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CONTEXT

Archaeologists Robert Murowchick (Boston University) and Jian Leng (Washington University) examine an excavated trench profile at Santaisi, a settlement site of the Longshan culture (about 2500 B.C.E.), in eastern Henan Province, China. See page 18 for information on the new International Center for East Asian Archaeology and Cultural History.

INSIDE THIS ISSUE:

Roman Shipwrecks from the Deep Sea: New Trade Route off Skerki Bank in the Mediterranean

by Anna Marguerite McCann

The first archaeological explorations in the Deep Sea with the new robotic technology have brought to light a previously unknown ancient trade route over the open seas between ancient Carthage (modern Tunis) and Rome. Working with a Remotely Operated Vehicle (ROV) at a depth of about 800 m, a team of archaeologists, engineers, oceanographers, and conservators, headed by Robert D. Ballard of the Institute for Exploration in Mystic, Connecticut, have discovered five ancient Roman shipwrecks as well as a small medieval fishing vessel and two nineteenth-century wooden sailing ships. Expeditions took place in 1989 and 1997 in international waters off the west coast of Sicily, just north of Skerki Bank, a treacherous reef that lies just below the surface. These projects off Skerki Bank represent a tremendous breakthrough for the sciences and a challenge to the archaeological, oceanographic, and engineering communities to work together in further collaborative efforts both to discover and protect our heritage in the deep sea. It is for this reason that I have joined Boston University's Department of Archaeology, where we are proposing to develop a Center for Maritime Archaeology and Technology to train students to take part in this growing collaborative field.

It has been a thrill to realize that the archaeologist can now explore ocean depths that have been unreachable before. Over ninety five per cent of the ocean still remains unexplored. Since over 3/5ths of the planet earth is covered by water, the opportunity for new knowledge about our maritime heritage is almost unlimited. In 1942 the shallow depths of the sea (under 200 feet) were opened up to archaeologists by the invention of SCUBA—the self-contained breathing apparatus—by Jacques-Yves Cousteau, Frederic Dumas, and Emile Gagnan. In the past decade, with the development of the ROV, depths of 20,000 feet can now be reached with camera and sonar. The archaeologist can thus search wide areas of the sea floor, record vast amounts of data with speed and accuracy, and make decisions with others in safety.

This new technology has come to the archaeologist at the right time. With SCUBA we have learned a lot these past 50 years about ancient harbors and ships. A number of ancient harbors have been carefully excavated and over 1500 ancient ships have been documented in the Mediterranean and at least 100 excavated. We have learned how ancient ships were built and can make better judgments about which wrecks in deep water are worth excavating. Also, the amphoras that document shipwrecks and their trade routes in the Mediterranean have received careful study and classification. The archaeologist is now in the position to

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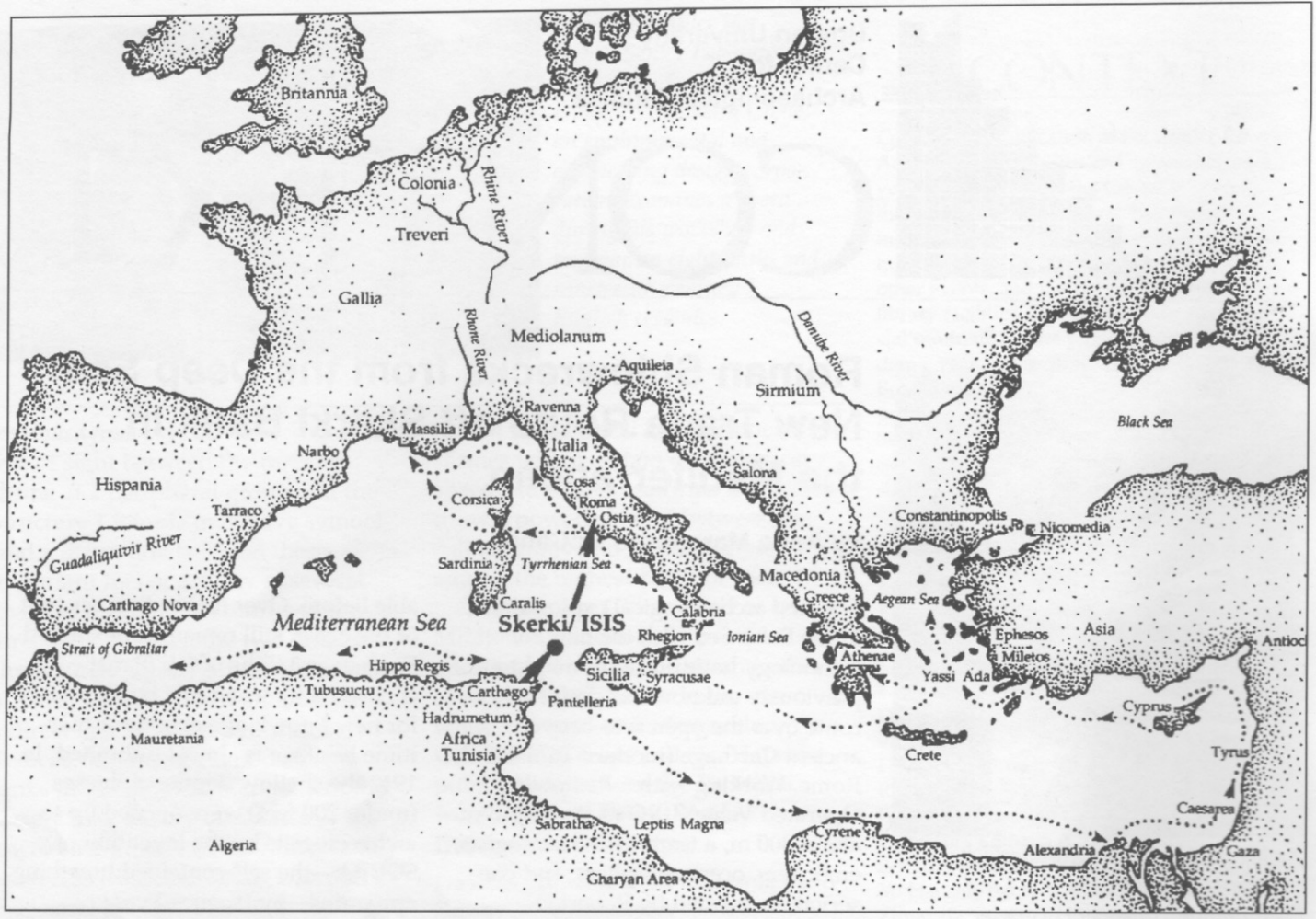

Map of the Mediterranean, locating Skerki Bank and showing several ancient trade routes.

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use this robotic technology to search wide areas of the sea floor with camera and sonar to document and study ancient ships and trade routes without excavation.

One of the most versatile ROV's in use for science today, named Jason, was developed at the Woods Hole Oceanographic Institution by Ballard and a group of talented engineers. The 1989 Skerki Bank Project was the first sea trial for ROV Jason. The robot gave its name to the first of the JASON Projects directed toward the education of children in the sciences and included the first live, interactive television directly from the sea floor. About 225,000 children in the United States and Canada in their science museums communicated directly with the team in the Mediterranean in a half-second of time. This achievement was recognized by a number of national awards including the 1990 American Association for the Advancement of Science (AAAS) Westinghouse Award and the Computerworld Smithsonian Award. The JASON Projects have continued every year and now reach about one-half million school children annually.

ROV Jason, now a federal research vehicle, is the tool that first allowed the archaeologist to look into the deeper sea. Designed by Andy Bowen with the engineering team at the Deep Submergence Laboratory at Woods Hole, Jason's precise maneuverability as well as its multi-sensory imaging systems make it an ideal ROV for careful archaeological work. Since 1989 Jason has evolved into an instrument that can produce both on-site black and white photo mosaics created from a series of digital images as well as precise bathymetric maps of the individual wreck sites using scanning sonar techniques. The resulting microtopographic maps are within two centimeters of accuracy.

ROV Jason, which is 2.2 m long and 1.1 m wide and weighs 1200 kg in air, is designed to be neutrally buoyant in water, using a syntactic foam flotation unit and a light aluminum tube frame. Three titanium housings seal in the electronic circuitry that is essential for its operation. Jason works in conjunction with a towed unmanned camera sled, named Medea, that serves as the support vehicle for the tethered, remotely operated Jason. Medea is attached to the control ship by a steel armored, electro-optic cable which, for the work at Skerki Bank, was 4000 m long. Jason was attached to Medea by a neutrally buoyant, electro-optic tether approximately 40 m long and usually operated some 5 m below. Medea also acts as a relay station for the signals between the main two cables linked to a control room on the mother ship above, which is held in a tight holding pattern (dynamic positioning), and Jason's neutral umbilical cable. So successful has this system

become that Medea and Jason have evolved into a tightly knit, ROV unit with Medea used mainly for wide-area survey, and Jason used for precision, multi-sensory imaging and sampling. The success of ROV Medea/Jason is in large part because of the development of a fiber optic telemetry system, the cornerstone of which is the steel-armored, fiber-optic cable that allows for high-quality video, high-speed data, and sensor support in real-time.

Essential for Jason's archaeological work is the electrically controlled mechanical arm and claw used to recover samples and artifacts. Various assemblies have now been designed to lift fragile artifacts, cradling them gently in soft, synthetic fish-netting. Even a small Roman lamp was recovered without a scratch, thanks to the robotic design team headed by Dana Yoerger and careful joystick operators. Artifacts can be recovered from the deep sea without damage and lifted to the surface by an autonomous elevator-device acoustically controlled. In 1989 field conservation was done by Mary-Lou Florian of the Royal British Columbia Museum, Victoria, B.C., followed by laboratory conservation by Dennis Piechota of Arlington, Massachusetts, who also directed the conservation of the 1997 material with assistance from Cathy Giangrande, Institute of Archaeology, University College, London. These first artifacts recovered from the deep sea have now been successfully conserved and are part of an exhibition, "Challenge of the Deep," now on view at the Institute for Exploration at the Mystic Aquarium, Mystic, Connecticut.

While the archaeological goal of the Skerki Bank Project was primarily documentation of the surface remains, the archaeologists selected some key artifacts to be recovered for the study and dating of the wrecks and trade route. Other archaeologists on board for the 1997 project were John P. Oleson, University of Victoria, British Columbia; Jon Adams, University of Southampton, England; and Brendan Foley, graduate student from M.I.T. Deposits of pottery on wrecks at these depths have special value since most pieces are unbroken and undisturbed by wave action or robbing, unlike those in wrecks found in shallow water. The 1989 and 1997 Skerki Bank campaigns together recovered and catalogued 180 artifacts: 65 objects in 1989 and 115 in 1997. Of this material, 56 are amphoras. Many more were documented by video, digital, and conventional still cameras. The cargoes from the five ancient Roman shipwrecks found are surprisingly varied, including material from both the eastern and western Mediterranean. Clearly the ancient Mediterranean was an open highway for transport between the east and the west even during war and after the division of the empire. The earliest of the Roman wrecks dates in the first half of the first century B.C. while the latest wreck, named by this author the

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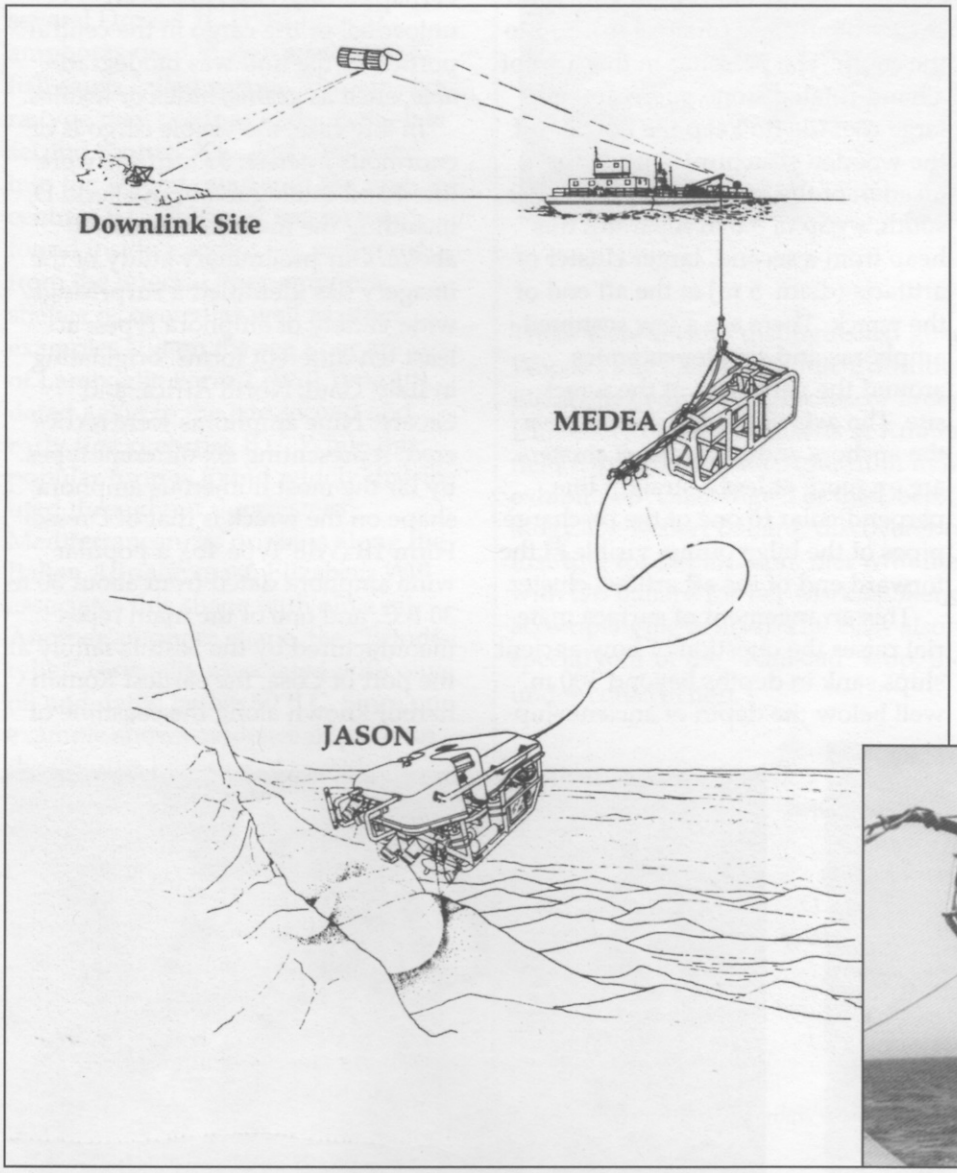

