

# SAS

VOLUME 4

NUMBER 1

SUMMER 1980

## NEWSLETTER

### SOCIETY FOR ARCHAEOLOGICAL SCIENCES

## NEWS OF THE PROFESSION

### Archeomagnetists Agree on Reporting Procedure

Following the "Archeomagnetism: Prospects for Improving Time Control" symposium, archeomagnetists attending the 45th Annual Meeting of the Society for American Archaeology agreed on a procedure for reporting archeomagnetic laboratory results. Papers delivered at the symposium clarified many issues in archeomagnetism ranging from statistical tests of the contemporaneity of samples to communication between the archeologist and the archeomagnetic specialist.

Robert S. Sternberg, Robert F. Butler and Randall McGuire suggested that the primary mineral carrying remanence in archeomagnetic samples was magnetite rather than hematite. Further, their preliminary results indicate that the remanence is a partial thermoremanence acquired at temperatures (400-450° C) substantially less than the Currie temperatures of either magnetite or hematite. Their results support those reported by George Krause who fired three hearths for three hours and achieved maximum temperatures of only 450° C. After sampling the hearths, Krause found no difference between archeomagnetic samples collected with a sun compass and those collected with a magnetic compass. Evidently, small isolated hearths do not produce magnetic anomalies strong enough to influence a magnetic needle. In processing these samples, Krause suggests that discarding 'outliers,' although improving Alpha 95 values slightly, may be giving less accurate pole positions.

In a significant contribution to accessing pole positions Eighmy, Berry and Mielke described a modification of a statistical technique developed by Mielke and Berry (Mielke, Berry and Johnson, 1976) for comparing the location of archeomagnetic pole positions on a sphere. Dubois, Lee, Hsue and Tull presented their results from Mesoamerica and Southwest paleointensity studies. Tentative paleointensity master curves were offered for the period A.D. 200 to A.D. 1700.

Finally, in two related papers Windes and McGuire, Sternberg and Butler discussed practical problems in the archeological use of archeomagnetism. Despite excellent results from Chaco Canyon archeomagnetic work, Windes discovered several problems of general concern. Potential problems include inaccurate cross-test levels and compasses, unusual site to site variation in archeomagnetic success, and indications of a necessary revision in the archeomagnetic master curve during the late A.D. 1000s. McGuire, Sternberg and Butler argued strongly for greater communication between archaeologists and the archeomagnetists. Specifically, they suggest a new method of reporting dates based on declination and inclination values and a set of minimum information for adequately reporting archeomagnetic results.

In an informal meeting following the symposium, participants agreed on the urgent need to publish archeomagnetic results. This urgency was particularly apparent given the likely revision of the master curve suggested by the Chaco results. DuBois informed the group that several years ago paleomagnetists made a similar agreement. Working with the proposal made by McGuire, Sternberg and Butler, the participants agreed that the following elements were essential components of an archeomagnetic laboratory report:

- 1) mean declination, mean inclination
- 2) number of specimens measured

- 3) number of specimens used in final direction estimation; basis for rejection of other specimens
- 4) demagnetization treatment
- 5) latitude and longitude of virtual geomagnetic pole
- 6) alpha 95, and precision parameter (k)
- 7) the oval of 95% confidence (dp, dm)
- 8) intensity (per unit volume)

The following were agreed upon as a minimum set of information for the proper primary archeological reporting of archeomagnetic results.

- 1) identification, archeological context, site location (latitude and longitude)
- 2) archeomagnetic laboratory used, cube size
- 3) number of specimens collected, used, and basis for rejection
- 4) demagnetization treatment
- 5) mean inclination, mean declination
- 6) latitude and longitude of virtual geomagnetic pole
- 7) alpha 95, precision parameter (k), and the oval of 95% confidence (dp, dm)
- 8) interpretative techniques for dates
- 9) source for secular variation curve

Daniel Wolfman pointed out that *Archaeometry* has agreed to act as a vehicle for publishing archeomagnetic results.

#### Reference Cited

Mielke, P.W., K.J. Berry and E.S. Johnson  
 1976 "Multi-response Permutation Procedures for a priori Classifications," *Communications in Statistics: Theory and Methods*. A5:1409-1424

Submitted by Jeffrey L. Eighmy, Department of Anthropology, Colorado State University, Fort Collins, CO 80523.

#### A Proposed National Forest Service Program for Cultural Resource Research

The Pacific Southwest Forest and Range Experiment Station has been assigned responsibility for proposing a National Program for Cultural Resources Research to be undertaken by the Forest Service. This program would be funded and managed in concert with other Forest Service research and would entail many extramural grants and contracts. The program should be of particular interest to members of the Society for Archaeological Sciences since the proposed research primarily deals with technological and methodological research development for approaches to general research problems such as environmental reconstruction, dating, artifact analysis and artifact conservation.

In order to develop such a program, the Station has recently initiated an analysis of research needs for cultural resources associated with wildlands *in general*. Based on this study, the Forest Service will decide on how it can best direct future research efforts. The study is being coordinated by Dick Hubbard, Assistant Director for Planning and Application and R.Z. Callahan, Director.

The study consists of a modified Delphi analysis, synthesizing communication between a panel of approximately 30 archeologists and related specialists representing nation-wide cultural resource interests. At least three rounds of interaction regarding a proposed list of general research problems and their related approaches will be conducted.

