

CONTEXT



Zhichun Jing, a member of the Boston University Nikopolis Project staff in 1992, drills a geological core near Ammoudia in Epirus, Greece (see p. 11).

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Archaeological Field Projects in Belize, 1992

Cities in the Jungle: Field Study at Cuello and La Milpa, Belize, 1992

by Norman Hammond

The Department's fieldwork teaching program developed in a new direction in 1992: instead of two instructors, each taking half of the semester on two similar projects conducted out of the same camp, a single person directed two very different programs at two sites in dramatically contrasting environments. In the course of three months' work, the class found itself moving from the populated environs of the Cuello site to the deep rain forest that enshrouds the Classic Maya city of La Milpa.

First, however, they had to get there—and there were probably more
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Ancestor Veneration at K'axob, Belize: Excavations and Analysis, 1992

by Patricia A. McAnany

The third season of excavation at K'axob began in early June, a month generally associated with the onset of the rainy season. This fact did not deter us, however; the sun was blistering hot and the heat buildup at the end of the dry season had not yet been broken by the first rains as we crossed the southern border of México and entered the small Central American country of Belize. We continued south to Orange Walk Town, the economic hub of northern Belize, and pulled into the camp at Kate's Lagoon, field station for the 1992 project. An apt home base for a

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Maya Chronology: Periods and Dates

Preclassic	Early: 2000-900 B.C.
	Middle: 900-400 B.C.
	Late: 400 B.C.-A.D. 150
Classic	Early: A.D. 250-600
	Late: A.D. 600-800
	Terminal/Early Postclassic: A.D. 800-1100
Postclassic	Middle: A.D. 1100-1300
	Late: A.D. 1300-1520

Dates above are solar years. The Maya calendar was used on public inscriptions from A.D. 200-1000 and on private texts for several centuries before and after those dates. The earliest C-14 dates for K'axob are 770 B.C. (calibrated).

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large archaeological research project, the long bunkhouse can accommodate twenty-six persons and features a separate "lounge" area, kitchen, and laboratory for processing artifacts. The camp had the added advantage of being situated on the edge of a freshwater lake, locally termed a lagoon, which was ideal for swimming, boating, fishing, and occasional late-night "chicken-fights." As the rest of the crew began to arrive, the bunks filled with staff members, graduate and undergraduate students, and distinguished colleagues and visitors of diverse, international affiliation. Boston University was well represented by current graduate students Mary L. Angelini, Francisco Estrada Belli, Elizabeth Platt, and Howard Wellman as well as undergraduate alumni Matthew Bobo, Lorren Jackson, Ingrid Martonova, Valerie McCormack, Robert St. Laurent, and Jacqueline White. Another B.U. graduate student, Daniel Finamore, arrived to carry out dissertation research. With the assistance of Boston University alumnus Matthew McDermott, Dan conducted a survey of historical remains from logwood camps along the Belize River and from the early settlement of St. Georges Cay.

Our field research focused on understanding the genesis of ancestor veneration among the Maya. With financial support from the National

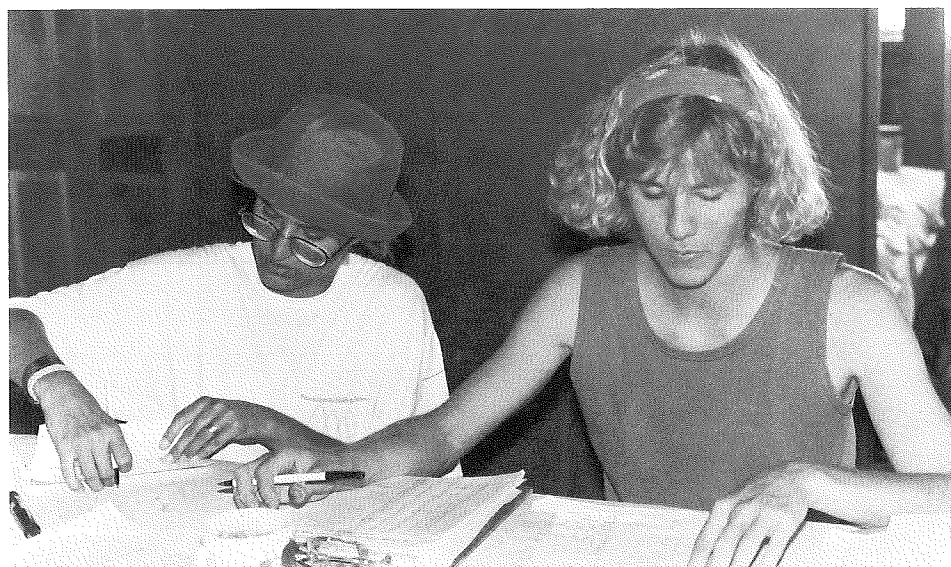
Science Foundation, our goal was to excavate Middle and Late Formative deposits dating to the first millennium B.C.—a time period during which the social practice of ancestor veneration emerged among the lowland Maya. Towards this end, I chose several locales in the southern part of K'axob at which large and deep excavations would be conducted. My research design focused on changes in three independent variables: land use, burial practices, and architectural form. In ethnographic and ethnohistorical case studies from the Maya region and elsewhere, these three variables behave as particularly sensitive barometers of change in the scale of social formations. Change in these variables, furthermore, can often be correlated with the emergence of lineages, a prominent characteristic of which is ancestor veneration. Insofar as the archaeological record provides the only means at our disposal to test the applicability of this idea to the Formative Maya, I devised a testing strategy whereby the genesis of ancestor veneration within the matrix of lineages with proprietary resource rights (which are archaeologically **invisible**) can be diagnosed by reference to corollary changes in the archaeologically **visible** domains of land use, architectural form, and burial practices. Employing several lines of evidence including palaeobotany (pollen, macrobotanical and phytolith

remains, osteology, palaeopathology, burial context and furniture, and architectural stratigraphy), I proposed that changes in these classes of data will coincide with the emergence (probably during the Late Formative) of ancestor veneration as an institutionalized expression of intergenerational, intralineage land transference at K'axob.

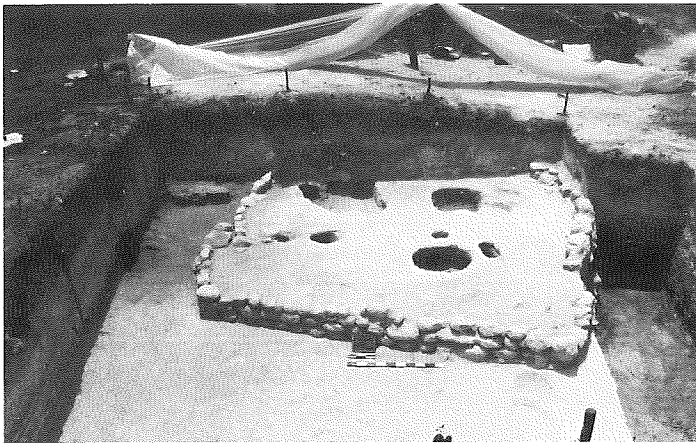
At each of the excavation locales, information was collected relevant to the following three variables.

1) *Land use changes* were monitored through an aggressive program of water flotation and the retrieval of macrobotanical remains. This project was run by Elizabeth Platt. Macrobotanical remains, in particular, provide evidence not only of some of the economic species cultivated but also a gauge of the type of ground cover extending out from the boundaries of the intrasettlement space. At K'axob most of the well-preserved macrobotanical material consists of wood charcoal which, when identified at the species level, can indicate whether the lands between and beyond dwellings were in orchards, low-bush fallow, or pristine rain forest. Average recovery rate from 1990 and 1992 seasons was 66 pieces of wood charcoal (large enough to be identified down to the species level) per 30-liter sample. Temporally calibrated changes in macrobotanical composition, as well as in pollen assemblage from the stratified Formative deposits at K'axob, will allow us to chart this environmental change in relation to changes in the second social variable: burial practices.

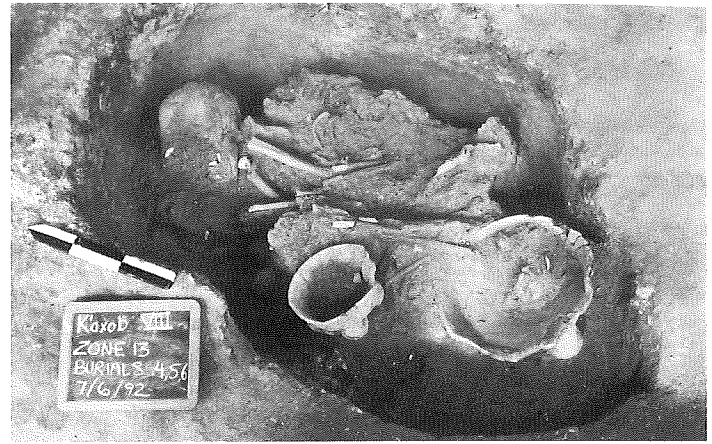
2) *Changes in burial practices* were observed through the careful excavation of mortuary contexts which, among the Maya, are generally found closely associated with living surfaces. We are focusing on the following burial characteristics: (a) burial location in preferential and formalized locations (such as burial shrines in contrast to subfloor burials); (b) differentiation in burial accouterments; (c) presence of burial goods carrying iconographic information suggestive of lineage and leadership positions (the quadripartite or cross motif has now been discovered in five separate



K'axob laboratory staff at work registering newly discovered materials from the excavations. Left: Lisa Hilborn of York University, Toronto, Canada; right: Annabeth Headrick, a Ph.D. candidate in Art History at the University of Texas, Austin.



A Late Formative (about 200 B.C.) platform at K'axob; pits are locations of intruded burials.



A multiple burial from a "satellite" residence at K'axob. The ceramic vessels with mammiform feet date this interment to the Protoclassic (the first two centuries A.C.).

burials plus one dedicatory cache); (d) differential presence of organic and inorganic residues from burial rituals; (e) absence of some skeletal elements due to curation of selected ancestral remains (a pattern of multiple interments of nonarticulated and incomplete skeletal remains interred with a higher-than-average frequency of burial goods has been detected at K'axob); (f) the presence of a high degree of genetic closeness among males in the burial sample (assuming a deep history to the ethnohistorically documented proclivity towards defining lineage and residential group membership along patriline); (g) the presence of extremes in nutritional profiles; and (h) the differential presence of palaeopathologies.

Dr. Rebecca Storey of the University of Houston is studying the osteology and palaeopathologies of the K'axob burial sample, and preliminary results indicate that the Formative population of K'axob was a well-nourished one with relatively few indicators of dietary stress and with comparatively robust skeletal structure. Research physician Eric Poeschla (University of California, San Diego medical school), who is currently involved in DNA research of the HIV virus, is undertaking experimental research on amplification of DNA from K'axob skeletal material. If successful, this highly innovative research would make it possible to establish explicitly genetic distances among individuals.

3) Finally, *changes in ritual and domestic architecture* are studied

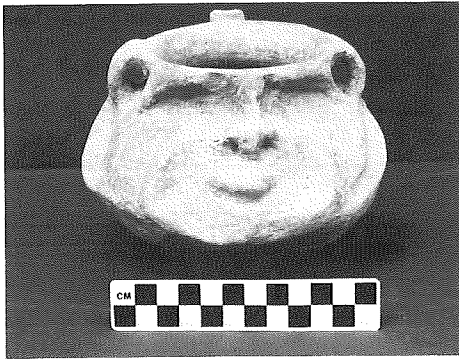
through large lateral exposures of architectural units. Upon the emergence of ancestor veneration, **place** of final burial takes on a new significance. Minor lineage members might be interred under floors of residences while significant members, who would become ancestors, are buried within shrines within the residential complex. These places of the ancestors, whether they were residences, burial shrines, or pyramids, underwent incessant cyclic renovation and expansion. In this way, the genesis of ancestor veneration should coincide with a formalization of certain burial areas and the ritualized sanctification of those locations through the history of interments—a **genealogy of place**, as Michel de Certeau has expressed it (de Certeau, Michel, 1989, *The Practice of Everyday Life*, University of California Press, Berkeley). Such changes might include the construction of shrines over burials, the conversion of dwellings to household shrines, or the capping of an important Formative burial context with a pyramidal structure, like structure 18 at K'axob.

A high priority of the 1992 field season was the excavation of Operation I in front of Structure 18. Fieldwork during previous seasons had indicated the presence of deeply stratified Formative deposits with an unusually high number of ancestral Maya burials in the area directly in front of the Late Classic pyramid. Lorren Jackson, assisted by Matthew Bobo and a host of students and local workers, directed excavations at this

locale. In total, 88 cm of deposits or 42 cu m of a finely stratified sequence of floors, walls, construction fills, and intrusive pit features were excavated. (This includes 34 burials as well as 5 firepits, 7 sherd-lined pits, 12 post-holes, and 3 dedicatory caches.) A total of 100 different stratigraphic contexts were encountered, mapped in 3-dimensional space, photographed, individually recorded on context forms, and tracked through the use of a Harris matrix. Palaeoecological data were recovered from 88 stratigraphic contexts at K'axob and, although they have not yet been analyzed, these contexts yielded approximately 1032.11 grams of wood charcoal, seeds, and other organic matter.

The high density of ancestral burials at this location is remarkable. It is within burial contexts at Operation I, in particular, that an iconographic motif—the so-called cross or quadripartite motif—is found painted on the base of ceramic vessels from particular burials that are separated stratigraphically and chronologically by as much as 600 years. (For an example, see the photograph published on page 15 of *Context 9:1-2*.) Associated with calendrical day-keepers or lineage leaders in the contemporary Maya cosmology, the quadripartite motif is evocative of the intricately linked dimensions of space and time in Maya cosmology. That is, it suggests the division of space (in the sense of boundaries or demarcation), as well as the passage of time (marked by calendrically linked ancestral

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An effigy vessel with a dwarfish face excavated from a Late Formative burial at K'axob.

continued from page 3 commemorations). One Late Formative burial contained not only a cross-marked vessel but also a spouted jar on the front of which a dwarfish face was modeled. The general pattern of Operation I consists of a series of thin floors constructed from ground level during the Middle Formative changing to the low platform structures of the Late Formative with burials intruded into almost every construction unit.

To the south of the large plaza group in which Operation I is located, there are three satellite residential groups in which operations were initiated and completed (Operations VII, VIII, and X). Three additional operations located to the north were begun during the 1992 season and will be continued next season. These six excavations provide valuable comparative data on inter-residential differentiation during the Formative and Early Classic periods. Operation VII, supervised by Francisco Estrada Belli, revealed a well-preserved Early Classic platform above a series of finely laminated Late Formative floors and footing walls. A distinctive and relatively elaborate Early Classic stone-capped cist was excavated at this locale. One of the two polychrome vessels associated with this burial featured four-legged supports fashioned in the image of peccary (wild pig) snouts.

One of the most provocative findings from Operation VII as well as the other satellite operations is the strong evidence of continuous occupation and construction from the Late Formative through the Early Classic

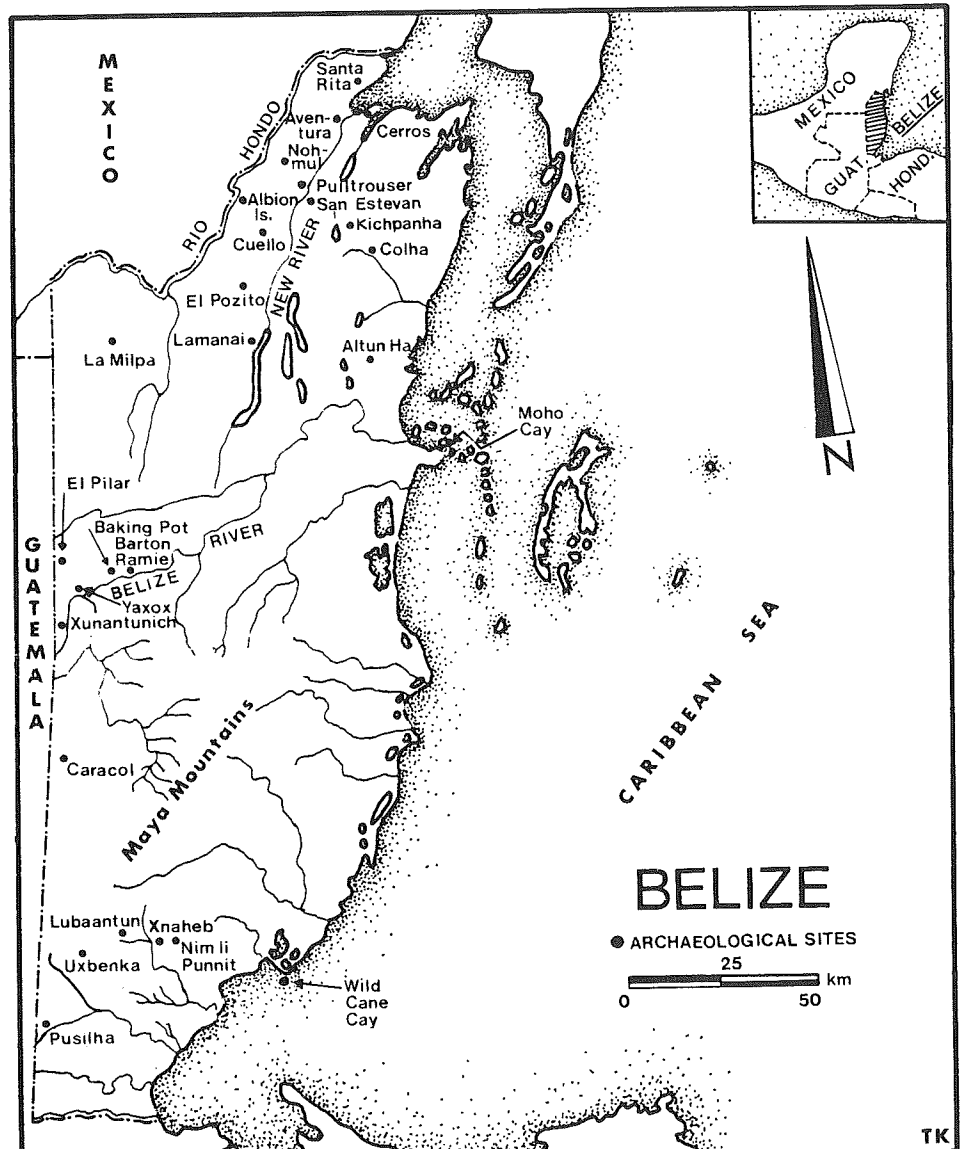
Period. In and of itself, this pattern is noteworthy, since the Early Classic period tends to be underrepresented or completely absent at many sites in northern Belize.

