

CONTEXT



An Earthwatch volunteer cleans the collapsed rose window of the gable at Galways, a sugar plantation on the Caribbean island of Montserrat. See page 4.

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Richard S. MacNeish Appointed to Archaeology Program

Richard S. MacNeish, one of the nation's most distinguished archaeologists, has joined the faculty of Boston University. In November, 1981, he was appointed Research Professor of Archaeology, and in September, 1982, will become Professor of Archaeology.

Professor MacNeish, a member of the National Academy of Sciences, has received numerous awards in recognition of his archaeological achievements. He is a member of the British Academy and has received the Lucy Wharton Drexel Medal for archaeological research, the Addison Emery Verrill Medal of the Peabody Museum, the Alfred Vincent Kidder

Award from the American Anthropological Association, Huesped Distinguido Amigo Predilecto de Tehuacan, the Spinden Medal for archaeology, and an honorary doctorate from Simon Fraser University. He is also Director of the Robert S. Peabody Foundation for Archaeology at Andover.

Professor MacNeish has carried out major excavations in Canada, the United States, Mexico, Belize, and Peru. He is currently (January-May, 1982) in Belize investigating the earliest Maya. He is one of the world's authorities on the origins of agriculture, about which he has written extensively. The most recent of Professor MacNeish's publications, of which there are more than 200, is *Excavations and Chronology*, volume II in the series *The Prehistory of the Ayacucho Basin, Peru*, which was published in December, 1981, by the University of Michigan Press.



Manuela Martins in a structure of unknown function at Citânia de Briteiros in Portugal. See page 10.

EDITORIAL NOTE

Context is the new name of the newsletter of the Center for Archaeological Studies at Boston University. This choice of name reflects the Center's conviction that context is of utmost importance in archaeology. One of the principal aims of archaeology, in the view from the Center, is to place the cultural materials excavated in their historical, economic, social, and ecological context. We hope also that this newsletter and your involvement in Center activities will place archaeology in an immediate, contemporary context for you.

The newsletter of the Center not only has a new name, it also has a new, more attractive design, and a revised publication schedule. *Context* will be published quarterly, and not bi-monthly, as previously announced. In making this decision we have tried to balance the need to provide you up-to-date information with the practical problems of producing a high-quality newsletter.

Would You Like to Work with Artifacts?

The Center recently obtained the first two boxes of artifacts from an important historical site in Virginia. These artifacts, on loan from the Virginia Research Center for Archaeology (VRCA), are part of a collection of materials excavated from the Spinning House of the Corotoman Plantation in the summer of 1980. The Spinning House excavation was part of the VRCA's Corotoman Plantation Project, and Mac Goodwin, a doctoral student in the Archaeological Studies Program here at Boston University, was chief excavator, lab technician, and assistant to the project director. Unfortunately, the funds for the project ran out before these artifacts were processed and analyzed. We are seeking your help to complete this important study.

The Spinning House dates from ca. 1700 and was in use as a residence until ca. 1900. Architecturally, the building is known to have at least two phases of construction; the original early 18th century building and an early 19th century addition. Excavation has

Summer Program in Greece

Boston University's Summer Term and the Department of Classical Studies are offering a summer program in Greece from June 30 to August 3, 1982. Under the direction of Professor Stephen Salamone, the program offers three courses of study: CL 504 XB1 Byzantine and Modern Greek Culture, CL 514 XB1 Studies in Classical Civilization: Culture of Ancient Greece, and AR 530 XB1 Cities and Sanctuaries of Ancient Greece. This last course will be of special interest to our members interested in the archaeology of ancient Greece.

The program will be based at Nafplion and Thessaloniki with day trips to the numerous ancient and modern areas of interest. Professor Salamone, an expert on modern Greek culture, will be joined by Ricardo Elia, whose interests include the Neolithic architecture of Greece and Classical Greek art and architecture, and Professor Charles R. Beye, an expert on early Greek literature and the author of numerous books and articles, including *Ancient Greek Literature and Society*.

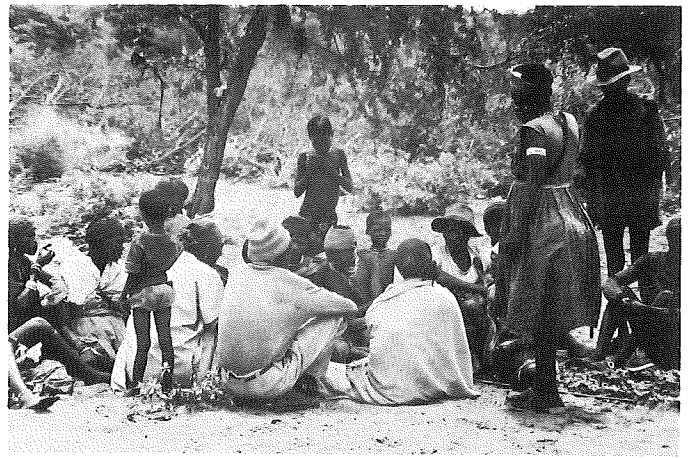
For further information contact Deborah Katz, Boston University, Department of Classical Studies, 745 Commonwealth Avenue, Boston, MA 02214; (617) 353-2427.



Late Roman coin of the Emperor Gratian.

revealed three distinct colonial and post-colonial occupation layers. The building was constructed on a high bank overlooking the Rappahannock River, and apparently was the site of earlier Indian occupation. During the field season at least one projectile point was dated as far back as 6,000 B.C. and later prehistoric points and pottery are in the collection. Historical period artifacts run the entire gamut of materials one would expect on a site of this size and wealth.

