



SAS Bulletin



Society for Archaeological Sciences

Volume 18

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July – Sept. 1995

From the New Editor

I want to start out by praising Rob Sternberg for the job he did as the previous editor of 18 issues of the *SAS Bulletin*, spanning four volumes from 1991 to 1995. I was only able to appreciate most of these from the outside, as an avid reader. I also want to thank him for the considerable amount of time he spent with me, passing on the editorial torch, and the many useful suggestions he offered. I hope I can live up to the high standard which he set. Pat Martin, the president of SAS and *Bulletin* editor prior to Rob, had volunteered to write a few lines concerning Rob's work to be included in this issue, but I overlooked his e-mailed offer until very recently. I will try to include his comments in the next issue.

I do not plan to make any substantial or immediate modifications to either the format or content of the *Bulletin*. In general, I think the *Bulletin* "works well" as it is currently constituted. However, I do have some ideas for the future, some of which are based on my own particular interests. None of these are dramatic changes, but I have outlined them below in what I feel to be their approximate order of importance.

1. I think it is important to get regular "News of ..." contributions from the various subfields of archaeometry into the *Bulletin*. It may prove to be useful in this regard to review the current organizational structure of contributing *Bulletin* Associate Editors. Should we have a greater variety or different Associate Editor categories than we do now? As an example, I plan to incrementally include more articles on data analysis and quantitative methods, since these are part of my own interests. Reports on laboratories and conference proceedings also make useful and informative reading, but can't easily be accommodated by the present editorial structure. Any potential Associate Editor recruits should have Internet/e-mail savvy, and be willing and able to make regular contributions.

2. I intend to work toward making the *Bulletin* appear more "professional." One way of achieving this would be to print it on a smoother paper at a higher resolution (more dots/inch). This would allow smaller typefaces to be used without loss of readability. If a smaller size type is used for book re-

views (similar in size to the one used for the Meetings Calendar section or to that employed for book reviews in *American Anthropologist*), for example, this would free up space for other types of contributions.

3. I plan to continue and strengthen the Internet resources section that Rob initiated. Since the names and addresses of discussion lists, web and ftp sites are frequently modified or discontinued, this will be a regular column, so that the information it presents is current. Articles on the features and use of worldwide web browsers, including the critical topic of web searching, will also appear.

4. I will make the *SAS Bulletin* available online on a worldwide web server, as part of ongoing efforts to create an Internet home page for the Society. We may be able to have the *Bulletin* online by the time the next issue is published.

I will try to adhere to the following publication schedule for volumes 18 and 19 of the *Bulletin* over the course of this calendar year.

Issue	Submission deadline	Publication date
18(4)	(past)	May 1, 1996
19(1)	June 1, 1996	July 1, 1996
19(2)	July 1, 1996	Sept. 1, 1996
19(3)	Sept. 1, 1996	Nov. 1, 1996
19(4)	Oct. 1, 1996	Jan. 1, 1997

– Chris Nagle



In This Issue

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News of Archaeometallurgy

Workshops for archaeologists interested in archaeometallurgy are becoming all the rage. Following the successful meeting last April in Cairo, IAMS organised such a workshop in Egypt for late August and early September. And the Historical Metallurgy Society are planning another slag workshop to be held as a session of the annual Institute of Field Archaeologists Conference at Bradford University 11-13 April 1996. It is being organised under the aegis of the HMS Archaeology Committee and will provide an introduction to mining, smelting and working as well as an opportunity to examine detritus diagnostic of metallurgical activities. For information write David Starley, Ancient Monuments Laboratory, English Heritage, 23 Saville Row, London W1X 1AB England; telephone 44-171-973-3306; fax 44-171-973-3330; or email: D.Starley@eng-h.gov.uk.

In 1997 Tavistock in West Devon will have a millennial observance of the Viking invasion of 997, in which the Benedictine Abbey was sacked along with the Saxon mint at Lyford. If you might be interested in attending the conference being planned, write Julian Barnicoat, 10 Cuxton Meadows, Buckland Monachorum, Yelverton, Devon PL20 7NG, UK, and if you have comments or suggestions on the form and content of the events, write Tom Greeves, 39 Bannawell Street, Tavistock, Devon, or telephone 44-1822-617004.

To be put on the electronic discussion list for archaeometallurgy (ARCH-METALS) originated at Oxford by Chris Salter, send the command line "join arch-metals [first name] [last name]" to the address: arch-metals@mailbase.ac.uk. Recent discussion has tended to center on stable lead isotopes and the identification of the site at Kestel in Anatolia as a tin mine, but the list is also a practical vehicle for queries (as is this column.) Chris Salter's address is salter@vax.ox.ac.uk.

