International Association of Obsidian Studies
Bulletin

Number 14 Fall 1995

Business Address: Department of Anthropology,
San Jose State University, San Jose,
California, 95192-0113

Assembled and edited by B. Hamusek

CONTENTS

NEWS AND INFORMATION

THE IAOS ANNUAL MEETING

The seventh annual meeting of the IAOS was held at the Minneapolis Hilton and Towers in Minneapolis on Friday, May 5, 1995, in conjunction with the 60th annual meeting of the Society for American Archaeology. Of 14 attenders present at the IAOS meeting, 10 were already members and the four remaining individuals expressed an interest in future membership. The IAOS member who came from the greatest distance was Dr. Yaroslav Kuzmin from the Pacific Institute of Geography in Vladivostok, Far Eastern Russia.

The meeting was called to order by the incoming President (Michael Glascock). He reported on the accomplishments of the IAOS, during the term of outgoing President Kim Tremaine (i.e., April 1994 through April 1995), which included publication of three IAOS Bulletins, an increase in membership from 99 to 115, and an modest increase in the IAOS treasury balance from $2501.89 in April 1994 to $2905.63 in May 1995. In summary, the current IAOS membership consists of 99 persons from the USA, two from Mexico, two from Russia, two from New Zealand, four from Australia, two from France, two from Greece, one from Israel, and one from Japan.

Results from the recent election for President-elect were reported with Tom Jackson being elected. Jackson's one-year term as the IAOS President will begin in April 1996.

The proposed changes to the IAOS By-laws which Steve Shackley and others worked on during the past year were read. It was announced that the complete By-laws, with changes noted, will be printed in the Fall 1995 IAOS Bulletin along with a ballot for member to vote their approval or rejection the proposed changes (see insert with this bulletin). All ballots must be received by the Secretary-Treasurer on or before December 1, 1995 in order to be counted. The ballot will also include a place to nominate candidates for the next

election of IAOS officers to take place early in 1996. The positions are the Secretary-Treasurer for a two-year term beginning in April 1996 and President-elect who later becomes IAOS President for one year beginning in April 1997.

Glascock expressed his goal that three newsletters be published during the next year. Tentative plans are October 1995, January 1996, and April 1996. The newsletter editor (Blossom Hamusek) needs help from the membership in terms of both timely and quality contributions submitted on diskette (using WordPerfect or Microsoft Word) several weeks ahead of the printing date if we are to meet this goal (The next deadline for newsletter submission is December 15, 1995).

Glascock mentioned the ongoing effort to create a descriptive data base (names, locations, archaeological significance, pertinent literature, etc.) on obsidian sources world wide. The eventual goal is to make the data base available to all IAOS members via diskette and/or Internet. Glascock is compiling information on sources in the western hemisphere; Roger Bird is compiling information on sources in the South Pacific and eastern Asia. Thus far, Glascock has received extensive information concerning approximately 200 sources from both Fred Nelson and Craig Skinner. Help is needed in other regions. George Rapp (a visitor who expressed an interest in joining the IAOS) offered to compile information on sources in Turkey neighboring areas in the Near East. Robert Tykot offered to compile information on sources in both the Mediterranean and Europe. Potential contributors are encouraged to provide their information to one of the above named individuals.

The IAOS meeting concluded with a brief description of the Hitachi Model U-6000 Microscopic Fourier-Transform Spectrophotometer by Christopher Stevenson who explained the potential of this instrument for non-destructive measurement of hydrated layers on the surface of obsidian. The Hitachi instrument includes an interference detector instead of a conventional grating module enabling rapid measurement of hydration rims with a reproducibility of 0.02 microns. An article published in *Hitachi Scientific Instrument News*, volume 35, 1992, No. 3 explains the application in greater detail.

The next IAOS meeting will take place during the SAA meeting in New Orleans from April 10-14, 1996.

GREETINGS FROM THE PRESIDENT

The President's gavel has been transferred from Kim Tremaine to me (Michael Glascock), and I humbly follow in the foot-steps of my able predecessors (i.e., Chris Stevenson, Craig Skinner, Tom Origer, Steve Shackley, and Kim Tremaine). Each did an outstanding job in establishing the IAOS and helping it to grow into a truly international organization. On the other hand, our current membership of slightly more than 100 is still predominantly US-based, and it is one of my goals to encourage more of our international colleagues to join the

IAOS. I regularly correspond/collaborate with a number of people in other countries (many of whom are not yet IAOS members) and I'm sure that many others of you are doing the same. I want to encourage you to mention the IAOS to your foreign colleagues, and I am hopeful that such recruitment efforts will bear fruit. If any members or non-members have something that they think the IAOS could do for them that we are not doing already, please feel free to write to me or one of the other officers. We will enjoy hearing from you.

