

CONTEXT



Carnelian intaglio (height: 1.8 cm) discovered in Aksum. The scene shows the Roman god Mars holding a winged victory (see Bard, pages 16–18).

INSIDE THIS ISSUE:

Studying the Nature and Formation of Sites	4
New Discoveries in an Old Collection	7
Context and Human Society Lectures, Andrew Sherratt	8
Appointments, Promotions, Tenure	9
AIA Honors Faculty	10
Remote Sensing Conference	12
Other Special Lectures	15
Archaeology in Aksum, Ethiopia	16
Faculty News/Awards	18
Student News/Awards	19
Archaeology Commencement	20
Chopping Away Culture	21

Bogged Down in Wetland Controversy: Current Investigations at K'axob, Belize

by Kimberly Berry and Patricia A. McAnany

Archaeological investigations at K'axob, Belize, enter a new phase, as researchers take up the controversial issue of how the ancient Maya exploited the wetlands. For previous work at K'axob, see the report by Patricia A. McAnany in Context 10:3-4 (Fall/Winter, 1992-93) 1-4.

To many people in the United States, the word "swamp" conjures up an image of a stagnant, pestilence-ridden pool or a parcel of land that, in the lingo of development, needs to be improved. Yet swamps can be viewed in a different light: as a refuge for wildlife, as a host for various species of plants, and as a reservoir. In the karstic plateau of the Maya Lowlands, such biodiversity and water-retention properties must have been highly desirable in securing protection from hunger and drought during the prolonged dry season. Numerous ancient Maya sites have been discovered in proximity to wetland environs, including K'axob, a settlement situated on the eastern edge of Pulltrouser Swamp in northern Belize. K'axob has been the focus of field research since 1990, and most recently during the summer of 1998. Boston University field school students have learned the fundamentals of field techniques during four field seasons at K'axob, and information from a total of five seasons has provided data for three dissertations, one master's thesis, and three senior theses. Prior seasons concentrated upon domestic and ritual patterns of its former residents, whose longevity of occupation (roughly 800 B. C.–800 A. D.) and place-making activities indicate the

power of ancestor veneration (see McAnany 1995). The 1997 and 1998 seasons focused upon the relationship between the settlement and its neighboring wetland. Continued support from the National Science Foundation has allowed us to initiate a two-phase study of the timing, duration, and character of wetland utilization at K'axob.

Although the Maya of K'axob may have better recognized the advantages of swamps, they may not have been so different from us in their desire to improve the utility of these inundated locales. Archaeologists and geographers, while examining aerial photos, detected the presence of polygonal shapes on the margins of a number of wetlands in the Maya lowlands. They hypothesized that these features represented relicts of raised fields and canals built for the purpose of intensifying agricultural production (see Darch 1983; Siemens and Puleston 1972; Turner and Harrison 1981, 1983). For more than a decade this view held primacy, but in recent years there has been a challenge to this position by those who contend that these islands are primarily the product of natural processes such as colluviation and in situ precipitation of gypsum sediments (see Jacob 1995; Pope, Pohl, and

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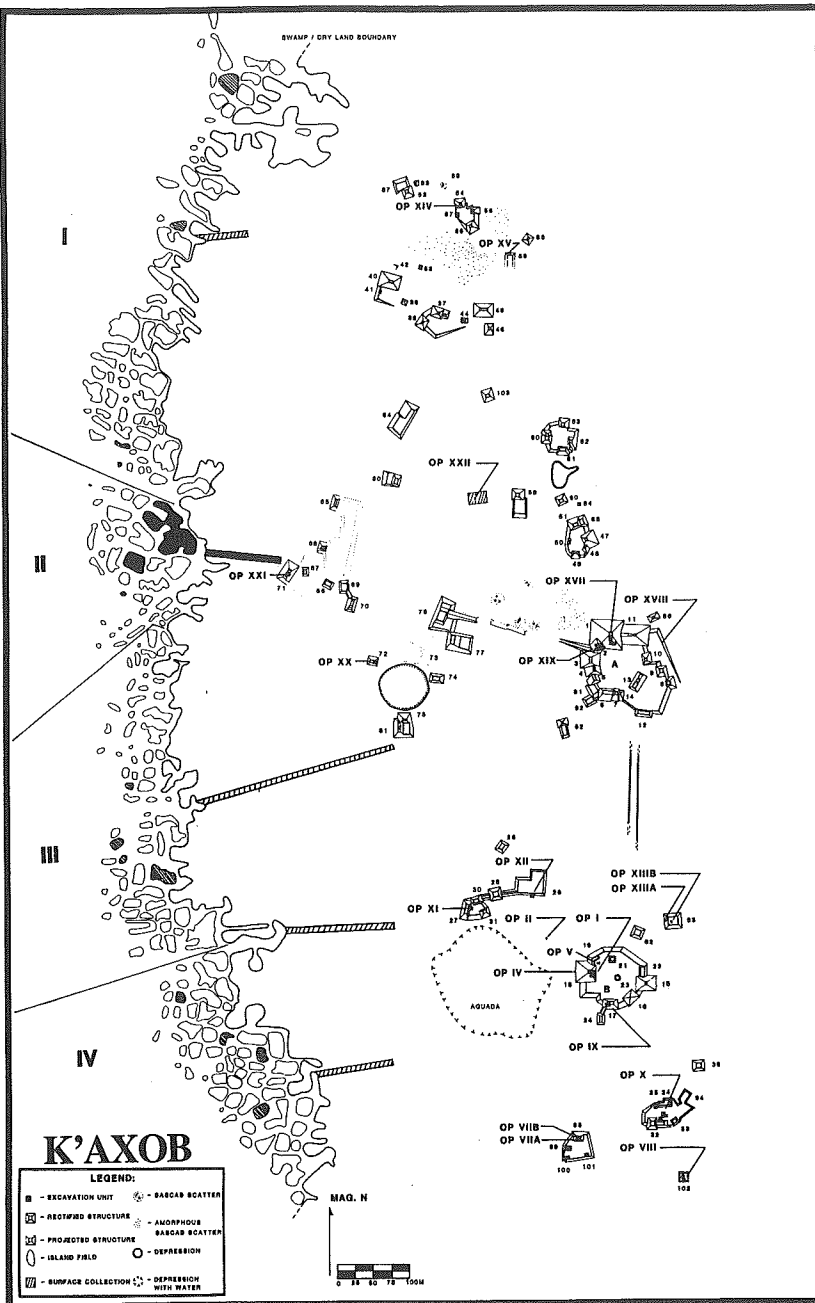


Figure 1. Map of K'axob showing the band of island fields and canals along its western edge. Transects and island fields excavated during 1997 are indicated with hatching; those excavated in 1998 are shown in black.

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 Jacob 1996). Within Mesoamerican archaeology, these differing views are hotly debated and have led to entrenched camps on both ends of the spectrum. From a scientific perspective, neither the anthropogenic nor geogenic camps have marshaled enough substantive evidence to permit an unbiased assessment.

The 1997 and 1998 seasons at K'axob were designed to remedy this situation. Recognizing the limited nature of previous wetland

excavations, the authors of this report devised a holistic program of study. We wanted to avoid what we saw as two methodological pitfalls. The first is the numerical and morphological inadequacy of previously employed sampling frames plus the global extrapolation of results from one locale to all wetlands, even if they were in altogether different regions. The second limitation of prior studies involves their isolation from detailed geological and cultural frames of reference for areas

external to the wetlands. In our view, there have been far too few excavations and far too little attention to context to justify the kind of grandiose statements on this issue published in scholarly journals. Our goal is to synthesize data from local cultural, geological, and environmental sources in order to create a more exact and comprehensive picture of human intervention within the wetlands adjacent to K'axob, namely those of Pulltrouser Swamp.

Accordingly, we focused our research on a subset of the island fields of Pulltrouser Swamp which are located immediately to the west of the sprawling settlement of K'axob (Fig. 1). To create a suitable sampling frame, K'axob Project members traversed and measured the islands which are clustered within a 0.16 sq km area along the western border of the site. This survey resulted in the discovery and mapping of 223 island fields which were then divided into four distinctive groups based upon geometry, orientation to shoreline, density, and location. The groups were labeled I-IV from north to south and each island was given a unique number in order to facilitate a proportional sampling scheme. It was important to ensure that the sampling frame encompassed fields from all four regions and also that the selected fields had varied morphological characteristics, sizes, and distances from the shoreline. We selected a 7% stratified random sample of fields for a total of fifteen island fields to be investigated.

During our 1997 season, excavations (1.5 x 8 m units) were conducted on three different islands. These units covered the sloping area from the height of the island to the water's edge (Fig. 2). This past summer, nine additional trenches were excavated by Boston University graduate students, Ben Thomas, Ilean Isaza, Steve Morandi, Polly Peterson, Dave Carballo, Dan Welch, Eleanor Harrison, and University of Michigan graduate student, Jennifer Smit. One technique that separated our wetland excavations from all others was the use of water from nearby canals to screen sediments. We used a



Figure 2. View of an island field showing a centrally placed excavation unit (Operation 30) in the foreground and the sawgrass of the central swamp depression in the background.

pressurized water pump to facilitate separation of the clays and recovery of cultural materials. The pump was also necessary once the excavations proceeded below the water table. Periodically the pump would be used to drain the inflow of water so that excavation could continue. As excavations proceeded, special analytical samples were removed from each operation. For instance, Professor Pat Farrell of the University of Minnesota, Duluth, is examining phosphate content in sediment samples from various strata in an effort to determine the depth of cultivation surfaces. Intact sediment blocks also were cut from the profile wall in order to examine the fabric of the sediments microscopically so as to identify formation processes. Kimberly Berry is conducting this analysis in the geoarchaeological laboratory of the Department of Archaeology under the supervision of Professor Paul Goldberg.

Excavation in the wetlands, however, is only part of our overall investigative strategy. Of equal importance are a series of smaller excavation units placed along transects that link the uplands with the wetlands, as well as units placed within the platforms of the settlement proper. The last two programs insure the cultural and geological context of the excavations in the island fields. Five transects, cut with machetes out of the high bush that lines the periphery of the swamp, provide a pathway for the placement of excavation units (Fig. 3). In 1997 and 1998, excavations along these transects (a series of 1 x 2 m units placed at 25 m intervals) were



Figure 3. Transect 4 with one of the excavation trenches staked out in the foreground.

directed by Boston University graduate students Ilean Isaza, Clint Chamberlain, Polly Peterson, Dan Welch, and Ryan Harrigan. Excavation in this intermediate area between the inhabited zone and the islands is yielding important artifactual and ecofactual information as well as vital stratigraphic cross-sections, which will allow us to evaluate the magnitude of downslope sedimentary as well as erosional processes. As in the island field excavations, intact sediment blocks were removed from each of these units.

The final program of excavation, conducted during 1997, included two excavations in platforms closest to the wetlands. Boston University graduate Angela Lockard directed work at a residential platform of the Formative

Period, occupied from about 500 B. C. to A. D. 300. Excavations revealed a sequence of floors and domestic deposits, including storage pits, hearths, and burials. Artifacts recovered included net sinkers, worked and unworked freshwater shell, and fish bones, all wetland resources. On nearby Structure 71, Boston University graduate student Ben Thomas, assisted by undergraduate field school students, excavated a 4 x 4 m trench that contained over 3 m of cultural deposits. The nature of the architecture and the artifact assemblage of this structure suggest that it did not serve a residential purpose, but rather was a more formal building which may have served as a meeting house for several of the smaller residential platforms that are arrayed nearby. During both seasons, environmental engineer Lewis Bowker, a graduate of Worcester Polytechnic, used the Sokkia Total Station to set ground control and complete the topographic map of K'axob.

Preliminary results from our two field seasons indicate that separate forces of deposition are operating on the transect and the island fields. Along the transects, cultural objects generally are found in the upper strata of all units and taper off toward the swamp—a pattern that lends support to the hypothesis of colluvial deposition. (There are some important exceptions to this pattern, however. Our ceramist, Dr. Sandra López Varela, discovered very early Middle Formative pottery at the bottom of an interminably deep trench that had been dubbed "the snake pit" because a deadly fer de lance snake had fallen into the unit while trying to escape biting ants.) Once out in the island fields, however, the density of artifacts begins to increase, and in fact we find more artifacts in fields that are farther from the dry land—a pattern that does *not* lend support to the thesis that slopewash accounts for the incorporation of artifacts within the sediments of the island fields. The island fields, furthermore, have yielded many pieces of intricately worked marine shell. Their discovery strongly suggests that some sort of

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dedicatory ritual is responsible for at least some of the artifacts that are found within the fill of the islands. A buried canal system, unearthed near the center of a current island and later filled in with Early Classic sherds, provides further support for the argument that the islands were formed by purposeful human activity. On the other hand, gypsum crystals are common in the island fields and ongoing geoarchaeological analyses are geared toward gauging the impact of this precipitant on the volume and morphology of the islands. Whatever the genesis of the island fields (the controversy is not yet over), our palynologist, Dr. John Jones of Texas A & M University, is confident that the fields indeed were used to grow crops, because the cores taken from canals between the fields contain extremely high frequencies of maize pollen along with cotton pollen and several other cultigens. As analysis proceeds, we hope to clarify the formation processes behind the island fields and generally to make a contribution toward understanding the chronology and extent of Maya "improvements" of the wetlands adjacent to K'axob.

Further Reading and References Cited

- Darch, J.P.
1983 *Drained Field Agriculture in Central and South America*. BAR International Series 189.
- Jacob, J.S.
1995 Ancient Maya Wetland Agricultural Fields in Cobweb Swamp, Belize: Construction, Chronology, and Function. *Journal of Field Archaeology* 22(2): 175-190.
- McAnany, P.A.
1995 *Living with the Ancestors*. Austin: University of Texas Press.
- Pope, K.O., M.D. Pohl, and J. S. Jacob
1996 Formation of Ancient Maya Wetland Fields: Natural and Anthropogenic Processes. In *The Managed Mosaic: Ancient Maya Culture and Resource Use*, edited by S.L. Fedick. Salt Lake City: University of

The Micromorphology Laboratory at Boston University Studying the Nature and Formation of Archaeological Sites

by Paul Goldberg

The author reviews geoarchaeological research and analysis conducted in the new Micromorphology Laboratory of the Department of Archaeology at Boston University, a facility that is unique on this continent.

