

# SAS

Volume 7

Number 2

1983

## NEWSLETTER

### SOCIETY FOR ARCHAEOLOGICAL SCIENCES

## NEWS OF THE PROFESSION

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### 1983 FRYXELL AWARD

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The Society for American Archaeology awarded the 1983 Fryxell Medal posthumously to John E. Guilday. The award is given annually by the SAA to an individual who has made the most significant contribution to interdisciplinary studies in the archaeology of the Americas. John Guilday held various curatorships in anatomy and paleontology at the Carnegie Museum in Pittsburgh. His own research interests concentrated on Pleistocene-Holocene faunal changes. As noted in the SAA citation: "Guilday contributed significantly to a wide range of scientific problem domains that are shared between archaeology and paleontology: human behavior as manifested in patterns of butchering and food processing; microclimatic information derived from archaeological faunal assemblages; taphonomic processes in caves and rockshelters; the discrimination of human from animal contributions to site bone assemblages; relationships between changing faunal assemblages and other environmental indicators such as fossil plant associations; patterns and causes of faunal extinctions and macroclimatic change and its effects on faunal distributions."

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### A NEW SERVICE FOR ARCHAEOLOGISTS: COMPOSITIONAL ANALYSIS OF CERAMICS

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The Anthropology Department at SUNY-Binghamton, in cooperation with the Geology Department, has developed a program in the technical analysis of ancient ceramics. They have facilities for thin-section preparation and have trained a number of graduate students in the techniques of petrographic analysis. Most of these students are now engaged in advanced research on pottery from the eastern U.S. and western Mediterranean.

They can now offer their services to other individuals and institutions. The basic analysis provides the following information on each ceramic specimen: 1) mineralogical identification of major paste constituents, including temper; 2) relative abundance of temper and other inclusions within the paste, expressed as a percentage of total volume (such estimates are derived by point counting).

The data can be used for a variety of purposes, including (but not limited to): 1) studies of provenience or origin; that is, identifying the probable areas of manufacture; 2) studies of pottery-making techniques; 3) studies of vessel function and the relationship of function to paste composition; 4) enhancement of conventional type descriptions.

The basic service—including thin-section preparation and analysis—currently costs \$35 per sample. There is no minimum order, and for large orders a reduced price may be possible. They can also undertake special studies, such as those involving the analysis of heavy minerals or the measurement of physical properties such as porosity, strength, etc. All arrangements can be worked out on a case-by-case basis, taking the specific needs of the investigator into account.

If you are interested in these services, contact Vincas P. Steponaitis, Assistant Professor, Anthropology Dept., State U. of New York at Binghamton, Binghamton, N.Y. 13901.

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### MEETINGS HELD IN TURKEY

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Dr. E. Deniz reports that a special meeting on the results of archaeological research in Turkey was held as part of the Exhibition and Symposium of Anatolian Civilizations. It met between 23 and 27 May, 1983 in Istanbul. The annual meeting of Archaeometry in Turkey also was held 26-30 May 1983 in Istanbul.

## UPCOMING MEETINGS

13-15 August 1984, American Quaternary Association, 8th Biennial Meeting, Boulder CO. Theme: Seasonal climatic responses in the Quaternary. 1 & 2 day field trips before and after the meeting. Inquiries: AMQUA, Office of Conference Services, Campus Box 153, U. of Colorado, Boulder, CO 80310, Tel. (303) 492-5151.

## INTERNATIONAL WORKSHOP ON DATA MANAGEMENT OF ARCHAEOZOOLOGICAL ASSEMBLAGES

The first workshop on data management of archaeozoological assemblages is scheduled to take place in Amsterdam, May 7-9 1984. The workshop is intended for zooarchaeologists who have a working knowledge of the use of computers in their field of research. The number of participants will be limited to 25 to 30 persons and each participant is expected to contribute to the program. Contributions may consist of a lecture or a demonstration. The conference language is English.

Contributions on the following subjects are invited: a) data management; b) data storage; c) management of museum c.q. reference collections; d) statistical analysis; e) use of microcomputers; f) bibliographies; g) spatial analysis; h) simulation and modelling; i) integration with other archaeological or ecological data. Contributions on other subjects may also be submitted. The program will provide for the presentation of short papers (10-15 min.) and long papers (30-40 min.). Please submit abstracts no later than 1 April 1984. It is intended to publish the Proceedings.

