SAS
VOLUME 1 NUMBER 1 SUMMER 1977
NEWSLETTER
SOCIETY FOR ARCHAEOLOGICAL SCIENCES

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NEWS OF THE SOCIETY

WELCOME TO THE SAS

This newsletter represents the first publication of the newly organized Society for Archaeological Sciences. We are beginning the society with 100 Charter Members who joined the SAS between March and July 1977. It is their membership dues which allowed the SAS to initiate the process required to incorporate as a non-profit organization.

We are looking forward to a period of from one to three years during which time the SAS membership, through such channels as this newsletter, can develop a common consensus as to the issues confronting those actively involved in the pursuit of archaeometric research in the 1970's and beyond. It is our intention to build the SAS organization slowly and deliberately, expanding into activities and projects as a consensus among our members becomes clear.

Our first task is to create an organizational structure for the SAS and begin the process of communicating SAS's aims and goals to prospective new members. The first step was the creation of the Acting Board. The membership of the Board represents a cross section of the disciplines with input to archaeometry including anthropology, chemistry, geochemistry, geochronology, geography, geology, and metallurgy, It is the intention of the present board members to identify representatives of additional relevant disciplines who are interested in the goals and aims of the SAS to sit on the Acting Board to provide added input and counsel as we move forward.

SAS INITIAL ORGANIZATION

During the International Symposium on Archaeometry and Archaeological Prospection 1977, March 16-19, 1977 at the University of Pennsylvania in Philadelphia, five members of the Acting Executive Board met to lay the ground work for the formal organization and development of the SAS during the first year of its operation. The Board authorized the Acting Secretary to incorporate the organization as a non-profit corporation under the laws of the State of California and to pursue plans to disseminate information concerning the activities of the SAS potential members.

The Acting Executive Board of the SAS includes Rainer Berger (UCLA), Karl Butzer (Chicago), James B. Griffin (Michigan), P. Edgar Hare (Carnegie), Richard L. Hay (Berkeley), Vance Haynes (Arizona), Robert Maddin (Pennsylvania), George Rapp, Jr. (Minnesota, Duluth), Max Saltzman (UCLA), and R. E. Taylor (UCR). R. E. Taylor was appointed Acting Secretary of the SAS and editor of the Newsletter.

ENCOURAGE YOUR COLLEAGUES TO JOIN SAS

Enclosed with this issue of the SAS *Newsletter* are membership materials. Please encourage interested collegues to join the SAS. The more concerned individuals we have as members, the more rapid will be the development of our ability to solve problems and provide opportunities for expanded archaeometric research. Please feel free to duplicate any of the membership materials for multiple distribution. If you need more than 10 items, please contact the Acting Secretary and he will be happy to send you as many copies as you can use.

SAS INITIAL AIMS AND GOALS

The purpose of the SAS is to provide a professional society for those involved in the board spectrum of physical science applications in archaeology and are interested in the natural science/archaeology interface whatever their specific areas of specialization. While the SAS supports discipline-focused interests, the principle concern of the SAS is to encourage *interdisciplinary* collaboration and co-operation.

MATERIAL FOR INCLUSION IN THE SAS NEWSLETTER

The Newsletter editor is anxious to obtain material for inclusion is future issues of the SAS Newsletter. The present sections include *News of the Society, News of the Profession, Current Research Notes, Recent Publications, and Meeting Notes.* It would be very helpful if the material could be typed double-spaced with ample margins on one side of a standard 8½ x 11 sheet.

SUGGESTIONS FOR DATE/PLACE FOR FIRST SAS MEETING

It is the Acting Executive Board's intention to develop as quickly as possible a meeting schedule for the SAS for the next four years. It has been suggested that the Society plan to hold two formal meetings over the next four years, the first in 1978 and the second in 1980. It was an unanimous consensus of the Board that the SAS should hold joint meetings with the Geological Society of America, the Society for American Archaeology or similar groups. The minimum planning time is on the order of from 12-15 months. It is therefore important that we began the process of deciding on the place and time of the first meeting by the Fall of 1977. The Board welcomes suggestions from the membership as to their preferences. Please direct your views to the Acting Secretary.