Valerie McCormack supervised Operation VIII, which contained burials with unusual assemblages of Protoclassic mammiform tetrapodal-footed vessels which became very popular at the very end of the Formative Period. Given the small size of the structure, the opulent nature of these interments (multiple burials with jade beads and polychrome vessels) goes against traditional notions about structure volume, wealth, and the status-linked role of Protoclassic ceramics.

On the other hand, Operation X

(supervised by University of Pittsburgh graduate student Hope Henderson) revealed a gargantuan fire feature. Specifically, a large (2 m in diameter) firepit packed with carbonized wood was found intruded into the underlying bedrock. Excavation revealed that, prior to the construction of the firepit, the A and B soil horizons had been stripped away from this area and the white marl bedrock used as a "living surface."

Meanwhile, the cross motif had begun to surface at other locations around K'axob, such as Operation XI, where it was part of a polychrome motif on an Early Classic funerary vessel. More extra-mural features were located by Robert St. Laurent, who supervised excavations at



Map of Belize showing the sites of La Milpa and Cuello which are being excavated by Professor Hammond, and Pulltrouser Swamp, where Professor McAnany is excavating the site of K'axob.



Temple I at Tikal, one of the most famous Maya buildings, was constructed in A.D. 730 as the funerary temple of one of Tikal's kings. The 1992 field class visited Tikal to get an idea of what the pyramids at La Milpa may once have looked like.

Operation XII where a series of Formative floor sequences were found adjacent to several shallow clay and stone-lined pits (bearing no traces of burning). The final operation, XIII, was begun by Ingrid Martonova, and will be completed in the upcoming Spring 1993 season.

In short, the goals of the 1992 field season were to recover palaeoecological information, to expose as fully as possible Formative domestic architecture, and to recover subfloor, shrine, and midden-interred burials. During this past summer, much of this research was accomplished, but the vitally important material from the deepest Middle Formative levels of Operation I and some of the critical comparative material from satellite operations is still in the ground. Full recovery of this remaining material is the target of the Spring 1993 season

during which undergraduates participating in the Archaeological Field Research in Belize Program (sponsored by the Department of Archaeology in conjunction with the International Programs Office) will excavate at K'axob together with staff and graduate students. This final phase of data collection will allow the evaluation of the extent to which changes in land use, burial practices, and architectural form presaged the emergence of ancestor veneration at Formative K'axob.

Patricia McAnany is an Assistant Professor in the Department of Archaeology. After spending a year as a Fellow at Dumbarton Oaks in Washington, D.C., Professor McAnany resumed field work at K'axob in Belize. For previous work at the site, see her report "Ancestor Worship and Sanctification of Place: Excavations at K'axob, Belize," in Context 9.1-2 (Winter, 1990-91):12-16.

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upsets and delays between Houston and Belize than in the whole of the rest of the semester put together! We all flew down from Boston, to find that the Mexicans had just instituted a completely new set of rules for bringing vehicles in from the United States (because so many stolen autos were being taken across the border and sold in Mexico): we now had to have original titles, full U.S. insurance coverage valid for six months even while in Mexico (although U.S. insurance isn't valid in Mexico, of course), and the presence of the owner of each vehicle at the border and in the vehicle through Mexico. The idea of getting the Trustees of Boston University, who officially own our van, to line up at Brownsville and cram in with us for the ride down was faintly risible. We eventually persuaded the Mexicans that a formal letter naming ID-holding members of the University as stand-ins for the Trustees would be enough, but we wasted three days getting documents faxed and notarized. Finally, the students said sad goodbyes to the last shopping mall in Texas; we crossed the border and set off down the Gulf Coast. After a chilly night in San Fernando we traversed the horrendous road to Naranjos, and we were still wearing sweaters when we crossed the Tropic of Cancer. Things only started feeling tropical when we reached the ruins of El Tajín, near Papantla (once the vanilla capital of the world, and where a pint of vanilla essence still costs only one dollar), where the students saw their first Mesoamerican site partly cleared from the encroaching vegetation.

Thereafter, it was archaeology all the way, interspersed with a broad gastronomic introduction to Mexican provincial cuisine as we progressed along the Gulf Coast (fresh coconut milk in the shell) and up into the mountains (Coatepec coffee and chicken in chocolate sauce) to Xalapa, capital of Veracruz. Our destination there was the new Museum of Anthropology, which houses the magnificent Olmec sculptures from San Lorenzo as well as numerous

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sculptures from the Classic Veracruz and Huastec cultures of later centuries. One of the most important finds in Mesoamerica in recent decades—La Mojarra Stela 1 with its 400-glyph text, hieroglyphic dates of A.D. 143 and 156, and dramatic relief carving of a ruler—was still confined to the basement store: the current museum director believes it to be a fake. Luckily, Dr. Fernando Winfield Capitaine, the former director, was around and took us down to see the stela.

From Xalapa we crossed the Sierra Madre into the Tehuacan valley, where in the 1960s Scotty MacNeish established the antiquity of native American agriculture, and then we went over the continental divide to Oaxaca, seat of the Zapotec civilization. A mid-journey break, extended by vehicle problems, enabled us to visit the important sites of San Jose Mogote, Monte Alban, Yagul, Lambityeco and Mitla, as well as the colonial buildings and markets of Oaxaca de Juárez. Then we descended through the coastal ranges to the Pacific at Tehuantepec, before ascend-

ing again into the highlands of Chiapas, and the Maya lands at last.

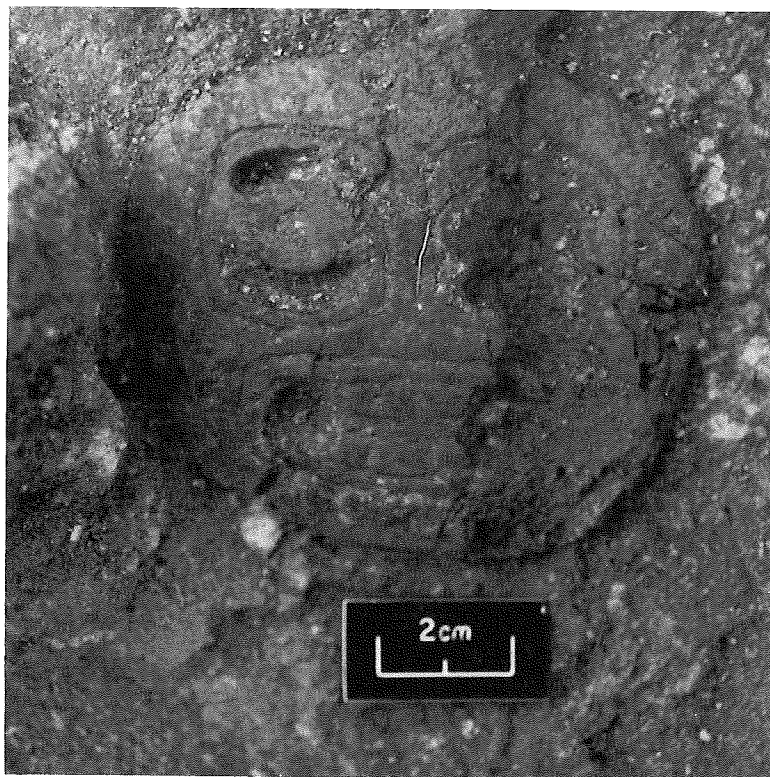
The highland Maya market town of San Cristobal de Las Casas gave most of us a first glimpse of the people whose ancient civilization we were on our way to study, and from there we turned north again, over the mountains to the great Classic Maya site of Palenque, which we reached after dark and a minor collision with a Mexican truck. More vehicle problems led to an extra day in Palenque (all our breakdowns occurred in places with nice hotels and interesting ruins and then we set off for Yucatan.

This was a new departure: in previous years we had driven directly from Palenque to Belize in one day. This time, we decided to introduce the class to the famous sites of Uxmal, Chichén Itzá, and the Puuc region, and also to the notable displays of the museum in Mérida, the colonial capital of Yucatan and the largest city any of us were to see for several months. In retrospect, it was too much; everybody was "sited out" and too tired to appreciate them properly. We were all relieved to get to Belize at the begin-

ning of February, stop moving so fast, and get settled into our camp at Cuello.

At Cuello we were trying to finish the excavations, which had begun in 1975 and were now in their eighth season: Cuello is the earliest known Maya site, and its lowest layers preserve the evidence for the first farmers to live in the tropical lowlands of Belize. Excavations in previous years had uncovered a series of low, plaster-surfaced platforms around a courtyard, but only their frontal portions had lain within the excavated area. In the "North Square," which we began to dig in 1987 and continued in 1990, the rear areas of the succession of structures on the north side of the courtyard could be examined, together with the ground that lay behind them. There is some uncertainty as to whether any of the buildings had been purely ceremonial in function, rather than dwellings; we hoped to find, if they had been inhabited, the trash thrown out by their occupants spread behind the buildings. Because the houses had been demolished and rebuilt with some frequency, we also hoped that layers of

This bone mask of about 450 B.C. may be a symbol of early Maya rulership. The mouth, with three fangs in the upper and lower jaws, was a snarling oval with drawn-back lips, pierced right through the bone on either side of the teeth. It was surrounded by a continuous grooved line, and similar lines enclosed the eye sockets. Their orbits were again cut right through the bone, above and below the strip which contained the iris and pupil. The latter was shown by a shallow drilled pit: we found two loose jade beads in the grave which fitted neatly into these pits, but we cannot be certain that the pendant was decorated in this striking way. Finally, a small triangular hole representing the nose only became visible when we cleaned the mask after it had been removed from the ground. Two perforations close together at the top allowed it to be worn around the neck; it was found lying on the upper part of the chest, worn probably as a gorget over the point where the breastbone and collarbones join, and immediately below the face of the man whose status it symbolized. That role may well have been one of leadership, in war as well as peace, within the Cuello community.

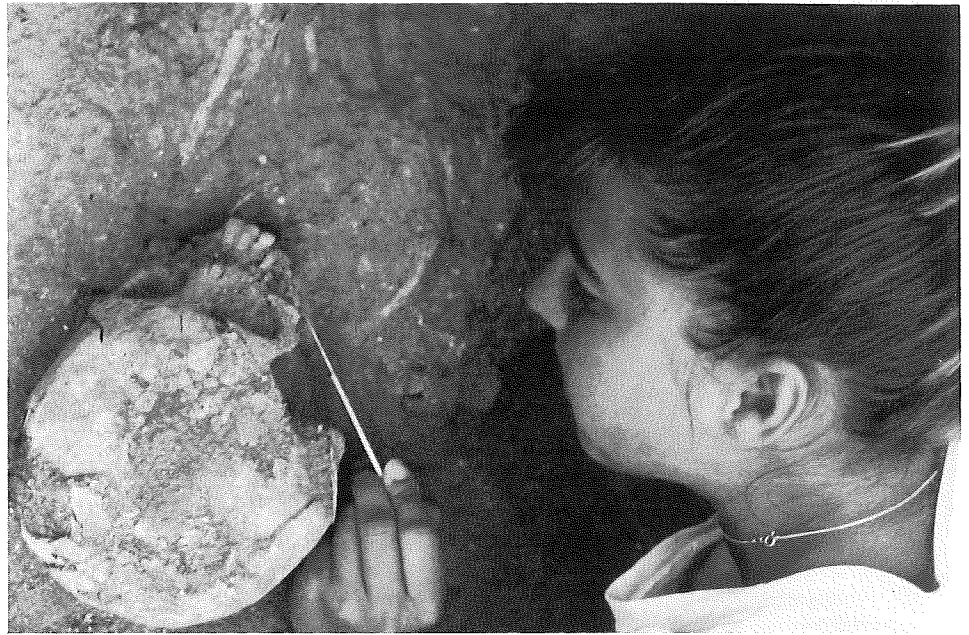


debris would separate lenses of occupation material, so that we could distinguish one occupation from another. Lastly, the frontages of the buildings had been torn away around 400 B.C., when the entire courtyard group was buried beneath a great new temple platform; we hoped that their side and rear portions would remain, so that we could better reconstruct what they had looked like.

A second excavation had been opened in 1990. The "South Trench" linked the areas dug in 1978–80 with the southern edge of the platform covering the earlier remains, and would give us a cross-section through 1,500 years of occupation, while allowing us to resolve the question of exactly how many retaining walls had succeeded each other on the southern flank of the platform. The answer to this last question came quickly: there was only one. But what was intended to be a swift slice through prehistory got bogged down in 1990 as we hit complex destruction deposits. This year we were intending to finish the job, stripping away successively earlier floors of the houses that had stood on the south side of the buried courtyard.

We had not reckoned on the propensity of the Maya to bury their dead in graves cut into the house floors—or at least the numbers of people that they had interred within a small space. Maya burials often took place on the central axis of a building, and our trench ran across the centerline of those standing on the south side of the courtyard. We had hit four burials of around 450–400 B.C. in 1990; now, as we removed the earlier floors, we came across a cluster of other graves so closely packed that they cut into each other and in places had removed parts of earlier skeletons.

The first one we encountered was perhaps the most important in several ways: he had been a mature man, 25–35 years old when he died, and well built. By his feet lay a bag-shaped pottery vessel, possibly used for cooking beans, with a worked shell beside it. Around his waist was a belt made up of bone tubes, carved from the long bones of a medium-sized mammal (probably deer): two of these bore



Senior Catherine Hawley cleans the skull of a child at Cuello. The jade pendant can just be seen beneath the chin.

a criss-cross design which we immediately recognized as an early and slightly crude version of the *pop* motif, a woven-mat design that was a symbol of rulership and power among the later Maya. The *pop* design had appeared, much better carved, on a set of rather larger bones tubes accompanying a mass sacrifice that had been carried out when the great platform was erected around 400 B.C. This burial was at least fifty to a hundred years older, and thus the earliest occurrence of this icon of leadership.

More striking, and even more important, however, was the pendant that lay on his chest. It was roughly circular, cut from a human skull and decorated with a stylized face.

The features of the bone mask are semi-human, semi-animal, and if they resemble any one creature of the tropical jungle, it is the jaguar, the largest of the great cats of Central America and a beast venerated by the Maya in later times. The simple arrangement of three circles enclosing the eyes and mouth also resembles the Maya hieroglyph Ahau, the last day in the twenty days of the sacred calendar, which has the meaning of "lord" or "ruler." We believe that this pendant is the earliest known rendition of this Maya symbol of rulership, one which became progressively simplified as it was adopted into writing. We also believe that the man who wore it may have

been the leader of the small community at Cuello in the fifth century B.C.

As we dug deeper, we found more burials, including another robust male directly below the "Lord of Cuello" and on the same alignment, athwart the main axis of the building in which both had been buried. He also may have been a ruler, but he was accompanied by only two pots and a few beads, so we have no indication of his status in his grave goods. Altogether, nine burials of the Lopez phase (600–400 B.C.) were uncovered at Cuello in 1992, all of them in the trench supervised by graduate student Francisco Estrada Belli.

Even earlier interments were found in the other area we were digging, where layers of 900–600 B.C. were being removed. Two were wrapped in each other's arms, one a child and the other a teenager who lived nearly 3,000 years ago. They were buried without grave goods. Better equipped was a child of six to ten years of age, whose small skeleton we found only partly inside the area of excavation. Two pottery vessels lay over his or her chest and head, and the level from which the grave had been cut showed that the burial had taken place around 600 B.C.

As student Catherine Hawley scraped gently away at the dirt

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around the neck, she hit something hard. As she cleaned it, it looked glossy and blue-green. When we finally got it out, it proved to be a superb blue jade pendant some two inches long and an inch across, hollowed out on the front and polished to a mirror-like finish; in fact, we believe that it is a jade imitation of the iron-ore mirrors known to have been made further west in Oaxaca at this period of Mesoamerican prehistory. It had been carefully pierced through the top edge and rear face, so as not to spoil the unbroken sheen of the concave front. Such a technique is well-known in the Middle Preclassic period and may have originated with the Olmecs who built a complex society with superb artistry in stone on the Gulf Coast of Mexico between about 900 and 400 B.C. A number of similar jade pendants have been found, most especially a cache of them at Chacsinkin in Yucatan. E. Wyllys Andrews V of Tulane University, who studied them, believed them to come from the Olmec area initially, although later he was less certain about how early they were. The Cuello find shows that such objects were indeed made when Olmec culture was at its height, and could thus have been imported from their workshops.

