SAS
Volume 7 Number 1 1983
NEWSLETTER
SOCIETY FOR ARCHAEOLOGICAL SCIENCES

NEWS OF THE PROFESSION

1984 CMRAE SUMMER INSTITUTE

The Center for Materials Research in Archaeology and Ethnology (CMRAE) announces its third annual Summer Institute course "Materials in Ancient Societies: Ceramics". This one month intensive investigation of ancient ceramic technology and production will be held 4 June to 29 June, 1984 at M.I.T. It will be taught by Suzanne De Atley, Assistant Professor of Archaeology, M.I.T., and Director of the CMRAE Summer Institute, and William Melson, Curator, Division of Petrology, Department of Mineral Sciences, Smithsonian Institution. The purpose of the course is to develop the analytical skills that enable students to reconstruct and interpret technological systems used by ancient and non-industrial societies in the production of ceramics. The course will be valuable to students of archaeology, anthropology, art history, conservation of cultural materials, and other related disciplines.

Morning lectures will discuss the stages of production common to most ceramic objects, focusing on the materials science aspects involved: e.g., mineralogical and chemical variability in raw materials; physical properties and microstructure of ceramics; firing transformations. In addition, technologies of ceramic production will be related to the socio-cultural setings in which the activities occurred. Afternoon laboratories will involve examination of prepared ceramic standards and excavated artifacts, with emphasis on low power and petrographic microscopy. Additional mineralogical and chemical techniques (e.g. x-ray diffraction, x-ray fluorescence, neutron activation, electron microprobe, scanning electron microscopy) will be covered as well.

The course is limited to 15 participants and is open to graduate students and faculty or post-doctoral staff. Credit must be arranged at the student's home institution. The cost is $500.00 which covers registration and course materials. Lodging in the M.I.T. dorms can be arranged for an additional cost of approximately $700.00. Financial assistance is available.

For further information and application forms, write to: Professor Suzanne De Atley, Director, CMRAE Summer Institute, Massachusetts Institute of Technology, Room 8-138, Cambridge, MA 02139.

The deadline for receiving applications is 15 February 1984.

POSITION AVAILABLE

The Center for Archaeological Research and Development (CARD), Peabody Museum, Harvard University announces a position for an archaeometallurgist to assist students and faculty interested in examining archaeological materials by physical scientific methods. Duties will involve providing direction to the activities of curators and other research staff. There will also be an opportunity for independent study, preferably in archaeometallurgy. A sound background in metallurgy and/or materials science is desirable (i.e. M.A., Ph.D. or equivalent in metallurgy or related physical science). Applications should be sent to Dr. Robert Maddin, CARD Lab, Peabody Museum of Archaeology and Ethnology, Harvard University, 11 Divinity St., Cambridge, MA 02138.

AMERICAN CERAMIC SOCIETY FORUM

The forum "History and Prehistory of Ceramic Art, Science and Technology" will be held at the annual meeting of the American Ceramic Society April 30 and May 1, 1984 in Pittsburgh, PA. It will be held in three sessions: (1) Pottery and Porcelain, (2) Ethnological and Archaeological Studies, and (3) History of Ceramic Science and Technology.

The focus of the forum will be both on ceramic developments per se and the use of ceramic artifacts as historical evidence, rather than on stylistic features, analysis techniques, or other descriptions of artifacts independent of their historical or archaeological context. Papers presented at the forum will be published as a volume in **Advances in Ceramics.**

Further information about the forum can be obtained from: Professor W.D. Kingery, Forum II Program Chairman, American Ceramic Society, Room 13-4090, Massachusetts Institute of Technology, Cambridge, MA 02139.

1984 ARCHAEOMETRY SYMPOSIUM: WASHINGTON, D.C. MAY 14-18

The 1984 International Archaeometry Symposium will be held at the Smithsonian Institution. Accommodation will be available at George Washington University and further details will be circulated to the regular mailing list of those who have attended recent symposia. New participants are welcome and should write to the organizers (Jacqueline S. Olin and M. James Blackman, Conservation-Analytical Laboratory, Smithsonian Institution, Washington, D.C. 20560).