In this IAOS Bulletin you will find a listing of the IAOS By-laws with proposed changes. Steve Shackley and others worked on this for a couple of years, and it is now time to vote your approval or rejection regarding these changes. A ballot has been enclosed which must be returned to Viviana Bellifemine before December 1, 1995. You are also invited to mention names of possible candidates for the Spring 1996 Election on the same ballot.

A final topic which I want to remind members concerns my efforts to create a descriptive database for obsidian sources world-wide. The world-wide sources database will offer members the ability to search listings of source names, source locations, names of persons who have access to source samples, archaeological significance of individual sources, and literature pertinent to each source. Once completed, the database will be made available via diskette or Internet.

Thus far, I have accumulated information for ~200 sources in the western hemisphere which one of my students is busily entering into the database. There are many sources for which we still lack information and I would appreciate any assistance that members are able to offer to make this effort successful. You can expect to read more about this effort in the next IAOS Bulletin.

IAOS WORLD WIDE WEB SITE UPDATE: *Obsidian Studies on the Information Highway*

by Craig E. Skinner

Biosystems Analysis, Inc., Obsidian Studies Laboratory Internet: skinncr@peak.org
http://www.peak.org/~skinncr/ces4_0.html

As promised in the last issue of the *IAOS Bulletin*, the IAOS World Wide Web site is now up and running, albeit in very rugged (sneak preview) form. The site went online in September at the URL (uniform resource locator) :http://www.peak.org/iaos/obsidian.html.

At this point, I'm leaking the site's existence only to *IAOS Bulletin* readers and Web surfers who happen to stumble onto the link from my home page. Once things are more complete at the site, I will announce its existence to the greater archaeological community and will add links from major archaeological Web sites such as the University of Missouri's ArchNet (http://spirit.lib.uconn.edu/ArchNet/Museums/Archeom.html).

The IAOS Web site currently lives at peak.org in the basement of the Computer Science department on the campus of Oregon State University (Corvallis, Oregon). Peak has generously donated 7MB of space on their Unix Web server for the IAOS to do with what we will.

The general structure of the site looks like this:

1. Home Page:
The main starting point for the start.

2. About the IAOS:
A brief history and description, membership information, how to join, who's who, and so on.

3. News, Projects, and Announcements:
Annual Meeting information, availability of the IAOS Obsidian Bibliography disk and book, hot new research projects, upcoming events, and so on.

4. IAOS Bulletin:
Back issues of the *IAOS Bulletin* converted to Web readable (HTML) format.

5. Obsidian-Related Resources:
This is the core section and the one that will take the longest to complete, even in rudimentary form. Included here are (or will be) obsidian studies laboratory summaries, bibliographic references, full-text articles, obsidian source lists and descriptions, obsidian studies databases, images, information files, and assorted other reference materials.

6. Internet Resources:
Links to any obsidian-related information that I've managed to locate elsewhere on the Internet. Also included here are pointers to Internet sites with an emphasis in the archaeological sciences and a number of other categories that may be of interest to archaeologists.

The resources organized and referenced at the IAOS Web site are actually distributed on several different computers at several different physical locations. Because of the interconnectedness and wide reach of the Internet and the architecture of the World Wide Web, different Web pages and resources can be placed at any location on the Net.

Thanks to this distributed resource capability, the *IAOS Bulletin* will live at Jeff Hamilton's Web site at http://www.ohas.com. Jeff has begun the somewhat thankless job of converting the past printed bulletins to their electronic HTML (hypertext markup language) counterparts. Other resources, including the *IAOS Obsidian Bibliography*, links to other obsidian-related Web locations, descriptions of obsidian sources in Oregon

and California, and a hypertext guide outlining the megascopic characteristics of obsidian can be found at the BioSystems' Obsidian Studies Laboratory Web site (http://www.peak.org/~skinncr/ces4_0.html). Online versions of obsidian-related journal articles from the journal *Current Research in the Pleistocene* are also beginning to make their appearance at the Center for the Study of the First Americans new Web site (also now on the Web in sneak preview form at http://www.peak.org/csfa/csfa.html).

