

Notes from the Director

Computers have become an integral part of life at the Kelsey Museum. *Megs, rams,* and *flames* spice our vocabulary, and, for some of us, *surfing the net* is an essential component of our work. For museums, as for other institutions, the future is ineluctably linked to the fast-paced advances in computer technology and the information highway.

Given the burgeoning of computer-based programs at the Kelsey—and their profound implications—we are dedicating much of the present Newsletter to the topic of the Kelsey and the Computer Age. Within the past year several projects have been undertaken by curators, staff, and students: five of our previous exhibitions are now online (a screen from our 1982 exhibition "Wondrous Glass" is illustrated at right), two joint projects with the School of Information are accessible through the World Wide Web and Aristotle, several Kelsey-sponsored field projects, Pylos and Leptiminius in particular, make extensive use of the latest in computer technology, and discussions about transforming aspects of our early excavations into a *virtual reality* are in the very early stages.

Exhibitions

For exhibitions 1996 has been a busy year at the Kelsey. On January 26 we enjoyed the opening of "Death in Ancient Egypt: Preserving Eternity," and on February 16 we celebrated the opening of "Caught Looking: Exhibiting the Kelsey." A graduate-student undertaking, "Caught Looking" was an experimental show for the Kelsey, replete with Barbie doll, Skippy peanut butter jar, and

an instructive "peep show." The exhibit, which invited visitor responses to issues of gender and the art of museum display, was wonderfully received.

A first for us, also, was a small installation in our turret gallery entitled "Visitors' Views of Ancient Nubia." As the

WONDROUS GLASS REFLECTIONS ON THE WORLD OF ROME

c. 50 B.C. - A.D. 650

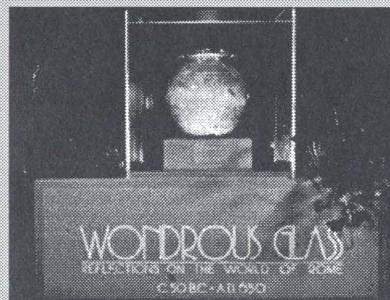


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title suggests, this show highlighted the public's reactions to our exhibit last semester, "Ancient Nubia: Egypt's Rival in Africa." We were pleased to have not only comments from the public but creative art projects from schoolchildren (see "Outreach Update," page 2).

Not all Kelsey-sponsored exhibitions on campus are contained within our building. Some of the Museum's ancient amulets, charms, and demon bowls made a short trip across the Diag on February 6. These pieces became part of the intriguing exhibit, "Traditions of Magic in Ancient Antiquity," curated by Professor Gideon Bohak of the Michigan Society of Fellows. "Traditions of Magic" will be on display at the Special Collections Library, Harlan Hatcher Graduate Library, 7th floor, until June 1.

Finally, we eagerly await the Associates' annual Spring Event, which will include an exhibition of eight David

Roberts lithographs generously donated by Eugene and Emily Grant and two Roberts images kindly loaned by Professor Sharon Herbert. "A Victorian's Passion for Egypt and the Near East: David Roberts" will open on Friday, May 10. Preceding the opening, Professor Lanny

Bell from the Oriental Institute, University of Chicago, will offer an illustrated lecture on the significance of early European travelers to Egypt.

Fieldwork and Research

As always, the summer beckons many of us overseas to the field. Kelsey staff and Interdepartmental Program in Classical Art and Archaeology graduate students will travel to various parts of the Mediterranean: Lauren Talalay will return to Karystos, Greece, to study prehistoric material collected during a long-term survey of southern Euboea. Terry Wilfong, who will

initiate research on several projects at the Griffith Institute, Oxford, will have the exciting task of examining recently discovered notebooks detailing the original survey of Karanis in the 1890s. Janet Richards will conduct a feasibility study for a new project in Egypt. John Cherry will return to Albania, and John Pedley's excavations to Paestum will continue. Graduate students David Stone, Sebastian Heath, Jennifer Trimble, Helen Dzitikis, Melanie Grunow, and Geoff Compton will continue both excavation and survey at Leptiminius, Tunisia, a Kelsey-sponsored project since 1990. Sebastian Heath will also conduct research in Sicily, France, and Troy. Elsbeth McIntosh will split her summer in Turkey working at three different sites: Gordion, Sardis, and Kerkenes Dagi. Melanie Bernstein will join the excavation teams at both Sepphoris in Israel and Polis Chryssou on Cyprus.

Outreach and Development

Last year's Family Days were a resounding success, and we will devote two more Saturday mornings to children and their parents. "A Morning with Mummies," organized by docent and work study student Todd Gerring, will be held on Saturday, April 20, and Saturday, May 18.

In the midst of discussions this past year about a possible benefit for the Museum, we received a wonderful call from Gary Sussman and Lorraine Platman, owners of Sweet Lorraine's Cafe. They offered their charming

restaurant for an evening event in support of the Kelsey. The Associates and a number of docents are hard at work on the details of the evening, which will feature a silent auction of hand-painted canvas tote bags designed by local artists and inspired by archaeological themes. "Nefertotee: A Benefit for the Kelsey Museum at Sweet Lorraine's Cafe and Bar" is scheduled for Monday, September 30, 1996. Mark your calendars, and watch your mail for more information on what promises to be an evening of great fun!

My tenure as Acting Director will end

on June 1 when Elaine Gazda begins her last year as Director. It has been a productive and gratifying year for me; I am grateful to Elaine for asking me to fill in for her while she was on sabbatical, and I greatly appreciate all the support that the Associates have given to both me and the Museum on so many fronts. I am also extremely indebted to the Kelsey staff for their tireless efforts and humor throughout the year. I look forward to continuing my work with all of you in the coming academic year.

*Lauren Talalay
Acting Director*

Outreach Update

Our outreach efforts for "Ancient Nubia: Egypt's Rival in Africa"—guest speakers, family programs, numerous tour requests—were amply rewarded when we received a crate of art projects inspired by the exhibition from students at Bates Academy in Detroit. These contributions formed the nucleus of a small display during February, "Visitors' Views of Ancient Nubia," assembled by Laurie Talalay and Becky Loomis, with help from Thelma Thomas, Dana Buck, Ric Smith, and Jason Sprague.

The third-through-eighth-grade students sent us papier-mâché pots created in the fashion of some Nubian pottery as well as hand-made dolls and African masks reflecting a wider geographic range of inspiration. Two undergraduates working with Thelma Thomas contributed projects involving the Nubian exhibition. Drawings and letters from elementary school students in Ann Arbor and Indiana were mounted on a wall. The visitors' comment book from the Nubian exhibition, offered for continuing inscription, completed this epilogue to "Ancient Nubia."

The Sunday Gallery Talks, led by docents and introduced during "Ancient Nubia," continue to be popular. They are now held for "Death in Ancient Egypt" every Sunday afternoon at 2:30.