Abstracts of proposed contributions will be considered by session convenors who will divide accepted papers into those for oral presentation and those for poster presentation. As a general rule oral presentation will be limited to one per speaker in the interests of avoiding too lengthy sessions. There will be publication of the proceedings but acceptance of an abstract for presentation does not commit the author to publish nor does it commit the organizers to accept the paper for publication unless referees find it of satisfactory standard. Finalized manuscripts (not more than 10 typescript pages) must be handed in during the meeting.

The abstract deadline is 20 January 1984. One copy of the abstract should be sent to the session convenor, and one copy to the organizers. It should be a minimum of 200 words, and a maximum of 1 page. At the bottom of the abstract state: (1) the name of the session convenor, (2) the name of the author who will speak if the paper is accepted for oral presentation, (3) papers sent for other sessions, (4) any preferences regarding poster versus oral presentation. A special form for abstract submission is available from the organizers. Notifications regarding acceptance of abstracts will be sent out by the convenors during February.

Sessions and Convenors:

Theme Session: Stable Isotope Measurements in Archaeology

Convenor: E.V.Sayre, Dept. of Chemistry, Building 555, Brookhaven National Laboratory, Upton, NY 11973

Prospection:

Convenors: R. Linington, Fondazione Lerici, Via Vittorio, Veneto 108, 100187 Rome, Italy, and

A. Hesse, Centre de Recherches Geophysiques Garchy, 58150 Pouilly sur Loire, France

Provenance Studies:

Convenor: S. Warren, Postgraduate School of Physics, University of Bradford, Richmond Road, Bradford BD7 IDP, England

Ancient Metals and Metallurgy:

Convenor: R. Maddin, University of Pennsylvania, Philadelphia, PA 19104

Ancient Technology: Non-Metals:

Convenor: M.S. Tite, The British Museum, Research Laboratory, London WC1B 3DG, U.K.

Dating of Organic Materials (e.g. radiocarbon and other cosmogenic nuclides, dendrochronology, amino acid dating):

Convenor: G. Harbottle, Dept. of Chemistry, Building 555, Brookhaven National Laboratory, Upton, NY 11973

Dating of Inorganic Materials (e.g. thermolu-

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Mail copy to:
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SAS Executive Officers, 1982-1983:

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For inquiries concerning change in addresses, information from membership records, and other business affairs, contact: Office of the General Secretary, SAS, Radiocarbon Laboratory, Department of Anthropology, University of California, Riverside, California 92521.

SAS RESEARCH REPORTS

Number 4 Winter 1983

PROPERTIES, CULTURAL SELECTION, AND PROVENANCE OF PUMICE FROM TELL JEMMEH, ISRAEL

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Pumice is one of a number of materials from Tell Jemmeh, Israel, being examined petrographically and chemically. The pumice samples, recovered at 10 loci during the excavations by Van Beek, cover a wide interval of burial time and are the subject of this paper (Table 1). Because pumice does not occur near Tell Jemmeh, its presence there suggests that it was brought in through trade or obtained as drift pumice from the Mediterranean coast which is about 7 miles west of the tell. The results of petrography and electron microprobe analyses of glass septae in these samples reveal that there was an apparent change from use of near-site drift pumice to later probable import of pumice with more useful properties.

The shapes and markings on the pumice artifacts reflect their prinicipal uses. Typically flat, striated faces point to their use as an abrasive, apparently the most common application. However other functions have been noted. A lump of pumice was found among other substances in an Egyptian cosmetic box of the 17th Dynasty (ca. 1600-1570 B.C.), presumably for cleaning the skin. Pliny the Elder (Natural History XXXVI.xlii) states that it was used as a depilatory by both women and men, and for smoothing the edges of book rolls. For pharmaceutical purposes, he relates that pumice was prepared by calcining it three times over a charcoal fire and quenching it three times in white wine. The resulting powder was then washed and dried. It was used chiefly for eye salves to clean ophthalmic ulcers, promote healing, and remove scars, as well as in poultices for treating sores of the head and genitalia, and in tooth powders. Theophrastus (Enquiry into Plants, IX.17.3) notes that because of its cooling properties (resulting from the large surface area of ground pumice) it was added to boiling wine to immediately stop the boiling. In the first century A.D., Pliny observed that the best quality pumice came from the Greek islands Melos and Nisyros, and from the Aeolian Islands just north of Sicily.

