



# SAS Bulletin

## Society for Archaeological Sciences

Volume 25 number 1

Spring 2002



### From the Editor

With this issue, I report several important changes of significance to SAS members. The first is the appointment of Robert Sternberg as the new General Secretary, replacing R.E. Taylor who served in this position since the founding of the Society 25 years ago. Sternberg, a past president of SAS, is a geophysicist specializing in archaeomagnetism, and is Professor in the Department of Geosciences at Frankling and Marshall College in Lancaster, Pennsylvania. With the support of his department, we anticipate that Rob S. will provide a steady central administrative office which will handle SAS business including finances and all correspondence dealing with membership and subscriptions. At the same time, we express our deepest thanks to Erv Taylor for his many years of service to SAS. In fact, this is the silver anniversary (25<sup>th</sup>) year of the Society, and a future issue of the *Bulletin* will include special remembrances of our first quarter century.

The second change of note is the retirement, with this issue, of Michael Glascock as our Book Review Editor. Mike served in this position for the past five years and has filled our pages with numerous reviews of relevant scholarly works,

while keeping reviewers to a tight schedule. Thanks Mike! Mark Hall of the Niigata Prefectural Museum in Japan, an archaeometallurgist, is our new Book Review Editor. He will appreciate your contacting him with suggestions for books to review, and also to identify yourself as a potential reviewer.

Third, I report that Julian Henderson of the University of Nottingham replaces Richard Klein as the SAS representative editor of the *Journal of Archaeological Science*. Some additional changes in editorial staff will be announced in the next issue, but we also welcome self-nominations from our members who would like to contribute occasional columns or other information for the *Bulletin*.

Lastly, I remind SAS members of the many membership benefits that exist and which continue to be added to, including:

### Journal Discounts

*Archaeometry* (Blackwell Publishers, ISSN 0003-813X). \$30 / £22 (reg. \$47). 4 issues per year. Pay to SAS with your annual membership.

*Journal of Archaeological Science* (Academic Press, ISSN 0305-4403). \$95 (reg. £570). 12 issues per year. Pay to SAS with your annual membership.

*Archaeological Prospection* (John Wiley & Sons, ISSN 1075-2196). \$100 / £65 (reg. \$435). 4 issues per year.

*Geoarchaeology* (John Wiley & Sons, ISSN: 0883-6353). \$110 (reg. \$195). 8 issues per year.

*International Journal of Osteoarchaeology* (John Wiley & Sons, ISSN 1047-482X). Discount in negotiation (reg. \$520). 6 issues per year.

For all Wiley journals, as well as for a 25% discount on archaeology books, contact Wiley customer services department directly and indicate you are a SAS member: tel (UK): 44 (0) 1243 779777; tel (USA): 1-212-850-6645; email: cs-journals@wiley.co.uk; web: www.wiley.com/

### Advances in Archaeological and Museum Science

This is the SAS-produced series with Kluwer Academic Publishers, for which all members are entitled to a discount. Visit website for a complete listing of all five volumes including tables of contents: <http://www.wkap.nl/prod/s/AAMS>. Please contact the Editor if you have a monograph or edited volume that you would consider publishing in this or a related series.

### In This Issue

AIA & SAA Awards	2
J. Roger Bird (1927-2001)	4
Radiocarbon Dating	5
COST Action G8 (A. Adriaens)	6
Archaeological Ceramics (C. Kolb)	6
Book Reviews (M. Glascock)	
<i>Dogs Through Time</i> (K. Emery)	21
<i>Skywatchers of Ancient Mexico</i> (G. Aldana)	22
<i>Religion, Power &amp; Politics</i> (J.C. Brandon)	24
<i>Foreign Relations of the "Hyksos"</i> (H. Neff)	25
<i>Spanish Colonial Gold Coins</i> (N.J. Mactague)	26
<i>Modern Analytical Methods</i> (S. Walling)	27
Meeting Calendar (S. Mulholland)	30

Robert H. Tykot

May 2002

## Harbottle Receives AIA's 21<sup>st</sup> Annual Pomerance Award for Scientific Contributions to Archaeology



*The following is the full text of the award citation:*

Dr. Garman Harbottle has been at the forefront of applying nuclear sciences to problems in archaeology, especially in the fields of proveniencing, radiocarbon dating, and archaeometallurgy. He epitomizes the pioneering interdisciplinary researcher, who in this case was able to take his plethora of chemical and statistical skills, combine them with an excellent understanding of archaeological data gained by close collaboration with archaeologists, and bridge the gulf in solving important archaeological problems, especially of the provenience or source of many materials.

In 1960 he proposed that INAA (instrumental neutron activation analysis) could be used to source Mesoamerican ceramics. At a time when computer database and statistical methods were in their infancy for scientific and scholarly research generally, he proposed building INAA databases that would serve to characterize ceramic production at specific sites and enable socioeconomic systems to be reconstructed.

After a two-year assignment as head of the Division of Research and Laboratories at the International Atomic Energy Agency in Vienna, Gar's proposal began to be realized in 1968 when he joined Dr. Edward V. Sayre in the Chemistry Department at Brookhaven National laboratory. Archaeology, and later art history, provided an ideal avenue for demonstrating the usefulness of the peaceful employment of nuclear energy. For the next 18 years, the Brookhaven group experimented with and carried out archaeometric provenience investigations with archaeological collaborators from around the world, trained many archaeologists and their graduate students, and pioneered innovative approaches to strengthening the link between archaeology and the physical sciences.

Gar's role during the 1970s in developing sophisticated statistical techniques for handling the enormous amount of chemical data produced by INAA should be stressed. In collaboration with Brookhaven Lab programmers, he wrote a

search program that would scan the database for samples that were chemically similar to a given specimen. The probabilistic "Mahalanobis Distance" search engines, a novel development, soon followed. Other innovations at Brookhaven that Gar achieved include computer-controlled sample changers and magnetic tape readouts that permitted the analysis of large numbers of archaeological specimens.

With Dr. Phillip Weigand of SUNY Stony Brook and others, he carried out a full-scale investigation of New World turquoise procurement and trade. The demonstrate that trade in turquoise took place between centers in New Mexico, such as Chaco Canyon, and pre-Columbian Mexico has led to a reevaluation of the cultural interactions between these two areas. Gar has made similar contributions to the proveniencing of obsidian and limestone. The Brookhaven Limestone Database Project has been able to trace the stones used in building some of the major cathedrals, ruined abbeys, and cloisters of Europe back to their quarries. The original edifices from which Medieval sculptures were taken has also been determined. This ongoing project is now affiliated with more than 33 museums in the United States, France, and Great Britain.

Prior to the development of AMS 14C dating, Gar developed a miniature 14C counter at Brookhaven that would date small samples of 10 mg. The technique was used to date a sample from an instance of iron smelting thought to have been carried by the Frobisher expedition to the Arctic in A.D. 1576. The date for the ingot, however, was found to be of earlier Norse or Viking date.

One of the themes of Gar's research has been that each new advance in science is potentially of value to the archaeologist or art historian. For instance, he suggested to Dr. Peter Gaspar of Washington University that the gold content of ancient coins could be uniquely determined, nondestructively, by gold K-edge absorption using gamma radiation from <sup>133</sup>Ba as a probe. Gaspar then tested and published this innovative method.

In summary, Garman Harbottle has been a pioneer in the development of the archaeological sciences. He fits well the ideal of a multifaceted scientist who has had the opportunity to see how the hard sciences can be made to serve the needs, and extend the horizons, of archaeological research.

## Torrence Wins SAA Award for Excellence in Archaeological Analysis

Robin Torrence received the 2002 SAA Award for Excellence in Archaeological Analysis. Her contributions to the field of archaeology, specifically lithic studies, have been remarkable. From Greek quarries she showed how lithic data can be employed to answer questions of craft specialization, social complexity, and centralized control of resources. Her research involving the sourcing, through PIXE/PIGME and density analyses, of obsidian from Oceania led to new insights concerning the production and distribution of the resource. This research dovetailed with considerations of landscape use in Oceania, which she has shown to have changed drastically



through time. Her theoretical work on time stress among hunter-gatherers has illustrated how lithic technology represents not just mundane responses to everyday situations, but solutions to the management of risk. In addition, her promotion of lithic use-wear, combined with phytolith and starch residue studies, has opened up innovative lines of endeavor in Australian research. Robin has initiated important projects, coordinated disparate expertise, as with the Ancient Starch Research Group, and nurtured students and colleagues to an enhanced level of achievement. For these and a host of other reasons, Robin Torrence has truly been an inspiration to the profession. *(text from the SAA awards committee)*

At the SAA meetings, Torrence also organized, with Pip Rath, the symposium "All Things Bright and Beautiful: Overlooked Meanings of Obsidian". The participants included Robin Torrence; Pip Rath; Carolyn Dillian; Warren DeBoer; William Parry; Cynthia L. Otis Charlton and Thomas H. Charlton; Payson Sheets; Patricia S. Escola; Catherine Perles; Tristan Carter; Elizabeth Healey; John E. Clark; and Joan M. Gero.

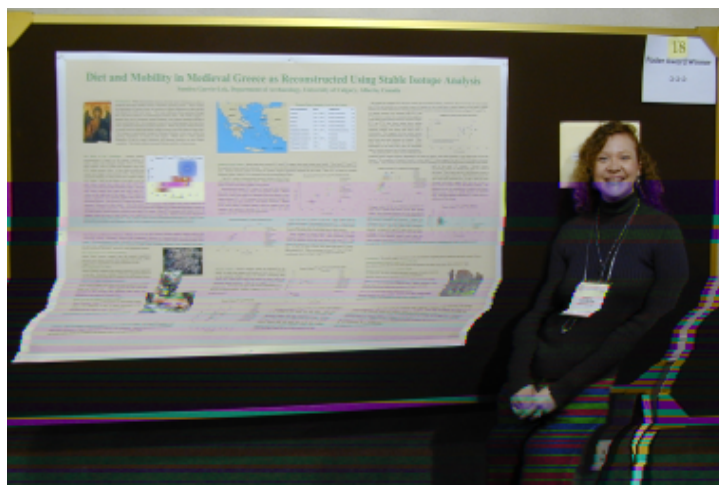


Robin Torrence, 2nd from right in front row,  
with SAA symposium group

### Pearsall Wins SAA Fryxell Award

Deborah M. Pearsall of the University of Missouri was the winner of the 2002 Fryxell Award for Interdisciplinary Research. She is perhaps best known for her book, *Palaeoethnobotany: A Handbook of Procedures*, as well as her co-authored book, *The Origins of Agriculture in the Lowland Neotropics*. She is particularly influential in her development and application of phytolith analysis in archaeology. Her classification system for phytoliths is one of the primary schemes used by researchers today, and she has substantive research contributions on nearly every continent. Pearsall is also a devoted teacher, inspiring students to discover the potential of palaeoethnobotany, with many of these students now practicing professionals. *(text from the SAA awards committee)*

### Garvie-Lok Wins AIA Poster Award



Sandra Garvie-Lok of the University of Calgary won the Best Poster Award at the 103<sup>rd</sup> Annual Meeting of the Archaeological Institute of America, held in Philadelphia, Pennsylvania in January 2002. The title of her poster was "Diet and Mobility in Medieval Greece as Reconstructed Using Stable Isotope Analysis." The abstract has been published in the *American Journal of Archaeology* 106 (2002): 254.

---

Winners of the Martin Aitken and Erv Taylor poster awards given at the 33<sup>rd</sup> International Symposium on Archaeometry will be announced in the next issue!

---

### Postdoc Position for Research Archaeologist

We announce a Postdoctoral position in archaeology at the Archaeological Research Institute, Arizona State University (ARI website: <http://archaeology.asu.edu>). Ph.D. in Archaeology required. Desired: interest/experience in interdisciplinary studies and conducting research on archaeological issues of central Arizona; Interdisciplinary research experience or educational training relevant to modeling, hydrology, materials analysis, information management, or human/environmental impacts is desired. The postdoctoral associate will work with and contribute to an ongoing interdisciplinary effort to understand the long-term prehistoric development of the Salt/Gila Basin. Position begins 8/15/2002. Send cover letter explaining interest in position and relevant expertise; a curriculum vitae; names, addresses, phone numbers and email addresses of 3 references; and reprints of relevant publications (limit of 3) to: Dr. Arleyn Simon, Post-Doc Search, Archaeological Research Institute, Department of Anthropology, PO Box 872402, Arizona State University, Tempe, AZ 85287-2402, USA. Application deadline is 5/30/02 or the 15th and 30th of each month thereafter until filled. For inquiries, contact Dr. Arleyn Simon at 480-965-9231 or [arleyn.simon@asu.edu](mailto:arleyn.simon@asu.edu). Position contingent upon funding. AA/EOE.

## J. Roger Bird (1927 - 2001)



Roger Bird died on 22 November 2001. Although Roger would not claim to be an archaeologist his contribution to the field was generous and significant, especially in untangling the skeins of obsidian distribution in the southwest Pacific. The possibilities of obsidian as an agent for revealing prehistoric distribution networks were shown to some extent with the work of Conrad Key in the 1960s but a quantum jump to almost archaeological revelation status could be accorded to the results that Roger Bird produced from 1974 until the late 1990s.

With grants from the cooperative university nuclear physics research organisation, the Australian Institute of Nuclear Science and Engineering (AINSE), and in collaboration with officers of the now named CSIRO Australian Nuclear Science and Technology Organisation (ANSTO), thousands of archaeological artifacts were analyzed. Roger Bird was the main initiator for this work within ANSTO through his role as head of the Nuclear Techniques Section. By 1978 his group had undertaken non-destructive analysis of obsidian, pottery, aboriginal ochers, and autoradiography of a fake painting. The signal undertaking was his guidance in developing automated processing of obsidian artifacts. Through the refinement of the proton induced X-ray excitation (PIXE), and proton induced gamma emission (PIGME) systems, a reliable degree of attribution of artifact to source was achieved, and the large numbers that were analyzed provided useful statistics for archaeological collections that could show changing preferences for particular sources over time.

The first major report on more than 1000 analyses appeared in 1981 with Roger Bird as senior author on the in-house publication 'The characterisation of Melanesian obsidian sources using the PIGME technique' (AAEC/510). This included results from over 900 archaeological obsidian flakes.

The early days of this enterprise in the late 1970s often

meant all-night vigils over the drifting efficiency of the equipment while mounds of punched paper ribbon rolled out of the teletype printer. The large stacks of IBM punch cards generated in this operation weighed more than the obsidian being analyzed. A 24-hour watch, over two or three days, was needed to accommodate the archaeological needs against queues of other users who were pressing to carry out their research on the 3 MeV accelerator used for the PIXE-PIGME work. In order to recover some of his sleeping hours Roger had fixed a solenoid controlled lever to a phone in the counting room. If for any reason there was an instrument failure the phone would be raised from its cradle; a check-up call from Roger's home would then produce an engaged signal that would have him hurrying back to the lab to rectify the problem on the wayward machine.

By 1981 Roger, as editor of 'Ion Beam Analysis' the proceedings of the 5<sup>th</sup> International Conference on Ion Beam Analysis, had introduced a chapter on Ion beam analysis in archaeology and the environment. Roger's continuing personal commitment to archaeology led to the successful first Australasian Archaeometry Conference at the Australian Museum, Sydney, in February 1982. His enthusiasm for archaeological applications is clearly seen in his major 160-page 1983 joint review paper, as a single issue of the international journal *Nuclear Science Applications*, entitled 'Ion beam techniques in archaeology and the arts'. Roger was able to engage others in his group to have a keen interest in the archaeological dimensions of nuclear applications research, to such an extent that at one stage there was discussion of setting up an Archaeometry group within the then Australian Atomic Energy Commission. This initiative faltered for lack of strong archaeological support, much to the disappointment of those involved.

He continued his role as an organizer of archaeological science meetings with the second Australasian Archaeometry Conference at the National Gallery, Canberra, in February 1985. This was the year that the Lapita Homeland Project was launched, with the commitment of Roger's group and AINSE to process large numbers of obsidian artifacts that would inevitably be excavated by the wide ranging field work undertaken in the Bismarck Archipelago. This was a major effort that extended for another decade producing thousands of analyses, and encompassed new work undertaken in the 1990s into the more precise definition of obsidian sub-sources in New Britain and other source regions in the Bismarcks. Roger Bird was tireless in calibrating all these data from instruments that were often being tweaked to different tunes by other users of the accelerator. He also engaged himself on holidays in fieldwork in the Northern Rivers of NSW and on Easter Island where he and his wife Betty collected obsidians to add to his growing catalogue of Pacific obsidian sources. A final compendium of all this effort has yet to be published but there is a manuscript version that should eventually be generally accessible. Many of the archaeological questions raised by the detailed distributional information have been addressed by individual archaeologists whose obsidians were analyzed over the last twenty-five years and they will have acknowledged Roger Bird's contribution. To these individual notices of their collaborative work should be added a recognition of his untiring



effort to promote the role of his field of nuclear science as a contributor to the fields of archaeology and the arts.

Archaeologists looking to the past are prone to spot a 'golden age' when developments were rapid and successful outcomes the norm. The directory of Australian archaeometry in the appendix to the first Australasian Archaeometry Conference twenty years ago seemed to presage a golden age of archaeological science in Australia, with Roger Bird's group being one among others that were working toward a common goal. That promotion seems to have lapsed in recent years but it is clear that Roger's presence as a strong supporter of archaeological science in previous decades has left a lasting imprint on Australian archaeology.

Wal Ambrose

### Italian Association of Archaeometry

The Associazione Italiana di Archeometria, Metodologie scientifiche per i Beni Culturali (A.I.Ar.), is an organization with members who are experts and researchers in a variety of disciplines, as well as teachers and professionals whose activities are related to the study and conservation of the cultural heritage by the application of scientific methods. The Association's aims include assisting and fostering the professional qualifications of young researchers in the field, by co-operation with public authorities and private enterprise, as well as with research and didactic institutes. The Association publishes and distributes scientific information in the field and, for this purpose, organizes meetings, conventions and schools.

The first annual meeting was held in Bologna in 1994, with subsequent meetings in Rovereto, Savona, Napoli, Bari, Este, Padova, Taormina, and Bologna. Proceedings of the first six have been published, although they were only distributed to conference participants and are not available for purchase at present. Tables of Contents and photocopies of articles are available from the *SAS Bulletin* editor.

For further information, contact: Claudio d'Amico, Associazione Italiana di Archeometria, c/o Dipartimento di Scienze della Terra e Geologico-Ambientali, P.za Porta S. Donato, 1 - 40126 Bologna, Italy; tel 39 0512094900; fax 39 0512094904; email: [aiar@geom.in.unibo.it](mailto:aiar@geom.in.unibo.it); web: <http://www.geom.in.unibo.it/ORGV/aiar/default.htm>

#### Proceedings Published

- D'Amico, C. and Campana, R. (a cura di). 1994. *Le Scienze della Terra e l'Archeometria. Giornata di Studio, 21 Aprile 1994*. Dipartimento di Scienze Mineralogiche, Università di Bologna.
- D'Amico, C. and Finotti, F. (a cura di). 1995. *Le Scienze della Terra e l'Archeometria. Riassunti estesi delle comunicazioni presentate alla seconda giornata nazionale, Rovereto 7-8 Aprile 1995*. Museo Civico di Rovereto and Università di Bologna.
- AA.VV. 1997. *Le Scienze della Terra e l'Archeometria. 3ª giornata. Savona - Complesso monumentale del Priamàr,*

*16 febbraio 1996*. Quaderni del Civico Museo Storico-Archeologico, Savona.

D'Amico, C. and Livadie, C. A. (a cura di). 1998. *Le Scienze della Terra e l'Archeometria. Quarta giornata, Napoli, 20-21 febbraio 1997*. Napoli: Cuen.

D'Amico, C. and Tampellini, C. (a cura di). 1999. *5ª Le Scienze della Terra e l'Archeometria. Bari - 19 e 20 Febbraio 1998*. Bologna: Pàtron Editore.

D'Amico, C. and Tampellini, C. (a cura di). 2000. *6ª Giornata le Scienze della Terra e l'Archeometria. Este, Museo Nazionale Atestino, 26 e 27 Febbraio 1999*. Este: Grafica Atestina.

## Radiocarbon Dating

### RADON - Radiocarbon dates online

<sup>14</sup>C data base for the Neolithic and Early Bronze Age of west Central Europe. The RADON radiocarbon database, edited by Dr. Dirk Raetzl-Fabian (email: [redaktion@jungsteinsite.de](mailto:redaktion@jungsteinsite.de)) comprises more than 2.000 Neolithic and Early Bronze Age data sets from Germany, Switzerland, the Netherlands, Denmark and adjacent regions. It is available as a free download (Excel 2000 file, zipped, 212 KB). In German, with explanations in English. <http://www.jungsteinsite.de/radon/radon.htm>

### New ANSTO AMS group web-site

If you maintain a list of active AMS labs please update our URL. The web-site contains information on radiocarbon dating and AMS in general. A series of examples, including archaeological, geoscience and environmental applications, is presented. You can also find contact details, sample submission procedures and forms, and download educational material. If you have any comments please contact us. We would like to hear your comment. Ugo Zoppi, ANSTO, Physics Division, Private Mail Bag 1, Menai NSW 2234, Australia; tel (61) 2 9717 3043; fax: (61) 2 9717 3257; email: [ugo@ansto.gov.au](mailto:ugo@ansto.gov.au); web: <http://www.ansto.gov.au/ansto/physics/ams/index.html>

### Proceedings of the 17th International Radiocarbon Conference

The proceedings of this conference, held in Jerusalem in 2000, have been published. The three proceedings books, which comprise Radiocarbon Volume 43, Numbers 2A, 2B, and 3, 2001, may be ordered for \$75 US plus shipping. Please email orders to: [orders@radiocarbon.org](mailto:orders@radiocarbon.org) or visit the Radiocarbon website for further details: <http://www.radiocarbon.org>

## International Symposium on Archaeometry

The official International Symposium on Archaeometry web page is hosted by the ATAM Program, University of Illinois. Check their website for information on the 34<sup>th</sup> ISA, to be held in Hefei, China, May 4-8, 2003, and the 35<sup>th</sup> ISA, to be held in Zaragoza, Spain, May 3-7, 2004, as well as for links to previous meetings and information on the standing committee: <http://www.uiuc.edu/unit/ATAM/conf/home.html>

## COST Action G8

### A European network on non-destructive analysis and testing of museum objects



The conservation and preservation of our cultural heritage has become one of the main concerns within Europe today. In particular the increasing need for non-destructive investigations is a major issue, as sampling is often restricted in view of the value or the uniqueness of the

object. Even in the case sampling is allowed, non-destructive testing offers the possibility of obtaining more information on one specific sample, as complementary techniques may be applied.

In the natural sciences many non-destructive techniques are available, such as e.g. ion beam analysis, autoradiography and optical spectroscopy, that can in principle be used in this field. Museums however do not always have access to these techniques, while many of these research instruments and analytical facilities are located in specialized research institutes, as they require very specific expertise. In addition some techniques may still need to be introduced and established in the field of cultural heritage.