While we had been finding this unexpected number of burials at Cuello—so many, in fact, that we have to return there in 1993 to finish the excavation—the other half of our research program had been under way at La Milpa, thirty-five miles to the southwest, hard against the border with Guatemala. La Milpa, discovered in 1938 by the late Sir Eric Thompson, was until recently one of the least accessible Maya cities; only in the past five years have roads begun to punch through the jungle. The site was unexcavated, but in 1988 two preliminary maps of the main plaza were made, and then in 1990, Dr. Thomas H. Guderjan of the University of Texas spent several months constructing a detailed plan of the site center as part of a regional survey. Our work—following on from his and supported by the National Geographic Society

and the Programme for Belize, the landowners—is intended to reach an understanding of the history of this city, which we estimate had tens of thousands of inhabitants scattered over several square miles of rugged terrain. The site core stands on a plateau some 190 meters above sea level, which has been leveled up to provide foundations for an impressive range of temple-pyramids, ball courts, residential compounds, and other buildings. My co-director, Dr. Gair Tourtellot III, with whom I worked at Seibal in 1968, took charge of the mapping. A grid of trails called *brechas* was cut out from the main plaza toward the cardinal directions, and stakes were hammered in every fifty meters. We had to disturb the natural vegetation as little as possible because of the area's status as a biosphere reserve, and this presented some interesting logistic problems. The department's EDM (electronic distance-measuring theodolite) was invaluable as we plotted the contours of the landscape and the distribution of ancient houses.

Several of these were excavated by the students. Two groups close to the site center were tackled by Belinda Monahan and John Falzone for their final papers before graduation, and both groups proved to have been occupied in the Terminal Classic period of A.D. 800–900. The pottery that they recovered began to give us an idea of the cultural affiliations of La Milpa in the last phase of its occupation: the vessels resembled those from Uaxactun and other sites to the south

and west, and not those from Lamanai and Nohmul to the east and north. Some kind of cultural frontier seems to have lain along the high escarpment that borders the La Milpa plateau on the east, overlooking the lowland plain of coastal Belize where Lamanai lies, and the valley of the Río Hondo flowing northward toward Cuello and Nohmul.

In the main plaza, however, we found the low foundations of a house of this period, clearly built when the plaza was no longer being used for grand official rituals. In plan and construction details it closely resembled houses I had excavated at Nohmul in the 1970s—and those had been clearly allied to the architecture of northern Yucatan. The pottery from the Nohmul excavations reinforced the evidence of northern links, and it looks likely that the new discovery at La Milpa may document the southernmost penetration of northern peoples at the time of the collapse of Classic Maya civilization. My colleague Richard E. W. Adams, of the University of Texas at San Antonio, has found similar evidence of such penetration at Río Azul, the next major Maya city to the west of La Milpa, and believes that there was an actual invasion. We await developments at La Milpa in 1993 with great interest.

Almost our last find this year was the most fascinating. Thompson and Guderjan had reported a total of sixteen stelae, standing stone pillars often carved with inscriptions in Maya hieroglyphic script and with portraits of Maya rulers. Fourteen of



Senior Scott Spurlock (left) and osteobiographer Dr. Frank P. Saul of the Medical College of Ohio uncover the entwined skeletons of two young inhabitants of Cuello who lived, and died, nearly 3,000 years ago.

Clay Hunting in Northern Belize

by Mary L. Angelini

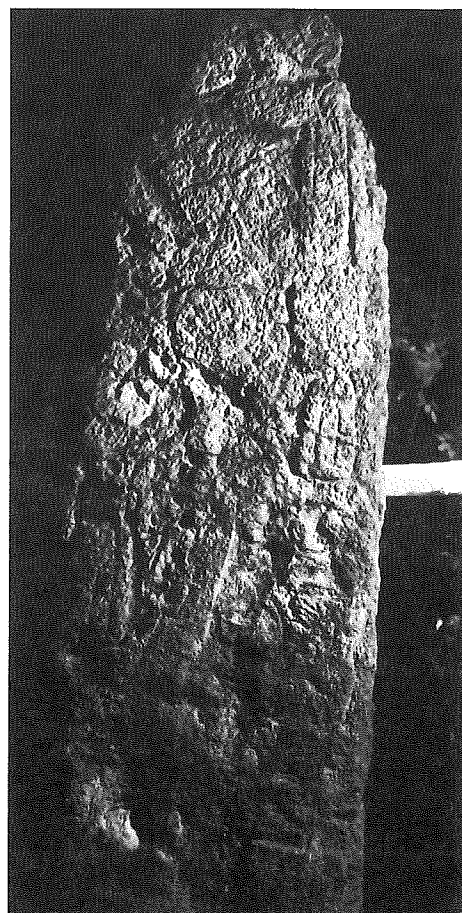
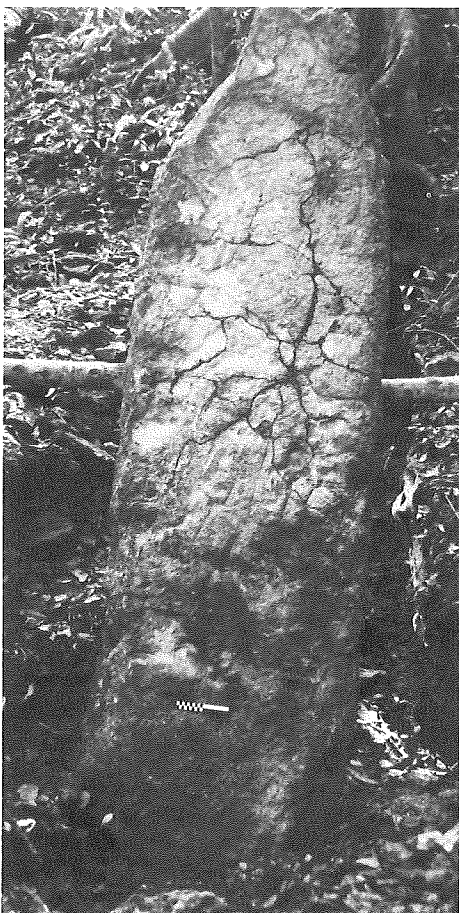
Clay is the basic material necessary for the manufacture of pottery. It is sticky, messy, and playing with it was bound to get you in trouble when you were young, yet it is the basic ingredient for everyday kitchenware and for our most expensive china. It is even the building block for much of the world's greatest art. Clay is formed by natural chemical and weathering processes, which break down rocks, and it is readily accessible in most areas of the world, so ancient potters generally had easy access to clay resources near their settlements.

Dean Arnold estimates that the clay resources within a seven-kilometer radius of a settlement were utilized because beyond that distance transport became uneconomical (Arnold, 1989:38-50). Assuming that climatic conditions and soil formation processes have not changed in the past 3,000 years, it should be possible to locate possible pottery clay sources within a seven-kilometer radius of any settlement area. Operating under this premise, Laurie Victor, an undergraduate archaeology student at Boston University, and I traveled to Northern Belize last April to collect clay. The goal was to obtain sample clay for analysis and for comparison with ceramics from the prehistoric Maya site of K'axob. Clay analysis can not only provide information concerning available clay resources, but can also be used to determine the inherent properties and inclusions of the clays.

This research was part of a second-semester project for a ceramic petrography course in which we were participating at the Center for Materials Research in Archaeology and Ethnography at the Massachusetts Institute of Technology. Funding was provided through a supplement for undergraduate students to a National Science Foundation Research Grant currently held by Patricia A. McAnany, Assistant Professor of Archaeology at Boston University.

The region being studied centers around the early Maya site of K'axob, one of several Precolumbian sites in the Pulltrouser Swamp area north of the modern Belizean town of Orange Walk. Ongoing archaeological excavation of this site is under the direction of Professor Patricia McAnany (see *Context* 9:1-2 and this issue, pages 1-5). The ceramics analyzed in this study date to the Middle and Late Preclassic periods, from approximately 1,000 B.C. to 100 A.C. Petrographic analysis of ceramics from these time periods at sites such as Kaminaljuyu and San Jose was initially conducted by Anna Shepard in the 1940s and 1950s and verified by the Jones analysis in 1991. The analyses determined that the paste composition of Preclassic ceramics consisted of three types. One group was comprised predominantly of poorly sorted calcite, the other contained quartz, and the third consisted of quartz and grog (Jones, 1991, p. 16). Grog is crushed pieces of pottery. It is often added as temper

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Contrasting daylight (left) and night shots of La Milpa Stela 15 show how the figure of an ancient ruler emerges with careful lighting.

these lay within the main plaza, most of them in a line in front of the main pyramids, but two lay beyond to the south. One was still intact, over eleven feet high, and fallen on its face in front of a small and heavily looted mound. With lifting tackle we raised it to a vertical position; there were faint lines of carving on the front, but we could discern nothing clearly. That night we brought along a high-powered lamp hooked up to a truck battery, and were able to "paint" the stela with light while taking a time-exposure photograph. The results were stunning: a tall figure stands in profile, facing to our right, his head large and his nose beaked, wearing an elaborate headdress. The sinuous curve of his back and buttocks is well marked, and he seems to carry a small round shield and spears on his shoulder. A few faint hieroglyphs may give his name; but as we left in 1992 he remained, mysterious and anonymous, looking out into the jungle which covers the city he once ruled.

Norman Hammond is Professor of Archaeology and Director of the project at Cuello and La Milpa.



Laurie Victor collects clay samples near the large aguada at K'axob.

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to ceramics to aid in formation and firing by providing additional plasticity and by controlling shrinkage. Subsequent researchers have validated the conclusions, but questions still remain concerning the preparation techniques used by the ancient Maya, specifically concerning which inclusions were intentionally added as temper to the clay, and what forming and firing techniques were utilized. These questions can be answered by analysis of local clays and by experiments in formation and firing.

The first step was to gain an understanding of soil-formation processes in the semi-tropical climate of the region and their relationship to the geology. Northern Belize is dominated by sedimentary limestones. Clay is formed as the result of chemical processes which break down these rocks, first into a mantle of marl called sascab, which underlies the soils of the area, and finally to clay. Smectite is the primary clay formed through these processes. Depth of the soil layer was reported not to exceed 40 cms at any point (Darch and Furley, 1983:184).

The area around K'axob is part of the flood plain for the Rio Nuevo. Possible clay sources were areas along the river, in swamplike depressions

near the K'axob site, and along areas of savannah or swamp, which at K'axob during Maya times were cleared and constructed into a raised field system utilized by the Maya for agriculture. Much of Northern Belize is a flat flood plain lying between the Rio Hondo and the Rio Nuevo. The rivers flow northward to empty into the Caribbean Sea and the topography follows the slowly descending rivers. The most conspicuous elevations in the area are the remains of the pyramids constructed by the ancient Maya.

Equipment necessary for this type of research is quite simple: a posthole digger, a soils map, and soil sample bags. Cameras and notebooks are important for recording collection site information. In our case, a local guide facilitated the collection process and kept us from getting lost or being bitten by any of the numerous poisonous snakes of Northern Belize. I should add at this point that I was included in this project because, first, I was studying the Late Preclassic material from K'axob and, second, I was old enough to rent a car for a cheaper rate. A four-wheel-drive vehicle is an absolute essential for travel in Northern Belize.

All sources of information concerning the location of clay resources should be explored by clay hunters. For example, contact with any local potters can provide valuable information about the clays of a region. Unfortunately, pottery production is no longer practiced in this area. A second important source of information, at least for us, was the landowner, Senor Concepcion Campos. Senor Campos is a charming man who professes a secret love for archaeology and an inherent desire to keep "gringas" ladies out of trouble. He provided us with a posthole digger, introduced us to our guide, Enrique Garcia, and gave us a tour of his rancho, including areas that he thought might provide us with clay. He contacted us daily, offering advice, and even guided us through the towering, snake-infested cane fields when we could not locate a particular location. His assistance was invaluable.

Our search method consisted of

locating areas bordering water which included swamps, aguadas (small ponds probably dug by the Maya), and riverbanks. Our guide would clear the way through the brush with a machete and, upon finding an appropriate area, would dig until he encountered clay. In each instance, the depth to clay did not exceed 20 to 30 centimeters. Clay is easily identified because it is sticky, will adhere to dry hands, and can be formed into balls or rolled into coils. Once a sample was taken, the site was photographed and the information recorded. Laurie assisted in the procurement of the clay while I did the recording. On occasion, I would follow these two through the tall cane. It was only later that I learned that it is usually the third person in line who gets bitten by the snake.

We collected 26 samples of clay, mostly from within five kilometers of K'axob. On one occasion, we rented a motor boat and traveled north to take samples along the riverbank. The scenery is stunning in tropical Belize. Orchids abound in trees, crocodiles sun themselves on logs along the river's edge, and the extensive forest canopy provides protection for any number of animals and birds. Storks, hawks, and herons greeted us each morning when we traveled over the dirt roads to the site. Often we saw the tracks of coatimundi and tapirs. Monkeys and jaguars can be found in some areas, particularly in the south of Belize near the Maya mountains. In the course of our trip, we visited several other Maya sites to collect clay and each was equally beautiful, providing panoramas of the surrounding countryside. From Nohmul one can see both Mexico and Guatemala. The countryside is breathtakingly beautiful.

Prior to our return to the United States, we air-dried the clay samples for as long as possible. (A soil sample permit is necessary for custom official approval for re-entry into the U.S.) Once we returned, we processed the clay by saturating each sample with distilled water until it reached a workable consistency. Any large pebbles or pieces of shell were removed by hand. The clay was wedged and

formed into small bricks, which were fired at differing temperatures. Thin sections or slides were made of each sample. These samples are currently being analyzed and compared to the ceramics of K'axob. Initial results indicate that clays from the area fall into two distinct groups, which are very similar to the groupings formed by analysis of the clay matrix of the ceramics from the Late Preclassic period. One group contains predominantly quartz inclusions and the other is composed of calcite. Further analysis is necessary to determine specific clay sources.

Tips for Clay Hunters

Clay procurement is a relatively easy task in Northern Belize, since a clay layer appears to underlie all top soil layers at a shallow depth and soil formation processes appear relatively constant. Other areas, with differing soil conditions, might prove more difficult. In that instance, coring might be an important addition to the procurement process. An understanding of the geology of the region and good mapping of the area of study are essential. Expect to make several trips to the area in order to pinpoint possible sources.

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Mary L. Angelini is a graduate student in the Department of Archaeology.

The Nikopolis Project, 1992

Land, Sea, and Aerial Surveys in Northwestern Greece

by James Wiseman

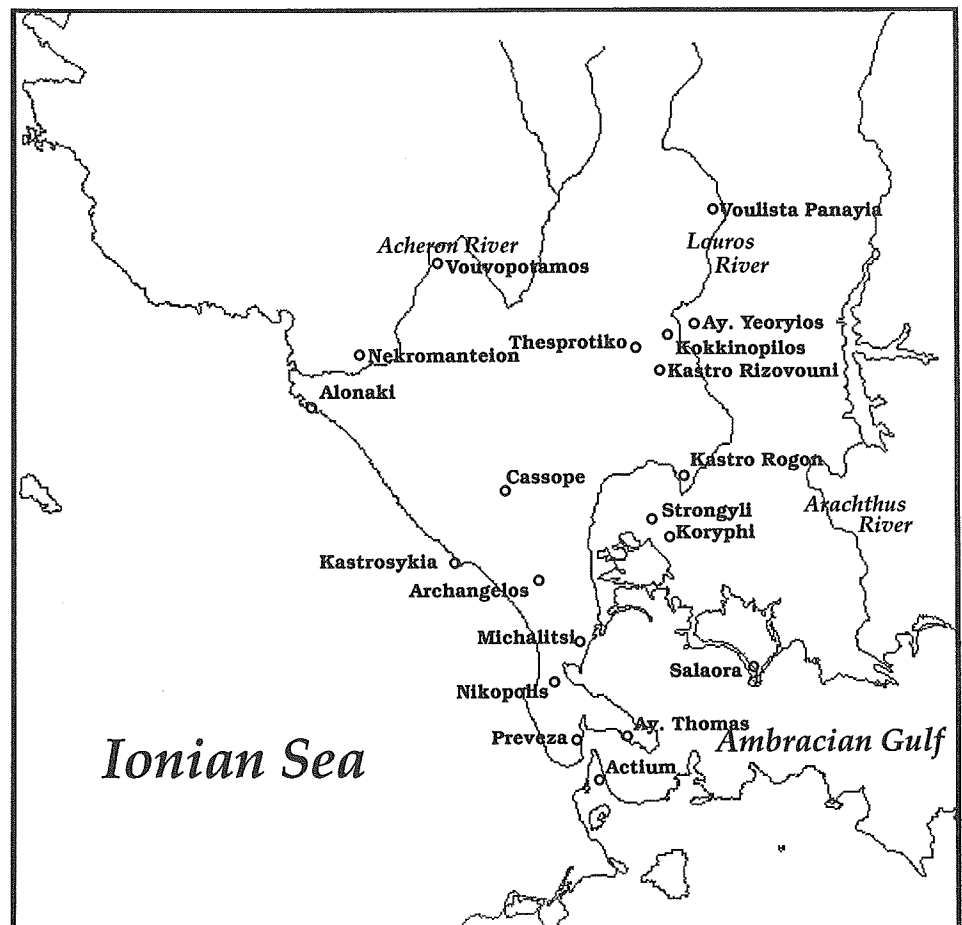
Archaeological and geological survey on land was supplemented by off-shore sonar survey and aerial photography from a tethered blimp during the second field campaign of the Boston University Nikopolis Project. A larger staff and longer season in the summer of 1992 helped to ensure substantial progress in the Project's study of human/land relationships as they changed through time in southern Epirus, Greece.

The archaeological surface survey teams, led by Tom Tartaron and Carol Stein and others, were able to sample many of the different environmental zones within the 800-square-kilometer survey area, searching intensively 71 survey units (*tracts*, in Project terminology) totalling nearly 500,000 square meters, and counting nearly

70,000 artifacts. The results so far indicate that the landscape of southern Epirus is rich in cultural material of many different time periods, including the Roman era, which has heretofore been poorly represented among reported sites outside of Nikopolis itself. One of the most significant of these is a large site on a hill overlooking the plain of Grammeno (east of Archangelos; see map below), where nearly 20,000 artifacts were counted, mostly of the Roman period, but with both Hellenistic and Turkish periods represented.