There are abundant sources of pumice northwest of Israel in the Aegean Volcanic Arc. A number of major explosive eruptions have occurred there, perhaps the best known being that of Santorini around 1500 B.C. This particular eruption is known to have produced pumice rafts which reached the shores of the eastern Mediterranean. Therefore, its occurrence at sites inhabited during that time might be expected, especially at Tell Jemmeh because of its proximity to the sea.

Pumice has a number of properties which are potentially useful in establishing a single source or in limiting potential sources. The possibility of successfully sourcing pumice is based on the volcanologic observation that when examined in detail, the pumice of a given eruption can have a number of unique properties. Index of refraction has proven useful, but for glasses such as these, many of which have identical compositions yet different mineral assemblages, index of refraction will not be unique to a single source. On the other hand, the major and minor element composition of the glass and mineral phases, combined with trace element analyses, will eventually allow unique source determinations.

The analytical methods used here focus on the petrographic features of the pumice and on electron microprobe analyses of the glass septae. The principal focus is on glass analyses as a parameter of discrimination. Mineral analyses would be useful too, but have not yet been obtained.

TABLE 1: Tell Jemmeh pumice samples. Probable age of sample on archaeological grounds, field designations, & descriptions.

1	3rd century B.C.	Loom weight, 3.5 cm diameter with bored hole in center. GM1C. Pit 2, Layer 14.
2	3rd century B.C.	Irregular lump, max. diameter 3 cm. GM2C. Layer 1.
3	6th-4th century B.C.	Irregular lump, max. diameter 5 cm. GM2A TT7. Feature 7, Layer 2.
4	7th century B.C.	Disc-shaped. 5.5 cm diameter. GM2B Wall 11. 80476. Fits with GM2B Layer 35. Locus 2A. 72576.
5	8th century B.C.	Elongate, max. length 5 cm. Scraped surfaces, as if used in grinding or polishing. GMII STA2, Layer OC. 72075.
6	12th century B.C.(?) Maybe later	Roundish, 7 cm max. length. Shape is typical of pumice rounded by abrasion within a pumice raft. GMIII A3. Cir. O. 62078.
7	12th century B.C.	Angular lump, max. length 6 cm. Some surfaces flat, as if used in grinding or polishing. GMI 4D Layer 1A. 80576.
8	12th century B.C.	Roundish, 6 cm lump. GMI TTC Layer 3. 70772.
9	13th century B.C.	Roundish, 5 cm lump. GMI 4D Layer 2C. 1 72577.
10	12th century B.C.	Roundish, 4 cm lump. GMI FUR Layer 4. Locus 2. 72378.

TABLE 2: Petrography of pumice, listed from youngest to oldest. n is the index of refraction of the glass septae using Na light. The precision obtained here is +/- .004.

1	>99% glass. A single microlite of plagioclase in entire thin section.
2	ca. 5% phenocrysts. Plagioclase > augite > hypersthene. Plagioclase up to .5 mm long. Plagioclase-pyroxene clots common. n = 1.509.
3	>99% glass. One microlite of plagioclase in entire section.
4	>99% glass. No phenocrysts or microlites noted. n = 1.499.
5	ca. 5% phenocrysts. Plagioclase > hypersthene > augite(?) magnetite. Some plagioclase-pyroxene clots. n = 1.509.
6	ca. 5% phenocrysts. Plagioclase > hypersthene. n = 1.510.
7	ca. 5% phenocrysts. Plagioclase > hypersthene. n = 1.509.
8	ca. 5% phenocrysts. Plagioclase > hypersthene.
9	>5% phenocrysts. Plagioclase > hypersthene > hornblende > oxide. n = 1.512.
10	ca. 5% phenocrysts. Plagioclase > hypersthene. Some plagioclase phenocrysts unusually large (.6 mm).

TABLE 3: Major & minor element composition of glass in Tell Jemmeh pumice samples. Each analysis is the average composition of ten septae in each sample. Analyses by electron microprobe at a voltage of 15 kilovolts and beam current of .15 microamps with the beam moved slowly during the analysis to minimize alkali loss.

