

SAS Newsletter

Society for Archaeological Sciences

Volume 10

Number 1

January-March 1987

From the Editor

With this issue I assume responsibility for editing and producing our *Newsletter*. You will, no doubt, notice some differences in format and appearance, and can expect additional changes during the coming months. I see the *Newsletter* as a growing, evolving publication, one that will adapt to the needs and desires of the membership. Toward this end, you will find our first "Membership Survey" enclosed in this issue. The information that we seek in this questionnaire is important for the continuing operation of the Society, and for the healthy development of the *Newsletter*. Please take the time to provide some background information and make your opinions known.

You will continue to see "Notes" and "Queries" published on these pages, along with listings of "New Publications," and a "Meetings Calendar" compiled by Rob Sternberg. Martha Goodway has graciously agreed to continue compiling "News of Archaeometallurgy," and I'd like very much to find individuals willing to do the same for geoarchaeology, archaeological chemistry, and other specialty areas. "The Research Reports" series will definitely continue, so long as we have quality submissions.

In addition, we will be running a feature called "Works in Progress." This will allow, and encourage, the publication of short research notes or observations that are of interest, but have not yet reached the stage of full-scale publication. I hope that some of our academic caution might be set aside momentarily to allow for timely and lively discussion of ongoing work by means of this *Newsletter* feature.

Another slightly different twist that we'll be taking involves the beginning of "Laboratory Profiles" to compliment the individual "Profiles" we've seen in the recent past. In this series, I hope to offer the membership some information regarding the facilities, personnel, and capabilities available within archaeometric labs and institutions. The purpose here is to familiarize the readership with operations that they might not otherwise contact due to geographic separation, disciplinary boundaries, or some other obstacle.

The SAS is by its very nature an eclectic organization, with a broad range of training, interests, and academic traditions represented. This breadth requires that we find creative, and perhaps even unorthodox, means to communicate. The *Newsletter* can provide the means for interdisciplinary communication and stimulation, but **only** if the members contribute. Furthermore, we should take advantage of the powerful communication and research tools available by means of electronic telecommunication technology. It is somehow fitting that scientists who look to the past for their subject matter should be slow to embrace novel technologies, but there is great promise in the use of computer-based communication, particularly for persons who have few traditional lines of communication available. By this I mean that archaeological scientists, as an interdisciplinary group, don't enjoy the established publication and meeting forums that are commonly found in the core disciplinary fields. Therefore, they must find other avenues to interact. The recent explosion in computer-based telecommunication offers just such a novel means of communication, and is the topic of a short piece in this issue, as well as a question in the "Membership Survey." I assume that additional comments and opinions will be forthcoming as members speak their minds.

One final change to note: with this issue we will be going to a single Volume and four Numbers within each calendar year. This will alleviate some of the confusion inherent in a Volume/Number structure that was originally coincident with the academic calendar. It should also facilitate a change now underway in the Executive Secretary's Office to shift dues obligations to a calendar year basis, so that billing can be done once a year for the entire membership, rather than on a staggered, virtually continuous schedule.



Patrick E. Martin

News of Archaeometallurgy

- A colloquium on "Archaeo-metallurgical Perspectives: Challenging the old picture with recent findings" is being organized by Dr. Prentiss de Jesus for the AIA meeting in San Antonio December 27-30. The colloquium will be held on December 29 in the Convention Center, and will include Noel Gale on early cycladic copper metallurgy, Aslihan Yener and L. Barnes on lead isotope analysis of Anatolian silver sources, James Muhly on the Mesopotamian metals project, Jane Waldbaum on the start of the Iron Age, Martha Goodway on usual structures in tin bronzes, Mark Hall on Damascus steel, and William Rostoker on iron making in China.

- There is a conference on provenance and geochemistry being organized in memory of Pittioni for April 1988 in Salzburg.
- The Archaeology Committee of the Historical Metallurgy Society planned a meeting this month on physical metallurgy, and is planning a joint meeting with PACT in the Autumn of 1987 on casting, working, joining and decoration in Europe.
- PACT are organizing a handbook of properties of ancient metals, with Belgium responsible for brass, France for precious metals, Austria for iron, and England for bronze.
- Elisabeth Nosek has announced an archaeometallurgical meeting in Poland in September 1987. Her address is Museum Archaeologiczne, Krakow.