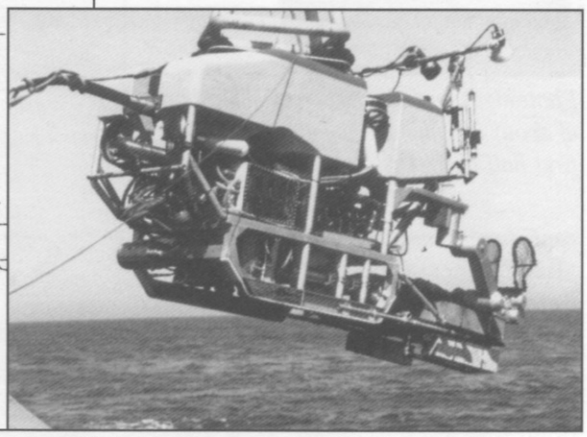

Image at left is a drawing of ROV Jason, with an amphora in its robotic arm, over the "Isis," a Roman shipwreck from the late fourth century A.D. At right is ROV Jason hovering over the Mediterranean.

Photomosaic of Skerki Wreck D at depth of about 800 m. Date: Roman wreck, first half of first century B.C.

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"Isis," after the Egyptian goddess, dates in the last quarter of the fourth century A.D. Other amphoras scattered over the sea floor further extend the ancient use of this route over the open seas back to about 300 B.C., covering the span of Roman domination of the Mediterranean.

The earliest and probably the largest of the Roman shipwrecks discovered, Skerki Wreck D, can be dated both by the recovered catalogued finds and by other amphoras left on the sea floor but visible in the photomosaic. The material mainly falls in the first half of the first century B.C. and probably can be narrowed to between 80 and 60 B.C. on the basis of the amphora finds as well as a Campanian black-glazed plate. The other datable artifacts include kitchen and common ware, finer pottery, bronze table ware, and two lead anchor stocks with one lead anchor strap. The last must mark the bow at the north end of the site, which is about 20 m long overall. Only a scatter of intact amphoras can be seen between the anchors and the forward cluster of artifacts (diam. 4 m), 5 m to the south. The presence in this area of a hand-rotated stone quern and a large roof tile (to keep the brazier off the wooden structure) suggest the location of the galley. Moving further south, a gap of 3.6 m separates this heap from a second, larger cluster of artifacts (diam. 5 m) at the aft end of the wreck. There are a few scattered amphoras and smaller ceramics around the periphery of the wreck site. The axis of the ship seems clear: the anchors and two artifact clusters are on more or less a straight line, perpendicular to one of the discharge pipes of the bilge pump, visible at the forward end of the aft artifact cluster.

This arrangement of surface material raises the question of how ancient ships sank in depths beyond 100 m, well below the depth of ancient shipwrecks carefully examined up to now. Did the hull reach the bottom intact and drive itself into the sediment, leaving exposed only the upper layer of cargo or material used on deck by the crew and deck passengers, or a mixture of both? Why are there two separate heaps of amphoras? Did the hull fracture across the middle as it fell, scattering or crushing the central part of the cargo so that mud covered it more completely? Or were there two separate holds with separate hatches, and empty space around the mast step? Alternatively, the more fragile goods, or the goods loaded first, may simply have been stacked toward the closed ends of the boat, leaving empty space aft of the mast and forward of the bilge pump. Perhaps a cargo had just been unloaded, or the cargo in the central portion of the hull was biodegradable, such as grains, hides or textiles.

In any case, the visible cargo is of enormous interest; 35 artifacts were lifted and catalogued from Skerki D, including the material discussed above. Our preliminary study of the imagery has identified a surprisingly wide variety of amphora types: at least ten different forms, originating in Italy, Gaul, North Africa. and Greece. Nine amphoras were recovered, representing six different types. By far the most numerous amphora shape on the wreck is that of Dressel Form 1B (Will Type 4b), a popular wine amphora dated from about 80 to 30 B.C. and one of the main types manufactured by the Sestius family at the port of Cosa, the earliest Roman harbor known along the coastline of

Amphoras from Roman Wreck D, at depth of 800 m.

ancient Etruria, modern Tuscany. Two were recovered and petrological analysis by D.F. Williams at the University of Southampton identifies the clay with an amphora kiln in Albinia, next to the port of Cosa. Since this is by far the dominant shape in the cargo of Wreck D, it is reasonable to suggest that our ship was loaded at Cosa on its way south. Wreck D, as well as the Sestius amphoras recovered in 1989 from the trade route north of Skerki Bank, provide startling new evidence for the extent of the export trade of the Sestius family and the importance of the port of Cosa in the last centuries of the Republic.

Visible in the photomosaic of Skerki D, but not recovered, were also several Dressel 1C (Will Type 5) amphoras used to ship a processed fish sauce called garum. This amphora type may occur as early as the late second century B.C. and continued into the second quarter of the first century B.C. Traces of garum were found inside a sealed jug recovered from the wreck. Other amphora shapes recovered as well as other examples still on the sea floor are jars of Lamboglia Form 2 (Will Type 10), dated again in the late second and early first centuries B.C. While this popular form is found widely distributed throughout the western Mediterranean, its origin is along the Italian Adriatic coast. Elizabeth Will associates this shape with olive oil. Another amphora shape, the "Brindisi type," is usually associated with olive oil and dated before 50 B.C. Since our example shows evidence of pitch on the interior, however, it must have contained wine rather than oil.

A Tripolitanian oil amphora was also recovered, datable to the second or first century B.C., and two small, flat-bottomed amphoras from Gaul that may have contained wine or beer. The fabric of the latter is typically Gaulish—light, fine and cream colored. These Gallic wine jars are usually dated, however, at the end of the first century B.C. in the Augustan period, a date that appears too late for the rest of the material. Wreck D

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New Course in Maritime Archaeology

During the fall term 1999 at Boston University, the Department of Archaeology offered a new course, AR507 Maritime Archaeology and Technology in the Ancient Mediterranean, which was taught by Professor Anna Marguerite McCann and Professor Claire Calcagno. The course provided a survey of the history of maritime archaeology and technology, focusing upon the ancient Mediterranean world. The course intended to introduce students to the ships, harbors, and trade routes of the ancient Middle East as well as those of Greeks, Etruscans, and the Roman empire, and highlights recent underwater archaeological discoveries along with the technologies used for both shallow and deep-water excavation. Exposure to underwater conservation methods and discussion of the laws of the sea, in antiquity and today, were also included.

Seated left to right are McCann; Giulia Boetto, Research Associate, Museum of Roman Ships of Fiumicino, Rome, Italy; and Calcagno. In addition to lecturing to the class, Dr. Boetto also gave an evening lecture entitled "New Research on Ancient Ships: The European Navis Project, the Fiumicino Ships and Recent Finds at Pisa." Photo by Michael Hamilton.

There were several distinguished guest lecturers, including Dr. Dana Yoerger, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, and Dr. Elizabeth Lyding Will, Professor Emeritus, Amherst College and the University of Massachusetts at Amherst. A special feature of the class was a field trip to the Mystic Aquarium in Mystic, Connecticut, to visit the current exhibition, "Challenge 3 of the Deep," on deep-water technology and archaeology. Dr. Robert Ballard, discoverer of the Titanic and President of the Institute for Exploration, met with the group. Dr. McCann has collaborated with Dr. Ballard for her work at Skerki Bank in the Mediterranean (see accompanying article). The class also visited the Mystic seaport and had a special tour of the "Amistad" ship, the nineteenth-century slave ship now under construction.

Dr. Elizabeth Will lectures about an amphora similar to those found at Skerki Bank.

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may provide the earliest evidence thus far for the exportation of wine from Gaul.

Another amphora shape visible in the photomosaic but not recovered is a long, narrow, wide-mouthed Punic type of amphora (Dressel Form 18) from the west side of the aft cluster of material. It probably contained fruit or pickled fish and is found both in North Africa and Italy. This type also appears on the upper wreck of the Grand Congloué, dated now between 110 and 80 B.C. Other amphora forms visible in the aft section but also not recovered are some Greek amphora shapes including several Koan jars with double-rolled handles dated in the earlier first century B.C.

Also included in the cargo or used on board were fine unglazed ceramics and some black-glazed pottery found in a wide variety of shapes scattered throughout the amphora heaps. A fine, long-handled bronze ladle decorated with duck-head finials, as well as a bronze sauce pan of typical Central Italian type were found in the aft cluster. A curious artifact now under study is a spoked iron wheel, possibly part of the rigging or a loading crane.

Undoubtedly loaded at the Roman port of Cosa on the Tyrrhenian coast of Italy, Wreck D expands our knowledge about Roman trade during the late Republic and gives us the first glimpse of a major shipwreck in the deep ocean. The artifacts date the shipwreck in the first half of the first century B.C., providing new evidence for the beginning of the French wine trade in the Mediterranean. Skerki D is unique in its completeness and the variety of material preserved. It surely deserves further survey and excavation. The Skerki Bank Project has shown that the Deep Sea indeed holds a wealth of new knowledge about ancient ships, trade and trading routes, and economic history.

Professor Anna Marguerite McCann of the Department of Archaeology at Boston University is archaeological director of the Skerki Bank Project. She received the Gold Medal for Distinguished Archaeological Achievement from the Archaeological Institute of America in 1998.

Exploring Northern Slavery at the Royall House of Medford

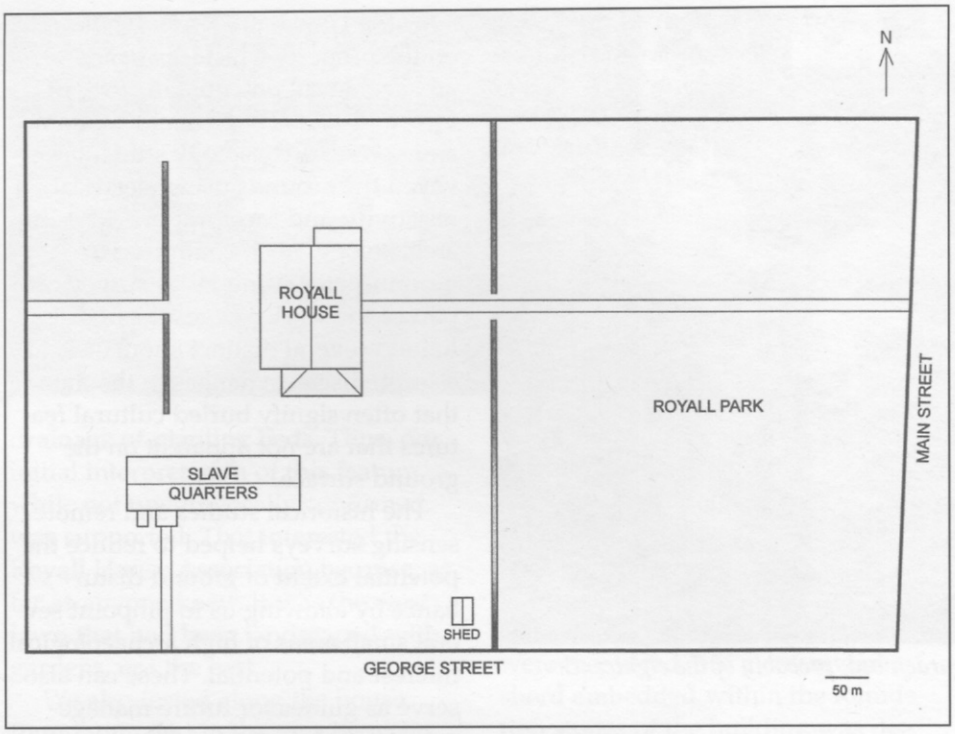
by Marni L. Blake and Alexandra Chan

In 1783, an illiterate, impoverished, elderly African-American woman, known only as Belinda, petitioned the General Court of Massachusetts for an annual pension in recognition of a lifetime of labor given to her former master, Colonel Isaac Royall, Jr. of Medford, Massachusetts. Belinda's petition was granted, and after it was recorded Belinda, as well as other slaves who toiled at the Royall House, vanish from the historical record. It is a story repeated often in American history: documents offer tantalizing glimpses into the lives of men and women generally ignored by history, but fall woefully short of being able to satisfy our piqued curiosity.