An important part of the workshop will be

devoted to demonstrations and practical uses of computer programs. The Computer Center of the University of Amsterdam houses a CDC Cyber (operating system NOS/BE or Unix) and an IBM (operating system MVS). An Apple//e (operating system Apple DOS or CP-M) with 5 1/4 inch floppy disks will also be available. Participants who use microcomputers with different operating systems for their work are requested to bring their own apparatus if they want to demonstrate their programs. Please give the detailed information on the registration form.

Registration forms may be obtained from Dr. Louise H. van Wijngaarden-Baaker, Universiteit van Amsterdam, Albert Egges van Giffen Instituut voor Prae-en Protohistorie, Singel 453, 1012 WP Amsterdam, Netherlands. The registration fee is Dfl 125 (\$50). This includes coffee/tea/lunches, a reception, and on the final night a boat tour on the canals with cold supper on board.

Accommodations can be booked in Hotel Rokin, Rokin 73, in the center of Amsterdam. The costs per person are ca. Dfl 75 for a single room, Dfl 50 for a double room and Dfl 60 for a double room with bath. If hotel accommodation is required, the registration form must be returned by 1 April. Some staff members of the IPP have kindly offered to lodge participants free of charge at their homes. As this number is restricted, those wishing to use this offer will be accommodated in order of entry of their registration fee.

The workshop will be followed by an international symposium on Mathematical Methods in Archaeology in Amsterdam, May 9-11 1984. It will be organized by commission 4 of the UISPP: data management and mathematical methods in archaeology.

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Mail copy to:

Suzanne De Atley, Anthropology-Archaeology Program, Room 20D-105, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.

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## IN BRIEF...

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Catherine Takacs-Biro (Hungary) informs us that on 20 January 1983 an Archaeometry Committee was founded within the Hungarian Academy of Sciences. It is headed by Dr. M. Bakos from the Veszprem University of Chemical Sciences.

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## REQUESTS FOR COOPERATION

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Mark Aldenderfer (Anthro. Dept., Northwestern U., Evanston, IL 60602), Carol Waddell, and John Fountain (SUNY, Buffalo) have designed a project to explore a new dating technique based on the diffusion of calcium into substances with clay/cement interfaces, e.g., building materials, and perhaps ceramics with calcium based slips. Preliminary results have been consistent and indicate that the method may have real promise for a wide range of dating applications. The greatest problem has been the acquisition of samples of sufficient diversity and known provenience for the calibration and further exploration of the method. They would appreciate receiving materials from members of the SAS. For a list of sample requirements, or for further information, contact M. Aldenderfer.

Dr. Graeme Coote (Dept. of Scientific & Industrial Research, Institute of Nuclear Sciences, Lower Hutt, New Zealand) requires teeth and sections of bone from skeletons of known age in order to check the fluorine profiling method and to determine the appropriate diffusion constant(s). He would also like obsidian specimens of known ages and sources for further testing and calibration of the sodium profile method. He wishes to compare this technique with other methods for hydration dating, e.g. optical methods and ion sputtering.

Foss Leach, (Research Lab. for Archaeology, Oxford U., 6 Keble Road, Oxford OX1-3QJ, England) is interested in corresponding with anyone working with obsidian sputtering for the purposes of creating analytical standards.

Dr. I.R. Selimkhanov (Institute of History, Baku-143, U.S.S.R.) wishes to correspond with other researchers interested in the history of tin and high tin bronzes, especially in the Near East and Southeast Asia.

Catherine Takacs-Biro (Hungarian Geological Institute, H-1143 Budapest, Nepstadion u.

14, Hungary) is interested in exchanging samples of raw materials used for chipped stone artifacts, particularly obsidian from Europe and the Middle East, and other raw materials from the Carpathian Basin and Central Europe. She is also interested in computer registration systems for lithic materials.

Gary C. Wessen (1826 1st Street, Kirkland, WA 98033) is interested in contacting other researchers who have shellfish data from Pacific coast archaeological sites in which earlier fauna dominated by Mytilus californianus are subsequently replaced by fauna dominated by Saxidomus giganteus, Protothaca staminea, or other hardshell clams.