- Professor Ronald F. Tylecote's classic 1962 book, *Metalurgy in Archaeology* has been extensively revised and brought up to date. It has been issued under the title of *The Prehistory of Metallurgy in the British Isles*, as Book 319 published by the Institute of Metals, 1 Carlton House Terrace, London SW1Y 5DB England (1986, ISBN 0 904357 72 4) for 20, 16 to members of the Historical Metallurgy Society.
- Tylecote and Brian Gilmore have published *The Metallurgy of Ferrous Edged Tools and Edged Weapons* as a BAR report (1986).
- Robert B. Gordon and Terry S. Reynolds reported on the meeting last year in Sweden, "Medieval iron in society—Norberg, Sweden, May 6-10, 1985" in *Technology and Culture* 27 (January, 1986).
- The second volume of proceedings from the meeting in Norberg has been issued under the title *Medieval Iron in Society II, Papers and discussions at the symposium in Norberg May 6-10, 1985* by Jernkontoret and Riksantikvarieämbetet, as Jernkontorets Forskning H29 (ISSN 0280-137x) available from Jernkontoret, Box 1721, S-111 87 Stockholm. Though the comments and replies have been prepared by the participants, the lively quality of the discussions has been retained.
- One of the sites discussed and visited during the Norberg meeting was Lapphyttan. There is now a study of the materials from that site, *Iron from Lapphyttan, a Metallographic Investigation and Guide with Archaeological Comments*, by Helfrid Modin and Sten Modin with archaeological commentary by Inga Serning and a forward by Ake Hyenstrand. It was published by Riksantikvarieämbetet and Jernkontoret in 1985, and is distributed by Meritforlaget, Skattungsv. 14, S-121 70 Johanneshov, Sweden (ISBN 91-970254-6-1).

If you have news of archaeometallurgy, please call Martha Goodway at 202-287-3733 or write her at CAL MSC, Smithsonian Institution, Washington DC 20560.

New Publications

Haas, Herbert, Vance T. Holliday, and Robert Stuckenrath
1986 Dating of Holocene stratigraphy with soluble and insoluble organic fractions at the Lubbock Lake archaeological site, Texas: An ideal case study. *Radiocarbon* 28 (2A) : 473-485.

Holliday, Vance T. (editor)
1986 **Guidebook to the archaeological geology of classic Paleoindian sites on the southern high plains, Texas and New Mexico.** Geological Society of America Guidebook. Department of Geography, Texas A & M University, College Station, TX 77843.

Meighan, Clement W. and P.I. Vanderhoeven (editors)
*1978 **Obsidian dates II, a compendium of the obsidian hydration determinations made at the UCLA Obsidian Hydration Laboratory.** Monograph VI, UCLA Institute of Archaeology, \$7.50

Meighan, Clement W., and Glenn S. Russell (editors)
*1981 **Obsidian dates III, a compendium of the obsidian hydration determinations made at the UCLA Obsidian Hydration Laboratory.** Monograph XVII, UCLA Institute of Archaeology, \$7.50.

*SAS members will receive a 10 percent discount on these volumes if they indicate their affiliation when ordering.

Meeting Announcements

Archaeological Chemistry

The Eighth Symposium on Archaeological Chemistry will be held in Denver, CO, during the American Chemical Society National Meeting, April 5-10, 1987. For further information, please contact Professor Ralph Allen, Department of Chemistry, University of Virginia, Charlottesville, VA 22901.

Cross-Craft and Cross-Cultural Interactions in Ceramics

The fourth seminar on ceramics in history and archaeology will be held in conjunction with the American Ceramic Society's meeting in Pittsburgh, PA, April 26-29, 1987. A full day's program of about fifteen papers is tentatively planned for Tuesday, April 28. The program is being organized by the two cochairmen, whose addresses are provided below, together with W. S. Williams (University of Illinois) and P. B. Vandiver (Smithsonian Institution). The proceedings will again be published as a volume (no. 4) in the **Ceramics and Civilization** series, under the general editorship of W. D. Kingery.