Docent News

Jane Schwenk captivated young imaginations in a mummy doll-making session at the Hands-On Museum earlier this semester. Thyra Throop is working with

Conservator Geoff Brown to design and manufacture protective housings for the artifacts in our (well used!) Karanis and Roman Daily Life kits. These kits are used during our guided museum tours

and are a definite hit, especially the pieces of 2,000-year-old bread! Todd Gerring created a compelling centerpiece for the opening of "Caught Looking: Exhibiting the Kelsey." A bronze Aphrodite statuette, gazing into a hand-held mirror, was "caught" in a cage of spun sugar. Joy Burnett is working with Becky Loomis to design a brochure highlighting the Kelsey's outreach activities. Several docents have traveled to Cleveland to view "The Pharaohs" and report that this spectacular exhibition from the Louvre is well worth the drive.

Mark Lawall, former Visiting Curator of Education and now lecturer at the University of Manitoba, delivered a paper at the December 1995 Chacmool Conference on Archaeology at the University of Calgary entitled "Maintaining Museum Audiences during Renovations: The Kelsey Museum's Traveling Kits."

Becky Loomis



Students from Bates Academy in Detroit view their own artwork, installed as part of "Visitors' Views of Ancient Nubia."

Photo: L. Talalay

Fall Exhibit Rejoins Fragments from Two Museums

"An Image of Empire: Marble Fragments in Rome and Ann Arbor Rejoined," curated by Kelsey Director Elaine Gazda, will open in late September. First mounted in 1994 at the Museo Nazionale Romano, this exhibition rejoins fifteen marble fragments in the collections of the Kelsey and the Museo Nazionale to reconstruct relief sculptures from the Templum Gentis Flaviae—the mausoleum of the Flavian emperors (A.D. 69–96) and their family.

The exhibition will include two striking full-scale models of those parts of the funerary monument that once held the extant marble fragments. Casts of the sculpture fragments will be

incorporated in these models. Photographs and videotape will explain the modern casting process, while molds and casts from the Kelsey's collection illustrate how reproductions were made in antiquity. Another component of the exhibition documents the architectural remains of the funerary complex that originally contained the fragments.

A possible daylong conference to celebrate the opening of the exhibition is in the planning stage. Sessions would focus on such topics as Flavian imperial imagery as well as on international collaboration among museums, antiquities and loan laws, and repatriation.

The Kelsey in Cyberspace: What Next?

It's a new world. The Kelsey exists in cyberspace. This is a great boon for both our staff and the public. Anyone can view our neo-Romanesque castle in the eternal sunlight of the Kelsey home page (see box) even on the dreariest winter day or visit a past exhibition in splendid privacy any time day or night. Information about our field projects (see pages 4-5) and—any day now—even our registry (see page 8) can be accessed from the comfort of your living room or my office.

The possibilities are breathtaking, not only for exhibitions but also for museum work of the daily variety and for specialized tasks. Preliminary research time and expense are drastically reduced by this technological wonder that goes by

many names: the Net, the Web, cyberspace. I can, for example, access other U-M libraries and museums, or those elsewhere, from my office computer. It is just as easy to browse through my favorite Web sites, such as Theology on Line, CoptNet, and CyberMuslim.

All of us have worked hard and quickly to make virtual visits to the Kelsey possible. Registrar Robin Meador-Woodruff is responsible for the online database and, as Curator of Photographs, has worked with the School of Information on special projects and posted several exhibitions. Curator of Fieldwork Terry Wilfong is teaching a class about putting archaeology online as he continues to refine the Web presentation of Kelsey excavations at Karanis (see pages 6-7). The Kelsey's recent excavation/survey project in Upper Egypt, codirected by Professors Henry Wright and Sharon Herbert, is online, as is the Pylos Regional Archaeological Project, codirected by Professor Susan Alcock. Sebastian Heath, graduate student and all-around Very Big Help, has introduced many of

us to the wonders of the Web, as well as various peripherals and programs.

We are proud to have done so much in such a short time. Enthusiasm has carried us this far, but now we need to plan for what should happen next.

Clearly, something will have to hap-

more private staff work areas, providing job titles, names of employees, and job descriptions written in the employees' own words. This is a more intimate visit than would ever be possible in the real world. Our real world neighbor, the U-M Papyrus Collection, is also beauti-

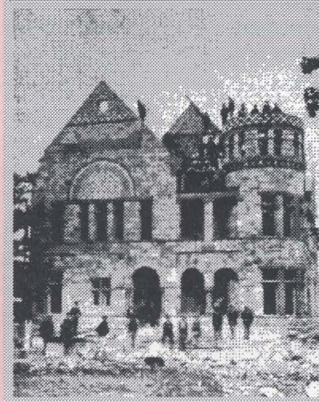
What Is a Home Page?

Several articles in this Newsletter refer to the Kelsey Museum home page. Our home page is a site on the World Wide Web with a unique address (<http://www.umich.edu/~kelseydb>), which is accessible through a modem or ethernet connection. After logging on to the Internet, the user types in the Kelsey's address, and a variety of information about the Museum appears on the screen:

- the history of the building and the Museum (see sample screen at right),
- an overview of past and present exhibits,
- images of notable objects in our collections,
- images of objects from Kelsey excavations in Karanis, Egypt, 1926-35,
- maps of the ancient world,
- links to other online resources for classical art and archaeology, and
- information about hours, services, and contact people.

The Kelsey home page has been awarded four stars by the McKinley Group's professional editorial team and rated in the top 5 percent of Web sites by Point Survey.

About the Kelsey...



The Kelsey Museum is housed in Newberry Hall, located at 434 South State Street. Originally built as a home for the Student Christian Association, it was begun in 1888 and completed in 1891. The building was dedicated on July 21, 1891, and was named for John S. Newberry, whose widow Helen Newberry contributed \$18,000 to the eventual \$40,000 cost of the building.

The Student Christian Association was not officially affiliated with the University of Michigan and in 1921, the organization leased Newberry Hall to the University for classroom space. In 1928, the archaeological collections were moved into the building. In 1937, the building was finally sold to the University. The museum was officially named after Kelsey in 1953.

pen because business, pleasure, and education are booming on the Web. Our bustling little cottage industry at the Kelsey has not yet produced a home page capable of the multiscreen possibilities of the newest Net software, in part because we have still not formulated a coherent, overarching vision of the Kelsey's presence on the Web.

Among other things, this issue of the Newsletter gives us the opportunity to review our efforts and compare them to accomplishments elsewhere on the Web.