During the summer of 1999, working amid the stately shade trees of the Isaac Royall House, a designated National Historic Landmark in Medford, Boston University archaeologists excavating under the direction of Professor Ricardo Elia searched for information about the varied and fascinating characters who have lived at this site since the 1600s. Governors, Revolutionary War generals, a purported Tory, dozens of enslaved Africans, a large family with many children, and others have left their marks on this property. Until recently, interpretations of the site have concentrated on the lavish lifestyle, elegant hospitality, and many philanthropic deeds of the Royall family—former sugar planters from the British West Indies who lived in the house during the mid-eighteenth century. Little attention has been paid to the enslaved residents and other workers who made the Royalls' aristocratic lifestyle possible. Nor has much attention been paid to the other owners and occupants of the site, both before and after the Royalls.

The Royall House Association, which bought the property in 1908 in order to preserve it, realized that archaeology might be able to tell these other stories. The Association wanted to present a more balanced story of the site, which traditionally focused on the slave-owning and slave-trading family of the Royalls. After discussing possibilities with Professor Elia, a Medford resident, the Association invited him to undertake an exploratory investigation, which was funded by the Royall

The Royall House. Photo by Michael Hamilton.



Sketch map showing Royall House and environs. Map by Marni Blake.

House Association, the Medford Historical Society, the City of Medford, Boston University, and Tufts University.

The Royall House contains the eighteenth-century mansion of its most well known residents, the Isaac Royall family, who lived here from 1732 to 1775. The site also contains an intact brick and clapboard structure known as the Slave Quarters. Isaac Royall, Sr. was a prosperous merchant who amassed great wealth in Antigua in the early 1700s, running a sugar plantation and trading in slaves and rum. After moving to Medford in 1732, the Royalls lived here in Georgian luxury, where they managed the estate (one among several they had in the region) and owned as many as 39 slaves. In a time and place where most families could not afford more than one or two enslaved domestics, the number was exceptional.

After his father's death in 1739, Isaac Royall, Jr. inherited the estate and became one of the most prominent residents of pre-Revolutionary Medford. While Royall was known for his generosity and activism in the Medford and Boston communities, and for always having plenty of rum on hand for his visitors, he was also thought by some to be a Loyalist. In fact, this reputation (which may not have been merited) forced him to flee Massachusetts on the day of the Battle of Lexington, April 19, 1775, and his estate was confiscated as a result of a resolve of the General Court.

The Royalls were not, however, the first prominent owners of the property. The land was originally granted to John Winthrop, the first governor of Massachusetts, in 1631, and was part of his famous 600-acre "Ten Hills Farm." Winthrop built a house on the estate, and his family owned the site until 1677. From the 1690s until 1732, when Isaac Royall Sr. bought the farm, Lieutenant-Governor John Usher lived here. During the Revolutionary War, after the Royalls escaped to England, the house was used as a headquarters by Generals Stark, Lee, and Sullivan of the Continental Army, and the ubiquitous claim that "George Washington slept here," may in fact be true for the Royall House. Various owners acquired parcels of the farm after the War, which were eventually sold off by 1908. At that time, the Royall House Association purchased the 0.8 acre parcel containing the main house and Slave Quarters. The City of Medford bought the adjacent land between the Association's property and Main Street, and maintains it as a park.

Our primary goals in undertaking archaeology at the site were to help the Royall House Association gain a sense of what lay beneath the ground, and to explore how archaeology might help the Association interpret and manage the site for the public. There were several questions that interested all involved, however, when we arrived at the site in the beginning of June. During the Royall period, the property contained formal, landscaped gardens, and we were interested in identifying evidence of these in the various yard areas. There were also certain historical ambiguities about the house and property that we hoped to address. One question was the age of the original core of the house; some believed it had been built by the first owner of the property, Governor John Winthrop, as early as the 1630s. We also wanted to find out whether the so-called Slave Quarters had been built, as oral tradition had it, in two phases, and to date those building phases. We were especially interested in uncovering cultural deposits that could be linked to the African-American presence on the site—the living conditions, accommodations, material culture, and ethnic identity of colonial New England slaves.

Massachusetts was the first American colony to formally sanction human bondage in its ironically named Body of Liberties of 1641, making slavery in Massachusetts longer-lived than in Georgia, which legalized the institution only in the 1750s. The Royall House and its Slave Quarters are one of the last relicts of slavery in the region, and may help us to recognize colonial New England as the multi-ethnic center of social, cultural, and economic interactions that it was.

The archaeological study of African Americans is a relatively new area of study that generally extends only as far back as the American Civil Rights Movement. The formative years of archaeological studies of

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Boston University excavators uncovering a garden bed, probably of the eighteenth-century, in front of the Royall House.

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slavery focused on the antebellum American South. The interconnectedness of the American South with the North and the Caribbean, however, made slavery a national reality from first settlement to final abolition in 1863. Our work at the Royall House is one of the only archaeological investigations of slavery in New England. Virtually nothing remains in the written record of the individuals kept in bondage during the 40 years that the Royalls inhabited the house. A few maddeningly vague account–book or town–record entries are virtually all that attest their existence. Isaac Royall, Sr. once shelled out an astounding £15 "to salivating the Negro Boy," a practice following the prevailing medical wisdom of the day, but in reality a brutal regimen of poisoning a patient, sometimes to death, certainly to further sickness, by administering heavy metals such as mercury to cause excessive salivation. Then there is the poignantly perfunctory listing in the Medford vital records of the death of George, "said to have cut his own Throat," after fifteen years of service and only a day after Isaac Royall, Jr. had instructed his agent from his exile in Halifax to sell George for as little as £15.

Archaeology, we believe, will play a critical role in reconstructing the slave population and its daily routines. We may eventually be able to evaluate the common claim that New England slavery, because of differences in economy, religion, and population structure, was a "different brand" of slavery from the better-documented and studied human bondage of the American South or British West Indies. Our work will also potentially shed light on the processes of cultural creation and transformation, as Africans became African Americans. Many of the names of the Royall slaves that have survived in the record are typical of names bestowed by white owners on new arrivals from Africa (e.g., Fortune, Cuff, Plato, Captain, or Old Cook). It seems likely that Royall owned slaves who were both African- and American-born, as well as some who had been "seasoned" in the West Indies. What might this diversity have meant for the structuring of community and culture among the Royall slaves?

Research at the Royall House site actually began long before our 1999 excavations. Detailed investigations of the archaeological potential and historical development of the property since the 1630s were conducted, as was historical documentary research on the enslaved residents of the Royall House. Marni Blake completed a Boston University Master's thesis on the property's historical and archaeological potential in 1998. In 1997 and 1998, Dr. Kenneth Kvamme and several archaeology students surveyed the grounds using electrical resistivity, and Meg Watters (M.A. in archaeology, 1998) conducted a ground-penetrating radar survey of part of the yard. The results highlighted several distinct anomalies, or abrupt, discrete changes in the data that often signify buried cultural features that are not apparent on the ground surface.

The historical studies and remote sensing surveys helped to reduce the potential extent of ground disturbance by allowing us to pinpoint several small areas of high archaeological interest and potential. These can also serve as guides for future management and protection of the site.

With so much background research in place, we finally arrived on site to break ground in June 1999. While we excavated, Elia was often called upon to lead tours of school children who visited the site to see first-hand an archaeological excavation. Our team of dedicated excavators, most of them volunteers from the Boston University Department of Archaeology, included Jennifer Sennott, David Rich, Susan Allen, Christine Lovasz, Ilean Isaza, Kara Honthumb Lange, Elizabeth Gilgan, Christina Hodge, Tara DiPace, and Charles Elia. The present authors served as Project Archaeologists.

We began the first excavations in the park area (the east lawn), where resistivity results showed curious linear and circular patterns for which no historical evidence had been found. We suspected that these might be historical walkways and planting beds. The first trench was dug across one of these circular anomalies, and excavations revealed two stone features enclosing a deep deposit of rich, dark, organic soil. Artifacts found within this feature, such as glass and pottery sherds, bone, and other materials, placed it squarely within the eighteenth century. It is interesting to note that similar materials were frequently used during that time, in addition to stones and gravel, to facilitate

Testing uncovered a cobblestone driveway outside the west entrance of the Royall House. Photo by Michael Hamilton.

drainage of planting beds. Thus, our initial interpretation of this feature, while not unequivocally confirmed, was supported. That interested the Royall House Association because, as far as anyone knew, it was the west lawn that had been landscaped with gardens, not the east.

We also tested along the house foundation and in the area between the house and the Slave Quarters, as well as at a few locations across the courtyard. While there were several individual artifacts in these areas that seemed to stem from at least the late seventeenth century, including some Staffordshire earthenware, Westerwald stoneware, and a pair of iron scissors, the majority of this testing proved inconclusive because of disturbance caused by later centuries of cultural activity. Excavation behind the house revealed a skillfully laid cobble surface that had purportedly been part of the Royalls' carriage drive. A rich midden of sheet refuse was exposed between the house and Slave Quarters, directly beneath the cobbles, and dated to the early eighteenth century, perhaps evidence of a pre-Royall occupation. Thus, we were able to confirm the probable date of the courtyard to the 1730s or 1740s, the result of the Royalls' many beautification efforts.

Attempts to date the building phases of the Slave Quarters were less successful. A test unit placed at what was thought to be the seam between the two halves of the building revealed a jumble of artifacts spanning the entire occupation of the site, and a large pile of redeposited rocks, which turned out to be protecting a relatively modern gas utility line. Such are the perils of historical archaeology! A unit dug by graduate student Jennifer Sennott at the east end of the foundation was slightly more productive, and it seemed undisturbed. Large quantities of wine bottles, animal bone, earthenware, and other eighteenth-century artifacts were recovered, but a creamware sherd embedded within the foundation stones of the building was disconcerting, because it suggested that half of the so-called Slave Quarters had been built only in the 1760s or 1770s, at the very end of the slave-owning era of the site and of Massachusetts in general.

Behind the Slave Quarters, in what must have been a work yard, we found artifacts and deposits that could be associated with the Royall occupation of the property and later, nineteenth-century owners. One test unit excavated only 1.5 meters from the structure revealed what seems to have been a dumping ground for a thick layer of construction debris. Sprinkled with eighteenth-century artifacts that date the deposit generally to the first half of the century, this deposit may reflect the construction and refurbishment activities that were undertaken when the Royalls first bought the property in 1732. What was also interesting about the South Yard was that all of the cultural deposits, both from the eighteenth as well as the nineteenth century, were lying directly atop sterile subsoil, with no evidence of a historical topsoil present. We are not sure what this means, but it may be that the Royalls removed the topsoil here for use in the formal gardens laid out elsewhere on the property.

Three excavation units are the best candidates we have for addressing the living conditions of enslaved Africans on the site. The first, described above, was at the east end of the Slave Quarters, and contained prodigious amounts of bottle glass and animal bone, as well as a large base of an earthenware container, but has a curiously late date as attested by the single sherd of creamware. The second unit was in the middle of the South Yard, which also revealed solid eighteenth-century associations, with Staffordshire earthenware and white salt-glazed stoneware, animal bone, and a single earthenware tobacco pipe. The third was a unit at the west end of the Slave Quarters. Its cultural layers were intact, complete with historical topsoil. The artifacts, too, fit neatly within the window of the Royall occupation (1730s–1770s). Sherds of Staffordshire comb-and-dot earthenware, white salt-glazed stoneware, Chinese porcelain, creamware, and shell-edged pearlware were present, but a thick deposit of rough earthenware sherds vastly outnumbered these, and may reflect the fact that African Americans used many more plain utilitarian wares than fancy ones. Large amounts of animal bone, apparently of several different species, were recovered, and as in the other two units discussed in this section, all of them were chopped and cracked as opposed to sawn. This circumstance is consistent with similar discoveries on slave sites in the South, where it has been suggested that African Americans chopped their

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Excavations opposite the Slave Quarters revealed a mid-eighteenth-century cobblestone surface in the area between that building and the Royall House. Photo by Michael Hamilton.