David Killick recommends a new book edited by Alan C. Craig and Robert C. West, *In Quest of Mineral Wealth: Aboriginal and Colonial Mining and Metallurgy in Spanish America* (ISBN 0-938909-57-6), published in 1994 in paper by Louisiana State University Geoscience Publications as number 33 in its Geoscience and Man series. He describes the chapter by Izumi Shimada as the best summary treatment of Andean metallurgy that he has seen. It can be ordered from Geoscience Publications, P. O. Box 16010, Baton Rouge, Louisiana 70893-6010, telephone 1-504-388-6245, fax 1-504-388-4420, for US\$25 plus US\$2 for shipping and handling within the US. Unfortunately they do not take credit cards and require prepayment in US funds.

Dorothy Hosler's book, *The Sounds and Colors of Power: The Sacred Metallurgical Technology of Ancient West Mexico* (ISBN 0-262-08230-6), was published by the MIT Press in 1994. The area received its metals technology among other import from the south and applied it first to bells, and only later to tools such as beam tweezers; the function of

these was analyzed by finite elements and related to measured properties of the metal. The book is in hardcover and can be ordered from The MIT Press, 55 Heywood Street, Cambridge, Massachusetts, USA, for US\$50 in the States, Canada, Mexico, Brazil, Israel, New Guinea, Australia, and New Zealand; elsewhere it is US\$60. For shipping charges telephone the book order department, 1-800-356-0343 x772, or fax 1-617-625-6660. They accept Visa, MasterCard, and American Express.

A revised and extended second edition of *The Iron Industry of the Weald* by Henry Cleere and David Crossley has been announced. Cost in the UK is £24.95 post free from Milton Priory Press Ltd, 7 Nant Fawr Road, Cardiff CF2 6JQ Wales, telephone and fax 44-1222 761544.

There were a number of interesting reports in the last issue of the IAMS newsletter (Number 19, June 1995), among them one on the International Merv Project, in which crucible steel remains were excavated in Turkmenistan during the 1993 and 1994 seasons. Another was on "Late neolithic copper smelting in the Arabah" by Beno Rothenberg and John Merkel, who identified the materials at Site F2 at Timna as a less advanced stage of smelting than the Chalcolithic procedure, which consistently used an iron-containing flux to lower the melting point of the slag. The pottery at Site F2 although locally made closely resembles Qatifian ware of the late Neolithic, as does that at Site Fidan 4 in Jordan. Formerly dated to the Chalcolithic, it is now dated to the turn of the fifth millennium BC. A subscription to the IAMS newsletter (ISSN 0261-068X) is still I believe £10 a year from the Institute for Archaeo-Metallurgical Studies, Institute of Archaeology, University College London, 31-34 Gordon Square, London WC1H 0PY England. You can inquire of Christine Crickmore, secretary for IAMS, at 44-171-387-7050 x4756.

If you have any archaeometallurgical news to share or comments to make, please write or call:

Martha Goodway, Smithsonian Institution MRC 534, Washington DC 20560 USA; tel. 301-238-3700 x164; fax 301-238-3709; e-mail cal.meg@ic.si.edu. □

Society for Archaeological Sciences World Wide Web Home Page coming soon

SAS will shortly have its very own Home Page on the Web, created and maintained by James Burton, at the University of Wisconsin-Madison. It will contain information about the Society and its officers, issues of the *SAS Bulletin*, links to a variety of archaeometric and archaeological resources, and more. Stay tuned!

Preliminary Program for Archaeometry 96

Below is the preliminary program for the International Symposium on Archaeometry, to be held at the University of Illinois May 20-24, 1996. Registration materials will be mailed to those already on the mailing list during the first week of February. To be added to the list, e-mail: wink@uiuc.edu. To register on-line (beginning in early February), access the WEB site: <http://www.conted.ceps.uiuc.edu/CI/arch.html>

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SUNDAY, MAY 19, 1996

2:00 p.m. Tour of Krannert Center for the Performing Arts, 500 S. Goodwin Ave. (Meet in the 5th Floor Lobby, no charge)

2:00-5:00 p.m. Visiting hours at the World Heritage Museum (4th Floor of Lincoln Hall, 702 S. Wright St., no charge)

5:00-8:00 p.m. PRE-REGISTRATION AND REFRESHMENTS, Illini Union, 1401 W. Green, Rooms A-C (ground floor)

MONDAY, MAY 20 (Illini Union, 1401 W. Green St., Rooms A-C)