Even a quick glance at several of the more advanced pages suggests ways we could represent other aspects of the Kelsey's personality online. The Minneapolis Museum of Arts, for example, has interactive maps that allow the virtual visitor to see into every public part of the real museum building. Thus a virtual visit simulates movement through real museum space, which makes for a much more satisfying experience. At Emory University in Atlanta, the home page and clickable map for the Michael C. Carlos Museum even includes the

fully organized, thanks to Professor Traianos Gagos and student assistant William Michael Short. The Papyrus Collection home page takes visitors through resources, processes, and tools for study on its effective, interactive tour.

In addition to rethinking our home page, we should showcase more of our current research projects, especially those that are computer-based. The many options now available using videotape and audio will take some time to investigate; our article on QuickTime Virtual Reality (pages 8-9) explores only one of them.

As more of us engage in all sorts of computer activities, we need to coordinate our efforts to ensure maximum achievement with minimal lapses and redundancies. Coordination would also allow us to keep up our links to other home pages and follow rapid Internet developments, such as the emerging copyright problems attendant upon electronic publication.

We have a lot to look forward to. We are rolling up our virtual sleeves.

Thelma K. Thomas

Use of Computers Transforms Fieldwork

As digital computers claim an ever larger place in society, two Kelsey-affiliated field projects, the Pylos Regional Archaeological Project (PRAP) and the field survey at ancient Leptiminus, Tunisia, are actively applying technological advances to archaeological research. Kelsey staff and IPCAA graduate students have brought portable computers into the field for both these projects, as well as making use of the Museum's growing computer resources while in Ann Arbor. While computers have been applied to archaeological ends for more than three decades, their increasing power means that they can now take on many more functions than before. As the discussion below shows, Kelsey researchers and their collaborators are taking advantage of the expanding multimedia, numeric, and Internet-based capabilities of the machines that the Museum and University make available.

The most obvious way computers are used on an archaeological project is to maintain databases of the pottery, small finds, and sites that are identified. The single greatest advantage that an electronic filing system has over paper-based alternatives is searchability. For example, during the 1993 and 1994 field seasons PRAP, an interdisciplinary project working in southwest Greece, identified a coastal site, known locally as Dialiskari, and gave it the number G1. From this site 220 datable pottery sherds were collected. An easily performed search of the online PRAP ceramic catalog shows that

forty-six of these sherds, or 21 percent of the total, were cataloged as late Roman—fifth to seventh centuries A.D.—by the project's ceramic specialists. This number is far greater than that for any other single period. The abundance of well-dated late Roman sherds at site G1 in conjunction with substantial Roman-period architectural remains, including a bath, indicates the likely presence of a villa complex that was still in use as late as the sixth century A.D.

Two further observations about site G1 are easily culled from the searchable ceramic catalog. Surface collection at the site recovered sherds of African Red Slip (a popular type of pottery produced in the region of modern Tunisia), finewares from the west coast of Turkey, and wine-carrying amphoras from the Aegean and Gaza Strip. Although this material is still under study, the diversity of the imported pottery already indicates that G1 was an important center whose inhabitants had access to the same interregional exchange systems that were also supplying high-quality pottery to large urban centers during the late Roman period. Even more importantly, among the 108 firmly dated late Roman sherds collected from the entire PRAP study area, 44 percent come from site G1. While fourteen other sites yielded late Roman pottery, none had more than four sherds. The forty-four sherds at G1 therefore suggest that it was by far the most active site at this time.

Because the PRAP pottery catalog exists in a computerized database, this

type of quantified description of the ceramic assemblage that PRAP collected can be easily repeated for all sites and periods that the project investigated. Yet detailing numbers of sherds found at a particular site is only one way to view the data that PRAP collected. Considerable effort has also been expended to generate maps that show changing settlement patterns. Computer-based mapping transforms this potentially time-consuming process into an interactive analytical technique. For example, figures 1 and 2 show the pattern of archaic and classical Greek sites and Roman sites, respectively. The visual pattern is clear, showing not only a marked increase in the number of sites but also a reorientation of site location toward coastal regions. There are a number of possible explanations for this shift, but it may well indicate an increased interest in access to the sea and to sea-borne commerce. Of course, the major political change between these two periods is the rise of the Roman Empire; the resulting political stability and elevated economic activity probably led more or less directly to a larger population in this corner of southwest Greece. The maps that make these patterns clear were generated with ARC/Info software on a UNIX workstation purchased by the Department of Classical Studies. This extremely powerful tool is jointly funded for PRAP by Classical Studies and the Kelsey.

The techniques discussed so far make use of database and mapping tools that have been steadily improving over many years. PRAP is also taking advantage of the rapidly developing Internet

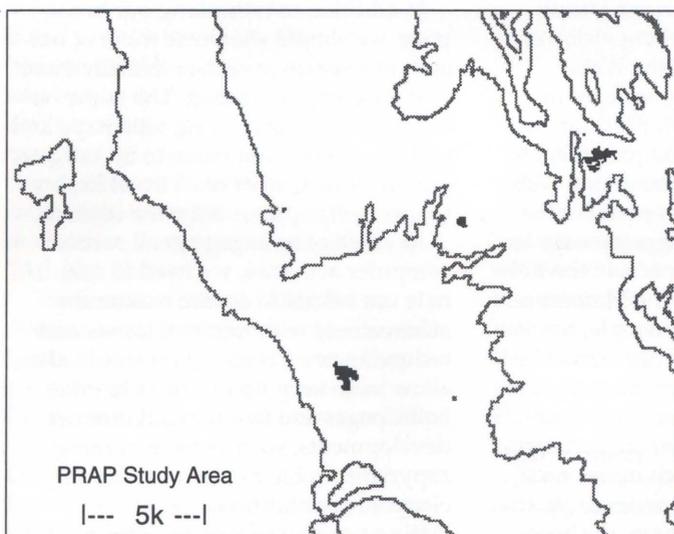


Fig. 1. Archaic and classical Greek sites in the PRAP study region (200-meter contour intervals).

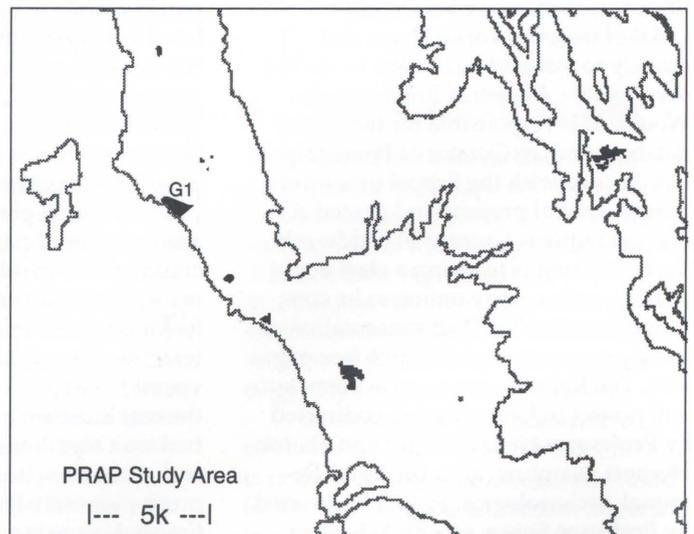


Fig. 2. Roman sites in the PRAP study region (200-meter contour intervals).