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## ATOMIC ABSORPTION ANALYSIS OF SPANISH PERIOD CERAMICS IN ALTA CALIFORNIA

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In 1979 Chapman College and the U. of California, Irvine (Extension) began their joint archaeological research project at Mission San Juan Capistrano in southern California.

The San Juan Capistrano Mission was established by the colonial Spanish in 1776. Excavation has revealed ceramics of various types, some locally manufactured and some transported to the site from other geographic regions--presumably the Orient, Mexico, the Caribbean, and Europe. Many of the ceramic samples are small shards; some can easily be identified visually and others require chemical analysis in order to determine their compositional closeness to known shards. Atomic absorption is an inexpensive, accurate and comparatively simple analytical method to utilize for this purpose. Thus far, approximately 100 ceramic and slag samples have been analyzed from Mission San Juan Capistrano and several Baja California missions.

Some of the accepted ceramic categories of this period need to be reanalyzed in order to determine their overall credibility. Eventually it is hoped that all 21 major Spanish missions in Alta California will conduct a comparative assessment of the excavated ceramics in order to establish firmer concepts concerning trade and the economic, political and social impact of this trade on California during the Spanish period. This dual type of research, visual identification and atomic absorption analysis working hand in hand, may be extended to the entire holding of Spanish territories during the height of the empire.

Submitted by N. Magalousis, Chapman College, Orange, CA 92666

## FROM TWO CULTURES: THE RESPONSIBILITIES OF AN ARCHAEOLOGICAL GEOLOGIST

Editor's note: George (Rip) Rapp, Jr. (Archaeometry Lab., U. of Minnesota, Duluth), SAS President for 1983-84, received the first archaeological geology award of the Geological Society of America in October 1983. The following is his acceptance speech.

I first want to define what I mean by an archaeological geologist. Geology provides the noun and archaeology provides the descriptive and limiting adjective. In other words I am addressing the practitioner who is trained primarily in geology (or in one of the relevant subdisciplines such as geochemistry or paleontology) and who performs geological studies that solve or assist in solving archaeological problems. Of course some archaeological problems are equally geological, e.g. Holocene geomorphic change, which affects a given archaeological site or region. I want to contrast an archaeological geologist with those one might call geoarchaeologists, those whose training and development lie within archaeology but who have learned to apply geological concepts and methods in their archaeological pursuits.

Members of all scholarly disciplines have well-understood, general responsibilities to scholarship and I do not presume to review, expand or philosophize on these. Nor do I intend to discuss the responsibilities peculiar to the geological profession as a whole. My remarks are limited to the special responsibilities of the archaeological geologist. These responsibilities derive from two conditions. The first is the interdisciplinary or cross-disciplinary nature of archaeological geology. The second is the very young age of the field as an organized discipline.

As members of a cross-disciplinary community we must develop as thorough an understanding as possible of the concepts and aims of archaeology in the study of culture patterns and culture history. We must join with archaeologists in the development of professional attitudes and standards relating to cultural resources. We should also realize that it was archaeology that first reached out to incorporate aspects of the natural sciences, not the other way around. Further, we must go beyond archaeology to investigate and develop the areas of interface and overlap with the other scholarly disciplines with mutual interests, ranging from palynology and paleoethnobotany to paleoanthropology—all those seeking to reconstruct the environmental history and

environmental processes that shaped human development and the human habitat over the last few million years.

As members of an emerging subdiscipline we must establish the sociological as well as the scientific framework for the profession. We are responsible for the communication of research results at meetings and through journals, establishing new ones if necessary. The establishment of the Archaeological Geology Division of the Geological Society of America was an early part of this social growth. Now it is critical that we establish quality programs to train Ph.D.s. Such programs could be either interdisciplinary between geology and archaeology (as we have in the Center for Ancient Studies at the University of Minnesota) or within enlightened geology departments.

We must actively seek the establishment of positions for archaeological geologists within the state and federal geological surveys, in colleges and universities, in the environmental sciences field, in the complex area of cultural resources management, and in museums and other research institutions specializing in expeditions and systematic collections. As a very young discipline we stand last in line, when there is any line at all, for financial support for research. It will take time and effort to develop funding sources and to get granting agencies reorganized to respond to cross-disciplinary research proposals.