For those of you in the rapidly growing group of well-connected archaeologists and other researchers with full World Wide Web access, I invite you to take a look around the new site from time to time. If you have any comments, suggestions, ideas, contributions, or notice any problems, be sure to let me know. For those of you who are not yet plugged into the Web, I recommend that you give it some serious thought. With the coming of the World Wide Web, the Internet has finally gotten almost easy to use. This is a valuable information resource whose time has clearly come.

TECH NOTES

This section of the Newsletter is devoted to sharing new techniques, innovative ideas, source of equipment and supplies, and discussing new technologies. Obsidian analysts are invited to submit information related to these topics.

OBSIDIAN SOURCING AND HYDRATION STUDIES AT MURR

by Jessica A. Ambroz and Michael D. Glascock (Missouri University Research Reactor), Craig E. Skinner (BioSystems, Inc.), and Christopher M. Stevenson (Archaeological Services Consultants)

Many factors, including temperature, humidity, water content, and elemental composition are responsible for affecting the rate at which obsidian hydrates. The Archaeometry Laboratory at the Missouri University Research Reactor, working in conjunction with Chris Stevenson and Craig Skinner, is intent on studying and measuring these factors in order to create a database from which possible correlations between the different factors can be investigated.

At MURR, we perform instrumental neutron activation analysis (INAA) on obsidian source material in order to get an idea of elemental composition. The sample undergoes two irradiations, one short (five seconds) and one long (70 hours). The short irradiation is followed by one count and the long irradiation is followed by two counts. The sample size is usually 100-300 milligrams, however, samples as small as five milligrams are possible in many instances. Using routine INAA, we can determine the concentration for each of about 27 elements. Each source has a distinctive distribution of the elements and this distribution may be found to correlate with other factors. For example, many sources low in iron are also found to have a high intrinsic water content.

In our research program, we intend to build upon the initial work of Ambrose and Stevenson who identified the relationship between obsidian density and water content. Once the intrinsic water content is known, the hydration rate constants may be accurately estimated for the artifact in question. The intrinsic water content of obsidian is determined from an infrared scan of a 1 mm thick section. An FTIR spectrometer is used to scan the waterbands located at 4500 cm^{-1} and 5200 cm^{-1} (Fig. 1). A density determination and induced hydration rate experiment will also be performed to examine the relationships between each of the variables.

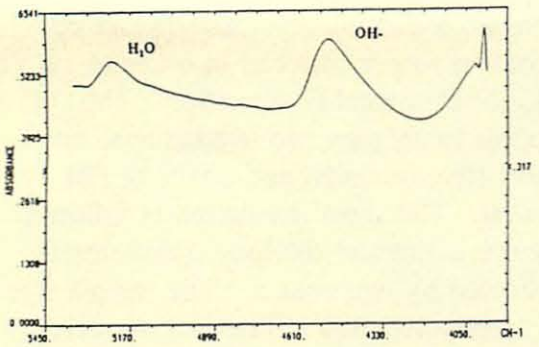

Figure 1. Scan of thin section of obsidian showing an OH^- peak at about 4500 cm^{-1}. By comparing the absorbance to standards, percentage of water content are calculated.

Recently completed research has found strong relationships between density and water content (Fig. 2), and hydration rate and water content. Based upon a simple density measurement the water content, and thus the hydration rate, may be estimated. In this analysis, we intend to examine additional "water rich" samples in order to strengthen this part of the calibration curve.

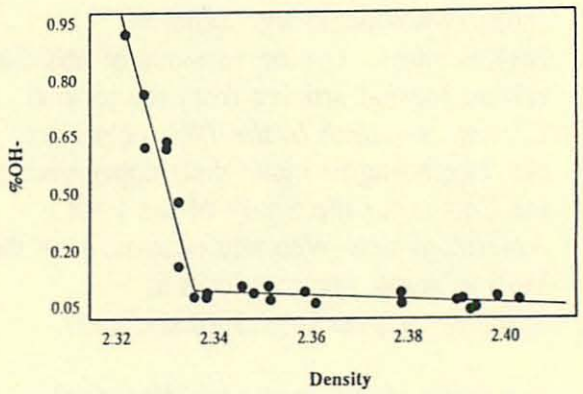

Figure 2. Plot of OH-% versus density. When density is known, water content is found using regression analysis.