The Palaeolithic team, headed by Curtis Runnels, continued its search for exposures of Pleistocene landscapes where evidence of occupation during the Palaeolithic might be

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Computer-generated map of the survey area of the Nikopolis Project in southern Epirus.

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expected to be found still in its geological context. Of twenty site/scatters identified and sampled, fourteen produced materials classified as Palaeolithic, and two as late Palaeolithic or Mesolithic. Two of the Palaeolithic sites probably date to the Lower Palaeolithic, including one known as Rodaki, where there are stratified deposits visible in a road cut, just a short stroll from the Project base at the Hotel Kleopatra!

The Palaeolithic survey also benefited from the computer-aided analysis of the Kokkinopilos landscape imagery. A particularly significant result of this remote sensing activity was the successful development of a spectral signature in the satellite imagery of the eroded red sediments that characterize Kokkinopilos, where Runnels made the spectacular discovery of the Acheulean handaxe during the 1991 season. Carol Stein and Brenda Cullen, working in the computer lab we set up at our Project base at the Hotel Kleopatra on Nikopolis beach, repeatedly refined the classification of the site, creating a false color that designated the Pleistocene landscape of Kokkinopilos in the computer image as well as appearing in several other regions of our survey area.

Six ground-truthing expeditions to the new regions indicated by the computer resulted in the discovery of five areas where erosion had exposed redbeds of Pleistocene origin, and where more Palaeolithic tools were



The Hellenic Navy Ship Pytheas at dock in Preveza. Photo by James Wiseman.

found. The sixth search led the Project team to a recently constructed slaughterhouse complex, which we presume covers the redbeds detected by the remote sensor when it recorded in 1988 the images we now use!

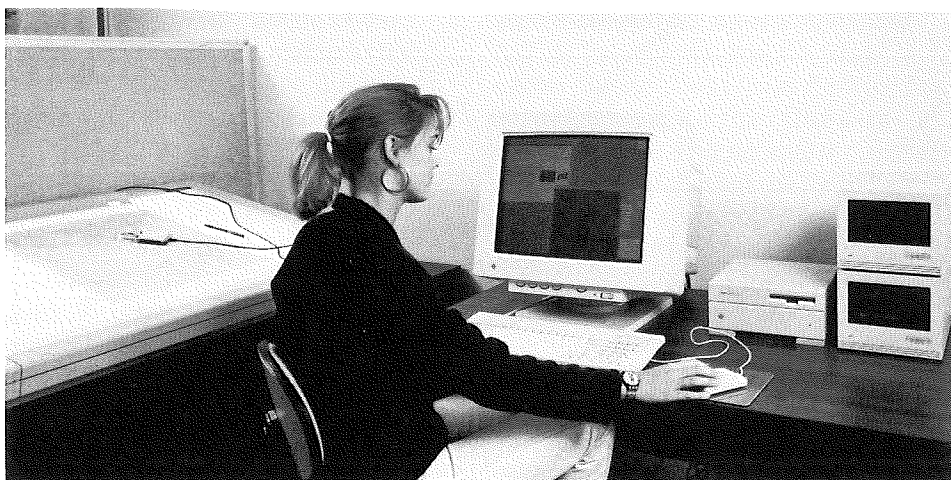
This success, of course, is important not only for the research results, but also as a demonstration of the value of the methodology. The staff are encouraged now to hope that in the future we will be able to develop other helpful spectral signatures. Quarries and different types of stone walls are high on the Project's list of priorities.

In addition to using remote sensing to examine the land surface of Epirus, the Project utilized remote sensing devices to study the floor deposits of the Ionian sea and the Ambracian Gulf in its efforts to determine ancient shorelines. The offshore work was

carried out with the cooperation of the Hellenic Navy, which sent a research ship, the *Pytheas*, to join us for two weeks. The ship was outfitted with a new model of the Klein side-scan sonar and a Klein sub-bottom profiler, which were towed behind the ship. The side-scan sonar detects features on the surface of the sea bottom, while the sub-bottom profiler provides data for understanding the depth and nature of sediments below the floor of the sea.

The ship ran grid lines (traverses and perpendiculars) totalling some 300 linear kilometers, concentrating on the area of the Ionian Sea off the long, curving expanse of Nikopolis Beach and, within the Ambracian Gulf, on the waters between Nikopolis itself and the lagoons in the delta of the Louros river. The data must still be studied during the coming months, but preliminary observations by Marie Schneider, a geologist who participated in all offshore expeditions, include features that may prove significant regarding the existence of harbors and possible springs, if we are eventually able to determine the line of the ancient Ionian coast. Sea duty was a popular assignment, and most of the staff, including students, were able to spend at least a day aboard the ship.

The offshore data, after analysis, must be correlated with the analyses of geological coring before final interpretations are possible. And the coring program itself, under the direction of Professor Rip Rapp, who is overseeing the overall coastal study, pro-



Brenda Cullen creating the digitized map shown on the previous page in the computer-imaging and GIS lab in the Department of Archaeology. The entire lab was set up at the Nikopolis Project base during the summer, 1992. Photo by Michael Hamilton.



Aerial view (height: 320 m) of the two rows of piers that carried the Roman aqueduct across the Louros River near Ayios Yeoryios. Photo by J. Wilson and Eleanor E. Myers.

gressed rapidly during the summer. Rapp and his doctoral student, Zhichun Jing, headed field teams that drilled twenty-one geological cores to depths up to eight meters in several different regions of the survey area. They took 193 samples of sediments, which are now being analyzed in Rip's Archaeometry Lab at the University of Minnesota at Duluth. The aims of the analyses are: to identify the succession of depositions in coastal and other environments; to date as many of the deposits as needed to construct a chronology of local change in the coastal regions; and to analyze microfauna, macrofauna, and pollen for palaeoenvironmental reconstruction.

A beginning was also made in the documentation by low-level aerial photography of the cultural remains that mark the Epirote landscape. The Project had already acquired aerial photographs of most of the survey area from the Hellenic Air Force in 1991, and these were extensively used

as aids in guiding ground-truthing and surface survey in both of the first two seasons. Low-level photography of the hilltop forts and other significant sites, however, has from the beginning been considered an essential component of the Project, and in 1992 we were able to field a tethered-blimp team led by J. Wilson and Eleanor E. Myers.

The aerial documentation began with the first segments of the great aqueduct that supplied water to Nikopolis from the springs at Ayios Yeoryios in the Louros River gorge, some forty kilometers away. Photographs in color and in black-and-white were taken at varying elevations that show both the supply channel, we surveyed in 1991, and the two (chronologically separate) rows of piers that carried the aqueduct across the Louros River. Photos were also taken of three fortified hilltop towns, Kastro Rogon, Kastro Rizovouni, and Voulista Panayia.

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Nikopolis Project Staff, 1992

Archaeologists and Administration

James R. Wiseman, American Co-director (archaeology)
 Kostas Zachos, Greek Co-director (archaeology)
 Frankiska Kephallonitou, Greek Co-director (Late Antique and Byzantine archaeology)
 Brenda Cullen (archaeology, remote sensing)
 Melissa Moore (ceramics, archaeology)
 Priscilla Murray (archaeology, drafting)
 Curtis Runnels (archaeology)
 Carol Stein (archaeology, remote sensing)
 Thomas Tartaron (archaeology)
 Lucy Wiseman (registrar, administration)
 Stavros Zabetas (archaeology)

Aerial Photography

J. Wilson and Eleanor E. Myers

Geologists and Oceanographers

Jon Jolly (oceanography, instrumentation)

George (Rip) Rapp (geoarchaeology)

Sytze van Heteren (geology)

Zhichun Jing (geoarchaeology)

Marie Schneider (geology, archaeology)

Consultants

Evangelos Chrysos (University of Ioannina: Byzantine History)

Angelika Douzougli (Director, 12th Ephoreia of Prehistoric and Classical Antiquities)

Panayiotis Paschos (IGME, Preveza: geology)

Computer Engineering and Remote Sensing

Daniel Juliano

Topographic Survey and Drafting

Anne Van Dyne (survey, drafting)

Students

Nikola Hampe (University of Münster)

Petra Matern (University of Münster)

Stavroula Vrachionidou (University of Thessaloniki)

So You Want to be an Archaeologist . . .

by Kael Alford

As I stood feeling strange at the edge of a cotton field in the countryside of northwestern Greece—lined up and carefully spaced in a row with eleven of my peers all equipped with zip-lock bags, hand-held counters and American name-brand hiking boots—it was something like the complexities of relative dating and context that busied my thoughts. I had no previous background in archaeology, but had successfully convinced my advisor in the English Department that the Nikopolis Summer Field School was an entirely fitting way to fulfill the exacting demands of a "related course-work requirement." My argument, "After all, Homer was Greek," must have been the clincher.

About two weeks into the program, I began to realize that in spite of my lack of experience, I was already integrally involved in gathering data essential to the Nikopolis Project. This is part of the beauty of field schools: they are ideal administrators of on-the-job training, particularly because there is little else to do on a project than the job at hand. In our six weeks in Greece, we took part in both basic and sophisticated methods of data collection, learning uses for tools ranging from state-of-the-art satellite imagery and electromagnetic conductivity equipment, to compasses, contour maps, and blimp-borne aerial photography.

The time range of our systematic surface survey spanned from the Paleolithic to Medieval eras in the region, introducing us to a broad spectrum of artifact types and identification techniques. Common among our finds were pottery, sometimes dating as early as Neolithic handmade wares, to lumps of kiln clay, metal slag, and flaked flint left from production of enigmatic stone tools. As we painstakingly scoured pastures and corn fields, artifacts dryly described in heavy introductory textbooks became lively and mysterious fragments of history. Even the surface layers of the countryside harbored thousands of these pieces.

To improve our practical skills, a flint-knapping demonstration was given by Professor Runnels which made our identifying elusive stone tools in the field easier. Once we got the artifacts home, we washed and helped to document our finds while keeping records in our own field notebooks.

Developing field skills, however, was not our only task. We attended regular lectures by the staff scientists, informing us of the various interdisciplinary aspects of the project; by Professor Wiseman on Greek history, especially that of our study region; and by local specialists when we visited archaeological sites. And we were tested on the information

Students of the Nikopolis Field School, 1992

Kael Alford
Alexandra Bienkowska
Anne Cockburn
Todd Gukelberger
Deborah King
Dawna Marden
Thomas Matthews
Richard Rotman
Bayleh Shapiro
Jane Sontheimer
Anita Vyas
Erika Washburn

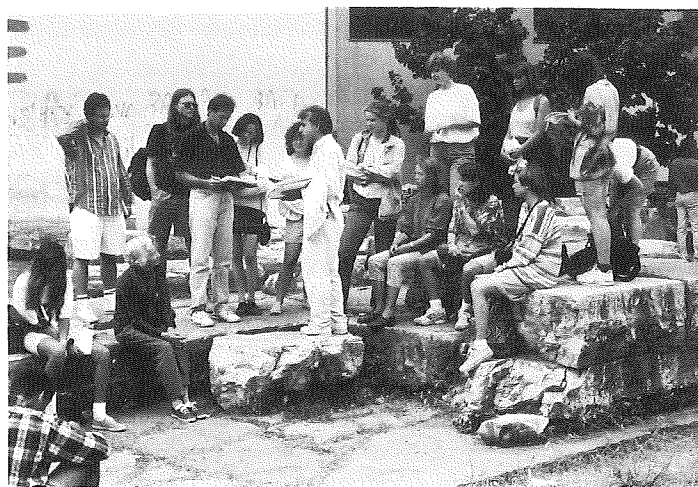
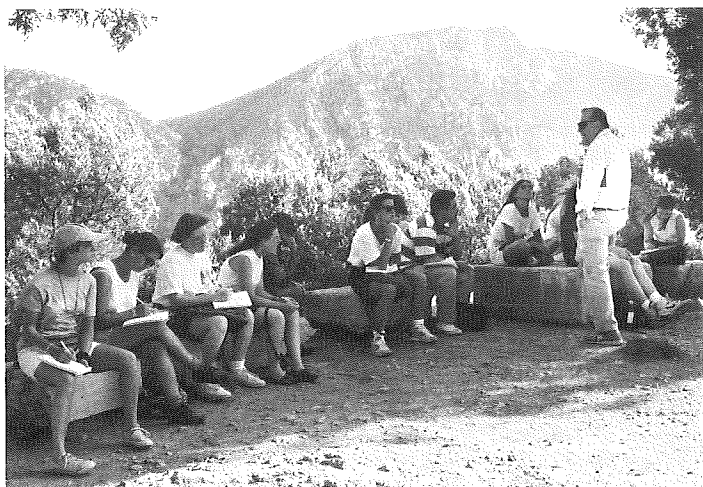
given to us. With 6 a.m. risings for fieldwork, augmented by weekend trips both to local sites and more distant attractions such as Delphi and Corfu, our schedules were strenuous. And then there were the Greek lessons—two words, when used together, that conjure dread enough in themselves.

Any setting served as a lecture hall, whether in the shadows of the Temple of Athena, where we took notes on classical architecture; or on the bluff where Octavian camped with his troops above the Ambracian Gulf, where we learned the details of his triumph over Antony and Cleopatra. In such an ideal learning environment, recalling a historical event could be as simple as remembering the route walked the week before, or where we stopped for lunch. Even for those to whom assimilation doesn't come naturally, picking up some Greek becomes a matter of survival when the people taking your dirty clothes away and bringing your food speak the language of *The Odyssey* (well, almost).

Yet this field school was hardly a marathon of unremitting drudgery and academics. Plenty of amusing stuff happens when you take twelve young Americans, strangers to one another, and plunge them into a foreign routine in a foreign environment. (Sorry, does that sound like *The Breakfast Club*?) Dinner table discussions often centered on highlights of the day's fieldwork, granting mythological proportions to snakes and scorpions, or to the



Professor Curtis Runnels demonstrating flint-knapping techniques to the field school in the courtyard of the Hotel Kleopatra. Photo by James Wiseman.



In the photo at left, field school students attend a lecture by James Wiseman near the Temple of Athena Pronoia at Delphi, and, at right, students, staff, and visitors listen to Kostas Zachos lecturing at the Archaic temple in Arta (ancient Ambrakia). Photos by Carol Stein (left) and Wiseman (right).

more deadly "yiayia" ("grandmother"), usually some very angry farmer's wife who mistook a team for a band of watermelon thieves. The weakhearted were quickly tagged with an appropriate nickname, and were always at risk of finding a lively indigenous specimen among their sheets. Long hours in the Mediterranean sun and nightly predinner volleyball games contributed to a camaraderie among students and staff probably similar to the relationship that a professional coed football team might enjoy.

A field school is like a summer camp for college credit, providing the staff is as successful as the Nikopolis Project staff at disguising hard work as fun. The most rewarding results of my own experience have been the practical knowledge and "feel" for archaeology that I've gained. The work I've undertaken in archaeology since this summer is vested with a significance that only such a hands-on project could lend. To a student, with little previous background contemplating the pursuit of archaeology, I would highly recommend undertaking fieldwork as soon as possible, for there must be no more comprehensive way of gaining an appreciation for the rigors and rewards of the discipline.

Kael Alford is a senior at Boston University. After spending the summer of 1992 as part of the Nikopolis Field School, she has decided to make archaeology her area of concentration in graduate school.

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The Project staff were joined during much of the summer campaign of 1992 by twelve undergraduate students (see this issue of *Context*, page 14 for list of participants) in a Boston University Archaeological Field School, whose studies involved immersion into the ongoing research activities of the Project. The students were involved in all aspects of the research, from surface survey and the drilling of archaeological cores to cleaning and documenting pottery and entering records into the computer databases. In addition to their participation in Project research, there were lectures and demonstrations of techniques, several visits to ancient sites in the region, and two weekend excursions, with lectures on-site, to

Delphi and to the island of Corfu.

The Field School, offered by the Department of Archaeology for the first time in Greece, was highly rewarding for the student participants, with the senior Project staff offering guidance and instruction in numerous areas, in addition to that provided by the author and two teaching assistants, Carol Stein and Tom Tartaron. The School also proved to be a useful, congenial enhancement of the Project. We plan to offer the Field School again in 1993.

James Wiseman, Chairman of the Department of Archaeology at Boston University and Director of the Center for Archaeological Studies, is the American Co-director of the Nikopolis Project.

Nikopolis Project Funding

The Boston University Nikopolis Project was funded in 1992 by the National Geographic Society and a group of private donors, the Friends of the Nikopolis Project. The Project also received substantial support from Boston University's Center for Remote Sensing, the Archaeometry Lab of the University of Minnesota at Duluth, the Hellenic Navy, and the Office of the Mayor of Preveza, Greece. The Project staff and its director express their deep appreciation to all.

1993 Nikopolis Field School

For information concerning Boston University's Nikopolis Field School for the summer of 1993, please write or call:

Division of International Programs
 Boston University
 232 Bay State Road
 Boston, MA 02215
 Tel. (617) 353-9888
 or
 Center for Archaeological Studies
 Boston University
 675 Commonwealth Avenue
 Boston, MA 02215
 Tel (617) 353-3415

Old Worlds, New Worlds

Recent Fieldwork by Faculty of the Department of Archaeology

The program began at 1 p.m. with a tour of the laboratory facilities of the Department of Archaeology, where there were displays of recent archaeological discoveries from Massachusetts, arranged by Mary C. Beaudry, and Maya pottery from Belize, arranged by Patricia A. McAnany. Guests had the opportunity to discuss the material with the project directors and members of their staffs.