8:00-9:00 REGISTRATION AND MOUNTING OF POSTERS FOR SESSION A. (n.b.: Posters for Session A should remain up for TWO days)

9:00-9:10 Welcome and Introductions

TECHNOLOGY/PROVENANCE OF STONE, PIGMENTS, PLASTER

9:10-9:40 Review of Marble Provenance - Y. Maniatis (REVIEW)

9:40-10:00 A NAA Data Base for Mediterranean Marbles - Norman Herz and Michael Glascock

10:00-10:20 Isotopic Strontium: its Potential for Improving the Determination of the Provenance of Ancient Marble - Sam C. Carrier, Norman Herz, and Bruno Turi

10:20-10:40 Obsidian Characterization by Laser Ablation ICP-MS and its Application to the Prehistoric Trade in the Mediterranean and the Near East: The Sources and Distribution within the Aegean, Anatolia and Armenia - B. Gratuze

11:10-11:30 Lithic Raw Material Provenance Studies in Hungary - Katalin T. Eiro

11:30-11:50 Lime Burning in an Open Fire: A Reconstruction Experiment to Simulate the Manufacture of Early Neolithic Terrazzo Floors - Maria Thais Crepaldi Affonso and Ernst Pernicka

11:50-12:10 A Comparison Study of Light Pigments used in Idyot and Miheh Tombs, Saqqara, Egypt - Mona F. Ali

12:10-12:30 Non-destructive Spectroscopic Detection of Pigments containing Pb(II) in Renaissance Italian Works of Art - M. Bacci and M. F. P. Ali

TECHNOLOGY/PROVENANCE OF CERAMICS AND GLASS

2:00-2:20 The Presumption of Local Provenance and Other Deadly Sins - Peter M. Day, Neil J. Brodie, and Vassilis Kilikoglou

2:20-2:40 Hydrogen Reduction as a Strategy for Firing Chinese Ceramics - Pamela Vandiver, Tim Levine, James W. Mayer, and Leopold May

2:40-3:00 Group Therapy in Crete in Crete: a Comparison between Analyses by INAA and Petrographic Thin Section of Early Bronze Age Pottery from Knossos - Alexandra Tsolakidou, Peter M. Day, Evangelia Kiriati, and Vassilis Kilikoglou

3:00-3:20 The Provenience of some Mycenaean and Related Pottery found in the Tombs at Tel Akko and Laish/Dan in Israel - J. Gunneveg, F. Asaro, and H. V. Michel

3:20-3:40 Postmanufacture Effects on the Chemical Characterization of Prehistoric Pottery: Evidence from the Central Mississippi River Valley - J. W. Cogswell, L.M. Ross, Jr, M. J. O'Brien, H. Neff, and M. D. Glascock

4:00-4:20 Salado Ceramic Production: Provenance and Intervillage Exchange - Arleyn W. Simon

4:20-4:40 Mapping Ceramic Compositional Variation and Prehistoric Interaction in Pacific Coastal Guatemala - Hector Neff

4:40-5:00 Ceramic productions of Islamic and Hispano-Moresque Workshops in Spain (10th to 16th Centuries): General Trends and Reference Groups - J. Molera, M. Vendrell-Saz, T. Pradell, and M. Garcia-Valles

5:00-5:20 Ceramic Physical Properties as Indicators of Technology - V. Kilikoglou, G. Vekinis, Y. Maniatis, and P. M. Day

6:00-8:00 RECEPTION AND COMPUTER FAIR, Beckman Institute for Science and Technology, 405 N. Mathews (Atrium, ground floor)

TUESDAY, MAY 21 (Illini Union, 1401 W. Green St., Rooms A-C)

TECHNOLOGY/PROVENANCE OF CERAMICS/GLASS, II

8:30-8:50 Why Lead Glazes? - M. S. Tite

8:50-9:10 Possibilities of Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for the Determination of Lead Isotope Ratios and Isotopic Analysis of Glazes from the Medieval Ceramic Industry of Andenne (Belgium) - Wim Devos, Luc Moens, Frank Vanhaecke, Richard Dams, and Emile C. Joël

9:10-9:30 The Results of an Archaeometric Examination of Glass from Sepphoris, Israel - W. Patrick McCray, A. Fischer, and W. D. Kingery

9:30-9:50 Glass after Rome - I.C. Freestone and M. J. Hughes

9:50-10:10 An Analytical Study of Roman Mosaic Tesserae to Investigate Their Re-Use in Medieval Enamels, and Some Comments on the Origins of their Opacifying Agents - Jennifer L. Mass, Mark Wypyski, and Rabia Demiralp