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meat into small chunks for stew and pottages, while their European owners preferred special cuts such as steaks or roasts, which are sawn from the animal by a butcher. We also discovered an iron buckle, small enough to belong to a hat or pair of breeches. Isaac Royall, Sr. listed several purchases of buckles in his account books, but they are of gold; an iron buckle would have been more in keeping with the plain blue jersey and worsted wool that Isaac Royall, Sr. procured for his slaves' clothing.

The preliminary findings described above hint at the wealth of data yet to be gleaned from excavations at the site. Laboratory work for the 1999 season began in July and August and is being done primarily by Jennifer Sennott, an M.A. student, and David Rich, an undergraduate who received an Undergraduate Research Opportunities Program grant to work on the project. After this work progresses into analytical stages, we will be able to conduct a more thorough investigation of artifacts from this exploratory season.

In sum, we have succeeded in identifying the likely presence of landscaping in the east lawn, for which there were no historical records, and determining areas from which the soil for such ground-shaping might have come. We have also been able to obtain tentative dates of the cobblestone courtyard and part of the Slave Quarters. The deposits tentatively associated with the African slaves on the site shed little new light on African-American cultural identity and expression. The artifacts by themselves merely show the obvious difference in wealth between master and slave. They are, however, likely indicators of the presence of these people on the site, and so constitute the first step toward a more detailed cultural interpretation of the artifacts. We hope that these areas, at the sides and back of the Slave Quarters building, will be more completely exposed in future seasons. Once a deposit can be definitely associated with this forgotten group of people, we can undertake the interpretation of the artifacts within that framework, and make more substantial contributions to our understanding of slavery in colonial New England.

While evidence of the earlier, seventeenth-century occupation of the site may turn out to be less well preserved than that of later generations, additional excavation between the original core of the house and the Slave Quarters might still answer some of our questions concerning the age of the house and lifeways of some of the prominent founding residents of Medford. We hope also that further research at the site will shed a brighter light on broader aspects of New England society and culture of the seventeenth and eighteenth centuries as well.

Marni Blake received an M.A. at Boston University in the Archaeological Heritage Management Program in 1998, and continues to work toward a Ph.D. in archaeology, with a particular interest in the cultural and historical developments of the Harrappan civilization of the Indus Valley in South Asia.

Alexandra Chan is a Ph.D. student in the Department of Archaeology at Boston University. She specializes in North American Historical Archaeology, and is exploring the cultural creation, transformation, and expression of Africans in colonial America.

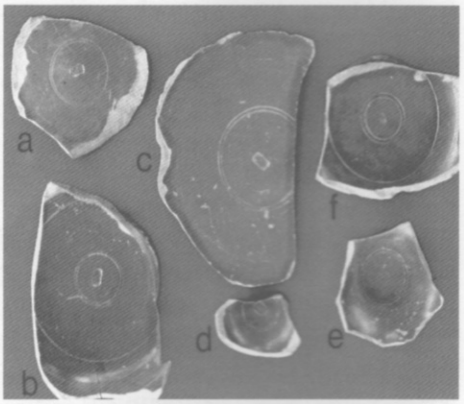
Ceramics Analysis in Western Turkey

New Light On the Origins of Eastern Sigillata B Ware

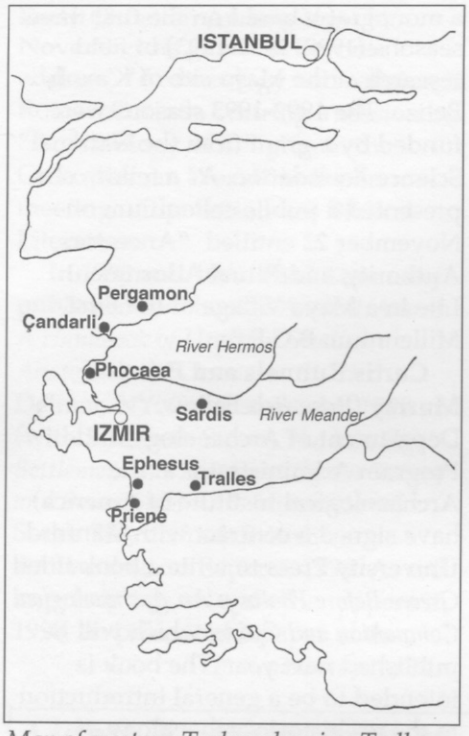
by Turan Takaoglu

Terra sigillata ware is fine red-gloss tableware with impressed decoration (="sigillata") which might include the name of the potter. The pottery had a very wide distribution pattern throughout the Mediterranean world during the late Hellenistic period and the first two centuries of the Common Era. Originally associated with workshops in Italy, this distinctive ware reached quite distant markets all around the Mediterranean and Black Sea worlds. Some of the largest factories of the Italian peninsula established manufacturing subsidiaries in provincial areas to obtain economic benefits. Western Asia Minor is one of those regions where this distinctive ware appears to have been intensively locally manufactured.

Archaeological discoveries in western Asia Minor have revealed a complex pattern of both production and distribution of terra sigillata ware. Çandarli, Phocaea, and Pergamon are among the cities where some workshops were located that produced eastern variants of Italian terra sigillata. The origin of eastern sigillata B ware, however, has remained conjectural since Kathleen Kenyon identified the ware in 1957. It has long been inferred that the ware was manufactured somewhere in western Asia Minor from the Augustan period until the mid second century A.D. According to wavelength dispersive X-ray fluorescence technique, thin-section studies, and heavy mineral analyses, eastern sigillata B finds from Ephesus and other sites within



Top: A group of eastern sigillata B bowl fragments with potter's stamps. Bottom: The stamp of the potter Doron, in Greek (detail of f above).



Map of western Turkey showing Tralles and other Roman sites mentioned in the text.

the region match very closely clay samples taken from a potter near Tralles (Sauer et al. 1994: Schneider 1996). Early eastern sigillata B products bear name-stamps of Arretine potters of the Augustan age, including C. SENTIUS and Q.P. SERENUS (Kenrick 1993; Zabehlicky-Scheffenegger 1994 and 1995). Pliny the Elder, who wrote in the first century A.D., mentions in his *Natural History* (xxxv.46) the presence of distinguished pottery workshops at Tralles, and his account has led some scholars to consider the city a candidate for the place of manufacture of eastern sigillata B ware (for example, Hayes 1985).

New light on this archaeological issue has been shed by excavations at Tralles, where Turkish archaeologists began a new project in 1996. The shapes associated with eastern sigillata B ware turn out to be quantitatively dominant in the archaeological record of Tralles, comprising ninety per cent of the total sigillata assemblage. Futhermore, numerous potter's stamps have been discovered in the newly excavated waste dumps of workshops, and in excavation trenches at a gymnasium-bath complex and the arsenal area. The most common names, which occur in nominative and genitive (possessive) forms both in Greek and Latin, include (here in English) Doron, Hermes, Phoibos, Matreos, Koiranos, Markos, Praulos, Epaphras, Aineas, Euhemeros, and Serenus. Pottery with these names are well-known at sites around the Mediterranean and the Black Sea. The study of these potters' names contributes to our understanding of the patterns of production and distribution related to eastern sigillata B ware.

The lack of evidence for the Arrentine potter C. Sentius at Tralles so far is striking in view of the fact that his products are common at neighboring sites such as Ephesus and Priene. The presence of examples bearing the cognomen SERENI (genitive), however, suggests that a subsidiary workshop of Q. P. Serenus might have existed at Tralles; further excavation may yet result in evidence for a similar subsidiary factory of C. Sentius. The homogeneous nature of the large assemblage, with only minor stylistic variations in manufacturing techniques, and uniformity in forms and fabrics, suggests that multiple workshops simultaneously existed at Tralles. Local craftsmen might have worked alongside the Arretine potters.

The stamp of potter Q.P. Serenus from a footed bowl.

The high level of prosperity at Tralles and its important status derived only in part from the pottery industry. Prior to the emergence of this pottery tradition, Tralles was already one of the wealthiest cities of Asia Minor and famous for its sculptural school. By establishing a pottery industry, Tralles appears to have taken advantage of its strategic location on the River Meander and proximity to Ephesus.

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Turan Takaoglu is a Ph.D. candidate in the Department of Archaeology at Boston University. He has been a field supervisor of the excavation project at Tralles since 1997.

Faculty News

The Encyclopedia of the Archaeology of Ancient Egypt was published in March 1999 by Routledge, London. Edited by **Kathryn Bard**, the work is the most comprehensive overview of ancient Egypt in English. The major focus of the book is on pharaonic Egypt, but the volume covers sites and topics ranging from the Paleolithic through Roman times. The book, 939 pages in length, took eight years to complete, and is expected to become a basic reference work on ancient Egypt. Bard also assisted with the Exhibition on Excavations at Aksum (see related story, page 17), which was held in September 1999 at the George Sherman Union.

Mary Beaudry will conduct the third Flora MacDonald Field School Project during the summer of 1999 (see page 15 for details).

Clemency Coggins published an article entitled "Proposal for Museum Acquisition Policies," in the *International Journal of Cultural Property* VII: 2, 434-437. On April 17, 1999, she was a participant on a panel: "The Developing World: Preservation, Export and Looting" in "Who Owns Culture: the International Conference on Cultural Property and Patrimony," National Arts Journalism Program, Columbia University. On October 7, 1999, Coggins delivered a paper: "El arte maya hoy en dia," Conferencia Magistral, in a conference entitled "Presencia Maya en los albores del Tercer Milenio," at the Museo Nacional de Antropologia, INAH, Mexico City.

During the fall of 1998, **Paul Goldberg** received the "Poste Rouge" from the French Government (Centre National de Recherche Scientifique), which is awarded for scientific research to senior fellows who are in residence at the Center. In addition to publishing four articles during 1999, he presented several papers at national and local meetings.

During the spring of 1999, the Geological Society of America (GSA) established the "Farouk El-Baz Award for Desert Research" in honor of **Farouk El-Baz**, Director of Boston University's Center for Remote Sensing and an Associated Faculty member of the Department of Archaeology. The Award will be given annually to a scientist selected from a group of geologist nominees. It will be managed by the Quaternary Geology Division of GSA.

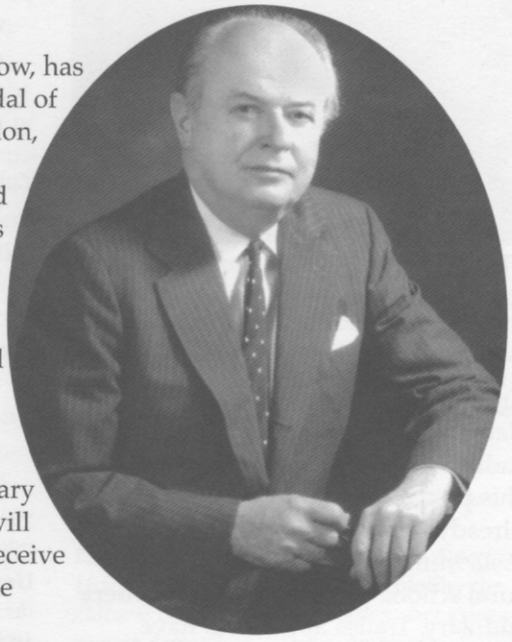
Patricia McAnany received a Bunting Fellowship to spend the 1999-2000 academic year at the Radcliffe Institute for Advanced Study, Harvard University, to prepare a monograph based on the first three seasons (1990, 1992-1993) of field research at the Maya site of K'axob, Belize. The 1992-1993 seasons were funded by a grant from the National Science Foundation. As a fellow, she presented a public colloquium on November 22 entitled "Ancestors, Authority, and Ritual Adornment: Life in a Maya Village of the First Millennium B.C.E."

Curtis Runnels and Priscilla Murray (Research Fellow, Department of Archaeology, and Program Administrator at the Archaeological Institute of America) have signed a contract with Stanford University Press to write a book titled *Greece Before History: An Archaeological Companion and Guide*, which will be published next year. The book is intended to be a general introduction to the prehistoric archaeology of Greece and is based on the authors' joint research over a period of nearly thirty years. Illustrated throughout with original drawings of artifacts, sites, and the Greek countryside, the book is intended to appeal to students, travelers, and all those with a curiosity about the distant past of this fascinating country. The book will be published in cloth and paperback format in order to make it widely available. Runnels and Murray hope that the book will be particularly attractive and helpful to those who journey to Greece and need a handy guide to the prehistoric cultures of that country. Although there are many books that describe the classical remains that form a conspicuous part of the landscape, there are not generally available books that focus specifically on the Stone and Bronze Ages.

