "Ceramics, Identity and Regional Interaction in the Lower Amazon." Chairs: Helena Pinto Lima; Cristiana Barreto. Participants: Helena Pinto Lima and Glenda Bittencourt Fernandes; Cristiana Barreto; Bruna Rocha; Lorena Garcia and Fernando Almeida; Joshua Toney; Bruno Moraes; Anna Browne Ribeiro and Helena Pinto Lima; Renzo Duin; Sérgio Meira; and Joshua Birchall. Discussants: Martijn Van Den Bel; Stéphen Rostain; and Michael Heckenberger. Poster Session "People, Pottery, and Petrography: Recent Research in Ceramic Petrography." Chair: Andrea Torvinen. Participants: Ammie Mitchell; Zackary Gilmore and Kenneth Sassaman; David Hill; Tanya Chiykowski; Andrea Torvinen; John Lawrence, Scott

Fitzpatrick and Kathleen Marsaglia; Daiana Rivas-Tello and Andrew Roddick; and Philip Johnston. General Session "Ceramics in Mesoamerican Archaeology." Chair: Kong Cheong. Participants: Gavin Davies and Maria de los Angeles Corado; Dean E. Arnold; Agapi Filini; Timothy Sullivan; Dante Garcia and Guillermo De Anda; and Kong Cheong, Mads Jorgensen and Roger Blench. Symposium "Ceramics of the Indigenous Peoples of South America: Studies of Production and Exchange using INAA." Chair: Michael Glascock. Participants: Fernanda Falabella, María Teresa Planella, Matthew T. Boulanger and Michael D. Glascock; Itaci Correa Girrulat, Franscico Gallardo, Mauricio Uribe, Michael Glascock and Matt Boulanger; Go Matsumoto; Ronald Lippi and Alejandra Gudino; Terence Daltroy and Veronica Williams; Hernando Giraldo Tenorio, Robert Speakman and Michael Glascock; Krzysztof Makowski, James Davenport, Mercedes Delgado, Iván Ghezzi and Michael Glascock; Marisa Lazzari, Lucas Pereyra Domingorena, Maria Cristina Scattolin, Wesley Stoner and Michael Glascock; Leslie Cecil, Tom Dillehay and Michael Glascock; Lucy Salazar, Richard Burger and Michael Glascock; Estefania Vidal Montero, Mauricio Uribe, Ester Echeñique and Andrew Menzies; and Mercedes Delgado, Paula Olivera, Eduardo Montoya, Jorge Bravo and Miriam Mejia. Discussant: Hector Neff. General Session "Archaeometry and Artifact Analysis in European Archaeology." Chair: Robert Tykot. Participants: Barbara Voytek; Andrea Vianello; Robert Tykot and Andrea Vianello; and Jessica Bernstetter, Michael Kolb and William Balco, Jr. Poster Session "Ceramics of the Indigenous Cultures in South America: Studies of Production and Exchange using INAA." Chair: Kevin Vaughn. Participants: Michael Glascock; Martin Giesso, Andrés Laguens, Silvana Bertolino, Michael Glascock and Mathew Boulanger; James Davenport; Patrick Ryan Williams, Donna Nash, Anita Cook and William Isbell; Emlen Myers, Hector Neff and Mike Glasscock; Nuria Sugrañes, María José Ots and Michael D. Glascock; Guillermo De La Fuente, Jeffrey Ferguson and Michael Glascock; Christine Pink, Danielle Kurin and Matthew Boulanger; and Kevin Vaughn and Marcela Poirier.

There are three sessions of interest on Friday. Forum "Exploring the Unnamed Era: Pre-Mamom Pottery in the Maya Lowlands of Yucatan, Peten and Belize." Moderator: Debra Walker. Discussants: Takeshi Inomata; Laura Kosakowsky; Nina Neivens; Katherine South; Michael Callaghan; M. Kathryn Brown; Terry Powis; Kerry Sagebiel; Lauren Sullivan; George Bey; and Jerald Ek. General Session "Technological Advances in Archaeology." Chair: Sudhagar Nagarajan. Participants: Laura Short; Michael Carter; R Doyle Bowman, Thomas Gruber, Janna Gruber, Sonya Beach and Thomas Thompson; Megan King; Sarah Love; Sudhagar Nagarajan and Christian Davenport; and Peter Day. Symposium "Cerámica sin Fronteras: Defining Cultural Phenomena at the Intersection of Honduras, El Salvador, and Nicaragua." Chair: Clifford Brown. Participants: Rosemary Joyce; Marie Kolbenstetter; Elisa Fernández-León and Geoffrey McCafferty; Larry Steinbrenner; Geoffrey McCafferty and Shaelyn Rice; Eva Martinez; Kelsey Willis and Clifford Brown; Ashley Gravlin Beman; and Clifford Brown.

One session of interest is scheduled for Saturday and none on Sunday morning. Symposium "Exploring the Microscale: Advances and Novel Applications of Microscopy for Archaeological Materials." Chairs: Danielle Macdonald; W. James Stemp; and Adrian Evans. Participants: Harry Lerner; Danielle Macdonald, Adrian Evans and Robert Harman; Rachel Crellin and Mark Purnell; Miriam Belmaker; Julia Gamble and Brooke Milne; Carl Knappett, Jill Hilditch and Duncan Pirrie; Mostafa Fayek, Brooke Milne, Ryan Sharpe, Rachel ten Bruggencate and Lawrence Anovitz; Matthew Gleason and Adam Watson; Randolph Donahue, Daniela Burroni and Anders Fischer; W. James Stemp and Adrian A. Evans; and Gilliane Monnier, Kele Missal and Ellery Frahm. Discussants: Adrian Evans; and Linda Hurcombe.

The 41st International Symposium on Archaeometry (ISA) is scheduled for 15-21 May 2016 in Kalamata, Greece. Additional information is available online at http://isa2016.uop.gr/ The final program will be available in February 2016, and include oral contributions (20 minutes) as well as poster presentations. Four of the six sessions are relevant to ceramic studies: Archaeo-chronometry; Stone, Plaster, and Pigments; Ceramics, Glazes, Glass and Vitreous Materials; and Metals and Metallurgical Ceramics. The SAS is also a sponsor of a Theme Session: "The Beginning of the Bronze Age in the Eastern Mediterranean." ISA Abstracts will be published in a Book of Abstracts and Final Program. It isn't clear if these will be posted online.