	SIO_2	AL_2O_3	FEO	MGO	CAO	K_2O	NA_2O	TIO_2	P_2O_5
Group 1. Aphyric pumice (>99.9% glass).									
1	78.04	12.40	00.99	00.13	00.68	04.24	03.38	00.12	00.01
3	77.82	12.65	00.97	00.12	00.67	04.22	03.41	00.12	00.02
4	78.01	12.41	00.97	00.11	00.69	04.24	03.42	00.12	00.03
Group 2. Plagioclase phyric pumice (ca. 5% phenocrysts, 95% glass).									
9	74.36	13.99	02.10	00.32	01.28	03.25	04.13	00.31	00.05
2	73.87	14.14	02.18	00.36	01.60	03.40	04.12	00.31	00.04
6	74.35	14.10	02.20	00.34	01.55	03.35	03.77	00.30	00.04
7	74.12	14.11	02.13	00.34	01.49	03.39	04.03	00.32	00.07
8	74.20	14.11	02.18	00.30	01.53	03.32	04.01	00.31	00.04
5	74.21	13.89	02.11	00.33	01.41	03.44	04.29	00.29	00.05
10	74.05	14.08	02.19	00.34	01.48	03.36	04.15	00.31	00.05

The samples fall into two petrographic groups which correspond closely to late and early stratigraphic assemblages: (1) mainly glass, with less than 0.1 volume percent crystals (microlites) and (2) about 95% glass, with about 5% crystals (phenocrysts and microlites). This second group is characterized by the presence of plagioclase phenocrysts with subordinate mafic phases, the main one being hypersthene. Table 2 gives a brief listing of the phenocrysts and their order of abundance. The younger, highly glassy group is also characterized by thicker glass septa walls (Fig. 1, A & B) compared to the older group (Fig. 1, C & D). In terms of their utilization, group 1 pumices crush less readily and probably hold up better for use in grinding or other "heavy" uses. On the other hand, the second group crushes quite easily and probably is better used in fine grinding or even polishing objects because of the thinness of the septae.

The index of refraction of the glass septae is probably slightly different between these two groups (Table 2). Specifically, the glass septae in sample 4, the only sample for which the index of refraction was determined in the group 1 samples, is slightly lower than those in group 2. This is an expected difference because the group 1 samples are higher in silica, and normally index of refraction is roughly directly proportional to SiO_2 content.

The thin, bubble-encasing glass septae in the pumice range from 1 micron to up to 50 microns thick. Electron microprobe analyses are optimum when the target is more than 5 microns thick because this is the area analyzed by the most finely focused beam. Loss of alkalies can be a serious deficiency in electron microprobe analyses of alkali-rich glasses such as those of the 10 pumices. The problem can be alleviated but not totally eliminated by slowly moving the beam during the analyses. This was the method used in these analyses. The alkali volatilization problem can also be alleviated by using a large defocused beam which distributes the thermal effects of the beam over a broad area. However, this method cannot be used in analyses of most pumice glass septae because they are too thin.

Table 3 gives the average of 10 analyses of septa walls in each of the 10 samples. These analyses form 2 groups which are the same as the petrographic groups. Specifically, the totally glass samples have higher SiO_2 and K_2O and lower Al_2O_3, FeO, MgO, CaO, and Na_2O than the 7 samples from the phyric pumice group.

In order to test these groupings, the 10 analyses of glass septae in each sample were considered as a single group and all groups were compared using discriminant analysis. The 2 groups based on petrography and chemical compositions were confirmed. None of the 3 aphyric glasses (group 1, samples 1, 3, & 4) fall into the phyric group and none of the phyric group members fall into the aphyric group. In most cases the within-group members can be discriminated one from another; however, sample 8 cannot be discriminated as a group, overlapping with 3 other group 2 members.

Discriminant analysis was further used to see if the group 1 and 2 samples could be divided into "subgroups." It appears to these writers that group 1 samples are essentially identical. Thus, they come from a single source or from sources with identical glass compositions with regard to elements reported here.

