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A BLOG FOR ALL SEASONS

In the SAS Blog, Rachel Popelka-Filcoff notes, “A recent editorial in Nature (477, 510, 29 September) outlines some of the threats to preservation and scientific study of our worldwide heritage. Rather than focusing on environmental or human effects physically altering heritage, this opinion piece focuses on the threats due to a lack of long term funding and lack of recognition. The authors point to the fact that the research is accomplished across disciplines without a home discipline. In addition, they suggest that the valuable research does not get the media attention and recognition that it deserves.”

Although archaeological finds are exciting and covered frequently in the news, the broader field is currently getting negative press due to statements by Florida Governor Scott about the need for anthropology. Gordon Rakita writes about this situation and the importance of discipline-specific blogs in his column within this issue. Take a look at the upcoming meetings and other information available online through the electronic version of the *Bulletin*.

Jay VanderVeen, Editor-in-Chief

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ANNOUNCEMENTS

Assistant Professor in Archaeological Science

The Department of Archaeology at Boston University seeks full-time, tenure-track Assistant Professor in Archaeological Science, specialty and geographic area open but in an area other than our existing strengths in geoarchaeology, GIS, and remote sensing (pending budgetary approval). Teaching load of 2 courses per semester, of undergraduate and graduate courses in archaeological science, in particular our undergraduate core course in Archaeological Science, as well as introductory and curricular offerings. We seek an individual with an outstanding research and publication record to attract graduate students and research funding. PhD in Anthropology, Archaeology, or related discipline; teaching experience, publications, and an active program of research expected; we are especially interested in a dynamic scholar whose research intersects with University-wide initiatives in environmental studies, climate change, and related issues. Starting salary commensurate with experience. Send cover letter, curriculum vita, names and contact information of 3 referees to Prof. Paul Goldberg (paulberg@bu.edu), Chair, Search Committee in Archaeological Science, Department of Archaeology, Boston University, 675 Commonwealth Avenue, Boston, MA 02215 USA. Deadline for applications is November 15, 2011.

Research Award

As a result of a collaborative effort with the International Symposium on Archaeometry, the Society for Archaeological Sciences will acknowledge an outstanding student poster by granting the R. E. Taylor Award, consisting of

US\$100 and a one-year subscription to the *SAS Bulletin*.

This prestigious award is named in honor of Professor Emeritus R. Ervin Taylor of the University of California at Riverside for his outstanding contributions in the development and application of radiocarbon dating in archaeological research and dedication to the founding of the Society for Archaeological Sciences, for his leading role as President (1980) and General Secretary (1981-2002) and his committed service as editor of the *SAS Bulletin*.

For more than a decade, receiving the Taylor R. E. award has enhanced the career of those who are now prominent young scholars and professionals. Entries will be judged on the significance of the archaeological problem, appropriateness of the methods used, soundness of conclusions, quality of the poster display, and oral presentation of the poster by the student, who should be the first author in order to compete.

ARCHAEOLOGICAL CERAMICS

Charles C. Kolb, Associate Editor

The column in this issue includes four topics: 1) Recently Published; 2) Reviews of Books on Archaeological Ceramics; 3) Forthcoming Meetings; and 4) Exhibitions.

Recently Published

A Passion for the Past: The Odyssey of a Transatlantic Archaeologist by Ivor Noël Hume (Charlottesville and London: University of Virginia Press, 2010) was mentioned as suggested reading in this column. It should be supplemented by the following, enlightening, recently published article: Ivor Noël Hume and Henry M. Miller "Ivor Noël Hume: Historical Archaeologist" *The Public Historian* 33(1):9-32 (Winter 2011). It is part narrative and part oral history with Miller as the interviewer.

Reviews of Books on Archaeological Ceramics

Archaeometric and Archaeological Approaches to Ceramics Papers presented at EMAC '05, 8th European Meeting on Ancient Ceramics, Lyon 2005, S. Y. Waksman (ed.), British Archaeological Reports International Series S-1691, Oxford: Archaeopress, 2007. 204 pp., 162 figures (figures, maps, plans, drawings and photographs), 34 tables, and 479 references. ISBN 9781407301297. £35.00 (paper). This volume presents a selection of papers delivered at the 8th European Meeting on Ancient Ceramics (EMAC) which took place in Lyon, France in 2005 and was organized by the Laboratoire de Céramologie (Universities Lyon 2 and Lyon 1). Twenty-seven papers were selected for publications but we are not informed about the number of presentations. The EMAC series of conferences began in Rome in 1991 and the conference is scheduled every two years in a European city and brings together specialists carrying out research on ancient ceramics using archaeological sciences. EMAC provides the opportunity to present and debate recent advances in this field of research, from methodological aspects to archaeological studies with fully integrated laboratory approaches. Two other EMAC publications have been reviewed in this column: *Ceramic in the Society: Proceedings of the 6th European Meeting on Ancient Ceramics, Fribourg, Switzerland, 3-6 October 2001*. (S. DiPierro, V. Serneels, and M. Maggetti, eds.; Fribourg, Switzerland: Department of Geosciences, Mineralogy and Petrography, University of Fribourg, 2003), *SAS Bulletin* 27(1-2):12-15 (2004); and *Vessels Inside and Outside: Proceedings of the Conference EMAC'07, 9th European Meeting on Ancient Ceramics, 24-27 October 2007, Hungarian National Museum, Budapest, Hungary* (Katalin Biró, Veronika Szulágyi, and Attila Kreiter, eds.; Budapest: Hungarian National Museum, 2009). *SAS Bulletin* 33(1):9-10 (2010).

The EMAC '05 publication has no overall conclusion about the papers, nor is there a summary of the papers which are, in the main, brief essays on an archaeological ceramics problem solved by laboratory analyses. Explanations tend to be brief and often wanting in interpretation. There is a meager discussion of the conference in the editor's "Preface" (p. 7) in which he notes that both

traditional and new EMAC themes were the foci of the presentations. The 162 illustrations in the 27 chapters are clear and readable as are the 34 tables. Each chapter has its own bibliographic references (the numbers of references varies per chapter from a low of 3 to a high of 40). The contributions do not have abstracts. A list of the 90 participants (pp. 201-204) follows the 27 contributions.

“Assessment of ancient vessel design with the Finite Element Method (FEM)” by A. Hein and V. Kilikoglou (pp. 9-12, 2 figures, 12 references). The authors discuss the significance of ceramics, experimental testing, the FEM, and mechanical and thermal loads. In addition, computer simulations, numerical approaches from the engineering sciences are reviewed. There are three case studies using FEM: Myrtos piriform jars, Hellenistic transport amphorae, and heat transfer in copper smelting furnaces.

“Contribution for a mineralogical thermometer to be applied to low fired and/or non-carbonate ceramics” by P. Ricciardi, L. Nodari, B. Fabbri, S. Gualtieri, and U. Russo (pp. 13-18, 6 figures, 1 table, 23 references). Studies on ceramics fired ca. 650° C employed XRF, XRD, micro-Raman, and Mössbauer spectroscopy in the analysis of illitic and kaolin clays. X-ray diffractograms show the effects of quartz on clay minerals and the formation of cristobalite at ca. 1050° C. The effectiveness of Mössbauer spectroscopy is emphasized.

“Investigating the substrate-glaze interface of ceramics with SEM-EDS and Raman spectroscopy” by C. Pacheco, R. Chapoulie, and F. Daniel (pp. 19-23, 6 figures, 1 table, and 9 references). Central Asian gilded ceramics of the 14th and 15th centuries are examined, raw materials characterized and laboratory-made specimens tested. The analysis of devitrification crystals and future research are discussed as are comparisons of Raman and *μ*-XRD profiles. “Ceramic sequence of 7000 years: archaeometrical study of pottery finds from Vörs, Máriaasszonyziget (SW Hungary)” by K. T. Biró, K. Gherdán, and G. Szakmány (pp. 25-31, 6 figures 1 table, 5 references). The ceramics span the period from Starčevo (Early Neolithic, 5500 BCE) to the Early Medieval Conquest. A diachronic assessment of raw materials, technologies of production and taphonomy are presented based on studies using petrographic microscopy and geochemical analyses

(XRF and INAA). Specimens examined include pottery from Lemgyel III culture, Balaton-Lasinja culture (n = 25 specimens), Kisapostó Early Bronze Age (n = 30 specimens), and Celtic/Early Roman materials. Common raw materials were used and the utility of petrographic analysis is emphasized.

“Production and use: temper as a marker of domestic production: The case of two Middle Neolithic villages in Concise (VD, CH)” by E. Burri (pp. 33-39, 5 figures, 23 references). The sites and excavations are described and analysis determined that the pottery temper was either crushed alpine pebbles or sand. The author contends that the NMB and Cortaloid pottery traditions coexisted and the spatial distributions of the pottery are discussed and future research postulated. “Early and Middle/Late Neolithic pottery production in Northern Calabria (Italy): Raw material provenance, paste preparation and firing techniques” by I. M. Muntoni, P. Acquafredda, and R. Laviano (pp. 41-48, 4 figures, 4 tables, 19 references). The authors report the geological contexts and the analysis of 42 samples using PXRD, XRF, and thin section petrography. Two Early Neolithic wares show similar compositions and fabrication techniques. Vessel shapes and surface finishes are the major sources of variation. “Pottery production in the Neolithic and Copper Age village of Maddalena di Muccia (Marche, Central Italy): Raw material provenance and manufacturing technology” by R. Laviano and I. M. Muntoni (pp. 49-56, 4 figures, 3 tables, 12 references). The archaeological and geological contexts are characterized and 49 pottery and 3 wall daub samples were studied using PXRD, XRF, and thin section petrography (which determined only 7 fabrics). The chemical and mineralogical data are generally consistent with firing temperatures for most ceramics fired at 600-800° C except that Middle Neolithic fine-painted pottery was fired 850-1050° C. The wall daub was rich in CaO. Raw material variability is also discussed. “Black-on-red painted pottery production and distribution in Late Neolithic Macedonia” by Z. Tsirtsoni, D. Malamidou, V. Kilikoglou, I. Karatasios, and L. Lespez (pp. 57-62, 7 figures, 1 table, 13 references). These ceramics are dated 4800/4700-3900/3800 BCE and the authors discuss the archaeological and chemical groups that have been discerned. SEM data and the analysis of 200 specimens by INAA

suggest a preference for fine non-calcareous clays that fired to 900-1000° C. “Bell Beakers bone based decorations from Guadiana River Middle Basin (Badajoz, Spain)” by C. Odriozola, A. Justo Erbez, and V. Hurtado Pérez (pp. 63-67, 5 figures, 1 table, 16 references). Sixteen specimens of Incised Bell Beaker “incrusted pottery” were assessed by XRF, XRD, and FTIR. The white inlaid paste came from powdered bone mixed with an organic agent (possibly bone marrow). “Archaeometrical investigations of Impasto pottery from Terramara of Gorzano (Modena, Italy)” by A. Cardarelli, G. Carpenito, S.T. Levi, S. Lugli, S. Marchetti Dori, and G. Vezzalini (pp. 69-74, 7 figures, 18 references). The Middle to Late Bronze Age pottery was examined by petrographic analysis, XRF, and PXRD. Twenty geological samples of sediments were also studied and the authors suggest that the potters used fine grained sediments sometimes tempered with grog and calcite. Their preliminary conclusions and suggested research are discussed.

“Exploring patterns of intra-regional pottery distribution in Late Minoan IIIA-B East Crete: The evidence the petrographic analysis of three ceramic assemblages” by E. Nodarou (pp. 75-83, 13 figures, 2 tables, 40 references). The period dates ca. 1400-1200 BCE and the three assemblages are detailed: Chrysokamino (a provincial farmhouse with coarse local ceramics), Mochlos (a town with coarse and fine local ceramics), and Petras (a large town with five distinct fabric types). The clay analysis found serpentine, sedimentary and igneous materials, granodiorite, fine red quartz, and clay pellets (the latter used in fine wares). Imported pottery was found in all of the assemblages. Fabrics and distributions are detailed. “Preliminary results of archaeometric analysis of amphorae and Gnathia-type pottery from Risan” by M. Daszkiewicz, P. Dyczek, G. Schneider, and E. Bobryk (pp. 85-93, 4 figures, 2 tables, 35 references). Risan is in Montenegro and dates 4th-2nd century BCE. The authors detail the ceramic forms (mostly bowls and amphorae) and some eastern Mediterranean imported pottery. The specimens were studied using thin section analysis and WD-XRF; refiring studies were done at 1150 and 1200 ° C. Six pottery groups are differentiated but the local clays do not match any of the groups. Hence, provenance remains “an open case.” “Tiles from the Lyon area in the 2nd century

BC: Local products or imports?” by N. Cantin, A. Desbat, and A. Schmitt (pp. 95-102, 3 figures, 2 tables, 11 references). Petrographic studies and chemical analysis (WD-XRF) were conducted on 109 specimens of *tegulae* from the site of Rue du Souvenir and seven other sites as well, plus six local clay samples. Four petrographic and two chemical groups are documented; the tiles are made from two different clays but all pastes are local. “Lyon amphorae in the North: Studies in distribution, chronology, typology and petrology” by P. Monsieur, P. De Paepe, and C. Braet (103-111, 4 figures, 1 table, 26 references). The authors provide background on the amphorae and site of Velzeke. The samples studied include 4,871 sherds (527 minimum vessels) of which 250 sherds (45 minimum vessels) are Lyon amphorae (2nd century CE). Three fabric groups are identified from 10 thin section studies and the fabrics and forms are discussed.

“Archaeometric characterisation of Roman wine amphorae from Barcelona (Spain)” by V. Martínez Ferreras, J. Buxeda i Garrigós, J.M. Gurt i Esparraguera, and V. Kilikoglou (pp. 113-119, 5 figures, 2 tables, 19 references). The authors discuss the production of amphorae in Spain, noting that there are at least 60 production centers in Catalan. Samples analyzed included 102 Pascual 1 amphorae specimens and eight clay samples. XRF and XRD data clearly demonstrate that there was a Roman wine amphorae production center in the area of ancient Barcino which also served as a consumption and redistribution center. “A late Roman pottery and brick factory in Sicily (Santa Venera al Pozzo)” by S. Amari (pp. 121-128, 20 figures, 31 references). The site was identified as an ancient Roman *statio* (Acium) and was the location of kiln-fired brick and tile during the 4th-5th century CE. Portable LNS and PIXE-alpha system studies were undertaken and the author discusses the architectural uses of these materials, provides a typology of the brick and tiles, and manufacturing marks. “The first Byzantine ‘Glazed White Wares’ in the early medieval technological context” by S. Y. Waksman, A. Bouquillon, N. Cantin, and I. Katona (pp. 129-135, 3 figures, 3 tables, 24 references). The ceramics date to the 7th century CE and the specimens studied came from well-defined archaeological contexts. Four groupings are considered: 1) Byzantine (= Istanbul; 16 ceramics and 5 glazes analyzed; 2) Middle East

(= St. Symeon; 12 pastes and 4 glazes); 3) Balkans (= Caričin Grad; 5 pastes and 8 glazes); and 4) Italy (= Saint Blaise and Hyères; 4 pastes and 4 glazes). EXD-SEM studies indicate all of the glazes have a high lead content and the authors suggest that there was a “reintroduction” of glazing techniques in Byzantium. The role of Middle Eastern products “later on” is also discussed. “The ‘polished yellow’ ceramics of the Carolingian Period (9th century AD): Samples from Zalavár, South-West Hungary” by H. Herold (pp. 137-144, 8 figures, 2 tables, 5 references). The author’s goal is to characterize this “special” ware. The author’s goal is to characterize this “special” ceramic and diachronic changes in production based on an assessment of 50 sherds and seven clay samples. Petrographic analysis discerned four groups (Groups 1, 2, 3, and 4); XRF determined three similar groups with Group 4 well differentiated; XRD found that Group 4 had a higher degree of vitrification; and SEM documented that Groups 1 through 3 were a “continuous textural set.” Macroscopic observations are also reported. “Lead-glazed slipware of 10th-11th century Akhsiket, Uzbekistan” by C. Henshaw, Th. Rehren, O. Papachristou, and A. A. Anarbaev (pp. 145-148, 7 figures, 5 references). The site is located in the Ferghana Valley, northeastern Uzbekistan and the analysis focused on glazed from a limited range of vessels (bowls, plates, and lamps) using SEM and SEM-EDX. Preliminary analyses are reported but the authors note that an expanded assemblage of samples should be studied.