What is Micromorphology?

Micromorphology is the study of undisturbed soils, sediments, and archaeological materials (e.g., ceramics, bricks, mortars) at a microscopic scale. Micromorphology employs undisturbed, oriented samples in which the original components and their geometrical relationships are conserved. Maintaining the intact nature of the sediments is important because micromorphological analysis exploits the observation of composition (mineral and organic), texture (size, sorting), and most important, fabric—that is, the geometric relationships among the constituents of the soil or sediment. Among its greatest assets is that within an individual thin section it is possible to observe the (microstratigraphic) sequences that indicate succeeding changes in depositional and post-depositional processes through time. We might be able to observe, for example, finely bedded clays (representing water deposition), which were later subjected to drying, thereby producing cracks that were later filled in with blowing sand. Thus it is not only the

composition of a sediment or soil that is significant, but also how the components are arranged in space. This kind of analysis is critical for studying the nature and formation of archaeological sites.

Much geoarchaeological inference is made both in the field and in the laboratory. Field observations of color, texture, structure, and consistency are common, useful descriptors, and they provide criteria to infer depositional environments of both natural (geogenic) and human (anthropogenic) deposits, as well as conditions of soil development. These field observations are normally supplemented by a variety of laboratory analyses that generally include grain-size and chemical analyses, such as pH, calcium carbonate, organic matter, cation exchange capacity, and soluble and exchangeable ions. Based on these data alone, however, incomplete and perhaps erroneous conclusions can be made.

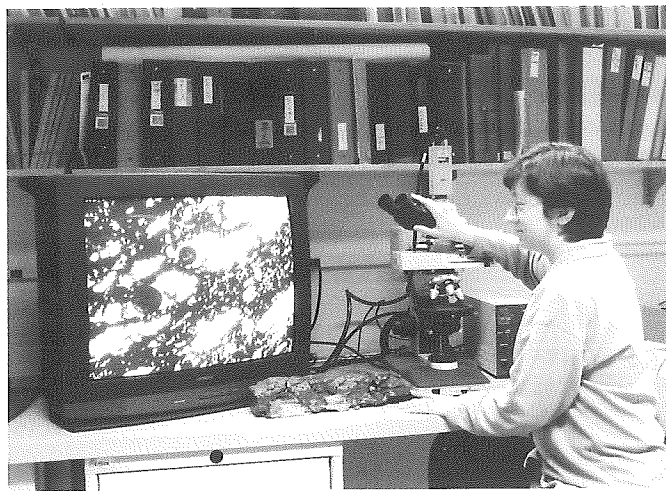
One of the principal reasons for such errors is the typically complex nature (e.g., composition) of soils and sediments associated with archaeological sites. Grain-size analysis, for example, often does not discriminate

- Utah Press.
- Siemens, A.H., and D.E. Puleston
1972 Ridged Fields and Associated Features in Southern Campeche: New Perspectives of the Lowland Maya. *American Antiquity* 37(2): 228-239.
- Turner, B.L., II, and P.D. Harrison
1981 Prehistoric Raised-Field Agriculture in the Maya Lowlands, *Science* 213(4506): 399-405.
- Turner, B.L., II, and P.D. Harrison, eds.
1983 *Pulltrouser Swamp*:

Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize. Austin: University of Texas Press.

Kimberly Berry, a Ph.D. student in archaeology at Boston University, is working on this project for her dissertation. Patricia A. McAnany is an Associate Professor of Archaeology at Boston University and is director of the K'axob Project. For more information on the wetlands project, consult the web page of the Department of Archaeology (www.bu.edu/archaeology), under "Research and Field Schools."

between silt or clay that has moved through a soil profile from that transported as sand-size aggregates of fine material, since as a technique it attempts to break down the sample into its primary components. Many of the analyses mentioned above are limited in their ability to recognize and discern a succession of soil-forming, geological or anthropogenic events that have taken place sequentially upon the same material or substrate. An analysis of calcium carbonate, for example, may comprise calcite that was deposited originally



Graduate student Trina Arpin checks image of a thin section under the Nikon petrographic microscope in preparation for teaching a lab session. The video camera atop the microscope transmits the image to the large television monitor to allow a group of students to view it at once. Photo: Michael Hamilton.

A Sampling Tutorial

How To Take a Sample

Samples for micromorphological analysis are collected in the field as intact fist-size blocks. For firm sediments sampling is normally accomplished with the aid of a trowel and large knife; for loose sandy materials which are prone to disintegration, samples are collected as cores, usually using square PVC downspouting. This "coring" technique has met with great success in the sampling of loose sands from several prehistoric sites, such as Gorham's Cave in Gibraltar (see page 6). We usually wrap the sample tightly with toilet paper and packaging tape, taking care to maintain the correct up-down orientation by designating "UP" with an indelible pen.

Processing Samples in the Laboratory

Samples are then taken to the laboratory where they are dried in an oven at $\sim 60^{\circ}\text{C}$ for several days. They are then hardened by placing the samples in plastic containers into which is poured a mixture of unpromoted polyester resin, diluted with styrene; this dilution is necessary to insure that the resin soaks into all the pores of the sample, minimizing the risk of incomplete impregnation of sediments rich in clay; thin, lower viscosity resin with long soaking times are needed to insure the best impregnation. Additional improvement in impregnation is made by placing the containers with sample and liquid into a vacuum chamber for up to an hour; this helps draw the resin into the fine pores of the sample. The resin is then allowed to cure three to five days, during which the liquid is transformed into a gel-like mass and then into a hard, brittle substance. When in the latter state the containers are returned to the drying oven for 24 hours at a temperature of about $50\text{--}60^{\circ}\text{C}$. After the resin has completely hardened, the resulting blocks are cut into slices with a rock saw, and thin sections are produced with a thin-section grinder, which produces a $25\text{--}30\ \mu\text{m}$ thick slice of soil or sediment mounted on a glass slide. This finished thin section is then examined with a microfiche viewer at $\sim 20\times$ magnification, and with the petrographic microscopes under plane-polarized (PPL) and cross-polarized light (XPL), at magnifications ranging from $20\times$ to $200\times$, and occasionally at magnifications up to $450\times$. Microscopic images of the thin sections, captured with a digital camera linked to a computer, can be used to derive quantitative data, or the images themselves can be enhanced with appropriate software.

with the sediments (primary) or material that was precipitated in a soil (secondary).

The Laboratory at Boston University

The new Micromorphology Laboratory of the Department of Archaeology at Boston University was developed because of the importance of micromorphology in archaeological research and the consequent need to educate students in its practice. The lab is unique for this continent. Although micromorphology is rapidly becoming more widespread both in soil science and archaeology, there is no other complete facility devoted to the technique, especially related to archaeology. The lab is equipped to produce and analyze thin sections that range in size from $27 \times 46\ \text{mm}$, a size typically used in geology, to larger ones, $50 \times 75\ \text{mm}$, that are more common in the study of soils and archaeological sediments. The lab is under the direction of the author, who is involved in a number of archaeological projects—mostly in caves in the Old World, but also in the New World—that utilize micromorphology to understand several aspects of site history, particularly by using sediments as indicators of past human behavior at archaeological sites. Several of those projects are briefly discussed below.

China and the Site of Peking Man

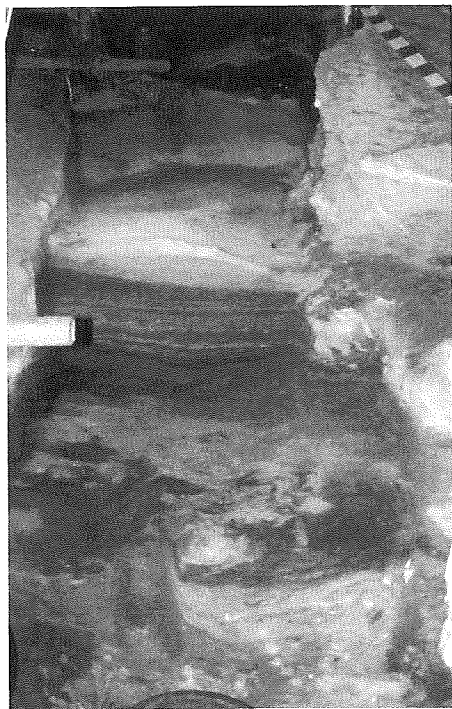
We are studying sediments from the cave of Zhoukoudian, home

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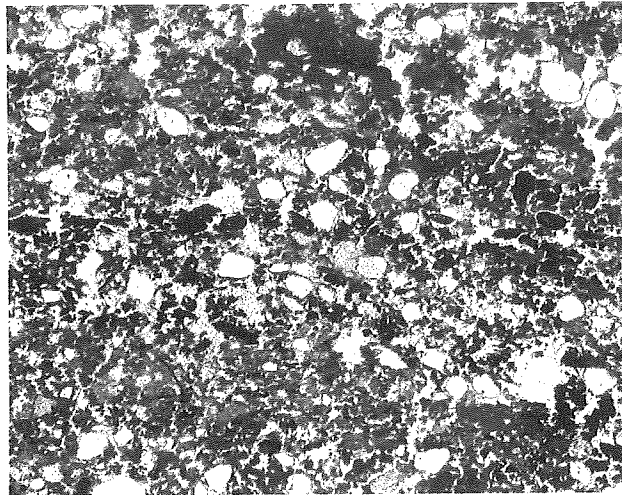
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of the famous hominid called "Peking Man," near Beijing, China, in collaboration with Professor Steve Weiner (Weizmann Institute of Science, Israel), Professor Ofer Bar-Yosef (Harvard University), and Professor Xu Qinqi, (Chinese Academy of Sciences, Beijing). The major issue is to use both micromorphology and Fourier Transform Infrared Spectrometry (FTIR) to evaluate the often-cited use of fire in the cave by Peking Man (*Homo erectus*) about 500,000 years ago. The results of this study are only in preliminary form, but they promise to be very informative, contributing to the answer of this question and also determining the origin of the sediments for much of the cave. Initial results were recently published in *Science* (July 10, 1998).

Cultural vs. Natural Features in Delaware

An interesting application of micromorphology has involved distinguishing archaeological features from natural phenomena in Delaware. In this region, numerous



Gorham's Cave, Gibraltar, showing finely laminated, organic-rich, Middle Palaeolithic beds in the center associated with ponding of water.



Gorham's Cave, Gibraltar. Photo-micrograph of finely laminated beds, consisting of organic matter, quartz (clear, rounded grains), and red clay. The fine bedding shows that the organic matter does not represent *in situ* burning, but rather charred material that was secondarily deposited. Length of photograph is about 3.4 mm.

circular, dark features were uncovered and interpreted to be either pits or a similar cultural feature, or to be the result of a natural process, such as a tree fall. With the help of Trina Arpin, a Ph.D. student in the Department of Archaeology, we were able to sample a number of these features from a Woodland site of Augustine Creek, south of Wilmington. The thin-section analysis revealed that most of the features are clearly cultural in origin (some sort of pit-like features), but some of similar overall dimension are the result of tree falls.

Prehistory of Gorham's Cave, Gibraltar

Gorham's cave is located at the base of the prominent cliff forming the southeast flank of the Gibraltar Peninsula. Originally excavated in the 1940s and 1950s by J. Waechter of the Institute of Archaeology, London, the cave has been the focus of recent excavations by a multidisciplinary team led by Professor Chris Stringer (Natural History Museum, London). In association with an English colleague, Dr. Richard Macphail of the Institute of Archaeology, London, I have been using micromorphology to refine the original depositional history of the cave as discussed by Waechter, particularly for layers that span the boundary between the Middle and Upper Palaeolithic (about 30,000 to 40,000 years ago), a period of critical importance in which the Neanderthals became extinct and were replaced by anatomically

modern humans in the Iberian Peninsula. Although this project is ongoing, we do have some concrete results. The results show that some of the sediments are wind-blown, particularly those at the entrance, and accumulated during a period when sea level was lower and the coastal zone was broader. In the interior of the cave, however, the thin sections brought to light the occurrence of cultural and biogenic components, such as bone, coprolites, shells, charcoal, and finely divided organic matter. Moreover, we could observe in the thin sections the presence of yellowish, phosphatic material that is indicative of bird guano. In the layers close to the Upper Palaeolithic/Middle Palaeolithic transition, we were able to observe a number of finely laminated beds rich in organic matter. These beds appear to have accumulated in standing water, a surprising occurrence, considering the porous nature of the sandy fill of the cave. It is possible that such a pool of water is related to a slightly wetter climate, although this inference must be compared to other data, such as the faunal and floral remains.

Other Projects and Prospects for the Future

Currently, thin sections from other sites in many localities are being studied in the Micromorphology Laboratory by the author and students who are working on projects in collaboration with other professors. Some of these projects include the

New Discoveries in an Old Collection

by Christine Bedore and Chris Dixon

Recent research on metal artifacts excavated at Nuzi (Syria) some seventy years ago sheds new light on metallurgy of the Late Bronze Age in the Near East.

From about 1500 to 1350 B.C. the Kingdom of Mitanni was a major power in northern Mesopotamia (modern northern Syria and Iraq). The site of Nuzi, located on its eastern periphery, had close political and economic ties to Mitanni, as attested by archaeological and textual evidence. Despite over a century of archaeological investigations, relatively little is known about this Late Bronze Age empire, and the materials excavated at Nuzi remain one of the key sources of information on the Kingdom of Mitanni and on questions regarding the appearance of Hurrian-speaking populations in the Bronze Age Near East.