Therefore the COST Action G8 has been established, which aims at creating a European wide environment that enables the co-operation and interaction between people directly concerned with the maintenance of our cultural heritage (i.e. art historians, archaeologists and conservators) and natural scientists (i.e. physicists, chemists, material scientists, etc.). The main objective of the COST Action G8 is to achieve a better preservation and conservation of our cultural heritage by increasing the knowledge in museum objects through non-destructive analysis and testing.

COST is an intergovernmental framework for European cooperation in the field of scientific and technical research, allowing the coordination on a European level nationally funded research projects. The scientific activities of the COST G8 Action include organizing short-term scientific missions to train scientists of both groups in the others field as well as to transfer practical experience between the European countries. Six working groups are active and allow a close collaboration for an extended and efficient exchange of knowledge within a specific topic. These topics include technology and techniques of manufacture, origin and provenance, degradation processes corrosion and weathering, preservation and conservation, authenticity and authentication, development of analysis methods.

Regular meetings in the form of workshops are organized to exchange obtained knowledge in a broader group, to discuss new themes and to enhance the interest and give the possibility of new collaborations. The last one was held in Ghent, Belgium earlier this year on the topic of new analysis methods. The application of a wide variety of techniques was demonstrated for studies concerning our cultural heritage. Studies using

Raman, PIXE, SIMS, SR-XRF, and neutron imaging methods as well as micromethods for the measurement of paper acidity and hydrothermal stability of skin collagen materials were discussed.

The next workshop 'Conservation Science 2002' will be held in Edinburgh (May 22-24, 2002) in collaboration with The Institute of Conservation Science and The National Museums of Scotland.

For further details on the activities of COST G8, please visit our web site at <http://srs.dl.ac.uk/arch/cost-g8/>.

Annemie Adriaens, Chair COST G8

## Archaeological Ceramics

Charles C. Kolb, Associate Editor



This issue includes seven topics: 1) summaries about new and reissued books related to archaeological ceramics; 2) notes on other important books; 3) ceramic notes; 4) an exhibition; 5) professional meetings held; 6) forthcoming professional meetings; and 7) Internet sites.

### New Publications: Books

Mentioned in the last issue of *SAS Bulletin* was a recently published monograph on ceramic figurines dating to the Classic period in Central Mexico. Sue Scott's *The Corpus of Terracotta Figurines from the Excavations of Sigvald Linné at Teotihuacan, Mexico (1932 & 1935) and Comparative Material* (National Museum of Ethnography, Stockholm, Sweden, Monograph Series 18, Stockholm, ISBN 91-85344-40-0, xii + 114 pp., 2001, \$40.00) contains more than 1200 photo illustrations in 175 plates, augmented by 53 figures, 34 line drawings, and five maps. This outstanding research derives from her dissertation, *Terracotta Figurines from Ancient Teotihuacan: Typology and Iconographic Themes* (Institute of Archaeology, University College London, 1994) and adds significantly to our understanding of so-called "minor" artifacts. During the past 70 year's archaeological projects at Teotihuacan, Mexico yielded sufficient quantities of figurine fragments to merit the use of typological analyses and interpretive approaches. The earliest scientific excavations were undertaken by Swedish archaeologist Sigvald Linné (1899-1986) in the urban center at residential sites called Las Palmas, Xolalpan, and Tlamimilolpa during the 1930s. Except for general descriptions, Linné made no attempt to describe or classify the figurines. His research at Teotihuacan was published in two well-written and highly illustrated monographs. *Archaeological Researches at Teotihuacan, Mexico* (Ethnographical Museum of Sweden, new series Publication 1, 1934) emphasized the work conducted at Xolalpan, while the second, *Mexican Highland Cultures: Archaeological Research at Teotihuacan, Calpulalpan, and Chalchicomula in 1934/*

35 (Ethnographical Museum of Sweden, new series Publication 7, 1942) included excavations of the room complex at Tlamimilolpa. The Xolalpan ruin was completely excavated and contained 45 rooms, 7 forecourts, and 7 graves, while the Tlamimilolpa complex, probably containing 300 rooms, was only about half exposed and mapped. A total of 176 rooms and 13 graves were found in the 3,200-sq m. that was excavated. The excavations of these residences and the analysis of their artifacts helped to establish the Classic Teotihuacan period relative chronological phase sequence (Miccaotli, Early and Late Tlamimilolpa, Early and Late Xolalpan, and Metepec), collectively ca. 50-750 CE.

Scott's narrative is divided into three sections: Part One containing Chapter 1 (pp. 3-14, 3 maps, 1 figure), a description of Teotihuacan and discourse on the context of Linné's research); and Chapter 2 (pp. 15-26, 2 maps, 1 chart) in which she considers figurine production and use and earlier studies. These two initial chapters cover the period from 1865 to the present, characterizing briefly early reports by Almaraz, Batres, Seler, Gamio, Tozzer, and Vaillant among others. More extensive studies by Armillas, Noguera, Caso, Séjourné, and Rattray, and personnel of the urban Teotihuacan Mapping Project (directed by René Millon) and the rural Teotihuacan Valley Project and Basin of Mexico Project (directed by William Sanders) are also documented. Warren Barbour studied the figurine corpus from the urban area for his dissertation, *The Figurines and Figurine Chronology of Ancient Teotihuacan* (University of Rochester, 1976), identifying Classic Teotihuacan period figurine workshops and deriving a chronology based upon excavated specimens from the Pyramid of the Sun, the Ciudadela, and a residence named Tetitla. More than 210 figurine workshops are now known. Rural site data are reported in "Teotihuacan Period Figurines: A Typological Classification, Their Spatial and Temporal Distribution in the Teotihuacan Valley" by Charles Kolb, *The Teotihuacan Valley Project Final Report, Volume 3: The Teotihuacan Period Occupation of the Valley, Part 2: Artifact Analysis*, Pennsylvania State University *Occasional Papers in Anthropology* 20:275-465. This database includes 4,301 Preclassic and Classic specimens: 2,958 from excavations and 1,344 from survey. There are an additional 755 Postclassic (Toltec and Aztec) and Colonial era specimens.

Part Two in Scott's monograph contains only Chapter 3 (pp. 290-56) a description of the figurine corpus with reference to the 175 photographic plates. This chapter is divided into headings that follow the current Teotihuacan chronology mentioned above and is further organized by figurine categories. It also contains references to comparative materials and includes interpretations as the evidence allows. As a part of her study, Scott made superb photographs of figurines in the Linné collections of the Las Palmas, Xolalpan, and Tlamimilolpa excavations deposited in Stockholm and specimens from 12 other American and European museums (ranging from the American Museum of Natural History to the Museum für Volkerkunde, Vienna). However, we are not informed which specific collections were examined (for example, the Duc du Loubat collection at the AMNH?). She also photographed selected specimens from the collections at The Pennsylvania

State University. Scott begins her characterization with Preclassic figurines and describes 25 types. Curiously, she does not quantify verbally or in tabular form the numbers of specimens Linné excavated or that she examined and photographed in Stockholm or in any other repository. It is not clear if these images represent the total Linné collection in Stockholm or are only representative specimens from the collection — the latter seems to be the case. The plates lack scale but may be assumed to be 1:1 (100% of image size), but in a few instances actual heights are given in the photo captions. These captions provide catalog designations so that it is possible to evaluate the images (and I have attempted to do so as follows). Eliminating 36 duplicate views of individual figurines, there are a total of 1,237 specimens illustrated in the 175 plates: 818 from Linné's excavations (474 from Xolalpan, 168 from Tlamimilolpa, and 176 from Las Palmas) plus four figurine molds. There are an additional 286 specimens illustrated from the Penn State collections and 89 from 12 other museums — Bruxelles, Berlin, the AMNH, and British museums providing the majority. Some readers may object to the use of subjective terminology in names such as "Mohawk hair" style but others will desire a more fulsome explanation of the typological strategy employed and the criteria for inclusion or exclusion within a "type," especially in complex headdresses and garments. She made no attempt to compare Linné's corpus with the typology and chronological phase determinations or inter- or intrasite association in residences developed by Kolb (1995).

Scott's Part Three encompasses five chapters: Chapter 4 (pp. 59-63, 4 figures) in which she assesses the contents of Tlamimilolpa Burial 1; Chapter 5 (pp. 65-74, 15 figures) a discussion of fakes and falsified figurines; Chapter 6 (pp. 75-88, 13 figures) in which an iconographic connection to the Copán site in Honduras is explored; and Chapter 7 (pp. 87-94, 9 figures), in which two previously unidentified figurine categories are defined. Chapter 8: Concluding remarks (pp. 95-98) completes the narrative. There are 62 endnotes, a list of 25 abbreviations (institutions and societies, museums, and sites), a bibliography of 326 items (pp. 105-114), and a list of five maps. In spite of the concerns mentioned above, Scott has provided specialists with a magnificent, unparalleled set of illustrations and she sets a new benchmark for comparative research on Classic Teotihuacan period figurines. The book is available in the United States from Latin American Archaeology Publications at the University of Pittsburgh (telephone 412/648-7681, FAX 412/648-7535, website [www.pitt.edu/~laap](http://www.pitt.edu/~laap)). Scholars outside of the US can contact Ann-Cathrine Lagercrantz at the museum in Stockholm [Ann-cathrine.lagercrantz@etnografisca.se](mailto:Ann-cathrine.lagercrantz@etnografisca.se).

Ivor and Audrey Noël Hume are the authors of *The Archaeology of Martin's Hundred, Part I: Interpretive Studies; Part II: Artifact Catalog*, 2 vols. (2001), University of Pennsylvania Museum of Archaeology and Anthropology and the Colonial Williamsburg Foundation, Philadelphia, ISBN 0-924171-85-5 (set), \$100.00. Historical archaeologist Ivor Noël Hume, the author of 14 books and dozens of professional articles, whom many regard at the dean of Virginia colonial archaeology, was at the Colonial Williamsburg Foundation for more than 30 years prior to his recent retirement. His late wife



Audrey (d. 1993) was curator of the archaeological collections at Colonial Williamsburg. Among the significant sites they excavated was Martin's Hundred, a 20,000-acre tract of land in the Tidewater region of Virginia settled by 220 persons in 1618. The community was nearly destroyed in a surprise Indian attack in 1622 but the survivors rebuilt the community and remained a few more years despite environmental hardships and contagious diseases.

In this two-part compendium the Noël Humes document the community and its artifacts, and present the reader with a captivating account of archaeological field research, laboratory studies, and analysis which employed museum collections, published and unpublished documents, and expert consultants. The authors provide an overview of the excavations at nine Martin's Hundred sites, Carter's Grove, Wolstenholm Towne (Virginia, USA) undertaken by Noël Hume and his colleagues during the 1970s. The excavations defined 25 structures, fences, and palisades, but only one water well, one cellar hole, and one deep, large pit, plus numerous shallow pits were located. However, the brief occupational duration provided a proverbial time capsule for historical archaeology. A scholarly, semi-popular book written by Ivor Noël Hume entitled *Martin's Hundred* (New York: Knopf, 1982) contains a lively narrative about these excavations and their initial interpretations. *Digging for Carter's Grove* (Colonial Williamsburg Foundation, Archaeological Series 8, 1974) and *Discoveries in Martin's Hundred* (Colonial Williamsburg Foundation, 1986) augment the 1982 volume. The 2001 scientific publication provides artifact documentation, provenance, and comparative information.

In *Part I: Interpretive Studies* the authors ask and answer four questions: "Who was Martin?" "What was a 'hundred'?" "When did it begin and end?" "Where was it located?" This volume contains an Introduction, 9 chapters, and a Postscript, and is accompanied by 833 footnotes, 54 black-and-white photographic illustrations, and 97 plates. The individual chapters elaborate the geographic location, the people, the community itself, arms and armor, pottery, the small finds, glass, tobacco pipes, and pits. *Part II: Artifact Catalog* illustrates and describes the principal items of material culture from the Martin's Hundred excavations. The artifacts are grouped by category beginning with ceramics (the most common and readily and reliably dated). This volume has a User's Introduction, the artifact catalog (pp. 231-553) with 110 figures (line drawings), four appendices, and a comprehensive bibliography with 306 entries. The appendices include: I: Faunal Analysis (prepared by Stanley J. and Sandra L. Olsen, and George E. Watson, with an additional 11-item bibliography); II: Index of Illustrated Tobacco-pipe Marks (including 10 supplementary figures); III: Cited Excavation Register Entries (16 pp.); and IV: Ceramic Nomenclature (52 additional illustrations depicting vessel types). All artifact scales for the illustrations are in inches but the written descriptions provide precise English and metric measurements.

He comments "Let's face it, nobody in their right minds will read these parts from cover to cover, and it is not meant that they should. This is an accumulation of interpreted data to be used by archaeo-historians who in general have a need to know, say, what the earliest rat trap looked like or who worked

at Carter's Grove, and which buildings were located where in Martin's Hundred. They can learn the former from Part II and the latter from Part I, but when they need to know the kind of household the trap belonged to, they will need to refer to both parts" (p. xiii). The authors also acknowledge the contributions of the late J. Lawrence Angel (Smithsonian Institution) who studied the human remains, and Adrian Oswald and David Higgins who analyzed the clay tobacco-pipes. Oswald, who helped to create contemporary historical/Post-medieval archaeology and was a pioneer in smoking pipe studies, died recently at the age of 93 (b. August 13, 1908, d. October 28, 2001). The Noël Humes also point out that David Gaimster (British Museum) and Goeff Egan (Museum of London) read and commented upon the draft catalog.

The excavations yielded very little glass (case bottles, tableware, and beads) but metalwork and ceramics were abundant (precise counts are not listed). The former includes ferrous agricultural tools (hoes, spades, and a shovel), kitchen equipment, cutlery, scissors, firearm parts, military and equestrian objects, armor, locks, handles, and nails. Other metallic artifacts comprise copper coins (1613-1614), copper alloy tools, iron nickel alloy buttons, pewter utensils (especially spoons), and miscellaneous objects in brass, copper, and lead, including casing counters. Of particular interest is Chapter 5: Of Pots and Pertinence (pp. 159-173, 57 footnotes, 35 illustrations, and plates 58-70) which may be augmented with Chapter 4: Painters and Potters from the 1982 book (pp. 84-110). Much of the Artifact Catalog is taken up with ceramic materials (pp. 231-339, figures 1-35 [with 300 individual artifact drawings], and 272 footnotes). More than a dozen ceramic categories are documented, among them local earthenwares (16 figures), English and European ceramics (4 figures), local and imported ceramics (2 figures), Virginia and English ceramics, local slip and sgraffito wares, and kiln wall fragments. The imported ceramics include earthenwares (2 figures), earthenwares and stonewares, kitchenwares, tin-glazed earthenwares, tin-glazed wares, North Devon Sgraffito Slipwares dating 1623-1640 (2 figures), Anglo-Netherlandish Tin-glazed Wares, and Rhenish Stonewares. The local earthenware forms consist of a variety of culinary ceramics: bottles, bowls, bucket pots, cauldrons, chafing dish, casseroles, cisterns, colanders, fuming pots, jars, jugs, lids, mugs, pans, pipkins, pipkin lids, porringers, storage jars, and tygs (2 or 3 handled drinking pots). Other forms include an alembic, chamber pots, and flowerpot stand. Virginia earthenwares consist of jars and pans, plus local slip and sgraffito ware dishes dating 1623-1640. An alembic is a beehive-shaped condenser for a steam-borne distillate. English and European wares comprise dishes, many jar forms, kitchen pots, mugs, and storage jars. Eighteen specific wares are identified, among them: London delftware salt vessels; Polychrome London delftware dish and ointment jar; a North Devon gravel tempered pipkin; North Devon Plain storage jars; and North Devon sgraffito slipware dishes. European forms include Anglo-Netherlandish Tin-glazed ware forms (dishes, mugs, ointment pot, porringer, and salt vessel); Bartmann bottles (stoneware gray under a mottled brown salt glaze, formerly known as Bellarmine bottles); Delftware or early Netherlandish maiolica gallipots; Iberian



costrels and jars; North Italian sgraffito slipware bowls; a North Italian Slipware dish or small bowl; North Netherlands tri-footed pipkins; Portuguese tin-glazed earthenware plates and bowls; Raeren brown salt-glazed stoneware vessels (produced near Aix-la-Chapelle); Rhenish Salt-glazed Stoneware jugs; Rhenish Stoneware jugs and a chamber pot; a Spanish olive jar (1620-1622); and Westerwald stonewares (many jug specimens, 1600-1620). Notably absent from the ceramic assemblage are French decorative vessels and objects. Based on these specimens, Noël Hume suggests revised dates for several wares. In addition, spectrographic studies of ceramic specimens were conducted by Stephen Clement (Geology Department, College of William and Mary, Williamsburg, Virginia) which helped to establish which vessels were locally manufactured, although the sample size is rather small (p. 169). There are a few paragraphs in the narrative but, disappointingly, these scientific results are not elaborated in an appendix nor is any further reference provided to Clement's research.

The most unusual vessel recovered from the excavations and dated 1623-1645 is a locally produced alembic (pp. 314-316, Plate 67, Figure 28.6), a condenser for a steam-borne distillate, which had an orange-to-green glaze covered interior and finial crown. This beehive-shaped vessel was reconstructed from fragments and is complete except for a broken spout. The authors states that this alembic is "unquestionably the most accomplished piece of American potting yet discovered in Virginia" (p. 316). The 13 kiln wall fragments (pp. 263-264, Figure 12) dating to 1620-1622 are inferred to have come from an impermanent potter's kiln built by resident potter Thomas Ward. Although no evidence of a traditional kiln was recovered during the excavations, the presence of wasters and tools suggested the presence of a kiln. Chapter 8: The Tobacco Pipes (pp. 189-193, 27 footnotes, 38, illustrations; pp. 508-553, Figures 91-110 [184 separate drawings], and 105 footnotes) chronologically span the period 1619 to 1645 and include English, Dutch, Virginian, and Local types. Again, Chapter 6: Pipe Dreams from the 1982 book (pp. 111-129) emends the presentation. Among these specimens was a reassembled but nearly complete three-bowl Dutch pipe (initialed ED) dating 1623-1640 (pp. 528-529, Figures 100.3, 100.4). A majority of the specimens are Dutch and/or English tobacco pipes. One English tobacco pipe (Figure 98) is documented, as are Virginian specimens (buff to red clay, red brown ware) and Local tobacco pipes (red ware). The narrative provides general assessments of the sites, structures, and the artifacts and their contexts, but the superb illustrations and their informative captions are especially useful. The volumes lack tables of artifact distributions and tabulations by site and structure, and we are not informed as to total numbers of artifacts by class or type. Readers would certainly like to have more precise information about Clement's spectrographic analyses of the ceramic specimens. Only general color terms are employed rather than the traditional Munsell color designations. Nonetheless, this catalog and the interpretive narratives provide significant insights about one of the earliest European settlements in North America and provides important comparative material for historical archaeology in the Americas and post-medieval archaeology in England and Continental Europe. The volume

may be ordered through University Museum Publications, 33<sup>rd</sup> and Spruce Streets, Philadelphia, Pa 19104, telephone 1-800/306-1941, FAX 215/573-2497, or [http://www.upenn.edu/museum\\_pubs/index.html](http://www.upenn.edu/museum_pubs/index.html)

Ivor Noël Hume is also the author of *If These Pots Could Talk: Collecting 2,000 Years of British Household Pottery* (Hanover, NH: University Press of New England for the Chipstone Foundation, 472 pp., ISBN 158465161X, 2001, \$75.00). In this monumental treatise he shares his passion for historical reconstruction from potsherds and their contexts, and describes in detail the common household pottery that he and a graduate of Bristol University named Audrey unearthed and collected during four decades of marriage and pottery collecting that followed. In 1957 he was appointed as chief archaeologist at Colonial Williamsburg and subsequently became director of their Department of Archaeology. For his achievements in archaeological research, historical analysis, and clarity of reporting, for fostering Anglo-American relations, and for contributions to British cultural interests in Virginia, Noël Hume was named an Officer of the British Empire in 1992. Among his notable, classic writings are *Historical Archaeology* (New York: Knopf, 1969), *A Guide to the Artifacts of Colonial America* (New York: Knopf, 1970), and *All the Best Rubbish* (New York: Harper and Row, 1974). The University of Pennsylvania Museum Philadelphia has reprinted an emended *Guide to Artifacts of Colonial America* (2001).

*If These Pots Could Talk* is written in a personal and often humorous style. Noël Hume engages the reader so that one believes that he is speaking directly to the reader while holding the artifacts in his hands. At the same time he explains where the objects came from, how they got to where they were found, and what they reveal about the makers and cultural traditions, and use and discard. The stories of discovery he relates are illuminating and he narrates the stories behind the acquisitions and the uncanny connections that the Noël Humes made as their eclectic collection took shape. In addition he also documents with wit and humor the foibles and triumphs of assembling this unique collection of ceramics from both sides of the Atlantic. As a ceramic collection guided by an archaeological perspective this corpus of artifacts includes the commonplace, the unusual and even occasional fakes.

This memoir-monograph-catalog is not "light reading" — printed on 115-pound paper it weighs 7 pounds 12 ounces — and is published by the Chipstone Foundation (Milwaukee, WI) which will inherit and maintain the Ivor and Audrey Noël Hume Collection. The volume was prepared as a catalog for the exhibition "If These Pots Could Talk" held at the Milwaukee Art Museum (5 October 2001-20 January 2002). The Chipstone Collection of decorative arts was established by Stanley and Polly Stone in 1946, and came to include 17<sup>th</sup> and 18<sup>th</sup> century British pottery, hence, the Noël Hume collection will supplement this corpus and both are to be housed in a new section of the Milwaukee Art Museum. This book is the "ultimate catalog," emphasizing 2,000 years of pottery in Britain and her colonies in the broadest sense, and is superbly illustrated with photographic images of the artifacts and many artifactual parallels that serve to enhance the historical and personal commentary. From Roman Britain to the Queen Mother's 100th

birthday celebration, this volume is not just about pots but about the people who made and used them, and the events that they commemorate. Of the 648 magnificent illustrations, 560 are in color, largely created specifically for this publication by noted photographer Gavin Ashworth. While concentrating on earthenwares, stonewares, and porcelains commonly found in archaeological excavations but encountered rarely in decorative arts exhibits, his book actually spans five millennia and includes pottery ranging from wine cups, smoking pipes, and chamber pots to burial urns. The first figure in this volume is a Predynastic Egyptian Badarian culture beaker (Chalcolithic, 4000-3400 B.C.) while the last is a Porcelain Box by Royal Crown Derby commemorating the one hundredth birthday of Queen Elizabeth the Queen Mother, August 4, 2000. The intervening 16 chapters are packed with facts and personal observations and the narratives are augmented by 654 endnotes and a bibliography of 218 items. A 165-term glossary (agate to zoomorphic) and a 14-page triple column index conflates topics and proper nouns. Along the way we learn the distinctions between marlies and rims, pitchers and jugs, mugs and tankards, and plates and dishes. In sum, the volume appeals to archaeologists, historians, art historians, and collectors, nonspecialists and experts alike. The book is available from the University Press of New England, 23 South Main Street, Hanover, NH 03755-2055, telephone 1-800/421-1561, or on the Internet at <http://www.dartmouth.edu/acad-inst/upne/order.html>

*Post-Roman Pottery from Excavations in Colchester 1971-85*, written by British Medieval archaeologist and ceramic expert John Cotter, has been published by the Colchester Archaeological Trust as Colchester Archaeological Report 7 (2000). To a large extent, this report is both a typology and a synthesis of medieval and later pottery in north Essex. At over 400 pages and with over 1,700 pottery illustrations plus maps, diagrams, and photographs, it is the largest publication on post-Roman pottery from Essex, as well as one of the largest urban assemblages to be published from southeast England in recent years. It should prove an invaluable reference work, not just to ceramic researchers in Essex, but also to researchers in East Anglia and southeast England generally, as well as those with wider interests in imported wares or other socioeconomic aspects of pottery studies. The reports deals with nearly 100,000 sherds (2 tons) of post-Roman pottery from the excavations in Colchester between 1971 and 1985. The study also draws on some largely unpublished material in the Colchester Museum in order to fill gaps in the sequence of excavated material. The sites, methods of analysis, and previous work are detailed in the first chapter. Chapters 2 to 6 detail a typology of English wares, most of which are of local origin. Accounts of local wares of the 11th to early 16th centuries form the core of the work. Particular attention is given to the Middleborough kilns (ca. 1175-1225) and the 13th- to early 16th-century Colchester-type ware industry — the local manifestation of the East Anglian Redwares tradition, which includes a high proportion of vessels with exuberant slip decoration. The production of roof-furniture, particularly louvers, was an important element of the Colchester-type ware industry, and the report includes two of the most complete and highly decorated louvers published in Britain.