Scientifically we must come to grips with several problems. Excavation oriented work is always limited by the need for special permits, often difficult or impossible to obtain. We must get geology into the design as well as the execution stages of excavation. And we must expand the understanding of the need for off-site stratigraphic controls. We must be alert to apply new concepts and new methodologies or instrumentation (often borrowed from chemistry or physics) to the solution of archaeological problems. Probably all prehistoric archaeology and paleoanthropology have a significant geological component. Are we providing innovative geological science to move these areas forward as fast as desirable?

When the intellectual history of this century is written how will we fare? Will it be recorded that we were among those who used inquiry at the boundaries of semi-rigid disciplines to penetrate to new levels of understanding? Or will it have become obvious that we merely meandered across the geohistorical landscape practicing our journeyman trade? The choice of problems we choose to address

is not a given. Archaeology is a discipline in ferment, a discipline seeking new organizing principles. For modern geologists, struggling with organizing principles is a strange labor. Yet in the overlap areas of natural history we can choose to work with archaeologists in their labors or proceed in our mundane ways, secure in the knowledge that our paradigms will go largely unchallenged.

The responsibility for taking the high road rests not with a committee or a society but with all those who practice what we call archaeological geology. We have the privilege and the responsibility to grow and to prosper.

Excelsior!

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## NEWS OF ARCHAOMETALLURGY

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The long awaited proceedings of the 1981 symposium on **Early Metallurgy in Cyprus 400-500 BC** have been published by the Pierides Foundation (PO Box 25, Larnaca, Cyprus). The volume can be ordered for C£ 18.00 exclusive of postage and packing.

The Historical Metallurgy Group of the Swedish Ironmasters' Association has published "Iron and Steel on the European Market in the 17th Century", a manuscript of the 1660's containing information on Spanish, German, French, and Swedish ironmaking. The book can be ordered from Jernkontoret (Box 1721, S-11187 Stockholm) in either hardcover (ISBN 91-970365-2-8) or paper (ISBN 91-970365-1-x). Paperbound copies may also be obtained from Roger Wood, secretary of the Historical Metallurgy Society, 99 High Lane West, West Hallam, Derbyshire DE7 6HQ, for £9.50 including postage and packing.

Professor Tohru Ishino (Castings Division, Dept. of Metallurgy, Faculty of Science & Technology, Kinki U., Kowakee 3-4-1, Higashiosaka 577 Japan) has published a 71 page book in Japanese with diagrams and illustrations, some in color, on "How the Great Image of Buddha at Nara was Constructed" (1983, ISBN 4-338-04203-6). There is a 20 page booklet with the text translated into English. Professor Ishino previously (1977) published a book in Japanese on ancient casting.

The Metals Museum of the Japan Institute for Metals (Auba Aramabi, Sendai 980 Japan) publishes the **Bulletin of the Metals Museum**, most of which is in English.

The Institution of Mining and Metallurgy (44 Portland Place, London W1N 4BR) is publishing a series of historical reprints. Three already published on mining include the "Fodinae Regales" of 1670 by Sir John Pettus (£15), "The miners dictionary" of 1747 by Wil-

liam Hooson (£15), and "A discovery of subterranean treasure" of 1639 by Gabriel Plattes (£13). For further information contact Helen Picksley, Publication Sales Officer.

Modern use of the mokume technique is explored in the Spring 1983 issue of **Metal-smith** (3(2):35-42), published by the Society of North American Goldsmiths (2849 St. Ann Drive, Green Bay, WI 54301).

1982 brought forth two works of encyclopedic proportions on crafts. Oppi Untracht published **Metal Techniques for Craftsmen, A Basic Manual for Craftsmen on the Methods of Forming and Decorating Metals** in 1968. He has just published **Jewelry Concepts and Technology** (Doubleday, \$60, 864 pp. & 1850 illustrations) which covers ancient as well as modern techniques. Richard Hughes and Michael Rowe have compiled **The Colouring, Bronzing and Patination of Metals, A Manual for the Fine Metal Worker and Sculptor** (ISBN 01 903 798-60-3, 372 pp., 16 color plates). They give 1117 recipes (so called) that worked and 17 that didn't. No commercial methods or those utilizing cyanides, arsenic, antimony, molten salts or acidified sulfides are included. The book is published by the Crafts Council (11/12 Waterloo Place, London SW1 4AU) for £30 plus £1 shipping.