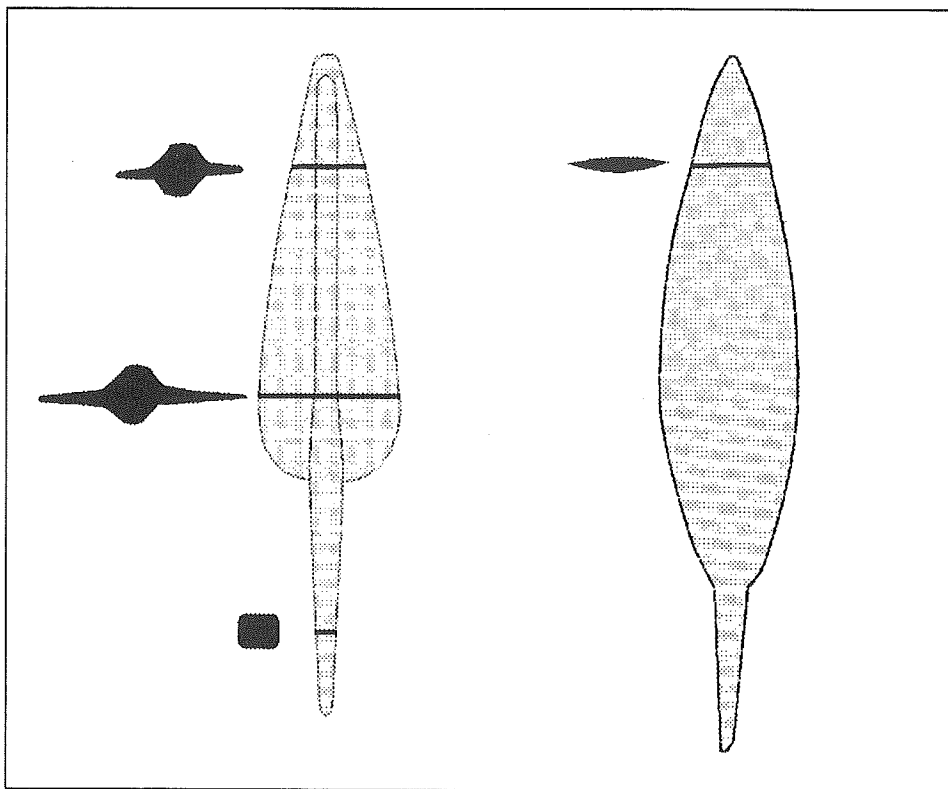
Nuzi was excavated in 1927–1931 by a joint project of Harvard University and the American Schools of Oriental Research, Baghdad, during an era when archaeological projects were undertaken on a monumental scale and artifacts were often shared with the excavating institution. As a result, objects in the Nuzi Collection of the Harvard Semitic Museum constitute an extensive corpus of well-documented, provenienced materials for study that include a large collection of cuneiform tablets, ceramics, glass, and metal objects. Many of these may now be viewed at the museum in the exhibition, "Nuzi and the Hurrians: Fragments from a Forgotten Past,"

which opened April 20, 1998, and will continue until December, 2001.

Metal artifacts from the Nuzi Collection were generously made available in 1996 by Dr. James Armstrong, Assistant Curator of the Semitic Museum and curator of the Nuzi exhibition, for study and analysis by the authors, who began

the research as part of a course they were taking in metallography at the Center for Materials Research in Archaeology and Ethnology (CMRAE) Graduate Laboratory at M.I.T. under the direction of Professor Heather Lechtman, director of CMRAE and professor at M.I.T., and Dr. Thomas Tartaron, Post-Doctoral Associate and supervisor of the graduate CMRAE lab. The research, which continued into 1998, was focused on three finger rings, three stick-pins/fasteners, and a sample of three arrowhead types. To

continued on page 8



Tanged arrowheads from Nuzi (Yorgan Tepe). The midrib arrowhead (left, H. 8.8 cm) was shaped by folding during manufacture; the long-point arrowhead (H. 9.1 cm) was cast. Drawings courtesy of The Semitic Museum, Harvard University.

hearths and chemical changes of the sediments from the Palaeolithic site of Hayonim Cave (Israel; with Bar-Yosef and Weiner, mentioned above regarding the Zhoukoudian project); sediments from raised fields of K'axob, Belize (with graduate student Kim Berry, under the co-direction of Professor Patricia McAnany, Boston University); stabling layers and sediments associated with possible animal domestication from Blydefontein rockshelter in South

Africa (with Dr. C.B. Bousman, University of Texas, San Antonio); and riverine sediments, hearths, and ashy deposits from Dust Cave, Alabama (with S. Sherwood, University of Tennessee, and Dr. B.N. Driskell, University of Alabama).

The scope and number of projects is continually growing as more researchers become acquainted with the technique. Following the creation of a new Master of Science program in Geoarchaeology (final administrative

approval pending) at Boston University, it is anticipated that new students both from archaeology and the earth-sciences will help in the development of the technique and the laboratory.

Paul Goldberg, Associate Professor of Archaeology at Boston University, has been instrumental in developing the technique of micromorphology and its application to geoarchaeological problems, particularly microstratigraphy and the processes involved in the formation of archaeological sites.

continued from page 7

the delight of all those involved, what began as a routine, albeit important, exercise in the metallographic analysis of copper-alloyed objects turned into a project that brought to light striking and important information on Late Bronze Age metallurgy in the Near East.

The study of metal sources, production techniques, and the use of copper alloys has been the subject of countless investigations by researchers over many years. From these investigations it is clear that the use both of copper-arsenic and copper-tin, as well as the process of shaping metal objects from a cast metal form through sequences of hammering and annealing episodes, were well-established and indeed typical of Bronze Age metallurgy in the Near East. Despite all the data, there remains a great deal that we still do not know about the history and dynamics of this technology. The interpretation of material relating to Bronze Age metallurgy has been the subject of disagreement and sometimes heated debate.

In contrast to the generally accepted belief that arrowheads of this period were cast in simple molds, one of the "typical" Late Bronze Age tanged arrowheads from Nuzi (this one with a midrib) was found to have been worked into shape through a complex and labor-intensive process of folding during manufacture. The arrowheads found at Nuzi were made of copper containing small amounts of arsenic or tin, often with minute amounts of other metals—that is, "dirty" copper alloys, and perhaps not intentional alloys at all. Objects of personal adornment from Nuzi, however, were made from alloys very different in composition than those used for the arrowheads. Overall, the tin content in those objects was significantly higher than in the arrowheads, an important find in terms of the many unresolved issues surrounding access to tin sources in the Near East and the proposed sequences for the development of tin-bronze metallurgy.

One altogether unexpected result
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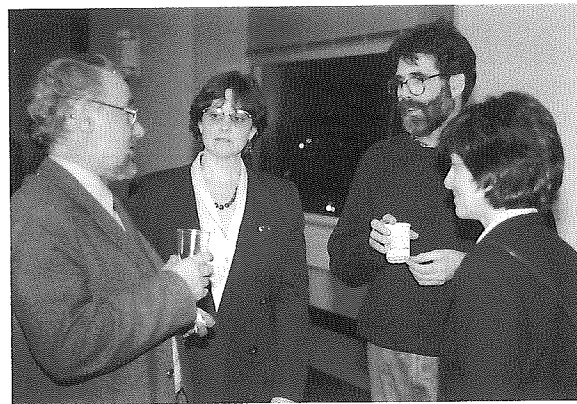
Context and Human Society Lecture Series

Andrew Sherratt on Archaeology and Social Sciences from the Enlightenment to the Present

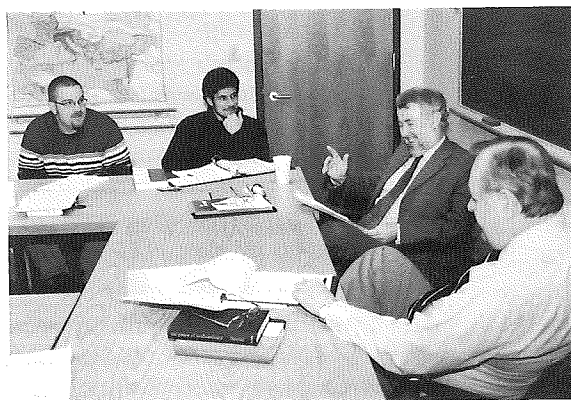
The Department of Archaeology and the Center for Archaeological Studies were delighted to welcome Dr. Andrew Sherratt as the Context and Human Society lecturer during the week of February 23-27, 1998.

Dr. Sherratt, Curator and Reader in European Prehistory at the Ashmolean Museum, University of Oxford, gave three public lectures, with the overall title: "Between Evolution and History: Long-term Change in Human Societies." The theme of the series was the way that social sciences in general, and archaeological thought

in particular, have changed throughout history, beginning with the Enlightenment and extending to present day post-processual approaches. The first lecture, "Enlightenment Thought and the Romantic Revolt," looked at modernism and post-modernism as these have affected the growth of archaeology. In the second lecture, "Extraordinary Popular Delusions and the Madness of Crowds: Progress and Fashion in the Social Sciences," he discussed the sociocultural context of archaeology and the definition of discourse. The week was concluded with a lecture on



Andrew Sherratt (left) in conversation with archaeology faculty (left to right) Julie Hansen, Chair of the Department, Paul Goldberg, and Kathryn Bard. Photo: Michael Hamilton.



Andrew Sherratt (second from right) joined the graduate seminar on the intellectual history of archaeology during his visit. Photo: Michael Hamilton.

"Bringing Culture Back In: Why Societies Change," in which he discussed environmental irregularities as factors in biological and cultural change. In addition, Dr. Sherratt participated in three lively seminars on such diverse topics as the intellectual history of archaeology, the development of complex societies, and Roman Iberia. It was a busy and productive week for all, and another very successful series of Context and Human Society lectures.

The Context and Human Society lectures, founded in 1984, are made possible by grants from the Humanities Foundation of the College of Arts and Sciences.

Faculty Appointments, Promotions, and Tenure

Curtis N. Runnels has been promoted to full Professor of Archaeology, effective in September 1998. Dr. Runnels, an expert in Aegean prehistory and the technology of lithics, joined the department as an assistant professor in 1987, after teaching six years at Stanford University. He was awarded tenure and promotion to associate professor in 1991. He specializes in the earliest periods of occupation of the Aegean, which he has recently shown extends back in time as far as the Lower Palaeolithic. He has conducted archaeological surveys in several areas of the Greek mainland, including the southern Argolid, the Berbati valley, Thessaly, and Epirus, and has also worked on early lithics collections from Turkey. Runnels recently received a national award for excellence in teaching; see page 10 in this issue of *Context*.

Paul Goldberg, Associate Professor of Archaeology, has been awarded tenure, effective in September 1998. Dr. Goldberg, an internationally recognized geoarchaeologist, joined the department three years ago. His area of specialization is micromorphology of sediments and site formation, especially of cave sites. He has worked on excavations throughout the world, including such important sites as Zhoukoudian, China; Hayonim Cave, Israel; Gorham's Cave, Gibraltar; and Meadowcroft Rockshelter, Pennsylvania. For a discussion of some of his research, see the article by Paul Goldberg in this issue of *Context*, pages 4-7.

Kathryn Bard was awarded tenure and promoted to Associate Professor, effective September 1997. Dr. Bard joined the department as an Assistant Professor in 1988, after completing her doctoral studies in Egyptian archaeology the previous year at the University of Toronto. She is an expert in the origins of early civilizations, and has taught a variety of courses both on the undergraduate

and graduate levels. Since joining Boston University she has directed excavations in Egypt and in Ethiopia. She reports on her project at Aksum, Ethiopia, in this issue of *Context*.

Mohammad Rafique Mughal returned to campus for the spring term 1998 as Visiting Professor of Archaeology, an appointment made possible by a grant to the department from the Humanities Foundation of the College of Arts and Sciences. Dr. Mughal, who was also a visiting professor in the department in spring 1997, is an expert in south Asian archaeology and in archaeological heritage management, and taught courses in both areas in the department; he also gave several guest lectures and occasional seminars. He was Director General of Archaeology and Museums for Pakistan from 1993 to 1996, and is the author of numerous articles and books, the most recent of which is *Ancient Cholistan: Archaeology and Architecture* (Pakistan: Ferozsons Ltd., 1997). During the fall of 1998 he will be a Visiting Fellow of Churchill College at the University of Cambridge, England.

Joseph A. Greene, Assistant Director of The Semitic Museum, Harvard University, was Adjunct Associate Professor of Archaeology during the spring term, 1998. Dr. Greene, who has excavated at Carthage, on Cyprus, and in Jordan, served as director of the United States Agency for International Development in Jordan (1987-88) before joining the Semitic Museum; he became Assistant Director in 1994. At Boston University he taught Syro-Palestinian archaeology on the undergraduate and graduate levels.

Dragi P. Mitrevski was a Visiting Fulbright Scholar in archaeology during 1997-98, while conducting research on the Late Bronze Age and Early Iron Age of the former Yugoslav Republic of Macedonia and neighboring regions. Dr. Mitrevski is a Senior Curator of the Museum of Macedonia

in Skopje and Associate Professor of Archaeology at the University of Skopje, and has most recently excavated at several prehistoric sites along the Vardar river. During his visit he lectured on the northern periphery of the Mycenaean World at Boston University and for the Eastern Pennsylvania Society of the Archaeological Institute of America.

Adrian Nigel Goring-Morris, a distinguished scholar of the early prehistory of the Near East, is Visiting Professor of Archaeology during the fall term, 1998, thanks to a grant to the department from the Humanities Foundation of the College of Arts and Sciences. Goring-Morris is a Senior Lecturer in the Prehistory Department, Institute of Archaeology, Hebrew University of Jerusalem, and is the author of two books and numerous articles on the Palaeolithic and Neolithic of the Near East. He is offering a course in Studies in Near Eastern Archaeology, which is open to undergraduates and graduates.