“Archaeometric investigation on 13th century glazed and slipped pottery found in Liguria and Provence” by C. Capelli, R. Cabella, and S. Y. Waksman (pp. 149-154, 2 figures, 1 table, 26 references). Three wares were studied: Savona archaic sgraffito (SAS), port Saint Symeon ware (PSSW), and Ligurian Protomajolica (LPM). The authors review various hypotheses on the relationships of these three ceramics and employ thin section studies, SEM-EDS, and WD-XRF analyses. There are clear compositional and technological distinctions among all three. “The archaeometric study of white slips: A contribution to the characterisation of the Medieval Mediterranean productions” by C. Capelli, R. Cabella (pp. 155-159, 2 figures, 19 references). Optical microscopy, and SEM-EDS studies were undertaken on two clay-rich slips and two clay-poor

slip. The chemical compositions are reported, variations discussed, and glaze-white slip interactions documented. “From furnace to casting moulds: an exceptional 14th century copper-metallurgy workshop studied in the light of refractory ceramic materials” by I. Katona, D. Bourgarit, N. Thomas, and A. Bouquillon (pp. 161-167, 5 figures, 1 table, 10 references). A small workshop in the center of Paris (62 rue des Archives) produced copper alloy specimens, jewelry, and metal vessels. Refractory sheds (n = 27) including 12 crucible specimens and six mould fragments were studied using thick and thin section analyses and PIXE. Two groups of crucibles were identified but the refractory bricks were homogeneous. Comparisons reference other sites. “The decorative and architectural terracottas in Ferrara” by R. Fabbri, S. Ciliani, M. Bagatin, and F. Bevilacqua (pp. 169-173, 15 figures, 17 references). The production methods for ornamental architectural *cottos* for cornices and label and string courses are reviewed and the authors provide a survey of terracotta, color finishes, and treatments found in Ferrara.

“Archaeometric characterization of Middle Age and Renaissance tin lead glazed pottery from Barcelona” by J. Garcia-Iñáñez, J. Buxeda i Garrigós, M. Madrid i Fernández, J. M. Gurt i Esparraguera, and J. A. Cerdà i Mellado (pp. 175-180, 5 figures, 2 tables, 13 references). This preliminary study of majolica production focused on materials from kiln dumps and had a the goal to discern chemical and technological changes in production in 14th century green and black glazed ware versus 16th and 17th century luster, blue, and blue and yellow glazed pottery; the glazes have a high tin and lead content. A total of 99 specimens were studied using XRF, XRD, and SEM-BS-EDX. Three chemical groups are identified and technological variations reported. Pigments were always applied on top of the raw glaze and two distinct firing processed determined. Chronological differences in production are also discussed. “Compositional studies on Iznik ceramics pigments” by R. Bugoi, A. Climent-Font, B. Constantinescu, A. D’Alessandro, P. Prati, and A. Zucchiatti (pp. 181-185, 2 figures, 3 tables, 10 references). Twenty-one specimens dating from the 15th to 17th centuries from the collections of the National Museum of Romania’s History, Bucharest,

were studied using ED-XRF and PIXE to assess paint pigments. The source of the blue pigment was found to be in Saxony. “Turkish ceramics in the Crimea on the eve of the Porta invasion (problems of chronology of a certain group of vessels)” by I. Teslenko (pp. 187-193, 3 figures, 1 table, 32 references). Specimens of Miletus ware (red clay with underglaze paint) from 15 sites in Crimea were examined to discern the initial and final dates of production within the 14th to 16th centuries. More precise dates were not determined. “Preliminary comparative archaeometric results on Inka and Colonial ceramics from Paria (Oruro, Bolivia)” by V. Szilágyi, J. Gyarmati, G. Szakmány, and M. Tóth (pp. 195-199, 5 figures, 3 references). The authors review the Inka and Colonial periods and their ceramics. Petrographic and XRPD studies were done on 54 Inka and four Colonial era specimens. The raw materials used in pottery production did not change significantly, but the locally-made Inka pottery was fired 650-750° C while the Colonial specimens were fired 800-900° C.

Pots, Farmers and Foragers: How Pottery Traditions Shed a Light on Social Interaction in the Earliest Neolithic of the Lower Rhine Area,

Bart Vanmontfort, Leendert Louwe Kooijmans, Luc Amkreutz, and Leo Verhart (eds.), Archaeological Studies Series, Amsterdam: Leiden University Press; distributed by the University of Chicago Press, 2011. 213 pp., illustrations, ISBN-13: 9789087280864, ISBN: 9087280866, \$62.50 (paperbound). The treatise is co-edited by Bart Vanmontfort (research fellow in prehistory at Leuven University, Belgium), Leendert P. Louwe Kooijmans (emeritus professor in prehistory, Leiden University), Luc Amkreutz (curator prehistory of the Netherlands National Museum of Antiquities at Leiden), and Leo Verhart (curator archaeology and early history of the Limburg Museum at Venlo. In this volume, 26 European scholars have prepared 21 chapters in which they propose a new synthesis of the complex interaction of the communities of the western part of the North European Plain during the early Neolithic period. Pottery played a significant role in the study of the earliest Neolithic stage, and the most advanced northwestern settlements in the expansion of the central European Linear Pottery culture during the second half of the sixth millennium BC is situated in the Lower Rhine Area. Simultaneously with this

expansion, the northernmost extension of the synchronic and enigmatic pottery groups La Hoguette and Limburg. In this new synthesis, “contributors attempt to convince the reader that pottery and its associated habits were among the first of the many new societal aspects to be adopted by neighboring foraging communities.” Each chapter has its own references. The authors demonstrate how small sherd assemblages can yield valuable information about the spread of technologies and peoples but also indicate that there is a great deal of work yet to do. This volume is not easily to read but provides a foundation for future research agendas.

“Early pottery traditions in the Lower Rhine Area: An Introduction” by Bart Vanmontfort (pp. 11-13, 11 references). Pottery is viewed as an indicator of changes in food preparation and coincides with foraging-farming. Neolithization began during the middle of the 6th millennium and ended during the 4th millennium BCE. The goal of this monograph is to report on the collection and analyses of early non-Linearbandkeramik pottery in the area and report the results of a workshop that focused on contexts, production technologies, and morphological variability. The main ceramics were Linearbandkeramik (LBK) in the Lower Rhine (late 6th millennium and early 5th millennium BCE) with regional and chronological variants: Begleitkeramik, Danubian Blicquy/Villeneuve-Saint-Germain (BQY/VSG), and La Hoguette and Limburg. “Bowls of contention: Mesolithic sites with pottery in the Lower Rhine Area” by Luc W. S. W. Amkreutz, Bart Vanmontfort, Marc De Bie, and Cyriel Verbeek (pp. 15-26, 6 figures, 47 references). Five Mesolithic sites with pottery and the Neolithization process in the Campine region are reported. The pottery is described (ca. 200 sherds and a single vessel), indigenous pottery traditions, “moving” pots, and the possibility of pottery deposition after the Late Mesolithic are among scenarios reviewed. “The ceramisation of the Low Countries, seen as the result of gender-specific processes of communication” by Leendert P. Louwe Kooijmans (pp. 27-39, 2 figures, 1 table, 61 references). Pottery fabrication dates to ca. 5000 BCE with distinctive native styles and technologies; 24 sites have pottery including La Hoguette, Begleitkeramik, LBK/Limburg, Early Swifterbant (5000-4600 BCE) and “classical” Swifterbant (ca.

4000 BCE, cal. C14). The author discusses the process of ceramisation, ceramic samples, gender implications, and the need for pots; one conclusion is that “women may have learned the art by hearsay” (p. 35). “La Hoguette, Limburg and the Mesolithic: some questions” by Claude Constantin, Michael Ilett and Laurence Burnez-Lanotte, (pp. 41-48, 1 figure, 35 references). The authors review the debate on the widely-distributed La Hoguette and Limburg pottery traditions which emerged on the western boundaries of LBK ca. 6th Millennium BCE; there is no firm association with LBK settlements. Production technologies are related to LBK, the analysis of three LBK sites is reported, and there is a discussion of contexts and relationships to Mesolithic agriculture (distinction are “practically impossible” to make between cereal and wild grass pollens), in addition, radiocarbon dates are also questioned. “The cannelured version of *Begleitkeramik*: A survey of finds and sites” by Fred T. S. Brounen and Anne Hauzeur (pp. 49-63, 12 figures, 10 footnotes, 69 references). A consistent number of Early Neolithic *Begleitkeramik* sherds are found in 25 geographically scattered sites and match the Rhine-Meuse stylistic group of LBK and some are related to La Hoguette. The history of the version (variant) is delineated: decorative elements, distributions, relative dating, and associations with flint assemblages (microburins are typical). A tentative scenario is provided.

“Limburg sherds at Fexhe-le-Haut-Clocher *Podrî l’Cortri* (Liège province, Belgium)” by Dominique Bosquet (pp. 65-68, 2 figures, 9 references). Bowl sherds with bone and bone and grog temper are from the pioneer phase of LBK. The morphology and decorations are discussed and a short life span of the house/site (<10 years) is postulated. LA-ICP-MS data shows that the sherds were not produced locally. “Non-LBK in Dutch LBK: Epi-Limburg ware at Geleen *Janskamperveld*” by Pieter van de Velde (pp. 69-78, 8 figures, 3 tables, 19 references). Early Neolithic pottery from the LBK-Ib/Flomborn period in the southern Netherlands is discussed. A sample of 12,000 sherds (= 4000 pots) is discussed in terms of decorations and temper; 40 sherds are detailed (64% clay pellet temper, sand, and/or no temper; grog is <1%). Several hypotheses are advanced but the author concludes that non-LBK sherds cannot be automatically grouped with LBK. “Non-LBK

pottery from Wange and Overhespen” by Marc Lodewijckx (pp. 79-82, 3 figures, 8 references). The author discusses two Early Neolithic sites, contexts, pottery, and flint assemblages. Most pottery “fits” the characteristics of LBK pottery and he success that the sites had their roots in LBK culture. “Not just bits of bone and shades of red: Bruchenbrücken (Hesse, Germany) and its La Hoguette pottery” by Tessa Maletschek (pp. 83-94, 13 figures, 19 references). Excavations took place in 1984-1985 and 2003 at the LBK site with 17 house remains (Figure 13 is a splendid site plan) and 15 C14 dates are reported (ca. 5300 BCE). There were 55 La Hoguette sherds in LBK pits: 42% have typical bone temper, 58% have organic, sand and or grog temper. XRF analysis suggests local manufacture. The author reports on the pottery technology, morphology, and decoration, spatial distribution, and intra-site patterning. “La Hoguette north of the Rhine: The Ede *Frankeneng* site revisited” by Fred T. S. Brounen, Erik Drenth, and Peter Schut (pp. 95-104, 8 figures, 14 footnotes, 41 references). Two fragmented Early Neolithic pots are discussed in terms of context, decoration, and association with flint blades. Comparisons are made with other sites and wider geographic perspectives. Possible Swifterbant or non-Bandkeramic associations are discussed. “Ittervoort *Damszand*: A find of La Hoguette pottery and *Begleitkeramik* in the Dutch province of Limburg” by Fred T. S. Brounen, Erik Drenth, and José Schreurs (pp. 105-113, 7 figures, 14 footnotes, 17 references). The discovery of this site raises the number of the Early Neolithic La Hoguette sites to four. The authors consider the natural environment and human impacts. La Hoguette and *Begleitkeramik* are found in the same context which refutes a conclusion of a previous chapter in this volume by Brounen and Hauzeur.

“Some technological aspects of LBK and non-LBK pottery in the Rhineland” by Erich Claßeb (pp. 115-124, 6 figures, 42 references). Data on fifteen sites allow a reconstruction of Early Neolithic LBK settlements. The author discusses LBK pottery from these sites: 3,644 “vessel units” – 1,102 decorated, 1,051 undecorated with rims, and 1,491 undecorated without rims. Eight types of temper, six temper sizes, and Munsell color determinations are noted. The description of a Limburg vessel from the Königshaven 1 site suggests that Limburg ceramics

were produced or used about 50 years longer in this area as opposed to the Aldenhovener Platte area to the southwest. “La Hoguette in the town centre of Soest (Westphalia)?” by Benedikt Knoche (pp. 125-129, 4 figures, 22 references). The site and pit F264 are described as having probable La Hoguette pottery. The implications for settlement history are reviewed. “Fine plant temper and the origin of the Swifterbant culture” by Claude Constantin (pp. 131-134, 3 figures, 3 footnotes, 16 references). Plant remains (*Neckera crispa*) as imprints after firing suggest the use of cereal threshing waste was used as temper in 38 Belgian sites and five in the Netherlands. The data suggests the hypothesis that the “whole technique of pottery-making” was passed between Swifterbant and Danubian cultures of Belgium and the Netherlands, and that “people actually made pottery together.” “The Swifterbant pottery tradition (5000-3400 BC): Matters of fact and matters of interest” by Daan C. M. Raemaekers and J. Paulien de Roever (pp. 135-149, 9 figures, 1 table, 2 footnotes 43 references). An overview of Swifterbant pottery focuses on the major assemblages in terms of manufacturing techniques, vessel forms, temper, and sites for three chronological divisions: early phase (5000-4600 BCE), middle phase (4600-3600 BCE), and late phase (3600-3400 BCE). The paper has two parts: 1) a discussion of factual information and 2) issues under discussion (competing theories on sources and the relevance of pointed vessel base morphology). “Early Swifterbant pottery from Hoge Vaart-A27 (Almere, the Netherlands)” by Hans Peeters (pp. 151-160, 8 figures, 2 tables, 5 footnotes, 16 references). The pottery is from a hunting campsite and the author discusses the archaeological data, palaeoenvironmental data, and chronologies. Four phases are discern (4949-4360 BCE, cal. C14) based on 66 dates (Figure 3). Pottery technology, morphology, decoration, functions, and behavioral inferences are reviewed. The pottery is locally made over a short period of time and there is no evidence of cultivation or domesticated livestock. “Swifterbant pottery from the Lower Scheldt Basin (NW Belgium)” by Philippe Crombé (pp. 161-165, 2 figures, 12 references). Four sites have “hunter-gatherer” pottery and the author discusses the “minor” differences in technologies (temper types), morphology (vessel forms), and decorations. Eleven C14 dates (first half of the 3rd millennium BCE) are

reviewed and he details the incompatibility of dates derived from food crusts on pottery versus dates from associated charcoal and carbonized not shells, bone and seeds.