10:10-10:30 White European glass trade beads - R. G. V. Hancock, S. Aufreiter, and I. Kenyon

10:30-1:30 COFFEE AND POSTER SESSION A

TECHNOLOGY/PROVENANCE OF METALS

1:30-1:50 Copper Production from Sulfide Polymetal Ores of the East-Northern Balkans Eneolithic Culture - Natalja Ryndina, Ginda Indenbaum, and Vera Kolosova

1:50-2:10 Metal Technology and Refractories from Iron Age Bronze Melting Workshop at Khirbet edh-Dharih, Jordan - Sabine Klein, Andreas Hauptmann, Pamela Vandiver, and Carol Handwerker

2:10-2:30 Preliminary Study on Formation Process and Corrosion-resisting Mechanism of Chinese Black Mirrors - Changsui Wang, Minoru Suzuki, W. Thomas Chase

2:30-2:50 Manufacturing Techniques of Belt and Harness Fittings of the X century A.D. - Natalja Eniosova and Veronica Murashova

2:50-3:10 Scientific Investigations of Romano-British Metalworking - Justine Bayley

3:10-3:30 Large Scale-Small Size Production: Roman Brass-Making Crucibles - Thilo Rehren

4:00-4:20 The Sourcing of Southern African Tin Artefacts - Mike Grant

4:20-4:40 Determining the Technological Origins of Iron and Steel - David Starley

4:40-5:00 Precious Metals and Provenance Enquiries using ICP-MS-LA - M. F. Guerra, C.-O. Sarthre, J.-N. Barrandon

5:00-5:20 The Mapungubwe Gold Jewelry: Chemical and Metallographical Analyses of the Oldest Known Gold Work in Southern Africa - Duncan Miller and Suzanne Young

5:20-5:40 The Use of Sulphur in Hollow Ancient Gold Objects - Gerhard Eggert

5:40-6:00 DISMOUNTING OF POSTERS (SESSION A)

(EVENING FREE)

WEDNESDAY, MAY 22 (Colwell Playhouse, Krannert Center for the Performing Arts, 500 S. Goodwin Avenue)

THEME SESSION: BIOLOGICAL REMAINS AND ORGANIC RESIDUES

8:30-8:40 Introductions

8:40-9:10 Paleodiet and Biochemistry - Noreen Tuross

9:10-9:40 Diet Reconstruction with Stable Isotopes of Collagen and Apatite: Examples from Africa, Micronesia and North America - Stanley Ambrose

9:40-10:10 Stable Isotope Ratios and Coastal Diets in the Later Stone Age of South Africa: A Comparison and Critical Analysis of Two Data Sets - Judith Sealy

10:10-10:40 The Use and Abuse of Trace-Elements for Paleodietary Inferences - James H. Burton

11:00-11:15 DISCUSSION

11:15-11:45 Lipid Biomarkers in Archaeology - R. P. Evershed

11:45-12:15 (Organic Residues) - Tania Oudemans

12:15-12:30 Discussion

2:00-2:30 Recovery of Ancient DNA from Skeletal Remains - Bernd Herrmann

2:30-3:00 Ancient DNA and the Study of the New World - D. Andrew Merriwether and Robert E. Ferrell

3:00-3:15 Discussion

3:40-4:10 Radiocarbon Dating of Organic Materials - R. E. M. Hedges

4:10-4:40 U-Series and ESR Dating in Archaeology - Henry P. Schwarcz and W. J. Rink

4:40-5:10 Conservation Via Parylene Gas Phase Polymer Technology: A Perspective from the Windover Bog Site (8BR246) - J. M. Adovasio and B. Humphrey

5:10-5:30 Discussion

6:00-8:00 RECEPTION AND CONSERVATION EXHIBIT, Krannert Art Museum and Kinkaid Pavilion, 500 E. Peabody.