Pamela J. Russell will be a Lecturer in the Department of Archaeology during the fall semester, 1998. A Research Assistant in the Department of Classical Art at the Boston Museum of Fine Arts, Dr. Russell has a wide background in Aegean and Classical Archaeology, with a particular focus on Late Bronze Age and Classical ceramics. She has served as Coordinator of Educational Programs at Emory University's Museum of Art and Archaeology in Atlanta, Georgia, and as the Curator of Ancient Art at the Tampa Museum of Art. She was the editor for archaeology on the Perseus Project and now continues as a consultant for the Roman Perseus Project. In the recent past, Russell has offered several seminars at the MFA on Aegean and Greek art through a consortium program in which Boston University participates. She has excavated in Cyprus, Greece, Turkey, Egypt, and, most recently, in Spain as part of the Department of Archaeology's project in Cadiz. This fall, she will teach an undergraduate course, *The Archaeology of Classical Civilizations*.

Archaeological Institute of America Honors Faculty Members of the Department of Archaeology

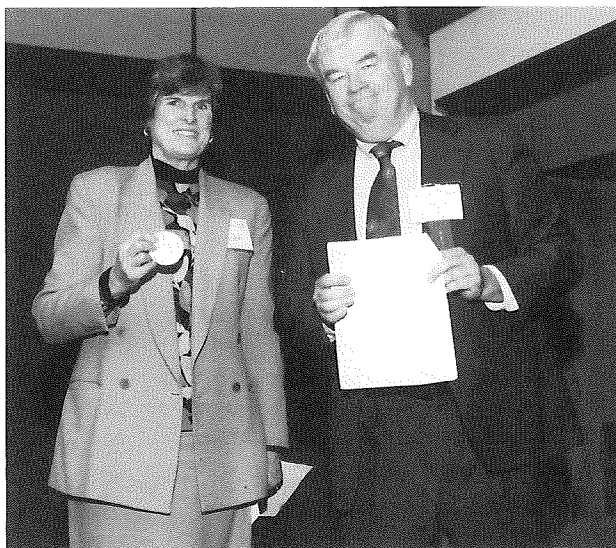
The National Meetings of the Archaeological Institute of America in Chicago in December 1997 were marked by a remarkable number of honors for faculty of the Department of Archaeology at Boston University. The Gold Medal for Distinguished Archaeological Achievement and the Award for Teaching Excellence were conferred on Clemency Coggins and Curtis Runnels respectively during the 1997 awards ceremony. The James R. Wiseman Book Award, named for another member of the faculty and a former President of the AIA, was presented for the eighth time at the same celebration. Later in the meetings, the AIA announced that the 1998 Gold Medal will go to Anna Marguerite McCann, and will be conferred next December at the National Meetings in Washington, D. C. The articles below and on the facing page provide details.

Special Colloquium for Clemency Coggins, AIA Gold Medal Winner for 1997

A special colloquium in honor of Clemency Coggins, the 1997 recipient of the Archaeological Institute of America's Gold Medal for Distinguished Archaeological Achievement, was held at the National Meetings of the AIA in Chicago in December 1997.

The colloquium, entitled "Archaeology and the Antiquities Market," was organized by Karen D. Vitelli, Professor of Archaeology at Indiana University and a former Vice President for Professional Responsibilities of the AIA. The four papers in the colloquium were presented by Ellen Herscher, Washington Society of the AIA; Patty Gerstenblith, DePaul University; David M. Pendergast, Royal Ontario Museum; and David Gill, University of Wales, Swansea, and Christopher Chippindale, University of Cambridge.

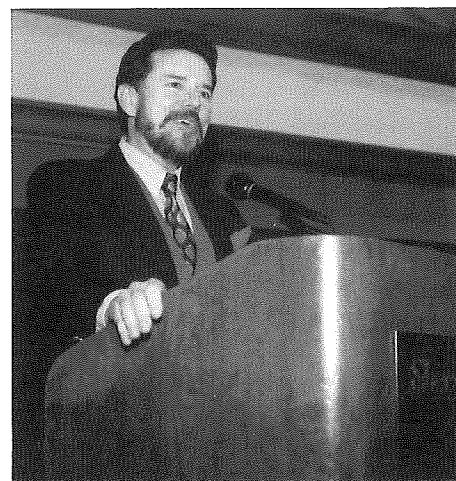
The Gold Medal (announced in *Context* 13:1-2 [Spring/Summer, 1997] 1, 14) was presented to Dr. Coggins by AIA President Stephen L. Dyson at the Awards Ceremony following the colloquium. The award citation noted her many accomplishments in the archaeology and art history of the Maya, and called special attention to her "numerous publications and public lectures," by means of which she "has eloquently and effectively sustained interest in the subject of safeguarding cultural property." Since the late 1960s she has been a leader in opposing the illicit traffic in antiquities, and for eleven years was a member of the United States Cultural Property Advisory Committee. In recognition of her work on that committee since its inception in 1984, the United States Information Service Agency in 1995 presented her an Award for Outstanding Service. Coggins joined the faculty of Boston University in 1988, where she is now Adjunct Professor of Archaeology and Art History.



Clemency Coggins displays the Gold Medal for Distinguished Archaeological Achievement presented to her on behalf of the AIA by President Stephen Dyson at the 1997 Awards Ceremony. Photo courtesy of the AIA.

Runnels Honored with National Teaching Award

The Archaeological Institute of America has named Professor Curtis N. Runnels the recipient of its 1997 Award for Excellence in Undergraduate Teaching, a prestigious award of the AIA, presented for the first time just in the previous year. Runnels was honored during the special awards ceremony at the National Meetings of the AIA in Chicago in December 1997. In the citation, presented by AIA President Stephen L. Dyson, Runnels is lauded for "his enthusiastic and engaging presentations, his innovative 'hands-on' style of teaching, and his unforgettable flint-knapping demonstrations." Since joining the Department of Archaeology at Boston University in 1987, Runnels has taught a broad range of courses both on the



Curtis Runnels addresses AIA members after being presented the AIA's Award for Excellence in Undergraduate Teaching in December 1997. Photo courtesy of the AIA.

undergraduate and graduate levels, including Palaeolithic archaeology, the prehistoric Aegean, prehistoric technology, and the intellectual history of archaeology. He has long been recognized by his students and colleagues as a superb teacher, whose exciting and captivating style of lecturing is combined with high, demanding standards for academic performance. See page 9 in this issue of *Context* for his promotion to full Professor of Archaeology.

Wiseman Book Award for Classical Bronzes

The Archaeological Institute of America presented the James R. Wiseman Book Award for 1997 to Professor Carol C. Mattusch of George Mason University for *Classical Bronzes: The Art and Craft of Greek and Roman Statuary* (Cornell University Press: Ithaca, 1996) at its 1997 National Meetings in December. The AIA named the book award, which is presented annually, in honor of the AIA national president, 1985-1988. As an historical sidelight, it may be noted that the first recipient of the Wiseman Book Award is the 1998 Gold Medal winner, Anna Marguerite McCann, who was honored in 1989 for her book, *The Roman Port and Fishery of Cosa; A Center of Ancient Trade* (Princeton University Press, 1987).

AIA Gold Medal To Be Awarded to Anna Marguerite McCann in December 1998

The Archaeological Institute of America has announced that it will confer its most prestigious award, the Gold Medal for Distinguished Archaeological Achievement, on Professor Anna Marguerite McCann at its National Meetings in Washington, D. C., in December 1998. This will mark the second consecutive year in which the AIA's Gold Medal was awarded to a member of Boston University's Department of Archaeology. McCann, who joined the department as Adjunct Professor in 1997, is a pioneer in maritime archaeology and is currently Archaeological Director of the Mediterranean Skerki Bank Project, an innovative expedition to document shipwrecks in the deep sea, which is headed by Robert D. Ballard, Director of the Institute for Exploration at the Mystic Marine Life Aquarium in Connecticut. McCann is also an internationally recognized scholar in Etruscan and Roman studies.

A special colloquium in her honor as the Gold Medal recipient is also scheduled for the AIA National Meetings in December. The colloquium, organized by Professor Nancy de Grummond, Florida State University, will include presentations by Professors Larissa Bonfante, New York University; John Pollini, University of Southern California; Maria Teresa Moevs, Rutgers University; John Oleson, University of Victoria; Elizabeth Lyding Will, Amherst College; and Lionel Casson, New York University.



Anna Marguerite McCann, winner of the 1998 Gold Medal for Distinguished Archaeological Achievement, with an amphora retrieved from an ancient shipwreck off Skerki Bank near Sicily in 1997.

New Discoveries, continued from page 8 of these analyses was that two of the rings were found to have been made of brass, an alloy of zinc and copper. The presence of brass at Nuzi is significant, because it is generally accepted that brass was not produced with regularity until the first millennium B.C. What is more, many of the finds that have been offered as evidence for early brass-making lack good archaeological contexts. The results of the analyses of the Nuzi material push the history of brass-making back into the middle of the second millennium.

The data recovered in these investigations hint at how much is still to be learned about Bronze Age metallurgy. The results, moreover, suggest several avenues for future research. Finally, this study is something of a testament to the kinds of new and important information that can be derived from the material analyses of existing museum collections. It reaffirms the position that there is much to be learned from the things that have long ago been removed from the ground. The application of technical investigations and analytical methods to curated materials affords us the opportunity to enrich our understanding of the past through the use of heretofore narrowly-tapped resources.

Christine Bedore and Chris Dixon, Ph.D. students in the Department of Archaeology, are now preparing a technical paper on this research for publication. The results of the analyses discussed in this article are featured in the current Nuzi exhibition at The Semitic Museum.

Remote Sensing As a Tool for Research in Archaeology Around the World

by James Wiseman

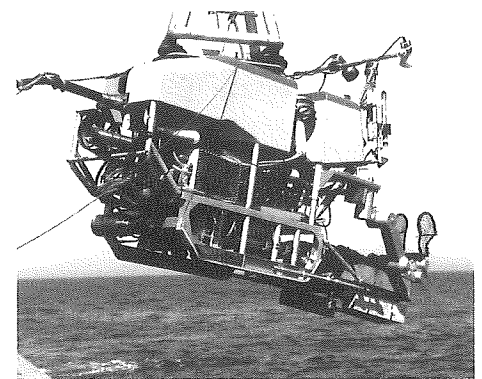
Recent developments by NASA in radar technology have made possible remote sensing from spacecraft and aircraft of terrain covered by vegetation—even jungle canopy—and have thereby opened up new possibilities for archaeological site-detection and survey. Analysis of radar images of arid environments and of images gathered by other multispectral scanners over other kinds of landscapes continues to be refined, and archaeological applications have become more sophisticated. Technological advances in remote-sensing devices used for geophysical prospection are also enhancing sub-surface exploration of archaeological features without excavation, and other related technologies are making possible the archaeological exploration of the deep sea. There have also been significant advances in computer-aided enhancement and manipulation of imagery. An international conference devoted to reports and discussions of these topics was organized by Farouk El-Baz, Director, Center for Remote Sensing, Boston University; Earnest D. Paylor II, Geology Program Scientist, NASA Headquarters; and the author of this article. The conference was held at Boston University in April 1998, as announced in Context 13:1-2 (1997) 11. The organizers thank the J. M. Kaplan Fund for its generous support of the conference.

Remote sensing applications in archaeological research projects in different environmental regions around the world, along with reports on significant technological developments, were featured in an international conference held at Boston University, April 16-19, 1998. The conference, made possible by a grant from the J. M. Kaplan Fund, was entitled "Remote Sensing in Archaeology from Spacecraft, Aircraft, on Land, and in the Deep Sea," and was sponsored by the Center for Archaeological Studies and the Center for Remote Sensing of Boston University. The 26 participants included archaeologists, engineers, and natural scientists from universities and research institutes in Greece, Japan, the United Kingdom, and the United States, as well as from the National Park Service, the Jet Propulsion Laboratory, and other NASA bases. The extraordinarily diverse mix of participants ensured wide-ranging, and lively, discussions during the conference and led to the generation of new collaborative ventures involving members of the different groups.

The four presentations of the opening session, where participants and about a hundred invited guests were welcomed by Boston University

President Jon Westling, provided a preview of the rich diversity of conference topics, dealing with different kinds of remote sensing from a variety of platforms. Anna C. Roosevelt discussed the use of geophysical survey in her archaeological investigations during the past two decades along the lower Amazon river in Brazil. Anthony Freeman used a multimedia presentation to illustrate the methodologies involved in obtaining high-resolution radar images with "unprecedentedly accurate topography" of the region of Angkor, Cambodia, during NASA's 1996-97 Pacific-Rim deployment of aircraft carrying new radar systems (AIRSAR/TOPSAR). The importance and the potential of remote sensing for site preservation and heritage management were the focus of the presentation by John H. Stubbs. How remote sensing aids in the exploration of deep-sea underwater sites was demonstrated by Anna Marguerite McCann, who heads the archaeology/conservation team working with Robert D. Ballard in the investigation of ancient Mediterranean shipwrecks at a depth of 700-800 m in the Mediterranean Sea near Skerki Bank off the northwest coast of Sicily.