James Wiseman presented major papers at three international conferences in the spring and fall of 1999. In a symposium on "Northwestern Greece Before and After the Foundation of Nikopolis," sponsored in March by the Danish Institute in Athens, Greece, he presented a keynote address, "Landscape Archaeology in the Territory of Nikopolis." In Vienna, Austria, in September, he spoke on "The Early Churches and the Christian Community in Stobi, Macedonia," at

Gold Medal to Gordon Willey

Professor Gordon R. Willey, Distinguished Research Fellow, has been awarded the Gold Medal of the Society of Antiquaries of London, the world's oldest archaeological society. The medal was established in 1934 "for distinguished services to archaeology," and previous medalists have included Sir Arthur Evans, Sir Mortimer Wheeler, Sir Leonard Woolley, and Professor V. Gordon Childe. Gordon Willey is the first Americanist to be awarded the Gold Medal, and is also an Honorary Vice-President of the Society. He will travel to London in May 2000 to receive the medal from the President at the Society's Anniversary celebration.



Early Christian Archaeology. In November he gave the keynote address, "Archaeology and religion in Roman Corinth," during a session on "Archaeology of Religion in the Greco-Roman World" at the annual meeting of the Society for Biblical Literature.

In 1998 and 1999, **Paul Zimansky** published two books: *Ancient Ararat: A Handbook of Urartian Studies. Anatolian and Caucasian Studies.* Delmar, NY: Caravan Books, 1998 and (with Elizabeth Stone) *The Iron Age Settlement at 'Ain Dara, Syria: Survey and Soundings, BAR* International Series 786, Oxford: British Archaeological Reports, 1999. As well as presenting several other papers in 1998, he presented a paper at the

continued on page 14

Hammond Receives Honorary Degree

Professor Norman Hammond with Baroness Lockwood of Dewsbury, Chancellor of Bradford University in England, after the University had conferred on him the Honorary Degree of Doctor of Science. The citation praised Professor Hammond's "contributions in the field of archaeology, including his distinguished publication and excavation record in the archaeology of Central America, and his services to archaeological journalism."

Professor Hammond was a faculty member at Bradford 1975–77, when he helped to establish Britain's first university department of archaeological science; he has also been Archaeology Correspondent of *The Times of London* since 1967.

Lights, Camera, Action!

Professor Runnels (left) discusses flintknapping with Alan Alda. Photo by Michael Hamilton.

In October and November, Professor Curtis Runnels joined Alan Alda, noted actor and producer, to make a documentary film for Scientific American Frontiers, a PBS series presented by Connecticut Public Television and now in its tenth season. The episode that will feature Runnels was filmed partly in Greece and partly in a Newton studio, and focuses on prehistoric obsidian trade in the the Stone Age Aegean. Obsidian, a volcanic glass, was mined on the Cycladic island of Melos as early as the Palaeolithic period (about 12,000 years ago) and is found on Greek mainland sites such as Franchthi Cave, which was excavated by an Indiana University team in the 1960s and 1970s under the direction of Thomas W. Jacobsen (now at Tulane University).

In the sequence shot in Greece, Runnels is seen guiding experimental archaeologist Haris Tzallas through Franchthi Cave. Tzallas also appears in the film demonstrating the building and sailing of a papyrus boat that he believes is similar to the type of craft used by prehistoric mariners to bring obsidian from Melos to the mainland. In the same sequence, Runnels is shown at the cave demonstrating flintknapping, an ancient art of stone tool making like that used by the ancient inhabitants of Franchthi Cave to produce useful tools and weapons from the imported obsidian.

Curtis Runnels (second from right) and Alan Alda (right) with PBS film crew at the flintknapping session in Newton, Massachusetts. Photo by Michael Hamilton.

In the same spirit of experimental work, Runnels appears again in the Newton studio with Alan Alda, the host of Scientific American Frontiers. In the Newton sequence, Runnels teaches Alan Alda how to flintknap. Viewers will see Alda learn from scratch how to make stone tools using a stone hammer and a deer antler billet in a sequence laced with humor and serious inquiry into the intellectual capacities of early humans such as the prehistoric seafarers from Franchthi.

The Newton filming was attended by Priscilla Murray, Research Fellow, Department of Archaeology, and Michael Hamilton, photographer for the Department of Archaeology, who joined Runnels and Alda for a lively and wide-ranging discussion at lunch after the tool-making session to discuss the implications of the research covered in the documentary.

Scientific American Frontiers is produced by the Chedd-Angier Production Company in association with *Scientific American* magazine, and the edition featuring Runnels, "Mediterranean on the Rocks," will be aired on local PBS stations on March 28, 2000.

Appointments

Claire Calcagno has been appointed Adjunct Assistant Professor, and is working with Dr. Anna Marguerite McCann on developing a departmental program in Maritime Archaeology, as well as assisting in the teaching of AR 507 Maritime Archaeology and Technology in the Ancient Mediterranean during the fall term 1999. During the second semester, she will teach a new course, AR 508 Post-Classical Maritime Archaeology and Technology, as a follow up to AR 507, and will continue work on several publications.

Dr. Calcagno received her Ph.D. in Maritime Archaeology from Oxford University in 1998, and has worked extensively on underwater sites in the Mediterranean.

Francisco Estrada Belli, who received his Ph.D. from Boston University in 1997, was appointed Lecturer for the academic year 1999–2000 in the Department of Archaeology. He also continues doing GIS work for the La Milpa Project in Belize (see his article on page 20 of this issue).

Alan Kaiser (Ph.D. 1999, Boston University) was appointed Lecturer in the Department of Archaeology for the academic year 1999. His innovative dissertation focused on analyzing the use of space in the Greco-Roman colony of Empuries, Spain, using GIS technology. Kaiser graduated with honors from the University of Minnesota, receiving his B.A. in Anthropology and History in 1989. He received Boston University's Presidential University Graduate Fellowship in 1993. While a graduate student, he served as a Teaching Fellow, and in 1996, received the "Outstanding Teaching Fellow Award." His field experience includes work in Greece, Spain, the United States, and on the Caribbean Island of Nevis.

Robert E. Murowchick has been appointed Research Associate Professor of Archaeology and Anthropology, effective September 1, 1999. Dr. Murowchick is Director of the newly founded the International Center for East Asian Archaeology and Cultural History (see story on page 18 in this issue of *Context*. He is also co-editor of the new *Journal for East Asian Archaeology*.

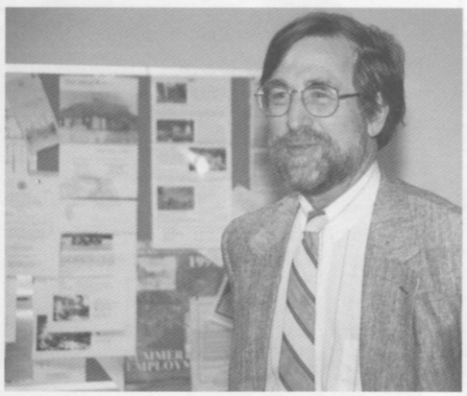
Murowchick is an internationally recognized expert in Chinese archaeology and is Co-director of the Shang Dynasty Project in China. He studied with Professor K.C. Chang, a distinguished scholar in Chinese Archaeology at Harvard University, and he has also been a lecturer on Chinese Archaeology as well as Associate Director of several centers there. At Boston University, Murowchick will organize a lecture series on East Asian archaeology offered through the Department of Archaeology, which will include visitors who are authorities on East Asian Archaeology and Art History. He will also participate as a guest lecturer in archaeology courses such as AR100 Great Discoveries in Archaeology, AR101 Introduction to Archaeology, AR205 Origins of Civilization, AR705 Pre-Urban Development, and AR706 Complex Societies.

Michael MacKinnon, who recently received his Ph.D. (1999) from the University of Alberta, Edmonton, has been appointed a Research Fellow in the Department of Archaeology for 1999-2001. He received a postdoctoral fellowship from the Social Sciences and Humanities Research Council of Canada to pursue his research on "The Role of Animals in Roman Italy: Integrating Zooarchaeological, Textual and Artistic Data." He will be adding the third component of this work while at Boston University working mainly with Professors James Wiseman and Fred Kleiner, and hopes that his integrated study of zooarchaeological remains, textual references, and artistic images will broaden our understanding of animal production and consumption in antiquity and promote new links across disciplinary lines in archaeology, anthropology, zoology, art history and classics.

MacKinnon is the recipient of several fellowships and student awards from the University of Alberta. He has done archaeological field survey work in southern Italy, and has been the zooarchaeologist for archaeological projects in Italy, Carthage, and Portugal. He has published reports on his research in North American and European journals, and several other publications in press, including *Vol. III: The Fauna and Flora* in the series of volumes *Excavations at San Giovanni di Ruoti* (University of Toronto Press).

In his proposal for the two-year postdoctoral fellowship, MacKinnon wrote "Boston University provides an ideal environment for my postdoctoral research. It is exceptionally strong in archaeological science, and amenable for zooarchaeological research, while at the same time it is one of the few Archaeology departments worldwide which encompasses Classical Archaeology within its ranks."

Faculty News continued from page 13
Annual Meetings of the American Schools of Oriental Research held in Cambridge, Massachusetts, in November 1999: "Society and Settlement in the Heartland of Urartu: Survey and Excavations in the Outer Town of Ayanis, Turkey, 1999." His work at Ayanis, Turkey, was recently reported in the "Geographica" section of *National Geographic* 196/5 (November 1999). Zimansky also presented lectures for the AIA societies in Baltimore and Charlottesville during January, 1999. Through Archaeological Tours Inc., he was a lecturer on a tour of sites in Syria, Lebanon, and Jordan in the fall of 1999.



Professor Paul Zimansky at a reception following his lecture entitled: "End of an Empire: New Evidence on the Collapse of Urartu," which was given on March 17, 1999, and co-sponsored by the American Schools of Oriental Research.

Material Life in the Scottish Highlands before and after the Clearances: the Flora MacDonald Project

by Mary Beaudry

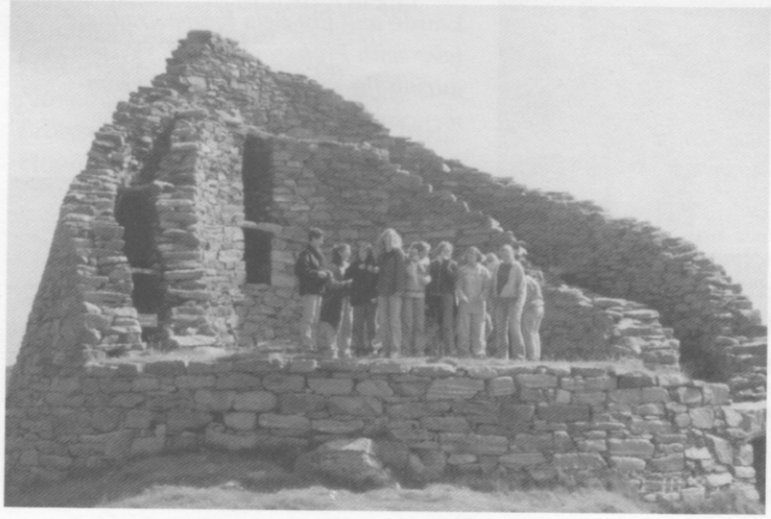
In summer 2000 Professor Mary Beaudry will direct the third season of Boston University's field school in the Outer Hebrides of Scotland in collaboration with the University of Sheffield. The Flora MacDonald Project (see Context 14:1 [Fall/Winter 1998/99], pages 23–24), begun by James Symonds of Sheffield in 1995, has as its goals to investigate the pre- and post-Clearance landscape, settlement history, and material life of Milton on South Uist through instrument-based landscape survey, detailed survey of individual structures at surface level, and test pits as well as wide-area excavations. The Highland Clearances began in the 1700s and reached their peak in the mid-nineteenth century; they involved the forced removal of islanders from the lands they had lived on and farmed as part of the clan-based, feudal system of land tenure that characterized the Highlands. Often the Clearances were initiated by landlords—heads of the local clan to whom the islanders had sworn fealty in return for protection and rights in the land. In reality any rights they had were limited and easily withdrawn; some contemporary observers made a direct comparison of the conditions in which these crofters (peasant farmers) lived with those of enslaved Africans in the Americas.

During the 1999 field season Boston University students and Earthwatch volunteers investigated elements of Milton township and conducted test excavations at Ormiclate Castle, the seat of Allan, 14th Chief of Clanranald, at Ormiclate, South Uist, in addition to continuing the ongoing landscape survey employing an EDM. We also undertook extensive wide-area excavations at the late eighteenth-/early nineteenth-century hamlet cluster of blackhouses known as Airigh Mhuillin, which lies near the monument marking the birthplace of Flora MacDonald. Here students undertook geophysical prospecting using a resistivity meter; results when plotted help guide us to spots of particular interest for archaeological testing. At Airigh Mhuillin, we completed investigation of two blackhouses, one of which had a corn dryer or grain-drying kiln, and the remains of an oval outbuilding of unidentified function. Blackhouses were the traditional dwellings in the Highlands and Islands of Scotland until the twentieth century and employed locally available construction materials: stone and turf or thatch. There are few if any trees on the islands—driftwood was the major source of timber for construction, while peat was burned for fuel.

