MVSE

NUMBER SEVENTEEN • 1983

ANNUAL OF THE MUSEUM
OF ART AND ARCHAEOLOGY

The Naukratis Project, 1983

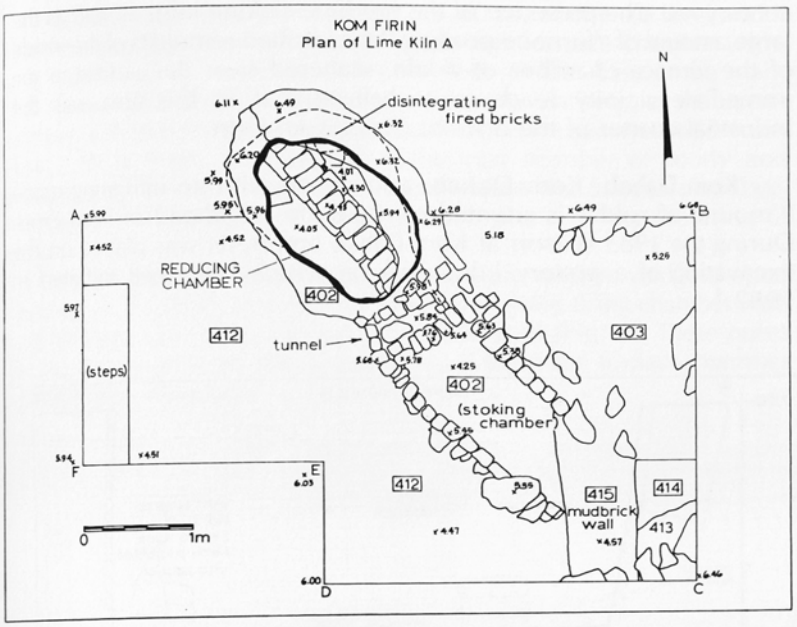
During the summer of 1983 the Naukratis Project conducted the fifth and final in-field season of a program designed to elucidate the development of civilization in a twenty-five square kilometer section of the western Nile Delta.[1] Although primarily intended as a study season, limited excavation and survey work were conducted at Kom Ge'if (Naukratis), Kom Firin and Kom Dahab, while detailed analysis of material previously excavated at these sites was being completed.

Naukratis (Kom Ge'if): Four small probes (less than 2 x 2 m.) were excavated in the South Mound at Naukratis in the remains of what we have termed the Northwest Building, in order to clarify certain details of the architectural history of this multi-phased structure.[2] Since all of the phases of this building appear to date within the Ptolemaic Period, study of the pottery and other artifactual material from deposits associated with the various stages of its remodeling should add significantly to our knowledge of the sequence of the local pottery forms and styles in this region during the third to first centuries B.C.