Researchers reported on archaeological projects in twenty countries on five continents—the Americas, Europe, Asia (including the Near, Middle, and Far East), and Africa. There were a total of nine papers concerned mainly with geophysical prospection, two on underwater archaeology, and twelve on remote sensing, especially radar, from aircraft and spacecraft, in addition to the more general talks. Because of space limitations, a few examples must serve here to illustrate



ROV (Remotely Operated Vehicle) Jason, shown here being lowered into the sea, was used by Anna Marguerite McCann and Robert Ballard in the deep-sea exploration of shipwrecks in the Mediterranean. Photo: A. M. McCann.

the wide geographical and topical concerns of the many presentations. Thomas L. Sever reported on his use of remote sensing to aid both archaeological and environmental research in Guatemala, and Elizabeth Moore focused on the use of radar imagery in the study of water management and the dramatic transformation of the landscape by the ancient Khmer in Cambodia and Thailand. Farouk El-Baz also used radar imagery in a combination of archaeological and hydrological research, but in the western desert of Egypt, a vastly different setting from the Cambodian jungle. Kenneth L. Kvamme discussed the challenges and results of geophysical prospection at the Roman site of Empúries, Spain, where he was aided by students from a Boston University Field School. One of the most exciting reports was by Vincent L. Gaffney, who contrasted the results of extensive geophysical prospection

and analysis at two Roman towns in England and Italy.

Among the technical papers, David V. Arnold and Colin Shell each reported on developments in airborne platforms and sensors that offer both high resolution and low budget, factors of major interest to archaeologists. Dean Goodman demonstrated his new techniques for computer analysis and display of ground-penetrating radar (GPR) data, including three-dimensional reconstructions of subsurface tombs in Japan, walls of moats in Angkor, Cambodia, and roads and houses at a Roman site in Britain.

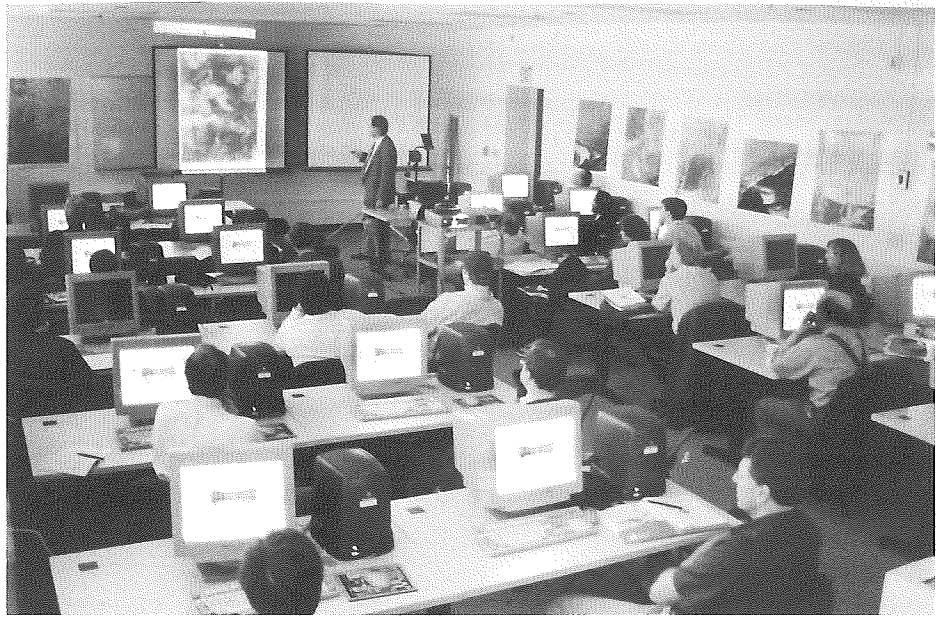
ERDAS of Atlanta, Georgia, generously provided for conference participants thirty site licenses for the sophisticated image-enhancing software, *Imagine*, which Derrold Holcomb demonstrated and introduced to researchers at two workshops. Holcomb also reported on using *Imagine* to interpret radar data from western China and Mongolia.

American archaeologists were excited by the encouragement from Earnest D. Paylor II of NASA Headquarters regarding possibilities for greater cooperation between archaeologists and NASA. Archaeologists, he suggested, might develop proposals involving future missions of AIRSAR/TOPSAR, which so far have included only a few

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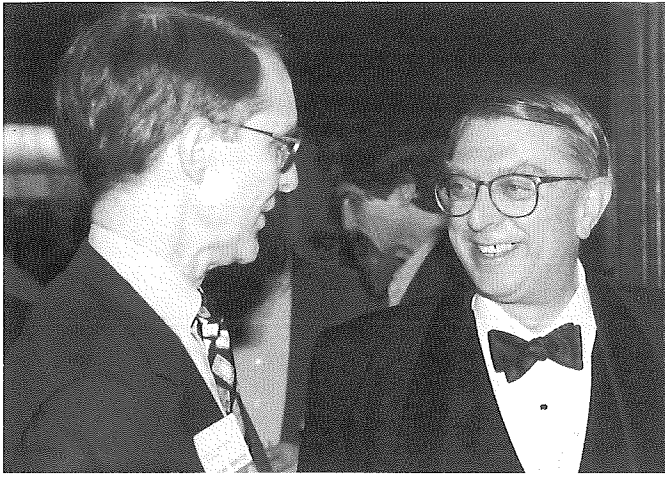
Ground-truthing remote sensing data in the Guatemalan jungle. Tom Sever (left) and fellow project-member Daniel Lee make their way towards the previously unrecorded site of La Corona. Photo: James D. Nations.



Colin Shell reports on recent airborne remote sensing in southern England in the new Center for Remote Sensing computing laboratory. Photo: Michael Hamilton.

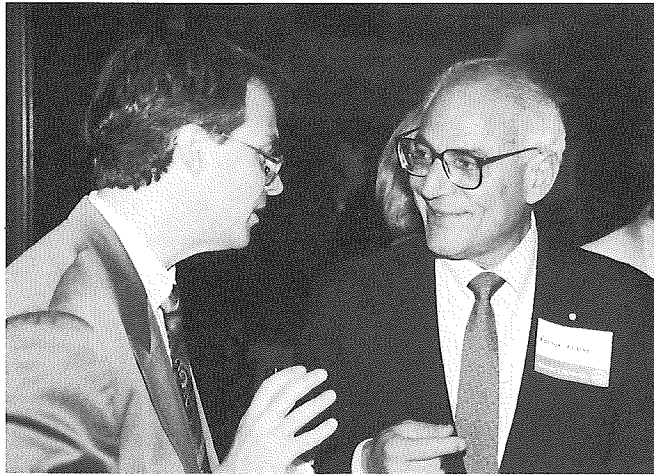
Conference Participants

- | | |
|---|--|
| David V. Arnold , Brigham Young University, Provo, Utah | David A. Mindell , Massachusetts Institute of Technology, Cambridge |
| Ronald G. Blom , Jet Propulsion Laboratory, Pasadena, California | Elizabeth Moore , School of Oriental and African Studies, London, U. K. |
| Douglas C. Comer , National Park Service, Silver Spring, Maryland | Yasushi Nishimura , Nara National Cultural Properties Research Institute, Nara-Shi, Japan |
| Lawrence B. Conyer , University of Denver, Colorado | Earnest D. Paylor II , NASA Headquarters, Washington, D. C. |
| Farouk El-Baz , Boston University | Benjamin Richason III , St. Cloud State University, Minnesota |
| Diane Evans , Jet Propulsion Laboratory, Pasadena, California | Anna C. Roosevelt , University of Illinois at Chicago, and Field Museum, Chicago |
| Anthony Freeman , Jet Propulsion Laboratory, Pasadena, California | Sheldon S. Sandler , Northeastern University, Boston |
| Vincent Gaffney , University of Birmingham, U. K. | Apostolos Sarris , Institute of Mediterranean Studies, Rethymnon, Crete |
| Dean Goodman , University of Miami Japan Division, Ishikawa Ken, Japan | Thomas L. Sever , Global Hydrologic and Climate Center, Huntsville, Alabama |
| Derrold W. Holcomb , ERDAS, Atlanta, Georgia | Payson D. Sheets , University of Colorado, Boulder |
| Kenneth L. Kvamme , Boston University | Colin A. Shell , University of Cambridge, U. K. |
| Anna Marguerite McCann , Boston University | John H. Stubbs , World Monuments Fund, Columbia University, New York City |
| Bradley Matson , Western Oregon University, Monmouth, Oregon | James R. Wiseman , Boston University |

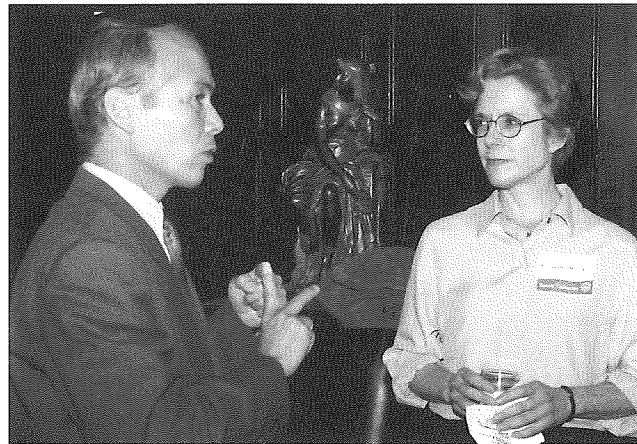


Jon Westling (right), President of Boston University, chats with Charles Hamilton, Executive Director of the J. M. Kaplan Fund, at a reception at the Castle which followed the opening session. Photo: Michael Hamilton.

Anthony Freeman (left) of the Jet Propulsion Laboratory discusses his work in southeast Asia with Farouk El-Baz, Director of the Center for Remote Sensing at Boston University. Photo: Michael Hamilton.

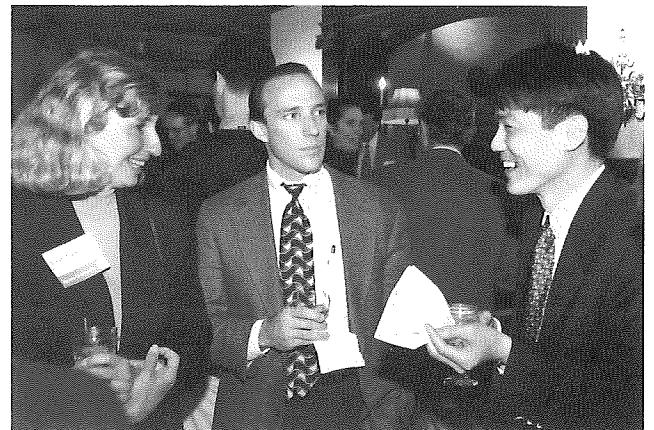


continued from page 13
 archaeological research components (at Angkor, for example). The generation of a proposal to create an archaeology program at NASA, which would have even greater long-term impact on archaeological research, was discussed both after Paylor's presentation, and again at the final morning discussion session. Heeding advice that such a proposal would have a greater chance of success if it comes with the support of the principal archaeological organizations, the participants asked the conference organizers to create a working committee to develop the proposal and try to mobilize the support of the archaeological community. The governing boards of the Archaeological Institute of America (AIA), acting on a proposal by the author, and the Society for American Archaeology (SAA), acting on a proposal by Payson Sheets, passed resolutions in the summer 1998 calling upon NASA to create an



Yasushi Nishimura, an expert in ground-penetrating radar from Nara-shi, Japan, in conversation with Elizabeth Moore, Head of the Department of Art and Archaeology of the School of Oriental and African Studies in London. Photo: Michael Hamilton.

Diane Evans of the Jet Propulsion Laboratory and Earnest D. Paylor II, Geology Program Scientist, NASA Headquarters, enjoy a relaxed moment at the reception with Youn-sik Choo, a Korean doctoral student in archaeology at the University of Cambridge. Photo: Michael Hamilton.



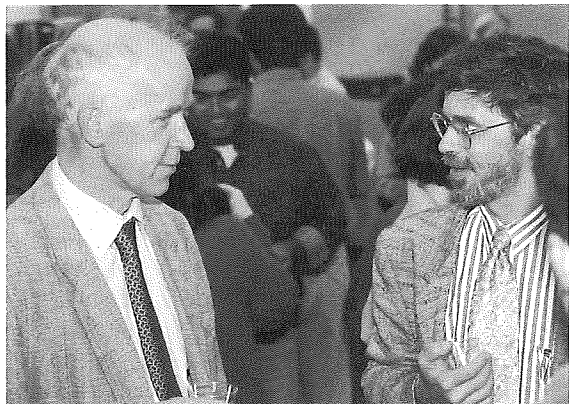
archaeology program within its Office of Earth Science; other organizations are considering similar proposals. The committee hopes to send the resolutions along with a formal proposal to NASA before the end of 1998.

Frequent scheduled discussion sessions and several informal functions ensured that the participants would have many opportunities to discuss their research with others at the conference. As a result, not only were many new friendships formed, but also some new collaborative research activities were initiated; for example, Yasushi Nishimura and Dean Goodman subsequently worked with Vincent Gaffney at a Roman urban site in Italy.

The grant from the J. M. Kaplan Fund also included partial support for colloquia on remote sensing in archaeology at some of the national meetings of archaeological organizations. Paylor and Wiseman were co-hosts of the first colloquium at the Annual Meetings of the AIA in Chicago in December 1997, with the

Other Special Lectures

In addition to the *Context and Human Society* lectures (see page 8), the Center for Archaeological Studies and the Department of Archaeology sponsored several other lectures during the 1997-98 academic year, including the three noted here. The opening lecture of the fall term in September was by Keith Branigan, Professor of Archaeology at the University of Sheffield, England, and had the title "The Battle for Britain—A View from the Trenches." The question posed in Branigan's provocative subtitle, "There has been a revolution in Romano-British archaeology—but has revolutionary fervor gone too far?" was answered in his lecture with a strongly affirmative argument. Dr. Dragi Mitrevski, a Visiting (Fulbright) Scholar in Archaeology at Boston University, presented a lecture in October, "North of the Mycenaean World," which dealt with the Late Bronze Age and Early Iron Age in his homeland, (the former Yugoslav Republic of) Macedonia, and in Greek Macedonia. Dr. Jaime Awe, an archaeologist at the University of New Hampshire and a member of the Belize Valley Archaeological Reconnaissance Project, spoke in January 1998 on "New Explorations in the Land of Xibalba: A Reassessment of the Role of Caves in Ancient Maya Society."