THURSDAY, MAY 23 (Illini Union, Green St., Rooms A-C)

8:00-8:30 MOUNTING OF POSTERS (POSTER SESSION B) (n.b.: Poster for Session B should remain up for TWO days)

BIOMATERIALS

8:30-8:50 Paleodietary Studies Based on the d13C Content of Cholesterol: Assessment of Dietary Differences Between English Inland and Coastal Communities - A. W. Stott, S. Jim, R. P. Evershed, and N. Tuross

8:50-9:10 A Solubility Profile Study of Acid Treatment of Archaeological Bone Mineral for Isotopic Paleodietary Analysis - Lori E. Wright, Tosha Dupras, Henry P. Schwarcz, and Martin Kynf

9:10-9:30 A Chemical 87Sr/86Sr Plateau Method for Obtaining Sr-Isotope Signatures from Fossil Bones and Teeth - S. Hoelzl and P. Horn

9:30-9:50 Biochemical Criteria for the Characterization of Thermally-Altered Bone - R. E. Taylor, P. E. Hare, D. Von Endt, and J. Kokis

9:50-10:10 Mesolithic 'Mastics': The Source of Natural Products in the Mesolithic of Northern Europe - E. M. Aveling, C. Haxon, and L. Larsson

10:10-10:30 Investigations of Stone Tool Function through Use-wear, Organic Residue, and DNA Analysis - Bruce L. Hardy

10:30-1:30 COFFEE AND POSTER SESSION B

1:30-1:50 Central European Pine Tar Technologies - Curt W. Beck, Edith C. Stout, Jonathan Bingam, Jonathan Lucas, Vandana Purohit

1:50-2:10 Chemical Nature of Balm Components used for Mummification in an Early Ptolemaic Mummy - Johann Koller and Ursula Baumer

FIELD ARCHAEOLOGY

2:10-2:40 Archaeological Soils and their Magnetic Properties - Jorg Fassbinder (REVIEW)

Geological Prospection subsession (moderator: Albert Hesse)

2:40-3:00 A 100-500MHz Band FM-CW Ground Penetrating Radar for Archaeological Prospecting - Hiroyuki Kamei, Shu Murayama, Masatsugu Shimizu and Yoshiyuki Naito

3:00-3:20 Resolving Discrepancies between Interpretations of Georadar Data and Reality - Juerg Leckebusch

3:40-4:00 Potential Focussing in Electrical Prospecting - Cedric Panissod and Alain Tabbagh

4:00-4:20 Building an Archaeological Site: The Champaign Facility for Testing Non Invasive Techniques in Archaeology, Phase I - Joyce Baird, John Issacson, Thomas J. Riley

Geochemical archaeology subsession

4:20-4:40 Identification of Activity Areas on Prehistoric Housefloors by Chemical Analysis of Anthropogenic Sediments - William D. Middleton

4:40-5:00 An Innovative Analysis of the Total, Inorganic and Organic Soil Phosphorus of a Prehistoric Mohawk Indian Site - Henry J. Chaya

5:00-5:20 Assessment of Habitational Intensity of Occupation at Harappan Site Dholavira, through Elemental Analysis of Anthropogenic Soils - Y. S. Farswan and V. Nautiyal

6:30 p.m. SYMPOSIUM BANQUET, Illini Union Ballroom

FRIDAY, MAY 24 (Illini Union, Rooms A-C)

DATING OF ORGANIC AND INORGANIC MATERIALS

8:45-9:15 REVIEW - G. A. Wagner

9:15-9:35 Radiocarbon Calibration for Dating based on Amino Acid Racemization: Newest Results on the Field of Age Determination of Fossil Bone Samples - Janos Csapos and Zsuzsanna Csapo-Kiss

9:35-9:55 Radiocarbon Dating: Organic Residues at the Microgram Level - D. Kirner, R. Burky, R. E. Taylor, and J. R. Southon

9:55-10:15 Radiocarbon Dating of Prehistoric Rock Paintings from Texas - Marian Hyman and Marvin W. Rowe

10:15-10:35 A New Spatial-temporal Model of the Dispersal of Domesticates from their Near Eastern Center of Origin to the Atlantic Coast, based on the Analysis of Recent Compilations of Radiocarbon Dates - Ilona Matkovszki

11:00-11:20 Dating of Materials up to 100,000 years old with Accelerator based Radiocarbon Dating: an Eternal Dream or Reality in the Near Future? - K. Vandeputte, L. Moens, R. Dams, and J. Van der Plicht

11:20-12:20 DISCUSSION: TRAINING AND PLACEMENT IN ARCHAEOOMETRY (moderated by the Society for Archaeological Sciences)

1:45-2:45 DISCUSSION: FUNDING FOR ARCHAEOOMETRY (moderated by the Society for Archaeological Sciences)

DATING, II

2:45-3:05 Uranium Series Dating of Flowstones from the Great Orme Mine - Helen L. King

3:05-3:25 ESR Dating on the Stratigraphy of Yunxian Homo Erectus, Hubei, China - Chen Tiemei, Yang Quan, and Hu Yanqiu