The Center is seeking volunteers who might be interested in working with these artifacts. Be warned that rigorous laboratory procedures will be followed, although previous experience is not necessary. If you are interested contact Mac Goodwin at the Archaeological Studies Program. Times can be arranged and there is the possibility that work can continue through the summer months.



*Top right: a family gathering in the Kalahari.
Bottom right: women resting in the shade.
Left: hunters boiling meat after the slaughter.*

Cattle in the Kalahari

Edwin Wilmsen, who joined the Center as a Visiting Professor in 1980, is director of a multi-disciplinary project in Botswana which he began in 1973. Botswana is a landlocked country in southern Africa with only one perennial river; eighty-five percent of the country is covered by the sands of the Kalahari Desert. The Bushmen who live here have been painted in colorful pictures by anthropologists and, because they are assumed to have been isolated from food-producing societies by the harsh conditions of the desert, their foraging way of life is often used as a model for reconstructing the social ecology of Paleolithic hunter-gatherers. Accounts by Eu-

ropeans who began to trade in the region for ivory and ostrich feathers nearly two centuries ago, however, contradict this assumption. The early travelers speak of finding large-scale herding and agropastoralist peoples wherever they went. It is now known that mixed herding, planting, and foraging economies have been practiced in the Kalahari for at least 1,000 years.

Wilmsen is using a combined archaeological, ethnographic, and biosocial approach to investigate the prehistoric and historical antecedents of contemporary Kalahari communities in order to understand the present social and economic situation in this region as well as the historical process which brought it about.

Excavations have resulted in the uncovering of Early Iron Age ma-

terials including pottery, iron tools and ornaments, and evidence of iron smelting that have been radiocarbon dated between 750 and 850 A.D. Burned wattle-and-daub house remains are present at a site in the Tsodilo Hills. Cattle dung, silicified by burning, indicates the presence of Kraals in which animals were penned. Glass beads and humped Zebra cattle document exchange systems with peoples in the north and east. The evidence collected so far suggests that pastoralist economies developed in the Kalahari by a dialectical interaction in which both forager recipients and herder transmitters played creative roles from which emerged a mixed-economy that has persisted to the present.

Galways: a Caribbean Sugar Plantation

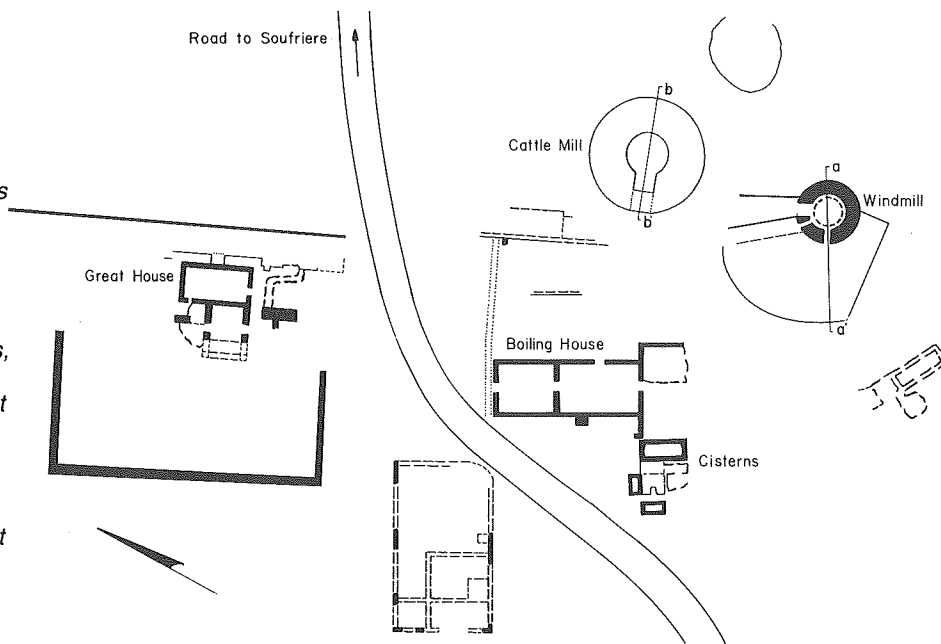
by Conrad Goodwin

To visit the volcano on the island of Montserrat in the West Indies, one drives up a winding mountain road through a tunnel formed by the jungle canopy. During the ascent visitors may glimpse magnificent stone ruins through the dense foliage. The ruins have an ambience reminiscent of ancient temples, and one wonders how they came to the remote Caribbean island. The Montserrat National Trust has long puzzled over these ruins. What were they? What can they tell us about the history of the island, and can they become a tourist attraction? To find out, the National Trust contacted Dr. Lydia Pulsipher, an historical geographer from the University of Tennessee who has been doing research on the island for several years, to see if she was willing to direct an archaeological project to answer these questions. She was.

The first field season at Galways, in Irish sugar plantation on this British island colony, took place in the summer of 1981; the project will continue in 1982. Dr. Pulsipher is principal investigator and Conrad M. Goodwin, a doctoral student in the Archaeological Studies Program at Boston University, is the archaeological director for the project. Funding for the 1981 season was provided by a grant from the Center for Field Research/Earthwatch. Additional support was provided by the Association of American Geographers, the Montserrat National Trust, and the Montserrat Government. The field crew consisted of Earthwatch volunteers and Montserratians.

Montserrat is one of the Leeward Islands in the Lesser Antilles, and is about 25 miles west of Antigua. It is a small, lush volcanic island with a series of three, sawtoothed mountain groups rising eventually to 3,000 feet on the southern edge.