Keith Branigan (left) chats with Murray McClellan at a reception following Branigan's lecture on Roman Britain. Photo: Michael Hamilton.



Dragi P. Mitrevski, Visiting Scholar from Skopje, Macedonia, lectures on his research in southeast Europe. Photo: Michael Hamilton.



Patricia McAnany (left) clarifies some points with Jaime Awe (center) about his recent work in Belize. Alan Moore (right), former Commissioner of Archaeology of Belize, joined in the discussion. Photo: Michael Hamilton.

same title as the conference. Research papers were presented by Ron Blom, Elizabeth Moore, Kathleen Bergen for Farouk El-Baz, Kenneth L. Kvamme, and Anna Marguerite McCann. Payson Sheets and Wiseman have proposed a colloquium for the SAA to be held in March 1999, also in Chicago, that is expected to be augmented by a hands-on workshop.

James Wiseman is Director of the Center for Archaeological Studies and is Professor of Archaeology, Art History, and Classics at Boston University.

Conference Abstracts

Readers of *Context* who would like to have a copy of the Program and Abstracts of the remote sensing conference should write to Professor James Wiseman, Center for Archaeological Studies, Boston University, 675 Commonwealth Avenue, Boston MA 02215. A limited number of copies are available.

Archaeological Field School in Southern Spain, 1998

Murray C. McClellan directed the Department's Summer Field School in Spain in 1998, which was based at Puerto de Santa Maria near Cadiz. In the photograph, Teaching Assistant Christine Lovasz and Professor McClellan oversee school excavations at the nearby site of Torre Viejo. A report on the field school and the results of the excavations will be published in the next issue of *Context*. Photo: James Wiseman.



New Discoveries Prompt New Chronology **Multidisciplinary Archaeology in Aksum, Ethiopia**

by Kathryn Bard

The author became the first woman to direct an archaeological excavation in Ethiopia when she and Rodolfo Fattovich, Professor of Ethiopian Archaeology at the Oriental Institute in Naples, Italy, inaugurated in 1993 a joint project in Aksum, ancient capital of a north Ethiopian kingdom beginning in the first century A.C. or B.C. The following article is a report on the 1997 season, with news about the 1998 season. For previous accounts of the annual field campaigns, see Context 12:1-2 (spring 1995) 13-15 and 13:1-2 (Spring/Summer 1997) 14.

Excavations at Aksum, Ethiopia, by Boston University and the Istituto Universitario Orientale, Naples, have revealed earlier occupation of the site on Bieta Giyorgis hill than in Aksum proper, below the hill, where the famed large (and later) stone stelae are located. The earlier occupation is attested in stratigraphically earlier levels and supported by C-14 dates and by evidence from the seriation of ceramics. An entirely new chronological phase, "Proto-Aksumite," has been recognized on the basis of typologically earlier pottery that is definitely Aksumite, and is found in the earlier levels and tombs on Bieta Giyorgis, but is not yet known elsewhere in Aksum. What is more, the Early Aksumite period can now be shown to have begun in the first century B.C. instead of the first century A.C., suggesting that an incipient state may have preceded the kingdom of Aksum known from historical sources in the first century A.C., the traditional date of its beginnings.

The new chronology published here, which differs from all earlier published chronologies, incorporates the modifications called for by the results of our joint project's multidisciplinary archaeological investigations carried out on Bieta Giyorgis hill from May 1 to June 18, 1997. Excavations were conducted at two sites: the cemetery at Ona Enda Aboi Zewgé (designated OAZ in this report), and the settlement at nearby Ona Nagast (ON). Project staff also conducted a reconnaissance of the south-

western region of Bieta Giyorgis hill.

In the cemetery, investigations of Tomb 2, first discovered in 1995, were resumed, confirming the existence of an Early Aksumite monumental funerary complex dating to the second century A.C. In 1995, an L-shaped corridor with steps was excavated and the entrances to three rock-cut chambers were found. In 1997, excavation of the east-west stairway was concluded and the three chambers were opened. Chamber C, at the southwestern corner of the corridor, was most likely the latest burial chamber of the tomb. An imported amphora from Roman Gaul, dating to the late first to third centuries A.C., was found in the fill of the chamber. Stamped on the base of the amphora is an inscription, which can be read as "MATVR," probably identifying the owner of the estate from which the original contents derived. The amphora shape, Gauloise 4, is known to have been used originally for the transport of wine; later storage or secondary transport, however, might have involved some other commodity. Other potsherds were from locally made vessels dating to the Early Aksumite period.

The square shaft of another monumental rock-cut tomb (Tomb 3) was found, but only the upper part of it was cleared. Most of the shaft walls had collapsed, as well as the upper part of the burial chamber. This discovery is supportive evidence for the identification of rock-cut tombs with underground anomalies

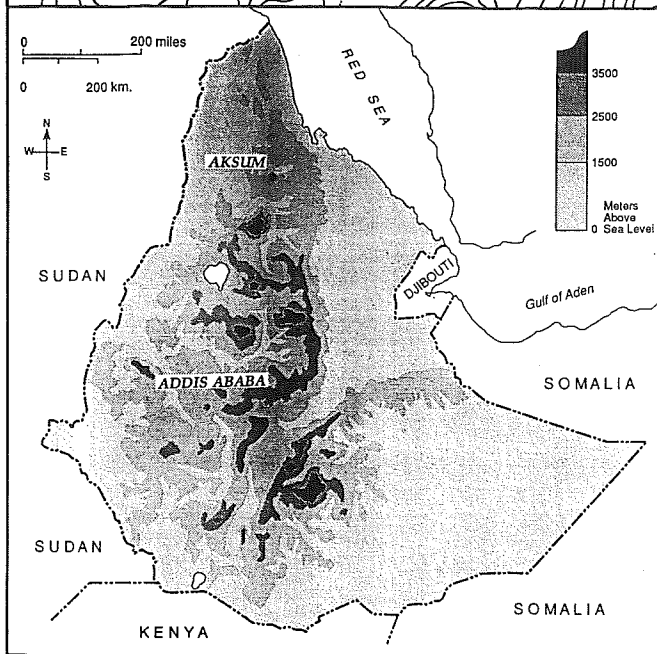
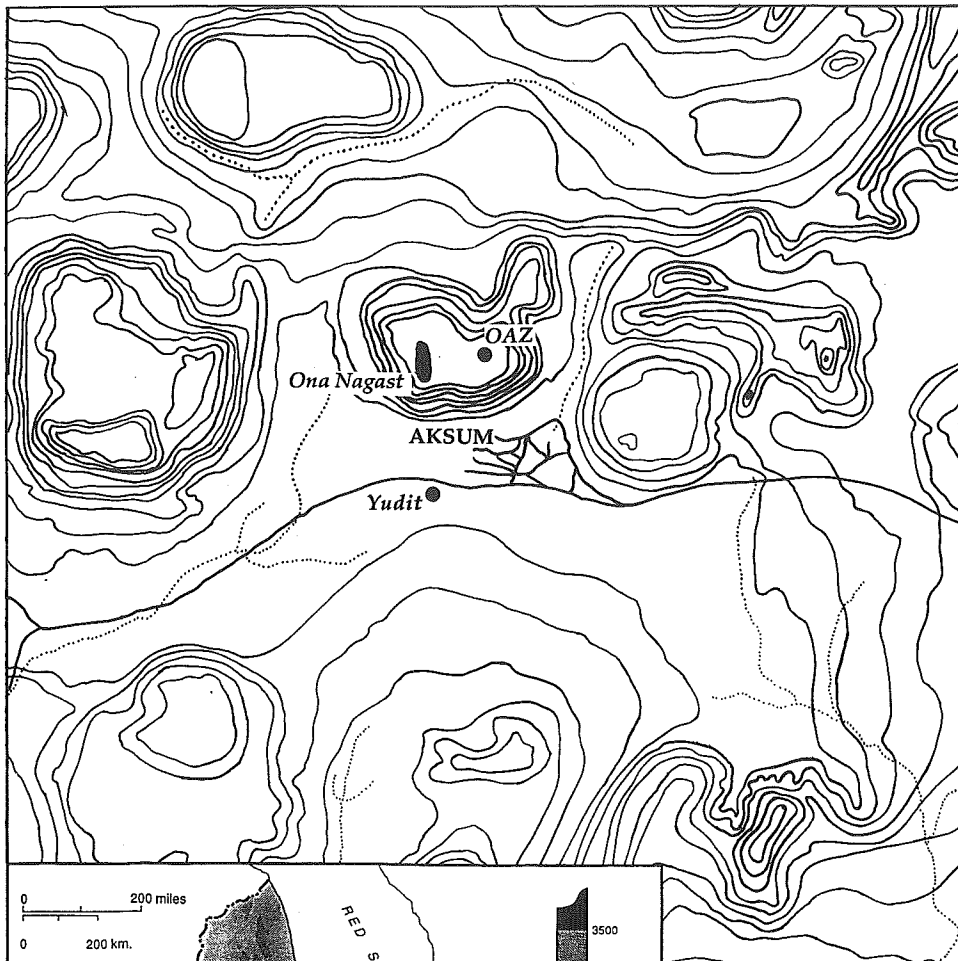
recorded by a team of geophysicists from the University of Cagliari, Italy, in November 1996.

Three excavation units were opened in the settlement area, which we hypothesize is an elite residential complex or palace. Excavation of Area ON VII/VIII revealed a complicated arrangement of stone masonry walls from multiple phases of construction and structural modification, ranging from Early to Middle Aksumite times. Thirteen major stone walls, including four stepped walls, and four stone stairways were found. Two distinct living floors or occupation surfaces could be distinguished: 1) the remains of a brick-tile floor laid on a compacted clay surface in one room, and 2) a stone pavement laid on a compacted clay surface in another room. Below the brick-tile floor and compacted clay floor, a stone-lined water conduit was excavated which was part of a drainage system. Much pottery (both local and imported), grinding stones, beads, glass sherds, bronze/copper artifacts, lithics, and animal bones were excavated here. Two Aksumite coins were also found: one was minted by King Kaleb (about A.D. 500-550) and the other by King Armah (about A.D. 600-630).

At the top of Ona Nagast, about 150 m southeast of an ancient cistern, remains of another huge building with massive, stepped stone walls were found in Area ON IX (not shown on the plan). These walls delimited two long, narrow rooms, 6 x 1.30 m, and a possible open area in the northern part of the unit. Such an arrangement of narrow rooms without openings, which we assume

Chronology at Aksum

Pre-Aksumite, ca. 800-400 B.C.
Proto-Aksumite, ca. 400-100 B.C.
Early Aksumite, ca. 100 B.C. to A.D. 400
Transitional phase, ca. A.D. 400-550
Middle Aksumite, ca. A.D. 550-600/700
Late Aksumite, ca. 700-800/900
Post-Aksumite, begins 9th-10th centuries



Above: map of Aksum region with the cemetery (OAZ) and palace (ON) sites.

Left: map of Ethiopia showing highland zones and surrounding countries. Source: National Atlas of Ethiopia, Ethiopian Mapping Agency, 1981.

were for storage and were part of a basement, is reminiscent of that of the Ethio-Sabeen "palace" of Gra'at Beal Guebri at Yeha, about 30 km east of Aksum, and is also known in basements of South Arabian monumental buildings. A silver coin of King Amadan Bayn (about 50-100 A.C.) of Saba and Dhu-Raydan, two South Arabian kingdoms, was found in a rodent hole in a Post-Aksumite

deposit of ash in one room. Well preserved black-topped pottery dates the hearth of a second room to Pre-Aksumite (Ethio-Sabeen) times (mid-first millennium B.C.). In a third room the lowest strata cut by the foundation trench consisted of a man-made floor laid on a soil stratum that covers the bedrock; only Pre-Aksumite pottery, mainly black-topped ware, was found

in the soil stratum below the floor.

In 1997 about 60 sherds of imported pottery and about 70 fragmentary or complete glass vessels were collected at OAZ and ON, and studied by A. Manzo. The presence of these materials suggests: a) continuous contact with Sudanese peoples up to the sixth century A.C.; b) continuity of contact with South Arabia in the late first millennium B.C.; 3) contact with the Roman Mediterranean world beginning in the first century A.C.; 4) continuity of contact with the Mediterranean region up to the seventh century A.C.; 5) intense contact with Syria from the fourth to the sixth centuries A.C.

Flotation samples from the 1996 and 1997 field seasons were examined by C. D'Andrea. They provided evidence of emmer wheat, free-threshing wheat, barley, teff, and flax, as well as legumes and grapes. One badly damaged grain of teff (*Eragrostis teff*) was collected at Ona Nagast in a context dating to about A.D. 350-380. Teff is the most important cereal grown today in highland Ethiopia.

Faunal remains from the 1996 and 1997 field seasons were examined by L. Chaix, who reports that of a total of 7,932 bones, 2,189 (27.5%) were identified as to species. Domesticated cattle is the predominant species, followed by domesticated caprids (sheep and goat). Very few remains of other animals were found. Most cattle remains are those of adults and old individuals, between three and ten years in age, indicating that the animals were not bred primarily for meat, but were used instead to provide milk and work (plowing and carrying), and possibly prestige. Cattle were butchered, and many of the marks suggest different activities: skinning, dismembering, filleting, etc. There is also evidence of tongue butchering for consumption, as is still practiced in highland Ethiopia today.