The typical blackhouse had a byre for animals at one end; the byre is readily distinguished from the living area of the house by its paved floor with drain; the remainder of the house tended to have a floor of dirt or tamped peat, with a hearth set directly on the floor. The two blackhouses excavated in 1999 had both been altered over time with internal partitions or other changes. One of the houses produced unmistakable evidence that it had been deliberately burned, possibly when its occupants were evicted when Milton was "cleared" to make way for a sheep-farming venture. What is most intriguing is that a portion of the house was rebuilt and reoccupied—an act of defiance by squatters, probably the former residents, who resisted their eviction.

Work in 2000 will continue the landscape survey; open-area excavations will focus again on the community of Airigh Mhuillin, the remains of which, no doubt, have many more interesting tales to tell.

Emily Parker and Amanda Hutchinson clearing stones of a blackhouse foundation at Sirigh Uhuilenn.



Field School students explore the ruins of Dun Carloway, an Iron Age broch or tower house, during a day trip to the Isles of Lewis and Harris.

Mary Beaudry is an Associate Professor in the Department of Archaeology and Director of the Flora MacDonald Field School Project.

Dates for the 2000 field school in Scotland are June 10 to July 22. For further information and application form, contact Boston University's Office of International Programs, 232 Bay State Road, Boston, MA 02215; Phone: 617-353-9888/ Fax: 617-353-5402; E-mail: abroad@bu.edu; Web Site: http://www.bu.edu/abroad.

Archaeology Commencement, 1999

Bachelor of Arts
Gino Joseph Albert (Minors: Earth Science and Anthropology)
Rachel Aminia
Jonathan Heath Anderson, *Magna Cum Laude* (Double major with History)
Benjamin Thomas Barna, *Magna Cum Laude* (Double major with History)
Mark Beazley, *Magna Cum Laude* (Double major with Classical Studies)
Sarah Abigale Bennett
Lauren Arzula Bologna, *Magna Cum Laude* (Minor: Earth Science)
Domenico Italo Composto-Hart, *Magna Cum Laude* (Double major with Anthropology)
Kristopher Cortwright (Double major with Anthropology)
Tibor J. Csànk (Minor: Earth Science)
Tara Lynn DiPace (Minor: Environmental Science)
Michaela Regina Donnelly (Minor: Art History)
Alex Brink Effgen*, *Summa Cum Laude*, Phi Beta Kappa (Double major with Classical Studies)
Jennifer Foley (Minor: Anthropology)
Carl J. Gordon
Sara Marie Hayes, *Cum Laude* (Minors: Earth Science and Psychology)
Kara R. Honthumb Lange
Elizabeth A. Kuba (Double major with History)
Sara E. Lyman, *Cum Laude* (Awarded Department Prize for Excellence)
Anne Catherine Morgens
Mentor Mustafa*, *Cum Laude* (Awarded Department Prize for Excellence)
Asa Robert Randall*, *Summa Cum Laude*, Phi Beta Kappa (Awarded College Prize for Excellence)
Scott Robert Reel, *Magna Cum Laude* (Minor: Computer Science)
Nicole Sara Reiss, *Cum Laude*
Erick Thomas Rochette*, *Magna Cum Laude* (Minor: Anthropology)
Megan Elizabeth Silvia
Kenya Uehara
Kyle Adam Wagner, *Magna Cum Laude*, Phi Beta Kappa

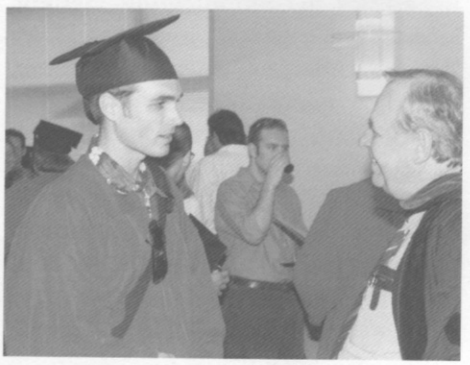
***Work for Distinction**

Master of Arts
Ellen Berkland
Clinton Chamberlain
Britt E. Hartenberger
Ben Thomas

Doctor of Philosophy
Alan E. Kaiser,
Dissertation: "The Urban Dialogue: Use of Space in the Roman City of Empuries."

Scott Robert Reel (third from left) who received his B.A. degree Magna Cum Laude, *with his family following commencement.*

Summa Cum Laude *and Phi Beta Kappa graduate, Asa Robert Randall, receives his B.A. degree from Professor Curtis Runnels. Professor Ricardo Elia (right) looks on.*

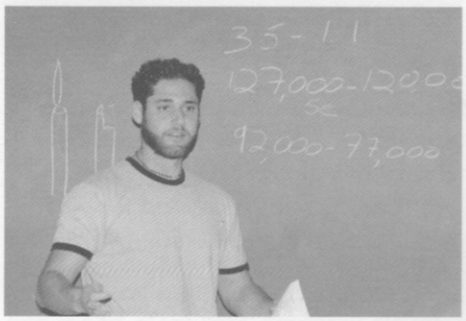


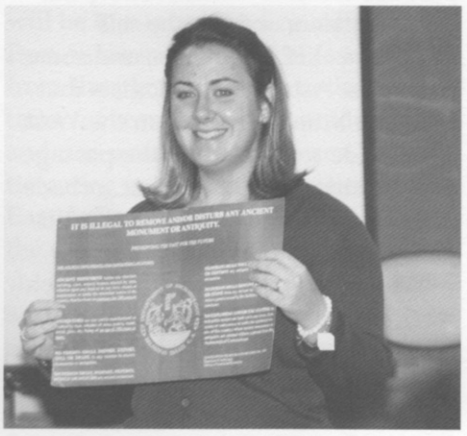
Alex Brink Effgen, B.A. Summa Cum Laude *and Phi Beta Kappa graduate, talks with Professor James R. Wiseman during the reception following commencement.*

Top: during the reception for new graduates following commencement exercises, Master of Arts recipient Ellen Berkland (left) accepts congratulations from Research Fellow Tom Tartaron (center) and Ph.D. candidate Brendan McDermott. Right: Professor Julie Hansen, Chair of the Department of Archaeology, chats with Alan Kaiser (center), who received his Ph.D. in May, 1999, and Christine Lovasz at the fall opening reception. Kaiser was hired as a Lecturer to teach in the Department of Archaeology during the academic year 1999–2000. Photos on this page by Michael Hamilton.

Student/Alum News

Featured below are some of the Brown-Bag Lunch Lectures given by graduate students in the Department of Archaeology during the fall 1999.





Top left: Britt Hartenberger, speaks on "Lithic Craft Specialization and the Blade Workshop at Titris Höyük Turkey." Top right: Eric Vrba (center), who spent two months in the summer of 1999 as a staffmember of the Slovak Museum Excavation Project, spoke on "Roman Archaeology in Slovakia." Bottom left: Jeffery Rose talks about the paleolithic in Arabia. Bottom right: Elizabeth Gilgan spoke on "Cultural Heritage Management in Belize." Gilgan holds a sample of a poster she created for the Belize Department of Archaeology informing people about antiquities of archaeological importance and warning against their damage. The posters were distributed throughout Belize. Photos on this page by Michael Hamilton.

Britt Hartenberger, graduate student at Boston University; Steven Rosen, Ben-Gurion University of the Negev, Israel; and Sumru Aricanli, American Museum of Natural History, presented a talk on November 20, 1999, "The Early Bronze Age Blade Workshop at Titris Höyük: Lithic Specialization in an Urban Context," at the Annual Meeting of the American Schools of Oriental Research held in Cambridge, Massachusetts.

Chantal Esquivias, Ph.D. candidate, received two awards (a Wenner Gren grant and a NSF grant) for the purpose of conducting research on her dissertation project. During the fall 1999, she spent time in Seville, Spain, doing part of the archive research for the dissertation.

Christine Lovasz (M.A. 1998) taught a course at Tufts University Experimental College in the spring of 1999. The course, entitled "Castles, Dragons and Knights: Images of the Middle Ages," examined contemporary medieval images of the Middle Ages (through the historical archaeological record) and compared them to modern images. In the spring of 2000, she will teach a class at the Brookline Adult and Community Education Program on "Romance and Chivalry: The Myth of Medieval Monarchy" to explore medieval kings from the historical and archaeological record and compare this to modern images.

Exhibition on Excavations at Aksum, 1993-1998

An Exhibition on the 1993-1998 excavations at Aksum, Ethiopia, by Boston University and the Instituto Universitario Oreintale (I.O.U.), Naples, Italy, was displayed in the gallery of the George Sherman Union, August 31-September 8, 1999. The exhibition had previously been shown at the Italian Cultural Institute, Addis Ababa, Ethiopia, and in the seventeenth-century palazzo in which the Department for the Study and Research on Africa and Arab Countries is located at the I.U.O.

The exhibition included illustrated educational material about the excavations and photographs of project members at work in the field. Posters gave an overview of the project, the chronology and cultural sequence, and discussed the two major sites investigated (a palace complex, Ona Nagast, and a cemetery with monumental rock-cut tombs, Ona Enda Aboi Zewge), as well as imported materials, the pottery, paleothnobotanical and archaeozoological evidence, and related ethnoarchaeological studies.

The exhibition was mounted by Michael Hamilton and Michael DiBlasi, and the Co-directors of the excavations, Kathryn Bard and Rodolfo Fattovich.

Michael DiBlasi (left), Adjunct Assistant Professor of Archaeology and African Studies, talks with Kathryn Bard and Rodolfo Fattovich, Co-directors of the Aksum Project, as Professor James McCann (center), Director of the African Studies Center, looks at one of the displays in the exhibition.

The International Center for East Asian Archaeology and Cultural History

by Robert E. Murowchick

Introduction

East Asian archaeology and the cultural heritage of that region of the world are at an important crossroads. On the one hand, unprecedented opportunities for truly collaborative projects in archaeology, anthropology, art history, history, and related fields have recently opened up for Western scholars and students. This important change—after decades of relative isolation for much of the region—brings with it the potential to utilize more fully Western methods and theories of archaeology in the study of early East Asia, and to integrate at last the richness of that region's archaeological resources into world archaeology. On the other hand, unfortunately, serious threats also loom, including rapid economic expansion, extensive construction projects, unprecedented increases in the illegal looting of antiquities, increasing destruction of archaeological and architectural sites, and a lack of funding needed to protect such sites in the proper manner.

These concurrent developments dramatically underscore both the need and the timeliness of the establishment of the International Center for East Asian Archaeology and Cultural History, or ICEAACH, at Boston University. The Center will use a major three-year startup grant of $750,000 from The Henry Luce Foundation to promote a broad range of collaborative research and publication projects and public outreach programs. The Center's geographical focus includes Central Asia, Siberia, Korea, Japan, China, and mainland Southeast Asia.

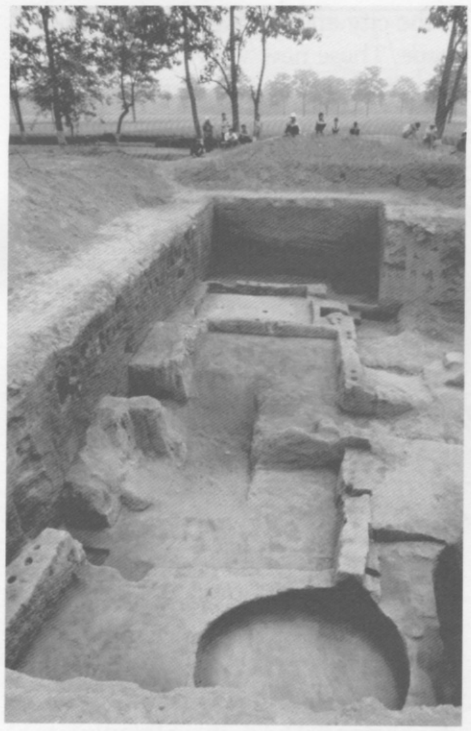
Background and Need

Archaeology in East Asia has a long and distinguished history. The scientific discipline of archaeology, introduced to East Asia in the late nineteenth and early twentieth centuries by foreigners and by foreign-trained nationals, found a fertile foundation in the East Asian historiographical tradition that dates back three thousand years or more. During the last forty or fifty years, however, particularly in China, but also in many other parts of East Asia, archaeology has become an insular enterprise, with few opportunities for foreign involvement or participation. In part this isolation resulted from language barriers or from the self-imposed belief by Chinese and some other East Asian archaeologists that they had little to learn from the West, an attitude reinforced by the passage of antiquities legislation that forbade or severely restricted foreign participation in archaeological work.

With so few opportunities for fieldwork, relatively few Western students have been trained in the archaeology and early cultural history of East Asia, and Western archaeology has consequently not been fully able to incorporate East Asian archaeology into either its academic training programs or its theoretical and methodological discussions. Most Westerners have been dependent upon a handful of excellent yet necessarily limited translated summaries that barely tapped an enormously rich body of archaeological data.