Martha Goodway has been appointed chairman of the American Society for Metals Committee on the History and Archaeology of Materials. The committee's next meeting will be in Philadelphia on October 2nd.

The Society of Jewellery Historians, formed in 1977 by a group of art historians, archaeologists, collectors and dealers, publishes a quarterly newsletter with regular articles on the history of techniques. Annual membership is £10. For details write to the Honorary Secretary, Miss Judy Rudoe, Dept. of Medieval and Later Antiquities, British Museum, London WC1 3DG.

The Scientific Research Committee of the Royal Numismatic Society published **Metallurgy in Numismatics**, Vol. 1, in 1980. The present plan is to publish Vol. 2 in 1985. Those who wish to contribute should send a resume of their work to one of the editors, either Dr. D.M. Metcalf (Ashmolean Museum, Oxford OX1 2PH) or W. Andrew Oddy (Conservation Dept., British Museum, London WC1B 3DG). Completed manuscripts will be due by the end of May 1984. The Scientific Research Committee is circulating a Code of Practice for Coin Analysis, obtainable from Mr. M.R. Cowell (Research Lab., British Museum) or Dr. G.R. Gilmore (Universities Research Reactor, Risley, Warrington WA3 6AT).

A symposium on "The Use of Scientific Techniques for the Studying of Coinage of Europe and the Mediterranean World in the Period AD 500-1500" has been announced for Spring 1984 at the British Museum. For details write Miss M.M. Archibald, Dept. of Coins and Medals, British Museum, London WC1B 3DG.

The Historical Metallurgy Society celebrated the Cort Bicentennial with a weekend conference at the University of Southampton, 16-18 September 1983. The conference secretary was Ian Standing of Rock House, Bowens Hill, Coleford Gloucestershire GL16 8DH.

The International Symposium on Electron Optical and Microchemical Analysis of Art and Archaeological Artifacts, announced for 23-24 June 1983 at LeHigh University in Bethlehem PA., has been postponed.

The most recent symposium on Archaeometry was held in Naples in April. Since there are no plans at present to publish the proceedings, titles of the papers in the ancient metallurgy sessions with authors and their addresses are given below:

"Segregation of alloying elements in bronze castings", J.P. Northover (Dept. of Metallurgy & Science of Materials, U. Oxford, Oxford OX1 3PH) & P. Holmes.

"Analysis of inclusions in bronze metalwork", J.P. Northover.

"An investigation into the nature of the slags and slag inclusions produced during the smithing of ancient wrought iron", C.J. Salter (Dept. of Metallurgy & Science of Materials, U. of Oxford, OX1 3PH).

"The metallurgy and chemistry of some iron artefacts from the Iron Age hill fort at Danebury, Hampshire", R.M. Ehrenreich & C.J. Salter.

"Examination of a spear from Late Iron Age Slovenia", E.A. Coughlin (Peabody Museum, Harvard U., 11 Divinity Ave., Cambridge, MA 02138), M.N. Gesolowitz & P.M. Rury.

"Mining and smelting through 500 years in Oman. Part I: The archaeological evidence", G. Weisgerber & A. Hauptman (Deutsches Bergbau-Museum, D4630 Bochum, W. Germany). "Part II: The development of copper metallurgy in Oman", A. Hauptman, H.G. Bachman & G. Weisgerber.

"Archaeometallurgy of the Kassandra region, northern Greece", G.A. Wagner (MPI Kernphysik, Heidelberg, W. Germany), et al.

"The influence of the chemical composition of bronze artefacts on the determination of the provenance of their copper by lead isotope measurements", Z.A. Stos-Gale (Ashmolean Museum, Oxford, England) & N.H. Gale.

"Differentiation of provenance of stylistically similar Greek and oriental bronzes from Delphi", N.H. Gale (Dept. of Geology & Mineralogy, Parks Road, Oxford, England), Z.A. Stos-Gale, E. Photos & S. Filippakis.