“The first pottery in South Scandinavia” by Søren H. Andersen (pp. 167-176, 9 figures, 19 references). Late Mesolithic Ertebølle culture (4700/4600 BCE) is related to EBK (5400-4600 BCE). The oldest associations are in western Denmark (Jutland) and Schleswig-Holstein but there are no absolute dates from Zealand or southern Sweden. Andersen discusses pointed-base vessels and lamps in terms of construction, shapes, decoration, and functions (domestic and one ritual [burial] context). There is a lack of comparative data from northwestern Germany where the shapes and temper are different and Ertebølle ends abruptly ca. 4000 BCE. “Technological and typological analysis of Ertebølle and early Funnel Beaker pottery from Neustadt LA 156 and contemporary sites in northern Germany” by Aikaterini Glykou (pp. 177-188, 19 figures, 29 references). The transition from the Final Mesolithic Ertebølle and Early Funnel Beaker period is not chronologically secure in the areas of Schleswig-Holstein and Mecklenburg-Vorpommern. The author describes the pottery in terms of fabrication technologies, temper (burnt and crushed granite vs. sand tempers), vessel formation (pointed bases) and rim typologies. Suggestions for additional research are presented. “The earliest pottery in Britain and Ireland and its Continental background” by Alison Sheridan (pp. 189-208, 10 figures, 5 footnotes, 76 references). There is a brief review of Neolithization and how pottery may have arrived from the Continent via four possible routes: 1) South Brittany north to Ireland; 2) northern France to much of Britain and most of Ireland; 3) northwestern France to southwestern Ireland; and 4) the Trans-Manche west or Normandy cross-channel to southwest Britain. Archaeological data, vessel forms, and chronologies are discussed but future research is needed. “Early pottery traditions in the Lower Rhine Area: Concluding remarks” by Leendert Louwe Kooijmans and Bart Vanmontfort (pp. 209-213, 17 references). The chapter provides a summary of the papers and the focus on early and developing pottery traditions in Western Europe, focusing on interactions between three spheres: the Lower Rhine,

Danubian Central Europe, and Western Europe (notably La Hoguette and Limburg).

Studies on Old Kingdom Pottery, Teodozja I. Rzeuska and Anna Wodzinska (eds.), Centre d'Archéologie Méditerranéenne de l'Académie Polonaise des Sciences avec la collaboration de l'Institut d'Archéologie de l'Université de Varsovie. Warsaw: Wydawnictwo Neriton, 2009. 240 pp., 20 color plates, ISBN 978-83-7543-121-6, \$165.00 US CY (hardback). Only 330 copies of this volume were published and copies are hard to find, especially in North America. This publication is the result of a workshop held in 2007 on Old Kingdom ceramics (2600-2100 BCE) organized by Rzeuska (Polish Academy of Sciences, Research Centre for Mediterranean Archaeology) and Wodzinska (University of Warsaw, Institute of Archaeology, Department of Egyptian and Nubian Archaeology). The volume focuses on technological, chronological, and cultural analyses of Old Kingdom pottery through the analysis of raw materials used in production, shaping techniques, and surface treatments. The book has "Acknowledgments" (p. 7), a list of 71 "Abbreviations" (pp. 9-10), a "Foreword" (pp. 11-12), 12 chapters, and a section of 20 color plates at the back of the book. Each chapter has its own references but there is, unfortunately, no index. Plates I-XX [color] are clustered at the end of the volume.

Some of the published standard works on the subject are in German: Dorothea Arnold (ed.), *Studien zur altägyptischen Keramik* (Deutsches Archäologisches Institut, Abteilung Kairo. Mainz-am-Rhein, Germany: Philipp von Zabern, 1971, rev. ed. 1981). Dorothea Arnold and Janine Bourriau edited an English-language volume written by Arnold with Paul T. Nicholson, Colin Hope, and Pamela Rose, "Fascicle 1: Techniques and traditions of manufacture in the pottery of ancient Egypt," in *An Introduction to Ancient Egyptian Pottery*, Deutsches Archäologisches Institut Abteilung Kairo Volume 17, Mainz-am-Rhein, Germany: Verlag Philipp von Zabern, pp. 1-141. Readers will need to be familiar with the "Vienna System" of paste analysis devised in 1981 by Dorothea Arnold, Manfred Bietak, Janine Bourriau, Helen and Jean Jacquet, and Hans-Åke Nordström. The system differentiates Nile Silt fabrics (originally designated "Nile fabrics") and

Marl fabrics. For details, see Nordström and Bourriau "The Vienna System", Chapter 4 in *Ceramic Technology: Clays and Fabrics*, Fascicle 2 in Arnold and Bourriau (eds.) *An Introduction to Ancient Egyptian Pottery* (1993), pp. 168-182, pls. I-VII. Brief summaries of the contributions follow.

Bettina Bader "The Late Old Kingdom in Herakleopolis Magna? An interim interpretation" (pp. 13-41, 12 figures [94 total illustrations], 116 footnotes, 47 references). Bader discusses the site's chronology, context, tombs, and differences in the ceramic assemblages: First Intermediate period, Early Middle Kingdom and Old Kingdom. Vessel shapes (open, restricted, and closed vessels and bread moulds), fabrics (Nile Silt B2, C1 and C2), and decoration (red slip, red polished, red slipped and polished, and white slip) and compares these to other corpora. Several possible conclusions are presented. Typo (p. 38): Twelfth = Twelfth. Miroslav Barta "A mistake for the afterlife?" (pp. 43-48, Plate IA [one color illustration], 3 figures, 13 footnotes, 16 references). The excavation of the 6th Dynasty tomb of Qar Junior is reported, focusing on a group of 15 *in situ* Nile Silt A vessels (most closed with Nile mud stoppers) that "imitated" amphorae and pithoi jars. The author concludes that the potter copied a genuine vessel but conflated Egyptian and Levantine pottery techniques into one. He comments that the vessel "carries 'too much' information" (p. 48). Mariusz Jucha "Beer jars of Naqada III period. A view from Tell el-Farkha" (pp. 49-60, 3 figures, 41 footnotes, 22 references). The site is on the Eastern Nile Delta and has 22 graves: Group 1 = 16 graves mostly with wine jars and Group 2 = 5 graves with beer jars. Grave 55 (the latest in Group 2) is the focus of the report and had mostly beer jars. These jars have flat or rounded bases, Nile fabrics, and scraped surface decorations; some earlier pottery types dated to the 1st Dynasty. Comparisons are made to other grave ceramics. Beer jars with wavy surface decoration are chronologically later and Jucha discusses beer jars, brewing vats, and related chronologies. It is not certain in which type of vessels Predynastic beer was stored. Typos: (p. 59) Supplement = Supplement, (p. 60) Potery = Pottery). Heidi Kopp "Die Rote Pyramide des Snofru in Dahschur - Bemerkungen zur keramik" (pp. 61-69, 6 figures, 21 references). Kopp describes the excavation, chronologies, and the

ceramics recovered from the southwest corner of the pyramid and the pyramid temple complex. The focus of her report is on ovoid jars, open bowls, a variety of miniature vessels, restricted mouth and closed vessels, and a pot stand. There is a mineral paste analysis and she compares this corpus with other assemblages. Sylvie Marchand "Abou Rawash a la IVe dynastie. Les vases en céramique de la pyramide satellite de Redjedef" (pp. 71-94, Plate IB [one color illustration], 5 figures, 76 other illustrations, 1 table, 34 footnotes, 50 references). Excavations at the pyramid are described briefly and locations and contexts reviewed. The chapter focuses on funeral artifacts including ceramics, flint blades, and calcite vessels (jar and stopper and bowl). The pottery was made from a variety of fabrics: Nile Silt B1, B2, and B2 variants 1 and 2; C variant 1; Marl P9 mixed clay) and P8 (calcareous). Meidum Ware bowls were produced using Marl P7 and Nile C variant 2. Bowls, miniature vases, and miniature jars are discussed. Detailed statistical information is provided (Table 1, pp. 83-85) and there are splendid drawings of the vessels.

Agnieszka Maxzynska "Old Kingdom pottery at Tell el-Farkha: Some remarks on bread moulds" (pp. 95-111, 17 figures, 19 footnotes, 16 references). This site has seven phases but the report focuses on the pottery from Central Kom at the end of the Early Dynastic and beginning of the Old Kingdom period (phases 6 and 7). Seventy percent of the ceramics are "rough coarse pottery" (R1-Ware) and the most dominant shapes are bread moulds with thick chaff temper; bread moulds were vessels of daily use. There are comparisons of the typology presented here with that of the Italian excavation reports from the same site, plus a detailed discussion of rim types, vessel sizes, and decorative patterns. The relationship of bread and beer is also noted. Typo (p. 99) rimes = rims.

Mary Owenby "Petrographic and chemical analyses of select 4th Dynasty pottery fabrics from the Giza Plateau" (pp. 113-131, Plates II-IX [33 thin section color micrographs], no figures, 2 tables, 44 footnotes, 25 references). Appendix I contains the macro- and microscopic descriptions of the sherds, Appendix III provides the XRF data, and Appendix II contains the thin-section images. The author discusses previous petrographic and chemical

analyses (mostly Bourriau's work) and she selected ten rim sherds of Nile clay fabric and two Marl clay specimens for the current study. There are also descriptions of the tempers and slips (white or red) or plain (uncoated). The methodologies are delineated (pp. 115-117) with initial examination by 25x binocular microscopy (descriptions of porosity, structure, hardness, Munsell colors, minerals, and plant remains). Two to four thin sections were prepared for each of 12 specimens. She discusses grain shapes of inclusions (Powers' scale of roundness), chemical compositions using XRF (30 elemental variables), and results of 36 analyses using SPSS programmed PCA (Principal Components Analysis). Owenby mentions SEM analysis of white slips (predominantly limestone or gypsum) on Nile clay vessels from Saqqara. There is also a discussion of forming techniques and firing temperatures. Teodozja I. Rzeuska "Pottery of the Old Kingdom -- between chronology and economy: Remarks on mixed clay in the Memphite Region" (pp. 139-148) with a contribution by Mary Owenby: "Petrographic examination of P.60 samples" (pp. 149-152), Plates X-XIII [20 color illustrations], Plates XIV-XV [10 thin section color micrographs], 2 figures, 55 footnotes, 34 references). This chapter is an elaboration of the author's 2008 publication on Old Kingdom pottery from the West Necropolis at Saqqara. The architecture, tombs, and "rich and varied pottery assemblage" (p. 140) are noted. Vessels were fabricated from Nile silt (A, B1, B2, C, and E) and Marl clay (C1 and C2 variants). Some early Bronze Age jars were imported from the Levant and show up in the assemblage. He discusses the pottery made from P.60 clay (19 vessel shapes with technological homogeneity), the related geology, and physical properties and suggests that this is Marl Clay A4. The author has no idea about the organization of production since workshops are unknown and the clay is "popular" in the region of the Memphis necropolis. He discusses the diffusion of P.60 ceramic form 22, reviews five scenarios, and comments on the use of the form as a chronological marker. Owenby provided petrographic descriptions of six specimens and suggests the possibility of a mixture of Marl clay (with the presence of highly weathered volcanic rock) with added Nile sediment that provided a white "scum" surface to the pottery. Firing temperatures were 800-900°C.

Sarah L. Sterling “Pottery attributes and how they reflect intentionality in craft manufacture/reproduction” (pp. 155-186, 7 figures, 13 tables, 68 footnotes, 43 references). The author discusses craft production as evidenced two ways: 1) widespread similarity in vessel forms known throughout Egypt and 2) artistic representations of potters using a wheel a Giza (2100-2000 BCE), Beni Hassan (2000-1650 BCE), and the Tomb of Ti at Saqqara (2450-2345 BCE). Her interpretive presentation refer to both Egyptian and American ceramic studies (the latter include Costin, Eerkens, Longacre, O’Brien, and Prudence Rice). She focus on the Meidum bowl and jars, provides five cross-semblage comparisons, reviews clay types and vessel measurements, an employs Coefficients of Variation, Analysis of Variants (ANOVA), Weber fraction, and transmission fidelity analyses (the results are reported in Tables 5-13). The geology, clay types and sources, and morphological characteristics suggest chronological trends: 2nd Dynasty vs. 3rd-4th Dynasty and 3rd-4th Dynasty vs. 6th Dynasty. Sterling defines Meidum lineages and suggests that proto-bowls derived from 2nd Dynasty jars. The data indicates that the mass production of pottery could not be conclusively proven at Giza and Elephantine. Stefanie Vereecken, Marleen De Meyer, Tosha Dupras, and Lana Williams “An Old Kingdom funerary assemblage at Dayr al-Barsha” (pp. 187-207, Plates XVI [two color illustrations], 8 figures, 240 other illustrations, 9 tables, 80 footnotes, 47 references). The site in Middle Egypt was an Old Kingdom burial ground and the authors describe the coffins and grave goods, and provide some osteological analysis. The pottery was mostly beer jars made from Nile fabric C with a variety of rim forms and as well as bread moulds, plates, Meidum bowls, and vats dating to the 6th Dynasty. Anna Wodzinska “Domestic and funerary/sacral pottery from the Fourth Dynasty Giza” (pp. 209-224, Plates XVII-XX [8 color illustrations], 19 figures, 2 tables, 66 footnotes, 46 references). The focus is on the site of Heit el-Gurob pottery including bread moulds, spouted basins, and miniature plates. Funeral ceramics included hole-mouth jars, “tall vessels,” censers, miniature jars and bowls, basins, and other forms. She compares the ceramic types from the settlements and burials, noting differences in clays, manufacturing methods, surface treatments, functions, chronologies, and use of white washes on

the pottery. Pottery production at Giza was, she concludes, “very complex.” Lastly, Anna Wodzinska “Work organization in the Old Kingdom pottery workshop: The case of the Heit el-Gurob site, Giza” pp. 225-240, 19 figures, 50 footnotes, 23 references). She compares a modern pottery workshop at el-Qasr in the Dachla oasis and its relationships to pottery workshops depicted in the Tomb of Ti (5th Dynasty). The ceramic assemblage at Heit el-Gurob had 200 pottery types and she discusses manufacturing techniques, rim forms, and fabrics (98% Nile alluvial clays, <2% Marl clay). The site, she states, is a highly specialized workshop using local Marl clays and suggests a “massive ceramic production” (p. 239), following Prudence Rice’s characterization of large workshops (1987:190).

An Archaeology of Black Markets: Local Ceramics and Economics in Eighteenth Century Jamaica,

Mark W. Hauser, Florida Museum of Natural History: Ripley P. Bullen Series. Gainesville: University Press of Florida, 2008. xxiii + 272 pp., 51 figures, 14 maps, 16 tables, bibliography, index. ISBN 978-0813032610, \$65.00 (hardcover). This volume begins with a contextual Foreword by Jerald T. Milanich, editor of the Bullen series. Anthropological archaeologist Hauser, a faculty member at Northwestern University (Evanston, IL, USA), focuses on the history of slavery, the complexity of trade networks and consumption patterns, production and consumption patterns of the enslaved and their role in pottery production, and economic conditions in 18th century Jamaica and also has important discussions of archaeological excavations and pottery production. He explores these issues by focusing on “yabbas,” a kind of pottery made by people of African descent in 18th century Jamaica, to draw out how solidarities were built and maintained in the everyday by enslaved Jamaicans. Hence, the volume is a multi-faceted assessment of Jamaica in which Hauser employs ethnographic research, documentary sources, and ceramic analysis but the focus of the volume is really on the Jamaican internal market system within the context of the 18th century Trans-Atlantic economy. The volume has the obligatory “Acknowledgments” and an “Introduction” (pp. 1-12) preceding six chapters and two appendices plus a bibliography containing 785 references (pp. 219-261) and a

double-column index combining proper nouns and topics (pp. 263-269). Three chapters and two appendices concern ceramic production and distribution.