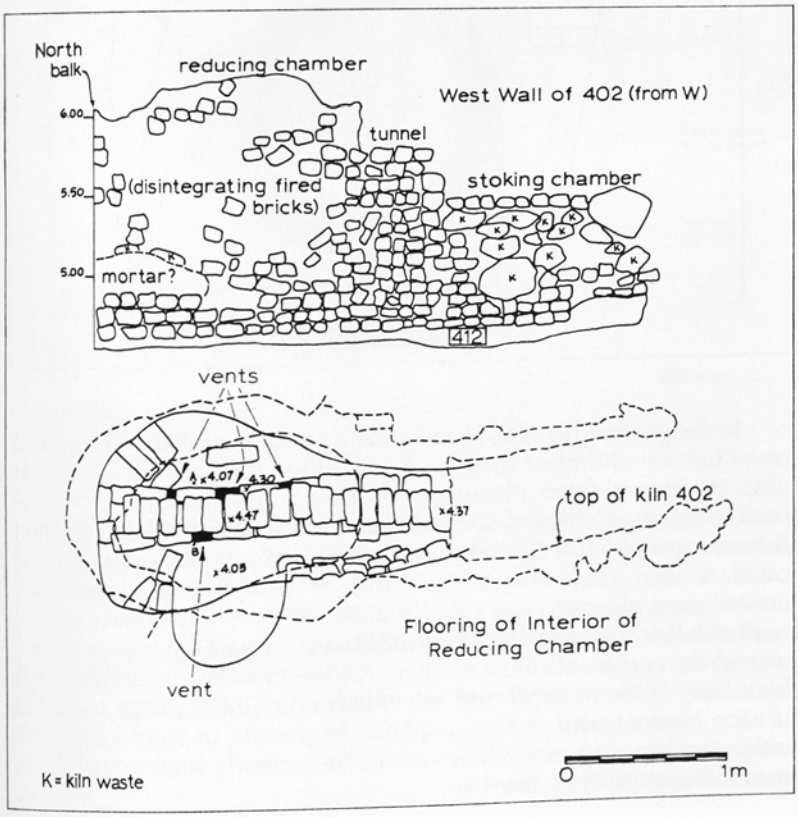
Kom Firin: Work at Kom Firin consisted of the excavation of two kilns located approximately 160 meters northeast of the Department of Antiquities resthouse. Kiln A, the better preserved of the two, had been recorded during our initial visit to the site in the winter of 1977-1978,[3] while Kiln B was noted during an intensive surface survey of Kom Firin during the summer of 1982. The two kilns are similar both in size and function and our discussion here will be confined to Kiln A.

Kiln A, which was constructed in a hole dug into the sterile sand, consisted of three main elements (Fig. 1a): an oval reducing chamber (ca. 1.80 x 1.40 m.) with a fired brick floor, a transitional tunnel (ca. 0.50 x 0.75 m.) with a corbelled vault of brick; and a stoking chamber (ca. 1.75 x 0.60 m.) the southern end of which incorporated an earlier mudbrick wall (Locus 415) of uncertain date. Upon the floor of the kiln two parallel walls of fired bricks (Fig. 1b), four courses high and ca. 20 meters apart, were laid longitudinally from the northwestern end of the reducing chamber to the southeastern end of the transitional tunnel. These walls were subsequently capped by a single row of bricks. Four "vents" (ca. 0.05 to 0.10 m.) between the bricks of the third and fourth courses suggest that a forced air draught was employed in firing the reducing chamber.

At the time of excavation the reducing chamber was filled with several depositional strata which included a layer of powdered lime, a thicker deposit of which (0.45 m.) was also found in the tunnel. This would indicate that the structure functioned as a lime-slaking rather than a pottery kiln. In-field study of the ceramic finds associated with Kilns A and B suggest a period of utilization in the second or third



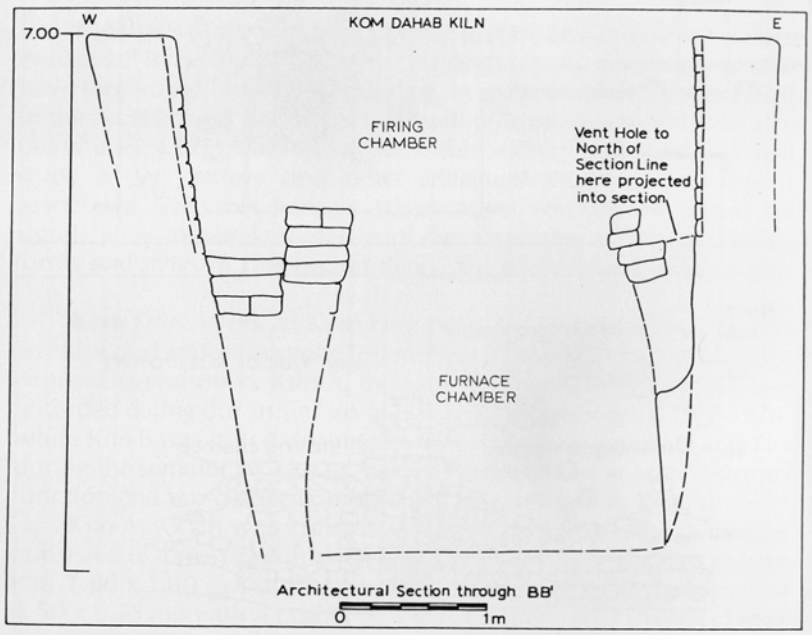
1a. The kiln at Kom Firin.