The data will be further examined for the effects, if any, of elemental composition on these correlations. The calibrations as they currently stand produce high quality hydration rates that can be used for chronometric purposes. These new efforts will increase our ability to produce reliable chronological dates based upon the properties of each artifact under study.

Related research goals include the thorough characterization of Oregon obsidian sources using INAA. We are working to compile an extensive database of 27 elements for each source. At this time, we have analyzed four sources: Glass Buttes, Chickahominy Reservoir, Horse Mountain, and Cougar Mountain. The results are interesting because we have determined that Glass Buttes is composed of at least two, and possibly four, distinct chemical signatures (Fig. 3).

We also plan to compare existing x-ray fluorescence (XRF) data, generated by Craig Skinner, with the INAA data from MURR. This comparison should show us which sources are adequately characterized by XRF and which may require INAA to completely determine their intra-source differences. When the full database is complete, different combinations of elements will be investigated to determine possible abbreviated-INAA methods. By being able to measure only a few elements, artifact sourcing can be done more rapidly and at lower expense.

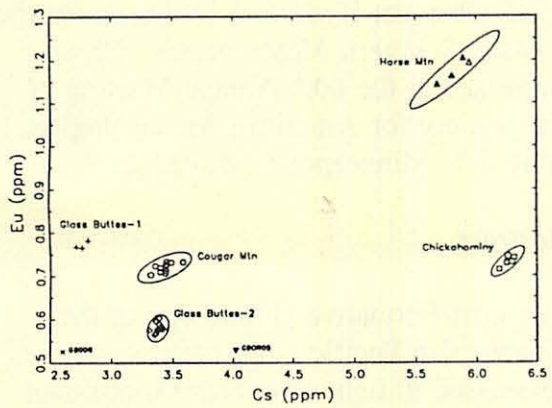

Figure 3. Plot of cesium versus europium showing source groups. Note that Glass Buttes has two source groups. Samples GB006 and GBOR05 are either additional groups or outliers. The ellipses shown represent the 95% confidence level.

We are also interested in sourcing obsidian from other states in the northwest as they pertain to our research goals. At this time, we are seeking samples from Oregon, Utah, Nevada, Idaho, and Wyoming. If you or someone you know may be interested in my dissertation project, please don't hesitate to contact me (Jessica) or forward my name. We are always interested in obtaining more source material and any contributions would be greatly appreciated. If samples are sent, the sender will always be appraised of the results.

As a final note, we would like to emphasize that the work we are doing is applicable to many areas of science. The information that we are gathering may also be helpful to geochemists and geologists. The applications of elemental composition through INAA are perhaps not endless, but they can be used to explore magmatic and other tectonic processes as well as artifact distribution.

ABSTRACTS AND ANNOTATIONS ON REPORTS AND PUBLICATIONS

Ambrose, W.R.

1994 Obsidian Hydration Dating of a Pleistocene Age Site From the Manus Islands, Papua New Guinea. Quaternary Geochronology 13:137-142.

Abstract

Obsidian hydration dating relies on the precise measurement of the depth of hydration developed over time in the surface of obsidians, but the loss of surface by natural dissolution at some archaeological sites can result in erroneous age determinations. By focusing the hydration measurement on internal crack surfaces protected from external surface erosion, acceptable results have been achieved from a Pleistocene age site in Papua New Guinea. Measurement of the hydration profile in thin sections of the sampled obsidian by computer imaging results in an improved reading error for the hydration depth. By using the system

on archaeological obsidians from the Pamwak site, the relative age results are more consistent with the radiocarbon age determinations than conventional obsidian hydration dating.

Barrett, Thomas

1995 Differential Specialization and Gulf Coast Obsidian Production: The View From the Tuxtlas Mountain Region. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

The continuing controversy over the identification of Mesoamerican centers as specialized stone tool production loci is examined from a "consumer" zone on the South Gulf Coast. Obsidian artifacts from the Tuxtlas region, Veracruz, Mexico, are examined to shed light on the production intensity and scale of a production-distribution system assumed to be dominated by Teotihuacan during the Middle Classic period. Debitage analyses utilizing sourcing studies, technological attributes, and categories of use wear, are contrasted within the Tuxtlas region to assess the differential regional procurement, production, and distribution of imported obsidian. The implications of the Classic obsidian industry are discussed.

Barut, Sibel

1995 Raw Material Use in the Later Stone Age at Lukenya Hill, Kenya. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

This paper examines strategies for the procurement and use of quartz, chert, and obsidian lithic raw materials at the early LSA sites of GvJm 10, 16, 19, 22, 46, and 62 from Lukenya Hill, Kenya. Implications for hunter-gatherer land and site use during the period are examined.