The account of the important but poorly understood Hedingham fine-ware industry is the most comprehensive overview published to date. English post-medieval wares are also well documented; the latter includes a study of the numerous tin-glazed drug jars (English and imported) recovered from apothecary dumps during the Lion Walk excavations, together with documentary evidence linking these to named families. The assemblage of Continental imports is arranged in geographical order in Chapters 7 to 13. Foreign imports are particularly common from the late medieval period onwards, and reflect Colchester's status as a port. The German stonewares constitute one of the richest and most diverse collections from southeast England. Chapter 14 presents and quantifies 22 stratified groups of pottery, arranged in chronological order. An overview of the main trends of pottery supply to Colchester is provided diachronically in the concluding chapter, and the significance of the assemblage is considered in terms of its regional, national, and international contexts. Appendices dealing with documentary evidence for local pottery production and neutron activation analysis of Colchester-type and other Essex redwares. The project and its publication were supported by English Heritage. Colchester Archaeological Report 7 costs £36 post free (UK mainland only) and is available from the Colchester Archaeological Trust (12 Lexden Road, Colchester CO3 3NF, UK; e-mail address [reports@cat.ndo.co.uk](mailto:reports@cat.ndo.co.uk)) Contact the Trust if ordering from abroad as there may be additional charges for postage; checks should be drawn in Sterling on a British-based bank.

#### *Brief Notes on Other Important Publications*

The Austrian Academy of Sciences Press has recently issued four works that consider ceramic materials from Egypt, Cyprus, the Levant, and Austria. Bettina Bader is the author of *Tell el-Dab'a XIII: Typologie und Chronologie der Mergel C-Ton Keramik: Materialien zum Binnenhandel des Mittleren Reiches und der Zweiten Zwischenzeit*. Denkschriften der Gesantakademie XII, Untersuchungen der Zweigstelle Kairo des Österreichischen Archäologischen Institute XIX (Wein: Verlag der Österreichischen Akademie der Wissenschaften/Austrian Academy of Sciences Press, 2001, ISBN 3-7001-2972-6, 266 pp., DEM 110,- CHF 98,-). Bader documents Marl C pottery found at a large number of sites in Egypt, particularly in the Memphis-Fayum region, the Sinai, and Nubia. A ceramic marker of the Middle Kingdom and Second Intermediate Period, she shows that Marl C was also used before and after these periods and for a wider varier of vessel forms that realized previously. In addition, Bader characterizes Marl C clays, their geographical distributions, contexts (graves, temple precincts, and settlements), and provides a catalog of all known Marl C pottery types.

Vassos Karageorghis edited *The White Slip Ware of Late Bronze Age Cyprus: Proceedings of an International Conference Organized by the Anastasios G. Leventis Foundation, Nicosia, in Honour of Malcolm Wiener, Nicosia, 29<sup>th</sup>-30<sup>th</sup> October 1998* (Denkschriften der Gesantakademie XX, Contributions to the Chronology of the Eastern Mediterranean II. Wein: Verlag der Österreichischen Akademie der Wissenschaften/ Austrian Academy of Sciences

Press, 2001, ISBN 3-7001-2935-1, 304 pp., DEM 92,- CHF 83,50). Cypriot White Slip pottery, one of the most widespread ceramics of the Middle and Late Bronze Ages, is the subject of 19 papers given by international scholars who consider technological, typological, and chronological aspects of the ware.

Claus Reinholdt is the author of *Die Keramik aus der Levante und dem Vorderen Orient. Sammlung Fritz Schachermeyr, Faszikel II* (Denkschriften der phil.-hist. Klasse 292. Wein: Verlag der Österreichischen Akademie der Wissenschaften/Austrian Academy of Sciences Press, 2001, ISBN 3-7001-2983-1, 64 pp., DEM 26,- CHF 24,-). This highly illustrated study presents information about a small collection of ceramics from the eastern Mediterranean and Southwest Asia that are a part of a large corpus of pottery assembled by the Austrian scholar Fritz Schachermeyr.

In addition, Brigitte Cech published *Thunau am Kamp — Ein befestigte Höhensiedlung (Grabung 1965-1990): Die keramischen Funde der frühmittelalterlichen Befestigung* (Mitteilungen der Prähistorischen Kommission 43. Wein: Verlag der Österreichischen Akademie der Wissenschaften/Austrian Academy of Sciences Press, 2001, ISBN 3-7001-2988-2, 100 pp. and CD-ROM, DEM 136,- CHF 123,-). Cech presents a ceramic catalog of specimens from the early Medieval settlement of Thunau am Kamp, Austria excavated from 1965 to 1990 and other specimens found in repositories in Vienna and Lower Austria. The initial section of the monograph considers ceramic forms (96% pots and 4% bottles, bowls, plates, pendants, loom weights, etc.) and there are chapters on the clays, production technology, and decorative patterns. The second part documents contexts (pits and potteries) and associated metal objects, and there are chapters on typology and chronology. Further information is available on the Academy of Sciences website <http://verlag.oeaw.ac.at>. The Verlag der Österreichischen Akademie der Wissenschaften/Austrian Academy of Sciences Press may be reached at A-1011 Wien. Postfach 471, Postgasse 7/4.; telephone +43-1-512-90-50, e-mail [verlag@oeaw.ac.at](mailto:verlag@oeaw.ac.at)

Kathryn A. Bard's *Encyclopedia of the Archaeology of Ancient Egypt* (London and New York, Routledge, 1999, 968 pp., 120 illustrations, ISBN 0415185890, \$250.00) is the first reference work in English to provide a systematic coverage of the region from the Early Paleolithic through the fourth century CE. There are more than 300 entries, three of which deal specifically with ceramics: S. Swain "Pottery, Early Dynastic to Second Intermediate Period," pp. 626-628; D.A. Aston "Pottery, New Kingdom through the Ptolemaic Period," pp. 629-632; and Renee Friedman "Pottery, Prehistoric," pp. 632-636. For further information, consult Routledge (information in the previous paragraph) or at <http://ecommerce.tandf.co.uk/catalogue/DetailedDisplay.asp?>

*The Oxford Encyclopedia of Ancient Egypt* (3 volumes), edited by Donald B. Redford (Pennsylvania State University), was published in November 2000 (Oxford and New York: Oxford University Press, 2000; 1632 pp., 200 halftones, 150 line illustrations, 30 maps, 8 pages in full color, ISBN 0195102347, \$475.00, hardcover) and has relevant articles on ceramics and related clay materials. The Nile valley cultures

and civilizations are characterized from the earliest times to the Greco-Roman period. This encyclopedia, a comprehensive and authoritative reference work with 600 original articles, includes contributions by Peter Lacovara (bricks and brick architecture), Paul T. Nicholson (faience), Carol A. Redmount (ceramics), and Bridget Schlich-Nolte (glass). Oxford University Press (198 Madison Avenue, New York, NY 10016) maintains a web site at <http://www.oup-usa.org>

Jill Leslie Furst is the author of *Mojave Pottery, Mojave People: The Dillingham Collection of Mojave Ceramics* (Santa Fe: School of American Research Press, 2001, 256 pp., 50 color plates, 25 color and black-and-white illustrations, ISBN 0933452551, \$45.00 cloth, \$24.95 paperback). This ethnohistoric account uses a variety of sources ranging from 17<sup>th</sup> century Spanish archival records through ethnographic accounts of the 1970s to document the production of Mojave effigy vessels and clay figurines (humans and mythological creatures). This volume should not be confused with *Mojave Pottery*, a 34-page report written by Alfred Louis Kroeber (Michael Harner, Robert Heizer, John Rowe, Ronald Olson, and T. D. McCown, editors; reprinted in 1995 by Coyote Press). Jill is also the author of the acclaimed volume *The Natural History of the Soul in Ancient Mexico* (New Haven, Yale University Press, 1995) which focuses on the Mexica (Aztecs) of the Central Plateau. The School of American Research Press (P. O. Box 2188, Santa Fe, NM 87504-2188; telephone 888/390-6070) has an Internet site and on-line catalog at <http://www.sarweb.org/press/press.htm>

The South Carolina Institute of Archaeology and Anthropology (SCIAA) website at the University of South Carolina currently has a list of *Volumes in Historical Archaeology*, edited by Stan South, that are available for \$10.00 each. The 34 volumes listed are theses or dissertations on topics in historical archaeology, and include six ceramic-related titles: Carl R. Steen, "The Inter-Colonial Trade of Domestic Earthenwares and the Development of an American Social Identity" (Vol. 9); Mark David Bograd, "Whose Life Is It Anyway? Ceramics, Context, and the Study of Status" (Vol. 16); Susan L. Henry, "Physical, Spatial, and Temporal Dimensions of Colono Ware in the Chesapeake, 1600-1800" (Vol. 23); "Ronald Varnelle May, "Mexican Majolica in Northern New Spain: A Model for Interpreting Ceramic Change" (Vol. 28); Patricia Hagen Jones, "A Comparative Study of Mid-Nineteenth Century Chinese Blue-and-White Export Ceramics from the Frolic Shipwreck, Mendocino, California" (Vol. 29); and Barbara Jo Grindy, "The Farmer Potter in Northwestern Pennsylvania (36ME226)" (Vol. 33). The names of the degree-granting institutions, degree dates, and dates of publication are not listed. The volumes are available directly from Stan South, 1321 Pendleton Street, Columbia, SC 29208. Additional information may be obtained at the website <http://www.cla.sc.edu/sciaa.hapubs.html>

*Ten Thousand Years of Pottery*, 4<sup>th</sup> ed., by Emmanuel Cooper (London: British Museum Publications, 2000, ISBN 0714127019, \$49.90 cloth) was issued recently; previous editions, published as *A History of World Pottery*, were released in 1972, 1981, and 1988. British Museum Publications has a website at <http://www.britishmuseum.co.uk/bmco.html>



David B. Wilson's *Keos, Vol. 9: Ayia Irini, Periods I-III: The Neolithic and Early Bronze Age Settlements, Part I: The Pottery and Small Finds* (Munich: Philipp von Zabern, 2000, xxi + 266 pp., 103 plates, ISBN 3-88-53-2341-7, cloth, DM 180/\$95.00) is also available. Indiana University is the North American representative for von Zabern publications and may be contacted at <http://www.indiana.edu/~libmps/order/phili.html>

*Ceramics of the Islamic World in the Tareq Rajab Museum* by Geza Fehervari (New York: I.B. Taurus, 2000. 399 pp., color plates, ISBN 186-644309, cloth, \$95.00) was also published recently. See <http://www.ibtaurus.com/> for additional information.

Yosef Garfinkel, with a contribution by Claire Epstein, authored *Neolithic and Chalcolithic Pottery of the Southern Levant* (Jerusalem: Hebrew University of Jerusalem, Qedem 39, 1999, xx + 341 pp., 4 color plates, 375 black-and-white illustrations, ISSN 0333-5844, cloth, \$60.00). Further information is on the university's website at <http://www.hum.huji.ac.il/archaeology/>

*Archaeology of Ancient Mexico and Central America: An Encyclopedia*, edited by Susan Toby Evans and David L. Webster (New York: Garland, 2001, 992 pp., 135 illustrations, ISBN 0815308876, \$95.00) contains two relevant but brief articles on ceramic materials: Leah Minc "Ceramics," 108-110; and Sue Scott "Figurines, Terracotta," pp. 266-270. Additional information may be obtained from Garland Publishing, Inc., Taylor and Francis Group (29 West 25<sup>th</sup> Street, New York, NY 10001; telephone 800/634-7064) at several Internet sites <http://www.garlandpub.com> or <http://www.routledge-ny.com/cgi-tin/catalogdisplay.cgi?0815308876>

Yvon Garlan's *Production et commerce des amphores anciennes en Mer Noire: Colloque international organize a Istanbul, 25-28 Mai 1994, par le GDR 830, avec le concours du CNRS, du GDR 1056, de l'Institut Francaise d'Etudes Anatoliennes du Ministere des Affaires Etrangeres et de l'Universite de Haute-Bretagne* (Provence, France: University of Provence, 1999, 288 pp., 22 plates, 137 illustrations, 18 tables, 2 maps, ISBN 2-85399-441-4, paper, FF 300.37) is another notable volume.

Pamela B. Vandiver, Senior Research Scientist at the Smithsonian Center for Materials Research and Education (SCMRE), who specializes in ceramic studies, is editing a second edition of *Ceramic Masterpieces: Art, Structure, and Technology* (New York: The Free Press; London: Collier Macmillan, 1986) a volume she co-authored with the late W. David Kingery. This new edition will be published later this year by the American Ceramic Society (P.O. Box 6136, Westerville, OH 43086-6136; telephone 614/890-4700). Check the ACerS website for an update on this revision <http://www.acers.org/publications/publications.asp>

*A Guide to the Classification of Medieval Ceramic Forms*, (ISBN 0-9506105-1-6) is the first in a series of Occasional Papers by the Medieval Pottery Research Group (MPRG). This guide describes 500+ vessel forms and recommends descriptive terminology for vessels fabricated from the end of the Roman period to the end of the 17th century. The guide (512 pp., 550 figures) is in two volumes, loose leaf

two-ring binding with PVC covers. Additional information is available from Paul Miles at <http://www.pmiles.demon.co.uk/mprg/mprg.htm> The cost via surface mail including postage and handling are £32.00 for MPRG members (£33.00 overseas) and £35.00 for nonmembers (£36.00 overseas). The guide may be ordered from MPRG Classification, c/o Department of Medieval and Later Antiquities, British Museum, London WC1B 3DG, UK. Inquire about payment format (sterling Giro account) at [mprg@pmiles.demon.ac.uk](mailto:mprg@pmiles.demon.ac.uk)

Jean Rosen is the author of *Manufacture de Meillonas (Ain) 1760-1870: Catalogue typologique des céramiques* (CNRS, Documents d'archéologie en Rhône-Alpes (DARA) No. 19, available in CD-ROM, MAC or PC format, 2000, 180F + 20F postage and handling). This volume is a typological catalog of 453 faïence forms and is illustrated by 150 color photos and 258 drawings, and 213 images of the archaeological setting, with references. Form, function, technique, decoration, date, etc may query the searchable database. For additional information, or to order, contact Service régional de l'archéologie, DARA, le Grenier d'Abondance, 6 quai Saint-Vincent, 69283 LYON, Cedex 01, France.

The forthcoming *'Ain Ghazal Excavation Reports, Volume 1: Symbols at 'Ain Ghazal* by Gary O. Rollefson and Zeidan Kafafi (Denise Schmandt-Besserat, editor; Irbid, Jordan: Yarmouk University Press) documents a Neolithic site ca 7200 to 6500 BCE located near Amman, Jordan. A website at <http://menic.utexas.edu/menic/ghazal/> provides several background narratives, copious illustrations, and catalogs of artifacts. Available on the Internet is "Chapter 1: Tokens: A Formal and Technological Analysis" by Harry Iceland which details a collection of 137 clay and stone tokens (cones, spheres, discs, cylinders, and ovoids) assessed by visual technological classification, thin section petrographic analysis of artifacts and prepared clay samples, and by XRD. Comparisons with tokens from other sites are made and chronology, contexts, and firing temperatures are assessed "Chapter 2: Animal Figurines" by Schmandt-Besserat, and "Chapter 3: Human Figurines" by Ellen McAdam are not yet posted.

Edward F. Heite and Carla L. Blue authored *Mitsawokett to Bloomsbury: Archaeology and History of an Unrecognized Indigenous Community in Central Delaware* (Dover, Delaware: Delaware Department of Transportation Archaeological Series 154, 2000; Document 55-03/00/12/20). The report elucidates the excavation of an historic house site in Duck Creek Hundred occupied ca. 1750 to 1814 and the analysis of the artifacts including ceramics and worked glass. Of significance among the 26 chapters is Chapter 16, "Ceramics Help Map Activity Areas." Stonewares, Coarse Stonewares, Refined Stonewares, Earthenwares, Coarse Earthenwares, Mended Ceramics, Black Glazed Red Earthenware, Slip-decorated Earthenware, Creamwares, Beaded Pattern Creamware, Royal and Queens Patterns, Shell-edged Pearlware, Oriental Porcelain, Delft, Glass, Windowglass, and Glass Vessels in the assemblage are documented. There are copious illustrations and artifact plots. The report is accessible on the DelDOT website at [http://www.state.de.us/deldot/projects/mitsawokett\\_to\\_bloomsburyarch.html](http://www.state.de.us/deldot/projects/mitsawokett_to_bloomsburyarch.html)

The Blackburn Press (P. O. Box 287, Caldwell, NJ 07006;

telephone: 973-228-7077, FAX 973-228-7276, e-mail [freed@blackburnpress.com](mailto:freed@blackburnpress.com) ) has announced the reprinting of two volumes that may be of interest to readers. The first is *Marks of American Potters* by Edwin Atlee Barber (originally published in 1904; 2001, ISBN 1-930665-41-5, \$32.95). Butler's initial attempt to describe the marks of American potters was in his *Pottery and Porcelain of the United States* (1893) in which fewer than 100 varieties were described. The reprinted book includes the marks used by factories, patterns, workmen or decorators in America to the time of this book's original printing. Additional information is available at <http://www.blackburnpress.com/marofampot.html> The second volume is *Bottle Makers and Their Marks* by Julian Harrison Toulouse (1969, 2001, ISBN 1-939665-34-2, \$69.95) which includes over 900 older marks and more than 300 modern marks, hand lettered for the most part, to better convey the actual markings on the bottles. The markings are organized into a dictionary-like format, with extensive cross-references, to facilitate quick identification of collectors' bottles by their marks. Dates, company histories, and human-interest vignettes are included in the listings, and there is a section on foreign marks; see <http://www.blackburnpress.com/bottlemakers.html>

*History of Civilizations of Central Asia, Volume IV: The Age of Achievement: A.D. 750 to the End of the Fifteenth Century, Part Two: The Achievements*, edited by C. E. Bosworth and the late M. S. Asimov (Paris: UNESCO Publishing, 2000, ISBN 92-3-103654-8), became available in the United States in October 2001. Ceramics and tiles are included in the discussion of achievements: pp. 270-272 (1 b-w image) Islamic ceramics; pp. 342-346 (1 b-w image) Arabic script and ceramics; pp. 412-321 (6 b-w and 4 color images) ceramics in Transoxiana and Khursan; and pp. 455-459 (3 b-w images) Hindu and Buddhist materials. The UNESCO series is available from the distributor, Bernan Associates, 4611-F Assembly Drive, Lanham, MD 20706-4391, telephone 800/274-4447, FAX 800/865-3450, e-mail [rsettles@bernans.com](mailto:rsettles@bernans.com) See also <http://www.unesco.org/culture/asia/index.html>

Due to be published in March 2002 is *Ceramic Production and Circulation in the Greater Southwest: Source Determination by INAA and Complementary Mineralogical Investigations*, edited by Donna Glowacki and Hector Neff, a monograph from the Cotsen Institute of Archaeology, University of California, Los Angeles, CA. A brief review of this volume will appear in the next issue of the *SAS Bulletin*.

#### Ceramic Notes

A new issue of the revamped *La Tinaja: A Newsletter of Archaeological Ceramics*, edited by George J. Bey III and Michael L. Galaty, has just been published. The new format allows illustrations. Among the research reports and articles in Volume 13(2), Winter 2001, are "Pots and Context in a Greek Bronze Age Palace" by Suzanne Hofstra, and "Stamp-Bottom Bowls of Cholula, Mexico" by Geoffrey G. McCafferty and Sergio Suárez Cruz. Subscriptions are \$10.00 per year and payable by credit card (MC, VISA, Discover). The editors are also soliciting research reports (up to 2,000 words) for subsequent issues. Further information is available at *La Tinaja*, Millsaps College, Department of Sociology and Anthropology,

1701 North State Street, Jackson, MS 39210-0001, or by e-mail [Beygj@millsaps.edu](mailto:Beygj@millsaps.edu) or [Galatml@millsaps.edu](mailto:Galatml@millsaps.edu)

The Potteries of Trenton Society (P.O.T.S.) has reprinted "From Teacups to Toilets: A Century of Industrial Pottery in Trenton, Circa 1850 to 1940," a 16-page pamphlet that provides a summary of the rise of Trenton, New Jersey as a major American pottery center. This study, prepared for the New Jersey Department of Transportation by Hunter Research of Trenton, includes photographs of some of the potteries and a time line of benchmarks for the development of the Trenton factories. The publication grant provided for free distribution of the pamphlet including postage. To receive a free copy, write to Patricia Madrigal, P.O.T.S., Hunter Research, 120 West State Street, Trenton, N.J. 08608 or via e-mail at [madrigal@hunterresearch.com](mailto:madrigal@hunterresearch.com)

The P.O.T.S. website <http://scils.rutgers.edu/~christym/publish.htm> is hosted at Rutgers University. Some of the society's newsletters are also posted on the web site, and include articles on the c. 1770's Richards stoneware kiln in Trenton (one of only three archaeologically excavated 18th century stoneware kilns in the eastern United States) and the late 19th century Arsenal pottery waster dump, also located in Trenton.

Also worthy of your attention for methodological procedures and substantive results is a recently published article by R. J. Speakman and Hector Neff entitled "Evaluation of Painted Pottery from Mesa Verde Region using Laser Ablation-Inductively Coupled Plasma Mass-Spectrometry (LA-ICP-MS)," *American Antiquity* 67: 137-144 (2002).