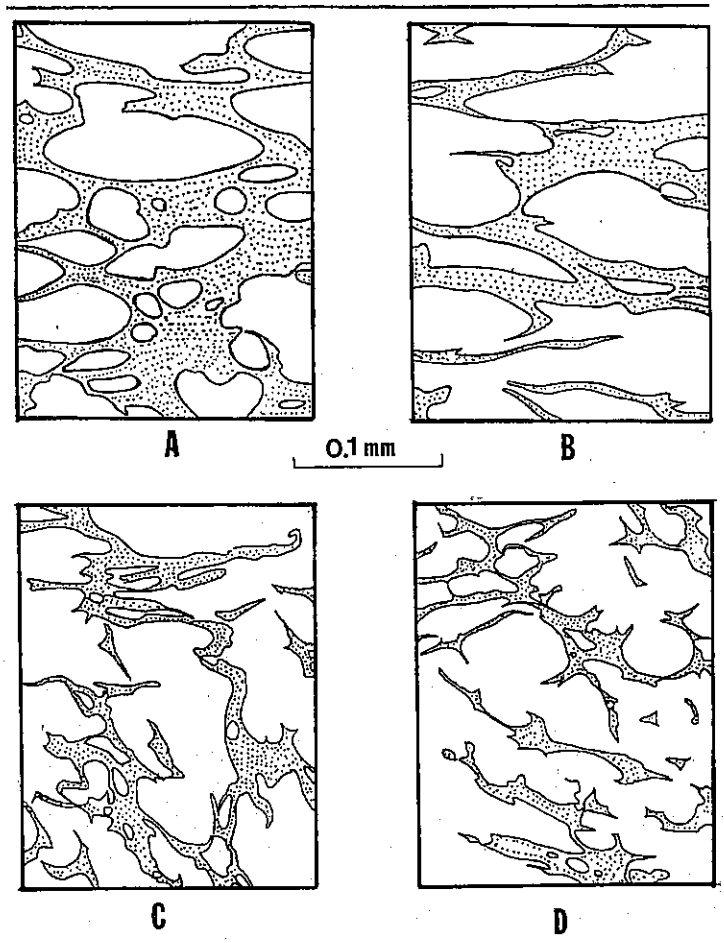

Figure 1: The stratigraphically younger pumices (group 1, A & B) have thicker walls than the older ones (group 2, C & D). A is sample 3 (2nd century, B.C.), B is sample 4 (6th to 4th century, B.C.), C is sample 5 (8th century, B.C.), and D is sample 9 (13th century B.C.). Glass septae are stippled.

Group 2 pumices similarly do not fall strongly into "subgroups." There are suggestive differences but these writers regard them as being probably within the precision limits of the data. The differences might be due, for example, to systematic instrumental drift which was not taken adequately into account by the program used to reduce the electron microprobe data. Thus, as for group 1 pumice, we conclude that group 2 pumice cannot be reliably broken into "subgroups" based on the elemental analyses used here. So, there is either a single source for this group based on glass analyses or multiple sources with identical compositions. However, the petrography of Group 2 pumices (Table 2) point to at least three sources based on different phenocryst assemblages.

Provenance

Bond (1976) reports at least 10 Quaternary Aegean eruptions which have produced pumice. In addition, older sources may occur. Since the bulk compositions of these pumices are the sum of glass and crystal components, the analyses are not directly comparable to our Tell Jemmeh samples which are only of the glass components. However the group 1 samples are nearly totally glass, hence the bulk analyses of Bond and those here are in fact comparable. These group 1, stratigraphically youngest pumices, fall near analyses from Kelafos, one of the Dodecanese Islands, Greece. The observed mineral assemblage in the described Kelafos pumice is quartz-feldspar (type not specified by Bond, 1976). This is not what we find in the group 1 pumices. Quartz was not found and the only phenocrystal phase is plagioclase in extremely rare microphenocrysts. Also, the total phenocryst content of the Kelafos pumice is given at 8%, whereas the Tell Jemmeh group 1 pumices contain much less than 1% plagioclase phenocrysts. Thus, although the Tell Jemmeh group 1 pumices may come from Kelafos or some other Greek isle, they cannot be the same materials described from Kelafos by Bond (1976). A specific locality or localities for these group 1 pumices thus remains unknown.