In Chapter 1, “Historical Archaeology of the Caribbean Plantation” (pp. 13-38), Hauser reviews the geography and history of Jamaica but focuses on the Jamaican plantation system (1690s-1840s), notably plantation economy, the colony and community, the plantations and ‘in between’ where the enslaved people “fit” in the socioeconomic system. The emphasis of his book is a study of the “in-between” archaeological sites. He asks the reader to consider the significance of Jamaica’s internal market system as central to trade networks and how these were reflected in determining what ceramic forms were produced, distributed, and consumed on the island.

Chapter 2, “Markets of Contention: Historical and Legal Perspectives on Informal Economies in Eighteenth-Century Jamaica” (pp. 39-66), focuses on the internal economy, market demands, market locations (depicted and discussed over three centuries: 17th, 18th, and 19th), an exchange system involving livestock and commodities, and the “jobbing out” of enslaved labor between planters. Hauser documents the intensity of the informal economy, market regulations and “higgling” (haggling and bargaining) characteristic of informal markets run and patronized by the enslaved. The Jamaican market system provided an opportunity for the economic freedom of the enslaved, and the Sunday market served as an economic concept (independent production and distribution) and a place that also offered social networks for commerce as well as sociopolitical resistance by the enslaved. He also characterizes six of these markets documented in the historic literature and seven archaeological sites in central Jamaica.

Chapter 3, “Between Urban and Rural” (pp. 67-92), begins with a discussion on local economies, distances between cities and markets and transit links via roads and waterways. Patterns of urban and rural slavery in 18th century Jamaica are detailed and the seven archaeological sites and their chronologies reported. Hauser’s site selection was based on four criteria: 1) tight temporal control; 2) location across

four discrete Jamaican regions; 3) linkages between sites provided by an extensive transit (road and waterway) network; and 4) variation of site types across rural and urban Jamaica. The archaeological sites included four rural sites: three plantations (Drax Hall, Seville, and Thetford) and one “provisioning estate” (Juan de Bollas); and three urban sites (Old King’s House [the Governor’s residence], the Old Naval Dockyard, and St. Peter’s Church). Hauser writes that “enslaved laborers of plantations were able to acquire through the local economy a vast amount of material goods” (p. 79). He also discusses the characteristics of sugar-producing estates, differences in foodways and the urban scene as cosmopolitan center of Port Royal fell on hard times. A portion of the chapter is devoted to European and Jamaican ceramics, Spanish jars, and other material culture. Notable in the urban assemblages are jewelry, glassware, tobacco pipes, local ceramics, porcelain, tin-glazed wares, cream-colored wares and slip ware.

Chapter 4, “Routing Pots: Ceramics of the African Diaspora” (pp. 93-119), provides a discussion of pottery terminology: yabbas (defined as Jamaican ceramics), colono-ware, colonoware, Afro-Caribbean ware, and Criollo ware. The enslaved – probably women – independently produced ceramics some of which illustrated West African ceramic traditions. Hauser reviews ethnoarchaeological research, notably coastal Ghana, contrasting Caribbean pottery fabricated in the eastern Caribbean by enslaved African laborers and indigenous Carib peoples. Emerging European capitalism is also considered. A goal of this essay is for scholars to recognize regional heterogeneity in pottery manufacture and not consider these ceramics as indicators of ethnic or cultural identity. Hence his use of the term yabbas and the plea to reject the homogenous label of “colonoware” when describing Caribbean earthenware.

The emphasis of Chapter 5, “Rooting Pots: Jamaican Colonial Ceramics” (pp. 120-159), is on yabbas (which he now defines as a coarse, sometimes low-fired earthenware produced by African Jamaicans), pointing out that the term yabba refers to a form and not a method of manufacture or decoration. Subsequent sections of this essay consider archaeological research in Jamaica,

ethnoarchaeological research in Africa, and the Transatlantic Slave Trade Database. The latter located at Emory University was financially supported in part by the National Endowment for the Humanities (disclaimer: your reviewer has been involved in this grant), and Hauser reports that 1,083,369 slaves were brought to Jamaica (not all survived the transit); there is also frequency information on the enslaved being transported to Jamaica from eight regions in Africa. He assembles and reports data on laborers and plantations, evidence of colonial ceramics and earthenware cooking vessels, ethnographic information on pottery production, and that market sellers were not the producers of the local ceramics. The pottery types included: Spanish jars, waterpots, Monkey jars, and three yabba vessel types and forms: lead-glazed, slipped and/or burnished, and untreated (decorated with punctuation and rather friable).

Chapter 6, “Locating Enslaved Craft Production: Petrographic and Chemical Analysis of Eighteenth-Century Jamaican Pottery” (pp. 160-191), deals with the locations of pottery production and distinctions between provenance (source of geological materials) and provenience (location of artifact recovery) (p. 161) – a debatable use of terms. Eight excavated sites provided a collection of sherds from which he also calculated EMV (estimated minimum vessels) for the three yabba types: glazed (1,417 sherds, 403 EMV); slipped (1,689 sherds, 612 EMV); and untreated (153 sherds, 142 EMV). Hauser also considers compositional studies and NAA, geological contexts, and the petrographic thin-section analyses of 164 specimens. The latter include quartz, plagioclase, feldspars, trace minerals, and lithic fragments. He discerned five Ceramic Groups plus a group of unassigned sherds; Appendix A, “Assignment of Samples from Sites to Ceramic Groups” (pp. 203-204). Ceramic Groups 2, 3, 4, and 5 are related to Rio Cobre near Spanish Town or the gravels from the Liguanea Plain. Fifty specimens were also selected sent to MURR (Missouri University Research Reactor, Columbia, MO, USA) for NAA analysis (the quantities of specimens from the three types don’t add up [$18 + 27 + 4 = 49$] while the MURR analysis (Appendix B, p. 205) refers to 51 specimens from the five Ceramic Groups from seven sites); Appendix B, “Instrumental Neutron Activation Analysis of Eighteenth-Century Pottery

from Jamaica” by Christophe Descantes and Michael D. Glascock (pp. 205-217). This appendix includes information on sample preparation, irradiation and gamma-ray spectroscopy, the quantitative analysis of 33 elements, and principal component analysis (Cr, Th, and Na). The assembled petrographic and NAA data provide compelling evidence for a reassessment of trade networks in Jamaica in which Hauser shows that pottery distribution was not limited to areas near the production centers, but that distribution ranged some distances from the loci of manufacture.

Lastly, in “Epilogue: Boundaries and Identities” (pp. 192-202), Hauser discusses the topics of physical and cultural boundaries and sociocultural identities and the relationships between archaeology and history. It is here that the word play of the phrase “Black Markets” becomes clear.

Hauser has not written the traditional archaeological or ethnohistoric report that one finds in Caribbean area studies. The author has offered a compelling reassessment of ceramics, market economies, and socioeconomics in Jamaica and he establishes new paradigms for Caribbean regional economic studies in historical archaeology. He has also provided a fairly comprehensive review of the literature on Caribbean slavery and on ceramics (archaeological, ethnohistoric, and contemporary), but has introduced to the region the kinds of interpretations that scientific studies - - petrography and INAA – can bring to a region. The reference (p. 223) to Harvey Blatt’s “Original characteristics of clastic quartz grains,” *Journal of Sedimentary Petrology* **37**: 401-424, is 1967 and not 1952. This is a well-written and enlightening volume, derived from his 2001 dissertation at Syracuse University that demonstrates the integration of multiple lines of research on the production and consumption patterns of the enslaved and their roles in pottery production. It is a significant contribution to ceramic studies.

Hauser has just published “Routes and roots of empire: Pots, power, and slavery in the 18th-century Caribbean” (*American Anthropologist* 113:431-447, September 2011) in which he updates his research from Jamaica and Dominica to track economic

networks through analysis of ceramic assemblages from the house yards of enslaved laborers.

Anthropomorphic and Zoomorphic Miniature Figures in Eurasia, Africa and Meso-America: Morphology, Materiality, Technology, Function and Context, Dragos Gheorghiu and Ann Cyphers (eds.), British Archaeological Reports International Series S-2138. Oxford: Archaeopress, 2010. vi + 158 pp., 133 figures (maps, plans, figures, drawings and photographs), 654 references, ISBN 9781407306797, £35.00. (paper). The present volume is, in the main, the result of two symposia held at the European Archaeological Association meetings in Krakow (2006) and Zadar (2007), which gathered studies on the function, morphology, materiality, technology, ritual, function, and context of figurines, whether made of clay, wood, metal, stone, bone or shell. The volume has an "Introduction" and 16 chapters, each with its own references (a total of 654). Some contributions consider multiple raw materials used in figurine production but 10 chapters focus on clay figurines, two on clay and stone artifacts, one on clay and ivory objects, and one each on limestone, wood, ivory, antler, and gold. This review will emphasize the clay figurines. The editors are well-known in their respective archaeological fields. Gheorghiu (Centre of Research, National University of Arts in Bucharest) a cultural anthropologist and experimental archaeologist, focuses on ceramics and the Eurasian Neolithic and Chalcolithic, notably of central and southern Europe. Cyphers (Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, México, DF) has special interests in the Preclassic period and Olmec culture of the Gulf Coast and Mexican highlands. The editors dedicate the volume to the Mesoamerican scholar Thomas Charlton, a co-author with his wife of a chapter in this volume, who passed away in 2010, see: Obituary: Thomas H. Charlton (1938-2010). *SAS Bulletin* 33(3):5 (2010) and "In Memoriam: 'Tom – We hardly knew ye': Thomas H. Charlton, 1938-2010," *Ancient Mesoamerica* 21(2):207-210, both by Charles C. Kolb.

This new edited volume adds another dimension to the study of figurines by providing examples of figurine analyses and interpretations from a variety of contexts and cultures. The volume is unusual

because it considers figurines made from a variety of raw materials and has papers from both the Old and New Worlds. Nine contributions are from Europe (Central Europe, Macedonia [2], Portugal, Britain, the Eastern Baltic, Romania-Moldova-Ukraine, Mycenae, and Scandinavia); three are from Japan; one from Egypt; and three from Mexico (Gulf Coast, Jalisco [West Mexico], and the Basin of Mexico). The latter three contributions add depth to an edited work by Christina A. Halperin, Christina T., Katherine A. Faust, Rhonda Taube, and Aurore Giguet (eds.), *Mesoamerican Figurines: Small-Scale Indices of Large-Scale Social Phenomena* (Gainesville: University Press of Florida, 2009). Recent interpretive works focusing primarily on Europe include Douglass W. Bailey's *Prehistoric Figurines: Representation and Corporeality in the Neolithic* (London: Routledge, 2005) and Richard G. Lesure's *The Goddess Diffracted: Explaining Femaleness in Prehistoric Figurines* (Cambridge: Cambridge University Press, 2011).

In the "Introduction: Small Worlds" by Dragos Gheorghiu and Ann Cyphers (pp. 1-7, 67 references), the editors define miniature figurines, discuss general themes in the study of these objects, and summarize the presentations. The editors discuss the growing interest in miniature figurines in archaeology and provide a very fine review of the literature through about 2008 that emphasizes studies on general overviews, contexts, production technologies, interpretations, anthropomorphism, and functional diversity. "Beyond 'Venus' figurines: technical production and social practice in Pavlovian portable art" by Rebecca A. Farbstein (pp. 9-16, 6 figures, 47 references). Using *chaînes-opératoires* analyses, the author considers ivory portable art from three Gravettian sites in Central Europe, discusses fabrication techniques and technological styles that reflect social variability. She suggests that there is more cultural variability than has been previously considered in the literature. "Dissentions: magnitude, usability and the oddness of Neolithic figures" by Christina Marangou (pp. 17-24, 6 figures, 46 references). Most Neolithic and Chalcolithic clay figurines reflect everyday activities. However, some Middle and Late Neolithic (second half of the 6th and first half of the 5th millennium BCE) clay figurines from Eastern and Central Macedonia are atypical, anthropomorphic

human-animal hybrids; cranial deformations are discussed and the author surmises that the figurine heads were used in performances. New directions on research are also suggested. “Neolithic ceramic figurines in the shape of a woman–house from the Republic of Macedonia” by Nikos Čausidis (pp. 25-35, 12 figures, 57 references). Middle to Late Neolithic Balkan hybrid clay figurines have an architectural base resembling a house topped by a human bust displaying female traits that the author characterizes as “women-houses” and infers fertility and nurturing significance (to give birth, to produce, to protect, to feed, to maintain life, to gather, etc.). Dwelling symbolism, ethnographic analogies, and cultic activities are considered. “Cult artifacts from the Neolithic and Chalcolithic settlement of Leceia, Oeiras, Portugal” by João Luís Cardoso (pp. 37-41, 3 figures, 15 references). The site dates second half of the 4th through second half of the 3rd millennium BCE and the author focuses on late Neolithic to Chalcolithic transitions and a change of clay to limestone figurines in the framework of domestic cults. The analysis focuses on 53 artifacts and their morphology as well as representations of fecundity, and life and regeneration.

“The ‘god-dolly’ wooden figurine from the Somerset levels, Britain: The context, the place and its meaning” by Clive Jonathon Bond (pp. 43-54, 9 figures, 44 references). An “enigmatic” wooden figurine and a wooden track from Somerset Neolithic wetlands (raised wet bog) context recovered in 1966 are assessed in terms of the physical and cultural landscapes, cosmology, and spirituality. “Anthropomorphic antler sculptures in Abora Neolithic settlement (Lake Lubāns wetland, Latvia)” by Ilze Biruta Loze (pp. 55-60, 6 figures, 19 references). This Eastern Baltic Late Neolithic wetland site had a mixed subsistence economy and yielded elk antler anthropomorphic figures from two contexts: settlement areas and burials. One figure depicts an adult male and the other is asexual. A *chaînes-opératoires* analysis and ethnoarchaeological data are employed in discussing fabrication and functional differences and relationships to a disturbed grave are discussed. “Ritual technology: an experimental approach to Cucuteni-Tripolye Chalcolithic figurines” by Dragos Gheorghiu (pp. 61-72, 21 figures, 89 references). Gheorghiu employs *chaînes-opératoires* in his

holistic analysis of the creation and ultimate final disposition of these 6th millennium BCE Chalcolithic clay figurines. These artifacts are typologically diverse and have ritual connotations. He considers the technologies of production, issues with the clay drying process, and ritual breaking of some figurine types, and reconstructs behavior and social patterns of the makers and users. “Problems of identity for Mycenaean figurines” by Andrea Vianello (pp. 73-77, 2 figures, 27 references). The author considers the presence of Bronze Age Mycenaean clay figurines in the Mediterranean region as the result of export and long-distance trade. These artifacts appear to be standardized and were used by other cultures implying regularized exchange networks and a broad community of consumers of Mycenaean material culture. There is a range of figurines from “supra-human entities” (deities or ancestors) through children’s toys. These artifacts are perceived as carriers of symbolic meaning that varies from period to period within a person’s lifetime and there are distinctions between communities as well as individuals. “Go figure! Creating intertwined worlds in the Scandinavian late Iron Age (AD 550–1050)” by Ing-Marie Back Danielsson (pp. 79-90, 8 figures, 81 references). Miniature thin-stamped or cut-out gold foil figures are reviewed in terms of manufacture, associated mythological and religious activities (gold was considered “divine”), and the object and the production process both had symbolic meanings. The human faces and garments are also considered in her analysis. The manipulation of the figures is suggested through the use of theater theory, semiotics, and anthropology and she pays attention to the contexts of discovery, neglected by previous researchers.