Bove, Frederick J. and Hector Neff

1995 Obsidian Hydration Dating in Pacific Coastal Southern Mesoamerica. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

The post-Formative chronology of the Guatemalan Pacific coast is being reassessed in light of over 1000 obsidian hydration dates from the Cotzumalguapa and Manantial archaeological zones. Dates are calculated on the basis of artifact source assignments determined by neutron activation analysis and soil temperature estimates based on measurements at four different elevations. The large number of dates thus generated permits time to be viewed as continuous rather than segmented. The traditional, segmented chronology for the region implies a post-Formative occupation history marked by incredible population explosions and collapses, whereas obsidian dates from Classic period contexts indicate more gradual expansions and contractions.

Fredrickson, David A.

1995 Obsidian Studies and Social Boundaries in Sonoma County: Implications for the Development of Sociopolitical Complexity in Central California. Paper presented at the 29th Annual Meeting of the Society for California Archaeology, April 5-9, Eureka, California.

Abstract

Because patterns of obsidian use by source have proved to correlate with known ethnographic boundaries, such patterns have been employed to assist in delineating boundaries at time depths for which no ethnographic data are available. Preliminary data, some of which are discussed here, are congruent with theoretical models that link the emergence of firm territorial boundaries with the development of sociopolitical complexity.

Freter, AnnCorinne

1995 Reconstructing Complex Site Stratigraphy: The Harris Matrix and Obsidian Hydration Dating. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Reconstructing site chronology is a complex process which involves the analysis of multiple lines of data. Obsidian hydration dating, when employed as either a relative or chronometric technique, has great potential as a chronological tool particularly when combined with other data sources. This paper employs the use of the Harris matrix to map complex stratigraphic deposits in combination with obsidian hydration, radiocarbon, and archaeomagnetic dates, from excavations at Copan, Honduras, to demonstrate how obsidian hydration can constructively contribute to the reconstruction of complex site chronology.

Freund, Joanna

1995 A Prehistoric Perspective of the Laguna de Santa Rosa, Sonoma County, California: A Study in Obsidian Hydration Analysis. Paper presented at the 29th Annual Meeting of the Society for California Archaeology, April 5-9, Eureka, California.

Abstract

The Laguna de Santa Rosa is a wetland area that is believed to have occupied a relatively stable location within the Cotati Valley for the past 7000 years or more. European migration and subsequent development rough draining and channelization have, however, created a markedly different environment than existed even a century ago. This paper uses historical and archaeological evidence to provide a prehistoric perspective of both the natural and cultural environment. Obsidian hydration analysis is used as a tool for establishing temporal context. Among issues discussed are settlement pattern and changes in the shoreline over time.

Gilreath, A., and B. Blommer, T. Ozbun, J. Fagan, D. Wilson

1995 Distribution and Use of Medicine Lake Highlands Obsidian. Paper presented at 29th Annual Meeting of Society for California Archaeology, April 5-9, Eureka, California.

Abstract

Medicine Lake Highlands obsidian is common in prehistoric sites in northern California and southern Oregon. X-ray fluorescence and hydration data from a variety of sites are used to plot the geographical and temporal distribution of this obsidian. Technological analyses of a sample of lithic assemblages from within this region suggest changes in the distribution of this glass are the consequence of cultural developments reflected in the organization of technology.

Godfrey-Smith, D.I., and J. Kronfeld, A. Strull, J.M. D'Auria

1993 Obsidian Provenancing and Magmatic Fractionation in Central Oregon. Geoarchaeology: An International Journal 8(5):385-394.

Abstract

In many instances, geologically distinct obsidian flows located within even a relatively small geographic area can be uniquely identified by their chemical composition. This happens to be true for several obsidian sources from central Oregon. Internally each obsidian locality is chemically homogeneous, but the obsidian rocks from different collection sites exhibit chemical differences. Based on the geochemical variations and on K/Ar dating of the end members of the chemical differentiation trend, these differences are related to the fractionation of a single Late Miocene magma chamber, dated at 6.5 Ma. By understanding the underlying causes of the chemical differences, constraints are disclosed that will govern the possible chemical variations of other, as yet unidentified but related obsidian flows. These can be useful for identifying the possible natural sources of obsidian artifacts which do not match known obsidian sources, and for suggesting possible geographic areas where these as yet undiscovered obsidian flows may be found.