News from the 1998 Field Season

An exciting discovery, made in the palace area (ON VII/VIII) by the

continued on page 18

Aksum, Ethiopia, Expedition Members

Co-directors for the Aksum Project are **Kathryn Bard**, Department of Archaeology, Boston University, and **Rodolfo Fattovich**, Istituto Universitario Orientale (I.U.O.), Naples. Other staff members in 1997 were **Louis Chaix**, Museum of Natural History, Geneva, Switzerland; **Livio Crescenzi**, Government Archaeological Office for Latium, Rome; **Catherine D'Andrea**, Department of Archaeology, Simon Fraser University, Burnaby, B.C.; **Michael DiBlasi**, Department of Archaeology, Boston University; **Gerald Johnson**, Chair, Department of Geology, College of William and Mary; **Mario Lolli Ghetti**, Head, Government Office for Cultural Heritage, Florence, Italy; **Andrea Manzo**, I.U.O. Naples; **Pasquale Musella**, National Archaeological Museum, Naples; and **Cinzia Perlingieri**, I.U.O., Naples.

continued from page 17
excavator, Michael DiBlasi, during the 1998 field season was a carnelian intaglio, carved with the image of the Roman god Mars holding a winged Victory. The intaglio, probably a setting for a finger ring, almost certainly originated in Rome, and is stylistically early imperial. And from Tomb 6 in the cemetery (OAZ VII) the discovery by Fattovich of Hellenistic glass beads provides further support for the early chronology at Aksum. What is more, the beads were imported from Ptolemaic Egypt, and are the first and only archaeological evidence of Ptolemaic artifacts in Ethiopia or the southern Red Sea region. The discovery confirms the speculation by several scholars that there must have been Ptolemaic trade with Ethiopia. Finally, the project now has a whole new corpus of ceramics from a non-elite domestic context as a result of excavations begun by the author in an Early Aksumite non-elite structure.

Kathryn Bard is an Associate Professor in the Department of Archaeology.

Faculty News and Awards

Mary Beaudry received funding from the CAS Graduate School to help defray some of her travel costs incurred in traveling to England to give an invited lecture, "House and Household: Domestic Life in Early America," at a joint anniversary meeting of the Society for Post-Medieval Archaeology and the Society for Historical Archaeology, held at the British Museum in London, November 3-7, 1997. She also presented the same lecture at the University of Sheffield.

Kathryn Bard presented an invited paper on the formative period of ancient Egypt at the symposium, "Genese und Strukturen der Primären Hochkulturen," which was organized by Hans Nissen at the Zentrum für interdisziplinäre Forschung, University of Bielefeld, Germany, March 13-18, 1998. Bard received her sixth National Geographic Society grant for continued excavations at Aksum. She also received a grant for a faculty exchange program at the University of Padua, Italy, to work at the International Center for Surface Archaeology in July 1998. Bard recently finished a seven-year project, *The Encyclopedia of the Archaeology of Ancient Egypt*, now in press at Routledge in London. Over 900 pages with 120 illustrations, it covers the archaeology of Egypt from the Paleolithic through Roman times, with a major emphasis on the pharaonic periods.

Ricardo Elia has been awarded \$14,935 by the National Park Service for the project, "Review of U.S. Policy for Protecting the Underwater Cultural Heritage."

Norman Hammond was recently made an Honorary Member of the Yorkshire Philosophical Society in England. He delivered the Society's 175th Anniversary Address in York in October 1997 on the topic "1822 and All That." During the past year, he delivered a discourse to the Royal Irish Academy in Dublin on

"Deciphering Maya Hieroglyphics" which was attended by the former Prime Minister, Garrett Fitzgerald, the Mexican Ambassador, and several other dignitaries. In the spring 1998, Hammond directed the Field Study Program in Belize, completing the fifth season at the Maya city of La Milpa and finding a series of painted thrones. Additional information concerning these exciting finds will appear in the next issue of *Context*.

Hammond Honored

Special congratulations to Norman Hammond, who has been elected a Corresponding Fellow of the British Academy. The citation presented to him states that it is "the highest honor the Academy can confer in recognition of scholarly distinction."

Julie Hansen and **Michèle Miller** (Ph.D. 1997) were awarded \$5,000 by the Curtis T. Brennan & Mary G. Brennan Foundation for the Sha'ar Hagolan Project in Israel, where Michèle will be working on a Neolithic village near the Sea of Galilee.

The National Park Service awarded **Kenneth Kvamme** \$11,499 for the project, "Digital Image Enhancements and Compositing of Plan View Geophysical Data Sets."

The Archaeological Institute of America has announced that **James Wiseman** will present the first Oscar Broneer Lecture to the Chicago Society of the AIA in February 1999. The annual lectureship was endowed by private contributions and named by the AIA to honor Broneer, who was the recipient of the AIA's fifth Gold Medal for Distinguished Archaeological Achievement in 1969. Broneer, who died in 1992, had taught at the American School of Classical Studies at Athens and at the University of Chicago. Wiseman studied with him at the University of Chicago and had his first archaeological field experience as a staff member of Broneer's excavations at the Isthmian Sanctuary of Poseidon (Greece) in 1959-60. Wiseman will also give lectures to AIA societies

continued on page 21

Student News and Awards

Kimberly Berry and Alex Effgen have received awards from the CAS Humanities Foundation of Boston University. The awards for scholastic achievement were presented in May at a special ceremony and reception at the Castle.

The following students have been awarded *Journal of Field Archaeology* Fellowships, which carry a stipend and tuition funding: **Trina Arpin** (JFA Fellow); **Jeffrey Rose** (JFA Demi-Fellowship); **Marni L. Blake** (CAS JFA Fellowship).

Francisco Estrada Belli (Ph.D. 1998), along with **Dr. Laura Kosakowsky** and **Marc Wolf**, received a grant from The National Geographic Society to conduct a third season of survey on the Pacific Coast of southeastern Guatemala during the summer of 1997. The summer's results were published in the January 1998 issue of the *National Geographic Magazine*. In March 1998 Estrada Belli presented a paper at the 63rd Annual Meetings of the Society for American Archaeology entitled "Regional Survey in Southeastern Guatemala: Documenting the Rise and Fall of Complex Societies on the Pacific Coast." In the spring 1998, the Department of Archaeology approved

continued on page 24

Graduate Student Fellowship in Palaeoethnobotany

by **Julie M. Hansen**

Palaeoethnobotany, the analysis of plant remains from archaeological sites, can offer a great deal of information about past diet, environment, and plant use. These types of studies have provided data on such topics as the origins of agriculture, ancient irrigation practices, and Roman gardens. In the Eastern Mediterranean, however, studies have been somewhat hampered by the paucity of specialists in this field. The Institute for Aegean Prehistory (INSTAP) has taken steps to increase the available specialists by funding a four-year Graduate Fellowship in Palaeoethnobotany and Aegean Prehistory for a student to study in Boston University's Department of Archaeology. The Fellowship, unique in the United States, carries full tuition and fees, as well as a stipend, and totals \$90,000. It has been awarded to Susan Allen, who received a B.A. in Classical Archaeology at the University of North Carolina at Greensboro and the M.A. in Classical and Near Eastern Archaeology at Bryn Mawr College. Susan joined the department in September 1997, taking courses in palaeoethnobotany, as well as the graduate core courses. She will also be taking several courses in botany and ecology in the Biology Department.

The best way to learn how to identify plant remains is by examining large quantities of them under the microscope and comparing them to modern material. For that reason, one of the stipulations of the Fellowship is that the awardee work twenty hours per week in the laboratory. Susan has been diligently at work in the lab since last fall, sorting through plant remains from the Early Bronze Age levels of Tsoungiza, a site in the village of Nemea in Greece, as well as working on the identification of charred wood from the Bronze Age site of Sovjan in Albania. Susan will ultimately complete her dissertation on Bronze Age material from a site in the Aegean region.

Julie M. Hansen, Associate Professor of Archaeology, chairs the Department of Archaeology at Boston University.



The Third Annual Open Forum for Graduate Students was held in November 1997. The theme of the forum was "Archaeology of Ritual," and was made possible by a grant from the CAS Humanities Foundation, as proposed by Professors Paul Goldberg and Julie Hansen. Participants in the Forum included (seated, left to right): David Carballo, Christine Lovasz, Professor Patricia McAnany (keynote speaker), Cassandra Michaud, and Paul Legatko; (standing, left to right): Tracey Verkuilen, Laurel Taylor, Amy Gazia-Schwartz, Michelle Nevius, Steve Morandi, Clinton Chamberlain, J. Gregory Smith, Stephen Brighton, Jane Eva Baxter, Joan Cummins, Scott Hutson, Ellie Harrison and Douglas Blash. Photo: Michael Hamilton.

Archaeology Commencement, 1998

Bachelor of Arts

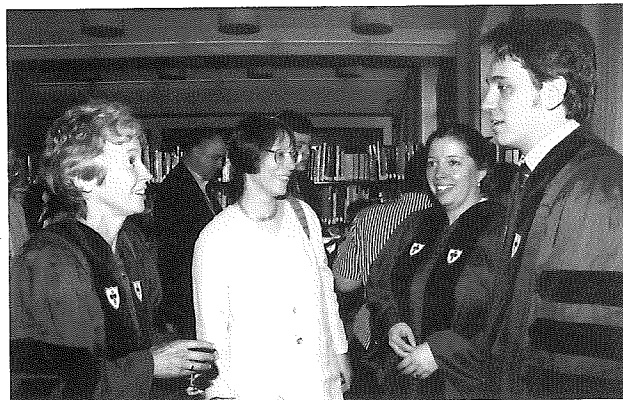
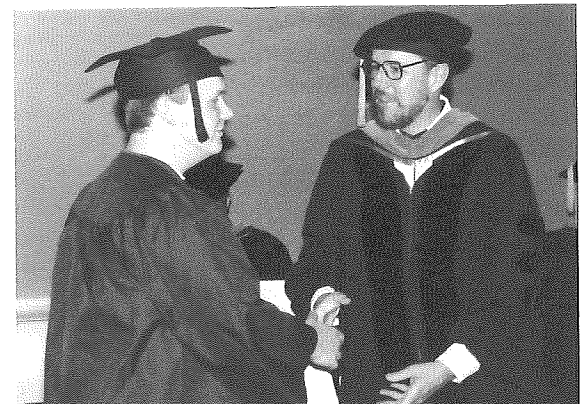
Kim F. Chen, *Cum Laude* (Work for Distinction)
 Mara Elizabeth Collins (Minor in Linguistics)
 Jennifer Sarah French (Minors in Chemistry, Art History)
 Breana Goodwin, *Magna Cum Laude*
 Ryan Jon Harrigan, *Summa Cum Laude*, Phi Beta Kappa,
 college prize for excellence (Double Major with Biology)
 Philip Edward Kolinka (Double Major with Anthropology)
 Jimmy F. Lam
 Tamarra H. Martz, *Cum Laude* (Minor in Anthropology)
 Ryan William Mongelluzzo, *Cum Laude* (Work for
 Distinction)
 Christina Rollins, *Magna Cum Laude* (Double Major with
 Latin American Studies; Minor in Spanish)
 Liliana Sada-Melo
 Clinton L. Schmidt, Jr.
 Jennifer Marie-Theresa Sennott (Minor in Art History)
 Tabitha Marie Symons, *Cum Laude* (Work for Distinction;
 Double Major with Classical Studies)

Master of Arts

Marni L. Blake
 Christine E. Lovasz
 Elizabeth Ellen Payne
 Margaret Watters

Doctor of Philosophy

Mary Lee Angelini
 Dissertation title, "The Potter's Craft: A Study of Formative
 Maya Technology at K'axob Belize"
 Francisco Estrada Belli
 Dissertation title, "The Evolution of Complex Societies in
 Southeastern Pacific Coastal Guatemala: A Regional GIS
 Archaeological Approach"
 Ann-Eliza Lewis
 Dissertation title, "Defining and Creating African-American
 Identity, an Archaeological Study of Ethnicity at Casey Farms,
 Saunderstown, Rhode Island, 1790-1820"
 Gayle Sawtelle
 Dissertation title, "The Commercial Landscape of Boston in 1800:
 Documentary and Archaeological Perspectives on the Geography of
 Retail Shopkeeping"



Left to right: Ph.D. recipients Mary Lee Angelini, Gayle Sawtelle, Ann-Eliza Lewis, and Francisco Estrada Belli share a moment of joy and relief after Commencement at the Department of Archaeology reception. Photo: Michael Hamilton.

Top: Students happily await the Department of Archaeology Commencement. Seated in front row, left to right: Marni Blake, Christine E. Lovasz, Philip Edward Kolinka, Ryan W. Mongelluzzo, Liliana Sada-Melo, Jennifer Sara French, and Breana Goodwin with head turned from camera. Middle: Professor Julie Hansen, Chair of the Department of Archaeology, congratulates Cum Laude graduate Tabitha Marie Symons. Bottom: Philip Edward Kolinka is congratulated upon receiving his B.A. degree by Professor Curtis Runnels. Photos: Michael Hamilton.

Profiles of the Past

Our Archaeological Heritage

by Ricardo Elia

Chopping Away Culture

The following article was originally published in the Focus section of the Boston Sunday Globe on December 21, 1997, shortly after the Museum of Fine Arts in Boston opened new galleries of the arts of the Americas, Africa, and Oceania.

Visitors to the new galleries of pre-Columbian, African, and Oceanic art at Boston's Museum of Fine Arts will admire the dazzling Moche goldwork, fine Maya pottery, and enigmatic African terracottas. But they'd better not ask where these artifacts were found, how they were obtained, or what they mean.

They won't find any answers at the museum. Only questions.

The MFA opening raises troubling questions about the involvement of museums that collect ancient art originating in plundered archaeological sites. Among the questions:

- How could the museum, in good conscience, acquire objects from

two of the most heavily looted regions of the world—the Maya heartland in Central America and the Inland Niger Delta of Mali?

- How does the collecting of looted archaeological objects affect our ability to understand ancient cultures and their art?

- Why does the MFA refuse to disclose the various documents, including import and export papers, relating to the acquisition of the artifacts in the exhibition? These questions reveal more about the culture of art museums than about any ancient cultures.

There's no question that the Maya vessels, Mali terracottas, and other antiquities in the exhibition were looted from archaeological sites. It's

the art world's dirty little secret: Virtually every archaeological object acquired from abroad by collectors and museums in the United States in the last 30 years is the product of clandestine digging and smuggling.