Recent changes in China's antiquities and archaeology regulations now allow collaborative archaeology projects between Chinese and foreign institutions, and have inaugurated unprecedented opportunities for foreign participation in the design and implementation of archaeological projects in China. For the first time, American students and scholars, working with collaborating Chinese institutions, can actually design and carry out research that is based on their own participation in Chinese archaeological field projects, a situation that would have been unthinkable only a generation ago. Similarly, opportunities for increased foreign participation in archaeological work in Vietnam, Cambodia, and Malaysia have blossomed since the early 1990s. These in turn have spurred increased

GPR at Mazhuang: MIT geophysicist David Cist (center), with geophysicist Wang Zenglin (left) and archaeologist Tang Jigen (right) of the Chinese Institute of Archaeology (Beijing), undertakes a GPR survey at the Middle Neolithic site of Mazhuang in eastern Henan Province, China. A variety of geophysical surveying methods was used to complement a comprehensive geophysical coring program undertaken by Jing Zhichun and Rip Rapp (University of Minnesota) in an effort to locate Neolithic and Bronze Age sites for the collaborative program, "Investigations into Early Shang Civilization."



Partially excavated multi-room building at Shantaisi, a settlement site of the Longshan culture (about 2500 B.C.E.), in eastern Henan Province, China. In addition to residential dwellings, the site has yielded a unique sacrificial pit containing nine fully articulated cattle. This excavation is part of the Sino-American collaborative field project, "Investigations into Early Shang Civilization."

interest in collaborative fieldwork with foreigners in Korea and Japan, where such work has always been possible but relatively little pursued by Western students. Collaborative projects in Taiwan ROC, which has always successfully encouraged a close working relationship with American and other foreign scholars, have increased as well.

This expanding network of opportunities has stimulated new interest in East Asian archaeology at Western universities, as shown by swelling undergraduate and graduate programs. This increase in academic programs in Asian archaeology has been accompanied by a surge in public interest for Asian art and archaeology, as witnessed by the success of a number of major traveling museum exhibitions in the U.S. and Europe, and by increased interest in incorporating early East Asia into the school curriculum of grades K-12.

The launching of the ICEAACH thus comes at a turning point in East Asian archaeology, a time of unprecedented opportunities and unmet needs. It will draw upon an extremely rich network of scholars, students, libraries, and museums from around the world in an atmosphere of openness and collaboration.

The Center's Mission and Programs

Research

The Center will pursue four interrelated goals: field research, publication, teaching, and public outreach.

The primary mission of the Center will be to support and coordinate East Asian archaeological research from the planning stage to the presentation of results for both academic and non-academic audiences. By participating in the cooperative efforts of East Asian scholars around the world, the Center will help to coordinate a range of archaeological research projects, including fieldwork, laboratory analyses, and the production of comprehensive computer databases of relevant scholars and their publications. Some international projects already under way, such as the major collaborative project on Early Shang Civilization at Shangqiu, Henan Province, China, will expand under the Center's umbrella and others will be launched by the Center's wide network of affiliated scholars.

To further foster the collaborative aspects of this research, the Center will create a Visiting Scholars Program designed to assist East Asian scholars in conducting research and studying with Western colleagues in Boston and elsewhere. These additional opportunities for study in the West will help to create a generation of East Asian scholars genuinely well versed in modern Western archaeology, art history, history, and anthropology. Most of these Visiting Scholars will hold positions of influence in East Asian academic and research institutions, and will be instrumental in shaping archaeological and related research in their own countries and expanding collaborative research opportunities with foreigners in the coming decades.

Good research is dependent, of course, on the ready availability of state-of-the-art library resources. The Center will create a specialized library on East Asian archaeology and cultural history that will be available to all interested users. To this end, the eminent senior Chinese archaeologist, Professor K. C. Chang, who has recently retired from Harvard University, has agreed to donate his entire research library of many thousands of volumes to form the core of the Center's new library. He hopes that his action will stimulate other senior scholars to do the same in order to rapidly provide the depth and breadth of resources that the Center's work will require. In addition, arrangements for collaborative library acquisitions are currently being made with a variety of institutions, including the Needham Research Institute at Cambridge University, the Institute of Archaeology in Beijing, Peking University, Tokyo University, Seoul National University, and the Center for Archaeological Research in Malaysia. The Center's library will also create and maintain a comprehensive keyword-searchable computer database of relevant article citations; this will be made available both through the Center's website and on CD-ROM.

Publication

The Center will be involved in a number of publishing activities to foster the dissemination of research results. In addition to scholarly monographs, an important focus will be the newly founded *Journal of East Asian Archaeology*. This new, peer-reviewed scholarly journal has an editorial committee comprised of a distinguished group of international scholars, and will be published by E. J. Brill in Leiden, The Netherlands. This journal fills an important gap in the current literature, and will publish original scholarship on all aspects of East Asian archaeology, art history, and early history, as well as translated essays of importance, field reports from ongoing projects, conference abstracts, and book reviews. The first

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A Virtual View of a Maya City: La Milpa, Belize

by Francisco Estrada Belli

Among the many records held by La Milpa one deserving special attention is that it is the first Maya city that can be seen through a virtual window. Several three-dimensional models of the city have now been created by digitizing field maps and placing them on a website for public access. Visitors to the La Milpa website can now navigate through each part of the site's settlement area from their desktop observing from different angles Maya residences, palaces, and earthworks strung along ridges and hills that make up the landscape of the city. These models result from an ongoing project to analyze and display the settlement area of La Milpa through computer-aided Geographic Information Systems (GIS) which the author began in the fall of 1998 in the Department of Archaeology at Boston University.

The GIS database, assembled for the La Milpa project with the aid of a National Geographic grant to Professor Norman Hammond, includes 1:1,000 scale maps of the city done by Research Fellow Dr. Gair Tourtellot as well as maps of the area for a 15-kilometer radius around La Milpa at 1:50,000, a remote sensing image from airborne Radar (AIRSAR) made by NASA's JPL team in 1991, and a Landsat Thematic Mapper image. All maps and images have been integrated into a common geo-referenced database, so that each source of data can be viewed individually or as overlays.

One of the great benefits of the GIS database of La Milpa is that new and unconventional views of the site can be produced, highlighting different aspects of the terrain and the location of archaeological features, both within the city and in its regional landscape. These new views have led to some interesting discoveries about the pattern of settlement around La Milpa.

The location of the site itself was found to be in a unique position, on the highest point of a broad ridge overlooking a large area of rolling hills and low-lying areas where some of the best soils in northwestern Belize are located. This hill not only gave its first colonizers optimal access to a variety of upland and lowland resources, but also allowed room for the growth of the early settlement into one of the largest ceremonial centers in Belize. In the Late Classic Period, the hill was occupied by one of the largest open plazas in the Maya Lowlands, enclosed by several temple and palace buildings of majestic dimensions. The highest temple, Str. 1, was also one of the earliest to be built at the site, judging from the long sequence of buildings within it. Looters had targeted this structure in 1979-81, leaving a deep trench open in its front and back, and exposing

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continued from page 19
issues are scheduled to appear in 1999-2000.

Teaching and Public Outreach
The Center will promote the teaching of East Asian archaeology by organizing workshops, symposia, conferences, and lectures that will be open to the academic community and to the general public. Graduate and undergraduate courses on Chinese and Southeast Asian archaeology will be offered through Boston University's Department of Archaeology.

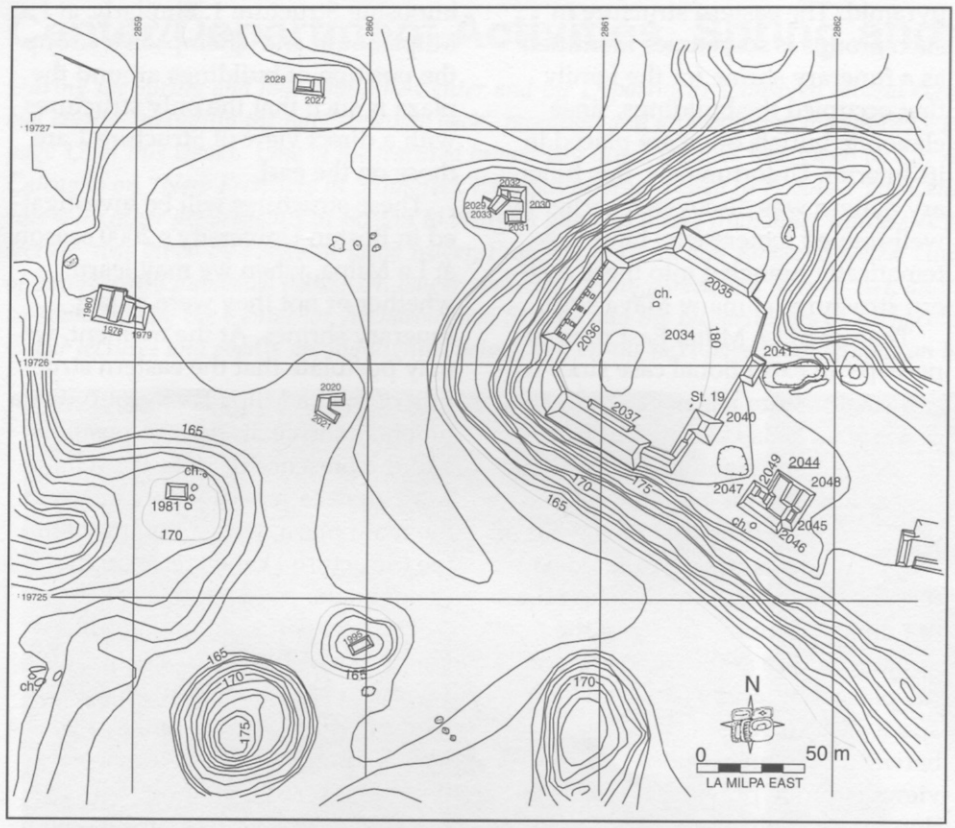
The Center will also provide an important bridge connecting universities, museums, and the general public, helping to foster awareness of and discussion about East Asian archaeology and related topics. These outreach efforts will build upon existing programs at a range of institutions, including the Boston Children's Museum, Primary Source's New England China Network, the education department of the Boston Museum of Fine Arts, and the Asian Art Museum of San Francisco. In addition to training docents and teachers, these programs will create curriculum materials that can then be shared nationally with other institutions and school systems. Educators will have access to the Center's library, and the Center will generate updated lists of suggested readings on various topics from its database.

One aspect of outreach too often missing from academic centers is providing accurate, up-to-date information to the media. Informed and interested media are extremely important to making a broader audience aware of the exciting research that is going on today, which of course translates into increased public support for these efforts. To this end the Center will be a clearing-house for the media to find reliable, accurate, and updated information about current discoveries in East Asian archaeology. Journalists will be regularly invited to workshops, seminars, conferences, and other outreach events, to give them first-hand contact with the people working in the field.

Summary

The Center will play an important leadership role at a critical time in the field, helping to network and coordinate an international array of scholars and students of archaeology and art history, history, anthropology, religion, and related fields. It will also serve as an important resource for educators, museums, the media, and the interested public. It will engage scholars and students from around the world, and will provide important benefits for a broad audience well beyond the students and scholars who will be involved in the dynamic field of East Asian archaeology in the next millennium.

Robert E. Murowchick is the Director of the International Center for East Asian Archaeology and Cultural History and Research Associate Professor in the Departments of Archaeology and Anthropology.



Plan of La Milpa East group showing a type of layout known as "Tikal Plaza Plan 2" and location of Stela 19 in front of eastern structure (Str. 2040).

successive earlier constructions. It is possible that some of the early rulers of La Milpa may have been buried within this temple, although apart from an empty tomb, evidence has been forever lost by the looting. It is evident, however, that this eastern building continued to be an important focus of ritual veneration since one of the late rulers, the great Ukay, chose to place his commemorative building and stela next to the imposing Temple 1 in A.D. 780, and Postclassic people re-erected fragmentary stelae in front of it.

Temple 1 may have offered an astonishing view of the densely populated hills and valleys around the main hill. This view is impossible to appreciate today because the rainforest canopy covers this entire region of Belize, a natural wonder in itself, with a multi-level tree canopy that stands as high as 100 ft. above plazas and temples. We can, without cutting down a single tree or harming the abundant wildlife living in the rainforest, appreciate a virtual view from the highest pyramid at La Milpa using one the GIS models recently created. Furthermore, the GIS model allowed us to explore the spatial and visual relationships between different parts of the site. We found that several large palace groups, sometimes referred to as "country manors" of the Maya elite, exist off the main hill. These groups consistently occupy the highest spots on hills around La Milpa; some are very close to the main hill while others are quite distant. The latter are also of larger size than all other groups beyond the main hill and form a ring of large groups around La Milpa at a distance of approximately 3.5 km, marking the cardinal directions around the center. Three of them have been surveyed so far: La Milpa East, La Milpa South, and Thompson's Group to the west. An unsurveyed hill to the north of the main plaza may be hiding the fourth group (La Milpa North?). As the counterpart to these, there is an inner ring of palace groups located at only about 1 km from the main plaza. The intermediate areas of the settlement were also punctuated by large and small palace groups at regular intervals. The landscape of the Maya settlement was thus organized in districts or neighborhoods of quite regular size, each with a palace group that was perhaps the locus of administrative and ritual activity. The implications of this spatial pattern in the layout of large and small residences are many, particularly regarding the social organization of the lower ranks of Maya society and the organization of labor and resource exploitation in the suburban landscape of Maya cities. Perhaps GIS analysis can help to elucidate these broad issues of Maya society in the future.