“A cognitive approach to variety in the facial and bodily features of prehistoric Japanese figurines” by Naoko Matsumoto and Hideaki Kawabata (pp. 91-98, 10 figures, 30 references). The authors provide a history of the interpretation of Middle and Late Jōmon and Yayoi anthropomorphic clay figurines (*dogū*) and their diverse interpretations of varieties and uses. In a behavioral psychological experimental cross-cultural analysis, they analyzed facial feature and expression cognition data from Japanese and non-Japanese groups to interpret genders and societal stereotypes. “Fragmentation practices in central Japan: middle Jōmon clay

figurines at Shakadō” by Ilona Bausch (pp. 99-112, 8 figures, 59 references). Bausch examines Middle Jōmon (ca. 2500-1500 BCE) clay figurines from the Shakadō site in the eastern Kōfu Basin and the occurrence of deliberately broken figurines that were apparently circulated and had a central role in an inter-communal exchange system that reinforced kin relationships. Matching figurine parts have been recovered from separate neighboring settlement contexts at distances of 203 m; concepts of fragmentation and enchainment (following Chapman 2000) are considered. “Awaking the symbolic calendar: animal figurines and the conceptualisation of the natural world in the Jomon of northern Japan” by Liliana Janik (pp. 113-121, 9 figures, 18 references). Zoomorphic clay figurines from the Jōmon (Later Jōmon, Epi-Jōmon, and Yayoi periods; ca. 1500-100 BCE) had symbolic significance and are considered in the contexts of landscape and chronology; wild boar and sea mammals have a differential presence in northern Japanese sites. She perceives that these figures conveyed symbolic and economic messages. “Can clues from Egypt’s dynastic period shed light on its Predynastic figurines?” by Aloisia de Trafford (pp. 123-129, 4 figures, 13 references). Predynastic period (ca. 3100-1069 BCE) ivory and clay funerary figurines are interpreted using cultural codes provided by historical sources such as the Pyramid Texts in this chapter that employs ethnoarchaeological hermeneutics in an assessment of symbolic imagery. These objects had roles in the rites of passage, particularly death, the afterlife, and rebirth. Gender representations, social status, and relationships between figurine production and ritual are also examined.

“Artificial cranial vault modification in Olmec figurines: identity, ancestry and politics in early Mesoamerica” by Ann Cyphers (pp. 131-139, 6 figures, 35 references). Mesoamerican Early and Middle Preclassic clay figurines from the Mexican Gulf Coast have regional variability and Cyphers looks at cranial vault deformation as related to social groups. The figurine assemblage is from the first Olmec capital, San Lorenzo, Veracruz. Head shape correlates with a high degree of social complexity that she relates to a shared ancestry and social identity. Ideals, values, and perceptions are reviewed and she examines diachronic variations in

political affiliations within the Olmec region. “The solid terracotta and stone figurines from central region of the Bolaños Canyon in the state of Jalisco, Mexico?” by María Teresa Cabrero G. (pp. 141-149, 17 figures, 20 references). Cabrero examines clay and stone figurines from sites in West Mexico dating to the first millennium CE. Facial characteristics are not emphasized in these figurines and in some objects the primary and secondary sexual characteristic are ambiguous so that gender cannot be discerned. She compares these data with mortuary shaft-tomb figurines and employs ethnographic data in her assessments, determining that some figures are of ritual specialists or healers. She contends that the asexual figurines may relate to the practice of sexual abstinence prior to household and temple rituals. “Figurines in the heart of the Aztec Empire” by Cynthia L. Otis Charlton and Thomas H. Charlton (pp. 151-158, 6 figures, 37 references). The authors discuss state-level political and economic contexts of the mass production of Postclassic era Aztec clay figurines that involved a limited number of conventional types and employed moulds. They demonstrate that the figurines reflected society at a miniature scale and served as indicators of social change. Otis Charlton and Charlton also discuss the production technology and morphology, and decline of certain figurine types and compare their findings with Basin of Mexico Preclassic materials (end of the first millennium BCE) and the post-Conquest period where Spanish influences are seen in figurine morphology and a decline in the quality of production.

African Pottery Roulettes Past and Present: Techniques, Identification and Distribution, coauthored by Anne Haour, Katie Manning, Noemie Arazi, Olivier Gosselain, Sokhna Ndéye Guèye, Daouda Keita, Alexandre Livingstone-Smith, Kevin MacDonald, Anne Mayor, Susan McIntosh, and Robert Vernet, Oxford, UK and Oakville, CT: Oxbow Books, 2010. ix + 196 pp., ISBN-13: 978-1-84217-968-0, ISBN-10: 1-84217-968-3, \$50.00 or GB £25.00 (paperback), distributed in North America by The David Brown Book Co; online prices for new copies can be found for at least \$40.50. The 11 contributors to this volume include major researchers who focus on Sub-Saharan African archaeology and ethnology: Anne Haour (Sainsbury Research Unit, University of East Anglia,

UK); Katie Manning (Institute of Archaeology, University College London, UK); Noemie Arazi (Heritage Management Services, Belgium); Olivier P. Gosselain (Université Libre de Bruxelles, Belgium); Sokhna Ndéye Guéye (Université Cheikh Anta Diop, Dakar, Sénégal); Daouda Keita (Université de Bamako, Mali); Alexandre Livingstone Smith (Africamuseum, Tervuren, Belgium); Kevin MacDonald (Institute of Archaeology, University College London, UK); Anne Mayor (Université de Genève, Switzerland); Susan K. McIntosh (Rice University, Texas, USA); and Robert Vernet (Centre de Recherche International et Intra-Africaine d'Archéologie, Université de Nouakchott, Mauritania).

This volume was authored by ethnographers, archaeologists, and museologists specifically for scholars who work with impressed ceramics and pottery-decorating tools called roulettes, short lengths of fiber, wood, or other material that are rolled over the pre-fired surfaces of vessels primarily for decoration. Typically, roulettes consist of one or several lengths of vegetal fiber, twisted, knotted, folded, wrapped or braided to form a tool, typically around 5-10 cm long, that can be rolled across the surface of a clay vessel prior to firing. Roulettes of carved wood, or natural objects such as shells or pine cones, may also be used. This decorative technique quickly and easily produces aesthetically pleasing designs and it has been, and remains, very commonly used throughout Africa.

This monograph is one outcome of a three-year research project "Making a Good Impression: Pottery of the Sahara-Sahel Borderlands," which engaged these 11 researchers on three continents and resulted in two workshops. In 2008, this interdisciplinary and international team convened in Oxford and Dakar by Haour and Manning. The two meetings involved formal papers, the examination of museum collections, and included unstructured time for discussion and for the sharing of images and materials. These discussions resolved some of the fundamental inconsistencies and "areas of shadow" in the description of archeologically- and ethnographically-documented roulettes. The participants also created an elaborate, comprehensive system for the classification of roulettes made from fibers. The journal *Azania: Archaeological Research*

in Africa 46(1):1-109 (2011), journal of the British Institute in Eastern Africa, published a "Special Issue: Identity, Fashion and Exchange: Pottery in West Africa," with six articles by 11 authors (eight of whom are coauthors of the monograph under review) that also focus on the research and results of the workshops; three articles are in English and three in French. Taken together, these publications set a new standard for the identification and interpretation of roulette-decorated pottery and open new insights into the cultural meaning of variations in roulette style. All 11 authors of this monograph have conducted field research and pottery analyses and, for the first time, have established a basic typology for the classification of African pottery decorated with such tools, and reached a consensus on common methodology and standards which is extremely valuable for comparative analyses. Although focused on Africa from Senegal to Tanzania, the volume is highly relevant for researchers who work with impressed ceramics anywhere, especially in North and South America, and Northern Europe and Asia.

The volume has a "Preface and Acknowledgments" (pp. vii-ix) and three "Maps" (p. xi-xii) – Africa, West Africa, and Central Mali – prior to a bilingual English and French language "Introduction" (pp. 1-34), with the initial part in English (pp. 1-16, 9 endnotes, 1 figure) and a French-language version – not a direct translation – (pp. 17-28, 1 endnote), accompanied by one set of 120 references (pp. 29-34). Four authors composed these essays: Gosselain, Haour, MacDonald, and Manning. The book provides a synthetic overview of roulette decoration which had been used for millennia in Sub-Saharan Africa. The focus of this volume is on West Africa and the types of roulettes used to decorate pots, but also considers East African roulettes as markers of ethnolinguistic groups. The authors review briefly the long history of research and the production and use of cord-marked pottery beyond Africa: Jomon in Japan (9500 BP), Siberia (10,600-9900 BP), Eastern Asia (mid-third millennium BCE), Europe (third millennium BCE), and New York State, USA (Late Woodland period). An outline of the three sections of the book is also presented: 1) ethnographic information, 2) ethnoarchaeological documentation, and 3) archaeological data. Future directions for research are

also outlined.

Section 1 (pp. 36-114, 1 table, 39 figures [pp. 88-105], 11 endnotes, and 181 references [pp. 106-114]) by four authors: Livingstone Smith, Gosselain, Mayor, and Guèye. The English and French presentations are on alternate pages and the essays review modern roulettes. The topics discussed include classification and nomenclature of African roulettes; principals of classification; materials and manipulation systems; ethnographic referents; and popular and scientific classifications. Sixteen types are defined: seven core and strip, and three continuous core variants, and three independent core variants. The uses of roulettes consisting of modified and unmodified materials are also documented: carved wood or bone cylinders, inflorescences and fruits, shells, and manufactured objects. Section 2 (pp. 116-130, 5 figures, 5 endnotes, 12 references) again has English and French versions on alternating pages and was authored by Livingstone Smith. He reviews methods of identification, principles, tools and actions, and the identification process, and discusses and provides examples of the analysis of ethnographic tools and their impressions. Section 3 (pp. 131-191), all in English, has eight topics prepared by a number of authors. "Introduction" (pp.131-133, 1 figure) by Haour and Manning; "Twisted coil" (pp. 134-143, 8 figures, 1 endnote) authored by Arazi and Manning; "Cord-wrapped" (pp. 144-156, 10 figures) by MacDonald and Manning; "Braided cord" (pp. 157-169, 15 figures) by McIntosh and Guèye; "Folded strip" (pp. 170-176, 7 figures) by Haour and Keita; "Knotted" (pp. 177-180, 2 figures) authored by Haour; and "Braided" (pp. 181-186, 4 figures) by Mayor. The "References" (pp. 187-191) includes 94 entries. Lastly, there is a "Glossary" (pp. 193-196) with 17 terms and bilingual descriptions.

The workshop organizers and international team of authors must be congratulated for their diligence in presenting this thoughtful synthesis and for creating a valuable typology on rouletting, as well as providing splendid illustrations and an extremely useful bibliography.

Identidad y Estilo entre las Alfareras Mixtecas y Amuzgas de la Costa de Oaxaca y Guerrero, México, Frances Ahern, *Arqueología Oaxaqueña* 3,

Oaxaca: Centro INAH Oaxaca/CONACULTA-INAH, 2010. xv + 59 pp., 22 figuras [figures], 95 láminas [plates], 14 tablas [tables], ISBN 978-607-00-2924-0. \$8.00 US Cy. It is available in the United States from the Center for Comparative Archaeology, University of Pittsburgh, Pittsburgh, PA 15260; Web site: www.pitt.edu/~ccapubs/, email: ccapubs@pitt.edu. *Arqueología Oaxaqueña* is a publication series of the Instituto Nacional de Antropología e Historia in Oaxaca, México, that began in 2004 and this is the third monograph in the series. Ahern, who lives on Oaxaca and has conducted both archaeological and ethnographic research, received a doctorate in 1993 (*Pottery Stylistic Variation among Coastal Mixtec and Amuzgo: An Ethnoarchaeological Study*, unpublished Ph.D. dissertation, Stony Brook, NY: State University of New York) and studied under Phil Weigand, Pedro Carrasco, and Elizabeth Stone.

The current volume summarizes interviews and observations on 127 potters from nine towns and villages in Pacific coast of western Oaxaca and southeastern Guerrero during the period 1988-2004. However, this is not a diachronic study but a series of synchronic investigations undertaken at different times. There is a "Prefacio" by series editor Marcus Winter (pp. ix) and a "Prólogo" by Robert Markens (p. xi-xii); the later also has a list of 19 west Mexican pottery studies. These include the basic references to research undertaken in Oaxaca by Foster, Hendry, Stolmaker, Thieme, and van de Velde. In nine chapters of varying length, Ahern provides ethnoarchaeological data based on ethnographic research on contemporary potters' ceramic production, technologies, styles, ethnicity, and social organization. The discussions of the nine communities are uneven (18 pages to a few paragraphs) and we are not informed consistently of the actual periods of study. All of the ceramic vessels – a variety of water or storage jars – and handmade without the wheel, sometimes using molds, and generally with englobes (red or white liquid clay slips), and have painted decoration. The author challenges the premise that the geographic extent of a pottery style matches the distribution of ethnic identity.

Chapter 1 is titled "Introducción: Huellas Cerámicas: Patrones Amuzgos y Mixteco de la Costa" (pp. 1-3,

2 figures). There is a basic description of the coastal region of Guerrero and Oaxaca and a very short historical overview emphasizing the Prehispanic context. In Chapter 2, “Cerámica de las Costa” (pp. 4-5, 2 figures), Ahern describes kitchen ovens (fogóns) and culinary ceramics: comales [tortilla griddles], tinajas [water jars], cazuelas [pans or casseroles], ollas [pots], cántaros [pitchers or jugs], and jícaras).

The third chapter, “Ceramistas Mixtecas en el Distrito de Jamiltepec, Oaxaca” (pp. 6-28, 77 láminas, 8 figures, 1 table), focuses on the Mixtec community of San Pedro Jicayáb (p. 6-23) with 3,733 inhabitants. Ahern provides a local map and town plan that locates potters and pottery kilns (hornos). The production of tinajas and cántaros are emphasized, and seven women potters (identified by name) are associated with seven study units: SPJ01 through SPJ07. The topics covered include raw materials (clay types and sources), tempers (granitic diorite), and englobes; methods of fabrication (clay preparation and section building [neck-rim and body]); prefired painted decoration (naturalistic and geometric types); and firing (placements in kilns or ovens and firing times and temperatures, the latter derived from pyrometric measurements). Reminiscent of Anna Shepard’s early studies, firing time and temperature data are presented in Table 1: 162 minutes, up to 660° C (p. 24) and Table 2: 178 minutes, maximum temperature 680° C (p. 33). Two potters from San Antonio Tepelapa (pp. 23-24), a Mixtec community of 3,375 persons, are discussed in four paragraphs; San Lorenzo with 1,557 inhabitants was studied in 1994 with fabrication, decoration, and firing reported (pp. 24-26); while Santa Catarina Mechoacán (pp. 27-28), studied in 1992 and 1994, had 12 active potters in that era. Chapter 4, “Las Ceramistas Amuzgas de La Guadalupe, Municipio de Ometepec, Guerrero” (pp. 29-33, 5 láminas, 2 figures, 2 tables), describes a village of 760 persons, and presents Ahern’s observations on 33 potters (22 actually visited) who made unslipped cántaros. Clay types, fabrication, and firing are discussed; firing times and temperatures are documented in Table 3: 199 minutes, 620° C maximum temperature achieved (p. 33).

In Chapter 5, “Las Ceramistas Mixtecas de San Cristóbal, Guerrero” (pp. 34-40, 12 láminas, 4

figures, 2 tables), the author reports studies on 26 Mixtec potters who produced both tinajas and cántaros, reviewing information on kiln (horno) construction, clays, fabrication, decoration, and firing. There is a detailed discussion on zones of decoration and geometric and naturalistic elements. Tables 4 and 5 include firing data: 257 minutes and up to 670° C; and 358 minutes with a maximum of 650° C (p. 40). Chapter 6, “Variación Estilística” (pp. 41-42, 1 table), provides information on stylistic variations among 9 communities and 18 types of decoration (Table 6, p. 42), while 7. “Patrones de Comercio Cerámico” (pp. 43-47, 3 figures, 1 table) reviews distributional data in markets in Oaxaca and Guerrero, market day occurrences, patron-client relationships, periodic vs. fiesta day sales, distances to market, numbers of annual visits to markets, and transportation routes used by truckers (camioneras).