3:50-4:10 New Data on Secular Change in the U.S. Southwest Geomagnetic Field and a New Version of the Southwest Archaeomagnetic Master Curve - Jeffrey L. Eighmy and Jason M. LaBelle

4:10-4:30 A Climate-driven Dating Tool for Prehistoric Archaeology - Tim Rolph and Jan Bloemendal

THE
J. PAUL
GETTY
TRUST

Position Announcement

**SENIOR COORDINATOR
IN THE TRAINING PROGRAM**

THE GETTY CONSERVATION INSTITUTE, an operating program of the J. Paul Getty Trust, invites applications for the position of Senior Coordinator in the Training Program to work with the Institute's international program of professional education aimed at promoting, developing, and enhancing the practice and knowledge of conservation of cultural property. The Program includes courses, workshops, seminars, and conferences for conservators and other professionals. Responsible for assessing educational and training needs, developing proposals for activities according to the Institute's policies and priorities, and implementing proposals in consultation with the Program Director. Identifies lecturers and specialists, establishes and coordinates content and oversees the creation of supporting materials. Supervises support staff and performs administrative duties within the Program.

QUALIFICATIONS: Graduate degree in conservation, art history, archaeology, or anthropology; experience in management of projects, preferably on an international level; and a minimum of 5 years experience in archaeological conservation or related field required. Successful candidate must be skilled in interpersonal relationships in order to work effectively with staff and outside professionals. Excellent written and verbal skills necessary. Position also requires frequent travel to meetings and course sites throughout the world.

SALARY RANGE: US \$46,300 — US \$54,800.

Please send cover letters and résumés to:

Yvonne Bradshaw, Human Resources
J. Paul Getty Trust
401 Wilshire Boulevard, Suite 900
Santa Monica, California USA 90401
Telephone: 310 395 0388

Meetings Calendar

Susan Mulholland, Archaeometry Laboratory, University of Minnesota-Duluth, 10 University Drive, Duluth MN 55812, USA; tel: 218-726-7957; fax: 218-726-6979; email: smulholl@ua.d.umn.edu

New listings are marked by an *; new information for previous listings indicated by a +. More information on some meetings is given in previous bulletins as indicated, e.g., "12(4):13" for volume 12, number 4, page 13.

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April 22-26. Materials Research Society, Spring Meeting. San Francisco, California. Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237, USA; tel: 412-367-3003; fax: 412-367-4373.

April 22-26. 8th International Conference on Luminescence and Electron Spin Resonance Dating. Canberra. LED 96, Mrs. Judy Papps, Quaternary Dating Research Centre, ANH, RSPAS, Australian National University, Canberra, ACT 0200, Australia; tel: 61-6-249-4764; fax: 61-6-249-0315; email: Judy.Papps@anu.edu.au. Topics include dosimetry, equipment technology, Quaternary and archaeological dating applications. Pre-conference field trips to laboratories at Adelaide, Wollongong and Canberra.

April 25. Geology and Geochemistry in Archaeology—Spring 1996 Meeting of the Mineralogical Society. Milton Keynes, UK. Olwen Williams-Thorpe, Department of Earth Sciences, The Open University, Milton Keynes MK7 6AA, UK; tel: 01908 655147; fax: 01908 655151; email: O.Williams-Thorpe@open.ac.jk. Recent applications of geology, geochemistry and mineralogy in the study of archaeological stone artefacts; followed by a field excursion on April 26 to a local archaeological site to demonstrate the use of a range of field-portable geochemical and geophysical analysis instru-

ments in characterising archaeological samples.

April 28-May 1. Symposium on the Application of Geophysics to Engineering and Environmental Problems—SAGEEP '96. Keystone Resort, Colorado. Linda Hadley, SAGEEP '96 Conference Chair, !Geophysica, 2221 East Street, Golden, CO 80401, USA; tel: 303-278-1488.

* May 1-5. Annual Meeting, Women in Mining. Los Angeles, California, USA. Trips to Death Valley.

* May 1-5. 29th Annual Conference, Canadian Archaeological Association. Delta Barrington Hotel, Halifax, Nova Scotia, Canada. Stephen Davis, Conference Coordinator, Dept. of Anthropology, St. Mary's University, Halifax, Nova Scotia, Canada B3H 3C3; tel: 902-420-5631.

* May 20-22. American Quaternary Association 14th Biennial Meeting. Flagstaff, Arizona, USA. Jim Mead, Dept. of Geology, Northern Arizona University, Flagstaff, AZ 86011, USA; fax: 520-523-9220; email: jim@vishnu.glg.nau.edu.