The American Schools of Oriental Research **(ASOR)** annual meeting is scheduled 16-19 November 2016 in San Antonio, Texas, USA. A call for papers for the session "Glass in the Ancient Near East" has just been announced. The session is being co-organized: Katherine Larson, University of Michigan/Corning Museum of Glass (larsonka@cmog.org) and Carolyn Swan (carrie.swan@gmail.com), University College London, Qatar. Session description: The Near East is the heartland of ancient glassmaking: from the earliest production of glass vessels in second millennium BCE Mesopotamia

and the innovation of glassblowing in the first century BCE Levant, to large scale industrial production of the Late Roman-Byzantine eras and the artistic finesse of the Islamic period. Despite this rich history, synthetic discussion of the contributions of glass to the Near Eastern social, political, and economic landscapes have largely been lacking. Glass scholars have traditionally limited their research to typologies and dates, but this trend has been steadily changing over the last decade. Our goals of this session are thus twofold: to raise the profile of glass scholarship in the ASOR community, and to encourage glass scholars to ask more complex historical and archaeological questions of their glass assemblages. Papers in this session will go beyond presenting basic excavation data and instead engage with larger questions of concern to other Near Eastern scholars, including the role of glass in daily life, trade and exchange, workshop organization and artistic production, as well as sociocultural aspects like identity and taste.

The ASOR-approved session "Glass in the Ancient Near East" appears on the list http://www.asor.org/am/2016/approved.html. Should you be interested in participating, abstract submission is now open and should be made using the following link: http://asor.conference-services.net/authorlogin.asp?conferenceID=4981&language=en-uk . The deadline for abstract submission is **February 15, 2016**.

Please Note: 1) Professional Membership in ASOR is a prerequisite for participation in the Annual Meeting Program for paper presenters and session chairs (http://www.asor.org/membership/individual.html). Further details are noted under the http://www.asor.org/am/2015/rules.html section of the website. 2) Registration for Annual Meeting is Required at Time of Abstract Submission Potential speakers also need to http://www.asor.org/am/2015/registration.html when submitting their abstract.

Internet Resource

Ceramic Kilns and Workshops in the Ancient World. (Posted to AWOL-Ancient World Online-on 13 Jan 2016 12:54 PM PST by Stefano Costa) This repository contains GeoJSON map files on ceramic kilns and workshops (*ateliers*) in the ancient world: Classical antiquity, Eastern civilizations, pre-Columbian Americas, etc. The repository can be found at: https://github.com/archaeology/ancient-ceramic-kilns If you have data on ancient kilns you would like to contribute, please see the information below.

How to contribute: You will need a GitHub account, and you will use http://geojson.io/ (no registration needed) to create and edit map files. If you work on an existing file, open it in GitHub and a map will be displayed on the screen. You can navigate the map and click on markers. Click the Edit button in the upper right corner of the map. You will be presented with the JSON source for the map. Select all the JSON source and paste it in the editing frame of http://geojson.io/. You will see the same markers appear, but this map is editable: you can add more markers for other ceramic kilns. Don't worry too much about providing complete data: if you can, provide a name and a source. If you start from scratch, go directly to http://geojson.io/ , and use the "table" view to add data about each site: **name** can be the ancient place name, or more commonly the modern place name. Use the name that would be found in archaeological literature, so it's easier to find for others. **source** is a stable URL that points to a book, a journal article, or any other published source of information about that kiln or atelier. You can use DOI URLs, Zotero URLs, Persée URLs, Wikipedia URLs, Pleiades URLs. If any of the sites you're adding have an ID in another catalogue, please add it so it's easier to cross-check. For Classical antiquity, many sites (but not all!) will have a *Pleiades* ID. Just add a pleiades column and fill in the ID (not the entire URL). Do the same for other catalogues. When you are done editing the map in geojson.io, go to the "JSON" view, copy all the content and paste it in the GitHUb editing window, overwriting the previous content (your new map will contain also the previous content plus your contributions). Provide a commit message, a sort of comment, describing what you added (e.g. sigillata workshops in the Guadalquivir valley).

What NOT to contribute; If there is agreement that there was a ceramic workshop at a certain site, but there is no archaeological evidence for the actual workshop, either don't add the site to the repository or add it in a separate file with clear indications. In general: 1) either kiln remains or substantial discard heaps are good evidence; 2) some mis-fired pots in residential contexts are not good evidence, and 3) petrographic or chemical evidence for production in a certain region is not good evidence (but could use a separate collection effort).

ARCHAEOMETALLURGY

Thomas R. Fenn, Associate Editor

The column in this issue includes the following categories of information on archaeometallurgy: 1) New Books; 2)

New Book Chapters/Articles; 3) Doctoral and Master Theses.

New Books

Metallurgical Production in Northern Eurasia in the Bronze Age, by Stanislav Grigoriev, 2015, Archaeopress Publishing Ltd, Oxford, UK, 831 pgs, ISBN: 978-1-78491-236-9 (e-PDF), £19.00. Copper is the first metal to play a large part in human history. This work is devoted to the history of metallurgical production in Northern Eurasia during the Bronze Age, based on experiments carried out by the author and analyses of ancient slag, ore and metal. It should be noted that archaeometallurgical studies include a huge range of works reflecting different fields of activity of ancient metallurgists. Often, all that unites these is the term 'metallurgy'. This work considers the problems of proper metallurgy, i.e. extracting metal from ore. A number of accompanying operations are closely connected with it, such as charcoal-burning, ore dressing, furnace constructing, and preparation of crucibles. In some instances the author touches upon these operations; however the main topic of the work is the smelting process. The closing stage of the metallurgical production is metalworking including various casting and forging operations, and also auxiliary operations: making of crucibles, casting molds, stone tools for metal forging. These problems are, as a rule, out of frameworks of this research.

Sections of the volume consist of: Introduction (p. 1); Chapter 1. Experiments with Ancient Copper Smelting Technologies (p. 31); Chapter 2. Production in the Eneolithic, Early and Middle Bronze Age (p. 64); Chapter 3. Metallurgical Furnaces of Sintashta Culture (p. 95); Chapter 4. Copper Ores of Sintashta and Petrovka Sites in the Transurals (p. 107); Chapter 5. Mineralogical and Chemical Composition of Sintashta Slag (p. 127); Chapter 6. Sintashta metalworking (p. 282); Chapter 7. Chronology, Genesis and Structure of Sintashta Metallurgy (p. 313); Chapter 8. Metallurgical Production in the Bashkirian Urals (p. 323); Chapter 9. Metallurgy of the Late Bronze Age in the Volga and Orenburg Regions (p. 391); Chapter 10. Mining and Metallurgical Production in the Don and Donets Areas (p. 454); Chapter 11. Metallurgical Production in the Asian Part of the Eurasian Metallurgical Province in the Bronze Age (p. 475); Chapter 12. Metallurgical Production in the Kyzyl-Kum (p. 651); Chapter 13. The Problem of Iron in the Bronze Age of Northern Eurasia (p. 692); Chapter 14. Metallurgical Production in the Early Iron Age (p. 704); Conclusions (p. 766); and, Bibliography (p. 777). More information about purchasing the e-PDF can be found at: http://archaeopress.com/ArchaeopressShop/Public/displayProductDetail.asp?id={0AD8DBA6-A46D-430A-81F2-5AB569FA5BD4}.