NEWS OF THE PROFESSION

NORTH AMERICAN EDITOR FOR JOURNAL OF ARCHAEOLOGICAL SCIENCE

The Journal of Archaeological Sciences (JAS) will shortly announce the selection of a North American editor for the JAS. The JAS is published by Academic Press, Inc. in London on a quarterly basis. It is now beginning its fourth year of publication. A subscription to the journal can be sent to Academic Press, Inc., 111 Fifth Avenue, N. Y. 10003. The current yearly cost is $29.50.

GSA, DIVISION OF ARCHAEOLOGICAL GEOLOGY

SAS Executive Board Member George Rapp, Jr. has reported the organization of the Division of Archaeological Geology of the Geological Society of America. The formal approval of the Division will probably occur on or before the 1977 Annual Meeting of the GSA in Seattle in November. Geologists who are members of the SAS may wish to contact Dr. Rapp at the University of Minnesota, Duluth for further details. Dr. Wakefield Dort, Jr., Department of Geology, University of Kansas is organizing the first annual field trip of the Division. Present plans include a visit to Jaguar Cave, Veratic and Bison Rockshelters and to the Wasden Site. Those who may be interested in the field trip may wish to contact Dr. Dort directly.

ACS, POSSIBLE ARCHAEOLOGICAL CHEMISTRY SECTION

Professor Giles Carter of Eastern Michigan University has initiated discussion concerning the organization of a section within the American Chemical Society devoted to archeological chemistry. Some of the problems that need attention include sampling techniques, comparison of analytical results among laboratories, and work on the preparation of standards. One proposal is to join the Division of the History of Chemistry of the ACS. Chemists interested in the possible formation of an ACS Chemistry Section should communicate with Dr. Carter, Department of Chemistry, Eastern Michigan University, Ypsilanti, MI 48197.

MEETING NOTES

SIXTH AMERICAN CHEMICAL SOCIETY SYMPOSIUM ON ARCHAEOLOGICAL CHEMISTRY, August 31 and September 1, 1977 – Pick-Congress Hotel , Chicago, Ill. Symposium Chairman: Dr. Giles F. Carter, Department of Chemistry, Eastern Michigan University, Ypsilanti, Michigan 48197.

PARTICIPANTS AND TOPICS:

August 31 (Wednesday): "Chemistry and Archaeology: A Creative Bond," S. V. Meschel; "Some Application of X-ray Radiography in the Study of Archaeological Objects," P. Meyers; "Use of Spark Source Mass Spectroscopy and Proton Induced X-Ray Fluorescence in Archaeological Chemistry," A. M. Friedman; "Chemical Aspects of the Conservation of Archaeological Materials," N. S. Baer; "Radiocarbon Dating in Retrospect and Prospect: An Archaeological Perspective," R. E. Taylor; "Trace Element Analysis in the Characterization of Archaeological Bone," G. Wessen, F. H. Ruddy, C. Gustafson, H. Irwin; "Asphalts from Middle Eastern Archaeological Sites," R. F. Marschner, H. T. Wright; "The Analysis of Dyes in Early American Textiles," M.Saltzman;"Amino Acid Analysis as a Tool in Radiocarbon Dating of Bone Collagen," A. A. Hassan, P. E. Hare; "Geochemical Analysis of Archaeological Deposits," F. A. Hassan, A. A. Hassan; "Chemical Investigations on Ancient Near Eastern Archaeological Ivory Artifacts: III. Fluorine and Nitrogen Composition," N. S. Baer, T. Jochsberger, N. Indictor; "Advances in Amino Acid Racemization Dating of Bone and Shell," J. L. Bada, P. M. Masters.