"Chemical and lead isotope analyses of Greek Late Neolithic/Early Bronze Age metals: archaeological implications", V. McGeehan-Liritzis (Inst. of Archaeology, Oxford U.), N.H. Gale & Y. Liritzis.

"Lead isotope ratio measurements on galenas from Copena burial mounds, Alabama, USA.", R.M. Farquhar (Physics Dept., U. of Toronto, Toronto, Canada), J.A. Walthall & S.H. Stow.

"8th millenium BC copper from Cayonu, Turkey", R. Maddin & J.D. Muhly (U. of PA., 3231 Walnut Street, Philadelphia PA 19104).

"Research on Etruscan metallurgy: report of the group 'L'Etruria Mineraria'". Istituto di Studi Etruschi ed Italici, Florence. A. Sestini & G. Sperl (Erich-Schmid Institut fur Festkorperphysik, Osterreichische Akademie der Wissenschaften, Jahnstrasse 12, A-8700 Leoben, Austria).

"Etruscan granulation and filagree: some recent analytical results on the ancient welding techniques", E. Mello (Istituto Guido Donegani S.p.A. via G. Fauser 4, 28100 Novara, Italy), P. Parrini & E. Formigli.

"Cadmium in ancient gold jewelry", G. Demortier (Facultes Universitaires Notre-Dame de la Paix 61, rue de Bruxelles, B-5000 Namur, Belgium).

"Laser microspectral analysis of ancient gold and silver objects", E.L. Richter (Staatliche Akademie der Bilden Kunte, Am Weissenhoff 1, D-7000 Stuttgart 1, W. Germany).

"Authenticity of brass objects by major element analysis?", A. Pollard (Research Lab. for Archaeology & the Fine Arts, 6 Keble Road, Oxford OX1 3QJ).

"The use of electron probe microanalysis in coin analysis", D.H. Metcalf (Ashmolean Museum, U. of Oxford) & J.P. Northover.

"Chemical compositions of copper-based Roman coins: IX Neronian quadrantes, 64-66 AD", G.F. Carter (Eastern Michigan U., Ypsilanti, MI 48197.)

"Neutron and X-ray transmission: results in silver and gold ancient coinage", C. Mancini (Istituto di impianti nucleari, Facolata di Ingegneria, Universita di Roma "La Sapienza", Rome, Italy).

If you know of meetings being planned or have news to contribute, call Martha Goodway at 202-357-2444 or write to her at the Smithsonian Institution, Washington D.C. 20560.

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## PROGRAM ON ANCIENT TECHNOLOGIES AND ARCHAEOLOGICAL MATERIALS

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The U. of Illinois at Urbana-Champaign recently established the Program on Ancient Technologies and Archaeological Materials, ATAM, a special unit of the Graduate College. The purpose of ATAM is to stimulate and coordinate research on the key role of materials in the practical pursuits and aesthetic expression of various cultures. To this end, modern laboratory techniques from the physical sciences are joined with scholarship from the humanities and social sciences. The

ATAM group includes faculty and staff from the departments of Agronomy, Anthropology, Classics, Architecture, Geology, Art and Design, Ceramic Engineering, Metallurgy, Urban Planning, Physics, the Environmental Research Laboratory, and the World Heritage Museum. Research topics of interest include: authentication and identification of objects of archaeological and aesthetic interest, dating methods for archaeological objects, the materials aspect of historic preservation, the historical and anthropological record in materials, technology of early materials processing, and the role of materials in aesthetic expression.

# RECENT PUBLICATIONS

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## NEWSLETTERS

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The Newsletter on Near Eastern and Middle Eastern Archaeology is distributed free of charge, with regular contributions of news items and publications from its subscribers. For information contact: Nathalie Desse-Berset, Newsletter on Near Eastern and Middle Eastern Archaeology, CNRS, Archaeological Research Center, Sophia Antipolis, F 06565 Valbonne Cedex, France.

Nouvelles de L'Archeologie is published by the Maison des Sciences de L'Homme in Paris. For information write: Nouvelles de L'Archeologie, Maison des Sciences de L'Homme, 54, Bd Raspail 75270 Paris Cedex 06.