Our research has already solved many of the questions that prompted the study. We now know that the site was a sugar plantation, founded by an Irishman, David Galway, in the 1660s when it was worked with Irish in-



Site plan: Galways Plantation.

dentured servants and enslaved Africans. The standing ruins, which are tentatively dated by ceramic sherds as later than 1750, are arranged on a 2.5-acre tract at an elevation of 1100 feet on a steep volcanic finger that sweeps down the southwest side of the 3,000 foot Soufriere ("volcano") Hills. The ruins, which once formed the central industrial component of the site, consist of a sugar boiling house, a cattle mill, a windmill, a stair-stepped system of cisterns, and several additional features of as yet undetermined function.

Across the modern paved road to the *soufriere*, the major tourist attraction on the island, are the remains of the domestic component of the Galways Plantation. The large L-shaped building is probably the remains of the great house. Below it to the west is a flat area enclosed by massive stone walls that may have served as a reservoir, if local legend is to be believed. The ruins of the slave quarters, according to one informant, are said to be in the midst of a banana grove down below the stone wall.

The standing ruins are of cut stones of native volcanic rock and

are laid in regular horizontal courses. Although the buildings are constructed of the same material, and in a similar style, each is distinguished by relatively minor differences in dimension and building technique. The structures are in various states of decay and all have been partially dismantled by local citizens who used the facing stones for a variety of construction purposes elsewhere on the island.

During the 1981 field season, work was concentrated on the 1.5-acre industrial component of the site. When we first arrived at the plantation only the top of the windmill tower was visible through the jungle. Four Montserratian men, all over the age of 60, were hired to clear the site. Using only cutlasses (machetes) and hoes, these men removed the vegetation, from around the principal buildings in two and a half weeks. The field crew then cleaned the vegetation from in and around the buildings, and we were able finally to get a perspective on the individual structures and their relation to one another. Preliminary plan drawings of the boiling house, the windmill, the cattle mill, and the cistern complex were completed, and detailed photo-

graphs of the major architectural features were taken. A site plan, showing the major features, was drawn and a grid system was established.

The boiling house received primary attention this season and is chosen for a brief description here for a number of reasons. It is the physical centerpiece of the industrial complex; it is a particularly imposing and beautifully constructed building that has long been admired; and it has figured prominently in Monserrat folk tradition, which holds that the building is actually the ruins of a church. Certainly the rose window in the north gable end gives the building a church-like appearance, but there is no physical or documentary evidence to confirm that it ever was used as a church.

The boiling house is a two-story building set into the hillside so that the main floor is at ground level on the upslope side. The building is slightly over 72 feet long and 27 feet wide. Each of the long sides has nine arched windows; only six of these windows actually open to the interior, however, and it seems that the other three recessed openings were architectural adornments to create a pleasing visual exterior façade.

The north gable end rises 22 feet from the door sill to the peak. The round window, four feet in diameter, originally was louvered to control ventilation. The south gable end has collapsed and now lies inside the large room at the

south end of the building. The stones separated on impact, but the circle of the rose window still can be seen.

The main floor of the boiling house is divided into two rooms. The larger, southern room has a cobbled floor and originally contained five huge iron kettles mortared into a raised stone platform along the west wall. Beneath this platform was the boiler and flue complex which heated the kettles and boiled down the juice from the sugar cane. After being boiled to a thick syrup, the juice was cooled to crystalline form in large wooden vats, probably placed along the east wall of the boiling house.

The smaller room at the north end once had a wooden floor. The use to which this room was put has not been determined as yet, but we suspect that it, and the two rooms below it, held the large, cone-shaped, clay pots that the crystallizing sugar was stored in during the final stages of the curing process. The lower story of this room also had a cobbled floor.

The many visitors to the site have always been interested in the boiler and flue system because of the interesting pattern of stonework visible on the lower façade of the building. The amount of heat reaching each kettle was controlled by the vents, each slightly over a foot square. Stone or wooden blocks covered with wet cloth would be set into the opening and braced with a wooden

pole. We saw this kind of vent control in operation on Montserrat last summer, not on a sugar factory (for the last one stopped operating in the mid-1960s on the island), but on an outdoor oven. Many Montserradians use outdoor ovens for cooking, since they do not have electric or gas stoves. We were invited one Sunday after church to watch one family bake their weekly supply of bread, and observed with great interest how a square wooden block covered with wet cloth was braced against the oven's opening to control the temperature inside. (Incidentally, the bread was delicious.)

The flue system extends horizontally from south to north and the heat finally exits through the chimney. The stones of the chimney block a formerly open window, an arrangement that suggests that the chimney was an addition to improve the thermal technology of the boiling house.

In the process of removing the cut vegetation from the building, we uncovered large quantities of thick red clay fragments, some painted black and containing traces of mortar. Their S-curved shape, and size, 14" x 10", suggested they were roof tiles. When this roof was in place the building must have been magnificent: a large structure of beautifully cut stone with arched and round windows and a red tile roof set on the hillside in the midst of lush green jungle.

The second season of the Galways Plantation Project will get underway in June of 1982. Plans for this coming season include completing a topographic map of the plantation, establishing a permanent grid system, and conducting an intensive surface collection in conjunction with detailed soil analysis. Other phases of the work will include investigation of the water resources available to the plantation in the past, micro-filming the extensive collection of documents available, and recording the numerous oral histories. Visitors or volunteers who wish to work are welcome to the site, though we request advance notice.



The sugar boiling house at Galways Plantation.

In the Joint, Occasionally

by Karl M. Petruso

For the past two years, Dr. Karl Petruso, Assistant Professor of Archaeology and Classics, has participated in a special program under the auspices of Boston University's Metropolitan College. In the article that follows, he shares some of his personal reflections on his teaching experience at Norfolk Prison.