New Book Chapters/Articles

From the book ***AEGIS: Essays in Mediterranean Archaeology, Presented to Matti Egon, by the scholars of the Greek Archaeological Committee UK***, edited by Zetta Theodoropoulou Polychroniadis and Doniert Evely, 2015, Archaeopress Publishing Ltd., Oxford, UK, comes "Early Iron Age Greece, ancient Pherae and the archaeometallurgy of copper" (Vana Orfanou; pp. 107-116), and "The casting technique of the bronze Antikythera ephebe" (Kosmas Dafas; pp. 137-146). From the book ***Forging Identities. The Mobility of Culture in Bronze Age Europe: Volume 1***, edited by Paulina Suchowska-Ducke, Samantha Scott Reiter, Helle Vandkilde. British Archaeological Reports Ltd; Oxford, UK, comes "Copper Smelting in the Raxgebiet (Austria): A Late Bronze Age Alpine Industrial Landscape" (David Larreina-Garcia, Brigitte Cech, Thilo Rehren; pp. 213-219). From the book ***Forging Identities. The Mobility of Culture in Bronze Age Europe: Volume 2***, edited by Paulina Suchowska-Ducke, Samantha Scott Reiter, Helle Vandkilde. British Archaeological Reports Ltd; Oxford, UK, comes "The Earliest Socketed Axes in Southeastern Europe: Tracking the Spread of a Bronze Age Technological Innovation" (Oliver Dietrich; pp. 39-46).

From the ***Journal of Archaeological Science*** (2016, Vol. 66) comes "Metalwork wear analysis: The loss of innocence" (Andrea Dolfini, Rachel J. Crellin; pp. 78-87), and "Social identity and mobility at a pre-industrial mining complex, Sweden" (Ylva Bäckström, T. Douglas Price; pp. 154-168), and from (2015, Vol. 65) comes "Iron Age Nomads and their relation to copper smelting in Faynan (Jordan): Trace metal and Pb and Sr isotopic measurements from the Wadi Fidan 40 cemetery" (Marc A. Beherec, Thomas E. Levy, Ofir Tirosh, Mohammad Najjar, Kyle A. Knabb, Yigal Erel; pp. 70-83), and from (2015, Vol. 64) comes "Experimental dissolution of lead from bronze vessels and the lead content of human bones from Western Zhou dynasty tombs in Hengshui, Shanxi, China" (Ying Qin, Haomiao Li, Xiaoyong Yang, Huang Huang, Ya Qin, Yaoting Xie; pp. 22-29) and "Metalcraft within the Nordic Bronze Age: Combined metallographic and superficial imaging reveals the technical repertoire in crafting bronze ornaments" (Heide Wrobel Nørgaard; pp. 110-128).

From ***Journal of Archaeological Science: Reports*** (2016, Vol. 5) comes "Was Moshyttan the earliest iron blast furnace in Sweden? The sediment record as an archeological toolbox" (Erik Myrstener, William Lidberg, Ulf Segerström, Harald Biester, David Damell, Richard Bindle; pp. 35-44), "Craft production of large quantities

of metal artifacts at the beginnings of industrialization: Application of SEM–EDS and multivariate analysis on sheathing tacks from a British transport sunk in 1813" (Nicolás C. Ciarlo, Gisela Maxia, Marina Rañi, Horacio De Rosa, Rut Geli Mauri, Gustau Vivar Lombarte; pp. 263–275), and "Improving archaeological prospection using localized UAVs assisted photogrammetry: An example from the Roman Gold District of the Eria River Valley (NW Spain)" (Javier Fernández-Lozano, Gabriel Gutiérrez-Alonso; pp. 509-520), and from (2015, Vol. 4) comes "Using regional chemical comparisons of European copper to examine its trade to and among Indigenous groups in late 16th and early 17th century Canada: A case study from Nova Scotia and Ontario" (Kostalena Michelaki, Ronald G.V. Hancock, Gary Warrick, Dean Knight, Ruth H. Whitehead, Ronald M. Farquhar; pp. 285-292), and "Geochemical evidence for the use of lead in Prehispanic metallurgy at El Purgatorio, Casma Valley, Peru" (Melissa Vogel, Jeremy Fowler, Lee Drake, William E. Brooks; pp. 326-335).

From ***Archaeometry*** (2015, Vol. 57, No. 5) comes "The Copper CHARM Set: A New Set of Certified Reference Materials for the Standardization of Quantitative X-Ray Fluorescence Analysis of Heritage Copper Alloys" (A. Heginbotham, J. Bassett, D. Bourgarit, C. Eveleigh, L. Glinsman, D. Hook, D. Smith, R. J. Speakman, A. Shugar, R. Van Langh; pp. 856-868), and "A Preliminary Study on the Loss of Iron and Arsenic in the Re-Melting of Iron-Bearing Arsenical Copper" (J.-S. Park, E. Gelegdorj; pp. 869-878). From ***Archaeological and Anthropological Sciences*** (2015, Vol. 7, No. 4) comes "Pb isotope data of Roman and medieval objects from Wiesloch near Heidelberg, Germany" (Florian Ströbele, Ludwig H. Hildebrandt; pp. 465-472), and "Lead isotope analyses on Late Republican sling bullets" (R. Müller, G. P. Brey, H.-M. Seitz, S. Klein; pp. 473-485), and from (2015, Vol. 7, No. 3) comes "A (not so) dangerous method: pXRF vs. EPMA-WDS analyses of copper-based artefacts" (V. Orfanou, Th. Rehren; pp. 387-397).