Hughes, Richard E.

1995 Issues of Reliability, Validity, and Scale in Obsidian Sourcing Research. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Obsidian provenance analysis depends explicitly on the reliability and replicability of measurement units, but early concerns for these issues were largely implicit. It has become clear, however, that measurement units appropriate for one scale of analysis (a local area) may fail to provide valid measures when the scale and scope of research is expanded to a larger spatial universe (a region). This paper explores some aspects of the relationship

between reliability and validity at varying spatial scales, and considers how geologic and geochemical factors impinge on conclusions archaeologists draw from sourcing studies.

Norris, Susan M.

1995 New Methods in Obsidian Hydration Dating: Results from Yautepec, Morelos, Mexico. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Obsidian hydration dating has produced ambiguous data. We addressed this problem by hydrating glass in its ambient environment (vs. Inducing hydration in the lab). We buried source obsidian, archaeological obsidian, and standardized glass at the site of Yautepec for one year. The project goals were to 1) examine the effect of micro-environmental variation on hydration rates; 2) develop a hydration rate for obsidian in Yautepec considering factors besides temperature data; and 3) provide dates for archaeological obsidian. We measured the rims with a more precise, new technique called Hydrogen Profiling, performed on a Nuclear Accelerator. Results indicate that micro-environment may be a significant factor in the rate of hydration.

Stevenson, C.M., and E. Knaus, J.J. Mazer, J.K. Bates

1993 Homogeneity of Water Content in Obsidian from the Coso Volcanic Field: Implications for Obsidian Hydration Dating

Abstract

Users of the obsidian hydration dating method have routinely assumed that artifacts which originate from the same geological flow will be of the same chemical composition and thus hydrate at the same rate under equivalent conditions of temperature and relative humidity. Recent laboratory experiments into the hydration process has shown that the intrinsic H_20 content of the glass is the dominant factor in establishing the rate of hydration. H_20 content determinations on a large suite of samples from numerous prehistoric quarries within the Coso Volcanic field, California, indicated that H_20 content values, and thus hydration rates, varied significantly on a within flow basis. It is recommended that H_20 determinations be made on individual artifacts prior to obsidian hydration dating.

Reanier, Richard E.

1995 Obsidian Hydration Dating: The Alaskan Experience. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

After more than three decades of experimentation, obsidian hydration dating remains a promising, but by no means, routine dating method for arctic archaeologists. The 1970s saw limited success in constructing radiocarbon-calibrated hydration rates. In the 1980s,

thermal cells were first used to measure EHT, and activation energies derived from induced hydration were used to develop hydration rates, but erratic results pointed to hydration rind measurement error and the influence of forest fire as causes. Recent research suggests that within-source activation energy variability, and the limits on rind measurement precision imposed by optical microscopy may limit the usefulness of hydration dates in arctic environments.

Rhode, David

1995 Thermal Variation and Obsidian Hydration Rates. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Since the rate of obsidian hydration depends on temperature, and since the thermal environment experienced by artifacts varies considerably even over small spatial scales, it should be expected that hydration measurements from an artifact collection will also show significant variability. Differences in thermal regimes within a small area may easily result in differences in short term hydration rates on the order of 100%. Whether these rate differences hold over longer periods depends on the stability of the small scale thermal regime. Simulation modeling and empirical measurements are used to assess long-term hydration rate variability at Yucca Mountain, southern Nevada.

Ridings, Rosanna

1995 Modeling Subsurface Temperature and its Effect on Obsidian Hydration at Pot Creek Pueblo. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

A field study from Pot Creek Pueblo in northern New Mexico indicates that obsidian hydration dates may contain significant errors when hydration rate constants are extrapolated to depth-specific effective hydration temperatures (EHTs). This problem is most likely to occur when the amplitude of the annual surface temperature wave exceeds 2-3°C. Based on the large number of tree-ring dates for Pot Creek Pueblo, artifact burial histories have been modeled to account for a 3°C change in EHT with depth. Only 57% of the hydration age estimates are within the expected range, suggesting that sources of error in obsidian hydration dating are still poorly constrained.

Rondeau, Michael F.