In Chapter 8, “Distribución Especial” (pp. 48-55, 1 figure, 5 tables), spatial distributions (Tables 10-12) based on inventories (300 households and 1,033 recipients) of pottery from La Guadalupe are discussed, and the production origins of vessels and preferences for water vessels and potter communities are also considered (Tables 10-12). Lastly, there is a brief summary, Chapter 9. “Observaciones Finales” (pp. 56-57); 19 “Referencias” are listed (p. 59). Alas, there are no comparisons provided to any of the pottery studies cited on p. xiii. The major highlights of the volume are the data on firing temperatures and information on ceramic distribution. This ethnographic study is valuable for archaeologists, confirming some of the assumptions often relied on by archaeologists and considers unforeseen factors that can confuse the spatial relationship between style and identity.

Forthcoming Meetings

“*Ceramic Ecology 25: Current Research on Ceramics 2011*” (organized by Charles C. Kolb) is scheduled for Saturday afternoon, 19 November 2011, at the annual meeting of the American anthropological association in Montreal, Quebec, Canada. The session abstract is followed by the abstracts of the papers and the panel session. Session Abstract: This year, the Ceramic Ecology (CE) symposium reaches its silver anniversary milestone and, in celebration, there is a change in the

session format. This meeting has three components: 1) Traditional oral presentations, ending with an historical overview of the first 24 years of CE and the more than 300 papers that have been given. 2) A panel discussion on the status of ceramic studies today from a variety of perspectives focusing on present-day analyses and the future of ceramic studies. This panel includes individuals who conduct technical/ scientific analyses and those who undertake cultural interpretations. Panelists would prepare written versions of their papers to be shared among the presenters ahead of time and their presentations will be followed by discussions among the panelists. Lastly, 3) An open forum on ceramic studies would invite responses and critiques from the audience. The concept of Ceramic Ecology set forth in Frederick Matson's edited book, *Ceramics and Man* (1965), is contextual, multi and interdisciplinary, and analytical. On the one hand, it seeks to evaluate data derived from the application of physiochemical methods and techniques borrowed from the physical sciences within an ecological and sociocultural frame of reference. It relates environmental parameters, raw materials, technological choices and abilities, and sociocultural variables to the manufacture, distribution, and use of pottery and other ceramic artifacts. On the other hand, interpretation of these data and explanations of the ceramic materials utilize methods and paradigms derived from the social sciences, the humanities, and the arts. It also demonstrates the value of the cross fertilization which results when investigators ranging from art historians and professional potters to ethnoarchaeologists and archaeometricians come together in a forum devoted to a topical consideration: ceramics -- anywhere and anytime.

“Introduction to Ceramic Ecology 25” by Sandra L Lopez Varela (Universidad Autonoma del Estado de Morelos). Abstract: In 1965, Frederick Matson introduced the concept of Ceramic Ecology to study pottery under a cultural perspective by providing insights into the learned patterns and mechanisms by which mankind has attempted to adjust itself to the environment and to its social world. Thus, Ceramic Ecology has been an invitation to study pottery through a wide range of method and techniques borrowed, for example, from the physical and chemical sciences, but also, under paradigms derived from the social sciences, the humanities, and the arts.

In 2011, the Ceramic Ecology (CE) symposium reaches its silver anniversary milestone and, in celebration, this session also honors Dr. Charles Kolb, for bringing together, all those years, a group of scholars working all over the world, interested in investigating the relationship between pottery and environmental parameters, raw materials, technological choices and abilities, sociocultural variables to the making, distribution, and uses of pottery, and other clay objects. As part of this silver jubilee, probably unique in the history of the AAA, CE will remember the contributions of those who are no longer with us, but have continued to influence the more than 300 scholars that have participated in this symposium over the last 24 years. The papers presented for this special occasion will take us, as Matson once said, ‘beyond the conventional limits of anthropology’ through a variety of perspectives focusing on present-day analyses and the future of ceramic studies, enhanced by the discussants and an open forum in which the audience will be invited to participate.

“The Ethnoarchaeology of An Abandoned Potter’s Workshop In Ticul, Yucatan” by Dean E. Arnold (Wheaton College, IL). Abstract: This paper compares the remains of an abandoned potter's workshop in Ticul, Yucatan, to active workshops in the city. These comparisons show the types of activity, activity areas and patterns of discard used by its former inhabitants, suggesting the types of activities and spatial patterning of pottery workshops that can be recovered in the archaeological record.

“Gone to Market: Examining Spatial Relationships of Ceramic Production and Distribution in the Lake Pátzcuaro Basin” by Amy J. Hirshman (West Virginia University) and Christopher J. Stawski (Michigan State University). Abstract: As a relatively small region, the Lake Pátzcuaro Basin would not provide major obstacles to the movement of ceramic vessels from producers to markets to consumers, yet not all communities were equally positioned to take advantage of the short distances within the Basin. In this study we correlate archaeological ceramic, compositional, ethnographic, and GIS data to model ceramic production and distribution marketing and economic relationships among communities within the Lake Pátzcuaro Basin in the Postclassic period in order to

understand the ceramic economy of the Lake Pátzcuaro Basin.

“Trench Kilns In the Northern San Juan: A Case Study of Ceramic Production in the Comb Ridge Area, San Juan County, Utah” by Sandra Arazi-Coombs (University of New Mexico). Abstract: The Northern San Juan is home to a unique ceramic firing feature known as the trench kiln. Dotted across this vast landscape, these features exhibit distinct locational and morphological qualities which may yield clues about the social structures that revolved around ceramic production and distribution in this area. In this paper, I discuss the social environment of the Northern San Juan region through the lens of ceramic production in the Pueblo III period. Focusing on a specific cluster of kilns (~30+ kilns in a 1000 x 1000 meter area); this paper provides a preliminary analysis of the types of environmental factors and social relationships that may have surrounded ceramic production in the area. As a conclusion, I propose that certain kiln firing groups in the Comb Ridge region represent a form of community specialization. The paper addresses topics relevant to social complexity, such as the possibility of communal firing practices, overproduction of ceramics and the implication of agricultural scheduling conflicts on ceramic production.

“Potters, People, and Land in Bihar, India: A Perspective from the 1961 Census of India” by James J. Sheehy (Pennsylvania State University/Juniata College). Abstract: The 1961 Census of India provides a potentially useful data base for anthropologists and archaeologists interested in the relationships between craft production, population size, agricultural activities and the availability of land. The main 1961 Census of India compiled data from local levels to produce general tables and information at the state and national scale. Each Indian state also published a series of District Census Handbooks containing information at the level of the individual village. The handbooks detail the geographical size of individual villages as well as that of their cropped and irrigated fields. Population data is provided for the individual villages along with the total size of the workforce for activities such as: cultivators and agricultural laborers, household and non-household

manufacturing workers, quarrying and construction labor force, as well as the personnel involved in trade and transport activities. An additional source of information includes the number of industrial/craft establishments in individual villages and the number of occupied houses and households. This exploratory study draws on the district census handbooks from two 1961 Census districts (Patna and Gaya districts) in the Indian state of Bihar. These two districts cover a combined geographical area of 17,802 km². The industrial tables for the two districts report some 3,655 establishments involved in the production of earthenware pottery. I employ this information to examine the interrelationship of potting establishments to other craft activities (for instance, handloom weaving), population size, village area, as well as, the extent of cropped and irrigated village fields.

“Ceramic Ecology I-XXV: Current Research on Ceramics, 1986-2011: Where We’ve Been and What We Have Learned” Charles C. Kolb (National Endowment for the Humanities). Abstract: This symposium series began as a one-time presentation “Ceramic Ecology Revisited: A Pot for All Reasons” at the American Anthropological Association annual meeting in Philadelphia in 1986 as a tribute by Louana Lackey and Charles Kolb to our mentor, Frederick R. Matson (1912-2007), for having encouraged holistic and diachronic pottery studies. Matson a ceramic engineer, archeometrician, ceramic ethnoarchaeologist, and ethnographer characterized Ceramic Ecology as a methodological and theoretical approach in his edited volume *Ceramics and Man* (1965). He encouraged his students and other scholars to take the concept and modify, expand and improve it – Dean Arnold, Prudence Rice, Jim Sheehy, and Charles Kolb were among those who did. It became apparent that there was sufficient interest to the topic to initiate annual symposia. Lackey (1925-2005), a professional potter and ethnographer, and Kolb, an archaeologist cross-trained in materials science, organized subsequent symposia. Emphasis was placed upon the technological and socioeconomic aspects of ceramic materials regardless of chronology or geography. Presentations demonstrated the value of the cross fertilization which results when investigators ranging from art historians and professional potters to ethnoarchaeologists and archeometricians interacted

in a forum devoted to ceramics -- anywhere and anytime. The symposia have engaged more than 150 presenters and resulted in nearly 300 papers, many subsequently published. This presentation recounts the first 25 years of Ceramic Ecology, noting what modifications have occurred in ceramic analyses, methodologies, and interpretations through time.

“Introduction to the Panel Discussion” by Kostalena Michelaki (Arizona State University). Abstract: Ceramic studies in archaeology have been generally grounded on the premise that “archaeology is anthropology” and have employed aspects of the social sciences and humanities in interpreting these materials while employing basic geological methods and simple statistical procedures that have in recent decades given way to a highly sophisticated and growing toolkit of mathematical models, paradigms, and physicochemical and biological analyses. Ethnographic studies of potters and potting communities have frequently been synchronic in nature and focus on the production process but less so on the distribution and final disposition of vessels and other ceramic objects. Diachronic studies, such as those undertaken on pottery-making communities by Dean Arnold, are, unfortunately, rare. Several paradigms have been employed to focus on the ceramic process, chaîne opératoire and Ceramic Ecology among them. These seek to relate environmental parameters, raw materials, technological choices and abilities, and sociocultural variables to the manufacture, distribution, use, and final disposition of pottery and other clay artifacts. Ceramic ethnoarchaeology has also emerged as a viable hybrid field of study. The contributions to this symposium include individuals who conduct technical/scientific analyses and those who undertake cultural interpretations. The goal of my presentation is to set the stage for an integrated and critical evaluation of the status of ceramic studies today including a variety of theoretical, methodological, analytical and interpretative perspectives.

“The Current and Future Status of Ceramic Studies, Parts I-V” features presentations by five panelists who have circulated pre-prepared papers among themselves: Maria Masucci (Drew University), Chandra L. Reedy (University of Delaware), Arleyn W. Simon (Arizona State University), Rita P. Wright

(New York University), and E. Christian Wells (University of South Florida). An open discussion with members of the audience follows.

The Society for American Archaeology annual meeting is scheduled to be held in Memphis, TN, USA, 18-22 April 2012. The 2012 SAA meeting in Memphis could be a “pottery paradise” if the SAA Program Committee accepts all four proposed sessions. There are three sessions devoted to honoring researchers who have contributed substantially to pottery analysis and one symposium on petrographic analysis. The latter is organized by Mary Owenby (Desert Archaeology, Inc.) and Sophia Kelly (Arizona State University) who have organized “Petrography’s Continued Role in Ceramic Studies: New Advances and Debates.” Abstract: Although the popularity of petrographic analyses of ceramics waned with the adoption of chemical compositional methods, recent research demonstrates a renewed interest in ceramic petrography. In particular, petrographic data contributes substantially to the sensitivity of provenance analyses and is vital for understanding chemical compositional data on archaeological ceramics. This session explores recent applications of petrographic techniques to archaeological questions. The session focuses on new advances in the use of ceramic petrography, particularly with respect to understanding pottery technology. The collected papers will provide a fresh look at current issues in the field and the development of new trajectories for ceramic petrographic analyses in archaeology.”

“Honoring Dean E. Arnold on his Supposed ‘Retirement’” organized by Charles C. Kolb (NEH). Abstract: “Friends, colleagues, and admirers of Dean E. Arnold, Professor of Anthropology at Wheaton College, Illinois, for more than 36 years, come to honor him and the seminal ethnographic, ceramic ethnoarchaeological, and archaeometric research and publications he has created. His field work in Mexico, Peru, and Bolivia focusing on the organization and technology of ceramic production, is exemplified by longitudinal research in Ticul, Yucatan, Mexico, spanning 43 years. Known especially for *Ceramic Theory and Cultural Process* (1985) he was presented given the SAA’s “Award for Excellence in Ceramic Studies” (1996).

Symposiasts gather to pay tribute to this gentleman scholar.” Sessions honoring Michael Brian Schiffer (University of Arizona) are being organized by Jim Skibo (Northern Illinois University) and Jeff Speakman (Smithsonian Institution) and a symposium honoring Helen Pollard (Michigan State University) is organized by Amy Hirshman (West Virginia University).

The GlobalPottery Conference has a new web site: <http://globalpottery.ub.edu/>. The GlobalPottery 1st International Congress on Historical Archaeology and Archaeometry for Societies in Contact will be held at the Aula Magna of the Facultat de Geografia i Història of the Universitat de Barcelona 25-27 January 2012. It is sponsored by the Cultura Material i Arqueometria UB (ARQUB, GRACPE) research unit at the Universitat de Barcelona, along with the members of the Tecnològic research project. The Congress’ organizers indicate that there has been an important gap in the scholarly community where specialists could discuss and define new trends on the field of ceramic studies in Historical Archaeology for societies in contact. This gap is even more evident considering the limited number of projects embracing archaeological and archaeometrical methodologies that could serve for the development of interdisciplinary based knowledge. Hence, the aim of GlobalPottery is to fill this gap, providing scholars with a specialized international forum that deals with Historical Archaeology ceramic studies, primarily including the so-called topics of Post-Medieval Archaeology and Later Historical Archaeology or Industrial Archaeology. It is also the aim of GlobalPottery to promote the studies on societies in contact, bearing in mind that the colonization of America and the first World circumnavigation must be considered the beginning of the present Global World. The Congress will contribute to the promotion of the development of multidisciplinary archaeological and archaeometrical research in order to generate historical knowledge from the extant ceramic record of the Cultural Heritage. The conference sessions will be classified according to geographic topics, which will be introduced by an invited speaker. Each session will accept oral and poster communications. Invited speakers have been chosen following international excellence and visibility criteria, as well as a balance between Archaeology

and Archaeometry. GlobalPottery aims to create a real space for scholar discussion. In this way, the presence of archaeological materials, archaeometric samples and results is encouraged. The Congress will provide binocular and petrographic microscopes, as well as facilities, for enabling archaeological and archaeometrical observations and discussions by the participants.

Exhibitions

"Lasting Impressions: Body Art in the Ancient Americas" is a new exhibition at the Dumbarton Oaks Museum, Washington, DC on view from 30 September 2011 to 4 March 2012. The exhibition presents highlights from three thousand years of body art practices in the Ancient Americas. Piercings, tattoos, scarification, and even reshaped heads were held in high regard in many Pre-Columbian cultures. Such permanent changes were thought to make the body beautiful, strong, and powerful. Often steeped in ceremony, body transformations were associated with lasting changes in the identity of the wearer. Lasting Impressions presents over sixty objects from the Dumbarton Oaks Pre-Columbian Collection and the Peabody Museum of Archaeology and Ethnology, Harvard University. Human portraits and figurines offer a glimpse of ancient ideals of beauty and power, while jewelry and personal ornaments illustrate some of the many ways in which Pre-Columbian people adorned themselves. Visit <http://www.doaks.org> for details.