From ***Oxford Journal of Archaeology*** (2016, Vol. 35, No. 1) comes "Late Bronze Age Oxhide and oxhide-like ingots from areas other than the Mediterranean: problems and challenges" (Serena Sabatini; pp. 29-45), and "The Macro-Regional Scale of Silver Production in Iberia During the First Millennium BC in the Context of Mediterranean Contacts" (Mercedes Murillo-Barroso, Ignacio Montero-Ruiz, Nuria Rafel, Mark A. Hunt Ortiz, Xosé-Lois Armada; pp. 75-100), and from (2015, Vol. 34, No. 4) comes "Collapsing Commodities or Lavish Offerings? Understanding Massive Metalwork Deposition at Langton Matravers, Dorset during the Bronze Age–Iron Age Transition" (Benjamin W. Roberts, Dorothee Boughton, Michael Dinwiddy, Nisha Doshi, Andrew P. Fitzpatrick, Duncan Hook, Nigel Meeks, Aude Mongiatti, Ann Woodward, Peter J. Woodward; pp. 365-395), and from (2014, Vol. 33, No. 1), comes "Metalworking at Hazor: A Long-Term Perspective (Naama Yahalom-Mack, Yuval Gadot, Adi Eliyahu-Behar, Shlomit Bechar, Sana Shilstein, Israel Finkelstein; pp. 19-45). From ***Journal of Anthropological Archaeology*** (2015, Vol. 40) comes "When ceramic sociology meets material science: Sociological and technological aspects of crucibles and pottery from Mapungubwe, southern Africa" (Shadreck Chirikure, Simon Hall, Thilo Rehren; pp. 23-32). From ***Azania*** (2016, Vol. 51), comes "Book Review: *Metals in past societies: a global perspective on indigenous African metallurgy*, by Shadreck Chirikure, 2015, Springer, N.Y." (L. Iles; DOI: 10.1080/0067270X.2015.1133871), and from (2015, Vol. 50, No. 4) comes "Making metals in East Africa and beyond: archaeometallurgy in *Azania*, 1966–2015" (Louise Iles, Edwinus Lyaya; pp. 481-494), and from (2015, Vol. 50, No. 3) comes "Iron production in second millennium AD pastoralist contexts on the Laikipia Plateau, Kenya" (Louise Iles; Paul Lane; pp. 372-401), and from (2015, Vol. 50, No. 2) comes "Book Review: *Metals from K2 and Mapungubwe, Middle Limpopo Valley: a technological study of early second millennium material culture, with an emphasis on conservation*, by Farahnaz Koleini, 2014, Archaeopress, Oxford" (Thomas Panganayi Thondhlana; pp. 261-264). From ***Journal of Field Archaeology*** (2015, Vo. 40, No. 6) comes "Reimagining the City of Fire and Iron: A landscape archaeology of the Angkor-Period Industrial Complex of Preah Khan of Kompong Svay, Cambodia (ca. 9th to 13th centuries A.D.)" (Mitch Hendrickson, Damian Evans; pp. 644-664). From ***Applied Spectrometry*** (2016, Vol. 70, No. 1) comes "A Review of Energy Dispersive X-Ray Fluorescence (EDXRF) as an Analytical Tool in Numismatic Studies" (María José Navas, Agustín García Asuero, and Ana María Jiménez; pp. 207-221). From ***Medieval Archaeology*** (2015, Vol. 59), comes "Pewter Funerary Chalices and Patens from York Minster" (Nicola Rogers, Ian Panter, Penelope Walton Rogers; pp. 193-211). From the series ***Restaurierung und Archäologie*** (2014, Vol. 7), comes "Composition and decoration of the so-called *Zinnfigurenstreifen* found in Magdeburg, Saxony-Anhalt, Germany" (Daniel Berger; pp. 65-80).

Doctoral & Master Theses

Early Iron Age Greek copper-based technology: votive offerings from Thessaly, by Stavriani Orfanou (Doctoral thesis, Institute of Archaeology, University College London), 2015, 523 pages, 217 figures, 43 tables, 5 appendices, and bibliographical references.

The thesis aims to explore metallurgical technology in Greece during the Early Iron Age (EIA). Emphasis is put on copper-based metallurgy as there is a large body of evidence in the archaeological record to support the large-scale production of copper-tin-lead alloy objects in the post-Mycenaean period and the first half of the 1st millennium BC. Such artefacts played a significant role having both utilitarian and symbolic features as they have been deposited by the thousands as votive dedications to the EIA sanctuaries such as Delphi and Olympia. Questions in regard to these objects' mode of production, circulation, use and the circumstances of their ritual deposition, as well as of the sanctuaries' economics and their ability to attract a significant proportion of available wealth thus arise.

The assemblage of copper-based artefacts recovered at the sanctuary of Enodia in Thessaly has been selected in order to investigate EIA copper metallurgy during this period of transformation for Greek society. A sample of almost three hundred objects has been selected and investigated with the application of archaeometric quantitative and qualitative analytical methods. Meanwhile, research focused on the objects' chemical compositions, metalworking techniques, use, and typological classification which have been brought together for an integrated interpretation of copper-based production. Specific focus has been put on the organization and mode of production, the technological choices related to practices of alloying and metalworking of copper, as well as the dialectic relationship between the objects' form and intended use with their chemical and mechanical properties. Finally, results from Thessaly are brought together with published data from additional cultic and secular sites in mainland Greece in order to discuss inter-regional technological variation and affinity. Overall, the study addresses issues of the copper-based metallurgy's integration into EIA Greek society.

BIOARCHAEOLOGY

Katy Meyers Emery, Associate Editor

Working Group for Best Practice in Digital Osteology

Over the last decade, there has been increasing use of digital methods and tools as a way to study, share, and engage with human remains. There are many benefits to this trend. Digitized skeletal collections can be accessed easily online allowing for direct comparison of material when it isn't readily available, the preservation of remains in a format that protects them or allows for reburial, and they can be 3D printed to allow others access to important materials. Bloggers have led to new discussions, faster dissemination of results, increased public interest in the subject, and sharing of media to demonstrate the broad range of study. As digital media becomes increasingly accessible, we need to consider the ethical issues that come along with these changes in technology.

In light of this, a new initiative led by Alison Atkin sets out to bring these ethical issues to the forefront and have open discussions about the relationship between digital media (video, pictures, 3D scans, etc.) and human remains. The group is already addressing issues regarding the use of images of human remains in social media, and it has led to an article on the American Anthropological Association's "Ethics Blog". The article by Atkin and Errickson summarizes the goals of the DigitalOsteo group, and shares some resources for learning more about this.

If you are interested in joining the conversation, you can sign up for the listserv DigitalOsteo at: https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=DIGITALOSTEO, and for more on the initiative, check out Atkin's blog, Deathsplanation: https://deathsplaining.wordpress.com/

Annual Meetings

Society for American Archaeology

Annual Meeting
Location: Orlando, FL
Dates: April 6-10, 2016

The SAA meeting will include both bioarchaeology and mortuary archaeology presentations. This list features just a selection of the many sessions that feature these topics and may be of interest. There are many other excellent talks on human remains that take place within other sessions- this just represents a small selection of sessions dedicated to the topic.

April 7, 2016
8:00 AM – 12:00 PM

- The Bioarchaeology of Frontier and Borderlands. Symposium.
- On the Move: Archaeological Approaches to Children and Childhood. Sponsored Symposium.
- Bioarchaeology and Taphonomy. Poster Session.

6:00 PM – 10:00 PM

- Mortuary Studies in the Mesoamerican World. General Session.
- European Bioarchaeology. General Session.

April 8, 2016
8:00 AM – 12:00 PM

- Buried, burned, Bundled and Broken: Approaches to Co-occurrence of Multiple Methods, Treatments and Styles of Burials Within Past Societies. Symposium.
- Human Sacrifice in Ancient Mesoamerica: New Evidences and Theoretical Perspectives. Symposium.