The reason is simple. Decades ago, the governments of most antiquities-rich countries, including Guatemala, Peru, Mali, Nigeria, Greece, Turkey, Egypt, and China, enacted laws claiming ownership of archaeological sites and objects. They try to control the excavation of sites and the export of antiquities, though they often fail.

Most private collectors and museums choose to ignore legal efforts to curb the theft of cultural heritage. Their willingness to traffic in stolen antiquities finances a vast international network of thieves, smugglers, dealers, and auction houses circumventing the best efforts of local authorities in order to maintain a flow of objects out of despoiled archaeological sites.

Most art-importing countries, including the United States, do not generally enforce the anti-looting and export laws of other countries. If a looted archaeological object can be successfully smuggled out of its country of origin, it may be perfectly legal to acquire it in this country. Hence the MFA's claim that the artifacts were legally imported may be correct, but that does not imply that they were also legally excavated and legally exported.

In many parts of the world, looting has reached crisis proportions. Thieves digging for marketable antiquities destroy archaeological sites and, in the process, the information they contain about ancient cultures. This irreplaceable loss of knowledge is the most important consequence of looting—not the theft of an art object from one country and its transfer to another.

The debate about the MFA exhibition has focused on the question of ownership: Do the Maya pots belong to the MFA or to Guatemala? But the ownership issue misses the most important point. Collectors, by buying from looters, feed a process that obliterates our ability to learn

continued on page 22

Faculty News, continued from page 18 in Nebraska and Oklahoma on the same trip to the Mideast. In addition to the grant from the J. M. Kaplan Fund (see the article on the remote sensing conference in this issue of *Context*, pages 12-15), Wiseman also received a grant of \$18,500 from the Malcolm Hewitt Wiener Foundation and \$15,000 from James H. Ottaway, Jr. towards the preparation of a volume on the cemeteries in the series of final publications of the Stobi Excavation Project. The cemeteries were excavated in the 1970s by **Al B. Wesolowsky** as part of the Stobi Project (in Macedonia of the former Yugoslavia), of which Wiseman was co-director. The grants made it possible for Wesolowsky to take a

leave from his duties as Managing Editor of the *Journal of Field Archaeology* during the summer to work full time on the project, aided by Research Assistant **Trina Arpin**, who has been preparing computer graphics for the book and doing other editorial work. Co-authors Virginia Anderson-Stojanović, Wilson College, and Carolyn Snively, Gettysburg College, both long-time staff members of the Stobi Project, were able to make research trips to Boston to consult with Wesolowsky and Wiseman. **Mark Beazley**, an undergraduate major in Archaeology, has also been appointed (part-time) Research Assistant for the Stobi publications. Work on the project will continue through the fall.

continued from page 21

anything meaningful about the very cultures whose art is being gathered.

Several of the MFA's Maya pots come from Guatemala's Petén region, one of the most heavily looted areas in the world. Guatemala reports that more than 85% of the sites inspected in the area have been plundered. Richard Hansen, a scientist at the University of California at Los Angeles who works in the Petén region, lists 22 of 26 known Maya sites as being irreparably damaged by looting, most of it within the last 30 years.

Looting is part of an economic system that operates under the laws of supply and demand. The demand for antiquities begins with collectors. They buy from dealers and auction houses, which operate through networks of looters and smugglers that procure the artifacts. A looter who digs out a Maya pot in the Petén, for example, may receive up to \$500 for the vessel, while a collector may pay more than \$100,000 for the same pot; much of the difference goes to the dealer. Simply put, collecting causes, and finances, looting.

Museums buy antiquities, too, but they also profit when collectors donate objects to the museum. It's a win-win situation for donor and museum:

the museum gets the artifact, the donor gets the glory and a tax write-off. Everyone else loses: the country of origin, robbed of its heritage, and the public, deprived of the chance to learn about past cultures.

Looting produces an ever-growing inventory of undocumented antiquities that have surfaced in auction houses, private collections, and museums. I recently examined the published records of eight eminent collections of pre-Columbian antiquities—more than 2,300 objects— assembled in the United States. The records show that not a single one was obtained through legal archaeological excavations.

An example from the MFA exhibit is a group of terracotta sculptures from the Inland Niger Delta of Mali, another heavily looted region. Here the scale of looting can be gauged by tracking the location of known Mali terracottas in the world. A recent study revealed that out of 341 known examples, 91% were in collections and dealers' shops outside Mali and had no documented origin. Fewer than 10% had been recovered in Mali. Not surprisingly, little is known about the functions of these sculptures.

Because of the way they were acquired, all of the antiquities in the new MFA galleries come without an archaeological origin. As a result, the

museums cannot answer some very basic questions. Which archaeological sites did they come from? Were they found in tombs, shrines, or houses? What associated artifacts were found? What is the date of the material? How can we be sure there are no fakes?

Artifact descriptions accompanying the exhibit seem specific, but they are written in a code used by museums to describe plundered objects for which concrete information is available. For example, several of the Maya pots are described as "Petén Region, Guatemala." Translated, that description actually means "Looted Maya pot bought on the art market that looks similar to other pots found in archaeological sites in the Petén Region of Guatemala."

Descriptions of the Mali terracottas also convey potentially misleading information. One, a "pregnant ewe," is described as "excavated from a burial ground." Visitors might assume that this sculpture was excavated, but it was not; if dug up, it was by looters. And which "burial ground" did it come from? If the museum knows, it should identify the site. More likely, it is a dealer's description, hearsay conveyed as fact. Such misinformation reflects an intellectual dishonesty that typifies museum presentations of undocumented art.

The MFA's response to the present controversy is revealing. Clearly shocked at being asked to explain its long-standing acquisition practices, the museum offered excuses about legalities while ignoring the important ethical question of how a museum can serve the public interest by being party to the destruction of cultural heritage.

Implicit in the comments of the MFA is the assumption that looting occurs independently of outside forces. Refusing to take responsibility for its involvement in the illicit trade, the museum acts as if there is no connection between collecting and looting. Yet museums that acquire undocumented artifacts are not only beneficiaries of looting, but also act in effect as its agents.

The museum also seems to assume that it is entitled to secrecy in its

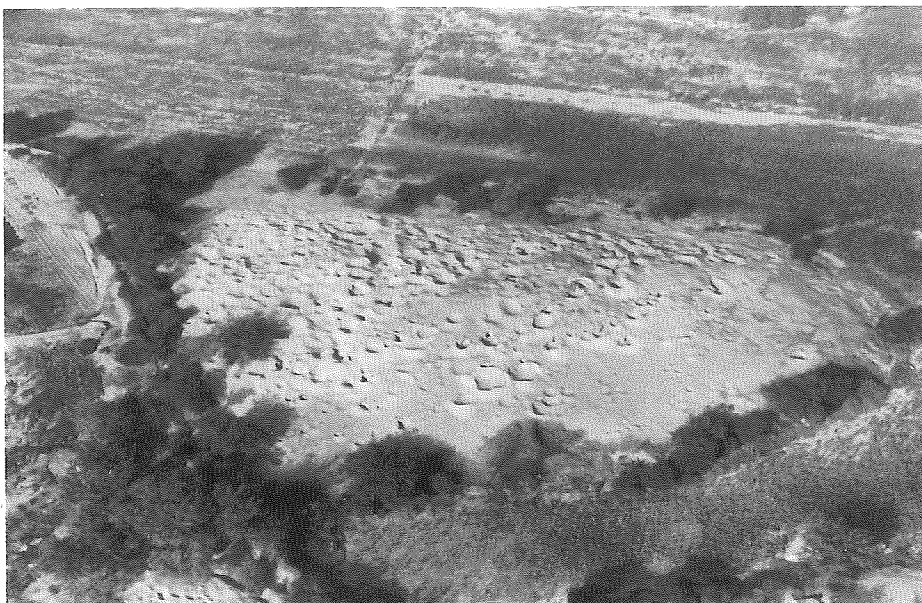


Figure 1. Pits indicate massive looting at Cahuachi, a large early Nasca ceremonial center, south coastal Peru, about A.C. 1–300. Photo courtesy of Dr. Helaine Silverman.



Figure 2. View of the GE Mound Site, a Middle Woodland Hopewell (about A.C. 100–500) mound in Posey County, Indiana. The site, one of the largest Hopewell mounds ever constructed, was looted in the summer of 1988. Photo courtesy of Judith A. Stewart, U.S. Attorney, Southern District of Indiana.

acquisition of such antiquities. The art market has traditionally operated under a veil of secrecy about the source of objects. One wonders, for example, when and under what circumstances the Mali terracottas loaned to the exhibit were acquired. The MFA says that the collector, William E. Teel, refuses to disclose any information about their acquisition, a reticence that does not seem to trouble the museum.

But times have changed. International ethical standards for museums require a higher degree of public disclosure and accountability. Museums are expected to publish acquisitions policies, something the MFA refuses to do. And they must take positive steps to ensure that they do not acquire illicitly obtained objects, whether by purchase, gift, bequest, or loan. So far, the MFA policy seems to be “See no evil, hear no evil, speak no evil.”

MFA director Malcolm Rogers insists there is a place in the museum for such antiquities. “They are works of tremendous beauty and they have vibrant cultural tales to tell,” he says. But an artifact without history is largely mute.

Indeed, there is precious little educational merit in the new galleries. Without historical context, the objects retain little more than aesthetic appeal. They are archaeological artifacts transformed through theft into fine art commodities. Unfor-

tunately, the aesthetic interest is precisely what collectors and museums value most.

Art museums cannot claim to serve the public interest until they reject participation in the culture of “no questions asked” acquisition. That means putting the public interest before the interests of a few collectors and donors who sit on museum boards. It also means agreeing to disclose fully the records of all acquisitions and, at least for the time being, refraining from collecting any antiquities—not only Precolumbian or

African artifacts, but Greek and Roman, Egyptian, Near Eastern, and South Asian ones—all areas where the MFA is continuing to collect.

Once museums put their ethical houses in order, they should play a more active role in assisting countries that are rich in art but poor in resources, expertise, and simple enforcement. Museums might sponsor conservation programs, curatorial training, or even archaeological excavations. These efforts might not result in gifts of antiquities to the museums, but opportunities for loans of objects and traveling exhibitions would certainly be reasonable to expect in return.

Change will not come easily. The MFA, like many art museums, must break some long-standing habits. Working to protect the cultural heritage of other countries might not be as easy as acquiring it. It would certainly mean a shift in focus on the part of museum curators, with less time spent wooing potential donor collectors, and more time sharing expertise and resources.

The price of a single Mali terracotta may reach as high as \$250,000 on the art market. That is more than ten sub-Saharan countries manage to spend on archaeology each year.

continued on page 24



Figure 3. Looted landscape at the site of Cerro Sapame, Batan Grande region, on the north coast of Peru. The site was occupied primarily by Sican and Chimú peoples, about A.C. 900–1500. Photo by Dr. Izumi Shimada and reproduced with his permission.

continued from page 23

Perhaps the museums could convince collectors of the world that spending money to preserve the world's archaeological heritage is nobler than acquiring its plundered remnants.

Ricardo Elia is an Associate Professor in the Department of Archaeology and Editor of the Journal of Field Archaeology.

Update: August 1998

In January 1998 Carlos Enrique Zea Flores, Guatemala's Vice Minister for Culture, met with museum officials and demanded the return of Maya objects from Guatemala. In a letter dated 26 June 1998, MFA Director Malcolm Rogers rejected Guatemala's claim to the artifacts and refused to return them to Guatemala. At the time of writing, the Guatemalan government is reportedly considering legal action against the museum. R.E.

Student News, continued from page 19
his nomination to become a Research Fellow in the Department. During the summer 1998, he presented papers in Guatemala at the XII Annual Siumposio de Investigaciones Arqueológicas en Guatemala (July 20-24) and at the IV Congreso Internaternal de Mayistas (August 2-8).

Carolyn White, a Ph.D. candidate, was one of two recipients of a Dissertation Award for Research at the Advanced Studies Center at the Winterthur Library and Museum, Winterthur Delaware. The title of White's dissertation is: "Reconstructing Gender Identities: Personal Adornment from Portsmouth, New Hampshire, 1680-1820." She will be working at the Winterthur "research spa" beginning in September 1998. This is the first time Winterthur has offered such an award.

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Managing Editor: Lucy Wiseman
Editorial Board: Ricardo J. Elia, Norman Hammond, Fred S. Kleiner

Faculty and Research Appointments in the Department of Archaeology (1997-98): Professors Norman Hammond, Fred S. Kleiner, James R. Wiseman. Professor Emeritus Creighton Gabel. Visiting Professor M. Rafique Mughal. Associate Professors Kathryn A. Bard, Mary C. Beaudry, Ricardo J. Elia, Paul Goldberg, Julie M. Hansen, Kenneth L. Kvamme, Patricia A. McAnany, Curtis N. Runnels, Paul E. Zimansky. Assistant Professor Murray C. McClellan. Adjunct Professors Clemency C. Coggins, Anna Marguerite McCann. Adjunct Associate Professor Joseph A. Greene. Visiting Scholar Dragi P. Mitrevski. Distinguished Research Fellow Gordon R. Willey. Research Fellows William K. Barnett, Julie Benyo, Helen Sorayya Carr, Tracey Cullen, Michael C. DiBlasi, Lorinda Goodwin, Thomas W. Killion, Laura J. Kosakowsky, Paula K. Lazrus, Priscilla Murray, George (Rip) Rapp, Jr., Joanna Smith, Zoran Stančić, Elizabeth C. Stone, Thomas Tartaron, Gair Tourtellot III, Tjeerd H. van Andel, Al B. Wesolowsky, Ann Yentsch. Associated faculty, Farouk El-Baz, Research Professor of Remote Sensing; Kenneth Lapatin, Assistant Professor of Art History.

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