At 2:00 p.m. the audience of about a hundred gathered in the lecture hall and were welcomed by Jon Westling, Provost of Boston University, and Martha Sharp Joukowsky, President of the Archaeological Institute of America. Professor Joukowsky also chaired the opening session and introduced the speakers. After a brief intermission, Norman Hammond chaired Session Two. A discussion concluded each session.



James Wiseman opens the program with a few comments about the program and an introduction of the guest speakers.



Session One

James R. Wiseman, *Space-Age Archaeology in Northwestern Greece*
Curtis N. Runnels, *Greece Long Before the Greeks: Pursuing the Palaeolithic*

Paul Zimansky, *Archaeology and the Gulf War: A Visit to Iraq*

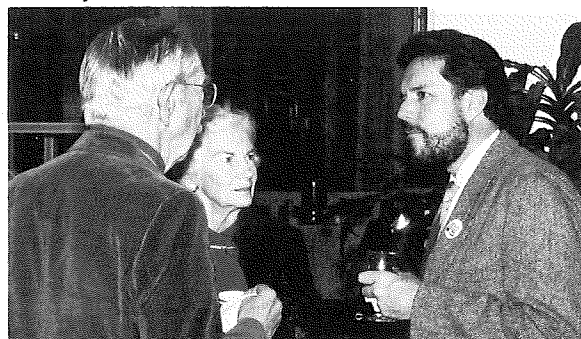


Session Two

Clemency Chase Coggins, *Mapping a Sacred Landscape at Maya Dzibilchaltún*

Patricia A. McAnany, *Maya Ancestor Veneration at K'axob, Belize*
Norman Hammond, *Still Seeking the Earliest Maya*

The program ended with a reception in the Stone Science Library.



Center Members, Bill and Betty Ruf (left) chat with Curtis Runnels at the reception following the Old Worlds, New Worlds Program.

The Department of

A Celebration of Archaeology

The Department of Archaeology became ten years old, celebrating a special series of programs throughout the year, ending on Saturday, October 31, with "Old Worlds, New Worlds." The Department of Archaeology and illustrated lectures on current fieldwork. The Provost of Boston University, and Martha Joukowsky, welcomed the audience with opening addresses, the speakers were introduced by James Wiseman, Chairman of the Department. The great support and encouragement of archaeology by the Department are also substantiated by members of the Department are also substantiated by the *Context*. Photos by Michael Hamilton.

Welcoming Address by Jon Westling

Jon Westling, an historian, joined Boston University in 1974 as Assistant to the President. Since then he has served as Vice President for Academic Affairs, Executive Vice President, Acting President, and Provost. He is also an accomplished and engaging speaker, as the following text shows, and an admired participant in Shakespearean readings.



Archaeologists

by Jon Westling

Welcome to this "Celebration of Archaeology" on the occasion of the tenth anniversary of the Department of Archaeology at Boston University. We have a great deal to celebrate: from discoveries in the Old World Paleolithic to new light on the rise and efflorescence of Mayan civilization, from the development of important new field techniques to the furtherance of international efforts to conserve archaeological resources. The Boston University Department of Archaeology, in its one decade of formal existence, has become a fertile center of contemporary archaeological research.

To initiate the series of events with which the Department will celebrate its tenth anniversary, the Department has organized "Old Worlds, New Worlds," today's review of some of its faculty members' recent fieldwork.

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Archaeology is ten years old!

Archaeology at Boston University

...d this past summer and to mark the anniversary, is pre-
...1992-93 academic year. The celebration was inaugurated
...lds," a program that included exhibits on New World
...work by several members of the faculty. Jon Westling,
...President of the Archaeological Institute of America,
...texts of which are published in the following pages. They
...Department of Archaeology, who also acknowledged the
...President John R. Silber. The results of field research pre-
...sents of reports published in this and the preceding issue of

Welcoming Address by Martha Sharp Joukowsky

Martha Sharp Joukowsky is Professor of Old World Archaeology and Art at Brown University and the President of the Archaeological Institute of America. She is also the author of the standard text book on techniques of field archaeology, A Complete Manual of Field Archaeology.



Old Worlds, New Worlds

by Martha Sharp Joukowsky

Provost Westling, Faculty, students, Ladies and Gentleman, it is indeed a pleasure to be here today in celebration of the Tenth Anniversary of Boston University's Department of Archaeology, and I am honored that the Department has invited me to preside over the first half of the presentations. All of you here are aware of the tremendous success of this program, that it is marked by exceptional diversity and range that have led to important contributions to the field of archaeology. Having watched the development of this program since its inception ten years ago, I would like to tell you what it has come to mean to me over the years.

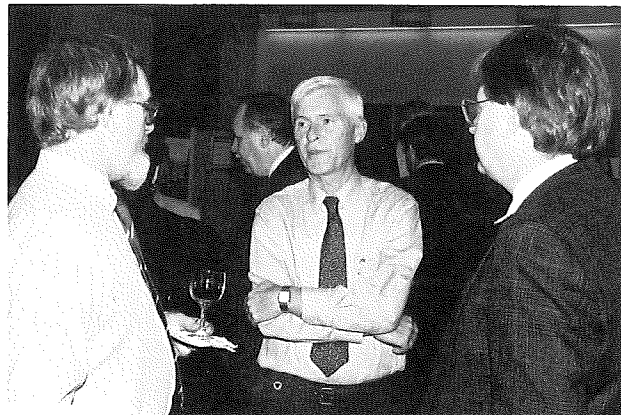
Since its founding, the program has not only been dedicated to its role as teacher, but to establishing, maintaining and increasing open dialogue between archaeologists and other programs around the world. Excellence

continued on page 18

Milestones in Archaeology at Boston University

- 1974** Founding of the *Journal of Field Archaeology* by James Wiseman.
- 1974/75** Introduction of interdepartmental archaeology courses at a field school in New Hampshire. First interdepartmental archaeology course on campus, Introduction to Archaeology, jointly taught by Creighton Gabel (Anthropology) and James Wiseman (Classical Studies).
- 1979** Interdepartmental academic programs approved for B.A., M.A., and Ph.D. in Archaeology.
- 1980** Founding of the Center for Archaeological Studies. NEH Pilot grant for enhancement of the archaeology curriculum.
- 1981** Founding of the Office of Public Archaeology. First issue of *Context* published.
- 1982** Founding of the Department of Archaeology.
- 1983** Headquarters of the Archaeological Institute of America and the American Journal of Archaeology established at Boston University upon the invitation of President John R. Silber. *Context and Human Society Lecture Series* founded by CLA's Humanities Foundation.
- 1985** Founding of the Center for Remote Sensing by the Departments of Archaeology, Geography, and Geology.
- 1987** Relocation of Department of Archaeology and AIA to Stone Science Building, with expanded facilities. Creation of the Stone Science Library.
- 1991** W. M. Keck Foundation awards grant to create a Professorship of Remote Sensing and Archaeology. Grants from the W. M. Keck Foundation to the Center for Remote Sensing in 1985, 1986, and 1988 also had significant impacts on the archaeology programs.
- 1992** Celebration of the tenth anniversary of the Department of Archaeology. Fulltime faculty lines now number twelve, in addition to staff, adjunct, and research appointments.

Norman Hammond chats with Creighton Gabel and Thomas Killion at the reception following the ten-year celebration program.



(Joukowsky) continued from page 17
in scholarship can only be found through constant exchange of new ideas and information, and programs of learning that remain on the cutting edge of the field can only be born of such exchange. I am proud to see that this Department has never ceased to strive towards this goal, and indeed that it has found success.

In what ways has the Department fostered such exchange? Not only in the excellence of the *Journal of Field Archeology*, but also in the excellence of its faculty and, in turn, their scholarship. Close at home, Boston University provides space for the headquarters of the Archaeological Institute of America, and the relationship between the Institute and the program has strengthened over the years. As President of the Institute, I have seen firsthand the incredible benefits to both, and with the renewed agreement between the AIA and the University, it is a relationship that now will continue to grow, bringing to the academic world and the public the fruits of a combined effort to achieve excellence.

This same scholarly exchange, I am proud to say, has existed since the beginning between this Department and Brown University. The existence of open dialogue is essential if we want to maintain high standards of scholarship, and since the founding of this Department and program, its members have never ceased to work towards that end.

It is such dedication that makes the Department's program as diverse and far-reaching as it is. The field reports that you will hear today, although they will be brief, reflect this remarkable commitment to learning, to exploring new worlds as well as old worlds, and to communicating knowledge. From Mesopotamia, to Greece, and across the ocean to South America, and in time from ancient to modern, we will learn today of the latest findings in archaeology, and it is all thanks to this Department which is deserving of the highest praise.

Thank you Jim Wiseman, congratulations Boston University, President Silber, and Provost Westling. You have much to be proud of.

(Westling) continued from page 16

Honesty compels me to report, however, that this occasion is a somewhat scaled-down version of the celebration which Professor Wiseman first proposed to me. Instead of the display of athletic prowess by Department members competing in javelin, discus, and wrestling which Jim had hoped to stage at the conclusion of the first group of presentations, we are going to have to limit ourselves to the graduate students doing bungee-jumps from the roof of the Stone Science Building. We have also reluctantly had to abandon our planned reenactment of a battle between Palenque and Yaxchillan, because our raid on Cambridge-initza failed to produce the requisite number of war captives for an auspicious sacrifice. We will instead, at the conclusion of the second group presentations, be entertained by the Department of Archaeology chorus in a rendition of *Pophul Vuh*, in a new musical setting by Norman Hammond, after which there will be a reception and (needed) refreshments in the Stone Science Library.

The history which we are celebrating begins officially in 1982 when the Department of Archaeology was formally organized as part of the College of Liberal Arts. From that point, archaeology at Boston University was not adjunct to any other discipline. It was not part of Classics or Anthropology or some other department—as is almost universally the case among the archaeology programs in this country. This meant that the Department was free to shape its own intellectual priorities, rather than fill in the spaces for archaeological train-

ing that occur in many other disciplines. As a consequence, it became a department with an expansive view of archaeology that has helped it to attract some of the most energetic, imaginative, and enterprising scholars in the field, and in turn some of the most promising students. Archaeology at Boston University has been both multi-disciplinary and home to scholars whose inquiries range across all the inhabited continents and all times from earliest human prehistory to the recent industrial past.

The new Department quickly received a resounding endorsement from the University and from the profession when, in 1983, the Archaeological Institute of America accepted President Silber's offer of facilities at Boston University. The AIA's relocation from New York to this campus meant that one of the discipline's most highly regarded scholarly journals would be published here, under the distinguished editorship of our colleague, Professor Fred Kleiner. And we are delighted that this year President Silber and the AIA signed an agreement which will keep the Institute at Boston University for at least another ten years and, we hope, for a long time to come.

In celebrating the first decade of the Boston University Department of Archaeology, we are, of course, drawing one of those imaginary lines that separates the continuum of the human past into distinct segments. This decade now ending is no doubt the early classical period of Boston University archaeology. The work currently underway in the Department will serve as the founda-



One feature of the ten-year celebration was a tour of the Department's laboratories. Professors Mary Beaudry and Clemency Coggins (center) examine artifacts with Boston University graduate students (l-r) Karen Metheny, Ellen Berkland, and Marie Schneider.

Russian Archaeologists at Boston University

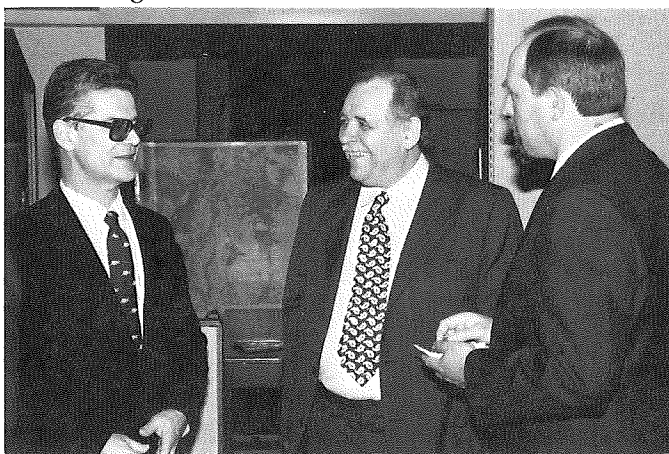
by Evelyn LaBree

The Department of Archaeology in October and November hosted two Russian archaeologists, Valeri I. Guliaev, Deputy Director of the Institute of Archaeology in the Russian Academy of Sciences, and Gennadi E. Afanasiev, Chief of the Department of Rescue Archaeology in the same institute. During their visits they both gave public lectures, consulted with faculty and students, and explored the possibility of collaborative archaeological projects between Boston University and the Russian Academy of Sciences in Moscow. Possible joint endeavors that were discussed included archaeological survey and excavation on the north shore of the Black Sea, cultural resource management, and applications of remote sensing and GIS (geographic information systems) in archaeology.

Their lectures, presented as a part of the Department's year-long celebration of its tenth anniversary, touched on all of those topics. Dr.

Afanasiev spoke on "Russian Legislation on the Protection of Archaeological Sites and Its Practical Use," and Dr. Guliaev discussed "New Discoveries in the Greek Colonies on the North Shore of the Black Sea."

The appointment of Guliaev as Visiting Scholar in the Department coincided with his designation as the President's Lecturer for 1992 by the Archaeological Institute of America.



Professor James Wiseman (center) shares a laugh with Professors Guliaev and Afanasiev (l-r) at the reception held after the Department's ten-year celebration.

tion for even more splendid scholarly and scientific accomplishments in the decades ahead.

In any case, behind any designated historical epoch, including this early classical period of Boston University archaeology, there is always a pre-history. I thought it might be in the spirit of this occasion to offer some remarks on what might be called the archaic period of Boston University archaeology.

The crucial date is 1973, the year when, according to inscriptions recently found in catacombs beneath 145 Bay State Road, one James (or possible "Jaguar") Wiseman, migrated from the satrapy of Texas to Boston University where he became a member of the Classical Studies Department. Almost at once, with the energy that barbarian invaders so often infuse into older, more advanced civilizations, he began to pull together the pieces of archaeological concentrations that were scattered

throughout the University. Before that, students were only able to patch together archaeological concentrations from courses in Classical Studies, Anthropology, American and New England Studies and the School of Theology. The University began offering a B.A., M.A., and Ph.D. in archaeology in 1978.

Unfortunately, however, even extensive field work has failed to find much evidence for the years before 1971—the pre-historic period, or Dreamtime—of Boston University archaeology. A hoard of coins bearing the likeness of the Emperor Lincoln has been dated to this period. It is believed to be the University's treasury from that time. We also have fragments of the legendary epic, *The Silbertiad*, which tells of the golden age when the earth was ruled by scholars and students sought knowledge for the sake of knowing. Those who have followed the literature on this fascinating topic will know that there is an

The prestigious lectureship involved travel by Guliaev to eleven North American cities where he lectured on a variety of topics to societies of the AIA. His varied research interests range from Precolumbian America to the archaeology of Russia, and he has participated in numerous archaeological projects in Cuba, the Mexican Yucatan peninsula, and in the Ukraine and Russia.

During interviews at Boston University, both Guliaev and Afanasiev expressed particularly grave concern about the possible adverse effects the transfer of state owned land to private ownership

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on-going dispute about whether this represented the ancients' view of their past or a millenarian vision of their future.

There is, however, no dispute about the present. The Department of Archaeology has established an international reputation in both Old World and New World Archaeology. The work which we will hear about today is in the forefront of archaeological field research and will, in time, help to transform scholarly views of the human past in the ancient Near East, the Mediterranean, and Meso-America.

We take great pride in our Department of Archaeology. It has been created by the intelligence, enthusiasm and dedication of many remarkably talented people—many of whom are present today. We are grateful to all who have had a hand in this important work, and I am very pleased to welcome you to this celebration of scientific achievement.

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might have on the preservation of the cultural heritage of Russia and other countries in what is now the Commonwealth of Independent Nations. "We must not destroy our cultural heritage in the process of changing from the old Soviet system," Guliaev commented. "We need at least two or three years to conduct extensive surveys of the endangered sites."

Guliaev cited as examples of endangered sites Kamenskoye, a Scythian fortress north of the Black Sea that was occupied in the fifth-second centuries B. C., and numerous burial barrows belonging to ancient nomadic tribes that are known throughout the countryside. Kamenskoye is eroding and in need of conservation, and hundreds of burial barrows are being destroyed every year because official measures have not been taken to protect them. The barrows, some of which probably represent the burial places of important chiefs, are famous for the gold and bronze objects found in them, like the Kostromskaya Barrow in the Kuban region to the east of the Black Sea. Some of the works of art found there, which were illustrated by Guliaev in his lecture, were made in the Greek colonies on the coast of the Black Sea, while others may have been fashioned by Greek craftsmen working for Scythian chieftains.

Afanasiev, who holds the highest-ranking position in rescue archaeology in Russia, provided details in his talk both about the dangers to archaeological sites and efforts now underway to protect them. He pointed out that the protection of historic and cultural monuments has been undertaken in Russia by the Russian Ministry of Culture and Tourism; by Ministries of Culture in the autonomous re-publics, and by various archaeological departments in the territories and regions. New legislation, he said, has been proposed to President Boris Yeltsin and the Russian Parliament that would extend governmental protection to archaeological sites. In Afanasiev's view, preserving the cultural heritage is more than just a task for

Archaeology in Northern Ethiopia

by Kathryn Bard

In June, 1992, I was in Ethiopia with Michael DiBlasi, my colleague in the African Studies Center, Boston University. We were there on a grant from the U.S.I.A. as Visiting Scholars in the Department of History and the Institute of Ethiopian Studies, Addis Ababa University. The visit was part of a formal affiliation agreement between Boston University and Addis Ababa University. Our time was divided between Addis Ababa, where we lectured at the university and the National Museum, and Axum in northern Ethiopia, where we evaluated the possibility of a research project directed at the problem of state formation in NE Africa.