1:00 – 5:00 PM
- Current Bioarchaeological Research in the Casas Grandes Region. Symposium.

April 9, 2016
8:00 AM – 12:00 PM
- Mortuary Practices in the Ancient Southwest. General Session.
- The Poetics of Processing: Memory Formation, Cosmology and the Handling of the Dead. Symposium.

April 10, 2016
8:00 AM – 12:00 PM
- Consumption Patterns and Funerary Rituals at the Site of Panquilma, Lurin Valley, Peruvian Central Coast.. Sponsored Symposium.
- Eastern US Bioarchaeology. General Session.

American Association of Physical Anthropologists/Paleopathology Association
Annual Meeting
Location: Atlanta, GA
Dates: April 12-16, 2016

The AAPA/PPA meetings will include a range of physical anthropology related sessions and workshops. Here, we will feature some of the sessions that may be relevant to bioarchaeologists. Sadly, paleopathology talks could not be included since the final schedule has not been solidified as of yet.

April 14, 2016
8:00 AM – 12:00 PM
- Session 4- Skeletal Biology: Bioarchaeology. Contributed Podium Presentations.

1:00 PM – 4:00 PM
- Session 15- Skeletal Biology: Paleopathology and Functional Studies. Contributed Podium Presentations.
- Session 17- Evolutionary Approaches to Bioarchaeology. Invited Poster Symposium
- Session 18- Malaria in Antiquity: Methodological and Theoretical Approaches. Invited Poster Symposium

April 15, 2016
8:00 AM – 12:00 PM
- Session 25: Birth, Death, and Migration: Bioarchaeology and Skeletal Biology of the Southeastern United States. Invited Poster Symposium.

8:00 AM – 4:00 PM
- Session 27: Skeletal Biology: Violence, Trauma and Disease. Contributed Posters.
- Session 31: Skeletal Biology: Bioarchaeology. Contributed Posters.

April 16, 2016
8:00 AM – 12:00 PM
- Session 43: Bioarchaeology of Indigenous Peoples of Cuba. Invited Poster Symposium.
- Session 44: Blood in the Villages: Bioarchaeological and Forensic Evidence for Massacres. Invited Poster Symposium.

1:00 PM – 4:00 PM
- Session 53: Early-life stress in the past: bioarchaeological approaches to the evolution, ecology, and cultural contingencies of human life history. Invited Podium Symposium.

MARITIME ARCHAEOLOGY

Nicolás Ciarlo, Associate Editor

In this issue there is a note concerning benthic conditions around an 18th century shipwreck (A. T. Ruuskanen et al.). A project on a digital reconstruction of a 3rd century B.C. oared warship (M. Polakowski) is also presented. A list of recent articles and books concerning archaeometric investigations related to underwater and coastal sites are included. The last pages highlight past conferences presentations and proceeding papers, as well as upcoming meetings.

Current Research
Recent studies of the shipwreck *Vrouw Maria* (1771) in the northern Baltic proper
Since her shipwreck in 1771, the wooden vessel *Vrouw Maria* has been on the seabed at a 41m depth off the southern coast of Finland. The 1999 relocated wreck of this Dutch merchant ship lies on her keel in an upward position in a right angle to the dominating bottom current, which is potentially affecting seabed topography, sediment characteristics and zoobenthic communities both upstream (NE) and downstream (SW) of the wreck.

Previously, a multidisciplinary study by Leino et al. (2011) described environmental factors and physical stress affecting the wreck. It is yet not known, however, to what extent the wreck may have affected the surrounding seabed and zoobenthos. Such knowledge is essential when assessing environmental impact of the wreck and when trying to distinguish between the ecological impact of possible archaeological activities (such as excavation) and those which are caused by the wreck itself. The information is also important for the feasibility to preserve the wreck *in situ* and to understand the local physical and environmental conditions.

Therefore, another more recent multidisciplinary study was undertaken to clarify abiotic and biotic patterns and processes in the vicinity of the wreck by combining field investigations with physical simulation studies in the field and at the laboratory. Multibeam echo-sounder techniques were utilized to generate a topographical map of the wreck area (fig. 1) and sediment grab samples were taken to characterize the sediment type and its zoobenthic community. Concurrently, a medium-sized field experiment generated data on the accumulation of sediment organic matter in the presence and absence of a current and/or a barrier on the seafloor and a small-scaled laboratory study was conducted to simulate scour forming processes.

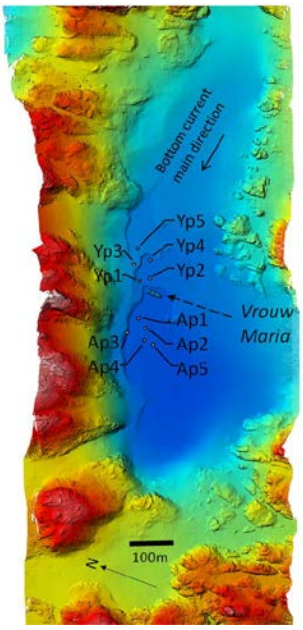

Figure 1. A multibeam sonar image from the wreck site, showing the location of the wreck and the sampling points (open circles) on the downstream (Ap1 – Ap5) and upstream (Yp1 – Yp5) sides of the wreck.

The results from this recent study showed that a deeper basin, scour area, with the dimensions 150 x 300m, was present downstream of the wreck. There was also a smaller scour area upstream of the wreck with the dimensions 50 x 100 m. Similar traces on the bottom were simulated in the laboratory. The organic content (recent mud) and the proportion of finer sediment were more pronounced in areas closer to both sides of the wreck. These results were in turn imitated in a field experiment, where the accumulation of organic matter in the sediment increased significantly in areas close to barriers. Regarding zoobenthos in the wreck area, a mean total abundance of 1,013 and 532 individuals per square meter were registered in the upstream and downstream area, respectively. In total, 11 taxa were found. The dominant ones were the bivalve *Macoma balthica* and the polychaet *Marenzelleria* sp., which together made up >80 % of the total number of individuals. Multivariate data analyses showed significant differences in community structure basically expressed as more individuals upstream of the wreck of the seven most common species. Univariate data analyses also showed significantly more species and higher total abundance in the scour area upstream of the wreck compared to the downstream scour area.

The results are useful for describing bottom areas around long-term physical barriers/artificial reefs, as background measurements ahead of possibly increased archaeological research activities, sediment excavations or measures taken to raise the wreck to the surface, as well as for any attempts to preserve the wreck *in situ*.

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Current research and the partial reconstruction of the Egadi 10 warship that sank at the Battle of the Egadi Islands (241 B.C.)