I had not allowed myself enough time to drive the ice-covered road to Norfolk Prison. On arrival, I attempted to hurry the admission procedure at the gatehouse: produce photo identification, sign in, deposit all personal effects (including coins and keys) in a locker, have my books and slides examined, submit to a garment search, walk through a metal detector, pause in the "trap" (a set of monstrous remote-controlled steel plate doors); then pass through another inner gate at which my identity was challenged, and await an officer to escort me to the education building. I realized once more with a shrug that it is not possible to accelerate the admissions procedure, and I resigned myself to being late. Once inside the compound I rushed to my classroom, about 15 minutes tardy, and was greeted by about two dozen inmates, my students. "I apologize for being late", I said, "I'd forgotten how long it takes to get into this place". "That's nothing, man," replied one of the students, "compared to how long it takes to get out of the place".

Thus began my second course at Massachusetts Correctional Institute, Norfolk. For the past decade Boston University has contributed to a special program offering college courses to the inmates at MCI Norfolk. During the 1980-81 academic year I taught AR 201 (Survey of Old World Archaeology), and I am currently teaching AR 230 (Archaeology of Classical Civilization). To my knowledge, these are the only archaeology courses taught in a penal institution in the entire country. I had learned of the Norfolk program from one of my colleagues in the Classics De-

partment, Professor Charles Beye, who has taught in it for several years. The prospect was intriguing to me; I had never even been close to a prison, and my conception of life on the inside was largely the product of Hollywood B movies.

MCI Norfolk, a medium-security prison, was one of the most progressive correctional institutions in the country when it was founded some 50 years ago. It was designed as a penal community rather than a traditional prison, and the ambience of the place—if one overlooks the massive walls that surround the compound—suggests that the design was successfully realized. Indeed, the compound resembles in plan a university quad, comprised of a large, rectangular grassy area surrounded by dormitories and buildings of administrative, industrial, and social function. Once the visitor has gone through the lengthy and intimidating admission procedure, he sees neither bars nor locks, and the men move freely about the compound. There are reminders, however, that this is no ordinary community. In a prominent position near the entrance to the quad there is a professional-size boxing ring, ready for use the year round. Constant chatter over large outdoor loudspeakers at each end of the quad calls inmates to appointments, work details, and roll calls.

When I mention to my colleagues that I teach at Norfolk Prison, I am frequently asked about classroom conditions. Many are surprised to learn how similar these classes are to regular classes on campus. There is great variety in student abilities; some are exceedingly bright, articulate, and stimulated by the material, while others tend to be rather silent and dull. Aside from the occasional provocative and obscene statement assessing the quality of scholarship displayed by the author of a book or article, and outbursts of temper resulting from disagreements between students, there is very little that distinguishes a Norfolk class from a class anywhere else. The men are polite in their attitude toward me,

and are generally respectful of the classroom atmosphere. Many seem to be hungry for conversation, and they often linger to chat long after the class has ended.

Perhaps the most frustrating aspect of teaching in such an environment is the unpredictability of daily life. Students are liable to be called out of class with no advance notice for visits with family or lawyers. Many take part in drug or alcohol rehabilitation programs, or have religious obligations that conflict occasionally with class attendance. Each spring, moreover, there is a flurry of review board hearings which determine the future status of individuals. Last April, toward the end of the semester, three of my students were transferred without notice to other institutions only hours after their hearings, and they had no opportunity to inform me. It was thus necessary to arrange for others to administer final assignments and final exams. Another student, also without warning, was put into solitary confinement for two weeks as a result of an altercation with a fellow inmate; the work for that period had to be made up before his final exam could be written.

During the first class of each of these courses, I have been asked whether any ancient prisons have been identified and excavated. I lectured in detail on the recent identification of the state prison of ancient Athens last year, and I plan to do so again this year. Last year many of the men were interested in such details as the dimensions of the cell in the Athenian prison, so that they could compare those ancient conditions to their own. Some of them, however, took this opportunity (as I had hoped they would) to read the last three dialogues of Plato, which deal with the trial and execution of the most famous person incarcerated in the state prison of Athens, namely Socrates. The discussions that ensued were as interesting to me as the readings had been to the students.

I have found teaching at MCI Norfolk often taxing, occasionally exasperating, and always fascinat-

News from the Office of Public Archaeology

by Clark M. Sykes, Director

Since its opening in July, 1981, the Office of Public Archaeology (OPA) has conducted rescue excavations and impact assessments at a number of sites in Massachusetts. Each of the studies was carried out in the context of public works projects; such studies are required by law for all federally assisted or licensed development projects.

One of the projects, located near Dighton, is the proposed location of a wastewater treatment station. The property chosen for the facility is on an island situated in the middle of a large river. Other than a small building housing a bank and post office, and an abandoned railroad spur, the island appeared to be undeveloped.

The first step in OPA's study was to confer with the engineering firm responsible for developing the wastewater facility. Details of the project, including engineering plans and proposed construc-

tion schedules, were reviewed by OPA staff. A formal proposal for the archaeological assessment, providing a detailed scope of work, timetable for activities, and projected costs, then was drawn up and submitted to the engineering firm for their examination. Application also was made to the State Archaeologist for permission to conduct field studies at the Dighton property, as required by law in Massachusetts.

Once the award for the archaeological survey work had been made to OPA, background research on the project area was initiated. The objectives of this phase of the work were to determine the potential of the project area to contain prehistoric and historical sites. Accordingly, OPA staff conducted exhaustive reviews of the published literature on Dighton area ecology, history, and prehistory, including town and regional histories, archaeological reports, descriptions of local Indian heritage, and geological and other environmental studies. Archival sources at the offices of the State Archaeologist, the State Library and Archives, and local historical societies and libraries also were checked. Interviews with Dighton area amateur archaeologists and town historians augmented the information gleaned from written sources.