The focus of the 1987 seminar is the interaction of a ceramic industry (whether pottery, plaster, vitreous materials, or refractories) with another craft of technology (such as metals, stone-working, textiles, or chemical processing), a topic which up until now has received minimal attention in the literature. The interaction of ceramic industries within the same or different cultures also falls within the scope of the seminar. Direct forms of interaction at the technological level (e.g., the sharing of raw materials, joint processing, itinerant craftsmen, apprenticeship in an auxiliary craft), which can be related to more far-reaching cultural developments (foreign conquest/occupation, alliances, trade, population movements, etc.), are of particular interest. Already proposed papers will treat refractories and the smelting of copper and iron ores in the Near East and India, the introduction of the wheel into Roman Britain and its effects upon the native pottery industry, the impact of Korean ceramic techniques on the Japanese industry, and craft interaction models of technological change. Additional papers, including ethnographic and "high tech" treatments of more recent interaction, are sought to broaden the geographic, temporal, and theoretical perspective of the seminar.

Oral papers are twenty minutes in length (including five minutes discussion). For those interested in presenting a paper, further information, including ACS abstract forms and manuscript guidelines, can be obtained from one of the cochairmen of the session:

P. E. McGovern
MASCA
University Museum
University of Pennsylvania
Philadelphia, PA 19104

M. R. Notis
Department of Metallurgy
and Materials Engineering
Whitaker Lab No. 5
Lehigh University
Bethlehem, PA 18010

Fish Remains from Archaeological Sites

The fourth meeting of archaeologists, osteologists and biologists interested in fish remains from archaeological sites will take place from September 9-12, 1987 at the University of York, England.

Previous meetings of this group have concentrated on fish exploitation in Europe and Africa. Contributions describing material from other parts of the world are welcome.

Contributions, in English, are invited on the following:

- site reports set in their regional and chronological context;
- refinements in recovery techniques and identification;
- techniques for the estimation of size and age;
- quantifying the importance of fishes in diet;
- fish exploitation in the past: the documentary evidence;
- ancient fishing techniques and fish culture;
- modern experimentation or observations related to taphonomy.

Participants are asked to keep their contributions as short as possible in order to allow a large number of papers to be presented. **Please consider presenting two or more short papers rather than one longer one.** Poster presentations are also welcome. There will be ample opportunity to display unusual or unidentified specimens.

The meeting will take place on campus at the University of York; accommodation will be available in student study-bedrooms. Special facilities for disabled or elderly persons can be arranged and special diets can be catered for, given prior notice. A small number of people can be accommodated privately. In addition, hotel, hostel or guest house accommodation is available. Participants are asked to confirm their intentions to attend in January 1987, if possible.

There will be opportunities to visit the Environmental Archaeology Unit and various museums in York. On Saturday, September 12 there will be an optional excursion to sites of interest in North Yorkshire.

For further details, please write as soon as possible, to:

Andrew Jones
Environmental Archaeology Unit
University of York
York, YO1 5DD, ENGLAND

Meeting Report

The Fourth Meeting of Work Group No. 1 on Unspecialized Bone Industries was held at Treignes (Belgium) on September 2-5, 1986. Numerous participants, from the United States, Great Britain, Italy, the Federal Republic of Germany, and France, met in the large Conference Hall of the Castle-Farm of Treignes. Contributions were made on the following topics: analytical and experimental approaches to unspecialized bone industries; modifications of bone surfaces; local and regional studies of unspecialized bone industries. The presentations were followed by many discussions, all of which will be published in the course of 1987. **The proceedings of the third Meeting (May, 1986) have now been published, and are available for 450 Belgian Francs (approximately \$13.50 U.S.) from: Centre d'Études et de Documentation Archeologiques, B-6390 Treignes, Belgique.**

Directory Assistance

The Society for Archaeological Sciences would like to publish an annual Directory of Graduate Research in the Archaeological Sciences. Currently, Rip Rapp is circulating a directory for archaeological geology and Joseph Lambert for archaeological chemistry. I am soliciting volunteers who would be willing to compile the appropriate data in the life sciences, physics, metallurgy and materials science, and mathematics. In addition, a person is needed to survey archaeological/anthropological departments. The process would involve sending a form to each university with a graduate program (M.S. or Ph.D.) in your field. I can supply the form used for chemistry. If you are interested in performing this service for one of the fields listed above, please

contact Joseph B. Lambert, Department of Chemistry, Northwestern University, 2145 Sheridan Road, Evanston, IL 60201.