Oared warships dominated the Mediterranean from the Bronze Age down to the development of canons on ships. Purpose-built warships were specifically designed to withstand the stresses of ramming tactics and high intensity impacts. Propelled by the oars of skilled rowing crews, squadrons of these ships could work in unison to out maneuver and attack enemy ships. In 241 B.C. just off the northwestern coast of Sicily, a Roman fleet of fast ramming warships intercepted a Carthaginian warship convoy attempting to relieve Hamilcar Barca's besieged troops atop Mount Eryx (modern day Erice). The ensuing naval battle led to the ultimate defeat of the Carthaginian forces and an end to the First Punic War.

Survey and excavations at the Egadi Islands began in 2005 and are conducted under the auspices of the *Soprintendenza del Mare* (Sicily, Italy), the cultural authority tasked with the management of Sicily's submerged cultural heritage. They have located eleven mid-3rd century B.C. rams to date. The Egadi 10 ram excavated during the 2014 field season, at the Battle of the Egadi Islands Archaeological Site, served as the basis for the current research into a partial reconstruction of the basic design of a warship in order to present new interpretations of the warships that sank during the Battle of the Egadi Islands.

This research employs experimental three-dimensional reconstructions in the Rhinoceros and Orca 3D software based on archaeological evidence in order to determine basic hull dimensions and fundamental characteristics of the Egadi 10 warship design during the First Punic War (264–241 B.C.). It analyzes historical accounts of naval engagements during the First Punic War in order to produce a narrative of warship innovation throughout the course of the war. Finally it compares the resulting reconstruction to Polybius' accounts of the warships that sank at the site.

Using the Rhinoceros and Orca3D software provided the necessary tools to develop a hull structure while allowing for easy alterations to the shape and generation of detailed hydrostatic results. Designing the basic hull shape and draft relied on extrapolated bow timbers from the ram interior, secondary archaeological evidence provided by merchant shipwrecks, and the shipsheds at Carthage. The reconstruction relied on length to beam ratios between 6:1 and 7:1 based on hull coefficients determined by Richard J. Steffy and John Coates. These ratios ensured an efficient hull design that was fast and maneuverable, meeting the ancient shipwright's requirements for sleek warships. The hull also needed to provide adequate room for the placement of rowers, which provided the ships main source of propulsion (fig. 2).

This research represents a small fraction of the work conducted on the Battle of the Egadi Islands Site. The partial reconstruction of the Egadi 10 warship sets out to develop potential hypotheses of the ships construction to aid in further research of the warships that sank during the battle in 241 B.C. Further analysis into the social, political, and economic factors will aid in the study of the various constraints that affected the development and construction of these warships.

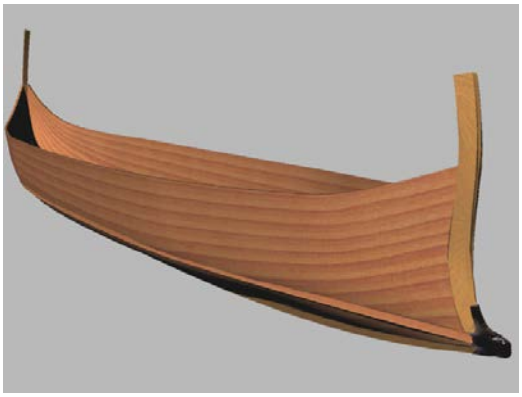

Figure 2. Render of the partially reconstructed Egadi 10 warship with a three-dimensional scan of the Egadi 10 ram. Image: M. Polakowski.

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Recent Publications

International Journal of Nautical Archaeology From *IJNA* year 2015, Vol. 44, No. 2: "The Port-Vendres 4 Shipwreck Cargo: evidence of the Roman wine trade in the western Mediterranean" (V. Martínez Ferreras et al.); "A Late Antique Ceramic Assemblage at Burgaz, Datça Peninsula, South-west Turkey, and the 'Normality of the Mixed Cargo' in the Ancient Mediterranean" (J. Leidwanger et al.); and "Doel 2: a second 14th-century cog wrecked in den Deurganck, Doel, Belgium" (J. Vermeersch et al.).

Journal of Maritime Archaeology From Vol. 10, No. 2: "A Comparison Between Structure from Motion and Direct Survey Methodologies on the *Warwick*" (P. Bojakowski et al.); and Vol. 10, No. 3: "Long-Term Corrosion Processes of Iron and Steel Shipwrecks in the Marine Environment: A Review of Current Knowledge" (James D. Moore III).

The Journal of Island and Coastal Archaeology From Vol. 10, No. 3: "Shellfish Gathering and Shell Midden Archaeology Revisited: Chronology and Taphonomy at White Oak Point, Potomac River Estuary, Virginia" (T. C. Rick & G. A. Waselkov); "Neolithic Voyages to Cyprus: Wind Patterns, Routes, and Mechanisms" (D. E. Bar-Yosef Mayer et al.); and "Cultural Heritage at Risk in the Twenty-First Century: A Vulnerability Assessment of Coastal Archaeological Sites in the United States" (L. A. Reeder-Myers).

Journal of Archaeological Sciences From the second half of 2015, it is worth mentioning the following papers:

Vol. 59: "Use of phosphorus mapping in assessing coastal activity zones of an Icelandic multi-period site of Vatnsfjörður" (Ł. Mikołajczyk et al.); Vol. 61: "Temple-complex post-dates tsunami deposits found in the ancient harbour basin of Ostia (Rome, Italy)" (H. Hadler et al.); "Mobility of early islanders in the Philippines during the Terminal Pleistocene/Early Holocene boundary: pXRF-analysis of obsidian artefacts" (L. A. M. Neri et al.); "History and influence of the Danube delta lobes on the evolution of the ancient harbour of Orgame (Dobrogea, Romania)" (G. Bony et al.); and "Why are they still there? A model of accumulation and decay of organic prehistoric cultural deposits" (N. Bleichera & C. Schubert); Vol. 62: "Volumetric models from 3D point clouds: The case study of sarcophagi cargo from a 2nd/3rd century AD Roman shipwreck near Sutivan on island Brač, Croatia" (A. Jaklič et al.); and Vol. 64: "Iron Age migration on the island of Öland: Apportionment of strontium by means of Bayesian mixing analysis" (H. Wilhelmson & T. Ahlström).

Journal of Archaeological Sciences: Reports From 2015, Vol. 3: "A submerged monolith in the Sicilian Channel (central Mediterranean Sea): Evidence for Mesolithic human activity" (E. Lodoloa & Z. Ben-Avraham); and "Deterioration of Israel's Caesarea Maritima's ancient harbor linked to repeated tsunami events identified in geophysical mapping of offshore stratigraphy" (B. N. Goodman-Tchernova & J. A. Austin Jr.); and Vol. 4: "Detection and mapping of shipwrecks embedded in sea-floor sediments" (O. Grøn et al.); "Dating the bridge at Avignon (south France) and reconstructing the Rhone River fluvial palaeo-landscape in Provence from medieval to modern times" (M. Ghilardi et al.); "Diet in Peru's pre-Hispanic central coast" (K. Gerdau-Radonić et al.); "Alkaline earth carbonates for the treatment of problematic sulfur associated with marine archeological wood" (E. J. Schofield et al.); "δ18O analysis of *Atactodea striata*: evaluating a proxy for sea-surface temperature and shellfish foraging from a prehistoric rockshelter in Palau, Micronesia" (N. P. Jew & S. F. Fitzpatrick); and "Isotopic evidences regarding migration at the archeological site of Praia da Tapera: New data to an old matter" (M. Q. Bastos et al.).