What this background research disclosed was that the island upon which the proposed sewerage facility was to be located once was the hub of Dighton's early industry. Evidence was found of a late 17th century iron furnace, built to extract ore from surrounding bogs and swamps. A mid-18th century complex of structures, including grist and saw mills, cider press, and blacksmith shop, also was found to exist on the island. Later, 19th century construction in the area added to an already complex settlement history. Moreover, although no direct evidence of Indian settlement was found, comparative information from the surrounding regions suggested high potential for the presence of prehistoric sites on the island.

With this background information in hand, an OPA archaeologi-

cal team was dispatched to the proposed sewerage facility site to conduct preliminary field investigations. The purpose of the fieldwork was to evaluate the accuracy of information derived from background research, and to test our ideas about the potential of the area for prehistoric and historical site location. These field efforts were an especially crucial part of the overall study, as the available 17th and 18th century documents and maps were not sufficiently detailed to enable us to determine the specific locations of the above mentioned historical structures. The field team was directed by Mr. Douglas George, a doctoral student in Archaeology, assisted by Messrs. James Krolikowski and Donald Jones, also graduate students in Archaeology at Boston University.

Most of the material recovered during the course of field investigations at the property was industrial debris dating to the 19th and early 20th centuries, and apparently was associated with later use of the island. The preliminary nature of the fieldwork, however, did not allow the OPA team to determine the entire nature or integrity of the deposits, or whether the earlier structures had been destroyed by the later construction or were preserved elsewhere on the property. Clearly though, the rich historical documentation for the island, coupled with the limited archaeological findings, indicated that more work was warranted.

The OPA study concluded that either the sewerage project should be moved slightly so as to avoid destroying the historical sites, or additional archaeological investigations should be carried out before the facility is built. Because final engineering plans already have been made, the latter alternative was elected by the developers. Consequently, a more intensive archaeological study is being planned for the spring.

Continued from opposite page.

ing. My cumulative time there has been reduced to a series of vignettes, many of which will remain with me forever: seeing a prisoner transferred in, his hands manacled to heavy chains around his waist; a toddler, crying hysterically on his way in to visit his father, terrified at the specter and sound of the steel doors of the trap; snatches of threatening conversation heard among inmates in the quad; food that is indescribably bad; and the most graphic, blasphemous, and disturbing graffiti I have ever seen, deeply engraved in classroom desks. Teaching in such an environment is indeed a compelling and rewarding experience; but I would be less than honest if I did not admit to breathing a sigh of relief each week after class when I head for the parking lot.

CMRAE and Boston University

Students in the Archaeological Studies Program have the opportunity to participate in the inter-institutional Center for Materials Research in Archaeology and Ethnology (CMRAE), which is currently based at the Massachusetts Institute of Technology. CMRAE, founded in 1977 by representatives from seven academic institutions in the Boston area, including Boston University, has developed a teaching laboratory and an educational program open to students at the sponsoring institutions. The first and current Director of CMRAE is Heather Lechtman, professor of Archaeology and Ancient Technology at M.I.T.

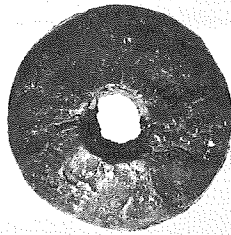
CMRAE students and scholars conduct physical analyses of materials from archaeological and/or ethnographic contexts. CMRAE offers, in sequential years, a series of four graduate-level courses dealing with the analysis of different materials; ceramics, metals, floral and faunal remains, and lithics. The year-long courses are taught by faculty from the sponsoring institutions.

A number of archaeology students from Boston University have taken part in the educational program at CMRAE. Recent studies by some of the students in our Archaeological Studies Program are reported here.

Metallurgical Analyses

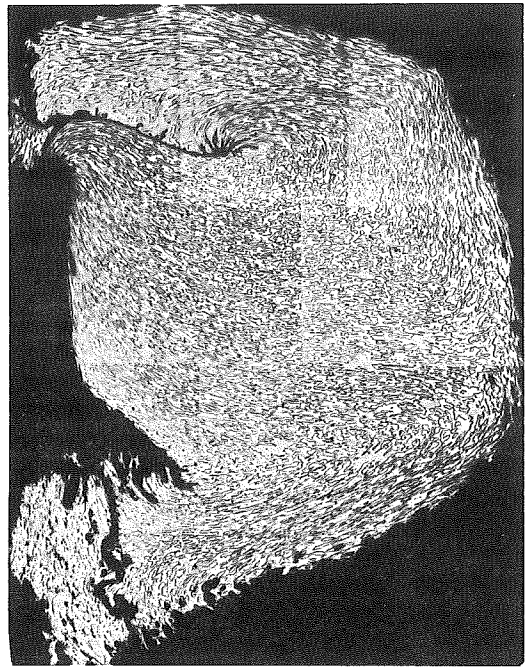
Gerald Macomber, a Ph.D. student analyzed a spindle whorl from Peru as part of the CMRAE course in metals last year. The object, which he determined by analysis to be of the late Chimu period, was subjected to a number of different processes in an experiment designed to determine its method of manufacture and its chemical composition. Macomber describes his analysis as follows.

After an examination of its external features, a sample of the metal was removed for mounting and polishing. At that point an etchant (acid) was applied to display the internal characteristics of the metal. The etchant differen-



Top: copper-arsenic spindle whorl from Peru, bottom view.