"Dancing into Dreams: Maya Vases of the Ik' Kingdom" is a forthcoming exhibition to be held 6 October 2012 to 17 February 2013 at the Princeton University Art Museum, Princeton, NJ. The focus is on exceptionally painted chocolate-drinking cups of a single Maya center located in modern-day Guatemala. Ik' vases are acknowledged particularly for their naturalistic color, veristic portraiture, skillful rendition of graceful movement, and elegantly fluid, calligraphic line. Several Ik' vases were also signed by their painters—a convention attested in the ancient Americas only among the Maya of this region. Complementing our important holdings of Ik' vessels with loans of select masterpieces from other museum collections, the exhibition will both elucidate the courtly politics and dynastic history of the Ik' kingdom and reveal the

vital role of master artists in these intrigues. For more information visit <http://artmuseum.princeton.edu/visit/directions/>

ARCHAEOMETALLURGY

Thomas R. Fenn, Associate Editor

The column in this issue includes the following categories of information on archaeometallurgy: 1) New Books; 2) New Articles/Book Chapters; 3) Previous Meetings; 4) Forthcoming Meetings.

New Books

English Heritage Research Department produces a series of publications in their *Research Department Report Series* (RDRS; ISSN: 1749-8775) each year that often include metallurgical subjects. In the past 18 months or so these include about 13 such reports. Roman and Medieval Litharge Cakes: A Scientific Examination, by Brice Girbal, 2011, 80p., RDRS 51-2011. 4 Low Forge, Wortley, South Yorkshire: An Investigation of the Slags, by Brice Girbal, 2011, 41p., RDRS 50-2011. Downside Mill, Cobham, Surrey: Analysis of the Metalworking Remains, by Matt Phelps, 2011, RDRS 43-2011. Grange Road, Bermondsey, London: Scientific Examination of the Cupels, by Harriet White, 2010, 12p., RDRS 91-2010. Michelmersh, Romsey, Hampshire: Analysis of the Slag, by Brice Girbal, 2010, 51p., RDRS 78-2010. Legge's Mount, The Tower of London, London: Scientific Analysis of the Crucibles, by Harriet White and Thérèse Kearns, 2010, 50p., RDRS 76-2010. Wild Court Rookery, City of London: Scientific Examination of Early 19th-Century Crucibles, by David Dungworth, 2010, 19p., RDRS 58-2010. Legge's Mount, The Tower of London, London: Scientific Examination of the Cupels, by Harriet White, 2010, 19p., RDRS 57-2010. Post-Medieval and Modern Copper Smelting. Technology Report, by Thérèse Kearns, 2010, 46p., RDRS 48-2010. Whitby Cliff, Whitby, North Yorkshire: An Assessment of Metalworking Debris from the Whitby Cliff Excavations, by Victoria A. L. Lucas and Sarah Paynter, 2010, 25p., RDRS 31-2010. Park Farm East, Ashford, Kent: Analysis of Crucibles from the Iron Age Settlement, by Victoria A. L. Lucas and Sarah Paynter, 2010, 15p., RDRS

30-2010. Taynton Brassmill, Newent, Gloucestershire: Early 17th-Century Brass Manufacture, by David Dungworth and Roger Wilkes, 2010, 13p., RDRS 28-2010. Upper Forge, Coalbrookdale, Telford, Shropshire: The Examination of Crucibles, Copper Ore and Slag, by David Dungworth, Paul Belford and Rob Ixer, 2010, 17p., RDRS 5-2010. Many of these reports are available as PDFs which can be downloaded from the English Heritage website: <http://www.english-heritage.org.uk/publications/research-reports/>.

New Book Chapters/Articles

From *Gold, Sklaven und Elfenbein: Mittelalterliche Reiche im Norden Nigerias = Gold, Slaves, and Ivory: Medieval Empires in Northern Nigeria*, edited by Detlef Gronenborn, Römisch-Germanischen Zentralmuseums, Mainz, 2011, come contributions in both German and English entitled "Ein Metalleimer aus Grab 7 und sein Inhalt / A Metal Bucket from Burial 7 and its Contents" (Margarete Nortmann; pp. 98-101), "Die Metallschale aus Tumulus 7 / The Metal Bowl from Tumulus 7" (Claus-Peter Haase; pp. 102-103), and "Chemische und Isotopenanalysen von Metallen / Chemical and Isotopic Analyses of Metals" (Thomas Fenn; pp. 104-105).

From the *Journal of Archaeological Science* (2011, Vol. 38, No. 12) comes "Isotopic and technological variation in prehistoric Southeast Asian primary copper production" (Thomas Oliver Pryce, Michael Brauns, Nigel Chang, Ernst Pernicka, A. Mark Pollard, Christopher Ramsey, Thilo Rehren, Viengkeo Souksavatdy, Thongsa Sayavongkhamdy; pp. 3309-3322), and (2011, Vol. 38, No. 11) "Identification of metal residues associated with bit-use on prehistoric horse teeth by scanning electron microscopy with energy dispersive X-ray microanalysis" (Robin Bendrey; pp. 2989-2994), "Hematite sources and archaeological ochres from Hohokam and O'odham sites in central Arizona: an experiment in type identification and characterization" (B. Sunday Eiselt, Rachel S. Popelka-Filcoff, J. Andrew Darling, Michael D. Glascock; pp. 3019-3028), "Natural preservation mechanisms at play in a Bronze Age wooden shovel found in the copper mines of Alderley Edge" (A.D. Smith, D.I. Green, J.M. Charnock, E. Pantos, S.

Timberlake, A.J.N.W. Prag; pp. 3029-3037), and (2011, Vol. 38, No. 10) "Middle Bronze Age metallurgy in the Levant: evidence from the weapons of Byblos" (Ziad El Morr and Michel Pernot; pp. 2613-2624).

From *Archaeometry* (2011, Vol. 53, No. 5) comes "Non-destructive chemical analysis of old South Arabian coins, fourth century BCE to third century CE" (A. Kirfel, W. Kockelmann, P. Yule; pp. 930-949), and (2011, Vol. 53, No. 3) "Ancient Metallurgy at Sumhuram (Sultanate of Oman): Technical Aspects of Raised Inscriptions on South Arabian Bronzes" (C. Chiavari, M. Degliesposti, G. L. Garagnani, C. Martini, F. Ospitali; pp. 528-546), "Physico-Chemical Characterization of the Acqualadrona *Rostrum*" (F. Caruso, M. L. Saladino, A. Spinella, C. Di Stefano, P. Tisseyre, S. Tusa, E. Caponetti; pp. 547-562), and (2011, Vol. 53, No. 1) "Seriphos Surfaces: A Study of Copper Slag Heaps and Copper Sources in the Context of Early Bronze Age Aegean Metal Production" (M. Georgakopoulou, Y. Bassiakos, O. Philaniotou; pp. 123-145).

From *HMS News* (2011, No. 77) comes "The Metal Workshop at Tell Tayinat, Turkey" (Jim Roames; p. 2), "Clay mould pieces from Bourton-on-the-Water, Gloucestershire" (Andrew Walsh; p. 3), and "Bronze Age metallurgy in the Southern Urals" (Roger Doonan; p. 3), while from *Antiquity* (2011, Vol. 85, No. 328) comes "Isotopes and impact: a cautionary tale" (A. M. Pollard). From *The African Archaeological Review* (2011, Vol. 28, No. 3) comes "Jack of Two Trades, Master of Both: Smelting and Healing in Ufipa, Southwestern Tanzania" (Bertram Mapunda; pp. 161-175)

Forthcoming Meetings and Conferences

The *Historical Metallurgy Society* will hold its *Research in Progress 2011* meeting Wednesday, November 9th, 2011, at the University of Sheffield, UK. This meeting is aimed at a wide variety of contributors, from historical and archaeological metallurgists to excavators, historians and economists. If you are working, or have just finished working, on a project related to archaeological or historical metallurgy, they would like to hear from you. They are particularly interested in bringing

together contract and public sector archaeologists with academic researchers, and in fostering links between the different disciplines studying metallurgy and related activities. Whether you are a student, a researcher, an interested non-specialist, or a professional excavator, they invite you to meet others working in this field and present your research to an interested community. Download the call for papers poster at: <http://hist-met.org/rip2011call.pdf>. Proposals for 10-15 minute oral papers are welcomed from anyone undertaking work in any area of ancient, historical, or industrial metallurgy, and from other researchers whose focus is of relevance to this subject. Titles and 300 word abstracts should reach the organisers at hms.rip2011@gmail.com by Monday 26th September. Download the registration form as MS Word or Adobe Acrobat file at: <http://hist-met.org/rip2011reg.doc>, or at: <http://hist-met.org/rip2011reg.pdf>. The cost of the conference will be £15 for members of the Historical Metallurgy Society, and £20 for non-members. Lunch and coffee is included. Please make checks payable to: The Historical Metallurgy Society Ltd. Registration is requested by Friday, November 4th, as there are limited places. The conference will be held at the Humanities Research Institute at the University of Sheffield, 34 Gell Street, Sheffield, S3 7QY. The meeting is being organised by: Derek Pitman: d.pitman@shef.ac.uk, and Jessie Slater: j.slater@shef.ac.uk. General enquiries and abstracts can be directed to hms.rip2011@gmail.com. More information and all the necessary forms can be found at the HMS website at: <http://hist-met.org/hmsrip2011.html>.

The international conference *Emergence of Bronze Age Societies: A Global Perspective* will be held from November 8-12, 2011, at the Baoji Museum of Bronze, Shaanxi, China. The conference aims at enhancing our understanding of the background and development of Bronze Age societies on a global scale. It will trace the beginnings of the use of copper and bronze throughout Eurasia and beyond, and investigate the societies that developed metallurgy. The conference especially seeks to provide a platform for integrating the achievements of Chinese archaeological research on the Bronze Age into a world wide context. For this reason the conference will be held in Baoji, Shaanxi province,

China, where a major bronze producing centre was located 3000 years ago, and where one of the largest collections of bronze artefacts in all of Asia is stored.

Questions to be raised include: What constitutes a Bronze Age? Which characteristics share early bronze using cultures? Is the use of bronze sufficient to define a Bronze Age society? What kinds of artefacts were predominantly produced? Which technological solutions were found in different bronze-using cultures to source raw materials and to produce alloys and artefacts? What was the role of cross-cultural exchange in the development of Bronze Age societies?

Conference topics include “Bronze metallurgy and complex societies” (Demography, socio economic aspects; Scale of production, specialisation of crafts, workshop organization; Types of commodities produced; What makes a Bronze Age?), “Contacts and trade” (Cross-Eurasian/long distance contacts and their role in forming Bronze Age societies; Raw materials and bronze production; Invention, transfer and adaptation of technology and typology; Centre and periphery in metal production and metal use), “Technologies” (Origin and development of bronze mining, smelting and alloying; Bronze casting technologies; Other metal working technologies), and “Bronze and Ideology” (Bronze and religion, mythology, and social hierarchy; Value, standardisation, and status). For more information go to: <http://www.ucl.ac.uk/iccha/event/Conference/2011conference>.

Previous Meetings and Conferences

The *Archaeometallurgy in Cambodia: Current Research and Future Prospects, Conference and Workshop*, was held in Siem Reap, Cambodia, from March 5-7, 2011. Over the past few years, there has been a growth in overseas of laboratory analyses of ancient metal artefacts from Cambodia, as well as field archaeometallurgy and metal conservation being undertaken within Cambodia itself. The result is a not insubstantial number of individual Cambodian and foreign scholars working in the field of Cambodian archaeometallurgy, who have yet to join forces as a unified subdiscipline and, most importantly, communicate the combined potential of such studies to the new generations of Cambodian

archaeologists and cultural heritage managers. The aim of this Conference and Workshop is to bring together experts, colleagues and students who share a common interest in Cambodian metallurgy, from prehistory to the historical period.

Papers on all aspects of archaeometallurgy in Cambodia were presented, including survey and excavation of metal production sites, material science analyses, metal conservation, and ethnoarchaeological fieldworks. The purpose of such presentations is, indeed, to highlight recent studies in the field of Cambodian archaeometallurgy and stimulate future research and collaborations, so that this new discipline can be enhanced and propagated.

The conference was organized into several sections: “Kuy and Iron Metallurgy”, “Iron Smelting Sites”, “Metal Crafts”, “Bronze Metallurgy”, “Metal Conservation”, a “Workshop”, and “Excursions”. On Saturday, March 5th, following Welcome and Keynote speeches, presented papers included “*Les maîtres du fer et du feu: Study of iron metallurgy and Kouy of northern Cambodia* (Bernard Dupaigne), “Some elements helping assess the importance of the Kuy in the past” (Ang Choulean), “Ethnographical research about iron making and forge in Cambodia in 2008-2010” (Mariko Ikegami), “Linguistic prehistory of two Kuay words: “iron” and “charcoal”” (Gérard Diffloth), “New discovery of forges” (Thuy Chantourn), “Ancient archaeometallurgy in Malaysia” (Stephen Chia Ming Soon), “Introduction to LARP (Living Angkor Road Project)” (Im Sokrithy), “Integrated mapping of archaeological sites: Khvav as a case study” (Kim Samnang and Srun Tech), “The study of the iron smelting sites along the Royal Road from Angkor to Phimai: The excavation campaigns of 2009 and 2010” (Heng Than and Khieu Chan), “Analysis of the findings from the excavation campaigns of 2009 and 2010” (Ea Darith), “The Industries of Angkor Project: Investigating the history and significance of iron smelting at Preah Khan of Kompong Svay” (Mitch Hendrickson), “The Iron Kuy Project: Ethnoarchaeological investigations of technological continuity in Preah Vihear Province, Cambodia” (Thomas Oliver Pryce), “The provenance of Angkor’s iron: Methodology and preliminary scientific results of the Industries of Angkor and Iron Kouy Projects” (Stéphanie Leroy, Thomas Oliver

Pryce, Mitch Hendrickson, and Philippe Dillmann), “Casting of ploughshares in Cambodia (1969) (movie, 16 min, 1970)” (Bernard Dupaigne, introduction and commentary), “Tek Thla and Thom Matout: A new stage in contemporary Khmer bronzecasting” (Jane P. Allison), “The making of a bronze sculpture (movie, 12 min, 2000)” (Huot Samnang, introduction and commentary), and “The goldsmith (movie, 19 min, 2003)” (Kong Vireak, introduction and commentary).

On Sunday morning, March 6th, presented papers included “Heger I bronze drum cast in lost-wax method: Local traditions of bronze production in Mainland Southeast Asia”, (Nishimura Masanari), “Problems and history of technical investigations on Khmer “bronzes”” (Brice Vincent), “Reflections on Sacred Sculpture of Thailand” (Hiram Woodward), “Khmer bronze metallurgy during the Angkorian period (12th-13th C.): Technical investigations of a new selected corpus of copper-based artifacts from the National Museum of Cambodia, Phnom Penh” (David Bourgarit, Brice Vincent, and Paul Jett), “From field to exhibition: Iron artifacts from Prohear and Village 10.8” (Seng Sonetra), and “Metal conservation at Vat Bo, Siem Reap” (Huot Samnang). On Sunday afternoon was the organized workshop with presented themes of “Metal conservation” (Huot Samnang and Seng Sonetra), “Archaeometric approaches to metal alloying and working traditions” (David Bourgarit), and “Archaeometric approaches to metal provenance and exchange networks” (Thomas Oliver Pryce). The excursions on Monday, March 7th, included a mix of site visits and short lectures including “Introduction to the inventory project of Vat Bo collections” (Ea Darith), “Conservation and preservation of the [Vat Bo] bronze collection” (Huot Samnang), “Introduction to the [Kvav] Iron Smelting Research Program” (Im Sokrithy), “Notes from the field: A preliminary ethnographic overview of Cham blacksmiths in Cambodia” (Emiko Stock), and “Bits and pieces on a casting of a bronze Buddha in 1994” (Ang Choulean).