The older, group 2 pumices contain around 5% phenocrysts and thus their bulk and glass compositions are not directly comparable. The 5% phenocrysts (mainly plagioclase and hypersthene) have SiO_2 contents around 50%, and a rock composed of 5% such phenocrysts and of 95% glass with about 74% SiO2 will have a bulk SiO_2 composition around 73%, bringing the bulk SiO_2 closer to that of Santorini pumices than those from the "Plateau Province" of Bond (1976). Thus, the source or sources for the group 2 pumices also remains unknown to us at present. However, one or more of the volcanic Greek islands remain likely sources, and Santorini's cataclysmic 1470 B.C. eruption cannot be ruled out.

It seems most probable to us that the older pumices (group 2) were not obtained by trade, but rather were collected from pumice stranded on the nearby beaches west of Gaza. All these post-date the 1470 B.C. eruption of Santorini. Santorini pumice strands have been identified in some coastal deposits (D.H. Yaalon, personal communication) and so was certainly available. It is also known that the wind direction during that eruption was to the southeast, a condition which would favor a southeastward motion of the marine pumice rafts which must have been produced by that eruption.

It is our belief that mineral composition and trace element analyses on these Tell Jemmeh pumices, combined with similar data on Aegean and possibly other nearby pumice sources, will yield a unique source for each pumice sample or for groups of samples. Adequate data to do this, however, will probably not be available for many years. Thick-walled pumices are more typically associated with small eruptions of low-water content magmas such as accompany dome growth. Thin-walled tephras, with compositions like those of the group 2 samples, are more typically associated with cataclysmic eruptions, like that of Santorini in 1470 B.C. These relationships will aid searches for sources.

Acknowledgements

William T. Potts and Pete Dunn provided the index of refraction measurements. Richard Johnson and Frank Johnson prepared thin sections. All this assistance is gratefully acknowledged.

Reference

Bond, A., 1976, Multiple sources of pumice in the Aegean, Nature 259:195-195.

SAS Research Reports is a Newsletter supplement intended to communicate current research and interim reports of data and analysis from long-term projects. Manuscripts should be submitted to the Newsletter Editor for consideration. Send 1 original and 1 copy. Reports must be limited to approximately 8 manuscript pages, double spaced, including tables and illustrations.

minescence, ESR, fission tracks, uranium-series, archaeomagnetism):
Convenors: M.J. Aitken, Research Laboratory for Archaeology, 6 Keble Road, Oxford OX1 3QJ, U.K., and
L. Langouet, Universite de Rennes, Campus du Beaulieu, Avenue de General Leclerc, 35031 Rennes Cedex, B.P. 25A, France.
Mathematical Methods and Data Management:
Convenor: I. Scollar, Rheinisches Landesmuseum, Colmansstrasse 14, 5300 Bonn 1, W. Germany.

NEWS OF THE SOCIETY

SAS AT THE PACIFIC SCIENCE CONGRESS

Forty papers were presented at the symposium on "Archaeological Science in the Pacific Region" held February 2-7, 1983 during the XV Pacific Science Congress at the University of Otago, Dunedin, New Zealand. The symposium's keynote speaker, Dr. Mike Tite, Director of the Research Laboratory at the British Museum, presented a paper on "Archaeometry —Past Achievements and Future Prospects." This symposium represents the first international meeting with which the SAS has been formally involved. The co-convenors were Foss Leach, SAS Consular, and R.E. Taylor, SAS General Secretary. The SAS member who traveled the longest distance to attend the Congress and symposium was Professor I.R. Selimkhanov, Institute of History, Academy of Azerbaydzhan, Baku, U.S.S.R.

Researchers from seven nations (Australia, Canada, India, Japan, New Zealand, United Kingdom, United States) reported on recent advances in a wide range of topics including analysis, characterization, and/or dating of ceramics, obsidian, copper, bone, and wood materials from many Pacific areas, updates on current accelerator C-14 research in Canada, New Zealand and the U. S., as well as paleobotanical and paleoenvironmental studies from many sites and localities in the Pacific region.

During the symposium, a panel discussion focused on the co-ordination of archaeometry in the area. Various proposals were offered and extended discussions took place. It was agreed that this issue required additional study and review. Those interested in the progress of these discussions should watch for announcements in the SAS Newsletter or in PANDA, the Pacific Newsletter of Developments in Archaeometry. For additional information on PANDA, contact Graeme Ward, Australian Institute of Aboriginal Studies, P.O. Box 553, Canberra, ACT 2601, Australia. There are a limited number of copies of the program (which includes abstracts for the papers presented), available at no charge for SAS members. Please write to the Office of the General Secretary.