Right: profile of one-half the spindle whorl. Conical projection in the photo above is pointing down.



tially attacks the various internal elements of the sample and causes the grain boundaries and the flow lines, which are caused by stresses put on the object during manufacture, to become strongly apparent. The boundaries and lines were studied microscopically and gave a great deal of information regarding the method of manufacture. These flow lines in the object, which formed when the object was hammered and the grains became elongated in the direction of the working, clearly show how the craftsman hammered the material.

As can be seen in the photograph, longer, thin lines are evident beginning at the center right edge of the sample and running both toward the top and bottom. These particular lines, studied in conjunction with the more rounded, less elongated lines in the center of the object, show that the object probably began as a thin, cast disc (about half its present thickness) and was hammered partly up toward the top and partly down toward the bottom from that central point on the right side. The breaks on the left side of the photograph at about the 1/4 and 3/4 positions show the extent of the folding.

Another interesting thing that the flow lines show is that the hole in the center of the object

was made before the whorl was hammered, but after it was cast, because if the hole had originally been cast into the object, the flow lines on the left side would not dip toward the lower portion. What is more, if the hole were made after the hammering took place, then the flow lines in the folds would also show this dipping. It is also evident that the central hole was created by hammering with an awl-like tool because of the absence of drill marks.

Finally, spectrochemical analysis was performed showing that the spindle whorl was an alloy of copper and arsenic. This information was an important indicator of the period, of time in which it was manufactured. Bronzes of the Inca period which immediately followed the Chimu, were of copper and tin. The conquest of the Chimu replaced copper-arsenic technology with the copper-tin technology of the Incan conquerors, thus providing a kind of marker for "dating" the object in the period 1000-1476 A.C.

Lithics

The CMRAE seminar this year is concerned with lithics. Rick Kanaski, also a graduate student in the Program, is conducting heat-treatment experiments on felsite from Castle Rock in Marblehead,

Massachusetts, a site known to have been quarried by New England aboriginals. Felsite was commonly used for stone tools in the prehistoric period and is a particularly difficult material to knap (remove flakes from). Heat treatment (exposure to high temperatures) is a technique known to have been used in the past to facilitate the knapping process, and may have been applied to felsites.

The process by which heat treatment modifies stone is not well understood, according to Kanaski. There appears to be no change in the actual crystal structure of the material, but the treatment increases compressive strength and decreases tensile strength by driving out the chemically bound water. Kanaski plans to expose the felsite to temperatures up to 750°C in a kiln. A macroanalysis of changes in the physical properties of the material will then be conducted with special attention to changes in color, luster, and compressive and tensile strength.

John Shea, a graduating senior, is doing use-wear analysis of three types of lithic material; obsidian, chert, and felsite. The analysis of wear patterns on the surface of stone tools is helpful in determining the possible functions of the tools. Experiments will be conducted on the stones using a mechanical device invented and used previously in experiments by Professor Edwin Wilmsen. This device is capable of applying wear on lithic material by controlling such variables as direction of the motion, the amount of pressure applied, and the angle of application. The treated stones will then be used on plant materials and information will be collected on edge breakage, fracture patterns, and edge polish patterns. This information will allow Shea to make comparisons with the use-wear patterns on stone tools found in archaeological contexts and we hope will provide insights into the actual uses of these ancient tools.



Theresa Mariaca and Pat Crawford examine a flotation sample in the archaeology laboratory at Boston University.

Archaeology and History at Tyng Mansion Site, July 5–August 15

The Center for Archaeological Studies, Boston University, is pleased to announce a new summer program in archaeology and history for adult laymen, secondary school teachers and students.

The five intensive, one- and two-week workshops that comprise the program will be held in conjunction with the Center's archaeological fieldschool at the Tyng Mansion Site, Tyngsborough, Massachusetts. The program offers opportunities for interested laymen, teachers, and young people to participate in all phases of an archaeological research project.

Workshop sessions will be held between 4 and 6 hours per day, Monday–Friday, over one or two consecutive weeks. Upon successful completion of a workshop, participants will receive a "Certificate of Training" from the Center for Archaeological Studies. Continuing Education Unit (CEU) credit and Teachers' Credit also are available. Partial credit for high school students in either social studies or history may be possible.

A \$50 non-refundable deposit must be received no later than June 1, 1982 to reserve a place. Enrollments are limited.

Teacher's Workshops in Archaeology

Schedule: Session 1: July 5–9;

Session 2: July 12–16.

Costs: \$95 per session (week).

High School Excavation Workshops

Schedule: Session 1: July 19–23;

Session 2: July 26–30.

Costs: \$145 per session (week).

Documentary History Workshops

Schedule: Session 1: July 19–23;

Session 2: July 26–30.

Costs: \$75 per session (week).

Adult Laboratory Workshops

Schedule: Session 1: July 19–23;

Session 2: July 26–30.

Costs: \$145 per session (week).