Computer Networks and SAS

The expanded capabilities provided by access to electronic mail continue to have a profound impact upon the way we transfer ideas and information. Not only are such services as centralized banking and billing a reality of everyday life, but we must also recognize that fast telecommunication is changing the way we conduct our professional lives. Many, if not most of us have transformed our means of collecting, organizing, analyzing, and presenting information by virtue of adopting microcomputers in the workplace. The same sort of transformation is at an earlier stage of development in the area of telecommunication. Some academics and research scientists have already embraced the networks, on-line searching, and electronic mail, while others are as yet unaware of their existence, or at least of their potential power.

This short piece is meant to discuss some limited aspects of telecommunication as related to the business of this Society and its members. **It is by no means exhaustive, nor comprehensive!** Such a treatment would require not only more space than is available, but would also require that I learn much more than I have any desire to know about the topic! I'll simply describe something of what I know about one widely available network (BITNET) and offer some remarks about another network on the basis of information provided by Irv Rovner (SCHOLARNET).

BITNET: Founded by an educational consortium known as EDUCOM, BITNET began in 1981 as a link between Yale and the City University of New York. It has since been significantly expanded, serving over 1500 nodes (institutional computers) in at least twenty countries. In brief, BITNET (**Because Its Time Network**) is a communications tool to facilitate the transfer of information between mainframe computers. The individual user must have access to a mainframe in a member institution, either by means of a hard-wired terminal, or by microcomputer and modem. The institution and the network assume the basic costs; all the user pays is on-line costs with the host mainframe, if that. So, from your office, home, lab, or computer center, you connect with your mainframe computer and call up BITNET. The mainframe is linked into the network by means of a dedicated phone line and/or a satellite link.

BITNET provides a wide variety of services. Among the available functions are: an index of registered users, searchable by name, institution, keyword, etc.; a variety of lists of specialists interested in topical areas, such as educational computing; numerous Helps and news items re: the network; and technical assistance on accessing gateways between BITNET and other networks, such as ARPANET and CSNET. By far its primary service, however, is electronic mail and file transfer. Though the exact form is determined by the mainframe configuration, a very simple set of commands will allow the user to send and receive either short notes or long files via electronic mail. In this way, users may communicate much as they would through the mails, without the hard copy. Notes or letters may be sent, as may longer documents, such as manuscripts or programs. The receiver of each message is notified when he/she next "signs on" to the local system, where the message may be read, saved, printed, edited, and/or discarded. There are optional commands that allow for such things as automatic acknowledgement of receipt and duplicate copies for a list of receivers. This listing service holds great promise as a means of easily circulating information to all the members of a group with common interests and concerns.

BITNET seems extremely stable, well-established, and is currently expanding. There have been rumors of the introduction of a membership fee, but this idea does not enjoy majority support at present. Several members of the SAS are already using BITNET, including your Editor, General Secretary, and Past-President Rapp, and find it most useful.

SCHOLARNET is somewhat different type of system that provides many of the same services as BITNET. Rather than connecting users via mainframes, SCHOLARNET connects users via microcomputers and a single, centralized mainframe node. Operating much like a very sophisticated bulletin board, SCHOLARNET was installed in 1985 at North Carolina State University. Under a contract with General Videotex Corporation, SCHOLARNET provides access to current news, text transfer, electronic mail, teleconferencing, and a variety of other services, tailored primarily for social scientists.

The individual user connects to SCHOLARNET by means of a phone line, a modem, and a microcomputer. The system's designers suggest that virtually any microcomputer with communications software and a modem can be used, with no compatibility problems, unless machine language or complex graphics are to be transmitted. Users may utilize their own familiar software, such as word processors, rather than learn a new system, since messages are transmitted as ASCII files. In addition, the system evidently is operated by means of menu choices, requiring little technical expertise.