and World Wide Web to facilitate collaboration among project members and to share its findings with the general public. Project members are spread over many institutions in addition to Michigan, including the University of Cincinnati, the University of Texas, and the University of Wisconsin. Such geographical distances among collaborators can make it difficult to ensure that everyone has the latest data. An excellent solution to this problem is provided by FileMaker Pro, version 3, a database application for Apple Macintosh and Windows-compatible computers that allows files to be accessed over the Internet. Thanks to this software, the latest versions of all PRAP's archaeological databases are now available from a Macintosh server paid for by the University of Cincinnati and housed in the Department of Classical Studies. Additionally, the project has made reports and a catalog of sites available on the World Wide Web—the portion of the Internet that permits “point-and-click” interfaces to publicly available information. Any web browser, such as Netscape Navigator, can be used to access this material at <http://classics.lsa.umich.edu/PRAP.html>. With this resource the project is dramatically reducing the amount of time needed to publish archaeological information. The PRAP photographic archive, currently being scanned by students at the University of Cincinnati, is also available on the World Wide Web.

The field survey at Leptiminius, Tunisia, directed by IPCAA graduate student David Stone and Nejib Ben Lazreg of the Institut National du

Patrimoine of Tunisia, is also making use of computer-based mapping tools to investigate the urban landscape of this Roman port. One goal of this multidisciplinary project is to identify distinct functional areas, in turn allowing closer examination of the economic life of this important ancient town. A basic tool in this effort is the mapping of artifact distributions. Figures 3 and 4 compare the distribution of mosaics, marble, and vaulting tubes—used in the construction of roofs—to metal and glass slag and ceramic wasters. The materials mapped in figure 3 indicate the probable extent of the urban center in that they are all used in the construction of administrative and domestic buildings. Similarly, the slag and wasters mapped in figure 4 are byproducts of manufacturing processes. Together, these maps show the division of the townscape into domestic/administrative and multiuse industrial areas. Close examination and mapping of the industrial regions within a city such as Leptiminius contribute to a multifaceted understanding of ancient urbanism—an understanding facilitated by the use of electronic mapping tools. As with PRAP, a Web page describing the initial results of this project can be accessed at <http://classics.lsa.umich.edu/projects/lepti/lepti.html>.

To support activities such as those described above, the Kelsey is assembling hardware and software and making them available to staff, faculty, and students. In the fieldwork room on the second floor of the Museum is a Macintosh PowerBook 180 connected to an external monitor and digitizing

tablet. The latter device allows paper maps to be converted into computer-readable form, a process known as digitization, and so is an extremely important component of the computerization of an archaeological project. Bill Parkinson of the Museum of Anthropology is currently digitizing the PRAP maps, and David Stone is working on the maps of Leptiminius and surrounding areas. A number of IPCAA graduate students are using a desktop mapping application called MapInfo, which is available on the Macintoshes in the Kelsey. Sebastian Heath maintains the UNIX workstation on which ARC/Info runs and which also makes material available over the World Wide Web. Various funding sources, including the Office of the Vice President for Research, the Department of Classical Studies, the University of Cincinnati, and the Kelsey itself, make this collection of archaeological tools available.

Sebastian Heath
IPCAA doctoral student

PRAP is conducted under the auspices of the American School of Classical Studies in Athens, with major funding from the National Endowment for the Humanities (NEH), the National Geographic Society, the Institute for Aegean Prehistory, and, at Michigan, the Horace H. Rackham School of Graduate Studies, the Kelsey Museum, Office of the Vice President for Research (OVPR), and the College of LS&A, as well as the Universities of Cincinnati, Texas, and Wisconsin. The Leptiminius Project is currently conducted in cooperation with the Institut National du Patrimoine of Tunisia (field directors Lea Stirling and Nejib Ben Lazreg). Previously the project received major funding from the NEH and the National Geographic Society. Special thanks for support at Michigan to the Kelsey Museum, the Rackham School of Graduate Studies, and the OVPR.

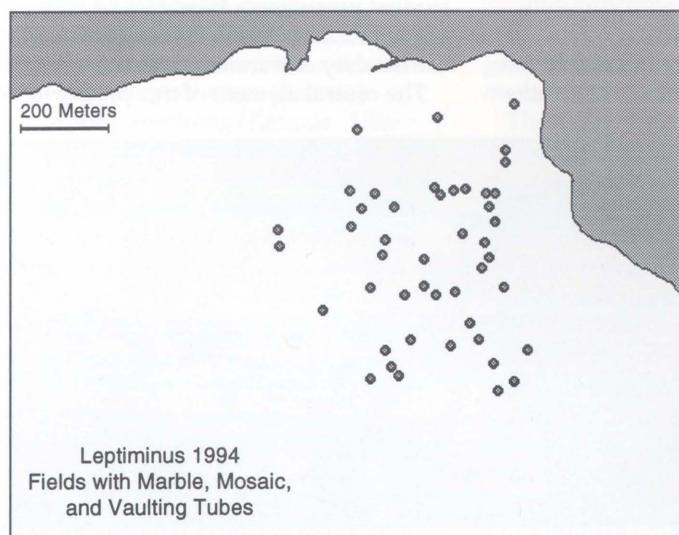


Fig. 3. Distribution of roof construction materials at Leptiminius.

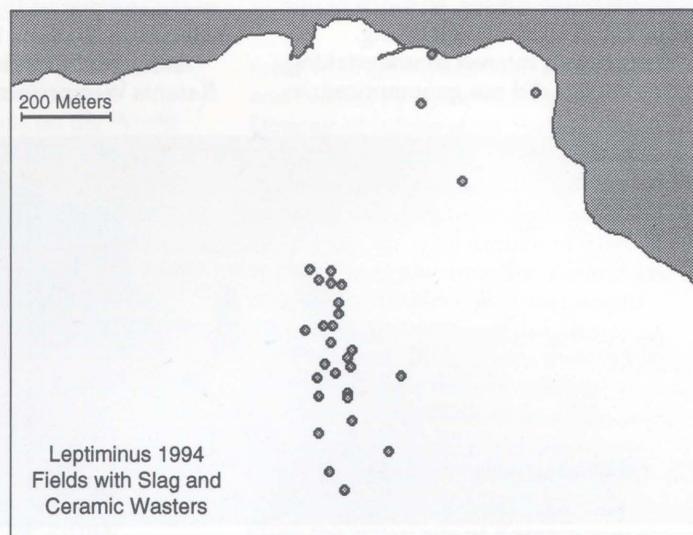


Fig. 4. Distribution of manufacturing materials at Leptiminius.