Archaeometry From 2015, Vol. 57, No. 3: "Cargoes of Iron Semi-Products Recovered from Shipwrecks off the Carmel Coast, Israel" (E. Galili et al.); "Phenol Formaldehyde Revisited–Novolac Resins for the Treatment of Degraded Archaeological Wood" (M. Christensen et al.); Vol. 57, Issue Supplement S1: "Formative Period Obsidian Exchange along the Pacific Coast of Mesoamerica" (C. E. Ebert et al.); Vol. 57, No. 4: "Metal Use and Production among Coastal Societies of the Atacama Desert" (V. Figueroa et al.); and Vol. 57, No. 6: "For Whom the Bells Fall: Metals from the Cenote Sagrado, Chichén Itzá" (B. Cockrell et al.).

A series of interesting articles were published during the second half of 2015 in the following journals: ***Aeolian Research***, Vol. 19, Part A: "Natural and human controls of the Holocene evolution of the beach, aeolian sand and dunes of Caesarea (Israel)" (J. Roskin et al.); ***Applied Surface Science***, Vol. 357, Part B: "Multi-analytical approach applied to the provenance study of marbles used as covering slabs in the archaeological submerged site of Baia (Naples, Italy): The case of the 'Villa con ingresso a protiro'" (M. Ricca et al.); ***Geoarchaeology***, Vol. 30, No. 4: "The Geoarchaeology of Utica, Tunisia: The Paleogeography of the Mejerda Delta and Hypotheses Concerning the Location of the Ancient Harbor" (H. Delile et al.); ***GeoResJ***, Vol. 6: "Sea level data archaeology and the Global Sea Level Observing System (GLOSS)" (E. Bradshaw et al.); ***Heritage Science***, Vol. 3, No. 1: "Archaeological and archaeometric study of the glass finds from the ancient harbour of Classe (Ravenna-Italy): new evidence" (S. Maltoni et al.); and "Micromorphological and chemical elucidation of the degradation mechanisms of birch bark archaeological artefacts" (S. Orsini et al.); ***Historical Metallurgy***, Vol. 47, No. 2: "Naval metals from mid 18th- to early 19th-century European shipwrecks: a first analytical approach" (N. C. Ciarlo); ***IFAC-PapersOnLine***, Vol. 48, No. 2: "The ARROWS project: adapting and developing robotics technologies for underwater archaeology" (B. Allotta et al.); "Underwater Photogrammetric Mapping of an Intact Standing Steel Wreck with ROV" (S. M. Nornes et al.); and other original papers from the 4th International IFAC Workshop on Navigation, Guidance and Control of Underwater Vehicles (NGCUV 2015); ***International Journal of Conservation Science***, Vol. 6, No. 3: "The contribution of earth sciences to the preservation of underwater archaeological stone materials: An analytical approach" (M. F. La Russa et al.); ***Journal of Cultural Heritage***, Vol. 16, No. 4: "The architecture of warehouses: A multidisciplinary study on thermal performances of Portus' roman store buildings" (F. Pagliaro et al.); ***Periodico di Mineralogia***, Vol. 84, No. 3A (Special Issue, Youth in Conservation of Cultural Heritage - YOCOCU 2014): "Archaeometric approach for the study of mortars from the underwater archaeological site of Baia (Naples) Italy: Preliminary results" (M. F. La Russa et al.); ***Proceedings of the Geologists' Association***, Vol. 126, No. 6: "A review of the submerged prehistory and palaeolandscapes of the British Isles" (A. Bicketa & L. Tizzardc)"; ***Review of Palaeobotany and Palynology***, Vol. 218 (Special Issue,

Changing flora and vegetation in Italy through time): "Archaeobotany in Italian ancient Roman harbours" (L. Sadori et al.); ***Quaternary International***, Vol. 373: "Looking at the sea: Mt Site, River Plate Coast, Canelones, Uruguay" (C. Erchini et al.); and "Human use of birds and fish in marine settings of southern Patagonia and Tierra del Fuego in the Holocene: A first macro-regional approach" (A. F. Zangrando & A. M. Tivoli); Vol. 382: "Blue Arabia: Palaeolithic and underwater survey in SW Saudi Arabia and the role of coasts in Pleistocene dispersals" (G. N. Bailey et al.); and Vol. 385 (Special Issue, Multidisciplinary approaches to Australian island pasts: Late Pleistocene to historical Perspectives on Australian island use): "Dating of in situ longhouse (dubu daima) posts in the Kikori River delta: Refining chronologies of island village occupation in the lower Kikori River delta, Papua New Guinea" (B. Barker et al.); "Late Pleistocene and early Holocene exploitation of estuarine communities in northwestern Australia" (T. Manne et al.); and "Geoarchaeology and the archaeological record in the coastal Moreton Region, Queensland, Australia" (R. Robins et al.); ***Quaternary Science Reviews***, Vol. 129: "Paleoenvironmental evidence for first human colonization of the eastern Caribbean" (P. E. Siegel et al.); and ***The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences***, Vol. XL-5/W7: "Development of tools and techniques to survey, assess, stabilize, monitor and preserve underwater archaeological sites: SASMAP" (D. J. Gregory).

British Archaeological Reports (BAR) The following book recently published by Archaeopress shed light on past human activities in island scenarios: "'Somewhere Beyond The Sea' Les îles bretonnes (France): Perspectives archéologiques, géographiques et historiques" (L. Audouard & B. Gehres, eds.), v + 123 pages; BAR International Series 2705, ISBN 9781407313566. This monograph compiles various presentations of the *Séminaire Archéologique de l'Ouest* (Seminar on the Archaeology of Western France), which was held on 1st April 2014, University of Rennes, France. It dealt with the archaeological research carried out in the islands of Brittany from an interdisciplinary perspective. The chapters (all but one written in French) cover a period from prehistoric to recent island occupations. Comparative studies stand as a means to assess themes related to the insular life through time. With this aim, investigations articulate the efforts of archeologists, archaeometrists, archaeomalacologists, geographers, and historians.