#### An Exhibition

*Wit & Wine: A New Look at Ancient Iranian Ceramics from the Arthur M. Sackler Foundation* is the title of an exhibition that was held at the Brooklyn Museum of Art, Robert E. Blum Gallery, (1st floor) from September 7 to December 30, 2001. The exhibition included forty-five ancient Iranian pottery vessels — most for holding or pouring wine — ranging in date from the fifth millennium BCE to the third century CE. Demonstrating an extraordinary range of Iranian pottery, the exhibition includes such whimsical examples as a jug like vessel supported by human feet, and sculptural works in the shape of camels and bulls. Some containers clearly imitate early metal prototypes, with their unusually thin walls and long spouts, while others are painted with sophisticated ornamental designs depicting the animals of the Iranian highland. The Arthur M. Sackler Foundation organized the exhibition; Trudy S. Kawami served as curator. James F. Romano, Curator of Egyptian, Classical, and Ancient Middle Eastern Art at the Brooklyn Museum of Art, organized the BMA presentation. Apparently, there is no catalog of the exhibition. Additional information is available on the Internet at [http://www.brooklynart.org/visit/special\\_exhibitions/witandwine/Default.htm](http://www.brooklynart.org/visit/special_exhibitions/witandwine/Default.htm)

#### Professional Meetings Held

The *XI Congress of the Brazilian Archaeology Society*, chaired by Tania Andrade Lima, and held in Rio de Janeiro in September 2001, was attended by representatives of 16 countries, working groups supported by the Brazilian Archaeological Society focused on Portuguese faience. These



groups were coordinated by Paulo Zanettini and attended by Portuguese researchers Isabel Maria Granja Fernandes and Fernando Castro, as well as the Brazilians mentioned above, and Uruguayan archaeologist Nelsys Fusco Zambetoglyris. These sessions opened new discussions on this topic and firmed up the idea among those present of establishing a study group specializing in investigations in greater depth of Portuguese faience as it spread throughout its overseas colonies, and the countries with which Portugal maintained trade relations. As a result of a series of meetings held for this purpose during the 2001 Congress of the Brazilian Archeology society, a core group of interested researchers was created, with the Tondela Meetings forming their main backbone. On the Portuguese side, João Manuel Diogo was appointed to chair them, with Paulo César Barreto Aquino dos Santos as Secretary. On the Brazilian side, Tania Andrade Lima was appointed as chair, with Paulo Zanettini as Secretary. Other professionals from many different countries clustered around this core group, expressing marked interest in participating in what is provisionally being called the Tondela Group. In order to attract the largest number of people interested in this topic, the Tondela Group announces its formation and a conference to be held at the V Medieval and Post-Medieval Ceramics Meeting to be held in Tondela, Portugal in October, 2002, coordinated by João Manuel Diogo. This event will include a special session presenting papers and studies related to Portuguese faience in the XVII and XVIII centuries. The organizers wish particularly to hear about the kind of projects they are developing in this field. Presently, the papers are focusing on mapping the occurrence of Portuguese faience outside Portugal and classifying the discoveries that are being made, so that a profile of research projects currently under way may be created. A "Working Group on Portuguese Faience" has been established to characterize Portuguese production during the 16<sup>th</sup> to 19<sup>th</sup> centuries and differentiate the Portuguese ceramic from those produced in Latin America. The coordinator of this group is Paulo Zanettini, e-mail [arqueoz@uol.com.br](mailto:arqueoz@uol.com.br) Additional information is also available at <http://www.itacultural.org.br/arqueologia>

*The Sixth European Meeting on Ancient Ceramics*, which had a theme of "Ceramic in the Society," was held 3-6 October 2001 at the Institute for Mineralogy and Petrography at the University of Fribourg, Switzerland. Forty oral presentations plus a poster session comprised the meeting. These presentations (in alphabetical order) were: Basso, E., Bernabo, B.M., and Riccardi, M.P. "The Technological Evolution of a Neolithic Ceramic Production from Travo (Piacenza, Italy); Belgiorio, M.R. "The Evolution of Metallic Ware in Southern Cyprus"; Benvenuti, M., Pecchioni, E., Chiarantini, L., Chiaverini, J., Mariani, A., and Mascaro, I. "An Investigation of Iron Smelting Furnaces from the Etruscan Site of Baratti-Popolonia (Tuscany)"; Bonzon, J. "Homogeneity of a Pot - Homogeneity of the Production?"; Borgia, I., Brunetti, B., Mariani, I., Sgamellotti, A., Cariati, F., Fermo, P., Mellini, M., Viti, C., and Padeletti, G. "Metal Nanocrystals in Italian Renaissance Lustre Pottery"; Borzacconi, A., Fabbri, B., Gualtieri, S., and Ruffini, A. "Production Technology of Local Late-Renaissance Sgraffito Ceramics in the Central Friuli-Venezia Giulia (NE Italy)"; Broekmans, T., and Adriaens, A.

"Analyses of Mesopotamian Metallic Ware from Tell Beydar Analytical Results and Archaeological Implications"; Bruni, S., and Cariati, F. "FTIR Spectroscopy for the Archaeometric Study of Fine Ware: Firing Temperature and Provenance"; Bucio, L., Ortiz-Diaz, E., Lazos, L., and Ruvalcaba, J.L. "Characterization of Prehispanic and Modern Pottery from the Caxonos River Basin, Oaxaca, Mexico, by PIXE, XRD and TL"; Burens, A., Carozza, L., Mille, B., and Bourgarit, D. "Copper Sulfide Smelting in a Ceramic Pot: Towards an Original Chalcolithic Metallurgy"; Cairo, A., and Celi, A. "The Roman Kiln of Bettola (PC): An Attempt to Define Aspects of the Firing Technology"; Camarda, L., Cerchi, E., Fabbri, B., Gualtieri, S., and Verardi, G. "Scientific Investigations and Classification of Nepalese Slipped Pottery from Gotihawa and Pipri Excavation Sites"; Colak, M., Anderson, T., Maggetti, M., and Galetti, G. "Aspects Concerning Production and Origin of the Middle Bronze Age Pottery of Ried-Holle (Ct. Fribourg, Switzerland)"; Colomban, P. "Analysis of Ancient and Modern European, Islamic and Asian Ceramics by Non-destructive Raman (Micro) Spectrometry"; Constantinescu, B. "Ancient Ceramics and Glass Compositional Studies Using Nuclear Methods"; Daszkiewicz, M., and Bobryk, E. "Measuring Water Permeability and Thermal Shock Resistance of Ancient Pottery to Determine Functional Properties"; Daszkiewicz, M., Bobryk, E., and Schneider, G. "Down-up Sampling Classification of Pottery Using MGR-analysis"; Daszkiewicz, M., Demoule, J.-P., Malamidou, D., and Schneider, G. "Composition and Some Aspects of Technology and Functional Properties of Neolithic Pottery from Macedonia"; Daszkiewicz, M., in collaboration with Schneider, G., Bobryk, E., Lopez-Valera, S., and Sato, E. "Compositional Classification of Pottery from the Pyramid of the Moon in Teotihuacan (Mexico)"; De Benedetto, G.E., Sabbatini, L., and Zambonin, P.G. "Infrared Spectroscopy in the Chemical and Mineralogical Characterization of Pre-roman Pottery"; Demirci, S., Caner-Saltik, E.N., Türkmenoglu, A., Özçilingir-Akgün, S., Bakirer, Ö., and Özer, A.M. "Raw Material Characteristics and Technological Properties of Some Medieval Glazed Ceramics and Tiles Anatolia"; Dias, M.I., Arruda, A., Prudêncio, M.I., and Gouveia, M.A. "The Roman Colony of Scallabis (Lusitania): An Archaeometric Approach to the Origin of the Fish Sauces Containers (Class 32 Amphorae)"; Dias, M.I., Prudêncio, M.I., Cardoso, G., Gouveia, M.A., and Rodrigues, S. "Chemical Characterisation of Pottery from the Workshop of Peniche (Portugal): A Provenance Study"; Di Pierro, S. "Matrix-temper Separation of Neolithic Ceramics: An Experimental Approach to Characterize the Original Raw Materials"; Evershed, R.P. "Lipids in Ancient Ceramics as Carriers of Anthropogenic Signals from Prehistory"; Falcone, R., Lazzarini, L., Cancelliere, S., and Mazzoni, S. "Investigation on the Provenance of Late Chalcolithic Pottery from Tell Afis (Syria)"; Fortina, C., Gliozzo, E., Grassi, F., and Memmi Turbanti, I. "Archaeometrical Study of Medieval Pottery from the Rocca of Campiglia Marittima (Tuscany, Italy)"; Geçkinli, A.E., and Yeniehirliglu, F. "Characterization Studies of Porcelains Recovered from Istanbul Tekfur Palace Excavation Site"; Gerber, Y. "Remarkable Changes in Two Centuries of Nabataean Coarse Ware: New Analyses Show Systematic, Time-dependent



- Alteration of Chemical Composition and Vessel Functions”; Giacomini, F. “Military Tiles production in Roman Switzerland”; Gliozzo, E., Fortina, C., and Memmi Turbanti, I. “Clay Sources and Roman Ceramic Production in Etruria (Italy)”; Gliozzo, E., Fortina, C., Memmi Turbanti, I., Apro시오, M., Dooryhee, E., Hodeau, J.-L., Bélar, J.-F., Clark, G., Papiz, M., and Pantos, M. “A Study of Black Glaze Production from Central Etruria by Optical Microscopy, SEM-EDX, XRF and EDX and Synchrotron XRD”; Hein, A., Day, P.M., and Kilikoglou, V. “The Agios Sillas Clay Quarry (Crete) - An Example of Geochemical Variability of Raw Materials Used for Ceramic Production”; Kimpe, K., Drybooms, C., Jacobs, P.A., and Waelkens, M. “Use of Gas Chromatography-Mass Spectrometry and Liquid Chromatography-Atmospheric Pressure Chemical Ionization Mass Spectrometry in Functional Analysis of Different Ceramics of Sagalassos, SW-Turkey”; Kohl, V., Kroll, H., Pentinghaus, H., and Schmitt-Riegraf, C. “The Calcite-clay-reaction as an Indicator for Firing Conditions in Grey-Minyan Ceramics of Troy VI: A Study by Electro Microscopy”; Laffi, E. “Late Antique Terracotta Unguentaria from Asia Minor: New Evidence from Pisidia and Cilicia”; Laviano, R., and Muntoni, I.M. “Early and Middle Neolithic Pottery Production at Pulo di Molfetta (Apulia, Italy): Social, Chronological and Functional Implication of Raw Materials Variability”; Laviano, R., and Muntoni, I.M. “Pottery Production in Middle Bronze Age Villages of South-Eastern Italy: Raw Materials Provenance and Firing Techniques”; Le Mièrre, M., and Picon, M. “Appearing and Development of Cooking Ware and “Non-cooking” Ware Concepts in the Near East” [sic.]; Leslie, K.A. “Identification of Porcelain Type Using Raman Spectroscopy”; Levi, S.T., and Sonnino, M. “Archaeogeology Project: A Tool for the Study of Provenance and Technology of Ancient Pottery”; Maggetti, M., and Galetti, G. “Chemical and Mineralogical Provenancing of Late La Tène Fine Ceramics from Western Switzerland”; Maggetti, M., and Galetti, G. “Technology of Early 19<sup>th</sup> Century Swiss Majolica: Contrasting Written Recipes and Local Clays”; Manucu Adamesteanu, G., and Poll, I. “Glazed Byzantine Pottery Discovered in Dobroudja (11<sup>th</sup>-12<sup>th</sup> c.)”; Martin-Kilcher, S. “Review Ceramic and Technological Innovation”; Martineau, R. “Archaeological and Experimental Recognition of Forming Techniques: Reconstruction of Social Contexts in Neolithic Cultures”; Mauvilly, M., Serneels, V., Ruffieux, M., and Garcia Cristobal, E. “Iron Age Crucibles from Sévaz (Fribourg-Switzerland)”; Mayor, A. “Use of Ethnoarchaeology for Better Understanding of Ceramic Production, Diffusion, and Consumption Modalities: The Example of Mali”; Merlini, M., Angelini, I., Artioli, G., Cremaschi, M., Liverani, M., Di Lernia, S., and Vincentelli, I. “Mineralogical Characterization of Ancient Pottery from Northern Africa”; Mignucci, A. “Archaeometric Study of the 13<sup>th</sup> Century Aegean Ware Excavated in the Area of the Lagoon of Venice: Comparisons with Local Production”; Mignucci, A., and Zane, A. “Chemical and Petrographic Study of Flat-bottom Amphorae from Santarcangelo di Romagna (Rimini, Italy): A New Reference Group”; Mirti, P., Gulmini, M., Pace, M., and Elia, D. “Red Figure Vases from Locri Epizephiri: Only Imports or also Local Products?”; Misonne, B., and Laduron, D. “From Microprobe Analyses of Slip and Matrix of Samian Ware to the Technology of Production”; Molera, J., Pradell, T., Pérez-Arategui, J., Larrea, Á., and Vendrell-Saz, M. “Lustre Production and Recipes from Spanish Medieval Workshops: Some Results on Raw Materials and Procedure Characterization”; Palmieri, A.M., and Morbidelli, P. “Archaeometric Study on Crucibles from Arslantepe, Turkey (IV-II Millennia BC)”; Panczyk, E., Kalicki, A., Kierzek, J., and Wasilewska-Dobkowska, J. “Comparative Study of Thai Ceramics by X-ray Fluorescence Analysis and Neutron Activation Analysis”; Prudêncio, M.I., Dias, M.I., Raposo, J., Gouveia, M.A., Fabião, C., Guerra, A., Bugalhao, J., Duarte, A.L., and Sabrosa, A. “Chemical Characterisation of Amphorae from the Tagus and Sado Estuaries Production Centers (Portugal)”; Rathossi, C., Tsolis-Katagas, P., and Katagas, C. “Archaeometric Study of Roman Lamps from Two Lamp Workshops and One Lychnomanteion in Patras, Achaia, Greece”; Rehren, T. “The Development of Ceramics for Crucibles”; Riccardi M.P., Messiga B., and Basso E. “Textural and Chemical Signature of Shell-bearing Pottery: An Experimental Study”; Santoro Bianchi, S. “Ceramics and Society in the Late Antiquity: Pantellerian Ware, A Case History”; Schäfer, A., and Scharff, W. “The Ceramic Materials of a Celtic Bronze Foundry from the Oppidum of Kelheim, Lower Bavaria, Germany”; Schreiner, M., Ottaway, B.S., and Wang, Q. “In the Footsteps of Prehistoric Foundrymen - Interaction between Crucible Clay and Molten Metal”; Schvoerer, M., Bobin, O., Miane, J.L., Fabre, J.F., Guette, A., Labrugère, C., and Lahaye, M. “The Metallic Lustre of Glazed Ceramics: Physical Characteristics Required to an Interpretation of the Optical Properties”; Schwedt, A., Mommsen, H., Stephan, H.-G., and Gaimster, D. “Neutron Activation Analyses of Sherds of the Flake-group”; Shimada, I., Goldstein, D., Häusler, W., Wagner, F., and Wagner, U. “Early Technology: Precolumbian Kilns and Furnaces in the Northern Andes”; Shokouhi, F., Oliayi, P., Rahighi, J., Laméhi Rachti, M., Roohfar, Z., and Durali, S. “Elemental Analysis of Ancient Iranian Lustre Decorated Potteries”; Shoval, S. “Petrography and Mineralogy of Iron Age Pottery from a Pillared Building at Tel Hadar, Israël”; Thierrin-Michael, G., and Babey, U. “Archaeometric Investigations Linking Historical and Archaeological Sources: The Example of Modern Pottery from the Ajoie Region, Jura, Switzerland”; Thierrin-Michael, G., Maza, G., and Schmitt, A. “Early Imports of Italian Wines to Lyon, France (160-140 BC): First Results of Macroscopic, Petrographical and Chemical Analyses of Roman Wine Amphorae”; Thierrin-Michael, G., Paratte Rana, M.-H., Châtelet, M., Waksman, Y., Picon, M., and Marti, R. “Pottery Production and its Diffusion - Chemical and Petrographical Analyses of Early Medieval Pottery from Develier-Courtételle and their Historical Implications”; Tsetlin, Y.B. “Organic Temper in Ancient Ceramics”; Tsolakidou, A., Buxeda I Garrigós, J., and Kilikoglou, V. “An Assessment of Dissolution Techniques for the Analysis of Ceramic Samples by Plasma Spectrometry”; Waksman, S.Y., Bonnifay, M., Treglia, J.-M., and Reynolds, P. “Some Indications about Byzantine Common Wares Found in the Western Mediterranean”; Walton, M.S., and Tite, M.S. “The Structure and Fabrication of Early Roman Lead Glazes”; Wolf, S., Ruffieux, M., and Mauvilly, M. “First Results about Iron Age

Ceramic from Frasses-Praz au Doux, Fribourg Switzerland”; Wolf, S., and Tite, M. “Lead Isotope Analysis of Islamic Glazed Pottery”; Zacharias, N., Buxeda I Garrigós, J., Mommsen, H., Schwedt, A., and Kilikoglou, V. “Implications in Luminescence Dating of Ceramics Related to Environmental Alterations”; Zanco, A. “Late-Roman Ceramics from Bubano and Orto Granara (Bologna, Italy): Analytical Approach.”

The abstracts of the papers from the meeting are temporarily on the department website at <http://www.unifr.ch/mineral/emac01> *The Proceedings of the 6<sup>th</sup> European Meeting on Ancient Ceramics, Fribourg, 3–6 October 2001: “Ceramic in the Society”* edited by V. Serneels and M. Maggetti will be published. Copies of these proceedings may be ordered in advance from Dr. Vincent Serneels, Institute of Mineralogy, University of Fribourg, Pérolles, CH-1700 Fribourg, Switzerland; e-mail [vincent.serneels@unifr.ch](mailto:vincent.serneels@unifr.ch) The manuscripts are still being collected and the actual date of publication and cost of the volume are not yet determined. Please provide Dr. Serneels with the following information: Number of copies desired, Name, Institution, Street, City, Country, Fax, Email, and Date.

*The Eighth Neolithic Seminar: The Neolithisation of Eurasia - Perspectives from Pottery*, was held in Ljubljana, 8-11 November 2001. The abstracts of the 21 papers that were presented are posted at <http://www.ff.uni-lj.si/arheologija/seminar.html> The papers were: Mihael Budja (Department of Archaeology, University of Ljubljana) “Potters and Pots in the Contexts of Transition to Farming — Some Introductory Remarks”; Andrew Sherratt (Department of Archaeology, University of Oxford, UK) “Diet and Cuisine: Farming and Its Transformations as Reflected in Pottery”; John Chapman (Department of Archaeology, University of Durham, UK) “Milking the Evidence - Rubbing Salt into the Meat? Secondary Products, Pragmatism and the Salt Trade in Neolithic and Copper Age Eastern Europe”; Kostas Kotsakis (Department of Archaeology, University of Thessaloniki, Greece) “A New Technology for a New Way of Life: The Role of Ceramics in the Neolithic of Greece”; Richard P. Evershed (School of Chemistry, University of Bristol, UK) “Lipids in Ancient Ceramics as Carriers of Anthropogenic Signals from Prehistory” [GC-C-IRMS]; Oliver Craig, John Chapman, Carl Heron, and Matthew Collins (Department of Fossil Fuels and Environmental Geochemistry, Newcastle University, Newcastle upon Tyne, UK) “The identification of Milk Residues: Which Way Next in Europe?”; Mirko Prosek (National Institute of Chemistry, Ljubljana) “TLC, a Suitable Tool for Quantitative and Qualitative Analysis of Organic Residue” [Thin Layer Chromatography]; Clive Bonsall and Gordon Cook (Department of Archaeology, University of Edinburgh, UK) “Direct Dating of Neolithic Pottery: Progress and Prospects” [TL, AM]; Dushka Urem-Kotsou, Kostas Kotsakis, and Ben Stern (Department of Archaeology, University of Thessaloniki, Greece, Department of Archaeological Sciences, University of Bradford, UK); “Defining Function in Neolithic Ceramics: The Example of Makriyalos, Greece”; Peter Day and Peter Tomkins (Department of Archaeology, University of Sheffield, UK) “Local Pots for Local People? A Review of Analytical

Studies of Greek Neolithic Ceramics and Their Interpretation”; Eva Lenneis (Department of Archaeology, University of Vienna) “The Combination of Different Methods for Analysing Early Neolithic Pottery”; Masaki Nishida (Department of Archaeology, Tsukuba University, Japan) “Another Neolithic in the Holocene Japan”; Yaroslav V. Kuzmin (Pacific Institute of Geography, Vladivostok, Far Eastern Branch of the Russian Academy of Sciences, Russian Federation) “The Earliest Centers of Pottery Origin in Siberia and the Russian Far East: Review of Chronology and Palaeoeconomy of the Oldest Neolithic Cultures”; Zhang Chi (Department of Archaeology, Peking University, China) “The Early Pottery in China”; Helena Knutsson (Department of Archaeology and Ancient History, Uppsala University, Sweden) “Pottery and the Northern European Groups, Some Problems and Possible Solutions” [Central Sweden]; Aleksandar Durman (Department of Archaeology, University of Zagreb, Croatia) “Early Neolithic Pottery vs. The Rest of Prehistoric Pottery”; Dimitris Vlachos (Department of Archaeology and Prehistory, University of Sheffield, UK) “Changes in the Production and Use of Pottery from the ‘Early Neolithic’ to the ‘Secondary Products Revolution’: Some Evidence from LN Makriyalos, Northern Greece”; Peter Tomkins (Department of Archaeology, University of Sheffield, UK) “Distance, Value and Status: Characterising the Exchange of Ceramic Vessels during the Early Neolithic on Crete”; Luiz Oosterbeek (Instituto Politécnico de Tomar, Tomar, Portugal) “Potters and Users: A Fragile Neolithic Interaction” [Portugal]; Milos Bilbija, (Museum of the City of Skopje, R. Macedonia) “Man, Bread and Pottery” [Skopje Region]; and Kornelija Minichreiter (Institute of Archaeology, Zagreb, Croatia) “Potter’s Workshops and the Use of Pottery in Early Starcevo Culture.”

The 103<sup>rd</sup> Annual Meeting of the *Archaeological Institute of America* (AIA) was held 3-6 January 2002 in Philadelphia, PA. Of the 276 oral and 26 poster presentations, 19 oral papers and 5 posters concerned ceramic materials. The papers included: “Ceramic Rubbish and Recycling in the Classical Landscapes of Greece” by David K. Pettygrew (Ohio State University); “The Reopening of Petsas House: The Study of a Ceramic Warehouse and the New Excavations at Mycenae” by Kim S. Shelton (Greek Archaeological Society); “The Diffusion of the Protogeometric Style of Pottery in the Peloponnese” by Mary E. Voystzis (University of Arizona); “The Dance of Ares: Dancing Warriors in Early Archaic Vase-Painting” by Lisa Buboltz (Harvard University); “The Golden Eagles of Zeus: Pindar and the Aktaeon Krater by The Painter of the Woolly Satyrs” by Jennifer Udell (Hunter College); “The Use of Pottery in Ritual at Ilion During the Archaic Period” (Carolyn Aslan (Koc University, Turkey); “Cybele at Troy: The Terracotta Figurines” by Blanche Menadier (University of Sydney, Australia); “Counting the Costs of Collecting Apulian Red-Figure Pottery” by Ricardo J. Elia (Boston University); “The Production and Consumption of Prestige Artifacts in Mycenaean Thebes. Greece” by Anastasia Sakouri-Hild (Christ’s College, Cambridge, UK); “Minoan Anthropomorphic Vessels: Evidence for Dress or Pottery Decoration?” by Bernice R. Jones (Queens College); “Pottery of the Late

Minoan III Period at Mochlos, Crete: A Preliminary Report” by Robert Angus K. Smith (Bryn Mawr College); and “Beyond Mycenaean Decorated: The Late Helladic I Pottery of the Argolid and Korinthia” by Jeffrey L. Kramer (University of Cincinnati). “Rapid Ceramic Vector Illustrations for Publication (Freehand and Illustrator)” and “Relational Databases: Recording Your Pottery and Small Finds (Filemaker Pro)” were part of a workshop on “Practical Field Computing” organized by John Waldrodt (University of Cincinnati), with panelists Sebastian Heath (American Numismatic Society) and James Conolly (University College, London) joining the organizer. The posters were: “Counting Sherds by the Thousands: Systematic Survey of an Amphora Production Site” by Effie F. Athanassopoulos (University of Nebraska at Lincoln); “Inscriptions on Attic Pottery: Onesimos’ Iliupersis in the Villa Giulia” by Pierre Desroches and Martin F. Kilmer (both Université d’Ottawa, Canada); “Pottery at Hacimusalar in North Central Lycia” by Mark B. Garrison and James Gallagher (Trinity University). İlknir Özgen (Bilkent University, Turkey), and Halford Haskell and Pamela Haskell (Southwestern University); and “Provenance of Etruscan Pottery from Poggio Colla, Italy: A Chemical Characterization study by Justin J. Winkler and Robert H. Tykot (University of South Florida).