Karanis on the World Wide Web: Bringing an Ancient Town into the 21st Century

The artifacts and records from the University of Michigan excavations of the Roman Egyptian town of Karanis are one of the great treasures of the Kelsey Museum. Indeed, these thousands of objects, archival photographs, plans, excavation records, and related materials from the Karanis excavations are something of an embarrassment of riches: there is so much material that its study, analysis, and publication remain a daunting and uncompleted task. Full publication in traditional formats would be both prohibitively expensive and generally inefficient for such a large amount of data. Yet the Karanis material needs to be made available so that researchers can use and analyze it.

Increasing use of computers and electronic publication has recently suggested possible applications for Karanis. The rapidly expanding use and popularity of the World Wide Web and the Kelsey's growing presence on it has given us a major vehicle for providing access to Karanis. The benefits are obvious: not only does the World Wide Web offer a cost-efficient way of making Karanis materials easily available, but it also allows for entirely new ways of looking at and organizing the data.

Putting Karanis material on the World Wide Web has been a priority since the Kelsey inaugurated its home page with a selection of objects and images from Karanis (see <http://www.umich.edu/~kelseydb/Outreach/OutKaranis.html>). But a serious project for putting Karanis onto the Internet needed much more computer equipment than has been available to the Kelsey, so much of our initial effort went into planning.

The Kelsey's interest in undertaking such a project did not go unnoticed: in

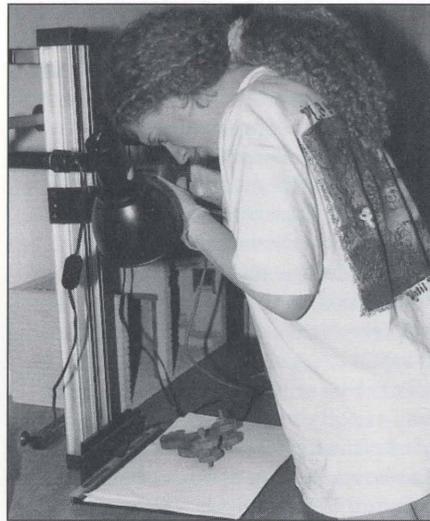


Photo: N. Garcia

Kirsten Firminger, an undergraduate in the UROP program, takes digital photographs of Karanis objects for use in her online World Wide Web presentation, a part of the "Karanis Web."

1995 the Museum received a donation of \$25,000 from a corporate source that prefers to remain anonymous for the present. This very generous grant was earmarked for purchasing equipment and hiring personnel to develop an undergraduate class that would teach students how to use the World Wide Web for research on Karanis and (more importantly) how to create their own online presentations of the Karanis material. This money brought computers, monitors, a scanner, a digital camera, and essential software into the Kelsey, as well as enabling us to hire students to help set up the necessary online components. The project began in the summer of 1995 and is currently called the "Karanis Web."

Although I have been in charge of the Karanis Web project, it has involved the

efforts of many people in the Kelsey community. First and foremost is IPCAA student Sebastian Heath, who has already contributed enormously to the computerization of the Kelsey and its online presence; Sebastian initiated the Karanis Web project and has been a constant source of ideas, support, and hard work. During the summer, Pedar Foss and Alan Hogg set up the elaborate prototype of a database for the material from Karanis and Dimé, allowing access to the material at a number of different levels. More recently, Ben Scharp has joined the project; his extensive experience with the World Wide Web makes him a natural contributor, and I look forward to seeing what he develops with the data. Robin Meador-Woodruff has been a great help to the project, providing us with physical access to archival materials as well as the benefit of her encyclopedic knowledge of the Kelsey collections and archives.

The Karanis Web project has also included two students from the U-M Undergraduate Research Opportunity Program (UROP), which allows first- and second-year undergraduates to pursue research projects under faculty supervision. These UROP students are pursuing independent research projects while scanning essential photographs, inputting data, and redrawing archaeological plans. They are Kirsten Firminger, a second-year student working on (among other things) an electronic version of the original Karanis publication, and Heather Boyd, a second-year student preparing a World Wide Web presentation on the evidence for Christianity at Karanis.

The central element of this project has

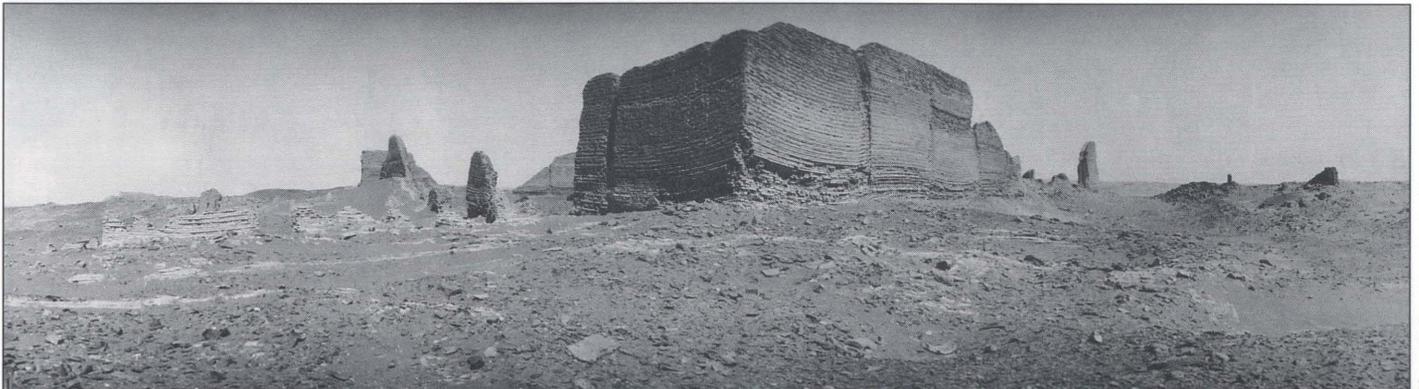


Photo: Kelsey Museum Archives

A 1931 panoramic view of Dimé, a site excavated in conjunction with the Karanis expedition. Such photos of archaeological sites can be used to create navigable "movies" through QuickTime Virtual Reality (see article on pages 8-9).

been my First Year Seminar class for the Winter 1996 term: "The Archaeology of Roman Egypt: Multi-Media Investigations of a Multicultural Society." The course has challenged me to integrate an introduction to Roman Egypt and Karanis, a survey of archaeological method and theory, and practical instruction in computer techniques. It has thus required considerable organization and coordination of very different kinds of teaching.

All of the written work for the class is done electronically: assignments are submitted (and returned with comments) via e-mail; exams are submitted through online forms; and class projects consist of interactive World Wide Web documents. But this is not by any means a "remote" class taught over the Internet: class sessions consist of lectures and discussions, hands-on work with computers and artifacts, as well as tours of the Kelsey Museum.