The one-day conference *Metal Objects: How They Were Made and Decorated*, is a joint conference organized by the Roman Finds Group, the Finds Research Group 700-1700, the Historical Metallurgy Society and York Archaeological Trust. It was held

Monday, October 17th, 2011, at The Merchant Adventurers’ Hall, Fossgate, York, UK. Presented papers include “Anglo-Saxon jewellery” (Susan La Niece), “The art and mystery of the Cheapside Hoard goldsmiths” (Hazel Forsyth), “Understanding iron mail” (Sonia O’Connor), “Brazing: using copper alloys for joining and finishing iron objects” (Tim Young), “Further research on the late Roman vessel hoard from Drapers Gardens, London” (James Gerrard), “How many ways are there of making money?” (Peter Northover), “Technology or Design? ‘Enamel’ in the 1st century AD” (Mary Davies), and “Casting metals in Roman and post-Roman Britain: continuity and innovation in mould technology” (Justine Bayley).

BIOARCHAEOLOGY

Gordon F.M. Rakita, Associate Editor

Of late, there have been several calls for Anthropologists to reach out and engage the public. For example, Jerry Sabloff (2011) in his distinguished lecture at the American Anthropological Associations annual meetings strongly urged us to actively speak and write to a public audience and develop mechanisms (at least within academia) to reward those who do so. In particular, he suggested (p. 414) that “One of the most promising areas of outreach—and perhaps the launching pad of the future for public intellectuals in anthropology—is blogging.”

Sabloff is just one such prominent anthropologist to advocate for blogging. Likewise, paleoanthropologist and blogger himself, John Hawks (2010, 2011) has continued to advocate for anthropologists to reach out to the public through blogging or other forms of public discourse.

Writing, as I do from a public university in the state of Florida, I am keenly aware that the public and our elected officials often have a clouded understanding of the nature of our discipline and our contributions to society. Certainly we make such contributions, but we often fail to tout or otherwise advertise these contributions. As a result, we often have to play catch-up when others define who we are and what we do. In the wake of Florida Governor Scott’s

comments regarding Anthropology, many rushed into to the public debate to emphasize the scientific aspects of modern Anthropology. None were more effective than the presentation developed by Charlotte Noble and other graduate students at the University of South Florida (<http://prezi.com/vmvomt3sj3fd/this-is-anthropology/>).

But I can't help but wonder if this entire incident would have happened, or if such a response would have been necessary, had Anthropologists been more active in communicating the value and knowledge of our field to the public. This is especially true for scientific archaeologists who both seek public funding and require public laws to preserve the cultural resources that we know are so important to our communities. For this reason, I want to highlight several blogs that are dedicated to bioarchaeology or bioarchaeology themes.

These are the blogs I've tuned my RSS feed reader to:

- Powered by Osteons by Kristina Killgrove (<http://www.poweredbyosteons.org/>)
- Bones Don't Lie by Katy Meyers (<http://www.bonesdontlie.com/>)
- These Bones of Mine by David Mennear (<http://thesebonesofmine.wordpress.com/>)

Each of these regularly discusses exciting new finds or developments within the bioarchaeology. They help me keep up with the literature, make connections between disparate research threads, and (perhaps most importantly) remind me why I decided to be a bioarchaeologists in the first place.

So if you're interested in the field of bioarchaeology, tune in, and don't drop out. And if you're not interested in bioarchaeology but some other aspect of scientific archaeology, then I guarantee there's probably a blog for it out there. If not, then why not start one yourself.

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Sabloff, Jeremy A 2011 Where Have You Gone, Margaret Mead? Anthropology and Public Intellectuals. *American Anthropologist* 113, no. 3: 408-416.

BOOK REVIEWS

David Hill, Associate Editor

In the future, all advertisement copy provided by publishers that is submitted for inclusion on the SAS blog regarding forthcoming books will not be accepted unless it is accompanied with an actual copy of the book for review. This procedure will allow for an independent review of books that are advertised on the site. This policy is a win-win situation for everyone involved. Publishers can place advertising for new publications on the SAS blog and have their publications reviewed for the SAS Bulletin in a timely manner.

Once again our backlog of books for review has been depleted. In anyone knows of a recently published book or set of conference proceedings, please pass that information on to the reviews editor. As usual, I am interested in obtaining conference proceedings or other volumes with limited circulation that might be of interest to our membership. If you know of a particular person who might be a good reviewer for a particular volume please pass that information on as well.

Creating Prehistory: Druids, Ley Hunters and Archaeologists in Pre-War Britain. Adam Stout. 2008. Blackwell Publishing, Malden, MA. 336pp. US\$110.95 (cloth). ISBN 9781405155045.

Reviewed by Deni J. Seymour, Dos Locos Consultores, LLC, 2916 Palo Alto Drive NE, Albuquerque, NM, USA.

This book will not be of interest to archaeologists who have, to quote Jacquetta Hawks, "mud on their boots, potsherds in their pockets and 'science' on their lips." In this sense I confess that, in opposition to Stout, I accept that archaeology is distinguished as a profession by its unique reliance on material culture and artifacts and the skills developed

surrounding their interpretation. Stout dismisses these long-held basics. He regrets that the profession is tainted because “the final appeal is always to the material record.” For the misdirected practitioner, he says, “archaeology is about things.” He believes that “we need to get beyond the confines of a discipline defined for a different age” (p. 3-6, 36). In 300 pages he does not provide a viable alternate direction forward for the archaeologist from his overly broad categorization of archaeological orthodoxy.

The thesis of the book is clearly conveyed in its title, that one view of the past is as valid as another and new ideas about the past, however unfounded are to be embraced. The content description on the book back promises an even-handed and sympathetic treatment of “several different sorts of prehistory,” which is code for conveying alternative histories at the expense of established disciplinary standards. Working from a thoroughly postmodern perspective, Stout questions the legitimacy of the discipline of archaeology in the UK and its professionals, while legitimizing lay persons and druids, advocating another sort of knowing and a resistance to empirical data and orthodox methodology (p. 172). Tearing down the walls of “professional orthodoxy” his goal is to uproot the establishment and question authority with the fervor of a true radical, advocating and celebrating theoretical and disciplinary anarchy without concern for the pernicious effects of this suggested return to hobbyism.

The introduction lays out the arguments to be made in the volume as a whole, summarized in its title “Power and the Past.” The most pervasive theme is who should control access to the past—its monuments and stories told about it—and who decides what is the right kind of archaeology. From Part 1 it becomes clear that his answer is: anyone but the archaeologist. This well-worn theme, that all viewpoints are valid and deserve equal access, does not address the more complicated and inherently more interesting practical issues (too numerous to recount here) that emanate from this view, not least of which is preservation of cultural properties. What he resents are national standards, research agendas imposed from above, and the authority and influence of an “inner circle” (p. 40-41). A source of his angst is that in each generation a small group of insiders decides the course of the profession, a fact that

makes many so-called modernists bristle as well. Yet, as he makes clear, one man’s excavations are another’s looting, one group’s quackery is another’s sacred revival. By tearing down the walls of disciplinary legitimacy, room is made for the expansionist goals of the extreme relativist.

Stout notes that the early archaeological work was driven by a mission—the professionalism of archaeology which by definition meant rigidity. This reveals the real purpose of his book, which is to cast off conventions because standards mean constraint, control by a chosen few. He advocates a free-for-all that, as he notes, occurred in antiquarian times (p. 18), welcoming new ideas, no matter how outrageous (p. 246). Showing that ideas are rooted in their time, Part 2 reveals how the concepts of progress and diffusionism shaped the direction, role, and influence of archaeology. This theme—that archaeology cannot be extricated from its contextual matrix—though not original, reoccurs throughout the volume, underscoring his core premise that all is subjective and all ideas are equally valid.

This razing of disciplinary values and reframing of history prepares the reader for Part 3 which discusses druidic revival at the turn of the century. Stout describes at length the personality and efforts of its leader, Robert Macgregor Reid. Stonehenge, one of the UK’s most high-profile monuments, serves as a stage in the confrontation between professional archaeologists and the druids. Yet, the reader is confused as to where to place sympathies, because typically, a recent and historically unsubstantiated claim to a sacred place is not considered legitimate, thereby justifying the professional archaeologists efforts to protect (control) this unique cultural property. Perhaps this is the author’s intent, for when facts and data are considered invalid the archaeologist’s story is no more valid than the modern-day druid’s, both represent new knowledge and new claims. This confusion is clarified near the end of the section when Stout tells us how to think about this history: He wants us to see and abhor the close links between disciplinary authority and legal authority (152). He sides with the oppressed underdogs, the druids as victims of state intolerance and religious persecution (p. 154). He includes all the right buzz words and catch-phrases to stir the souls of the restless and downtrodden.

With regard to this theme, Stout missed drawing a most interesting parallel to some similarly structured arguments regarding Native Americans. Yet, in the US Native Americans have an established past with some degree of continuity to the present whereas Stout spends over 20 pages clarifying that Druidism practiced today has no authentic connection to the past: Druid presence at Stonehenge is a “recently established tradition,” that barely antedated the Great War (p. 153).

The larger objective of this section is clarified at the beginning and throughout the final part (Part 4) with its obligatory tromping of processualism, its trouncing of the validity of facts, of a knowable past, and all the other faults of the modernist perception of the archaeological profession. Here as throughout the volume, like most treatments that adhere to postmodernist dogma, the text skates over the crests of issues, using a range of typical and now-tired catch-phrases and the well-worn argument-structure of relativist reckoning. The first few pages of Chapter 12 presents a barrage of such transgressions of the modernist approach before sinking back into another discussion of the battle between the mainstream archaeological engine and non-sanctioned practitioners less concerned with distinguishing fact from fancy. The modernist points are not genuinely addressed, only raised, as if to assure the sympathetic reader of adherence to the party line. More intent on writing style than content, the reader is occasionally rescued by a down-to-earth statement that clarifies Stout’s point. This post-modern response, however, is hollow.

After all the effort expended reading this book, the author disappointingly concludes: “the past is unattainable. We are chasing rainbows.” At this the funding agencies will likely feel as disillusioned as I. Will they withdraw support for a profession that encourages new ideas about antiquity “however outrageous,” without a common set of ground rules and standards (p. 18, 246)? Is it fair to extend funding to such musings when they can as easily be imagined from an armchair? Stout does not let the facts constrain his narrative (p. 3). Somehow the concept of the “cumulative growth of historical knowledge” has become debased (p. 18) as stuffy orthodoxy. The order he has found in the past is as

good as any other, he assures us, diminishing the cumulative contributions of our predecessors, especially those who have been the most influential.

UPCOMING CONFERENCES

Rachel S. Popelka-Filcoff, Associate Editor

2011

13-16 November. 16th Engineering Heritage Australia Conference. Hobart, Tasmania. General information: <http://australia.icomos.org/wp-content/uploads/16th-Engineering-Heritage-Australia-conference.pdf>

16-19 November. 17-20. November. American Schools of Oriental Research Annual Meeting. San Francisco, CA USA. General information: <http://www.asor.org/am/index.html>

16-21 November. American Anthropological Association 110th Annual Meeting. Montreal, QC Canada. General information: <http://www.aaanet.org/meetings/>

17-19 November. Australasian Society for Historical Archaeology Conference, Dunedin, New Zealand. General information: <http://www.otago.ac.nz/asha2011/>

25-30 November. The Clay Minerals Society Annual Meeting. Lake Tahoe, NV USA. General information: <http://www.clays.org/annual%20meeting/announcement.html>

1-3 December. Australian Archaeological Association. Toowoomba, Queensland, Australia. General information: <http://www.usq.edu.au/aaa-conference>

5-9 December. AGU Fall Meeting, San Francisco, CA USA. General information: <http://www.agu.org/meetings/>. Special session on Paleoenvironments and Geoarchaeology.

2012

4-8 January. Society for Historical Archaeology Conference. Baltimore, MD, USA. General information: <http://www.sha.org/about/conferences/2012.cfm>.

5-8 January. 113th Joint AIA/APA Annual Meeting. Philadelphia, PA, USA. General information: <http://www.archaeological.org/webinfo.php?page=10096>

13-15 January. 1st Conferencia Intercontinental. Society for American Archaeology. Panama City, Panama.
General information: <http://www.saa.org>

25-27 January. Global Pottery 1st International Congress on Historical Archaeology and Archaeometry for Societies in Contact. Barcelona, Spain. General information: <http://globalpottery.ub.edu/>

24-28 February. Association of American Geographers (AAG) Annual Meeting, Seattle, Washington, USA.
General information:
<http://www.aag.org/cs/annualmeeting>

11-15 March. Pittcon Conference and Expo, Orlando, FL, USA. General information: <http://www.pittcon.org/>

25-29 March. 243rd National Meeting and Exposition, American Chemical Society. San Diego, CA USA.
General information: <http://www.acs.org>.

26-30 March. Computer Applications and Quantitative Methods in Archaeology (CAA 2012). University of Southampton, UK. General information:
<http://www.southampton.ac.uk/caa2012/>

28-31 March. 10th Biennial International Conference of the Infrared and Raman Users Group. Barcelona, Spain.
General information: <http://www.ub.edu/IRUG10BCN/>.

11-14 April. American Association of Physical Anthropologists Annual Meeting. Portland, OR, USA.
General information: <http://physanth.org/annual-meeting>

18-22 April Society for American Archaeology. Memphis, TN USA. General information:
<http://www.saa.org/AbouttheSociety/AnnualMeeting/tabid/138/Default.aspx>

18-22 April. Paleoanthropology Society Meetings, held in conjunction with the Society for American Archaeology. Memphis, TN USA. General information:
<http://www.paleoanthro.org/meeting.htm>

28 May- 1 June. International Symposium on Archaeometry. Leuven, Belgium. General information:
<http://ees.kuleuven.be/isa2012/>

5-8 June. Association of Critical Heritage Studies: Inaugural Conference. Gothenburg, Sweden. General information:
<http://www.worldarchaeologicalcongress.org/events>

6-8 June. SR2A: Synchrotron Radiation in Art and Archaeology, New York, New York, USA. General information: <http://www.sr2a.ua.ac.be/>

6-9 June. 2nd International Landscape Archaeology Conference, Berlin, Germany. Abstract deadline: 31 December 2011. General information:
<http://www.geo.fu-berlin.de/geog/fachrichtungen/physgeog/lac2012/index.html>

24-29 June. Goldschmidt 2012. Montreal, Canada.
General information: <http://www.goldschmidt2012.org/>

8-13 July. 8th International Conference Easter Island and the Pacific: Living in Changing Island Environments. Santa Rosa, CA, USA. General information:
<http://islandheritage.org/wordpress/>

2-10 August. 34th International Geological Congress. Brisbane, Australia General information:
<http://www.34igc.org/>

6-10 August. 61th Annual Denver X-Ray Conference. Denver, CO, USA. General information:
<http://www.dxcicdd.com/>

19-13 August. 244th National Meeting and Exposition, American Chemical Society. Philadelphia PA, USA.
General information: <http://www.acs.org>.

20-24 August. 12th International Paleolimnology Symposium, Glasgow, UK. General information:
<http://www.paleolim.org/index.php/symposia/>

27-31 August. Geomorphic Processes and Geoarchaeology: From Landscape Archaeology to Archaeotourism. Moscow, Russia. General information:
<http://geomorphology.ru/images/upload/newsfond156/180.pdf>

30 September -4 October. (SCIX) Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Meeting. Kansas City, MO, USA. General information: <http://scixconference.org/scix2012.html>.

4-7 November. The Geological Society of America National Meeting. Charlotte, NC, USA "Geosciences: Investing in the Future". General information:
<http://www.geosociety.org/meetings/>.

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