There is a \$29.95 individual subscription fee for SCHOLARNET (\$100.00 for a departmental account with up to ten users), and hourly connection rates are \$9.50 during off-hours and weekends, \$18.50 from 7 a.m. to 6 p.m. on weekdays. The system is accessed via phone line within North America, and by means of TYMNET, UNINET, or DATAPAC from approximately sixty-five countries, with the attendant telephone charges.

Besides electronic mail, SCHOLARNET offers AP news, travel planning, topical forums and conferences, and access to a variety of on-line search services, such as Dialog Information Services, for an additional hourly surcharge. Furthermore, SCHOLARNET will develop specialized, customized bulletin board systems for user groups such as the SAS, at no extra cost.

In summary, these systems both offer a variety of useful services. Preference for one over the other is based on a number of variables, including access to a local mainframe and budget constraints. To learn more about BITNET, contact EDUCOM, P.O. Box 364, Princeton, NJ 08540, or call up INFO @ BITNET on-line from any BITNET node. For information regarding SCHOLARNET, write Dr. Richard W. Slatta, SCHOLARNET Director, North Carolina State University, Box 8101, Raleigh, NC 27695, or 70156,404 on CompuServe. If you have individual preferences, please indicate your ideas in the SAS Membership Survey.

Laboratory Profile

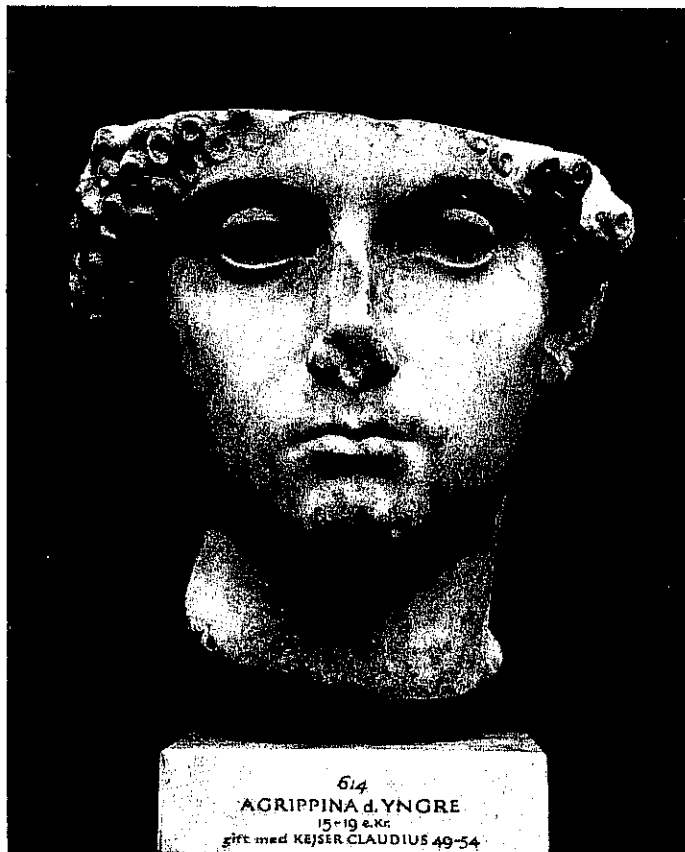


Figure 1 Marble portrait from Ny Carlsberg Glyptotek Museum, Copenhagen, authenticated by isotopic analysis.

Center for Archaeological Sciences, University of Georgia

The Center for Archaeological Sciences of the University of Georgia was established in May, 1984, to promote and coordinate research between the humanities (archaeology, anthropology, and art history) and the sciences (geology, geochemistry, organic chemistry, inorganic chemistry, and biological sciences.) The Center coordinates the research of persons at the University in fields relating to archaeology and art history, facilitates collaboration with experts outside the university, is a resource center of laboratory equipment and technical support for archaeologists and art historians world-wide, and coordinates interdisciplinary undergraduate and graduate degree programs in the archaeological sciences.

There are 28 associates of the Center on the University of Georgia campus distributed among the Departments of Geology, Anthropology, Geography, Classics, Art, and Science Education, and the School of Environmental Design. Off campus there are an additional ten associates in eight other universities. This is the only program in the southeast currently included in the brochure *Directory of Graduate Programs in Archaeological Geology and Geoarchaeology* published by the University of Minnesota.