Nyame Akuma, is the official publication of the Society of Africanist Archaeologists in America. It is issued twice a year (May and November) and publishes short reports on current research in almost all periods of African archaeology (in both French and English) with the exception of the classical period in North Africa and the Pharaonic periods in Egypt. Subscriptions are \$10.00 per year, payable to Nyame Akuma, c/o Dr. Sheryl Miller, Anthro. Dept., Pitzer College, Claremont, CA 91711. Some back numbers are still available at \$5.00 each, and a complete set of numbers 1-17 on microfiche can be purchased for \$50.00. Send enquiries to Dr. David Lubell, Editor, Nyame Akuma, Anthro. Dept., University of Alberta, Edmonton, Alberta, Canada, T6G 2H4.

Zooarchaeological Research News is published 4 times a year from Edmonton, Alberta. Subscriptions are \$6 per year (Canadian). Send to Tim Schowalter, Co-editor, 9712 84th Avenue, Edmonton, Alberta, T6E 2E9.

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## GENERAL INTEREST

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Butzer, Karl, 1982. *Archaeology as Human Ecology*. Cambridge U. Press.

Lechtman, Heather, & Ana María Soldi, eds. 1981. *La Tecnología en el Mundo Andino. Runakunap Kawsayninkupaq Rurasqankunaga*. Vol. 1: Subsistencia y Mensuración. Universidad Nacional Autónoma de México: México. Text in Spanish. Paperback price \$3.50 (U.S.). Order from Distribuidora de Libros U.N.A.M., Porto Alegre, 260, San Andrés Tetepilco, Delegación Iztapalapa, 9440 México D.F. Mexico.

Nibbi, Alessandra, 1981. *Ancient Egypt and Some Eastern Neighbors*. Park Ridge, New Jersey: Noyes Press.

Patou, Marylene, 1982. La conservation du matériel archéologique "in situ". le Musée de Terra Amat, Nice, A.-M. *Bull. de Liaison des Conservateurs des Musées d'Histoire Naturelle de Province* No. 52:3-4.

----, 1982. La grotte du Garrouillat (Davejean, Aude): Nouvelles découvertes de l'âge du Bronze. *Bull. de la Société d'étude scientifique de l'Aude*, Vol. 82.

Rapp, G., Jr., & J.A. Gifford, eds. *Troy: The Archaeological Geology*. Suppl. Monograph 4. Princeton: Princeton U. Press.

Wilson, M., K.L. Road, & K.J. Hardy, eds., 1981. *Megaliths to Medicine Wheels: Boulder Structures in Archaeology*. U. of Calgary Archaeological Association.

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## ENVIRONMENTAL STUDIES

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Albert, L.E., & D.G. Wyckoff, 1981. *Ferndale Bog and Natural Lake: five thousand years of environmental change in southeastern Oklahoma*. *Oklahoma Archeological Survey, Studies in Oklahoma's Past*, No. 7.

- Andrejko, M.J., S.B. Gerbeth-Jones, C. Aulbach-Smith, A.D. Cohen, 1981. SEM studies of major biogenic silicon bodies occurring in coal-forming environments in S.E. U.S. *GSA Abs. with Program*, 13(7):397.
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- Belknap, D.F., and J.C. Kraft, 1981. Preservation potential of transgression coastal lithosomes on the U.S. Atlantic Shelf. *Marine Geology*, Vol. 42, No. 1/4.
- Eidt, Robert C., 1981. Rural society and land use change in the highland basins of Colombia. *Latin American Studies* 3:25-46.
- Holliday, Vance T., 1981. Comments on the geomorphic contexts of pre-Clovis sites. *North American Archaeologist* 2(4):267-274.
- Ivanovich, M., & R.S. Harmon, 1982. *Uranium-Series Disequilibrium: Applications to Environmental Problems*. Oxford U. Press.
- Nibbi, Alessandra, 1981. A fresh look at the environment of ancient Egypt. *Palestine Exploration Quarterly*.
- Schuldenrein, J., & P. Goldberg. Late Quaternary paleo-environments and prehistoric site distributions in the lower Jordan Valley: a preliminary report. *Paleorient* 7:57-75.
- Shackley, Myra, 1981. *Environmental Archaeology*. London: George Allen & Unwin.

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