The *Society for Historical Archaeology* (SHA) annual meeting held in Mobile Alabama, 8-13 January 2002 included 11 presentations concerned directly with ceramics. These included: Timothy James Scarlett, Hector Neff, and Michael Glascock “Craft and Industry in Utah Potteries: Archaeometry and Historical Archaeology at MURR”; Kevin Mock “A Morphological Analysis of 17th-Century French Ceramics as an Indicator of Trade between France and French Canada”; John S. Cable “The Art of Beachcombing and Its Influence on Prehistoric Ceramic Taxonomy: The Legacy of Stanley South’s Early Survey of the Grand Strand”; Linda R. Shulsky “A Chinese Porcelain Bowl Found at Concepción de la Vega”; and Kendra Carlisle and Barbara L. Voss “Returning to Majolica: New Insights from Old Ceramics.” The symposium “Twenty-Five Years of Colonial Fur Trade Archaeology in the Pacific Northwest” included a paper by Gretchen A. Kaehler entitled “Smudge Pits and Smoking Pipes.” A “General Session on Ceramic Studies” chaired by Tara L. Tetrault included six presentations: Amy C. Earls, Barbara Silber, and Wade P. Catts, Jr. “Colonial Tablewares and the Mid-Atlantic Economy”; Juliette Gerhardt “Current Research on Philadelphia Redware: 19th-Century Contexts from Blocks 1 and 2 of Independence Mall, Independence National Historical Park, Philadelphia”; George L. Miller and Donald W. Linebaugh “Ceramic Consumption Communities: A Mid-19th-Century Snapshot from Boston, New York, and Philadelphia”; Robert Leavitt “Gin Jugs and Mineralwasser: A Taste of Home”; Kimberly Pyszka “Ceramic Analysis of the 19th-Century Thompson-Brown House”; and Tara L. Tetrault and Christopher R. DeCorse (video) “Continuity and Innovation: Pottery Manufacture Among the Coastal Akan.” Additional information may be found on the SHA website <http://www.sha.org/Meetings/sha2002/program.htm>

The *Conference on French Colonial Ceramics* was scheduled to be held at the Tunica-Biloxi Conference Center,

Marksville, Louisiana, 21-23 September 2001. Because of the tragic events in New York and Washington, the meeting was rescheduled for March 2002. The conference, sponsored by the U.S. Department of the Interior, National Parks Service (Cane River Creole National Historical Park), the Tunica-Biloxi Tribe of Louisiana, Northwestern State University of Louisiana, and the Louisiana Division of Archaeology, has the goal of promoting international discussion on French colonial ceramics. George Avery and Peter Gregory are the organizers, and may be reached at the Department of Social Sciences, Northwestern State University, Natchitoches, LA 71497; telephone 318/357-4341 or 357-4364, or e-mail to [averyg@nsula.edu](mailto:averyg@nsula.edu) and [gregoryh@nsula.edu](mailto:gregoryh@nsula.edu) No Internet site is listed. The presentations include: John Walthall and Greg Waselkov “Faience Styles in French Colonial North America: A Revised Classification”; Marcel Moussette “French Colonial Pottery in the St. Lawrence Valley”; Yves Monette “Documenting the Locally Made Common Earthenwares in the St. Lawrence Valley of the Pre-industrial Period, c. 1640-1880: The Emergence of a Ceramic Culture and the Characterization of its Products”; Vergil Noble “French Ceramics in the Midwest”; Edward Jelks, “French Ceramics at Fortress Louisbourg and Other French Colonial Sites”; Randall W. Moir “An Interdisciplinary Look at French Faience and Related Wares for the Ceramic Specialist”; James Bruseth Kathleen Gilmore, Nancy G. Reese, and Mike Davis “Tracing La Salle in Texas - Studies in French Ceramics”; Shawn B. Carlson “Distribution of French Colonial Wares at the Texas Missions”; Henri Amouric and Lucie Vallauri “European Origins for French Ceramics in Louisiana”; Jason A. Emery “Faience in Louisiana? Distribution of Tin Enameled Earthenware in the State of Louisiana”; Aubra L. “Butch” Lee “Pot, Pot, Who made these Pots? Medieval Mechanics as Applied in French Colonial Lower Louisiana during the Eighteenth Century”; Jill Yakubik “Classification System for French Ceramics in Louisiana”; and Pete Gregory and George Avery “French Ceramics from Northwest Louisiana.” Because of the rescheduling, it is not known if all of these papers will still be presented.

The *32nd Annual Meeting of the Middle Atlantic Archaeological Conference* (MAAC) was held March 14-17, 2002 in Virginia Beach, Virginia. Among the 88 papers presented, four concerned ceramics: Joel C. Hardison, Mike M. Madden, and Mark A. Martin “44BA32 - Jackson Bluff Site Ceramics: Temper, Temper, Temper”; George Tolley “Page Series Ceramics: Collars, Twists, and Paste”; Patricia E. Gobble “18th-Century Redware Folk Terms and Vessel Forms: Colonial Everyday Dishes and What They Were Called”; and Christopher T. Espenshade “Archaeology of the Pottery Shops of Washington County, Virginia.” The poster session included Stevan C. Pullins and Daniel R. Hayes’s presentation “Data Recovery, Geoarchaeology, and Prehistoric Ceramics at a Stratified Site in the Virginia Piedmont.” Additional information is available on the MAAC website: <http://www.siftings.com/MAAC2002.html>

The *33rd International Symposium on Archaeometry* was held 22-26 April 2002 in Amsterdam, The Netherlands. Seven parallel (non-overlapping) major sessions were scheduled: 1) Field Archaeology, Topic: “The Application of Ground Probing



Radar in Archaeology,” convened by Ron Farquahar and Larry Pavlish; 2) Technology and Provenance of Stone, Pigments, and Plasters, Topic: “Pigments and Paints in the Roman and Byzantine Periods,” convened by Yannis Maniatis; 3) Technology and Provenance of Ceramics (including ceramic pigments) and Glass, Topic: “Post-depositional Alteration of Ceramics,” convened by Michael Tite and Gerwulf Schneider; 4) Technology and Provenance of Metals, Topic: “Origins of Tin - What is New?,” convened by Pieter Meyers and Ernst Pernicka; 5) Dating, Topic: “Chronology of the Middle to Upper Palaeolithic Transition in Europe,” convened by Gunther Wagner; 6) Biomaterials, Topic: “Migration and Mobility as Detected from the Analysis of Biological Materials,” convened by Mark Pollard; and 7) Conservation Science, Topic: Science and the in situ Preservation of Archaeological Heritage,” convened by Henk Kars. For details please see <http://www.geo.vu.nl/archaeometry/index-en.html> The proceedings of the meeting are to be published, and a review of the meeting will appear in the next issue of the *SAS Bulletin*.

#### *Forthcoming Professional Meetings*

The international conference *Archaeometallurgy in Europe* will be held in Milan, 24-26 September 2002, at the Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci. The official language of the conference is English, and the sessions will focus on all aspects of iron and copper metallurgy in European countries (including smelting, casting, and the use of ceramic crucibles). Papers will range from processes to experimental methods, the identification and dating of artifacts, and conservation science. W. Nicodemi, President of Associazione Italiana di Metallurgia, is the conference chairman. Additional information is available at <http://www.fast.mi.it/aim/archaeo.html>

*Ceramic Studies in the New Millennium* is the title of a symposium that is to be held at the annual meeting of the European Association of Archaeologists in Thessaloniki, Hellas from 24-29 September 2002. Information about the conference is on the EAA website at: <http://www.symvoli.com.gr/EAA8.html> The symposium organizers are Dragos Gheorghiu (University of the Arts – Bucharest/University of Missouri-Columbia, e-mail [dghorghiu@dig.ro](mailto:dghorghiu@dig.ro)), Ralph Rowlett (University of Missouri-Columbia, e-mail [rowlett@missouri.edu](mailto:rowlett@missouri.edu)), and Kevin Andrews (University of Bournemouth, e-mail [kandrews@bournemouth.ac.uk](mailto:kandrews@bournemouth.ac.uk)). The organizers’ prospectus indicated that “we should aim to encourage contributions which address the social and experiential aspects of ceramic production through a multi-disciplinary approach to study materials science, experiential archaeology and socio-cultural theory. The development of a synthesis between science and material culture studies will mark, in our opinion, a new phase of ceramic studies in the new millennium. We see a trajectory which takes us beyond study of materials within positivist networks and through interpretative models of social organization as reflected throughout the production sequences to those which allow us to address the experiential nature of pyrotechnologies – the sweat, tears, boredom, excitement, smells and tastes of the process which turned clay into useful things.”

Scheduled for October 2002 is a session on Portuguese faience, *Tondela: The Study of Portuguese Faience and Its Dispersal Throughout the Colonial World*. In October 2000, a group of Brazilian archaeologists took part in the IV Medieval and Post-Medieval Ceramics Meeting, held at Tondela, Portugal, invited by its Coordinator, João Manuel Diogo. Marcos Albuquerque, Paulo Tadeu de Souza Albuquerque and Tania Andrade Lima had separate presentations on a variety of issues related to the occurrence of Portuguese faience at various historical sites in Brazil, seeking further input for their analyses. There has been a lack of information on pottery produced in Portugal for everyday use and exported to Brazil in abundance during the XVII and XVIII centuries. During this meeting, scholars demonstrated a clear and pressing need for a study on the dissemination of Portuguese faience, spread worldwide by its overseas expansion. The coordinator, Paulo Zanettini, may be reached by e-mail at [arqueoz@uol.com.br](mailto:arqueoz@uol.com.br) There is additional information at <http://www.itacultural.org.br/arqueologia>

An international conference *Settlers and Settlements in Greece, 9000-1000 B.C.* is scheduled for Rhodes, 7-11 October 2002, and is sponsored by the Archaeology and Archaeometry Branch of the Department of Mediterranean Studies at the University of the Aegean, 1 Demokratias Avenue, Rhodes, 851000, Greece. The organizing committee is chaired by Professor Ioannis Liritzis. The conference will focus on topics of social, technological, and environmental context including settlement patterns, agriculture, migration theory, mainland-island interactions, early writing, metal corrosion, human DNA, sea level fluctuations, flooding, pollen analysis, and food gathering. Of particular interest is the session “Physical Methods of Analysis” which includes dating, provenance, prospection, archaeoastronomy, and the analysis of raw materials and artifacts. The proceedings will be published in the *Mediterranean Archaeology and Archaeometry Journal*. For details see [http://www.rhodes.aegean.gr/maa\\_journal](http://www.rhodes.aegean.gr/maa_journal) or contact Professor Liritzis at [liritzis@rhodes.aegean.gr](mailto:liritzis@rhodes.aegean.gr)

An annual symposium on ceramics held at the American Anthropological Association annual meetings, *Ceramic Ecology XVI: Current Research on Ceramics*, is scheduled for 20-24 November 2002 in New Orleans, Louisiana. Papers will be presented by Marilyn Beaudry-Corbett (UCLA) and Tom Cuddy (Smithsonian Institution); Eduardo Williams (Colegio de Michoacan, Mexico); Dean E. Arnold (Wheaton College, IL); Louana M. Lackey (Maryland Institute College of Art); Mary Thieme (Gulf Coast Community College); Mary Hopkins (Harvard University); Frances Ahern (Suffolk County Library/Independent Scholar); Cynthia Pinkston (University of Maryland); Lisa Kealhofer (Santa Cruz University); Peter Graves (University of New England, NSW, Australia), and Ben Marsh (Bucknell University); Joe Mountjoy (University of North Carolina at Greensboro); and Charles C. Kolb (National Endowment for the Humanities). The discussant is Sandra Lopez Varela (Universidad Nacional Autonoma de Morelos, Mexico). Additional information will be forthcoming in the next issue of the *SAS Bulletin*.

WAC-5: *The Fifth World Archaeological Congress* is scheduled to take place from 21-26 June 2003 at The Catholic

University of America in Washington, DC. The meeting will be held in partnership with the Smithsonian Institution's National Museum of Natural History and the National Museum of the American Indian. The Academic Secretary is Joan M. Gero (American University, Washington, DC), [wac5@american.edu](mailto:wac5@american.edu). More information may be obtained from the WAC-5 website at <http://www.ehlflinders.edu.au/wac5/wac5home.html>

The Ancient Art Department of the Harvard University Art Museums will host the *XVI International Congress of Classical Archaeology/Associazione Internazionale di Archeologia Classica* in Boston and Cambridge from 23-26 August 2003. Papers, colloquia, and posters will focus on the theme "Common Ground: Archaeology, Art, Science, and Humanities." To receive further information about the Congress, please forward your name, address, telephone number, fax number, and e-mail address to: Amy Brauer, Department of Ancient and Byzantine Art and Numismatics, Harvard University Art Museums, 32 Quincy Street, Cambridge, MA 02138, e-mail [AIAC2003@fas.harvard.edu](mailto:AIAC2003@fas.harvard.edu), telephone 617/495-3393, FAX 617/495-5506. Additional information will be posted on the website <http://www.artmuseums.harvard.edu/ancient/congress2003/>

#### Internet Sites

The Colony of Avalon website is a joint effort of Newfoundland and Labrador Heritage and the Memorial University of Newfoundland. Regional history spans more than 500 years with evidence of Beothuk Indians, migratory fishermen from western Europe beginning in 1497, and European settlers since 1621 establishing the community at Ferryland which is as significant to Canadian history as Jamestown is to the history of the United States. Indeed, Sir George Calvert (1579-1632), the first Lord Baltimore was directly involved since 1620. The website documents in detail the history of the Colony of Avalon, the archaeological research, types of artifacts recovered, and provides copies of maps and archival documents. The Dutch attack in 1673 and the French raid of 1696 are documented, the latter effectively ending the colony. Breton Coarseware, French Normandy Coarse Stoneware, South Somerset Coarse Earthenware, Grey Westerwald, Rhenish Stoneware, North Devon Sgraffito and Coarse Earthenware milk pans and pipkins, Portuguese Terra Sigillata, Bartmann Stoneware (jugs), Combed Slipware, and an earthenware urinal (1650-1690) are among the ceramics identified. Red clay smoking pipes made in the Chesapeake Bay region (Virginia) and a variety of clay tobacco pipes dating to the 17<sup>th</sup> and 18<sup>th</sup> centuries made in Bristol, London, Barnstaple, Plymouth, Chester, and Amsterdam are depicted; 66 makers marks are also identified. The captions and images of the pipes and marks created by Barry Gaulton (Archaeology Unit, Memorial University) are a splendid comparative resource. The Internet site is highly informative and loads quickly, <http://www.heritage.nf.ca/avalon/default.html>

The Council for British Archaeology (CBA) has made accessible, free of charge, another set of out-of-print CBA Research Reports so that Numbers 1 (1957) through 49 (1983) are now available: [http://minerva.york.ac.uk/catalogue/proj\\_data/cbaresrep/html](http://minerva.york.ac.uk/catalogue/proj_data/cbaresrep/html) Included are a half dozen contributions on pottery, among these: G.C.Dunning, J.G. Hurst, J.N.L.

Myres, and F. Tischler (1959) Anglo-Saxon Pottery: A Symposium, Council for British Archaeology Research Report 4, London (Reprinted from *Medieval Archaeology* 3, 1959). Philip Corder (1964) The Structure of Romano-British Pottery Kilns, Council for British Archaeology Research Report 5, London (Reprinted from *The Archaeological Journal* 104:10-27, 1957). Graham Webster, editor, (1976) Romano-British Coarse Pottery: A Student's Guide, 3<sup>rd</sup> ed., Council for British Archaeology Research Report 6, London. Alec Detsicas, editor, (1973) Current Research in Romano-British Coarse Pottery: Papers Given at a CBA Conference held at New College, Oxford, March 24 to 26, 1972, Council for British Archaeology Research Report 10, London. M.A.B. Lyne and R.S. Jeffries (1979) The Alice Holt/Farnham Roman Pottery Industry. Council for British Archaeology Research Report 30, London. Richard Hodges with J.F. Cherry (1981) The Hamwih Pottery: The Local and Imported Wares from 30 Years' Excavations at Middle Saxon Southampton and their European Context, Southampton Archaeological Research Committee Report 2, Council for British Archaeology Research Report 37, London. D.W. Crossley, editor, 1981 Medieval Industry, Council for British Archaeology Research Report 40, London. The latter report contains two important contributions: S.A. Moorhouse (1981) "The Medieval Pottery Industry and its Markets," pp. 96-125; and P.J. Drury (1981) "The Production of Brick and Tile in Medieval England," pp. 126-142.

The results and discussions related to the Archaeological Institute of America AIA 2000 Workshop "Databases and the Field Archaeologist — Standards and Practices" are available on-line at <http://phrontisterion.uottawa.ca/aiaconf/graphs/> This workshop promoted on-site computing for archaeological excavations and emphasized relational databases for data analysis and cataloging. Panelists Andrew Reinhard (Willoughby Associates), Pierre Desroches (Université d'Ottawa), and Sebastian Heath (American Numismatic Society) demonstrated databases used for recording inscriptions on Greek pottery and incorporating digital images, and databases for recording finds at Troy.

H. H. Murray and Associates (<http://www.bhmurray.com>) is affiliated with the Applied Clay Mineralogy Laboratory, Dept. of Geological Sciences, Indiana University. The Laboratory and its associates primarily conduct clay mineral and industrial mineral exploration activities, evaluate the physical and chemical properties of clay deposits, and offer consultation on processing and production of those resources. For the past several years the Laboratory and H. H. Murray and Associates have been involved in the characterization and study of archaeological clays and ancient ceramic technology. The Laboratory has focused on topics such as: 1) the use of comparative X-ray diffraction analysis for reconstructing ancient ceramic technology, 2) clay sourcing as a reference standard for ceramic sherd analysis, and 3) clay mineralogy science as a tool for reconstructing past environments. The Applied Clay Mineralogy Laboratory can provide many standard tests for the characterization of archaeological clays along with relevant interpretations for archaeological research. Among the services offered are the following: 1) X-ray diffraction analysis for bulk composition, 2) % of +325 mesh

(grit) for discrimination of coarse and fine ware clay sources, 3) linear thermal gradient firings for firing temperature comparisons and range of fired color, 4) particle size distribution analysis, 5) petrographic analysis of fired clays, 6) physical property testing, and 7) clay sourcing projects. Questions or requests for services should be addressed to H. H. Murray or Christine M. Shriner, Applied Clay Mineralogy Laboratory, Indiana University, 1001 E. 10<sup>th</sup> Street, Bloomington, IN 47405; phones: 812/855-5583 (hbm), 812/824-3249 (cms); fax: 812/855-7899; e-mail: [murray@indiana.edu](mailto:murray@indiana.edu) or [cshriner@indiana.edu](mailto:cshriner@indiana.edu).

The California Academy of Sciences, Department of Anthropology has announced the availability of their entire collection database on-line. The database contains over 18,000 records and 6,000 digital images. Collection strengths include the Pacific Rim ethnography (excluding Mexico), the Pacific islands, and East Asia — including some pottery. The Internet version will be updated on a monthly basis, including additional images as they are processed. Besides making the collection available to the public, this resource will help researchers and other museums to browse our holdings and complete initial queries prior to contacting the department for further information. Research and exhibit loan requests are welcome. The database may be accessed from the Department Home Page at <http://www.calacademy.org/research/anthropology> or enter the database directly at <http://www.calacademy.org/research/anthropology/collections/collintro.htm>. Refer questions or comments to Dinah Crawford, Curatorial Assistant, Anthropology Department, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118 (telephone 415/750-7345, e-mail [dcrawford@calacademy.org](mailto:dcrawford@calacademy.org)).

Several numbers in the *Artes de Mexico* series emphasize ceramic materials: 3, La Talavera de Puebla [Talavera Pottery from Puebla]; 4, Museo Franz Mayer [The Franz Meyer Museum]; 14, Ceramica de Tonalá [Ceramics from Tonalá]; 17, La colección mexicana del Museo Etnográfico de Berlín [The Mexican Collection at the Ethnographic Museum of Berlin]; 24, Azulejos [Tiles]; 45, Ceramica de Mata Ortiz [The Ceramics of Mata Ortiz]; and Ceramica inglesa de México [English Ceramics in Mexico]. Additional information appears on the *Artes de Mexico* website at <http://www.artesdemexico.com> (Plaza de Río de Janeiro 52, Colonia Roma, Mexico, D.F. 07600, Teléfono 5525-5905, e-mail [ventas@artedemexico.com](mailto:ventas@artedemexico.com)).