September 1 (Thursday): "New Dimensions in Archaeometric Data Interpretation Achieved Through Large Data Bases," G. Harbottle, E. V. Sayre; "Application of X-ray Photoelectron Spectroscopy to Mycenaean Pottery and Egyptian Glass," J. B. Lambert, C. D. McLaughlin, A. Leonard; "Elemental Compositions of Spanish and Spanish-Colonial Majolica Ceramics and Their Use in the Identification of Provenience," J. S. Olin, E. V. Sayre; "The Use of Rare Earth Element Distribution Patterns To Characterize Steatite Artifacts," R. O. Allen, S. E. Pennell; "The Use of Trace Elements in Fingerprinting Prehistoric Chert Quarries," D. J. Ives; "Atomic Absorption Spectrophotometric Analysis of Artifiacts and Clay in Archaeological Contexts, Contents," N. M. Magalousis, "Lead Isotope Rattos of Some Chinese Bronzes," I. L. Barnes, et al. ; "The Possible Change-of-Lead Isotope Ratios in the Manufacture of Pigments: A Fractionation Experiment," I. L. Barnes, et al.; "Isotopic Studies of Nigerian ' Bronzes '." C. C. Goucher, et al.; "Ternary Representations of Ancient Chinese Bronze Compositions," W. T. Chace, T. Ziebold; "Prehistoric Copper Artifacts in the Eastern United States," S. E. Goad, J. E. Noakes; "Gold Analysis by Differential Absorption of a Gamma Ray Pair at the X-ray Edge," P. Gaspar, E. S. Macias, C. D. Radcliffe: "Fingerprinting New Jersey Copper Coins by Energy Dispersive X-ray Fluorescence," H. A. Frey, et al.; "Chemical Compositions of Copper-Based Roman Coins IV. Augustan Quandrantes, ca. 9 to 4 B.C.," G. F. Carter.

RESEARCH NOTES

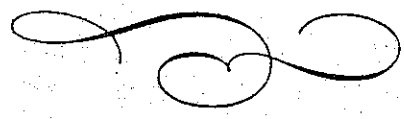
EXTENDING THE RADIOCARBON DATING RANGE TO 100,000 YEARS WITH A CYCLOTRON

A recent development in the radiocarbon field involves attempts to develop instrumentation and techniques to measure radiocarbon concentrations directly by counting the number of radiocarbon atoms contained in a sample rather than monitoring decay rates. At least three groups have reported initial attempts to use high energy particle accelerators as extremely sensitive mass spectrometers. The potential advantage of these approches is the possibility of using extremely small samples (1 – 100 millagrams) and extending the maximum dating range from the present 50,000 to 70,000 years to over 100,000 years with statistical counting errors depending on the number of atoms counted. A Berkeley group is using a 88-inch cyclotron to accelerate samples in the gas phase. Currently, the principle problem encountered involves contamination of the beam by residual nitrogen-14 in the sample and in the ion source of the cyclotron. The first report by the Berkeley group has been published in *Science*, Vol. 196, pp. 489-494 (29 April 1977). Two other teams – at the University of Rochester and Simon Frazer University – are using Tandem Van de Graaf accelerators with solid carbon samples. By counting only negative ions, they are attempting to circumvent the nitrogen contamination in the beam. No dates have as yet been reported by any of the groups.

THE WOOLLEY MAMMOTH SITE

Since the turn of the Century palaeontologists have collected dwarf mammoth remains from Santa Rosa Island, California. Later archaeologists probed the human prehistoric record. Over the years the question arose if man and mammoth were perhaps contemporaneous on an island body much larger in the Pleistocene due to lower ocean levels. On Santa Rosa, the oldest human bone fragments date to 10,000 years ago but other indications suggested a much larger presence of man, however the proof seemed elusive.

In 1975 geologist John Woolley showed Rainer Berger, UCLA, a badlands area composed of fine-grained sediments deeply cut by gullies. One of these gullies revealed a circular red-baked fire area at depth, 3 m in diameter and 80 cm thick at its maximum. Around the circumference in situ, were observed mammoth bones and stones tools made of basalt. During a partial excavation in 1976 six stone tools were collected, some slightly burnt red showing clearly association with this fire. The tools are bifacially-worked core-types with clearly worked surfaces. They are found in finely-grained sediments devoid of other stones. Three radiocarbon dates derived from unambiguous charcoal samples from the hearth are older than 40,000 years. At present the charcoal dates and a bone-derived radiocarbon date are being refined by isotopic enrichment and another technique.



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