Finally, those interested in the application of dendrochronological analysis to wooden shipwrecks, will surely find of outstanding help the following report: "Dendrochronological and wood anatomical examination of finds from historical shipwrecks etc. found on the shores of Svalbard, now kept in the Svalbard Museum in Longyearbyen - Material from wooden shipwrecks and other objects" (C. Baittinger & N. Bonde); NNU Rapport 55, Dendrochronology and Wood Anatomy, Environmental Archaeology and Materials Science, National Museum of Denmark. Available online at: http://natmus.dk

Previous Meetings and Conferences

Workshop: Dendrochronology & Wood Anatomy. This intensive training course took place in the Wageningen University, Netherlands, from 9th to 11th December 2015. It included lectures about wood anatomy, analytical methods, dating, provenance, ship construction and chronology, as well as practices on sampling and measurement of wooden features. Its syllabus can be downloaded from the ForSEAdiscovery webpage: http://forseadiscovery.eu

13th European Meeting on Ancient Ceramics (EMAC). This meeting was held from 24th to 26th September 2015, at the New Acropolis Museum in Athens (http://www.emac2015.gr). Biannually, scholars meet at this event to share the results of interdisciplinary studies on ancient ceramics. Main topics cover the production, use, post-depositional degradation and conservation of archaeological materials. This year, several presentations include the analysis of ceramics from shipwrecks, for instance: "Archaeometric investigations of the Kavalliani shipwreck, as a key clue for the study of the main 'Middle Byzantine pottery production'" (S. Y. Waksman et al.); and "Hit and sunk: Provenance and alterations of ceramics from Spanish 17th century Angra D shipwreck" (J. G. Iñañez et al.).

Upcoming Conferences

44th Computer Applications and Quantitative Methods in Archaeology Conference (CAA). *Exploring Oceans of Data*. The conference will be held from 29th March to 2nd April 2016, at the University of Oslo, Norway. A wide range of topics related to computer-science applications to manage digital information in archaeology will be addressed. The session 'Exploring Maritime Spaces with Digital Archaeology: Modelling navigation, seascapes, and coastal spaces', is worth mentioning. For general information about the conference, see http://caaconference.org or contact caa2016conference@khm.uio.no

UPCOMING CONFERENCES

2016

18-19 February. "Evaluating the Early Anthropocene Hypothesis: The Impact of Early Farming Economies on the Environment in East and West Asia" Copenhagen, Denmark. General information: http://eeah.ku.dk/

6-10 March. Pittcon Conference and Expo, Atlanta, Ga USA. General information: http://www.pittcon.org/

13-17 March. 251st National Meeting and Exposition, American Chemical Society. San Diego, CA, USA. Theme "Computers in Chemistry" General information: http://www.acs.org/content/acs/en/meetings/spring-2016.html

29 March-2 April. 44th International Conference on Computer Applications and Quantitative Methods in Archaeology (CAA). Oslo, Norway. General information: http://caaconference.org

29 March-2 April. Association of American Geographers Annual Meeting, San Francisco, CA, USA. http://www.aag.org/cs/annualmeeting

6-10 April. Society for American Archaeology. 81st Annual Meeting, Orlando, FL USA. General information: http://www.saa.org/Default.aspx?TabId=1419

12-16 April. American Association of Physical Anthropologists Annual Meeting. Atlanta, GA. General information: http://physanth.org/annual-meeting

15-20 May. International Symposium on Archaeometry, Kalamata, Greece. Abstract deadline December 15 2015. General information: http://isa2016.uop.gr

1-3 June. International Obsidian Conference Lipari (Italy). Abstract submission deadline: January 31, 2016 General Information: http://rtykot.myweb.usf.edu/Obsidian%202016/

9-12 June. DIG 2015 Sardinia. General information: http://www.developinginternationalgeoarchaeology.org/first.html

26 June-1 July. Goldschmidt Conference, Yokohama, Japan. General information: http://goldschmidt.info/2016/

31 July-5 August. Gordon Research Conference: Scientific Methods in Cultural Heritage Research, Newry, ME, USA. General information: http://www.grc.org/grc/programs.aspx?id=15101

21-25 August. 252nd National Meeting and Exposition, American Chemical Society. Philadelphia, PA, USA. General information: http://www.acs.org/content/acs/en/meetings/fall-2016.html Call for papers now open through March 21, 2016. http://www.acs.org/content/acs/en/meetings/abstract-submissions/acsnm252.html

28 August-2 September. World Archaeological Congress, Kyoto, Japan. http://wac8.org/

4-8 September. Society of Glass Technology Centenary Conference (SGT100) and European Glass Society Meeting. Sheffield, UK. General information: http://www.centenary.sgt.org/Conference.htm

18-23 September. SciX Conference 2016. Minneapolis, MN, USA. General information: https://www.scixconference.org/

25-28 September. The Geological Society of America National Meeting. Denver, CO USA. General information: http://www.geosociety.org/meetings/

16-19 November. American Schools of Oriental Research Annual Meeting. San Antoni, TX, USA. General information: http://www.asor.org/am/index.html

16-20 November. American Anthropological Association 114th Annual Meeting. Minneapolis, MN, USA. General information: http://www.aaanet.org/meetings/

28 Nov-2 Dec. The Sixth International Congress on Underwater Archaeology (IKUWA6) Fremantle WA Australia General information: http://www.aima-underwater.org.au/ikuwa6-2016/

12-16 December. American Geophysical Union Fall Meeting, San Francisco, CA USA. General information: http://fallmeeting.agu.org/upcoming-meetings/

2016 New Zealand Archaeological Association Conference, Blenheim. General information: http://nzarchaeology.org/cms/index.php/conferences

2017

5-8 January. Joint Annual Meeting of the Archaeological Institute of America (AIA) and the Society for Classical Studies (SCS). Toronto, Canada. https://www.archaeological.org/annualmeeting Call for

papers now open. Submissions deadline August 7, 2016 and August 21, 2016 ($25 fee). https://www.archaeological.org/meeting/CFP

29 March-2 April. Society for American Archaeology. 82nd Annual Meeting, Vancouver, BC, Canada. General information: TBA

18-22 April. American Association of Physical Anthropologists Annual Meeting. New Orleans, LA. General information: TBA

2-6 April. 253rd American Chemical Society National Meeting and Exposition. San Francisco, CA, USA. General information: TBA

20-24 August. 254th American Chemical Society National Meeting and Exposition. Washington, DC, USA. General information: TBA

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SAS BULLETIN
NEWSLETTER OF THE SOCIETY FOR ARCHAEOLOGICAL SCIENCES

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Published quarterly by the Society for Archaeological Sciences
Distributed to subscribers: $20/yr regular membership (electronic); $25/yr regular membership (paper);
$15/yr student and retired (electronic); $20/yr student and retired (paper); $35/yr institutional; $300 lifetime.
Individuals add $115/yr for *J. of Archaeological Science*: $45/yr each for *Archaeometry* and *Archaeological & Anthropological Sciences*. ISSN