The *Old Potter's Almanack (OPA)* the joint newsletter of the Prehistoric Ceramics Research Group (PCRG) and the Ceramic Petrology Group (CPG, based at the British Museum) now is in its ninth year of publication. The website for the Ceramic Petrology Group, mentioned before in this column, contains contact information, news, information about the group and the *OPA*, and ceramic petrology on the web and in print. Andrew Middleton and Louise Joyner (Department of Scientific Research, British Museum) are the contact persons for the CPG. Also of note is *The Bulletin of the Experimental Firing Group* (1983-1988), edited by Ann Woods, Leicester University. The CPG site is now joined by a website created by members of the Prehistoric Ceramic Research Group which contains information about the group, aims and objectives, the *OPA*

newsletter, publications, and membership. Alex Gibson (Department of Archaeological Sciences, University of Bradford) is Honorary Secretary. The URL for the PRCG is <http://www.prehistoric-ceramics.org.uk/> while the CPG is at <http://www.ceramicpetrology.uklinux.net/index.html>

*Internet Archaeology 10* includes a contribution by Julian D. Richards entitled "Anglican and Anglo-Scandinavian Cottam: Linking Digital Publication and Archive" that was originally published in conventional form in the *Archaeological Journal* 156:1-110 (1999). This electronic version includes a searchable database of 16 pottery fabrics: Bronze Age, Iron Age, Roman (Samian, Grog-tempered, Crambeck parchment ware, 'Other' grey wares, Calcite gritted wares, Crambeck grey ware, and East Yorkshire grey ware), Anglican or Early Medieval (Maxey type ware, Organic tempered, Torksey type ware, York ware, and Fabric C/hard fired wheel-thrown grey ware), Medieval, and Post-Medieval. Readers will find the database useful and worthy of emulation. There is also an extensive (non-searchable) bibliography (156 items). The article and database are at [http://intarch.ac.uk/journal/issue10/richards\\_index.html](http://intarch.ac.uk/journal/issue10/richards_index.html)

*Potsherd*, Paul Tyers's Internet site on archaeological pottery and ceramics from the Roman period (1<sup>st</sup> century BCE to 5<sup>th</sup> century CE) in Britain and Western Europe has recently been enhanced and updated. The site includes an introductory *Atlas of Roman Pottery* with descriptions and distribution maps of types of Roman ceramics and includes searchable databases by wares, classes, and sources. The publication *Roman Pottery in Britain* is included as a companion to the site. Paul has added a link to machine translations by Google, so that French and German translations are also now available on an experimental basis. Images and maps are clear and load quickly. The site is worth a revisit at <http://www.potsherd.uklinux.net/>

A paper by Daniel R. Thompson (Office of History and Archaeology, State of Alaska) entitled "Russian Earthenware on Russian Sites: A New Look," examines the Baranof Castle State Historic Site excavations 1997-1998. More than 250,000 artifacts including 50,000 sherds with 300 partial or complete makers' marks were recovered. The paper was presented 1 April 1999 at the Alaska Anthropological Association Conference and is available on the Internet at [www.dnr.state.ak.us/parks/oha\\_bin/ceramics1.pdf](http://www.dnr.state.ak.us/parks/oha_bin/ceramics1.pdf)

Colleagues interested in the History of English and Irish Ceramics may wish to visit an Australian site, Portobello.com, which contains nearly 20 essays with accompanying images of English Pottery, The Willow Pattern Story, Royal Doulton Figurines, Toby Jugs and Character Jugs, Crown Devon, Johnson Brothers, Chintz Wares, Staffordshire Pottery, William Moorcroft, Clarice Cliff, Susie Cooper, Shelly China, Cornish Ware, Torquay Pottery, English Porcelain. Coalport, Royal Worcester, and Belleek. Especially useful is a table on interpreting Wedgwood dates. The URL for the website is [http://www.portobello.com.au/reading/ceramics\\_english.htm](http://www.portobello.com.au/reading/ceramics_english.htm)

Also available online is the US Department of Agriculture Natural Resource Conservation Service (NRCS) *Soil Series Classification* (2001). The NRCS contains the taxonomic classification of each soil series identified in the United States. In addition to taxonomic information, the database includes other information about the series, such as series status, dates of



origin and establishment, and geographic areas of usage. The database is maintained by the soil staff of the NRCS and Major Land Resource Area offices throughout the United States. Access to the database allows a researcher to examine the contents of individual series records, to query the database on any data element and produce a report based on selected soils, or to produce national reports with all soils in the database. The search form tolerates misspellings, and search and downloading speed is good; visit the site at <http://www.statlab.iastate.edu/soils/sc/>

Diana C. Briscoe maintains the Archive of Anglo-Saxon Pottery Stamps (124 Cholmley Gardens, Fortune Green Road, London NW6 1AA, telephone +44(0)20 77946300, FAX +44(0)20 74311612). For further information, e-mail her at [ASArchive@dcbriscoe.fsnet.co.uk](mailto:ASArchive@dcbriscoe.fsnet.co.uk) There is no Internet site.



## Book Reviews

*Michael D. Glascock, Associate Editor*

**Dogs Through Time: An Archaeological Perspective.** Edited by Susan J. Crockford, British Archaeological Reports, BAR International Series 889. 2000. 343 pgs., xx tables, xx appendices. Price: 47.00 (paperback). ISBN: 1-84171-089-X

*Reviewed by Kitty F. Emery, Environmental Archaeology, Department of Natural History, Florida Museum of Natural History, Gainesville FL 32611 USA*

Whether considered a “best friend” or delicious entree, the domestic dog is indisputably the species with which humans have been most continuously and variably associated. Experts agree that *Canis familiaris* was our first and most ubiquitous domesticate. It is also the domesticate that holds the greatest diversity of roles in human society – the dog has been food, hunter, protector, herder, status symbol, and companion. In *Dogs Through Time*, Susan Crockford provides a thorough tour of recent research on the evolution and dispersal of the domestic dog. This highly specialized work will interest researchers from both the archaeological and biological communities around the world.

Crockford’s well-articulated edited volume combines chapters by 44 researchers from more than 15 countries to cover the many questions raised in modern studies of the domestic dog. The work arose out of the 1998 ICAZ symposium on the History of the Domestic Dog and, like other ICAZ works, encourages holistic perspectives within an international research community. The domestic dog has a global distribution, and despite the book’s European emphasis, chapters from Central and South America and Asia round out the volume suitably. Crockford avoids many of the difficulties inherent in a

conference volume with the effective integrating statements in her preface and conclusions, although these research links are not made explicit by internal references between the chapters. A comprehensive bibliography divided by subject area at the end of the volume supplements the individual chapter bibliographies (Walker). A few “conference volume” drawbacks remain. Editing is sometimes inconsistent, abstracts occasionally recur in the text, and some of the printing and illustrations are less than clear. These inconsistencies are, however, outweighed by the significant value of the data presented and the speed with which the information was made available.

The 29 chapters of *Dogs Through Time* are divided into six thematic segments: canid evolution, domestic dog roles, skeletal variation (in Roman and non-Roman contexts), modern primitive species, and archaeozoological methods. However, the authors consistently refer to a slightly smaller group of controversial issues overlapping the chapter divisions. These include the loci and timing of domestication, source of regional dog variation, effects of hybridization, and importance of appropriate methodology in dog domestication studies. An introductory history by Clutton-Brock evaluates several of these intriguing issues. While some of the chapters of this volume are entirely descriptive and others are theoretical, most are linked by an interest in these larger themes.

**Origins of the Domestic Dog:** Most zooarchaeologists agree that the dog is our oldest domesticate, and is most closely related to the grey wolf, *Canis lupus*. As the questions raised in this volume attest, however, the process of dog domestication is still hotly debated. What were the preadaptational conditions that encouraged the co-evolution between humans and dogs (Crockford, Clutton-Brock)? Did the domestic dog derive from a single ancestral stock and radical migration, or from multiple sub-specific progenitors in various geographic locations? Molecular genetics (Koop et al., Ishiguro et al.) combines with osteometrics and morphology (Musil, Shigehara and Hongo) in the quest for an answer to that question. And how has the genetic similarity that leads to successful interbreeding affected the various canid lineages? The genetic effects of continuous hybridization between regionally distinct sub-populations must be understood before the domestication puzzle can be solved (Crockford, Yates, Clutton-Brock and Kitchener). Interbreeding today threatens the stability of modern primitive dog populations, which are often used in comparative studies for the understanding of ancient behavior patterns (Koler-Matznick et al.).

**Regional Variation in Dog Types:** Dog morphology is a common theme in this volume. Not only do authors present data to detail the range of variability of domestic dogs worldwide, but they also discuss the nature of this variability. Archaeological dogs were variable in size (Chaix, Manaserian and Antonian, Handley), but the earliest domestic animals retained homogeneous morphological traits for thousands of years (Dayan and Galili, Shigehara and Hongo, Crockford). The broad regional variability can be explained in part by the rapid and early dispersal of the dog as opposed to intentional breeding, and a clear distinction is made in this volume between these two sources of variability. True dog breeding is a late

phenomenon and is difficult to substantiate in many regions (Bartosiewicz, De Grossi Mazzorin and Tagliacozzo), but some breeds (for example the Roman lap dog and the hairless Mexican dog) are excellent archaeological markers designating regional economic influences (Bartosiewicz, Cram, Valadez, Schwartz). Clark's history of dog osteology studies in Britain emphasizes the importance of these recent studies in expanding previously limited datasets to understand regional variation.

**Role of the Domestic Dog:** The variability produced by intentional breeding is clearly related to the unique multiplicity of roles held by ancient dogs in human societies. Dogs were a food source in many cultures, but the significance of this role varied regionally and chronologically. For example, while dogs were possibly raised primarily for their meat in Iron Age France (Horard-Herbin), they were only an insignificant resource in the Gallic-Roman period in other areas of Europe (Tarcan et al.). On a global scale the use of dogs as food appears to be a late and regionalized phenomenon (Crockford). Dogs have probably always cooperated in the hunt as is shown both by the association of dog and prey remains (Olsen, Musil), and by iconographic imagery (Manaserian and Antonian). Certain dog breeds were clearly markers of status or class, and these specialized dogs are found in late complex societies around the world. Some roles, though, are regionally specific. In North America, paleopathological markers support ethnohistoric documentation of their use as pack or travois animals (Warren), while on the NW Coast, some were bred specifically as a source of wool (Crockford). However, very early dog interments in many regions suggest that the dog has always held a spiritual role as well as a secular one (Yohe and Pavesic, Crockford, Schwartz). In Kazakhstan (Olsen) dog remains in house foundation contexts emphasizes their role as spiritual guardians. The recovery of hundreds of dogs from an Austrian cave has been interpreted as indicating centuries of sacrificial offerings (Galik).

**Archaeozoological Methods in Dog Studies:** Several authors remind us that recognition of the role of ancient dogs must rest on empirical data collected using standardized methods (Clark, Meadow, Olsen). This volume seeks to emphasize the importance of rigorous data collection and reporting in the analysis of dog remains from archaeological sites, often within a historical framework (Clutton-Brock). Crockford and Clark both discuss the need for consistent field collection and reporting of morphological and metric traits, a need that is emphasized by Lawrence's substantive list of effective osteometrics for canid cranial and dental morphology (Meadow). Olsen stresses the importance of contextual archaeological data in the analysis of the social function of dogs, and Valadez reminds us that ethnohistory must be used to corroborate data derived from archaeological remains, not as a direct source of data.

In addition to these direct comments, the collected works also exemplify the diversity of methodological approaches used today. Most authors combine metrical and morphological data to document regional variability or to separate dog remains from those of other canids. Several use modern biological markers (mitochondrial DNA, behavioral patterns, hormonal variations). Others use paleopathological markers to distinguish

treatment and function (Warren), footprint impressions left in Roman clay tiles to derive size variations (Cram), modern comparative analysis of dog hair (Ryder), dental attrition to create age profiles for archaeological dog populations (Horard-Herbin), butchery marks to quantify significance of food use (Tarcan et al.), discrete skeletal markers to verify dog remains (Musil, Yates), and iconography and ethnohistory to document dog/human relationships (Valadez, Schwartz).

One notable lack in the methodological section of this volume, however, is any discussion of the effects of the domestic dog on the archaeological record. As zooarchaeologists we are excited by the potential information to be gleaned from the analysis of dog remains and imagery. But we also cringe at the devastating effect this animal itself often has on an archaeological sample. Thus the volume would have been enhanced by a discussion of dogs as taphonomic agents.

All in all, Crockford's goals for this volume are well met. It provides a "sampler" of research while encouraging more rigorous methods and better-informed interpretations. *Dogs Through Time* will be valuable to researchers interested in topics as diverse as the methodological considerations of zooarchaeological osteology, the use of genetics in elucidation of taxonomic phylogenies, or the importance of iconography in revealing the role of domestic animals in ancient society. It should be heartily recommended not only as a substantive addition to the current literature on archaeological dogs, but also the broader literature on zooarchaeological domestication studies.

---

**Skywatchers – A Revised and Updated Version of Skywatchers of Ancient Mexico.** Anthony F. Aveni, University of Texas Press: Austin; 2001. 423 pp., 130 figures, 29 tables, 10 appendices, index. Price: \$34.95 (softcover). ISBN: 0-292-70502-6.

*Reviewed by Gerardo Aldana, Archaeological Research Institute, Arizona State University, Tempe, AZ 85308 USA*

The field of Archaeoastronomy began some 30 years ago with the concern over the potential astronomical content of the megaliths at Stonehenge. Not too long thereafter, interest in similar phenomena began to spread to other geographic regions as well as to other periods in prehistory. The author of this book, Anthony Aveni, and his colleague, Horst Hartung, were the first to introduce archaeoastronomy to Mesoamerica. In the early 1970s, these pioneers set about surveying the orientations (by astronomical fix) of monumental architecture throughout Mesoamerica in search of astronomical alignment. In *Skywatchers*, though, we are not encountering the work of a seasoned veteran reminiscing on his past achievements, but a "revised and updated version" of the manuscript that made him *the* authority on Mesoamerican archaeoastronomy in the first place.

The format of the book itself is pedagogically sound. First, Aveni treats the question of the role of astronomy in the Mesoamerican cultures as it has been preserved in historical

records. No sense in looking for something if we cannot be reasonably sure to find it in the first place. With an interest in the celestial realm empirically established, Aveni then turns to the realm of possibility. Given that no elaborate astronomical instrumentation has been recovered from these societies, what would the ancients have seen through observation of the heavens with the naked eye? After answering this question on observational and mathematical levels, Aveni moves to the combination of the first two chapters in a series of applications of archaeoastronomical study to specific cases. These are divided into Chapter IV on the astronomy within the inscriptional record (essentially confined to the Maya for “obvious” reasons), and Chapter V on that in the architectural record.

Mesoamerican archaeoastronomy differs from that of megalithic Europe in the availability of historical information. The “historical, ethnographical, and ethnological” sources comprising Chapter II (Chapter I is the Introduction) review the material that places Mesoamerican astronomy in its cultural context, making the recovery of this science much more secure. (Indeed, the first century of Maya Studies focused almost exclusively on Maya astronomy (Coe 1992:73-144).) Moreover, this first substantive chapter of the work is very rich and makes for good reading regardless of interest in archaeoastronomy. Here, for example, Aveni documents: the observation of a comet by Netzahualpilli, which was to have foretold of the fall of the Aztec empire; the representation of stars as single eyes in the Mixtec codices; and in Andean culture, the black constellations seen within the Milky Way.

As a trained astronomer, Aveni brings the next chapter, on naked-eye astronomy, to life. Using no more complex mathematics than were necessary for the maintenance of the Mesoamerican calendar, Aveni demonstrates the potential for capturing the characters of the Sun, Moon, and five visible planets. Only the treatment of “the moon, eclipses, and eclipse cycles” becomes dense enough to require pause of the non-specialist; the characters of the other celestial bodies are very lucidly explained. Here, too, the reader will find a treatment of astronomy sufficient to make any person’s trips outside of city light pollution more interesting.

A series of appendices follow this chapter, with the intent of providing some necessary considerations for the archaeoastronomy student setting out for field study. The novice cannot return from the field with significant data without consideration of the material in these appendices, but the interested reader can skip over them without sacrificing the flow of the text.

The content of Chapter IV starts off well enough with a discussion of calendrics, beginning with the Olmec- and Maya-specific Long Count, and then proceeding to the pan-Mesoamerican Calendar Round. The Lunar Series within the Supplementary Series then provides a nice segue into the records pertaining to the other celestial bodies. In Chapter IV, the reader is introduced to the document that established an interest in Maya astronomy during the nineteenth century: the Dresden Codex. Here, Aveni combines the work of several scholars to provide clear explanations of: a table that tracks the phases of Venus,<sup>1</sup> another that forewarns of possible eclipses, and a third that may have been used to track Mars. These

treatments are followed by the question of a Mesoamerican zodiac, combining data from a different Postclassic codex (Paris) with iconographic records from earlier periods. These sections do not differ profoundly from those in the first edition of the book. But in the rest of this chapter and in the next, the reader encounters the majority of the “updated and revised” material in the book. Here, as in the first edition produced in 1980, Aveni holds true to his attempt to “assemble all the relevant material in a single place,” though in the new edition, with very different result. Whereas his earlier attempt emphasized the mathematical and astronomical consistency of purported correlations, this version integrates the methodological issues that have cropped up since then.

Concerning the inscriptional record of the Classic period, this means acknowledging the scarcity of explicit astronomical records within hieroglyphic texts. Aside from a few solar-event glyphs (*k’alk’in* – ‘sun-binding’ at Chich’en Itza and Copán, see Aldana 2001b:9-13) and one explicit reference to Venus (as “Chak Ek” in Copán Structure 10L-11), the Moon is the only celestial body whose period is regularly and explicitly recorded in the hieroglyphic inscriptions. All other references to celestial bodies must be inferred by investigators. As Aveni himself notes, this circumstance opens the door to studies that look mainly for coincidences between planetary periods and the intervals between dates in various texts.

Similarly, in the introduction to Chapter V, Aveni refers to an exchange between himself and Keith Kintigh, in which the relevance of astronomical alignment studies was called into question (Kintigh 1992; Aveni 1992). This gave him the opportunity to reiterate that indeed, several factors besides astronomical considerations went into city planning, and that a correlation between an astronomical event and an architectural alignment is only the beginning of the archaeoastronomers work. The rest of a successful study of architecture, as well as of the coincidence between planetary periods and time intervals, must anchor the correlation in the cosmovision and cultural concerns of the people making daily use of it. At end, Aveni casts archaeoastronomy as a specialization under the purview of the study of religion.

Yet the confluence of this methodological concern with the task of collecting together examples from various distinct cultures is far too formidable a task, in my opinion, for one scholar. Aveni’s work provides evidence for this opinion in that for his “contextualizations” to be convincing, he would have to be an expert in Maya culture from the Preclassic through the Postclassic, all major cultures of Central Mexico for the same time period, Andean culture for various periods, as well as a few North American cultures for good measure. Without these myriad expertises, each purported astronomical correlation is sold short.

The situation is readily exemplified by Aveni’s use of Maya hieroglyphic records,<sup>2</sup> which occurs in both Chapters IV and V. Considering the content of a series of tablets in the Cross Group at Palenque, Aveni recounts a theory connecting three gods to a conjunction between Saturn, Jupiter and Mars. This theory, however, is based on a reading of the texts produced in 1982, of which only 10% has proven correct—and that 10% completely non-astronomical in content. That there were



problems with this study even in 1982, however, should have been apparent in that it assigned two gods named in the texts to Venus and the Sun, yet claimed that these gods were observed as (two of) Jupiter, Mars, and Saturn in the night sky. Also disconcerting in this section is Aveni's attempt to read La Mojarra Stela 1 pictographically. Not only is the reading unconvincing on an epigraphic level, it also violates the reading order of the script, which is plainly laid out by the calendric information.

Likewise, the section on architectural alignments at Copán is riddled with errors, again arising from Aveni's unfamiliarity with hieroglyphic writing.<sup>3</sup> In all fairness, Aveni references Linda Schele as the source of these ideas, yet the errors contained herein cannot solely be attributed to highly-conjectural textual interpretation. From the perspective of orientation, Aveni refers to an inscription in Structure 10L-11 that he claims read: "[i]t shined, the Great Star—Lord Ahau."<sup>4</sup> Appropriately, he argues, this text was inscribed into a doorway that opened out to the east, allowing for the viewing of Venus ('Great Star') from it on the day indicated. Yet in the footnote, Aveni remarks that the position of Venus on that day was near "EFIRST" (first visibility in the evening). Evening visibility of Venus, however, must be in the west. Further, he goes on to reference a second date separated from this one by 8760 days (=15 x 584 = 15 Venus Synodic Periods), which he writes would have been visible in the morning sky.

The original *Skywatchers* is a classic because it captured the state of an academic discipline near its inception, and it provided all of the fundamental material necessary for aspiring students to take up the torch. The new *Skywatchers* is valuable to the degree that it maintains most of the information in its predecessor and in its demonstration of how difficult it may be to reconstruct ancient intellectual activity. If, as a result, archaeoastronomy must now become more about its nominal prefix and less about its root, so much, in this reviewer's opinion, for the better.

#### Notes

1. There is one notable, since persistent, error in the "reading" of the text in the Venus Table. Aveni reads the verb as "was seen," yet epigraphers have recognized the verb as *k'al* ('to bind') for several years now. Also, on page 197, Aveni cites the "translation" of a hieroglyphic passage by R. W. Wilson, an astronomer at the Harvard College Observatory in the early twentieth century—a translation produced some 60 years before the decipherment of the script became productive.

2. To demonstrate that this is not the product of an overzealous reviewer, I note a few others here: concerning the La Mojarra script, the glyph that Aveni marks as Venus is the same as that he designates as corresponding to the sun (p. 168). Aveni and Hotaling note the inclusion of "star events connected with some form of the Venus glyph, also referred to as the "star verb", yet many of their data points here correspond to the occurrence of the star glyph within an historical figure's name (Aldana 2001a:97). Also, Closs' reading of a glyph block as (Ah) Tsul Ajaw, which he then argues is a proper name for Venus, now has been deciphered as *ajawtahk*, meaning 'lords' (plural), thus taking away the crux of his celestial link (Stuart, Houston,

Robertson 1999:II-25; Aldana 2001a:119-122).

3. Aveni confuses Yax Pasah with Yax K'uk' Mo' when referring to the founding of the institution of the *ajaw* (Yax Pasah was the 16<sup>th</sup> and final ruler in the dynasty, Yax K'uk' Mo', the first). Also, Aveni calls "Smoke Monkey", the fourteenth ruler of Copán, the father of Yax Pasah, making "18 Rabbit" his grandfather. In doing so, he has left out the fifteenth ruler of the dynasty, "Smoke Shell" who was Yax Pasah's father. So, while Rulers 14, 15, and 16 do seem to be of the same genealogical line, we do not know that they were related to Ruler 13 other than through institution.

4. The text actually reads *k'alwanihy Ajaw Chak Ek'*, or "it became bound, Lord Great Star."

#### References

- Aldana, G. 2001a. *Oracular Science: Uncertainty in the History of Maya Astronomy*. Ph.D. Dissertation, Harvard University.
- Aldana, G. 2001b. *K'in in the Hieroglyphic Record: Implications of a Pattern of Dates at Copán, Honduras*. *Mesoweb* <[www.mesoweb.com/features/aldana/implications.html](http://www.mesoweb.com/features/aldana/implications.html)>
- Aveni, Anthony. 1992. Nobody asked, but I couldn't resist: A response to Keith Kintigh on archaeoastronomy and archaeology. *Archaeoastronomy and Ethnoastronomy News* 6: 1, 4.
- Coe, Michael. 1992. *Breaking the Maya Code*. Thames and Hudson: London.
- Kintigh, Keith. 1992. I wasn't going to say anything, but since you asked: Archaeoastronomy and archaeology. *Archaeoastronomy and Ethnoastronomy News* 5: 1, 4.

#### Religion, Power, and Politics in Colonial St. Augustine.

Robert L. Kapitzke, University of Florida Press: Gainesville, 2001. 272pp., 4 figures, map, glossary, notes, bibliography, index. \$55.00 (cloth). ISBN 0-8130-2076-X.