May 20-24. International Symposium on Archaeometry. Urbana-Champaign, Illinois. Sarah Wissemann, ATAM Program, University of Illinois, 116 Observatory, 901 S. Mathews, Urbana, IL 61801, USA; tel: 217-333-6629; fax: 217-244-0466; email: wisarc@ux1.cso.uiuc.edu. 18(3).

* May 21-26. 22nd Annual Workshop and Conference, International Institute for Conservation of Historic and Artistic Works—Canadian Group. Montreal, Quebec, Canada. Johanne Perron, IIC-GC Congress '96, MBAM, C.P. 3000, succ. H, Montreal, Quebec, Canada H3G 2T9; tel: 514-285-1600; fax: 514-285-4019.

* May 24-26. 3rd Eastern States Rock Art Conference. University of Maine, Machias, Maine, USA. Mark Heddon, Maine Historic Preservation Commission, 55 Capitol St., Augusta, ME 04333, USA.

* May 28-June 1. 13th International Bronze Conference. Cambridge,

Massachusetts, USA. Amy Brauer, Arthur M. Sackler Museum, Harvard University Art Museums, 32 Quincy Street, Cambridge, MA, 02138, USA; email: brauer@husc.harvard.edu.

* May 30-June 2. Society for Industrial Archaeology, Annual Conference. Sacramento, California, USA. Patrick Martin, Dept. of Social Sciences, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931, USA; tel: 906-487-2070; fax: 906-487-2468; email: pem-194@mtu.edu.

* June 10-14. Public Lecture Series - Global Change and the Americas. NASA/Goddard Space Flight Center. Paula Webber, USRA, 7501 Forbes Boulevard, Suite 206, Sea- brook, MD 20706, USA; tel: 301-805-8396; email: paula@gvsp.usra.edu.

* June 12-15. Annual Meeting of the American Institute for Conservation of Historic and Artistic Works. "Collaboration in the Visual Arts." Jay Kureger, National Gallery of Art, DCL, 6th St. and Constitution Ave. NW, Washington, DC 20005, USA; tel: 202-452-9545; fax: 202-452-9545.

June 22-29. Ninth International Palynologic Congress. Houston, Texas, USA. Organized by the International Federation of Palynological Societies and the American Association of Stratigraphic Palynologists. D.J. Nichols, U.S. Geological Survey; fax: 303-236-5690; email: d nichols@greenwood.cr.usgs.gov. 18(1):19.

July 20-24. British Archaeological Association Annual Conference. Bristol. Helen Caton, BAA Conference, PO Box 31, Bristol BS99 1PW, UK.

* August 3-9. 5th in Triennial Oxford Conferences in Archaeoastronomy: "Cultural Aspects of Astronomy: An Intersection of Disciplines." St. John's College, Santa Fe, New Mexico, USA. Rolf Sinclair, Division of Physics, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230, USA; tel: 703-306-1809; fax: 703-306-0566; email: rsinclair@nsf.gov; URL:

- <http://www.phys.umn.edu/~zeilik/oxfordV>.
- * August 4-11. 24th Meeting of the Mexican Society of Anthropology: "Anthropology and History of Western Mexico. Tepic, Nayarit, Mexico. Linda Manzanilla, Instituto de Investigaciones Antropológicas, UNAM-Cd. Universitaria, 04510 Mexico D.F.; fax: 52-5-622-96-51; email: Imanza@servidor.unam.mx.
 - Aug. 4-14. 30th International Geological Congress. Beijing. Secretariat Bureau, 30th International Geological Congress, PO Box 823, Beijing 100037, P.R. China; tel: 86-1-8327772; fax: 86-1-8328928. 17(3):23.
 - + August 25-30. IIC 16th International Congress, International Institute of Historic and Artistic Works: "Archaeological Conservation and its Consequences." Falconer Center, Copenhagen. IIC, 6 Buckingham St., London WC2N 6BA, UK; fax: 44-171-976-1564. The Congress will offer new perspectives on the conservation of archaeological sites and finds, both on land and underwater.
 - + Sept. 8-14. XII Congress of the International Union of Prehistoric and Protohistoric Sciences. Forlì, Italy. Secreteria XIII Congresso U.I.S.P.P., Via Marchesi, 12-47100 Forlì, Italia; tel: 39-543-35725; fax: 39-543-35805.
 - Sept. 30-Oct. 3. 6th International Conference on Ground Penetrating Radar. Sendai, Japan. Dr. Motoyuki Sato, GPR '96 Technical chairperson, Department of Resources Engineering, Faculty of Engineering, Tohoku University, Sendai 980-77, Japan; tel: 81 (22) 217-7399; fax: 81 (22) 217-7401; email: gpr96@earth.tohoku.ac.jp; URL: <http://www.earth.tohoku.ac.jp/gpr96.html>. Abstract deadline: 5 April 1996.
 - + Oct. 9-11. 4th International Congress, Association for the Study of Marble and Other Stones Used in Antiquity. Bordeaux, France. Universite de Bordeaux III-CNRS, Maison de l'Archeologie, Applied Physics Lab., CRIAA, F-33405 Talence Cedex, France; tel: 33-56-84-51-60; fax: 33-56-84-51-57.
 - Oct. 26-29. Eastern States Archeological Federation, 62nd Annual Meeting. Wilmington, Delaware. Abstracts due June 1. Faye L. Stocum, DE SHPO, #15 The Green, Dover, DE 19901, USA; tel: 302-739-5685.
 - * Oct. 28-31. Geological Society of America Annual Meeting. Denver, Colorado, USA. Vanessa George, Geological Society of America, 3300 Penrose Place, Boulder, CO 80301, USA; tel: 303 -447-2020; fax: 303-447-1133.
 - Nov. 10-Dec. 13. Pan-American Course on the Conservation and Management of Earthen Architectural and Archaeological Heritage; co-organized by the Instituto Nacional de Cultura del Perú-Dirección Regional La Libertad (INC-DRLL), International Centre for Earth Construction-School of Architecture of Grenoble (CRATerre-EAG, Gaia Project), the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM, Gaia Project), and the Getty Conservation Institute (GCI), with support of the World Heritage Fund of UNESCO. Chan Chan, Trujillo, Peru. Training Program, The Getty Conservation Institute, 4503 Glencoe Avenue, Marina del Rey, CA 90292, USA; tel: 310-822-2299; fax: 310-821-9409. Application due 15 Dec. 1995. The course is geared toward professionals and technicians in anthropology, archaeology, architecture, engineering, conservation, and other disciplines involved with the conservation and management of cultural heritage. The course will be conducted in Spanish.
 - * Nov. 20-24. American Anthropological Association Annual Meeting. San Francisco, California, USA. American Anthropological Association, 4350 North Fairfax Drive, Suite 640, Arlington, VA 22203, USA; tel: 703-528-1902.
 - * Dec. 2-6. Materials Research Society Fall Meeting. Boston, Massachusetts, USA. Materials Research Society, 9800 McKnight Road, Pittsburgh, PA USA; tel: 412-367-3003; fax: 412-367-4373. The 5th symposium in Materials Issues in Art and Archaeology will be held at this meeting.
- 1997**
- * unknown. Millennial Observance of Viking Invasion of 997. Tavistock, West Devon, England. Julian Barnicoat, 10 Cuxton Meadows, Buckland Monachorum, Yelverton, Devon, PL20 7NG, UK.
 - * Feb. 10-13. Australasian Archaeometry: Retrospectives for the New millennium, 6th Australasian Archaeometry Conference. Australian Museum, Sydney, Australia. Secretariat, 6th Australasian Archaeometry Conference, AINSE< PMB 1, Menai NSW 2234, Australia; tel: 61-2-439 8220; fax: 61-2-439 6561; email: tuniz@atom.ansto.gov.au.
 - * April 2-6. Society for American Archaeology, Annual Meeting. Opryland, Nashville, Tennessee, USA. SAA, 900 Second St. NW, Suite 12, Washington, DC 20002, USA; tel: 202-789-8200.
 - * April 7-11. Materials Research Society, Spring Meeting. San Francisco, California, USA. Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237, USA; tel: 412-367-3003; fax: 412-367-4373.
 - * August 28-Sept. 3. IV International Conference on Geomorphology. Bologna, Italy. IV International Conference on Geomorphology, Planning Congressi s.r.l., Via Crociali 2, I-40138 Bologna, Italy.
 - * Sept. 8-12. 12th International Numismatic Congress. Berlin, Germany. Staatliche Museen zu Berlin - Preussischer Kulturbesitz, Munzkabinett, Bodestraße 1-3, D-10178 Berlin, Germany.
 - * Oct. 20-23. Geological Society of America, Annual Meeting. Salt Lake City, Nevada, USA. Vanessa George, Geological Society of America, 3300 Penrose Place, Boulder, CO 80301, USA; tel: 303-447-2020; fax: 303-447-1133.
 - * Dec. 1-5. Materials Research Society, Fall Meeting. Boston, Massachusetts, USA. Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237, USA; tel: 412-367-3003; fax: 412-367-4373.



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