The students in this experimental course are a bright and dedicated group of first- and second-year undergraduates. I look forward to seeing their next assignment (World Wide Web presentations reacting to the Kelsey exhibition "Caught Looking") and especially their final projects.

It is these final projects that will form a centerpiece for what will be known as the "Karanis Web": online interactive presentations of archaeological material from Karanis and related sites. Many of the students will be concentrating on small groups of objects from the "Karanis kit"; eventually we hope to have all of the objects from the kit available online as a teaching and research tool. A gateway into this project, the online syllabus for this course, and related materials can be accessed at <http://www-personal.umich.edu/~twilfong/Karanis>. Ultimately, we hope that the Karanis Web will be an expanding electronic resource for Karanis and its context.

The increased availability of Karanis materials to the scholarly community via the World Wide Web will undoubtedly encourage new publication efforts, but the unique nature of the World Wide Web will also give researchers completely new ways of looking at Karanis that should result in new and exciting approaches to the data. The access provided by the Web will also make the material available to nonspecialists, opening many avenues for the use of Karanis material in teaching and,

Digitizing Islamic Coins

Among the Kelsey's Islamic coins is a large hoard of about 700 silver dirhems bought from an Iranian dealer thirty years ago. This hoard is especially interesting because Islamic coins generally bear legends that include the name and title of the issuing ruler, the mint at which the coin was struck, and the year of issue (sometimes even the month and rarely even the day), whereas contemporary European coins usually include only one or two of these elements.

These particular coins appear to have been hoarded in eastern Iran and were struck in the 1320s and 1330s, during the last, tumultuous days of Mongol rule in the area. Professors K. Allin Luther (Near Eastern Studies) and Rudi Paul Lindner (History) found that many of the coins had been struck at the same mint in the same year (for example, some thirty coins minted at Nishapur in 730 H., twenty from another mint in 733). This discovery opened up the possibility of studying the output of the Mongol mints in relative terms and using modern statistical methods to obtain a sense of the actual mint output and its fluctuations. Such calculations rest upon the ability to classify different obverse and reverse dies upon which the coin blanks were struck—previously a laborious process requiring a microscope and a prodigious memory for the fine details of engraving.

The Collaboratory for the Humani-



Digitized image of a dirhem (KM 85.2.132) from the Kelsey hoard.

ties, a new U-M project jointly funded by the Library and the University Press and directed by John Price-Wilkin, has fostered new techniques for the quick identification and matching of coin dies. The Collaboratory's digitizing camera is used to make a large-scale image of a coin, which Chris Powell, consultant to the Collaboratory, re-

fines using imaging software in order to bring out fine detail and contrast. Lindner, presently a fellow of the Collaboratory, classifies the dies much more easily from these refined digital images, which may be saved or even superimposed. A further development, based upon work done in dental research, is to use a light pen to mark three points on a given coin image,

then identify coins struck from the same die by the congruent triangles defined by the three points saved to the computer for each face of every coin.

Die analysis, fairly common in ancient Greek and Roman numismatics, has been rare in Islamic numismatics due to the quantity of material and the detailed engraving of most dies. The use of digitizing imagery and the associated enhancement software will greatly facilitate such studies. Once information is gathered from large hoards like that in the Kelsey, it will be possible to draw reliable and quantifiable conclusions about the monetary and economic history of the medieval Near East as well as bullion flows within the commonwealth of Islam.

Rudi Lindner

generally, for more public access to our materials that are not on display.

The future for Karanis on the World Wide Web is especially exciting, since we are only just beginning to explore some of the possibilities. We are still limited by the equipment available to us: a major priority remains a dedicated file server, which will give us better control of (and more space for) our presence on the World Wide Web. Virtual Reality technology could be applied to the data from Karanis, perhaps ultimately allowing fully navigable computer models of this site. A more immediate prospect is the application of QuickTime Virtual Reality (QTVR) technology (see article on pages 8-9). The Kelsey's involve-

ment with QTVR has been encouraged and funded by Mike McPherson, Director of Information Technology for the College of LS&A. QTVR will theoretically allow for navigable museum galleries in which objects can be "picked up" and examined from all angles; the applications for Karanis are potentially limitless, and we hope to have a QTVR version of our "Karanis kit" available in the foreseeable future. There is also ongoing interest in a return to Karanis by the Kelsey Museum. With technology undreamed of by the original excavators, we can use new surveying and recording methods to bring the actual site of Karanis onto the World Wide Web and into the future.

Terry Wilfong

The Collections Database Project

The Kelsey collections database project was begun in the early 1980s during the directorship of John Pedley. Pam Reister, who was then Registrar, designed and implemented a rudimentary object database and began entering the records of the approximately 100,000 artifacts in the collection. The next Registrar, Dr. Marti Lu Allen, significantly improved the portions of the database documenting the provenance of materials excavated by the Museum. Software was updated and eventually changed and data entry completed under the supervision of Dr. Allen's successor, Robin Meador-Woodruff. The Registry staff is currently proofreading records and adding supplementary specialized information to data fields. Programmer Ben Scharp is preparing the database for distribution to a wider public.

The textual content of the database has been available to Kelsey Museum staff and researchers since its inception, but plans are currently underway to make the database available through our home page on the World Wide Web. In a recent pilot project, materials from the collections of the Kelsey Museum, the Museum of Art, and the History of Art slide collection were combined into the School of Information Art Image Browser (http://www.sils.umich.edu/Art_History/demoarea/htdocs/kelsey.html).

Two online exhibits displaying Kelsey artifacts exclusively show varied uses for illustrated records. One of these, designed by School of Information student Anne Noakes and available for viewing in the exhibit galleries of the Internet Public Library, compares Kelsey forgeries with genuine artifacts in our collections. Factors that curators weigh when deciding upon the authenticity of a piece are discussed in the accompanying text. The second exhibit provides additional documentation for the

Kelsey's Fall Term Nubia show. It displays photographs of the building of the first Aswan Dam, many of which could not be shown in an accompanying corridor gallery exhibit due to lack of space (<http://www.umich.edu/~kelseydb/Exhibits/Exhibits.html>).

In addition to artifacts, the Museum houses extensive photographic and text archives, which have, until now, been relatively inaccessible due in part to the sheer volume of material they contain. School of Information students are beginning to scan and publish portions of the Museum's 20,000-image photographic archives. This project, funded by the Department of Education, will bring into the public schools a database of images that can be configured in various ways to supplement a range of teaching goals. (For a sample project, see http://www.sils.umich.edu/Art_History/kelsey/title.html.)