1995 Technology as Context for Obsidian Hydration Studies. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Anomalous hydration band width readings have plagued interpretative endeavors and called into question the general utility of

obsidian hydration as a method of establishing relative chronologies. Recent techno-hydration studies indicate that certain kinds of anomalies can be explained. New interpretive benefits from combining technological and hydration analyses are recognized. It is argued that some unexplained results follow from a failure to establish context and, therefore, appropriate controls for sample selection.

Salgado, Sylvia and Wilson Valerio

1995 Lithic Industries of the Region of Granada, Pacific Nicaragua (A.D. 300-1550). Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

This paper discusses the results of the analysis of ground and chipped-stone artifacts recovered in stratigraphic excavations of the Ayala site, Pacific Nicaragua. Most of the artifacts were made of local cherts and basalts, while obsidian artifacts were made of imported materials from sources located in Honduras, Guatemala, and Central Mexico. The analyzed assemblages suggest that some specialized activities were being carried out at the site, owing to the prevalence of certain classes of artifacts. Comparisons are established with contemporaneous lithic industries of other regions of Lower Central America, especially of Costa Rica and Panama.

Stevenson, Chris, Peter J. Sheppard, Douglas G. Sutton, and W. Ambrose

1995 Advances in the Hydration Dating of New Zealand Obsidian. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Newly developed methods and calibrations for determining the age of flaked obsidian surfaces have been described and applied to New Zealand archaeological obsidians. Hydration bands were measured under high magnification (1000x) using a MOCHA computer imaging system to an accuracy of .2 microns. Hydration rates were then calculated on the basis of obsidian water content as estimated from artifact density while effective hydration temperatures were established from published temperatures derived from thermal cells. Hydration dates have been compared with radiocarbon dates from five archaeological sites in the North Island of New Zealand. The obsidian age determinations correlated well with the radiocarbon dates from the same context except for those recovered from sand dune sites. These results validate the ability of obsidian hydration dating procedures to provide accurate calendar year age estimates.

Tykot, Robert H. and Karen Hartshorn

1995 The Source of Corse Obsidian: Neolithic Exchange in the Western Mediterranean. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7,

Minneapolis, Minnesota.

Abstract

The provenance of several hundred obsidian artifacts from neolithic sites in Corsica has been determined by wavelength-dispersive spectrometry using the electron microprobe. The analysis of 200 samples from nine stratigraphic levels at Basi (Serra-di-Ferro) represents the largest study ever of obsidian exploitation at any one site in the western Mediterranean, and is singularly important for assessing chronological variation in obsidian exploitation. Our results contradict interpretations based on earlier studies of small numbers of Corsican samples, and indicate that obsidian from five Sardinian sources are represented. Changing procurement mechanisms may account for differences between the Early and Late Neolithic periods.

Woodward, Michelle R.

1995 Provenience Studies of Surface Obsidian Artifacts from the Northern Ridge of Lake Atitlán, Guatemala. Paper presented at the 60th Annual Meeting of the Society for American Archaeologists, May 3-7, Minneapolis, Minnesota.

Abstract

Neutron Activation Analysis (NAA) has determined the chemical characteristics for one hundred obsidian artifacts collected from surface surveys along the northern shore of Lake Atitlán, Guatemala. Sixty-six samples collected and tested from three obsidian sources (El Chayal, Rio Pixcaya, and Ixtepeque) provide a comparative database for the artifacts. Results indicate the Rio Pixcaya as the source for the majority of the obsidian artifacts. The dominance of Rio Pixcaya obsidian discounts the possibility of a local source while supporting a complex trade network similar to those of the Maya lowlands.

MEETINGS AND EVENTS

November 6-9. Geological Society of America, Annual Meeting. New Orleans, Lousiana. Vanessa George, Geological Society of America, 3300 Penrose Place, Boulder, BO 80301, USA; tel: 303-447-2020; fax: 303-447-1133.

November 15-19. American Anthropological Association, Annual Meeting. Washington DC., USA. American Anthropological Association 4350 North Fairfax Drive, Suite 240, Arlington, VA 22203, USA; tel: 703-528-1902.

1996

May 20-24. International Symposium on Archaeometry. Urbana-Champaign, Illinois. Sarah Wisseman, ATAM Program, University of Illinois, 116 Observatory, 901 S. Mathews, Urbana, IL, 61801, USA; tel:217-333-6629; fax: 217-244-0466; email: wisarc@ux1.sco.uicu.edu

CALL FOR ARTICLES AND INFORMATION

Submissions for articles, short reports, abstracts, or announcements for inclusion in the next newsletter should be received by December 15, 1995. We accept electronic media on IBM compatible 3.5" or 5.25" diskettes, in a variety of word processing formats including Wordperfect (5.1), Wordstar, and Microsoft Word, or ASCII text formats. A hard copy should accompany diskettes. Send to Blossom Hamusek, 2874 Camulos Way, Redding, California, 96002; (916) 221-7852.