Cooperative Programs in Ethiopian Archaeology

While in Addis Ababa I had numerous meetings with Dr. Kassiy Begashaw, General Director of the Center for Research and Conservation of the Cultural Heritage in Addis Ababa—the official under whom all archaeological research in Ethiopia is conducted. At Addis Ababa University I was also involved in Department of History meetings to plan a M.A. program in archaeology. Two undergraduate courses in archaeology are now being taught at the university, but an undergraduate

archaeologists; it is a community science.

Both Afanasiev and Guliaev said that they would like to see a system similar to the federally run U. S. National Park Service instituted in Russia to preserve sites threatened by privatization or economic expansion. They discussed this approach and other American models especially with Ricardo Elia, Director of Boston University's Office of Public Archaeology.

Relations between Russian and Boston University archaeologists have been developing for some years. Upon the invitation in 1987 of James Wiseman, who was then President of

minor in archaeology also needs to be implemented for history majors who wish to become archaeologists.

Boston University has an affiliation agreement with Addis Ababa University for the exchange and training of scholars, not only in archaeology but also in other disciplines such as history and anthropology. A new affiliation agreement will soon be signed between Boston University and the Oriental Institute of Naples for cooperation in research, especially in Ethiopian and African studies. As part of this agreement I will be excavating with the Italian mission in late spring, 1993, at the site of Beta Georgis, on a plateau above the city of Axum where early Axumite stelae and stone tumuli are located. I have also been invited to lecture at the National Museum in Addis Ababa as part of the training program for Ethiopian archaeologists.

Ethiopia's Archaeological Heritage

Ethiopia has the richest archaeological heritage in sub-Saharan Africa, from fossil remains of early man to the evolution of an early indigenous state centered at Axum. Because of the long war in northern Ethiopia, archaeological fieldwork had not been conducted there since 1974. After World War II and before the Marxist

the Archaeological Institute of America, a Soviet delegation, including Guliaev, participated in a special symposium on "Perspectives on the Origins of the State" at the AIA's annual meeting in New York city. And in June 1992, Norman Hammond visited Moscow as a guest of the Russian Institute of Archaeology. Wiseman plans to accept during the coming year the invitation of Dr. Guliaev to visit the Institute in Moscow and some of the Greek colonies on the Black Sea.

Evelyn LaBree is currently working on a Master of Science degree in Journalism at Boston University, and is Administrator of the Department of Archaeology.

government came to power in 1974, Axum had been the focus of extensive fieldwork by archaeologists from England, France, Italy, and the United States. Earlier excavations had been done there by German archaeologists in 1906. As the capital of the early Ethiopian state, Axum was an important symbol for the monarchy, and research there had been purposely ignored under the Marxist regime. But Axum represents one of the early African civilizations, and significant questions about its origins, evolution, and collapse remain unanswered.

The earliest historical evidence of Axum recorded in classical sources goes back to the first-second centuries after Christ. In the third-sixth centuries A.C. the state of Axum was a major trading partner of the Roman and Byzantine empires, in a trading network that extended from the Mediterranean Sea to India via the Red Sea. The Axumite state accepted Christianity in the fourth century A.C., and highland Ethiopia has remained Christian to the present. In

the early sixth century A.C. Axum was the most powerful state in the region of the southern Red Sea. Its power started to decline in the seventh-eighth centuries A.C., and the final disappearance of the kingdom probably occurred in the ninth-tenth centuries A.C.

In spite of the importance of the Axumite state in Late Antiquity, the process of state formation in northern Ethiopia is still largely unknown from an archaeological point of view. This process has been investigated mainly by historians and linguists, who have suggested that the ancient Ethiopian state arose as a consequence of migrations from South Arabia onto the Tigrean plateau in northern Ethiopia during the late second and early first millennium B.C.

Archaeologists, on the contrary, have stressed the reconstruction of the cultural sequences of the Axum region, but the late prehistory has been neglected. Extensive excavations have only been conducted at a few large historical sites in the Axum

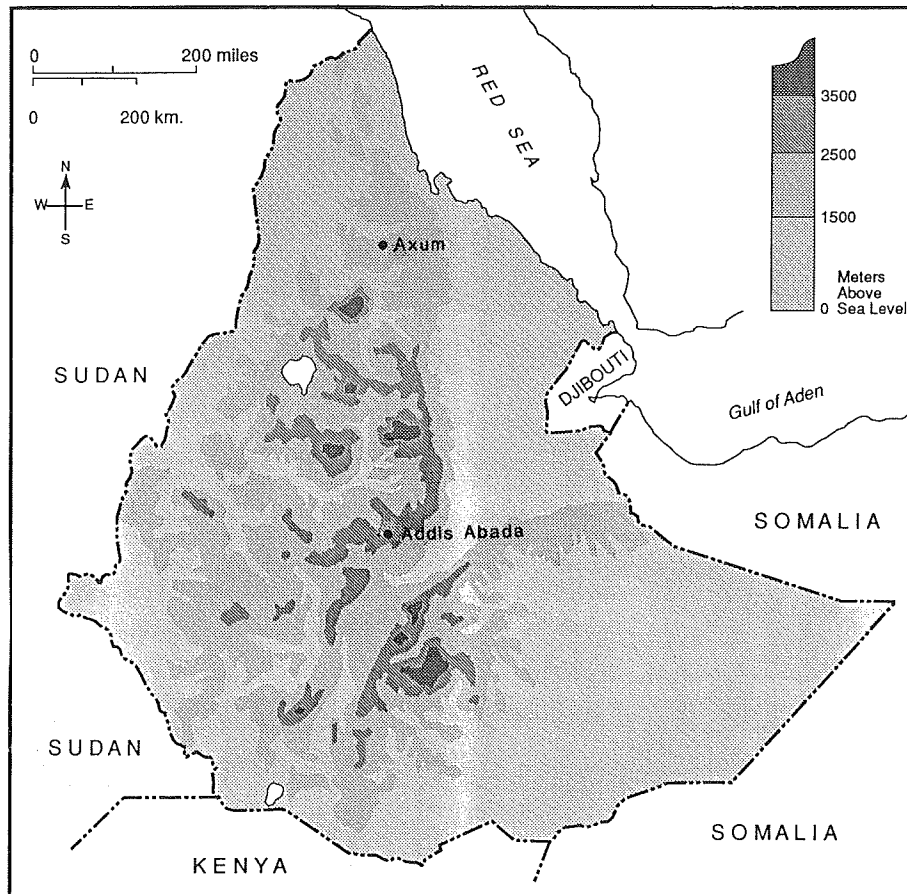
region (Axum, Yeha, Matara, and Adulis). No systematic archaeological surveys have been done in the Axum region, except for the 1974 work of Joseph Michels of Pennsylvania State University.

On the basis of excavations at the major sites, two main cultures have been distinguished: pre-Axumite culture and Axumite culture, which seem to have originated indigenously. The pre-Axumite culture (about 600 B.C. to 100 A.C.) corresponds to the early evidence of urban society in the Horn of Africa. In the early stage of this culture (about 400-300 B.C.) the population of northern Ethiopia was affected by strong influences from South Arabia, and there is monumental and epigraphic evidence of an early state. The Axumite culture (between 100-200 A.C. and 800-900 A.C.) basically corresponds to the kingdom of Axum.

Michels's archaeological survey in the region between Axum and Yeha, about fifty kilometers east of Axum, has been the only attempt to investigate the process of state formation in terms of settlement patterns. His results have yielded much information, but still leave many unanswered questions. One aim of our visit to Axum was to evaluate the possibility of resuming the systematic study of the settlement pattern around Axum. We visited several sites located during Michels's survey which date to late pre-Axumite times, and assessed their potential for excavation. One site in particular, Adi Ater, located SE of Axum, seemed to be promising as it remains undisturbed, and we thought that it may shed light on the regional processes of transformation.

As a result of our visit to Axum, discussions have begun with Rodolfo Fattovich of the Oriental Institute, Naples, and David Phillipson of the University of Cambridge for an international archaeological research project on the rise of complex society and state formation at Axum. Such a project needs to include paleoenvironmental studies of the region and investigations concerning the impact of human activity on environmental

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Map of Ethiopia: highland zones.

Boston University Celebrates Massachusetts Archaeology Week

by Sara Mascia

The Department of Archaeology sponsored a number of activities during the first annual Massachusetts Archaeology Week, June 6-14, 1992. This special week was designated by the Massachusetts Historical Commission in an effort to educate



Ellen Berkland, one of the coordinators of the exhibits and a graduate student in the Department of Archaeology, reviews some artifacts with students from the Williams School.

the general public about archaeology and historic preservation in Massachusetts. Activities at Boston University included an exhibit at the George Sherman Union Gallery, lectures, laboratory tours, archaeological site visits, and workshops

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degradation. Remote sensing and geoarchaeological work will be particularly important in this aspect of the project. More systematic surveys are needed in order to have a fuller understanding of settlement patterns during pre-Axumite and Axumite times. Selective excavation of sites also needs to be undertaken for more detailed information. This project has the full cooperation of the Center for Research and Conservation of the Cultural Heritage, Ministry of Culture, Addis Ababa, and we look forward to contributing to the extensive fieldwork that will be undertaken at Axum in the near future.

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

for the Chelsea School System.

The archaeological exhibit, "Boston University Looks Back in Time," was set up in the University Gallery by Ellen Berkland and Sara Mascia, with assistance from Timothy Scarlett, and ran from June 8 to September 1. The display included eighteenth-century domestic artifacts from the Spencer-Pierce-Little site in Newbury, Massachusetts; nineteenth-century artifacts from the Boott Mills Boardinghouse site in Lowell, Massachusetts; and prehistoric pottery and tools from the Department's collection. A series of photographs from various archaeological projects conducted by faculty members and a videotape of excavations at the Spencer-Pierce-Little site allowed visitors to experience what is involved in conducting an archaeological excavation. The gallery opening on June 8 was attended by local archaeologists, members of the Center for Archaeological Studies, students, and representatives of the Massachusetts Historical Commission.

On June 8, Professor Mary C. Beaudry of the Archaeology Department presented a lecture entitled "Historical Archaeology and the Lives of Women." The lecture focused on the work she has conducted over the past ten years at various historical sites in Massachusetts. Al B.

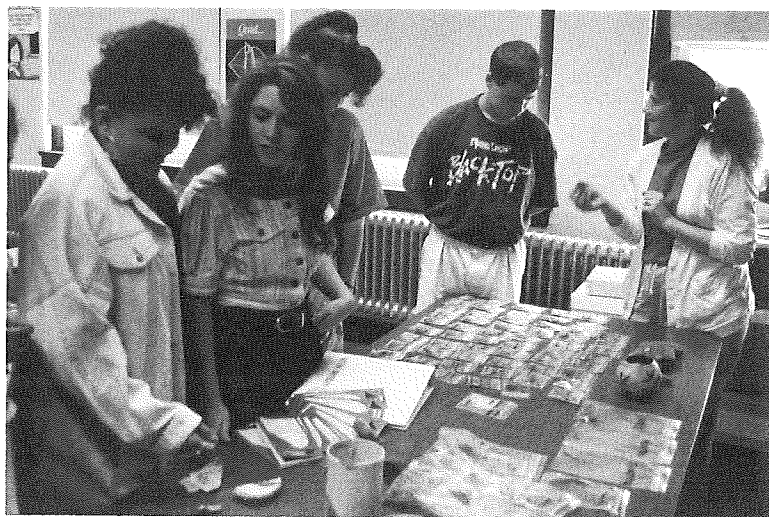
Wesolowsky, Managing Editor of the *Journal of Field Archaeology* and a Research Associate in the Department, presented a second lecture on June 10 entitled "Paupers' Bones: Excavation and Analysis at the Uxbridge Almshouse Cemetery, Uxbridge, Massachusetts."

The Archaeology Laboratory Open House on June 10 also drew a large crowd. Laboratory supervisor Nicole Missio offered a tour of the research lab, which included displays of artifacts and a discussion of the various procedures employed by the laboratory staff in processing, cataloging, and conserving artifacts.

On Saturday, June 13, Dr. Beaudry and Sara Mascia also held an archaeology open house at the Spencer-Pierce-Little site in Newbury. The site, settled in 1635, is one of the oldest continuously farmed sites in Massachusetts and is the location of the Boston University Summer Field School in Historical Archaeology. The open house was co-hosted by the Society for the Preservation of New England Antiquities. Over sixty visitors toured the house, viewed the excavations, and participated in a ceramic workshop. The workshop allowed visitors to attempt to piece together many of the artifacts that were recovered on the historic site.

The Office of Public Archaeology (OPA) sponsored a series of workshops and lectures for the Chelsea Public School System as part of Boston University's continuing collaboration with the Chelsea Public Schools. The school visits were

Sara Mascia, far right, describes some of the artifacts from the Spencer-Little-Pierce site to students from Chelsea High School.



Faculty News

Mary Beaudry attended the 12th annual conference of the Australian Society for Historical Archaeology, November 9-11, 1992, held in Sydney. She presented an invited keynote address, "Historical Archaeology: Local Context, Global Perspectives," and served as discussant for three of the conference sessions. In December, she delivered the paper, "Cowgirls with the Blues, Two: The Experience of Women in Historical Archaeology," at the American Anthropological Association meetings held in San Francisco, California. On September 17, 1992, she gave an informal talk to the Boston Chapter of the Massachusetts Archaeological Society on "Current Findings at the Spencer-Pierce-Little Farm."

Beaudry also organized and chaired a session for graduate students for the meeting of the Society of Historical Archaeology held in Kansas City, Missouri in early January. The session was entitled "Borrowing Creatively and Selectively: Experimenting with Analytical Models of Complexity," and Professor Beaudry presented a paper at the session on "The Handmaid's Lament."

The Certificate Program in the Culinary Arts at Boston University

inspired by the spirit of education and the desire to present a "hands on" look at the field of archaeology. The theme for the week was "A Look Back in Time" and Chelsea, with its rich prehistoric and historical background, provided an ideal setting for these workshops. During Massachusetts Archaeology Week, Ellen Berkland and Sara Mascia went to Chelsea High School and the Williams School (grades 4-6) to meet with students and faculty. At each school several one-hour workshops were presented. The workshops began with a three-part slide lecture offering, first, a broad overview of both prehistoric and historical archaeology; second, a review of archaeological investigations conducted by the OPA in Massachusetts; and third, a discussion of what Chelsea was like before and

has invited Professor Beaudry to teach two sessions on Theory and Symbolism of food during the Spring 1993 semester of this academic year.

In July, 1992, Clemency Coggins, Adjunct Associate Professor in the Department of Archaeology, was sent to Guatemala for a week by the United States Cultural Property Advisory Committee, of which she had been a member for ten years. There she interviewed archaeologists and officials, and wrote a report on the condition of archaeological sites in the State of Peten. The evaluation was necessary because the United States, in response to Guatemala's Emergency Request, has agreed to prohibit the importation of Maya antiquities from Peten into the United States.

In September, Clemency Coggins was invited to give a talk about the seminal role of Yale Professor Emeritus George Kubler in the study and teaching of ancient American art on the occasion of his receiving the George Silvert Award from the Latin American Studies Association at their meetings in Los Angeles.

In October, the Peabody Museum of Archaeology and Ethnology at Harvard University published the Museum's final Memoir (vol. X:3) on the Cenote of Sacrifice, entitled *Artifacts from the Cenote of Sacrifice*,

after European settlement of North America.

Following the lecture, students were given an opportunity to examine artifacts from the type collections housed at Boston University. The artifacts included prehistoric lithics from all over the state and a selection of historical materials from Plymouth and Newbury. The Chelsea students were interested in learning about how each of the objects displayed was made and had endless questions regarding their use by past peoples. The students were so enthusiastic about archaeology and learning about the past that the teachers invited us to return again and spend more time with the students.

Sara Mascia is a Ph.D. candidate in historical archaeology in the Department of Archaeology.

Chichen Itza, Yucatan: Textiles, Basketry, Stone, Bone, Shell, Ceramics, Wood, Copal, Rubber, Other Organic Materials, and Mammalian Remains. Coggins edited the volume and was the author of approximately one-half of the book. Gordon R. Willey, Research Associate of the Department of Archaeology at Boston University, wrote the Foreword.

Ricardo Elia attended the inaugural meeting of the US/ICOMOS International Specialized Committee on Underwater Cultural Heritage in Sydney, Australia, held November 15-19, 1992. As part of the inaugural meeting of the Committee, a public workshop was held by the Committee on Underwater Cultural Heritage, primarily devoted to identifying critical areas of concern.

Norman Hammond has accepted an offer from the International Commission for a New Edition of the History of the Scientific and Cultural Development of Mankind to contribute a chapter entitled "The Classic Period of Maya Civilization" to Volume III of the series.

On April 7th, 1992, Julie Hansen presented a talk to the Boston University Archaeology Club on Plants and Archaeology in the Old World.

Professor Hansen is also coordinating the Sixteenth Annual Ethnobiology Conference, which will be held on March 11-13, 1993, at Boston University. Sessions will include a special one-day symposium on the effects of foreign contact on native populations. With a diachronic perspective, papers will address such issues as the introduction of new plant or animal species, methods of subsistence, foods and food preparation, as well as diseases and the evidence for changes in the native populations brought about by these contacts. Papers may cover prehistoric contact between hunter/gatherers and agriculturalists, historical invasion or colonization, or modern problems arising from such contact. Paper and poster sessions will continue through the following two days, concluding with a buffet dinner on the last evening of the conference.

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Volunteers are needed to run the slide projectors, and to attend the registration and refreshment tables. All volunteers will have free admission to the conference. For further information, please contact Professor Julie Hansen, Department of Archaeology, Boston University, 675 Commonwealth Avenue, Boston, Massachusetts 02215.