Meanwhile, a GIS tool known as viewshed analysis has brought to light interesting patterns in the location of some large groups at La Milpa, and the symbolic meaning associated with all or parts of these groups. Viewshed analysis allows us for the first time to address questions about the spatial distribution of features on a landscape in a way that goes beyond purely functional and economic considerations and may give insights into the way ancient people may have perceived their own landscape. This kind of analysis is one of the simpler operations in GIS in terms of data computation, but it offers a tremendous opportunity to explore visual links across a landscape at the regional and local scale, and it allows us to evaluate patterns in a quantitative way. Given a three-dimensional surface map of the terrain's topography, the computer finds all parts of the landscape that are visible from a specified point. The final output is a thematic map with areas classified as visible or invisible from the specified location. The user is then able to evaluate the viewshed of a certain location in terms of its area's extent or in terms of specific landscape features that fall within the visible range. This technique makes it possible to determine that Structure 1 at La Milpa was the most visible temple at the site, since its viewshed area exceeded that of any other point at the site. It was probably visible far away from La Milpa, since no higher points on the landscape are present for 12 km to the south and southeast of the center.

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In all instances the analyst performing a viewshed must assume that no trees were present on the hills around the site which would have affected visibility in an unpredictable way. This assumption is perhaps most significant for the suburban area of La Milpa, where settlement is densely distributed in all areas, but especially on the tops and slopes of hills, leaving little doubt that the original forest canopy was no longer present. The viewshed analysis of the settlement area determined that a number of specific groups were located with direct visibility to Structure 1. Not only were all large groups in the 1-km radius directly in the line of sight of Structure 1, but so were the three large groups in the outer 3.5 km ring, at La Milpa East, La Milpa South, and Thompson's Group. An intriguing additional observation is that the natural hills on La Milpa East and La Milpa South are located almost exactly due east and south of the main plaza. Thompson's Group is located only slightly to the south of a western line from the main plaza.

While these relationships may be entirely coincidental, or a result of the extremely broken topography of this area, the choice of these hills for the most important palace groups outside the main plaza may have been guided also by symbolic considerations: the Maya cosmos was organized in a quadripartite fashion, using the four cardinal directions and the center. It is possible that the builders of these country palaces attempted to follow this sacred cosmological order, and that Structure 1 may have served as the symbolic reference point for all other parts of the La Milpa cultural landscape.

There may also have been other specific ritual reasons for placing important elite groups in direct view of Structure 1. Further insights can be gained by looking more closely at the arrangement of structures at La Milpa East, La Milpa South, and Thompson's Group. These groups follow the pattern of "Tikal Plaza Plan 2," having long range buildings on three sides of a plaza on the eastern side of which is usually a small pyramid. The eastern structure in such groups is sometimes identified as a funerary shrine for the family that occupied the buildings, since elaborate burials often are placed in its interior. Unfortunately, this funerary pattern was discovered earlier by well-trained looters who have systematically tunneled into these eastern structures at many Maya sites.

The site of La Milpa East presents perhaps an exceptional case since its eastern structure has not been looted and a plain stela is located in front of it, adding to its significance this structure as a shrine for ancestor veneration. It is interesting that the layout of La Milpa East is slightly rotated so that the small funerary structure does not directly face the center of the range structure at the opposite side of the plaza, but faces instead the empty space at the corner of the plaza between two range buildings. The viewshed map provides an explanation for this deliberate tilt in the plaza layout. A direct and unobstructed line of sight exists from Structure 1, 3.5 km to the west, to the face of Stela 19 and to the front of the small pyramid behind the stela; in the La Milpa East plaza, only this narrow space allows a direct view of the distant but imposing Structure 1. Similarly, at La Milpa South and Thompson's Group the position of buildings around the plaza is such that the only structures with a direct view of Structure 1 are those on the east.

These structures will be investigated in Boston University's 2000 season at La Milpa, when we may learn whether or not they were in fact funerary shrines. At the moment, we may postulate that the eastern structure of the La Milpa East group was a funerary shrine: its eastern position and the presence of Stela 19 on its front seem to replicate the pattern of the main plaza, with a funerary temple (Structure 1) and stelae on the eastern side.

The occupants of these groups (and of La Milpa South and Thompson's Group) may have been members of the upper ranks of the La Milpa administrative hierarchy, a point that is suggested not only by the dimensions of these residential compounds, but also by the dominant positions they occupy with respect to their surroundings and the direct view that they enjoy of the most sacred buildings in the center or La Milpa. More specifically, the direct

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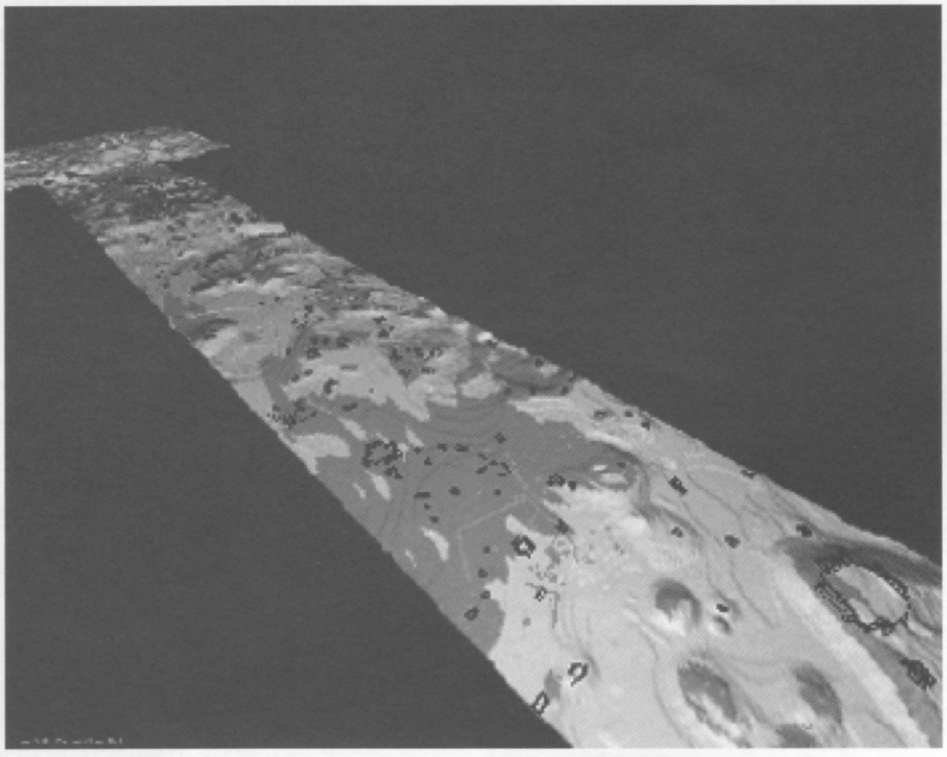
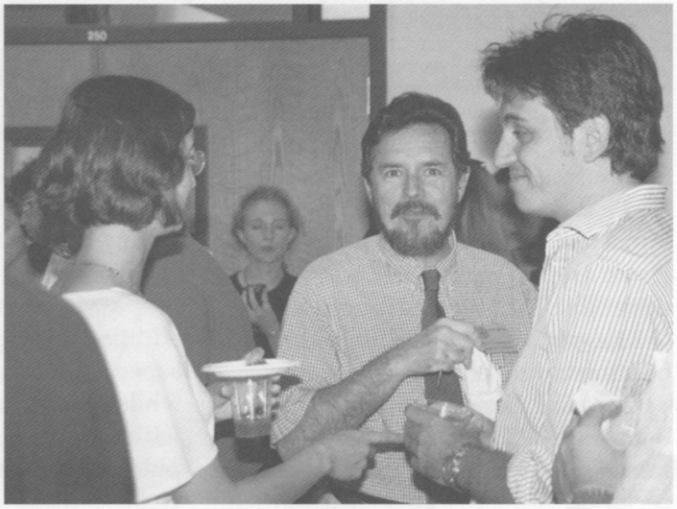


View of 3.5 km long East Transect and La Milpa East group (foreground) looking west towards site center and showing areas visible (dark tones) from Str. 1.

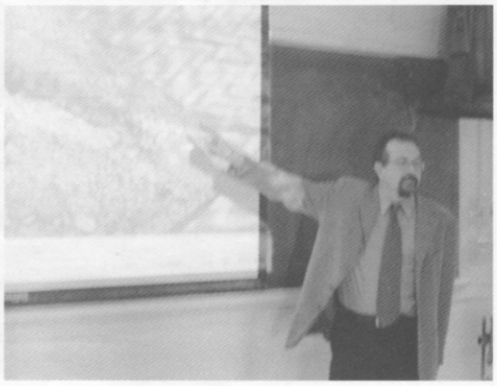
Center/Department Activities, Spring and Fall, 1999

During the spring and fall, 1999, the Center and the Department sponsored several evening and brown-bag lunch lectures and special events, including the fall "welcome back" reception and an exhibition on the 1993-1998 excavations at Aksum, Ethiopia (see page 17 in this issue). One of the featured brown-bag lunch lectures was given by Dr. Anna Marguerite McCann and Dr. Claire Calcagno on "New Frontiers in Shipwreck Excavation: from Scuba to Robots." The Center and the Department continue to collaborate with other departments at Boston to bring in guest lecturers from other universities in the United States and abroad. One such lecture was given by Professor Jacob Isager, Professor of Greek and Roman Studies, University of Southern Denmark and the author of two recently published books. Dr. Isager spoke on "Pliny, Greek and Roman Art, and Society" on December 2, and the lecture was co-sponsored by the Center for Archaeological Studies and the Departments of Archaeology, Art History, and Classical Studies. Other lectures and events are highlighted below, and on the next page (photographs on both pages were taken by Michael Hamilton).



Left: Undergraduate Amelia Kenward (back to camera), Professors Kathryn Bard and Michael DiBlasi chat at the "welcome back" reception. Right, at the same reception: Ph.D. candidate Britt Hartenberger (left) talks with Professor Curtis Runnels (center) and Lecturer Francisco Estrada Belli.

Left: Professor Rodolfo Fattovich (left), a Visiting Professor from the Oriental Institute, Naples, Italy, during 1999 spoke in the spring, 1999 on "Archaeological Research in the Kassala Region, Eastern Sudan." During the fall "welcome back" reception, he chats with Professor Mary Beaudry and Professor Haim Goldfus of Ben-Gurion University, Beer-Sheva, Israel, who is a Research Fellow in the Department. Right: Dr. Armando DeGuio, University of Padua, Italy, spoke to a packed house during his lecture entitled "From Remote Sensing to Public Archaeology: Investigations of The Center for the Study of Surface Archaeology, Padua, Italy."



Dr. Yossi Garfinkel, Hebrew University of Jerusalem, Israel, shows Research Assistant Susan Allen examples of his published work before his lecture entitled "Neolithic Ashkelon and Sha'ar Hagolan: A New Look at Sixth Millennium B.C. Levant."

George L. Miller (far right), Senior Laboratory Technician for URS Greiner Woodward Clyde, an environmental and engineering design corporation, examines a sherd during his workshop and seminar on eighteenth- and nineteenth-century English ceramics.

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line of sight between the funerary shrine at a peripheral group and the Structure 1 temple may have symbolized a direct link between these important foci of activity at several levels of meaning. At one level the direct link between the two funerary shrines may signify affinity in terms of kin relationships. At another level, a direct link between two shrines dedicated to members of different ranks in the political hierarchy of the society may signify allegiance of the lower elite groups to the ruling family as well as exclusive status afforded by the vassal lineage. Finally, at the highest level, the religious, the identification of both central and peripheral shrines with a certain cosmological space and deities reaffirms the will to draw a powerful bond between the ruling family and its supporters among the highest ranks of society.

The ongoing GIS analysis of La Milpa will undoubtedly provide additional insights on this and other aspects of Maya cities. In the meanwhile, the current findings, along with the GIS maps and raw data are publicly available at the La Milpa website, http://www.Boston University.edu/lamilpa.

Francisco Estrada Belli is a Lecturer in the Department of Archaeology and is a Ph.D. graduate (1998) from Boston University.

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