*Reviewed by Jamie C. Brandon, Department of Anthropology, University of Texas at Austin, Austin, TX 78712-1086*

This book, the newest in the Florida Museum of Natural History's Ripley P. Bullen Series, is a very well-documented and thought out historical study that attempts to give the reader a sense of the complicated and multifaceted conflicts which both perpetuated and disrupted the important colonial capitol of Spanish Florida. It charts a series of disputes from 1680 to 1763 involving a number of colonial governors, clergy and various other representatives of the Spanish Crown. These disputes are not only used to tell dramatic narratives about the politics of a city on the Spanish frontier, but they are also used quite effectively to demonstrate a point that Kapitzke makes in his first few chapters - most historians look at these conflicts reductively and this, he reasons, masks a great deal of the complexity at play within the Spanish colonial government as a whole.

Kapitzke's argument centers on the fact that these conflicts

are often seen by researchers as 1) disruptive to the colonial administration and 2) generally between religious and governmental forces. He then proceeds to illustrate the complicated interwoven nature of colonial conflict and administrative ambiguity using disputes over provisioning, gubernatorial authority, local fraternal organizations, immigration into the colony, sanctuary and secularization (the process by which “regular” clerical orders, in this case the Franciscans, transfer responsibilities of their converted laity to the secular parish). Kapitzke finds that the overlapping systems hierarchy which give rise to these conflicts, in a way actually served as a system of “checks and balances” within the Spanish system of government. Moreover, in the process of this exploration he explodes the somewhat false dichotomy constructed between colonial Spain’s religious and secular spheres.

Certainly, in this reviewer’s opinion, the strongest chapters in this work are the theoretical chapters which act as a prelude for the substantial and detailed narrative of administrative struggle which makes up the bulk of the book. Not to slight the well-fleshed out historical particulars, but it is in these first chapters that Kapitzke points out the diversity inherent in colonial St. Augustine (a population made up not only of natives of Spain and criollos, but also Native Americans, mestizos, enslaved and free persons of African descent, mulattos, and peoples of various other European heritages) and the central importance of Catholicism in the construction of colonial identity. In fact, at times it seems that it is this local sense of identity that leads to conflict between the relatively transient governmental administrations (mostly Spanish by birth and certainly more cosmopolitan in outlook) and the more stable local positions of power (i.e., the parish priest, Franciscan missionaries, Sergeant Majors, etc.). Kapitzke does an excellent job of teasing these underlying tensions between the local, colonial, administrative, and religious forces from the documentary sources at hand.

He also does an excellent job of relating local political struggles to Spain’s larger colonial project by tracing motives and conditions of these disputes back to Havana, the growing nation-state of Spain and, of course, the Pope. What does seem absent, however, is a discussion of the way that the caciques and tribes of Florida actively played a role in the politics of St. Augustine. Unfortunately, in this work Native Americans appear mostly passive in St. Augustine – primarily in the roles of forced labor, converted laity or as faceless inhabitants on the periphery of the colony. This, in all likelihood, is due to dwindling native presence in the colony and their absence in the documentation of political struggle. However, one cannot help but wonder whether politics amongst Native American groups did not help set the scene for some of these conflicts in a similar way to the larger colonial political arenas that Kapitzke connects with so well. Perhaps it is because he thoroughly demonstrates the three-dimensional character of St. Augustine’s administrators and priest that the two-dimensional depiction of native groups seems so stark.

A second, minor disappointing aspect of this volume is its lack of graphic materials. The four figures that are included in the text are all reproductions of historical documents. Aside from the very limited 1737 map of St. Augustine, for example, the reader is never situated geographically. Thus, those not

familiar with the region will find themselves left on their own in attempting to understand the relationship between St. Augustine and its outer provinces – Apalachee, Guale, etc. – much less the relationship between Spanish Florida and the British settlements in South Carolina.

From an archeological point of view, readers outside this study’s region of interest may, at first blush, dismiss this volume as it dwells on very particular local struggles and does not focus on subject matters dear to many archeological studies (such as material aspects of daily existence, spatial relationships which provide the colony with its sense of place, etc.). This, however, would underestimate the ability of this type of study to help dismiss reductive readings of history in all colonial situations. Kapitzke’s demonstration of the articulated and dynamic engagement between the interlocked religious and social spheres, the power of religion in the daily lives of the inhabitants of St. Augustine, and his blurring of seemingly distinct categories of power all make this work an important one for archeologists who wish to turn a critical eye toward history and historical documentation.

---

**The Foreign Relations of the “Hyksos”: A Neutron Activation Study of Middle Bronze Age Pottery from the Eastern Mediterranean.** Patrick E. McGovern, BAR International Series 888, 2000. xii+242 pp, 29 figures, 17 plates, 46 tables, 3 appendices. Archaeopress, Oxford. ISBN 1 84171 088 1. £40.00.

*Reviewed by Hector Neff, Research Reactor Center, University of Missouri, Columbia, MO 65211*

People involved in physico-chemical analysis of artifacts sometimes lament the fact that their work tends to get relegated to appendices in archaeological site reports. In the volume reviewed here, Patrick McGovern demonstrates that the data produced by instrumental neutron activation analysis (INAA) of ceramics can be worthy of monographic treatment in their own right. Evidently the job was not easy, as circumstances conspired to frustrate the project at several turns: Joan Huntton, the initiator of the Hyksos pottery study, died before completing what was to be her Ph.D. project, and McGovern’s effort to guide the project to a successful conclusion was delayed by disagreements with other project personnel over the mode and venue of publication. Added to these personnel problems, the INAA database McGovern had to deal with is large and complex, and extracting meaningful patterns was certainly no easy task. McGovern must be commended for overcoming all of the various hurdles and bringing this very useful volume to publication.

McGovern’s study concerns the origins of pottery found at the site of Tell el-Dab’a, the putative capital of the Hyksos, Semitic-speaking people who dominated Lower Egypt for approximately 100 years at the end of the Middle Bronze Age. The site is located just east of the eastern-most distributary of the lower Nile, in a good position to play a role in economic and political interaction between the Levant and Egypt. Along with

a group of urban centers in nearby Gaza, Tel el-Dab'a grew to urban proportions around the end of the Middle Bronze Age, during the period of Hyksos domination.

Provenances of the pottery from Tell el-Dab'a are evaluated by comparison to pottery and raw material analyses from widespread sites in Egypt, the Levant, and elsewhere in the eastern Mediterranean. Since Manfred Bietak, the excavator of Tel el-Dab'a, once suggested a northern Levantine origin for the Hyksos people, it is noteworthy that the strongest connections evidenced by the INAA study are with southern Palestine. The major imports from this area were amphorae known as Canaanite Jars. Organic residue analysis conducted by McGovern indicates that these vessels contained resinated wine. Thus, the INAA study together with the residue analysis paint a convincing and tidy picture of a flourishing wine trade along the southeastern Mediterranean coast during the Middle Bronze Age.

Along with the southern Levantine imports, the Tel el-Dab'a ceramic assemblage also includes local products derived from Nile alluvium. Among these are cooking pots in Syro-Palestinian style. The fact that such foreign styles were produced locally favors the hypothesis that the Tel el-Dab'a population consisted at least partly of Levantine immigrants.

Analytical work on the Hyksos pottery project was undertaken over quite a long period of time in two different laboratories. Ms. Huntoon did most of the sampling of vessels from Tel el-Dab'a and a large part of the sampling of comparison collections. Gar Harbottle carried out the initial INAA at Brookhaven National Laboratory (BNL). McGovern later augmented the comparative database with a series of analyses done at the MU Research Reactor Center, University of Missouri, Columbia (MURR). Other projects undertaken at BNL by Ed Sayre, Gar Harbottle, and their collaborators were also used for comparative purposes. Combining of databases from a number of projects undertaken over a period of nearly 20 years would have been highly problematic for any technique other than INAA; the superior replicability of INAA, well illustrated by this project, is one reason why chemistry-based provenance researchers continue to rely on INAA despite the availability of more sensitive, cheaper techniques and the fact that access to INAA is in decline.

All books have their flaws, and in this case the most noticeable ones are the exclusion of important material and inclusion of unnecessary material. The disputes over publication mentioned above led to the excision of important illustrations from the final monograph, a handicap that is only partially counterbalanced by vessel photographs. This was largely beyond McGovern's control, but the volume suffers nonetheless. Another flaw is the publisher's decision to include almost 40 pages of oxide concentrations data for the analyzed ceramics (Appendix 3), which serve little purpose other than to boost the price of the volume. Both the raw concentrations data and the 86-page catalogue of analyzed samples (Appendices 1 and 2) would be much more useful if they were made available for downloading from a web site, and reducing the volume from its current 250+ pages to approximately 125 pages would have made it much more affordable. Nothing can be done about the volume price at this late date, but, with the

support of McGovern and Harbottle, the analytical and descriptive data from the Hyksos study are now available through the MURR Archaeometry Lab website, <http://web.missouri.edu/~glascock/archlab.htm>.

McGovern has done a highly competent job of making sense of a complex database of INAA results, and the study sheds considerable light on Middle Bronze Age interaction patterns in the eastern Mediterranean. The study also contributes concrete data bearing on the origins of the Hyksos. Scholars interested in these topics will want to include this monograph in their libraries. This reviewer hopes, however, that McGovern's is the last ceramic provenance investigation that includes the analytical data on paper. Save a tree! Publish your data on the web!

---

***Spanish Colonial Gold Coins in the Florida Collection.*** Alan K. Craig, University Press of Florida: Gainesville, 2000. 112 pp., 284 gold coin photos, map, 17 tables, appendices, glossary, notes, bibliography, index. Price: \$49.95 (cloth). ISBN: 0-8130-1802-1.

*Reviewed by Nancy J. Mactague, Aurora University, Aurora, IL 60506 USA*

From Tutankhamun to Tiffany's, gold has fascinated and enticed mankind. Gold treasure from Spain's colonies in the New World provided a significant amount of funding for the Spanish court. Fleets carrying gold and silver treasure traditionally sailed twice each year between Spain and her American colonies. However, war during the first decade of the 18<sup>th</sup> century prevented the fleets from sailing. When the fleet of 1715 finally set sail, it was carrying an unprecedented amount of precious metals. Ten days after embarking, eleven Spanish ships were sunk by a hurricane along the southeastern Florida coast.

With his *Spanish Gold Coins in the Florida Collection* of 2000, Craig updates his 1988 work, *Gold Coins of the 1715 Spanish Plate Fleet*. Thanks to additional research undertaken in the intervening years, *Spanish Gold Coins* offers corrections to the information found in the 1988 edition, as well as color images and discussions of an additional 105 coins, for a total of 1,512 gold coins. These additional coins are of types either unrepresented or underrepresented in the 1988 book. Many coins included in the 1988 edition are now assigned to a specific shipwreck site.

*Spanish Colonial Gold Coins in the Florida Collection* provides the companion to Craig's *Spanish Colonial Silver Coins in the Florida Collection*, also published in 2000. *Spanish Colonial Silver Coins* includes a more in-depth history of mining and minting methods in colonial Spain than does *Spanish Colonial Gold Coins*.

In Chapter 1 of *Spanish Gold Coins*, Craig discusses the shipment of treasure from the New World to the Old. After the sinking of the 1715 Fleet and the drowning of over 600 crewmembers on August 3, 1715, the Spanish immediately began salvage efforts. The English privateer, Henry Jennings,



attacked the Spanish salvage camp, stealing at least 100,000 silver pieces of eight. It is unknown how much of the gold and silver treasure was carried off before historical records were kept. Therefore, it is also unknown whether the distribution of coins in the Florida collection represents the distribution by dates, values and mints of the original treasure.

Chapter 2 provides a general discussion of the Florida collection, which is notable for its quality and size. The average weight of each denomination and mint closely approximates the legal requirements of the time (1675-1772). This was due either to the honesty of the mint officials or to the effectiveness of the governmental controls over them. Florida holds the largest single accumulation of publicly owned Spanish colonial gold coins intact and available for study by qualified specialists. A computerized, searchable database contains information on all important numismatic characteristics of each coin. All coins have been photographed in black and white and scanned in color. An advantage to the scholar of studying the Florida collection is that it offers the ability to inspect simultaneously a number of duplicate coins from all mints.

The monetary value of the coins in the Florida collection cannot be determined until and unless the collection is sold. The precious metal out of which the coins are made has its own intrinsic value. However, these coins also have a significant historical value. In the fifteenth and sixteenth centuries, it was technologically difficult to counterfeit these cob coins, which lack the uniformity of machine-made coins. However, the contemporary counterfeiter can overcome those difficulties.

Chapters 3 through 6 discuss cob doubloons of the Lima, Cuzco, Mexico, and Santa Fé de Bogotá mints. The term "cob" comes from the Spanish *cabo de barra*, which means "made from the end of a bar" (Budde-Jones, 1993, p. 3), and has been applied to hand-made Spanish or colonial coins. The cob doubloons of the Lima mint are notable for the clarity of their engraving, the even thickness of their planchets, and their distinctive makers' marks. They are much better made than the coins from Santa Fé de Bogotá. Coins were struck in Cuzco from 1698 to 1699. Nearly all of the 1698 production was lost at sea, which explains the rarity of Cuzco gold cobs. Cob doubloons from the mint in Mexico comprised the majority of the gold and silver aboard the 1715 fleet, as the shipment included over twenty years' worth of accumulated production. Unlike those from Lima, the Mexican coins have no legible marks showing denomination, assay, date or mint; only the required weights were met accurately.

*Spanish Colonial Gold Coins* provides sixteen color plates of coins of various denominations from the Lima, Mexico and Santa Fé de Bogotá mints. Appendix A provides a classification of Mexican cob doubloons by die varieties. Appendix B gives detailed information on the coins pictured in the book. Craig also provides a glossary and bibliography for further research. Written for the specialist and non-specialist alike, *Spanish Colonial Gold Coins* is for any reader who is ready to succumb to the lure of gold treasure.

#### Reference

Budde-Jones, Kathryn. 1993. *Coins of the Lost Galleons*. Key West: Author.

**Modern Analytical Methods in Art and Archaeology.** Edited by E. Ciliberto and G. Spoto, 2000, New York: John Wiley and Sons; (Chemical Analysis Monograph Series, Volume 155), ISBN 0-471-29361-X hardback, \$150.00, xxv + 755 pp., 234 figs., 29 tables.

*Reviewed by Stanley Walling, Department of Classics and General Studies, Montclair State University, Upper Montclair, NJ 07043 USA*

This substantial and much-needed text is a summary of the techniques of contemporary archaeometric laboratory chemistry, which are employed to answer questions about the composition, history, provenience, methods of fabrication, and dating of artifacts and ancient art. The volume's twenty chapters focus on traditional techniques, such as mass spectrometry, x-ray fluorescence, and scanning electron microscopy, which should be familiar in general character to most archaeologists, art historians, and conservators. The text also considers new and evolving techniques that are probably not yet part of the general vocabulary of non-laboratory specialists, but have a great potential to contribute to our understanding of the material remains of ancient cultures. The twenty-nine contributors discuss the chemistry and physics that underlie these testing methods as well as the instrumentation, measuring procedures, and sampling methods appropriate for each technique.

It is appropriate here to point out what this text is not — it is not a treatment of the iconographic and stylistic analyses that art historians and archaeologists explicitly or implicitly include in their considerations of artifacts and architecture. Other than what may be inferred about ancient manufacturing, resource extraction, and related activities, the text is not focused on interpreting objects in their cultural, artistic, or historic contexts. Also, readers should be aware that largely, but not completely absent from the text are treatments of geochemical laboratory techniques appropriate for the analysis of stone, sediments, and soils as well as discussions of instrumentation for geoarchaeological research, such as ground-penetrating radar and seismic sensing.

Unlike several other archaeometric texts, the chapters of *Modern Analytical Methods* are organized according to technique rather than subject material. The first chapter by Ciliberto serves as a brief general introduction to the volume and to the analytic techniques of archaeometry. The remaining chapters are divided into four sections. These sections concern elemental analyses (chapters 2-6), molecular and structural analyses (chapters 7-14), isotopic analyses (chapters 15-19), as well as data handling and statistical analyses (chapter 20). Elemental analyses focus on the nature, quantity, concentration, and degree of homogeneity of materials in archaeological artifacts and pieces of art. Molecular and structural analyses consist of techniques that identify the molecular composition and architecture of organic and inorganic materials. The discussions of isotopes in the following section delineate how the behavior of isotopic variants of elements such as carbon and oxygen can be applied to dating, sourcing, and environmental reconstruction. The final section on data handling focuses on multivariate statistical techniques used for grouping artifacts.

Chapter one, which is an introduction by Ciliberto to the text, considers several aspects of archaeometric study. These include the nature and importance of cultural patrimony, sampling strategies, data handling, instrument calibration, destructive vs. non-destructive analysis, the detection of forgeries, and artifact degradation. Chapter two, "Elemental Analysis," by Ronald Hancock, introduces readers to the first section of the text, which considers techniques for the increasingly used 'fingerprinting' of artifacts by defining their component elements. The techniques of atomic spectroscopy and spectrometry, X-ray fluorescence, neutron activation analysis and particle induced X-ray emission, all of which are discussed in succeeding chapters, are used to define elemental composition of artifacts. Data on composition can in turn be used to determine, among other things, degrees of difference or similarity in constituent elements between artifacts, methods of prehistoric fabrication, as well as the locations and dates of origin of artifacts.

Chapter three, by Suzanne Young and A. Mark Pollard considers the range of atomic spectroscopic and spectrometric techniques available to conservators, art historians, and archaeologists that analyze artifacts and art on the level of atomic species. The authors focus on atomic absorption spectrometry, inductively coupled plasma-mass spectrometry, and inductively coupled plasma-atomic emission spectroscopy. The last two of these techniques, along with neutron activation analysis, which is discussed in a subsequent chapter, are among the most widely used methods of elemental analysis in archaeology, in part because they all can be applied to ceramics, one of the most durable, common, and interpretationally useful classes of artifact.

The following chapter by Luc Moens, Alex von Bohlen and Peter Vandenabeele considers the mechanics and applications of X-ray fluorescence, which typically produces little or no damage to the artifacts and art objects to which it is applied. This technique is used on a wide variety of materials to determine their constituent elements. Included among these are ancient coins, artist's pigments and the varnishes on historic violins. The fifth chapter, by Hector Neff details the physics and laboratory mechanics of widely-used neutron activation analysis. His discussion of the advantages, disadvantages, and applications of this technique are among the best found in this text. Chapter six, "Particle-Induced X-Ray Emission," is authored by Jean-Claude Dran, Thomas Calligaro, and Joseph Salomon. This chapter details the use of this archaeometric technique on the proveniencing of inks, pigments, gemstones, ceramic paste, and obsidian. The tables provided by the authors are a particularly effective way of summarizing artifact types, component materials and references.

Chapter seven, by Giuseppe Spoto introduces the second section of the text, which considers the topic of Molecular and Structural Analysis. In addition to identifying the constituent elements of artifacts, these techniques allow some quantification of component elements and can provide an indication of molecular structure. These archaeometric methods, many of which rely on mass spectrometry, are notable in that they make use of extremely small samples, thus minimizing damage to the

artifacts under study. The following chapter on "Biomolecular Analysis by Organic Mass Spectrometry" by Richard Evershed summarizes the ability of several types of mass spectrometry to identify and define the structure of ancient organic molecules, including DNA. The author's detailed treatment also considers human remains, resins, fats, oils, and other organic molecules preserved by, among other processes, heating or desiccation.

The ninth chapter, "Biomolecular Methods," by Raul Cano, discusses the recently developed field of molecular paleobiology, which consists largely of DNA identification through polymerase chain reaction assay. These identifications are typically of ancient tanned hides, which were used as clothing, as well as writing and decorative surfaces, including coverings for early books. Such genetic identifications of these archaeological and art objects produce phylogenetic information regarding the donor animals of the hides, which is intrinsically of interest, but also provides avenues for wider understanding of the past. Resonance Raman spectroscopy, the subject of chapter ten, is discussed by Franco Cariati and Silvia Bruni. This technique, which has the capability of being employed *in situ*, is used in the identification of pigments and is principally employed by those wishing to authenticate, date, and conserve art objects. Chapter eleven, "Thermal Analysis," by Marianne Odlyha, focuses on several thermoanalytical techniques, such as differential scanning calorimetry, thermogravimetry, thermomechanical analysis, and dielectric analysis, which provide insight into the mechanical and electrical effects of aging, light, temperature, pollutants, and other factors on artists' materials, particularly pigments.

In chapter twelve, author Mauro Bacci discusses ultraviolet spectroscopy, visible spectroscopy, near infra-red spectroscopy, Fourier transform-infrared spectroscopy, and fiber optics reflectance spectroscopy and their use in the identification of a wide range of organic and inorganic artists' pigments. In the following chapter, Giuseppe Spoto and Enrico Ciliberto consider how X-ray photoelectron spectroscopy and auger electron spectroscopy have been applied to the identification of component molecules in a broad range of artifacts and art objects. Chapter fourteen, "Electron Microscopy and its Application to the Study of Archaeological Materials and Art Preservation," by Miguel Jose-Yacamán and Jorge Ascencio, describes the use of scanning electron microscopy and conventional transmission electron microscopy to identify components of ancient and historic pigments, metal objects, and paper. The authors also discuss the use of environmental scanning electron microscopy to define the surface character of artifacts and art objects, including the *in situ* examination of murals.

Chapter 15, "Isotope Analysis, Dating, and Provenance Methods," by Gunther Wagner, introduces the third section of the volume, which focuses on the physics and chemistry of the archaeometric use of isotope analysis. Mass spectrometry is the primary tool for this analysis and is employed to date and source organic and inorganic artifacts and art objects. Isotope analysis is also employed as a dating technique for natural geological deposits that have archaeological significance. In the following chapter, Robert Hedges discusses the chemistry

and physics that underlie radiocarbon dating, but the balance of this article is devoted to a discussion of the application of this procedure, which is probably the most widely used of archaeological dating methods, to artifacts of bone, wood, shell and other organic materials. In chapter seventeen, "Lead Isotope Analysis Applied to Provenance Studies," by Noel Gale and Zofia Stos-Gale, the authors discuss how variations in isotope composition of lead ore bodies have been utilized to define sources of lead for a great variety of metal artifacts, as well as glass and glazes. The authors also consider problems in the interpretation of these sources and provide several archaeometric case studies regarding ancient metallurgy in the Old World. In chapter 18, authors Sebastiano Troja and Richard Roberts consider the physics, chemistry, and instrumentation of luminescence dating. They also devote considerable attention to its application to ceramics, chert, and other classes of artifacts and art objects with crystalline mineral inclusions that emit thermoluminescence. Chapter 19, "Electron Spin Resonance Dating," by Rainer Grun, considers the physics, chemistry and biochemistry of this technique and its application to hominid tooth enamel from several lower Paleolithic sites, including Zhoukoudian and Hexian, China.

The final chapter, which composes the fourth and last section of the text is "Data Handling and Statistical Analyses," by Mike Baxter and Caitlin Buck. The authors discuss several multivariate statistical techniques, such as principal component analysis, cluster analysis, and discriminant analysis that can reveal meaningful groupings in archaeometric data. The authors also discuss statistical modeling in archaeology and consider how the Bayesian approach can be applied to multivariate data.