Short Reports & Reviews: If you are interested in briefly reporting on research findings (e.g. one column in length), contact Mike Rondeau at Caltrans, Environmental Project, 650 Howe Avenue, Suite 400, Sacramento, California 95825; (916) 263-3375; FAX (916)263-3384.

INTERNATIONAL SYMPOSIUM ON ARCHAEOMETRY: CALL FOR PAPERS

The 30th International Symposium on Archaeometry will be held on the campus of the University of Illinois at Urbana-Champaign, Illinois, USA, May 20-24, 1996. Symposium organizers are soliciting abstracts of papers to be received by November 15, 1995.

Single sessions of oral presentations will be held each day from May 20 through May 24. Poster presentations are an important part of the Symposium and will be allocated special time slots. The following scientific sessions will be included:

1. Biomaterials (bones, residues, etc.);
2. Dating (organic and inorganic materials);
3. Field archaeology (prospection and geoarchaeology);
4. Technology/provenance of: a)metals, b)ceramics/glass, c) stone/pigments/plaster.

The Symposium schedule will include a full-day theme session, "*Biological Remains and Organic Residues*", featuring invited contributions as well as submitted papers.

A Preliminary Program with details on registration, the scientific program, social events, hotels, travel and sightseeing options will be mailed in February 1996. Events being planned include: a reception and exhibit at the Krannert Art Museum, a reception and computer fair at the Beckman Institute for Advanced Science and Technology, a Symposium banquet and musical entertainment in the Illni Union Ballroom, a pre-conference tour of Chicago museums and conservation laboratories, and a post-conference tour of Cahokia, a center of prehistoric Mississippian culture.

The organizers hope to provide limited financial aid to qualifying applicants in the following categories: 1. Archaeometry students from U.S. and abroad; 2. Non-U.S. researchers who can prove financial hardship and who plan to submit significant research papers. Those interested in financial aid should request application forms from the registration

address below by December 1, 1995.

If you would like to be added to the mailing list for Archaeometry 96 information, send you full name, address, fax and telephone numbers, and E-mail information to the registration address: C. Johnson, Conferences & Institutes, 302 E. John Street, Suite 202, Champaign, Illinois, 61820, USA; e-mail: johnsonc@uxl.cso.uicu.edu

NEW MEMBERS LIST:

E. S. Elster, UCLA, California

Stephen A. Moen, Portland, Oregon

George Rapp Jr., Univ. of Minnesota, MN

IAOS OFFICERS, 1995-1996

President: Michael Glascock
President-Elect: Tom Jackson
Secretary-Treasurer: Viviana Ines Bellifemine
Newsletter Editor: Blossom Hamusek
Advisory Board: Clement Meighan, Roger Green, Irving Freidman

---------- Cut-Out ----------

___ Yes, I'd like to renew my membership. A check or money order for the annual membership fee is enclosed (see below).

___ Yes, I'd like to become a member of the IAOS now. A check or money order for the annual membership fee is enclosed (see below). Please rush my first issue ofthe IAOS BULLETIN and a copy of the on-disk IBM PC-compatible IAOS Obsidian Bibliography. Please check disk format needed: ___ 5¼ 360K ___ 3½ 740K

Still not convinced, but want to know more?

___ Please send me a complimentary issue of the latest IAOS BULLETIN.

___ Please send me a copy of the on-disk IAOS Obsidian Bibliography and a complimentary copy of the IAOS BULLETIN. My check or money order for $10.00 (refundable if I join the IAOS this calendar year) is enclosed.

Name _____
Title _____
Street Address _____
City _____
Country _____
Affiliation _____
Work Phone _____
Home Phone (optional) _____
Internet/BITNET _____
Other E-Mail Addresses _____

My check is enclosed for the following amount (please check one):
___ $20.00 Regular Member ___ $50.00 Institutional Member ___ $200.00 Lifetime Member

Please return this cut-out to: International Association for Obsidian Studies ♦ Ms. Viviana Ines Bellifemine, Secretary-Treasurer ♦ Department of Anthropology ♦ San Jose State University ♦ San Jose, California 95192-0113