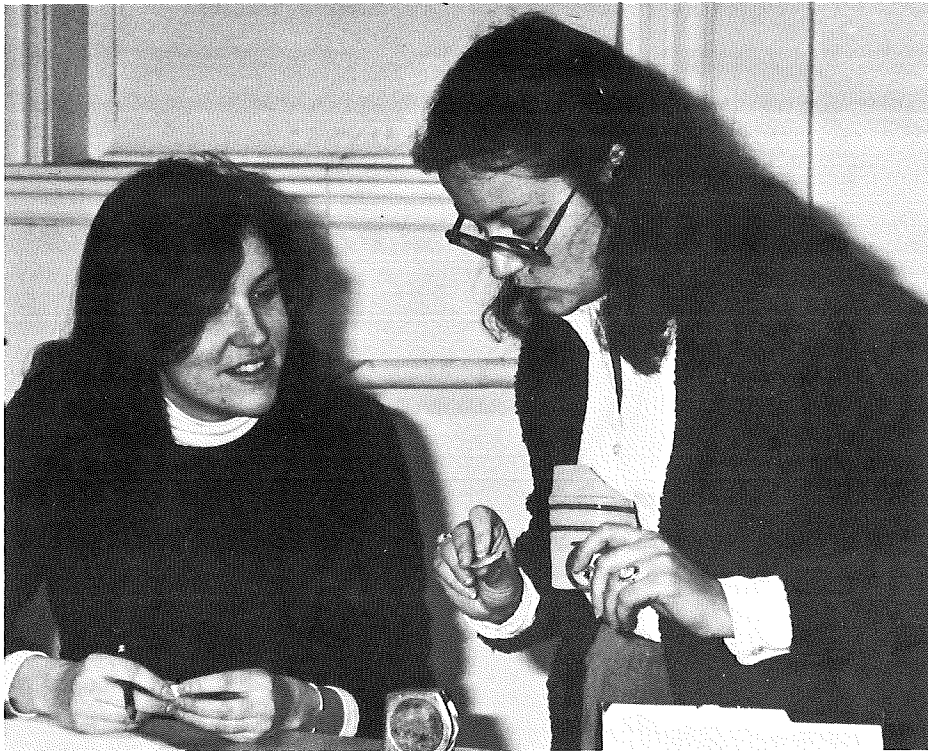
Adult Excavation Workshops

Schedule: Session 1: August 2–6;

Session 2: August 9–13.

Costs: \$145 per session (week).

For further information, please contact: Clark M. Sykes, Director, Office of Public Archaeology, Center for Archaeological Studies, 232 Bay State Road, Boston, MA 02215; Telephone: (617) 353-3416.



Tamara Blosser and Professor Mary Beaudry discussing New England Pottery.

A Field School in Portugal

The Archaeological Studies Program will sponsor an archaeological field school during the summer, 1982, in northern Portugal. The school will be based in Braga at the University of Minho. Students will participate in the excavation of an Iron Age hillfort at nearby Póvoa de Lanhoso, where there is also a Mediaeval castle, and will begin the archaeological reconnaissance of the immediate region. Professor Karl M. Petruso will direct the field school. He will be assisted by William K. Barnett, a Ph.D. student in archaeology at Boston University.

Professor James Wiseman, Director of the Center, and Professor Petruso were in Portugal, February 1-9, to make final arrangements for the summer. The photographs on the opposite page were all taken during that visit, and offer a preview of some of the sights in store for participants in the field school.

Archaeologists in Lisbon and Braga extended warm and genial hospitality to the American visitors. Several discussions during the visit resulted in preliminary agreements regarding future bi-national cooperation.

During the coming summer the downtown headquarters of the archaeological unit of the University of Minho will be made available to the field school. Facilities at the building include a library, drafting room, photo studio and dark room, conservation labs, and storerooms. Students will live in the university dormitory which is located a few blocks away.

The director of the archaeological group in Braga, Francisco Sande Lemos, and Manuela Martins, an expert in Celto-Iberian hillforts, will be associated with the field school. The other two senior archaeologists of the university are Manuela Dalgado, excavator of the Roman town, Braccara Augusta (located below modern Braga), and José Luiz Meireles Batista, who is currently investigating palaeolithic sites along the northern coast of Portu-

Field School at Tyng Mansion Site June 7-July 16

The Boston University Summer Term and Center for Archaeological Studies field school at the Tyng Mansion site will be held from June 7-July 16, 1982. Students enrolled in the field school will participate in all aspects of the 1982 field season and may receive graduate or undergraduate credit for training in excavation techniques, photography, mapping, surveying, and archaeological interpretation. Evening sessions will provide intensive training in the processing, cataloging, and field conservation of seventeenth- and eighteenth-century artifacts. Visiting guest lecturers will discuss various aspects of archaeological work. Tours to other sites and exhibits will be planned as part of the program.

The excavation site will be that of Jonathan Tyng's 17th-century Indian trading post; previous archaeological testing produced evidence of trade-good manufacture as well as the approximate outline

of the post-in-the-ground structure. Limited testing will be performed around the 18th-century mansion house. Many legends and ghost stories have sprung up about the Tyng Mansion—it is possible that archaeological excavations will provide clues about the origins of the numerous Tyng legends.

The course will be taught by Professor Mary C. Beaudry, assisted by Boston University Graduate Teaching Fellow Tamara Blosser. Mr. Steven Mrozowski, Research Associate with the Robert S. Peabody Foundation for Archaeology, will supervise the fieldwork.