Ultimately, our goal is to provide

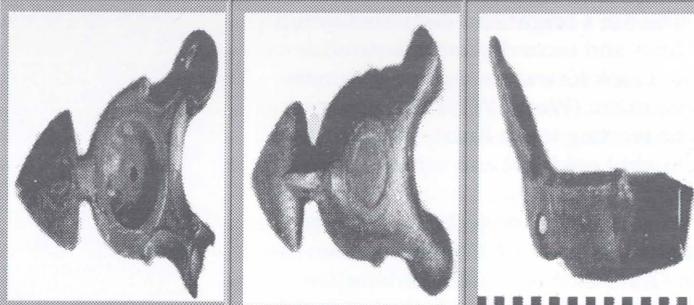
Kelsey Museum Registry Database Search

The table below lists the data for one record in the registry database that matched your search parameters. If more than one record was found, the next line indicates how many records were found and the number of the current record. You may use the buttons below to navigate through all found records.

This is record number 1 of 1

Registry Database Search Result

Accession Number	Function A	Function B	Function C
00002.2252	Lamp	---	---
Condition	Cons	Material A	Material B
I	F	clay terracotta	---
Iconography A	Iconography B	Provenance	Period
object/armor	---	Egypt	Late first century AD/ Roman
Earliest Date	Latest Date	Inscription	Negatives
50	100	None	L.70.44.1+, L.70.43.35+
Site	Unit	Room	Locus
Dime	II 202	00F	---
Field Number	Height	Width	Length
31-II 202F-TI	5	10	17



Entry for an Egyptian terracotta lamp from the Kelsey registry database, which will become accessible on the World Wide Web sometime this summer.

complete, illustrated collections records accessible by computer to scholars and students anywhere in the world. Through our database project, we hope to be able to make the widest body of our collections and archives available to the public for research and enjoyment, while following our mandate to protect and care for these materials.

Robin Meador-Woodruff

Virtuosity: First Steps toward a "Virtual Kelsey Museum"

A cybernetic "visitor" to the Kelsey Museum sits at her computer . . .

On her screen she sees the image of the Museum's facade. Using a combination of points and clicks on her mouse, she moves her view up the front steps to the door, "enters" the Museum, and finds herself in the lobby, facing the central corridor and looking toward the elevator. By moving her mouse to the left,

she changes her view and sees the Roman statuary through the south-central gallery entrance and then the door to the main office, just as if she were turning her head. She moves her mouse further left, and eventually she is 180 degrees from her original viewpoint, looking out of the Museum's front door. Continuing to the left, she sees Djheuty-mose's sarcophagus through the entrance

to the fireplace gallery, the guard seated at his desk, the cases of Egyptian funerary artifacts in the north-central gallery and at last returns to the view of the elevator at the end of the central corridor.

She chooses to enter the south-central gallery; by pointing and clicking she makes her way to the artifacts she wants to see, the samples of ancient glass in their case. As she looks at the image of

continued

the objects, she can call up label information about each object by clicking on each label in the image. This is a "virtual museum" experience, and it closely approximates that of a real physical visitor to the Kelsey.

But our electronic visitor can also do some things a real visitor can't do: She can "zoom" her view of any object to examine minute details of form, texture, or color. She can manipulate the objects on the screen, just as if she had picked them up, to look at them from all sides. She can access the Kelsey's object database to obtain even more comprehensive information about the objects, compare and contrast them to similar objects in our collection or in other collections around the world, or find data links to other research that may have been done on these or related artifacts or topics.

Although the "visitor" described above is a fiction and we do not yet have our "virtual" Kelsey Museum online, the day is fast approaching when visions such as this one will become a reality. Thanks to recently developed computer applications such as Apple's QuickTime Virtual Reality (QTVR), both the technology and the training are readily available and affordable today, and the creation of our "virtual museum" is easily within the abilities of the Kelsey's staff and volunteers.

In December 1995 Terry Wilfong and I attended a two-day QTVR workshop taught by instructors from Apple Computer's Developer University. We were given basic training in QTVR production, then allowed to develop our skills through hands-on experience, using QTVR tools to create all the components of a "virtual reality" environment.

First, we learned that a "virtual" environment is made up of a series of *panoramas*—scenes of 360 degrees or less that are, in effect, cylinders centered on a *node*, or single point of observation. This is what our "visitor" sees from the lobby of our virtual museum as she revolves her viewpoint. A viewer can look in any direction and can zoom toward and away from the image.

Each panoramic scene can be connected to others via *hot spots*—areas of an image created to respond to a mouse click or command. In the example above, our "visitor" might move from the "lobby" node to the "south-central gallery" node by clicking on the "hot spot" of the gallery's entrance. Had she chosen a different "hot spot"—the main office door, for instance—she might

have been linked to the panorama of the office interior. A "virtual" room can contain almost any number of nodes and linking hot spots.

Within a node that includes a case of artifacts, our "visitor" can choose to "pick up" and manipulate one of the objects she sees by activating another type of hot spot, linking to an *object movie*. An object movie is a series of views of an object that, when placed in a particular order, can create the illusion of motion, much like a child's flip book cartoon. By using a series of linked nodes and object movies, we can allow our "virtual visitor" to move about at will and examine any object in the virtual environment.

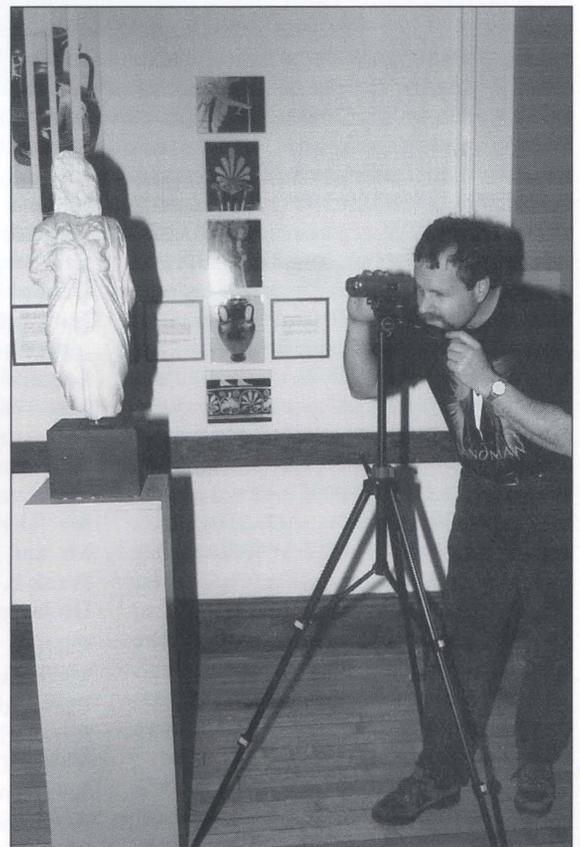
Following "basic training" in which the workshop participants learned how to create panoramas and object movies, then link them together, we divided into two-person teams and began work on our "final exam" projects—creating our own examples of "virtual reality" environments. Using Apple's Quicktake digital cameras, each team chose a location on campus, set up a tripod, and shot 24 digital images, each 15 degrees apart, to produce a 360 degree panorama. My team opted to set our camera in the center of the U-M Diag! After the images had been captured, we downloaded them from the camera to a computer, where they were digitally "stitched together" to form a node. A video camera captured the images necessary to create object movies. Video is used because—unlike panoramas, which as "cylinders" require only 24 images shot from a single viewpoint—object movies are "spheres," which must contain all possible views of the object, and a substantially larger number of images must be captured.