The authors of these chapters, who are well versed in their respective analytic techniques and exhibit strong research and publication records in their specialties, include little that could be construed as jargonistic, and for the most part, write directly and clearly. The readability of the chapters is not hampered by digression, unnecessary detail, or the inclusion of excessive chemical, statistical, or other formulae, which is particularly notable in light of the lack of footnotes and endnotes. Figures and tables are plentiful, direct, and clear. Much of this is undoubtedly due to the effective editing of Ciliberto and Spoto, who themselves contribute three articles to the text. It should be noted that occasional typographic errors and a few grammatical mistakes detract from an otherwise very professionally edited volume.

The bibliographies are presented chapter-by-chapter, and therefore on a technique-by-technique basis, and vary substantially in length and focus, according to the nature and variety of the methodologies discussed. This reviewer would like to have seen greater discussion of the evolution of methods and research perspectives – as well as more historical citations — but the text and references are more than adequate as they are for an understanding of modern archaeometric techniques. Even though the style of the citations generally reflects the traditions of the field of chemistry, a change in bibliographic format is suggested here for upcoming editions. It is suggested that all chapters include full titles of journal articles. This would be helpful to students and those outside the field of

archaeometry who are attempting to build a bibliography on an archaeometric topic.

The editors and the authors of this volume manage to strike reasonable, but not necessarily equal, balances between archaeology and art and between technique and application. The greater emphasis on archaeology perhaps reflects the general character of current archaeometric investigation. This reviewer would like to have seen a more substantial discussion of the application of archaeometric procedures to specific sites, artifacts, and research questions in about half of the chapters. Certainly from a heuristic perspective, more effective inclusion of case studies would probably aid the efforts of archaeometrists to help their students absorb the essentials of this broad field of inquiry.

In the same vein, it should be pointed out that a glossary and a more detailed index would probably aid university practitioners in their teaching efforts. Also useful, particularly for those gaining their first familiarity with the field, would be an appendix consisting of a summary listing of available techniques, perhaps in the form of a multi-page chart. This chart could categorize archaeometric methods according to the type of information they provide (e.g., age, composition, fabrication technique, method of extraction as a raw material), the physical nature of the objects to which the techniques can be applied (i.e., organic, or inorganic, wood, bone, or chert, etc.), the minimum mass of the sample required for testing, whether the sample would be subject to destruction, and similar factors. Such a chart would be a helpful learning tool and would increase future editions' effectiveness as laboratory handbooks.

This reviewer is aware that this and previous suggestions, which have been more a matter of mechanics than substance, would necessitate an increase in the length of future editions of the text, which is already substantial at 750 pages. He is also aware that the desire for full consideration of a topic must be balanced by the editors and publisher against the costs engendered by increased volume length, but he believes that such additions would round out the discussions and increase the volume's appeal, particularly to non-laboratory researchers and students.

In the last fifty years, archaeometry has become an integral part of the disciplines of archaeology, art history, and art conservation. As the field has matured, it has increasingly effectively answered questions regarding how, when, and where artifacts were manufactured. Archaeometry now provides archaeologists, art historians, and other students of the past with detailed and varied information concerning ancient resource locations, absolute dates for the manufacture of artifacts made from a variety of materials, as well as important data regarding extractive and fabrication technology. All of this has directly contributed to a greater understanding of ancient manufacturing sophistication as well as the prehistoric diffusion of technology, and has indirectly aided our understanding of matters such as the character and evolution of sociopolitical complexity. Today, just about all areas of archaeology and art history benefit tremendously from the products of archaeometric inquiry. Ciliberto and Spoto's volume stands out as a timely and useful addition to this dynamic field.



## Recent Publications

### *Archaeometry, Mexico 2000* (2001)

Published as a CD-ROM. Contains 58 articles, organized into six thematic fields: Field Archaeology (12 articles); Biomaterials (7); Ceramic and Glass (16); Dating (2); Metals (8); Stone, Pigments and Stuccos (13). A full review will appear in a future issue of the *SAS Bulletin*. To purchase, contact <http://www.archaeometry.unam.mx/>

### *Archaeometry Issues in Greek Prehistory and Antiquity*

2001. Edited by Y. Bassiakos, E. Aloupi, and Y. Facorellis, the contents of the proceedings, together with abstracts, are posted at: <http://www.archaeometry.gr/publication/sybosio/index-eng.htm>

### *Archaeologie & Computer* (2002)

The CD-ROM publication of the 6th workshop "Archaeologie & Computer", Vienna, 5-6 November 2001, was published in May 2002. The CD, which contains PDF and Powerpoint files, can be purchased for 16 Euro. For further information on this volume, as well as proceedings from previous conferences, visit the following website: <http://www.archaeologie-wien.at/workshop/index.html> or contact Wolfgang Börner by email: [bor@gku.magwien.gv.at](mailto:bor@gku.magwien.gv.at)

### *Revista Atlántica-Mediterránea de Prehistoria y Arqueología Social*. ISSN 1138-9435.

This is a relatively new journal published by the University of Cadiz (Spain) which includes articles on archaeology, geoarchaeology, archaeometry and archaeozoology. The 4th volume will be published in June 2002. For subscriptions, contact: Servicio de Publicaciones de la Universidad de Cádiz, C/ Dr. Marañón s/n. 11080, Apartado postal No. 439, Cádiz, Spain; tel 956015268; fax 956220118; email: [pedro.cervera@uca.es](mailto:pedro.cervera@uca.es). Summaries, indexes and texts are available through this website: <http://biblioteca.uca.es/ucadoc.asp>

## Books Received

Burillier, H. 2000. *Celestial Sites, Celestial Splendors*. Cambridge University Press. \$14.95 (paper). ISBN 0-521-66773-9.

Chatters, J.C. 2001. *Ancient Encounters: Kennewick Man and the First Americans*. Simon & Schuster. \$26.00 (cloth). ISBN 0-684-85936-X.

Creighton. 2000. *Coins and Power in Late Iron-Age Britain*. Cambridge University Press. \$69.95 (cloth). ISBN 0-521-77207-9.

Dincauze, D. 2000. *Environmental Archaeology: Principles and Practice*. Cambridge University Press. \$110 (cloth: ISBN 0-521-32568-4); \$39.95 (paper: ISBN 0-521-31077-6).

Martin. 1999. *Taphonomy: A Process Approach*. Cambridge University Press. Cloth (\$100; ISBN 0-521-59171-6); paper (\$44.95; ISBN 0-521-59833-8).

Price, T.D. (ed.) 2000. *Europe's First Farmers*. Cambridge University Press. \$90.00 (cloth: ISBN 0-521-66203-6); \$31.95 (paper: ISBN 0-521-66572-8).

Richards, J. & M. Van Buren (eds.). 2001. *Order, Legitimacy and Wealth in Ancient States*. Cambridge University Press. Cloth (\$69.95; ISBN 0-521-77212-5); paper (\$24.95; ISBN 0-521-77671-6).

Roskams, S. 2001. *Excavation*. Cambridge University Press. Cloth (\$74.95; ISBN 0-521-35534-6); paper (\$27.95; ISBN 0-521-79801-9).

Scagell, R. 2000. *The Cambridge Guide to Stargazing with your Telescope*. Cambridge University Press. \$14.95 (paper). ISBN 0-521-78448-4.

## Meetings Calendar

*Susan Mulholland, Associate Editor*

\* = new listings; + = new information for previous listings

### 2002

June 2-6. ART 2002. 7th International Conference on Non-destructive Testing and Microanalysis for the Diagnostics and Conservation of the Cultural and Environmental Heritage. Congress Centre Elzenveld, Antwerp, Belgium. Conference secretariat: University of antwerp (UIA), Dept. Chemistry, ART2002 Secretariat, Universiteitsplein 1, BE-2610 Antwerp-Wilrijk, Belgium. Tel/fax: 32-3-820.23.43; email: [vantdack@uia.ua.ac.be](mailto:vantdack@uia.ua.ac.be); web: [chem-www.uia.ac.be/art2002/](http://chem-www.uia.ac.be/art2002/)

\*June 17-18. North Eastern Archaeometallurgy Research Group, Lehigh, Pennsylvania. For more information: Prof. Michael R. Notis & Dr. Aaron N. Shugar, Archaeometallurgy Laboratory, Lehigh University, Department of Materials Science and Engineering, 5 East Packer Ave., Bethlehem, PA 18015; tel 610 758 4701; email: [mrn1@lehigh.edu](mailto:mrn1@lehigh.edu); [a.shugar@lehigh.edu](mailto:a.shugar@lehigh.edu); fax 610 758 3526; web: <http://www.lehigh.edu/~inarcmet>

July 21-25. The 6th International Conference of Ancient DNA and Associated Bio-molecules, Jerusalem, Israel. Contact: Mark Spigelman. Email: [dna6@md.huji.ac.il](mailto:dna6@md.huji.ac.il)

Aug. 14-21. 17th World Congress of Soil Science, Bangkok Thailand. Arid and Semi-Arid Soils: Records of Past Climates, Carbon Sequestration, Genesis and Management. Convenor: Brenda J. Buck; University of Nevada Las Vegas, Department of Geoscience, 4505 Maryland Parkway, Las Vegas NV 89154; tel 702-895-1694; email [buckb@nevada.edu](mailto:buckb@nevada.edu); web: <http://www.17wcss.ku.ac.th/>

\*Aug. 22-27. Dendrochronology, Environmental Change and Human History. 6th International Conference on Dendrochronology, Québec City. For more information: Centre d'études nordiques, Pavillon Abitibi-Price, Université Laval, Sainte-Foy (Québec), Canada, G1K 7P4; email: [dendro2002@cen.ulaval.ca](mailto:dendro2002@cen.ulaval.ca); web: <http://www.cen.ulaval.ca/dendro2002/information.html>

August 28-31. 4th International Meeting on Phytolith Research, McDonald Institute for Archaeological Research, University of Cambridge, UK. For further information: Marco Madella, The McDonald Institute for Archaeological Research, Downing Street, Cambridge CB2 3ER. Tel: 44-(0)1223-333537; fax: 44-(0)1223-339285. Website available soon.

- \*Aug. 29-31. Natural Glasses. Glasses in geosciences, environmental sciences and archaeometry. Lyon, France. Organizing committee chairman: B. Champagnon, Université Claude Bernard - Lyon 1, Labo. LPCML-UMR 5620 CNRS, 43 Bd du 11 Novembre 1918, 69622 Villeurbanne, France; tel 33 (0)4 72448334; fax 33 (0)4 72448442; email: natglasses.info@adm.univ-lyon1.fr; web: <http://natglasses.univ-lyon1.fr>
- Oct. 23-25. International Symposium on Ancient Gold Technology. Madrid. Contact Alicia Perea, Depto. de Prehistoria, Instituto de Historia, CSIC, Serrano 13, 28001 Madrid, Spain. email: [sitoa@ceh.csic.es](mailto:sitoa@ceh.csic.es)
- \*Nov. 21-22. 7<sup>th</sup> Workshop "Archaeologie & Computer", Vienna, Austria. Deadline for abstracts: May 28. For more information: Wolfgang Börner, Magistrat der Stadt Wien, Geschäftsgruppe Kultur - Stadtarchäologie, Friedrich-Schmidt-Platz 5/1, 1080 Wien; tel 0043/(0)1/4000 81176; email: [bor@gku.magwien.gv.at](mailto:bor@gku.magwien.gv.at); web: <http://www.archaeologie-wien.at/workshop/index.html>
- \*Nov. 20-23. American Schools of Oriental Research Annual Meeting, Toronto. Symposium: Artifacts: the Inside Story. Chair: Elizabeth Friedman, email: [esf@hydepark-chicago.org](mailto:esf@hydepark-chicago.org)

### 2003

- March 29-April 2. 3rd International Congress of Limnogeology. Tucson, Arizona, USA. Andy Cohen; email: [acohen@geo.arizona.edu](mailto:acohen@geo.arizona.edu)
- \*Apr. 2-5. UK Archaeological Science 2003, St Anne's College, Oxford. Abstract deadline is December 31, 2002. For further information: Archaeological Science 2003, Research Laboratory for Archaeology & the History of Art, 6 Keble Road, Oxford, OX1 3QJ, UK; email: [ukas2003@rlaha.ox.ac.uk](mailto:ukas2003@rlaha.ox.ac.uk); web: <http://users.ox.ac.uk/~ukas2003>
- \*May 4-8. 34th International Symposium on Archaeometry, Hefei, China. For more information, contact Changsui Wang, University of Science and Technology of China, People's Republic of China; email: [wanges@ustc.edu.cn](mailto:wanges@ustc.edu.cn) or visit the ISA website: <http://www.uiuc.edu/unit/ATAM/conf/home.html>
- \*May 11-14. The third symposium "Climate Change: the Karst Record", Montpellier, France. All communications and posters about speleothem records (geochemical, isotopical, petrographical, spectrometrical, etc.) and cave detrital deposits linked with climate variation, palaeohydrology and/or archeological interest are welcome, as are studies about the present day cave system like dripping water or cave temperature monitoring and all relationships with the climate. For more information, email: [karst3@lsce.saclay.cea.fr](mailto:karst3@lsce.saclay.cea.fr); or visit the web: <http://www.ipsl.jussieu.fr/GLACIO/KARST/Main-KRIII.html>
- +June 21-26. The Fifth World Archaeological Congress, Washington, DC. To be held at the Catholic University of America, in partnership with the Smithsonian National Museum of Natural History & National Museum of the American Indian. Sessional proposals and abstracts (150-

250 words) to be submitted to Program Committee by January 1, 2003: Joan M. Gero, Academic Secretary WAC-5, Department of Anthropology, American University, Washington, DC 20016; email: [jgero@american.edu](mailto:jgero@american.edu); fax 202-885-1837; web: [www.american.edu/wac5](http://www.american.edu/wac5); email: [wac5@american.edu](mailto:wac5@american.edu)

- Aug. 23-26. Common Ground: Archaeology, Art, Science, and Humanities. The XVI International Congress of Classical Archaeology of the Associazione Internazionale di Archeologia Classica (AIAC). To be held at the Sheraton Boston Hotel. Abstracts due November 2002. Contact: Amy Brauer, Department of Ancient and Byzantine Art and Numismatics, Harvard University Art Museums, 32 Quincy Street, Cambridge, MA 02138 USA. Tel: 617 495-3393; fax: 617 495-5506; email: [AIAC2003@fas.harvard.edu](mailto:AIAC2003@fas.harvard.edu); web: <http://www.aiac.org>
- Sept. 1-5. 18th International Radiocarbon Conference, Wellington, New Zealand. Hosted by the Rafter Radiocarbon Laboratory and held in the Museum of New Zealand, Te Papa Tongarewa. For further information: Rafter Research Centre, PO Box 31 312, Lower Hutt, new Zealand; tel 64-4-570-4650; fax 64-4-570-4657; email [14Conf-info@gns.cri.nz](mailto:14Conf-info@gns.cri.nz)
- +Sept. 24-26. Archaeometallurgy in Europe, Milan, Italy. International Conference organized by the Associazione Italiana di Metallurgia. For more information: Antonella Donzelli, AIM - Associazione Italiana di Metallurgia, Piazzale Rodolfo Morandi, 2. 1-20121 Milano, Italy. tel: 39 0276021132; fax 39 0276020551; email: [aim@fast.mi.it](mailto:aim@fast.mi.it); web: <http://www.fast.mi.it/aim/archaeo.htm>
- \*Oct. 27-31. European Meeting on Ancient Ceramics (EMAC) '03, Lisbon. Deadline for abstract: April 15, 2003. Conference Secretariat, ITN - Instituto Tecnológico e Nuclear, Chemistry Sector, Estrada Nacional 10, P-2686-953 Sacavém, Portugal; tel 351-21-994 6215/6223; fax: 351-21-9941455; email: [emac03lisbon@itn.pt](mailto:emac03lisbon@itn.pt); web: <http://itn1.itn.pt/EMAC03/>

### 2004

- \*May 3-7. 35th International Symposium on Archaeometry, Zaragoza, Spain. For further information, please contact: Josefina Perez-Arantegui, Dpto. Química Analítica, Facultad de Ciencias, Edificio D. 1<sup>a</sup> planta, Universidad de Zaragoza, 50009 Zaragoza, Spain; tel 34 976 76 22 55; fax: 34 976 76 12 92; email: [jparante@posta.unizar.es](mailto:jparante@posta.unizar.es); web: <http://www.archaeometry2004.info>
- \*Aug. 20-28. From the Mediterranean Area toward a Global Geological Renaissance: Geology, Natural Hazards and Cultural Heritage. 32nd International Geological Congress, Florence, Italy. web: <http://www.32.igc.com>
- \*Apr. 24-26. Worlds Apart? Human Settlement and Biota of Islands. The Annual Symposium of the Association for Environmental Archaeology 2003, Belfast. Abstract deadline December 1, 2002. For more info: AEA Conference, School of Archaeology and Palaeoecology, Queens University Belfast, University Road, Belfast BT7 1NN; email: [aea\\_islands@qub.ac.uk](mailto:aea_islands@qub.ac.uk); web: <http://www.qub.ac.uk/arcpal/events/aea.htm>

Department of Anthropology  
University of South Florida  
4202 E Fowler Ave SOC 107  
Tampa FL 33620-8100

Non Profit Org.  
U.S. POSTAGE PAID  
Tampa, FL  
Permit No. 257

ADDRESS SERVICE REQUESTED

Please send subscription address changes to Secretary/Treasurer.

# SAS Bulletin

## Society for Archaeological Sciences

### SAS Bulletin Staff

**Editor: Robert H. Tykot**, Department of Anthropology, University of South Florida, 4202 E. Fowler Ave., SOC 107, Tampa, FL 33620-8100, USA; tel 813-974-7279; fax 813-974-2668; e-mail rtykot@chumal.cas.usf.edu

**Associate Editor, Archaeological Ceramics: Charles C. Kolb**, National Endowment for the Humanities, Division of Preservation and Access, Room 411, 1100 Pennsylvania Avenue, NW, Washington, DC 20506, USA; tel 202-606-8250; fax 202-606-8639; e-mail ckolb@neh.gov

**Associate Editor, Archaeological Chemistry: Michael Richards**, Department of Archaeological Sciences, University of Bradford, UK. email: M.P. Richards@Bradford.ac.uk; tel (01274) 235532; fax (01274) 235190

**Associate Editor, Archaeometallurgy: Martha Goodway**, Smithsonian Center for Materials Research and Education, 4210 Silver Hill Road, Suitland, MD 20746-2863 USA; tel 301-238-3700 x164; fax 301-238-3709; e-mail GoodwayM@scmr.si.edu

**Associate Editor, Bioarchaeology: David B. Landon**, Center for Cultural and Environmental History, Anthropology Dept., University of Massachusetts-Boston, Boston, MA 02125 USA; email david.landon@umb.edu

**Associate Editor, Book Reviews: Mark E. Hall**, Niigata Prefectural Museum of History, Gongendo 2247-2, Sekihara 1, Nagaoka 940-2037, Japan; email: hall@nbz.or.jp

**Associate Editors, Dating: Jack Rink**, Department of Geology, McMaster University, 1280 Main Street West, Hamilton, ON, Canada L8S 4M1; tel 905-525-9140 x24178; fax 905-522-3141; e-mail rinkwj@mcmail.cis.mcmaster.ca

**Associate Editor, Geoarchaeology: Mike Waters**, Anthropology Department, Texas A&M University, College Station, TX 77843-4352, USA; tel 409-845-5246; fax 409-845-4070; e-mail waters@tamu.edu

**Associate Editor, Meeting Calendar: Susan Mulholland**, Archaeometry Laboratory, University of Minnesota-Duluth, 10 University Drive, Duluth, MN 55812, USA; tel 218-726-7957; fax 218-726-6979; e-mail smulholl@d.umn.edu

**Associate Editor, Remote Sensing and GIS: Apostolos Sarri**, Laboratory of Geophysical - Satellite Remote Sensing & Archaeoenvironment, Institute of Mediterranean Studies, Foundation of Research & Technology Hellas, Melissinou & Nikiforou Foka 130, P.O. Box 119, Rethymnon 74100, Crete, Greece; tel (30)-831-25146, (30)-831-56627; fax (30)-831-25810; e-mail: asaris@ret.forthnet.gr

### SAS Administration

**General Secretary: Robert Sternberg**, Department of Geosciences, Franklin and Marshall College, Lancaster, PA 17604-3003, USA; tel 717-291-4134; dept. tel 717-291-4133; fax 717-291-4186; e-mail R\_Sternberg@FandM.edu

### SAS Executive Officers 2001-2003

**President: Arleyn W. Simon**, Archaeological Research Institute, Department of Anthropology, Arizona State University, Tempe, AZ 85287-2402, USA; tel 602-965-9231, 6957(direct); fax 602-965-7671; e-mail Arleyn.Simon@asu.edu

**Vice President/President-elect: Gregory Hodgins**, Center for Applied Isotope Studies, University of Georgia, 120 Riverbend Road, Athens, GA 30602, USA; tel 706-542-1395; 706-542-6111; fax 706-542-6106; email ghodgins@arches.uga.edu

**Past President: Christine Prior**, Rafter Radiocarbon Laboratory, Institute of Geological & Nuclear Sciences, 30 Gracefield Road, PO Box 31-312, Lower Hutt, New Zealand; tel 64-4-570-4644; fax 64-4-570-4657; email C.Prior@gns.cri.nz

**Secretary/Treasurer: Felicia R. Beardsley**, Department of Anthropology, Univ. of California-Riverside, Riverside, CA 92521-0418, tel 909-787-5524; fax 909-787-5409; e-mail beardsley@qnet.com

**Internet and the World Wide Web: James Burton**, Department of Anthropology, University of Wisconsin, Madison, Wisconsin 53706-1393, USA; tel 608-262-4505; fax 608-265-4216; e-mail jhbunton@facstaff.wisc.edu

**Vice President for Intersociety Relations: Michael Richards**, Department of Archaeological Sciences, University of Bradford, UK; tel (01274) 235532; fax (01274) 235190; email: M.P. Richards@Bradford.ac.uk

**Vice President for Membership Development: Christian Wells**, Department of Anthropology, Arizona State University, Tempe, AZ 85287-2402, USA; tel 602-965-9231; fax 602-965-7671; e-mail christian.wells@asu.edu

**SAS Editor for Archaeometry: Steven Shackley**, Phoebe Hearst Museum of Anthropology, 103 Kroeber Hall, University of California-Berkeley, Berkeley, CA 94720-3712, USA; tel 510-643-1193, x-3; fax 510-642-6271; e-mail shackley@qal.berkeley.edu

**Editor, Archaeometry: Michael Tite**, Research Laboratory for Archaeology and the History of Art, Oxford University, 6 Keble Road, Oxford OX1 3QJ, UK; tel 44-(0)1865-515211; fax 44-(0)1865-273932; email Michael.Tite@rlaha.ox.ac.uk

**Editor, Journal of Archaeological Science: Julian Henderson**, The Department of Archaeology, University of Nottingham, University Park, Nottingham NG7 2RD, England, UK; email: julian.henderson@nottingham.ac.uk

SAS web page: <http://www.socarchsci.org>

### Published quarterly by the Society for Archaeological Sciences

Distributed to subscribers: \$20/year regular membership; \$15.00 student and retired; \$30.00 institutional; \$300 lifetime. Individuals add \$95.00/year for *Journal of Archaeological Science*; \$30/year for *Archaeometry*. Discounts also available on *Geoarchaeology* and other Wiley journals. Payable with major credit cards (+7%). ISSN 0899-8922.