Patricia McAnany received a grant from the National Science Foundation (\$3,700) to assist undergraduates in research to prepare senior distinction papers. She was also appointed to two national advisory grant review panels: the National Science Foundation Archaeometry Panel and the National Endowment for the Humanities Archaeology Panel.

Anne Yentsch, Research Associate in the Center for Archaeological Studies, presented a lecture entitled "Eighteenth Century Town and Plantation Landscapes" to Center members, faculty, students and staff on April 16, 1992.

James Wiseman was elected a General Trustee of the Archaeological Institute of America at its annual meetings held in New Orleans, Louisiana on December 27-30, 1992.

The first volume of the series being published by Princeton University Press on the results of the joint Boston University/Yugoslav archaeological investigations at Stobi, Yugoslavia arrived in June, 1992. The author of the volume, which dealt with the pottery from the excavations, is **Virginia Anderson-Stojanovic**. The Foreword was written by **James Wiseman**, the General Editor of the series, who directed the Project.

AlumNews, Student News

David B. Landon (Ph.D. 1991), Assistant Professor in the Department of Social Sciences at Michigan Technological University, has had articles accepted for publication in the *Journal of Archaeological Science* and *The International Journal of Osteoarchaeology*; his revised dissertation is under review by Plenum

Context and Human Society Lectures

George Bass to Speak on Nautical Archaeology

George F. Bass, George T. and Gladys H. Abell Professor of Nautical Archaeology at Texas A&M University, will give three public lectures on "Nautical Archaeology in the Mediterranean" during the week of March 15, 1993. The visit to Boston University by Bass, one of America's most distinguished archaeologists, to lecture in the Context and Human Society Lecture Series is a part of the continuing celebration of archaeology that marks the tenth anniversary of the Department of Archaeology at Boston University.

The lectures will all be held in Room B50 of the Stone Science Building, 675 Commonwealth Avenue, from seven until eight in the evening on the following dates.

Monday, March 15: *The Bronze Age Shipwreck at Uluburun, Turkey*

Tuesday, March 16: *A Shipwreck of the 11th Century A.C. at Serçe Limani, Turkey.*

Thursday, March 18: *Exploration, Excavation, and Conservation of Underwater Sites.*

Professor Bass will also participate in an open seminar on Wednesday, March 17, at 10 a.m. in CLA Room 202. The seminar, *The Phoenicians of Homer in the Light of Nautical Archaeology*, will be moderated by Kathryn A. Bard and will feature other invited participants.

Bass was the first archaeologist to advocate the application of modern, scientific archaeology to ancient shipwrecks, and many of the techniques for underwater archaeology that have now become standard were developed under his guidance. He has directed some of the most spectacularly successful underwater archaeology projects in the world, including the current work on the Bronze Age shipwreck off Uluburun in Turkey. He is the founder of the Institute of Nautical Archaeology and the Director of the Graduate Program in Nautical Archaeology, which he also founded, at Texas A&M University.

He is the author of numerous articles and books, and the recipient of distinguished awards, including the John Oliver La Gorce/National Geographic Society gold medal (1979), the Lowell Thomas Award of the Explorers Club (1986), and the Gold Medal for Distinguished Archaeological Achievement from the Archaeological Institute of America (1986).

The Context and Human Society Lectures are made possible by a grant from the Humanities Foundation of the College of Liberal Arts.

Press. He also presented a paper entitled *Breaking the Subsistence Barrier in the Past and in the Present* at the meetings of the Society of Historical Archaeology in Kansas City in January, 1993.

Conrad M. Goodwin (Ph.D. 1987) published with V. Judson Harward an article, "Multimedia Computing in Archaeology," in the journal *Brises*. He reports that his work as archaeological project director for the

International Archaeological Research Institute, Inc., on sites in downtown Honolulu is resulting in evidence of Hawaii's earliest colonial homesites.

Elizabeth Peña (Ph.D. 1990) is spending the year in Rome with her husband, Ted, and daughter, Violet; Liz is researching post-medieval Italian ceramics, a project she hopes will provide useful comparative material for historical archaeologists in

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Center Activities: Spring and Fall 1992

In addition to the Department of Archaeology's ten-year celebration festivities (see this issue, pages 16-17), the Center for Archaeological Studies and Department of Archaeology sponsored several other events during the spring and fall of 1992, some of which are highlighted below. All photographs shown were taken by Michael Hamilton.



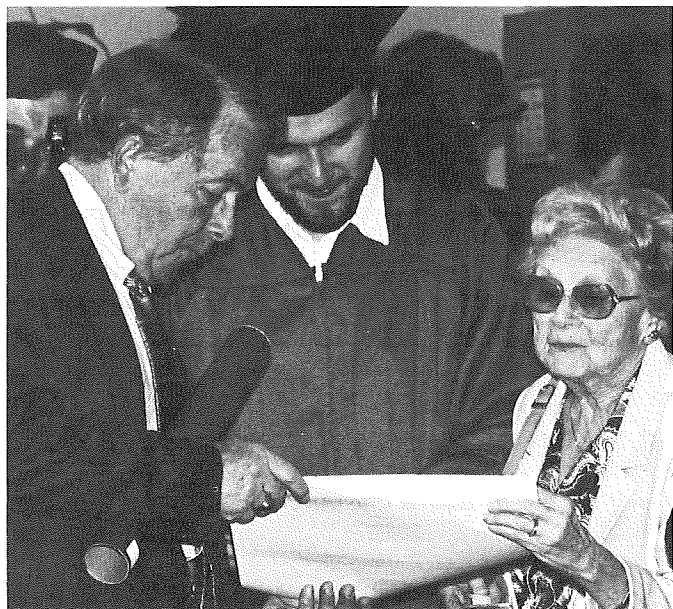
Before his lecture on GIS and Prehistory: Recognizing Patterns of Iroquois Settlement in April, 1992, Dr. Robert Hasenstab of Rutgers University discusses GIS mapping techniques with Tom Tartaron, Journal of Field Archaeology Fellow for 1991-92.

Dr. Anabel Ford, Adjunct Research Professor of the University of California at Santa Barbara gave a talk to students and faculty at a brown-bag lunch on "Maya Residential and Settlement Patterns: Recent Research in the Belize River Area," on Tuesday, December 15, 1992.



Dr. Daniella Bar-Yosef of the Peabody Museum at Harvard University points out to Paul Zimansky the area on the map where she has recently worked prior to her lecture on "Shell Bead Production in the Sinai Neolithic," which she presented on March 24, 1992.

Professor Paul Zimansky (r.) congratulates May 1992 Magna Cum Laude graduate, Ingrid Martonova (second from right), who was also awarded the College Prize for Excellence, while her mother, Viera, sister, Andrea, and younger brother, John (wearing sister's hat), look on.



John Walkey, who graduated Cum Laude, shows his Bachelor's Degree diploma to his father, Al, and his grandmother, Esther following the graduation ceremonies held in the Stone Science Library in May, 1992.



Snapshots for the family album (left-right). Cum Laude graduates, John Walkey and Mathew Bobo pose for family pictures with Magna Cum Laude graduate, Elaine M. Griener at the conclusion of the graduation ceremonies.

The Law and a Solitary Cranium

by Al B. Wesolowsky

One consequence of the Indian Rights movement of the past few decades has been legal acknowledgment of the cultural value ascribed to human remains by Native Americans who claim spiritual, and even consanguineous, ties to the bones. Although historical (in the sense of being recognized and identified) cemeteries in North America have long been afforded protections under common law against vandalism and unauthorized exhumations, only in recent years has some measure of similar protection been extended to prehistoric cemeteries, or to lost or abandoned (yet still "historical") cemeteries of uncertain age.

And also only recently have archaeologists in North America encompassed the excavation of historical cemeteries within their research interests. The legal and cultural protections of known cemeteries had made such resources largely inappropriate for archaeological investigation. Exhumation and relocation of historical graves, and even of entire cemeteries, were routinely handled by morticians who, understandably, were not concerned with archaeological information. They would simply open the grave and, had any coffin decayed, simply gather up the larger bones and place them into a container for reburial elsewhere.

Now, however, the archaeological potential of historical cemeteries is more widely recognized, and their removal (usually occasioned by a construction project) more often includes archaeological fieldwork of the same exacting standards of recovery and documentation that applies to prehistoric cemeteries.

These developments are all well and good for cemeteries—those more-or-less organized burying grounds—but what about chance finds of stray bones outside of any burial context? Not surprisingly, law enforcement agencies have a keen interest in human remains when the circumstances of death and deposition are

unclear. But if the remains are from some archaeological context, the law is content to turn the matter over to other agencies for final resolution. Boston University recently formed one of the last links in the chain of just such a resolution.

I received a telephone call in July of 1992 from the local office of the United States Fish and Wildlife Service to the effect that it had received a human cranium that had been found by chance on a federal wildlife refuge. Their immediate concern was advice on how to prevent further deterioration of the specimen pending analysis.

The first words out of my mouth were, "Do the police know about this?" I was assured that the Medical Examiner had already seen the specimen and had relinquished it as warranting no further attention on his part. In the course of advising the Fish and Wildlife Service on stabilizing the specimen, I learned a bit of the circuitous path it had taken to its door. Later, when I was asked to analyze the specimen, I was given access to police reports and documents from the Massachusetts Historical Commission in the matter; these explained how the law contended with this solitary cranium.

A man was clamdigging on an island tidal flat north of Boston one midsummer afternoon in 1992.

Har-vesting mussels at low tide, he noticed two small, white objects embedded in the mud. They were stuck fast and a few minutes of brushing away earth revealed them to be teeth, still attached to the upper jaw. A bit more matrix was

scraped away and he lifted his find from the mud, noting that there seemed to be no other bones present in the matrix. This was clearly more than he had bargained for on his clamming expedition.

He returned in his boat to the mainland and took his discovery to the local police, who in turn summoned the state police. Within two hours of the initial discovery a corporal of the Massachusetts State Police was interviewing the clamdigger. The clammer took the officers to the find-spot, but it was by then covered with high tide. Our corporal made some cogent observations regarding the specimen—"The teeth did not appear to have any fillings and appeared worn down"—and conveyed it to the office of the Medical Examiner in Boston.

A few days later the staff of the Medical Examiner informed the corporal that the cranium was likely that of a Native American and that they had transferred it to the Massachusetts Historical Commission for further examination. Soon after, the MHC spoke with the corporal, who could now end his report by commenting that the MHC "had determined that the skull was over one hundred years old and its ancestry was North American Indian. Case closed."

The MHC concluded that the specimen had been discovered on federal land, where federal law applied—in this case the Native American Graves Protection and Repatriation Act (Public Law 101-601; 104 Stat. 3048). Accordingly, the MHC informed the U.S. Fish and Wildlife Service that the cranium, likely falling under the law just cited, had been found on land managed by that federal agency.

The cranium was now transferred to the U.S. Fish and Wildlife Service, which needed a detailed examination



Adventures in Arkadia

by Stephen Agnew

Five years ago, while studying in Greece as a student of College Year in Athens, a friend and I had the chance to spend five days hiking in the middle of Arkadia. During our journey, we happened to stumble upon the modern village of Palaiokastro, where we camped for a night. After talking to the local farmers and informing them we were archaeology students, they began to spout tales of discoveries they had made over the years. One story referred to a tholos tomb and several other Mycenaean graves. Afterwards, at the American School of Classical Studies, I began to investigate their stories and found what the locals had told me to be true. Yet, there was much more than a tholos. There was an entire Mycenaean cemetery as well as remains of Mycenaean and Classical fortification walls. So began my fascination with a little -

known site in a remote part of Greece.

In the spring semester of 1992, with the help and advice of Professors Murray McClellan, Curtis Runnels, and James Wiseman, and of Dr. William Coulson, Director of the American School of Classical Studies in Athens, I received a permit from the Greek Ministry of Culture to study the remains at Palaiokastro (the ancient site of Bouphagion) in Arkadia for my Master's thesis. The object of the thesis is to compare the Mycenaean and Classical occupations at Palaiokastro, using historical as well as archaeological evidence.

The site of Palaiokastro is situated on a prominent hill overlooking the Alpheios River basin, northwest of Megalopolis in Arkadia. At first glance, this area may seem to be a fairly remote part of the Peloponnese, but as Pausanias and other ancient authors have illustrated, a major transportation route once existed along the Alpheios River valley through the rugged, mountainous regions connecting the coast of Elis to the interior of Arkadia.

Prior research at Palaiokastro occurred during the 1950s, when the French School of Archaeology in Athens surveyed the Mycenaean and Classical fortification walls while also excavating numerous Mycenaean shaft graves, as well as one tholos-like grave located nearby (Charneux 1956). A study of the ceramic remains dates the Mycenaean tombs between 1250 and 1100 B.C. The same chronology is established for a few sections of Mycenaean walls on top of the hill. The construction of the majority of the walls, which were composed of local blue-gray marble, suggests that they are Late Classical in date (360-330 B.C.), with one section remaining from an older Archaic period wall. New ceramic evidence from our survey and that recorded by the French School confirm these dates.

Knowing the amount of work involved in a study of the site and the surrounding area, I asked Kathy Rogers, a fellow graduate student at Boston University, for her technical assistance in surveying and pottery *continued on page 28*

of it to support the contention that it was likely that of an Indian; were it not, then this particular law would not apply. The U.S. Fish and Wildlife Service in turn contacted me for the analysis and transferred the specimen to the Boston University laboratories.

I evaluated it as the cranium of an adult female who had died between the ages of thirty and thirty-five years. The facial morphology and certain features of the teeth indicated quite strongly that she was of Indian ancestry. The U.S. Fish and Wildlife Service and the MHC had decided that the cranium was *ex situ*, likely eroded from an archaeological site somewhere upstream and redeposited in the tidal flat. The U.S. Fish and Wildlife Service took the specimen back after my analysis in order to turn it over to representatives of the Wampanoags for reburial in a tribal cemetery.

All this for one cranium. These peregrinations may seem



Kafkaesque—clamdigger to local police to state police to Medical Examiner to MHC to U.S. Fish and Wildlife Service to Boston University

to U.S. Fish and Wildlife Service to Wampanoags. But the positive side is that a mechanism exists to deal with skeletal remains from putative archaeological contexts, even isolated bones, as well as with remains from a cemetery.

In this instance the police were, quite properly, involved at the outset. Once the authorities had reason to believe that the specimen was from an archaeological context, and that it did not result from, say, some recent homicide, other agencies were involved in the analysis and disposition of the cranium.

Al B. Wesolowsky is the Managing Editor of Boston University's Journal of Field Archaeology and has a long-standing interest in earlier human populations and osteology. He has received many telephone calls, some of which have been very peculiar, relating to finds of human bones. John Ziemba, Secretary of the Department of Archaeology, drew the illustrations for this article.

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analysis. During the last week of July, after spending a few days in Athens preparing for the project, we established our base of operations at the nearest hotel, in Dhimitsana, forty kilometers from Palaiokastro. Every morning was spent driving one and a half hours to the site, with the majority of the time traveling on what seemed to be a glorified goat-trail.

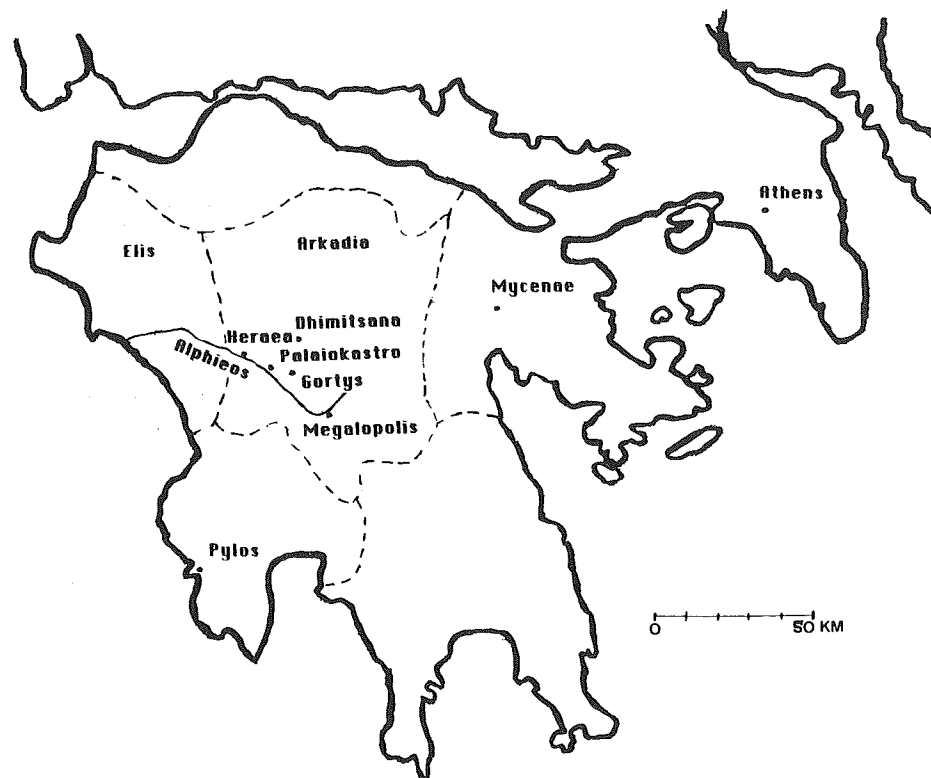
Once at the site, our first order of business was positioning 100 m x 10 m tracts for surface survey in various locations surrounding the hill using 1:5,000 topographical maps, acquired from the Greek Army's Map Service, in order to survey possible exploitation zones (e.g., valleys, terraces, hilltops). Luckily for us, a benchmark was placed at the site which made surveying easier. Our selection of different zones was limited by numerous cultivated fields and several fences, so that we were able to designate only ten transects within a four-square-kilometer area, fewer than the sixteen originally planned. I quickly learned that plans made before entering the field must be flexible so that they can be altered as circumstances require. Once we were located on the 1:5,000 map, the topography, land-use, vegetational coverage, and amount of erosion of each transect was recorded. In walking the transects we were spaced 5 m apart for better coverage in areas that contained moderate to dense vegetation. When discovered, each sherd was measured, described, sketched in the pottery log-book, and photographed along with its location within each transect. Walking these transects yielded a sufficient amount of ceramics for us to determine that numerous periods, ranging from Classical through Modern, were represented. No Mycenaean sherds were found. The majority of pottery fragments dated to the Classical and Hellenistic periods.