FIFTH ANNUAL SAS MEETING

President John Weymouth presided over the 5th Annual meeting of the SAS held on April 27, 1983 at the Pittsburgh Hilton Hotel, Pittsburgh, PA. The SAS sessions were held in conjunction with the Society for American Archaeology (SAA). The annual meeting of the SAS Executive Board was held the same day.

Topics considered by the Executive Board included (1) improving communication and coordination with the SAA through a standing committee to handle these affairs, (2) a suggestion by 1983-1984 SAS President George Rapp, Jr. that the SAS consider running short courses during SAS meetings in addition to symposia and exhibits, (3) a proposal by the General Secretary for a half-day meeting at the International Archaeometry Conference in May 1984 in Washington, D.C. and, (4) a discussion of relationships with the Center for Materials Research in Archaeology and Ethnology at MIT which houses the Office of the Newsletter Editor, Suzanne De Atley. The General Secretary also reported on the status of the radiocarbon dating retrieval project. This project will create the capability for the SAS to administer a computer-based retrieval system for radiocarbon dates. The system is expected to be partly operational within about nine months. The Executive Board also requested that the General Secretary look into gaining interest on the SAS checking account. Finally, the Executive Board endorsed a procedure whereby the SAS will send a card every year to members reminding them of the special rate available only to SAS members for subscriptions to the **Journal of Archaeological Sciences.**

At the annual business meeting, the reports of the officers included the 1982 financial statement by the Secretary-Treasurer, Elizabeth A. Coughlin and an internal audit report by Thomas J. Riley, Assistant Secretary-Treasurer. During the last fiscal year, the SAS administered an NSF travel grant of $12,950 to support the attendance of U.S. scientists at the International Council for Archaeozoology conference on the "Contribution of Faunal Analysis to the Study of Man" held at the Ins-

titute of Archaeology in London in April 1982. Total income for the SAS for the 1982 period, exclusive of the NSF grant was $1,161.32, while total expenditures were $3,252.90. Balance on hand at the end of the fiscal year was $2,832.86. The reports of the Secretary-Treasurer and Assistant Secretary-Treasurer were accepted by the membership. A motion was passed directing the General Secretary to explore the possibility of sending the Newsletter to U.S. members by non-profit, second class mailing rather than by first class. Overseas mailing would continue to be carried by airmail.

During new business, several items were taken up by the membership. A standing committee, consisting of the President, Vice President, and General Secretary, was authorized to co-ordinate future SAS sessions at the SAA meetings. The membership also endorsed a suggestion to hold a special half-day session in Washington, D.C. on 13 May 1984, one day before the opening of the 1984 International Archaeometry Conference. The purpose of this meeting is to discuss the future directions of SAS efforts over the next decade. It was determined that the regular annual meeting of the SAS for 1984 will be held in conjunction with the SAA in Portland, Oregon in April of that year. The meeting concluded with the announcement of the SAS election results and the installation of the officers for 1983-1984.

1983 SAS ELECTION RESULTS AND BOARD APPOINTMENTS

Rainer Berger, Professor of Anthropology and Geophysics at the U. California, Los Angeles, was elected Vice President and President-Elect of the SAS in recent balloting. Barbara Luedtke, Depart. of Anthropology, U. Massachusetts, Boston, was elected Assistant Secretary-Tresurer and Secretary-Treasurer-Elect in the same balloting. Other officers of the SAS for the 1983-1984 period include George Rapp, Jr., (U. Minnesota, Duluth), President; John Weymouth (U. of Nebraska), Past President; and Thomas J. Riley (U. Illinois), Secretary-Treasurer. Consulars of the Society reappointed by the Executive Board include Curt Beck (Vassar College), Foss Leach (U. Otago); Robert Maddin (U. Pennsylvania), and Daniel Wolfman (Arkansas Technical U.). Also reappointed by the Board was Suzanne De Atley (M.I.T), Newsletter Editor; R.E. Taylor (U. California, Riverside), General Secretary, and Christine Prior (U. California, Riverside), Associate General Secretary.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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