After each team had created both a node and an object movie, we were taught how to locate and configure the hot spots needed to link the two together in QTVR movies. Then, using Macromedia Director software, we learned how to join these movies in logical sequence to create a more fully developed and interactive "virtual" environment.

Along with QTVR training, the workshop provided participants with all the hardware, software, and documentation necessary for us to develop a "virtual Kelsey." While our initial project will almost certainly attempt to duplicate the actual galleries, it may soon be possible to allow both professors and students the opportunity to create their own "exhibitions" within our "virtual" space. By choosing various object movies of "artifacts" contained in a digital image library of our collections, a particular class, conference, or research project may develop and customize any "exhibition" to meet their demands.

It will also be possible in the future to "loan" or "borrow" these object movies, trading with other museums and institutions around the world in order to increase the availability and understanding of these artifacts within the international scholarly community. The Kelsey and its holdings will truly become accessible to anyone in the world. Hopefully, we will be an interesting and exciting stop for the increasing number of virtual voyagers who frequent the global village of the Internet.

Dana Buck



To begin creating a virtual exhibition tour, Preparator Dana Buck takes digital images of the Isis-Aphrodite statue in "Caught Looking: Exhibiting the Kelsey."

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Staff News, 1995–96

Research Scientist **Sue Alcock** delivered papers at the University of Cambridge, University of Siena, British School at Rome, Heidelberg University, and at the annual meetings of the Archaeological Institute of America (AIA). She also did a lecture tour for AIA. Recent articles have focused on Pausanias and her fieldwork in Greece. She was named Distinguished Faculty Member by the Michigan Association of Governing Boards and won the Class of 1923 Memorial Teaching Award.

Preparator **Dana Buck** has been working on installing the David Roberts photographs and getting ready for our fall exhibition of Roman marble fragments. Spring cleaning and further building renovations occupy much of the rest of his time. He also hopes to experiment with some multimedia projects.

Research Scientist and IPCAA Director **John Cherry** is close to reaching an agreement for a joint venture, to be partially sponsored by the Kelsey, with Professor Jack Davis of the University of Cincinnati and Albanian colleagues Lorenc Bejko and Muzafer Korkuti and students at the Institute of Archaeology in Tirana. In July he will spend two or three weeks in south-

central Albania scouting suitable areas for intensive field survey.

While on leave, Director **Elaine Gazda** served as respondent for the session "The Many Lives of Classical Sculpture" at the AIA meetings and presented a paper on dating Roman ideal sculptures at the College Art Association meetings. She was appointed to the AIA's new committee on Museums and Exhibitions. And she has been writing and editing a

"Vestal Virgins and Imperial Women: Allegiances and Art in the Antonine Era." She will teach an introductory art history course at U-M/Dearborn this spring.

Last fall **John Griffiths Pedley**, Professor of Classical Studies, delivered lectures on "Paestum, City of Sanctuaries" for the AIA in Ottawa and on "Theater and Sanctuary in Ancient Greece" for the inauguration of the new theater complex at Valparaiso University. At the AIA annual meetings he chaired a session on Sicily and South Italy.

This summer Curator **Janet Richards** will continue planning for the permanent reinstallation of our Egyptian and ancient Near Eastern galleries, scheduled for January. She will later visit the Fayum and Aswan in Egypt to conduct a feasibility study for a long-term archaeological field project to be sponsored by the Kelsey.

This spring Curator **Thelma Thomas** spoke on "Late Antique Love of Color: The Egyptian Example" for The Charles K. Wilkinson Lecture Series on "Textiles as Art and Inspiration" at the Metropolitan Museum of Art in New York.

Photo: N. Garcia



With the ghost of Francis Kelsey hovering in the background, graduate students (left to right) Kristina Milnor, Jennifer Trimble, and Carla Goodnoh enjoy the opening of their exhibition, "Caught Looking: Exhibiting the Kelsey." Not pictured is the fourth curator, Mariana Giovino.

book of essays on Greek and Roman art.

Librarian **Molly Lindner** completed her Ph.D. in History of Art this winter. At the AIA meetings she presented a paper on Roman women's hairstyles in the second century A.D. At the College Art Association meetings she delivered

IPCAA student **Steve Tuck** has received a postdoctoral fellowship for Winter 1997 at the Center for Epigraphical Studies at Ohio State University. He is presenting a paper at the Imitatio/Aemulatio Conference at the University of North Carolina, Chapel Hill, and coauthored "A Pharos for Paphos" for the next *Reports of the Department of Antiquities of Cyprus*.

Curator **Terry Wilfong** has become editor of *Bulletin of the American Society of Papyrologists*. He has completed two articles—"Reading the Disjointed Body in Coptic" and "Menstrual Synchrony and the 'Place of Women' in Ancient Egypt"—and a chapter on the Coptic community in post-Muslim Conquest Egypt for the *Cambridge History of Egypt*.

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Daniel D. Horning	Nellie M. Varner
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Museum hours

Monday–Friday 9:00–4:00

Saturday–Sunday 1:00–4:00

Closed Mondays May–August

Calendar of Events

Exhibitions

- *Death in Ancient Egypt: Preserving Eternity*

Through August 1

- *Caught Looking: Exhibiting the Kelsey*

Through May 14

- *A Victorian's Passion for Egypt and the Near East: David Roberts*

May 10–August 1

Opening May 10, 5:00–7:00 p.m.

Family Day

- *A Morning with Mummies*

\$5 per child, early registration required

Call 747-0441

Saturday, May 18, 10 a.m.–noon

Gallery Talks

- Informal, docent-led tours of *Death in Ancient Egypt*
Sundays, January 28–April 28
2:30 to 3:15 p.m.

Members Event

- Associates Annual Spring Event
Friday, May 10
5:00–7:00 p.m., Kelsey Museum:
public viewing of Roberts exhibit
*6:30 p.m.: members' business meeting
7:00 p.m., Auditorium C, Angell Hall:
Nineteenth and Twentieth Century Travellers: Pioneering Representations of Ancient Egypt
public lecture by Professor Lanny Bell,
Oriental Institute, University of Chicago
*Champagne reception follows the lecture

Benefit

- *Nefertotee: A Benefit for the Kelsey Museum at Sweet Lorraine's Cafe and Bar*
September 30

*Open to Kelsey Associates only

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