During my preliminary research of the site, I noticed that the map of the fortification walls that the French School had produced differed greatly from the map published by Mr. Pisimis, custodian of the site, who lives at the the modern village of

Palaiokastro today (Pisimis, 1987). The second part of my project involved examining the fortification walls for these discrepancies. I decided to chain-survey the walls with a 50 m tape and surveyor's compass. This method worked very well with what remains existed. In addition to the measurements, photographs of each section of wall were taken. While walking around the site surveying the walls, we recorded a large amount of pottery fragments. After the first day of this, we decided that only the sherds with diagnostic body parts or decoration should be documented, since our time was limited and the amount of ceramics on the surface was overwhelming. Pottery from Mycenaean buff-ware to Classical coarse-ware, including numerous painted sherds, confirmed the long occupation of Palaiokastro.

After a fairly successful summer, I began to formulate a few hypotheses from the data. Since there was no Mycenaean pottery found in the transects in the surrounding landscape, there may have been no large-scale agriculture for the site itself during that period. Palaiokastro might have been supplied by any one of the major

Mycenaean centers, such as Pylos which may have been reached either by ship from the mouth of the Alpheios river or by land travel through the mountain passes, or possibly by surrounding villages paying tribute. Looking at the pictures of the surrounding landscape taken by the French School in the 1950s excavation, we see the plowed fields of today to be overgrown and laced with tall trees and soil strewn with large rocks. Modern technology has turned the valley floor into a fertile landscape. Could the surrounding hamlets have been too small to gather the labor necessary to clear the valley floor of these trees and rocks for the purpose of large-scale, intensive agriculture? Could it be possible that the energy needed for such a laborious task would have been too great for a population that was probably small and scattered? If the surrounding hamlets produced only enough for themselves with small garden plots and not for surplus trade, no valley exploitation would have been necessary. In addition, considering the territory, sheep and goat herding may have been the main occupation. From these animals, a variety of secondary products



Map of the Peloponnese showing the Nomos of Arkadia where the site of Palaiokastro is located.



Part of the outer circuit of fortification walls (northeast section) of the Late Classical period.

could have been produced and traded. Assuming that the Mycenaean citadel was established as a control site for the trade and transportation route along the Alpheios, Palaiokastro may have been a focal point at which the surrounding villages would assemble and trade their secondary goods to passing caravans for merchandise they themselves could not produce.

Further consideration of the data leads me to wonder about the purpose of the citadel during the Mycenaean period (1250–1100 B.C.). Since the site had monumental walls, where did the labor, money, and engineers come from? Was this a garrison for some greater settlement? Why

were there so many shaft graves in the cemetery? Was there some form of royalty (governor or prince) or military commanders living there?

When considering the Classical era, I consulted several ancient works to formulate a historical context for Arkadia. After the creation of Megalopolis in 370 B.C., the neighboring sanctuary of Asklepios at Gortys is known to have been fortified as a frontier castle for the city-state. The French School noted that the Classical architecture (construction and style) at Palaiokastro is quite similar to that of Gortys, including the use of similar local, blue-gray marble. In addition to this, Pausanias states that the Spring of Bouphagos was the dividing line



Part of the inner circuit of fortification walls (east section) of the Late Classical period with the modern church in the background.

between the territories of Heraea and Megalopolis. From all this it is postulated that, during the fourth century B.C., Palaiokastro was located on the border between two warring factions, Elis and Arkadia, as a frontier fortress for Megalopolis along a major transportation route. It is also believed that the archaeological data documented during the survey indicates that the site may have been self-sufficient and held a greater population than during the Mycenaean period.

Research so far leads me to assume that during both periods of occupation the inhabitants of Palaiokastro capitalized on the transportation route along the Alpheios River, but for different reasons. The Mycenaean might have been motivated to establish a citadel at the site to protect the trade route to and from Pylos. The Classical inhabitants (including the presumed Archaic occupation), on the other hand, settled the locale for strategic, military advantages between political contingents. These tentative conclusions require further research, including another visit to Arkadia.

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Stephen Agnew is a graduate student in the Department of Archaeology. All photos are by the author.

Profiles of the Past

Our Archaeological Heritage

by Ricardo Elia

Cultural Resource Management Conference in Jordan

How do different nations protect and manage their archaeological resources? The answer to this question is, as one might expect, both fascinating and complex. Different nations manage their cultural resources in widely different ways, depending on a host of factors that include political and economic structures as well as legal, cultural, and religious traditions. Many nations have comprehensive legislation claiming state control of all antiquities, both on public and private lands; despite such legislation, however, these countries often lack the economic resources and archaeological infrastructure to provide adequate planning and protection of archaeological sites. Other nations exert control over their archaeological resources on public lands but provide little or no protection to sites on private property; this is especially true in the so-called developed nations of the West, such as the United States, Canada, and the United Kingdom. These countries, despite their inability to control archaeological resources on private lands, have well-developed systems of cultural resource management that stress planning and man-

agement to avoid the loss of sites.

Recently I had an opportunity to see first-hand how one developing country with a rich archaeological heritage and tradition of archaeological research is attempting to cope with the issues of archaeological heritage management. Last year, I was invited to participate in a conference on "Cultural Resource Management in Jordan: Techniques and Perspectives," which was held September 19-24 in Amman, Jordan. The purpose of this conference was to bring together archaeologists, planners, government officials, and preservationists to discuss methods of protecting the remarkable archaeological heritage of Jordan and to assess the developing Jordanian cultural resource management (CRM) program. The conference was held under the patronage of Crown Prince Hassan Bin Talal and was sponsored by the American Center of Oriental Research (ACOR) under a grant from the United States Information Agency.

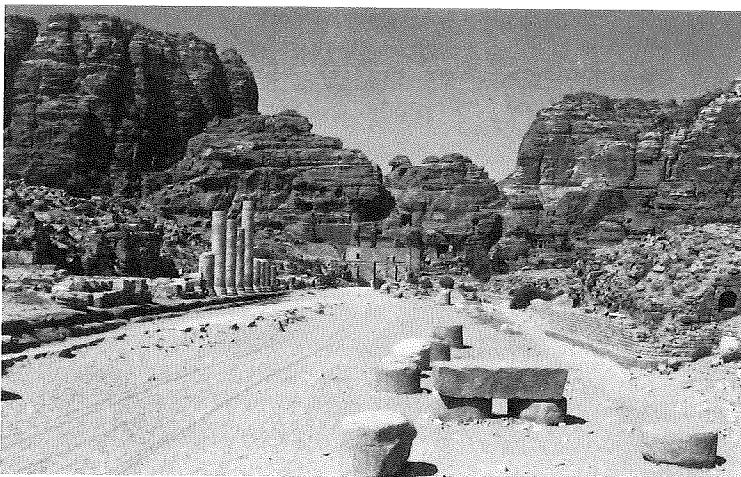
In opening the conference at the Royal Cultural Center in Amman, Crown Prince Hassan Bin Talal stressed the importance of preserving Jordan's archaeological and cultural

heritage and praised the ongoing CRM program in Jordan. He also pointed out that the preservation of the cultural heritage should be linked with concerns for the natural heritage, and stated that preservation and environmentalism are elements of a single holistic approach in the management of a nation's resources.

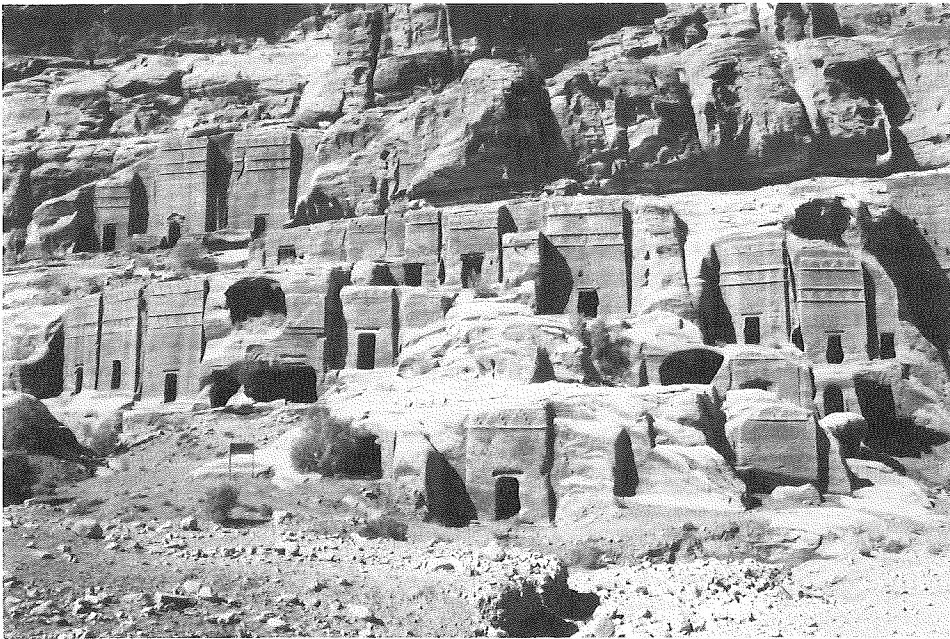
The opening day of the CRM conference was devoted to papers dealing with a comparative assessment of CRM in Jordan and the United States. The current Jordanian CRM program is being carried out as a cooperative effort between ACOR and the Jordanian Department of Antiquities, and is funded through a grant to ACOR from the U.S. Agency for International Development. This program is notable for its success in creating a computerized inventory system for recording archaeological sites in the country and for developing a process whereby archaeology is becoming an integral part in the planning process of new construction and development projects.

Abdul Sami' Abu Dayyeh of the Department of Antiquities discussed the evolution of the current CRM program over the last six years. Dr. Gaetano Palumbo, ACOR's CRM archaeologist who organized the conference, described the new archaeological database that he had developed to inventory the country's archaeological sites and explained current efforts to create mechanisms of information sharing between the Department of Antiquities and the various agencies responsible for public works and other projects that create a threat to archaeological sites. Ruba Kana'an of Oxford University described how CRM coordination efforts had developed in Jordan, and stressed the need for long-term planning strategies to ensure the successful continuation of the CRM program after the current program's funding ends in 1994.

The second part of the first day's conference was devoted to papers describing the U.S. experience in CRM and how that experience might be relevant to the Jordanian situation. Three American archaeologists with expertise in the U.S. cultural resource



View of the Colonnade Street in the center of Petra during the Roman Period.



Nabataean rock-cut tombs in the Street of the Façades at Petra.

management system, presented papers. In the first paper, I described how the American university system fails to provide adequate specialized training in CRM (see *Context* vol. 10, nos. 1–2, pp. 17ff.), and urged the Jordanian university system to take a leading role in such training. Eugene Rogge, a senior archaeologist at Dames & Moore, a private consulting firm in the United States, reviewed the role of the private sector in American CRM. Alan Simmons, of the Desert Research Institute (University of Nevada), who excavated the famous Neolithic site of Ain Ghazal in Jordan, compared U.S. and Jordanian approaches to CRM.

The second and third days of the conference were devoted to roundtable discussions of two themes: "The Quest for Compatible Development and Cultural Heritage Preservation" and "Teaching CRM Procedures." Both sessions were well attended, not only by archaeologists, but also by civic planners, architectural historians, scientists, members of public agencies and non-governmental organizations, and interested lay persons. Discussion of the first topic centered around the existing antiquities legislation and whether or not new laws were needed to strengthen existing controls. Also discussed were the problems of protecting the architectural and ethnographic heritage (not

covered by the current legislation); looting, smuggling, and selling of antiquities; private property rights and private construction; weak enforcement and minimal penalties for violations of the antiquities laws; and the need to develop better coordination between the Department of Antiquities and the various agencies responsible for construction and development projects.

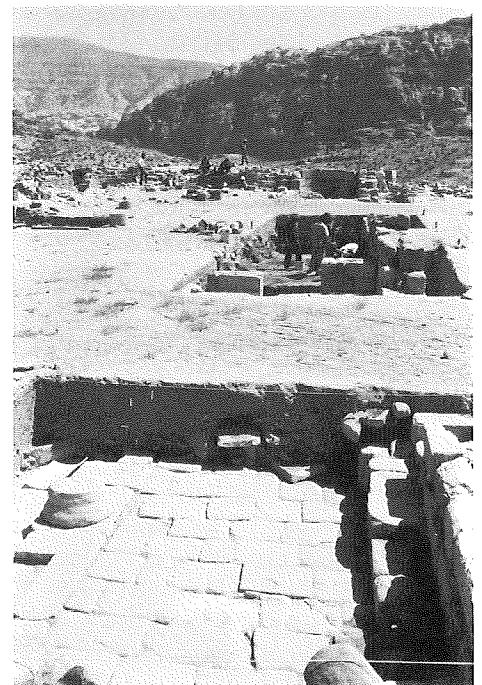
The roundtable discussion on teaching CRM procedures proved to be one of the most interesting and lively moments of the conference. The topic quickly expanded in scope from the training of CRM professionals to the fundamental need to educate the general population about the importance of protecting the archaeological and cultural heritage. Many speakers emphasized the universality of the cultural heritage, and stated that archaeological sites of all periods, from prehistoric to recent, should be considered an integral part of the Jordanian cultural heritage. Various methods of educating the public were suggested, including television programs, children's books, and curriculum programs for every level in the educational system.

At the end of the conference, the participants prepared a series of final resolutions that were signed by Dr. Safwan Tell, Director General of the Department of Antiquities and Dr.

Pierre Bikai, Director of ACOR. Among the most important resolutions were 1) a call for the creation of a permanent National Commission for the Preservation of Cultural Heritage, to develop a national master plan for the protection of Jordan's cultural heritage; 2) a recommendation that the legal authority of the Department of Antiquities be strengthened and its budget enhanced; 3) that a center of excellence in conservation be established; and 4) that attention be given to ensure the sustainable development of urban historic centers and sites of rural heritage.

The success of the Jordanian CRM conference can be measured in the active participation of the hundreds of individuals who took part in the proceedings, and in the animated, intense, and productive discussions and exchanges that took place over several days. Congratulations are owed to the organizers of the conference, Pierre and Patricia Bikai and Gaetano Palumbo of ACOR, and to Dr. Safwan Tell of the Jordanian Department of Antiquities for putting together a program that engaged individuals of many fields and

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New excavations at the Byzantine church in Petra. The excavations are being conducted by the American Center of Oriental Research.

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disciplines, whose common interest is the protection of Jordan's incredibly rich cultural heritage.

The current CRM program in Jordan is one of the most advanced in the region and may well become a model for other developing countries. Largely through the devotion and hard work of the CRM staff at ACOR and the Antiquities Department, Jordan is successfully making the difficult transition from the "salvage archaeology" mode to positive and proactive cultural resource management. For all its successes, the program is now at another critical point of transition—the point where informal procedures must be made formal, voluntary coordination must be made compulsory, and temporary policies, staffing, and programs must be made permanent. Judging from the success of the recent CRM conference, we have every reason to be optimistic.

Ricardo J. Elia is Director of the Office of Public Archaeology at Boston University and Chairman of the US/ICOMOS Archaeological Heritage Management Committee.

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Italy and elsewhere. Liz recently published "Educational Archaeology: Historical Archaeological Investigations at Schoolhouse 12 in the Town of LeRay, Jefferson County" in *The Bulletin: Journal of the New York State Archaeological Association*.

Three graduate students in the Department of Archaeology presented papers at the annual meetings of the Society for Historical Archaeology which was held in Kansas City, Missouri in early January at the session on "Borrowing Creatively and Selectively: Experimenting with Analytical Models of Complexity."

Ann-Eliza Lewis gave a paper on *Complex Societies in Miniature: Nineteenth-century Mill Housing in New England*; **Sara Mascia's** paper was entitled "When a Tenant Becomes an Owner: the Changing Nineteenth-century Farmyard." **Timothy J. Scarlett** presented a paper on "Describing Economic Relations in Eighteenth-century New England."



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Managing Editor: Lucy Wiseman.

Editorial Board: Ricardo J. Elia, Creighton Gabel, Norman Hammond, Fred S. Kleiner.

Faculty and Research Appointments in the Department of Archaeology (1992-93): Professors Creighton Gabel, Norman Hammond, Fred S. Kleiner, James R. Wiseman. Associate Professors Mary C. Beaudry, Curtis N. Runnels, Paul E. Zimansky. Assistant Professors Kathryn A. Bard, Julie Hansen, Patricia A. McAnany. Research Professors Farouk El-Baz, George (Rip) Rapp. Adjunct Associate Professors Clemency C. Coggins, Ricardo J. Elia. Distinguished Research Fellow Gordon Willey. Research Associate Gerald Kelso. Research Fellows William K. Barnett, Julie Benyo, Timothy G. Baugh, Helen Sorayya Carr, Tracey Cullen, John A. Gifford, Paul Goldberg, Thomas W. Killion, Georgeana Little, Priscilla Murray, Steven Pendery, Tjeerd H. van Andel, Elizabeth C. Stone, Al B. Wesolowsky, Ann Yentsch.

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Center for Archaeological Studies
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