#### SAS NEWSLETTER

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Published quarterly by the Society for Archaeological Sciences. Distributed to the members of the Society.

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Volume 4 Number 1 Summer 1980

**SAS**

Currently, the first round is in progress. It consists of rating nine research problems and thirty-eight related research approaches according to their: overall importance, susceptibility to solution, required scientist years, and needed Forest Service involvement. These research problems and approaches were formulated by a monitoring team that includes: Dr. Polly Bickel, Dept. of Anthropology, University of California, Berkeley; Marley Brown, Sonoma State University; Steven Hackenberger, Washington Archaeological Research Center, Washington State University; Leo Barker, Interagency Archeological Services, San Francisco, HCRS; Donald S. Miller, Regional Archeologist, Pacific Southwest Region, USDA. Since this core group's efforts could not possibly provide a fully comprehensive list of research problems and approaches the panel of experts has been asked to add to this list during the second round of evaluation.

In the second round the panel is presented a graphic display of the first round responses. Each panel member is then asked if their response varies from the norm, would they like to change it if it does, and if not, why not? Panelists are also asked to rate additional problems and approaches added during round one. A synthesis of round two may be published in *ASCA* in order to measure the general acceptability of the developing panel consensus to the archeological community at large.

Round three is a repeat of round two with the addition of panelists' arguments as to why they did not want to change their ratings of specific problems and approaches. After three rounds the monitor team will prepare a report on the results of the Delphi analysis. We hope to complete the third round by November 15, 1980 and a final report by December 31, 1980. This report should be published in *ASCA*, *American Antiquity* or another suitable journal. Meanwhile the monitoring team is considering presenting a symposium on the Delphi analysis and proposed research program possibly at the San Diego SAA Meetings. A final Forest Service Research Proposal is expected March 1, 1981.

We thank the panelists for the time, ideas, and encouragement they have provided to date. We hope to eventually receive similar input from the archeological community at large, and members of the Society for Archeological Sciences in particular. We feel these efforts will provide a solid base for planning the future of cultural resources research—not just for the Forest Service but for all involved agencies and institutions.

## MEETING NOTES

### Archaeological Geology Sessions at 1980 GSA Meetings

Several Archaeological Geology sessions will be held at the annual GSA meetings in Atlanta on November 18th and 19th. At the general session, chaired by David Weide and Curtis E. Larsen, the following papers will be presented.

Radiocarbon-dated sedimentological events in the Holocene, South Dakota, in their archaeological context, A. Coogan.

Uranium series ages of Columbian mammoth enamel on Santa Rosa Island; implications for low sea stands and man's entry into North America, C. McKinney.

Location of archaeological sites with respect to Holocene sea level in the southeastern United States, M. Brooks, D. Colquhoun, J. Michie, F. Stapor, W. Abbott, W. Newman, and R. Pardi.

The influence of geological parameters on man's early adaptation to the coastal environment of Panama, J. Barber, J. Adams, and A. Ranere.

Geopedologic factors and the Maya civilization of northern Peten, Guatemala, A. Segovia.

Petrography and provenance of the lithic repertoire of Punic and Roman Carthage, Tunisia, R. Bullard.

The influence of geologic factors on the ancient Mesopotamian civilization, A. Mirsky.

The application of micromorphological analysis to archaeological soils: a case study from the lower Jordan Valley, J. Schuldenrein.

This session will be followed by the Archaeological Geology Division business meeting.

Two sessions will be held the following day. A poster session will be presented by L. Burckle and D. Clarke on the Geologic and Paleoclimatic Framework for Pliocene and Pleistocene Hominids. Diana Kamilli and Jack Donahue will chair a symposium on Landscape Interpretation for Archaeological Sites. The following topics will be covered.

Glacial chronology of the north-central Alaska Range and implications for discovery of early-man sites, N. Ten Brink and D. Ritter.

Alluvial fan development in the Nenana Valley, Alaska and implications for site discovery, D. Ritter and N. Ten Brink.

Great Basin Holocene climates: a gradient of equability, D. Weide.

Distribution of archaeological sites as related to the geomorphic history of the Little Platte River, Missouri, G. Gardner and J. Donahue.

Reconstruction of archaeological sites along the Green River, Kentucky, J. Stein.

Paleogeomorphic settings and prehistoric settlement in the American Bottom (Middle Mississippi River), B. Gladfelter.

Paleoenvironment of early Paleo-indian sites associated with glacial lake Algonquin, southern Ontario, Q. Gwyn, P. Storck, and A. Nolin.

Re-examination of the Late Holocene history of the Georgia Coast, USA, J. Howard and C. De Pratter.

Paleogeomorphic studies at the head of the Malian Gulf: historic and prehistoric access between northern and southern Greece, J.C. Kraft, C. Tziavos, G. Rapp Jr., and S. Aschen Brenner.

Prehistoric and historic settlement patterns in western Cyprus, J. Adovasio, G. Fry, J. Gunn, and R. Maslowski.

Landscape reconstruction in the vicinity of the Carmel Caves (Israel) from 125,000 to 40,000 B.P., W. Farrand and A. Jelinek.

Holocene land-use variations on the Bahrain Islands, Arabian Gulf, C. Larsen.

Changes in the Western Desert during the late Quaternary times, C. Vance Haynes.