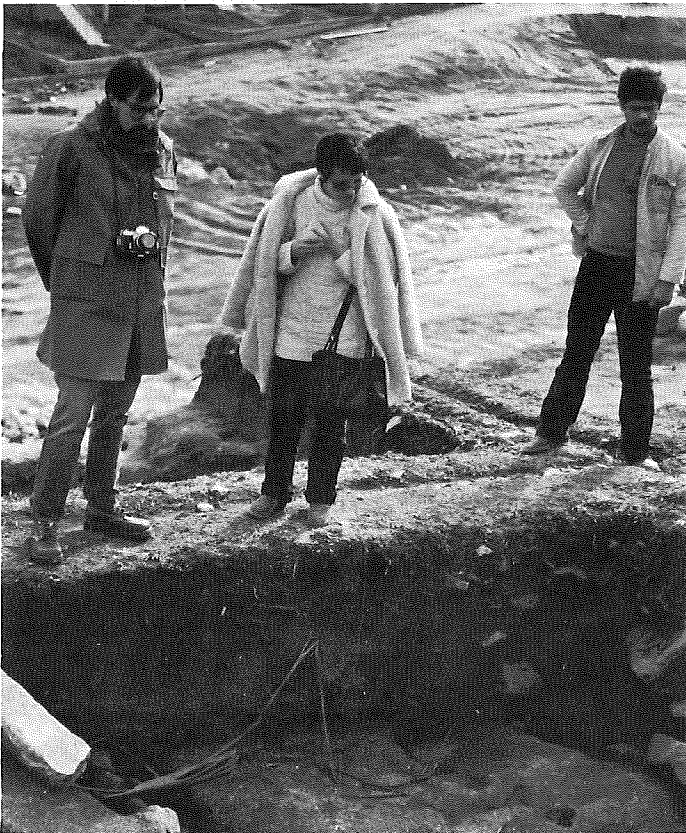
Each student will register for AR 503 A1: Field Methods: Excavation and Survey, for a total of 4-8 credits (graduate or undergraduate). Tuition (4 credits) for undergraduates will be \$480; for graduate students, \$784. Room and board will be \$350, and there will be a \$100 program fee. For further information and applications, contact: Dr. Mary C. Beaudry, Archaeological Studies Program, Boston University, 232 Bay State Road, Boston, MA 02215. Telephone: 617/353-3415.



Iron Age round house at the summit of Citania de Briteiros.

Manuela Martins describing the stratigraphy at Santo Ovidio, an Iron Age hillfort, to Karl Petruso.

Bottom Right: Cathedral at Bom Jesus, above Braga.



gal. Field trips to these and other excavations will be part of the summer program.

The visit to Portugal by the Boston University professors was coordinated through the office of Francisco Alves, who is Director both of the Museum of Archaeology and Ethnology in Lisbon and of the archaeological committee of the Portuguese Institute for the Protection of the National Patrimony. The field school of 1982 is viewed by Professors Wiseman and Petruso as the first stage of what may evolve into a longer-

term investigation of cultural inter-relations between the indigenous population and the Roman colonists in Portugal. That plan has also the support of the Portuguese archaeologists.

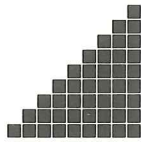
The summer program begins July 27 with a brief visit to Lisbon. En route to Braga participants in the program will stopover in the picturesque university town of Coimbra and visit the nearby Roman town of Conimbriga, which has been under excavation for many years by the distinguished Portuguese archaeologist, Dr.

Jorge Alarcão, his wife, and a group of Portuguese and French archaeologists. The field school will be in Braga and the region July 31 to September 1.

A charge of \$1,510 will cover tuition for 8 credits (AR 5), travel within Portugal, sleeping accommodations, and breakfasts. For full information and an application form, write to Professor Karl M. Petruso, Boston University, Archaeological Studies Program, 232 Bay State Road, Boston, MA 02215. The deadline for receipt of applications is May 1, 1982.

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Third Class



CALENDAR

April 3-24

The Archaeology of Greece, 3-week seminar by Dr. Karl Petruso.

April 20

The Age of Metals Comes to the Italian Peninsula, lecture by Dr. Ross Holloway, Center for Old World Archaeology and Art, Brown University.

June 7-July 16

Archaeological Field School at Tyng Mansion Site, Tyngsborough, Massachusetts, Dr. Mary C. Beaudry, Director.

July 5-16

Teachers' Workshops in Archaeology, Tyngsborough, Massachusetts.

July 19-30

High School Excavation Workshops, Tyngsborough, Massachusetts.

July 19-30

Documentary History Workshops, Tyngsborough, Massachusetts.

July 19-30

Adult Laboratory Workshops, Andover, Massachusetts.

August 2-13

Adult Excavation Workshops, Tyngsborough, Massachusetts.

July 27-August 31

Archaeological Field School in Portugal, Dr. Karl Petruso, Director.

All seminars and workshops are conducted at the Center for Archaeological Studies unless otherwise indicated. Public lectures are held at 7:30 p.m., Curtis Auditorium, Boston University School of Nursing, 635 Commonwealth Avenue.

The Center for Archaeological Studies, which was founded at Boston University in 1980, has as its chief aim the development and coordination of interdisciplinary archaeological programs in education and research on local, national, and international levels. The Center also seeks to increase national and international awareness of the importance of understanding other cultures, and of preserving the world's cultural heritage, by involving professional archaeologists, scholars in other fields, and the general public in the activities of the Center.

There are three principal components of the Center for Archaeological Studies. The Archaeological Studies Program offers programs leading to the B.A., M.A., and Ph.D. degrees. The Office of Public Archaeology coordinates the educational programs for the general public and carries out cultural resource studies required by federal and state preservation laws. The Center also maintains extensive research facilities, including analysis and teaching laboratories, a reference library, study collections, computers, and photographic and drafting studios.

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spring lecture series and other events, and the use of our library facilities. An annual report of Center activities will be sent to each member. We also encourage members to enroll in special seminars, offered to the public during the academic year, and to enroll in our summer field schools here in the Boston area and abroad. We will keep you abreast of other opportunities at the Center through *Context*. Other categories of membership are: Contributing Member, \$50; Institutional, \$50; Patron, \$100; Benefactor, \$500; Corporate, \$1000; Life Member, \$400. Please make checks payable to the Center for Archaeological Studies and send to the Center office at Boston University, 232 Bay State Road, Boston, MA 02215. Gifts to Center are tax-deductible.

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Center for Archaeological Studies
Boston University
232 Bay State Road
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