The CAS has achieved wide recognition for its accomplishments in four principal fields.

Stable Isotopic Fingerprinting of Classical Marbles (N. Herz)

The Center has accumulated a large data base of carbon and oxygen isotopic "fingerprints" for the principal classical marble quarries of Greece, Turkey, Italy, and Tunisia as well as the Renaissance quarries of Carrara. Isotopic

(continued on page 7)

(continued from page 4)

analysis can now routinely provide the best test available for the association of broken pieces of statuary and inscriptions as well as information on the provenance of marble artifacts. Isotopic testing can also help distinguish authentic pieces from fakes. For example, the Center recently aided the Ny Carlsberg Glyptotek Museum in Copenhagen in the interpretation/attribution of an important marble portrait from their collections. Alleged to be Livia, both the identity and authenticity of the piece had been challenged. Analysis of the marble showed that the portrait had been extensively repaired, that the head is made in Parian marble, while the nose is in Carrara marble, and the skull cap is in Ephesian marble (Figure 1). These revelations suggest a history of repair and modification. Iconographically, the original portrait is more appropriately identified as Agripinna.

Archaeological Fibers, Yarn, and Fabrics (K.A. Jakes)

Fibers, yarns, and fabrics from archaeological sites are studied by many analytical techniques at the Center, including SEM, energy dispersive x-ray analysis, electron microprobe, stable isotope analysis, and other types of analysis as well as by laboratory simulation experiments. The significance of mineral pseudomorphs after textiles, i.e., organic materials replaced entirely with mineral but retaining the physical shape of the original fiber, yarn, or fabric was first recognized here. This type of study provides information on cultures which otherwise yield no textiles. Present research deals with prehistoric Indian fabrics (Figure 2), Chinese textiles of the Shang period, and 16-17th century Turkish and Italian velvets. CAS has provided advice to textile conservators in many museums, including the Smithsonian, and for proposals on research and care of the Shroud of Turin.

Human Osteological Services (K.R. Burns)

Research is carried out on human skeletal elements including (a) identification, (b) determination of sex and race,

(c) determination of age by histological analysis of bone and tooth, and (d) analysis of pathology and trauma. Associates of the center regularly participate in forensic studies in support of regional law enforcement agencies.

Preservation of Historic Stone Monuments (N. Herz)

Because of the experience gained in studies of archaeological marbles, CAS has been asked to advise the U.S. Park Service and the Government of India on (a) preservation of stone monuments and (b) significance of data collection on acid rain and implementation of programs to counteract its effects.

The CAS recently co-hosted, with the Geology Department, University of Indiana, the first Penrose Conference in Archaeological Geology, December 7-11, 1986. Penrose Conferences are sponsored by the Geological Society of America which allows only six per year. About 70 persons attended from Europe, Latin America, Canada, and the United States. (A conference report will appear in Volume 10, No. 2 of the *Newsletter*).

The CAS coordinates programs that offer M.S. and Ph.D. degrees for research combining work in the humanities or social sciences (archaeology, anthropology, ancient history), with geology and other physical sciences. Students are awarded degrees by a department of Arts and Sciences but may use any facilities available to the Center. The Center's function is to organize and encourage continuous and intensive interaction between students and faculty from a broad spectrum of relevant fields. The focus is on interdisciplinary research joining traditional fields in the humanities and sciences that probes relationships between ancient man, society, and the physical environment.

For further information, contact Norman Herz, Director, Center for Archaeological Sciences, Riverbend Research Lab, Athens, GA 30062.



Figure 2 Pseudomorph after twined fabric from Tunacunnee, Georgia, ca. 200 A.D.

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Volume 10, Number 1
January-March 1987

Published quarterly by the Society for Archaeological Sciences. Distributed to members of the Society with membership, \$7.50/year for individuals, \$5.00/year for students, \$10.00/year for institutions, \$150.00 for life membership. ISSN 0739-0637. Editor: Patrick E. Martin, Department of Social Sciences, Michigan Technological University, Houghton, MI 49931 U.S.A. Telephone (906) 487-2070, 487-2113. BITNET Address: PEM-194 @ MTUS5.

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Deadlines for Submissions

No. 2 February 15

No. 3 May 15

No. 4 August 15

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