1b. Elevation and plan of the floor of the kiln showing arrangement of "vents"

century A.D. The presence of the two lime-slaking kilns as well as the large amount of "furnace product," the vitrified remnants of the inside of the furnace chamber of a kiln, scattered over the surface in the immediate vicinity leads us to believe that in this area was the industrial quarter of the ancient city of Kom Firin.

Kom Dahab: Kom Dahab, a small site with an intriguing name ("mound of gold") is situated ca. 0.50 km. southeast of Kom Firin. During the 1983 season at Kom Dahab emphasis was placed on the excavation of a pottery kiln, work on which had been initiated in 1982.[4]

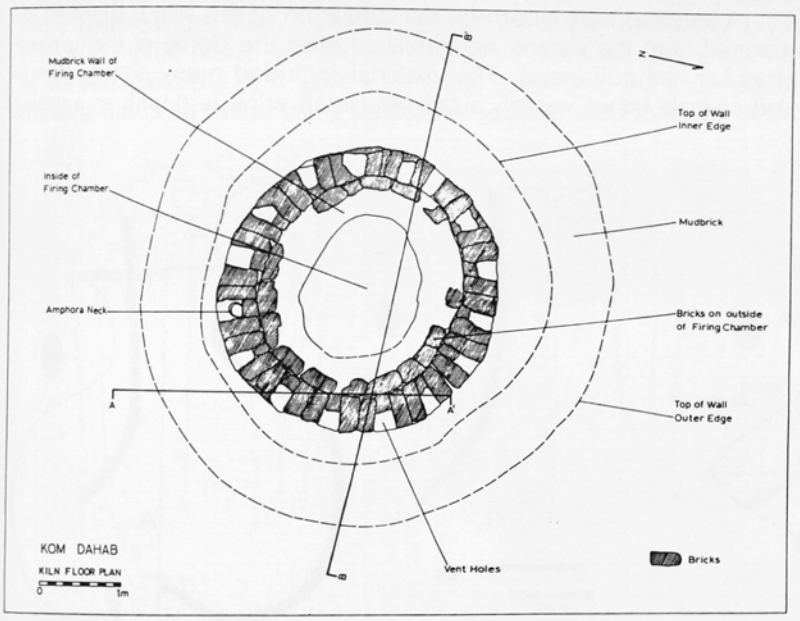


2. The kiln at Kom Dahab: section.

In design the kiln was found to be a circular updraught kiln with a lower furnace chamber and an upper firing chamber (Fig. 2). Similar kilns are known from elsewhere in the ancient world and in many modern Egyptian villages such as Gazayer Isa which is located a short distance east of Kom Dahab.[5] At Kom Dahab, as at Gazayer Isa, the lower furnace chamber of the kiln was dug below ground level. Limited excavations to the south and east of the kiln reached a level of mudbrick *detritus* (debris) which may have formed the original surface prior to the construction of the kiln. Above this layer of detritus was a thick layer of loose sand and ash which contained a large amount of furnace product and many amphora fragments of types found both within the kiln and elsewhere on the site, clearly representing debris from the operation of the kiln.

Ground water was encountered at 3.80 m. above sea level and it was necessary to cease excavation inside the furnace chamber without, unfortunately, reaching either the floor or the base of the wall. The furnace chamber was not preserved in its entirety, as the upper portion of its dome had collapsed, but it once must have stood more than 2.10 m. high. To judge from the vast number of poorly and partially-fired amphora fragments found inside the furnace chamber, the collapse of the dome must have taken place during the firing of these vessels.

Around the edge of the firing chamber are sixteen wedge-shaped openings in the floor between the inner face of the firing chamber wall and the outer face of the furnace chamber wall (Fig. 3). These holes served as flues to carry the hot air upward from the furnace chamber into the firing chamber.



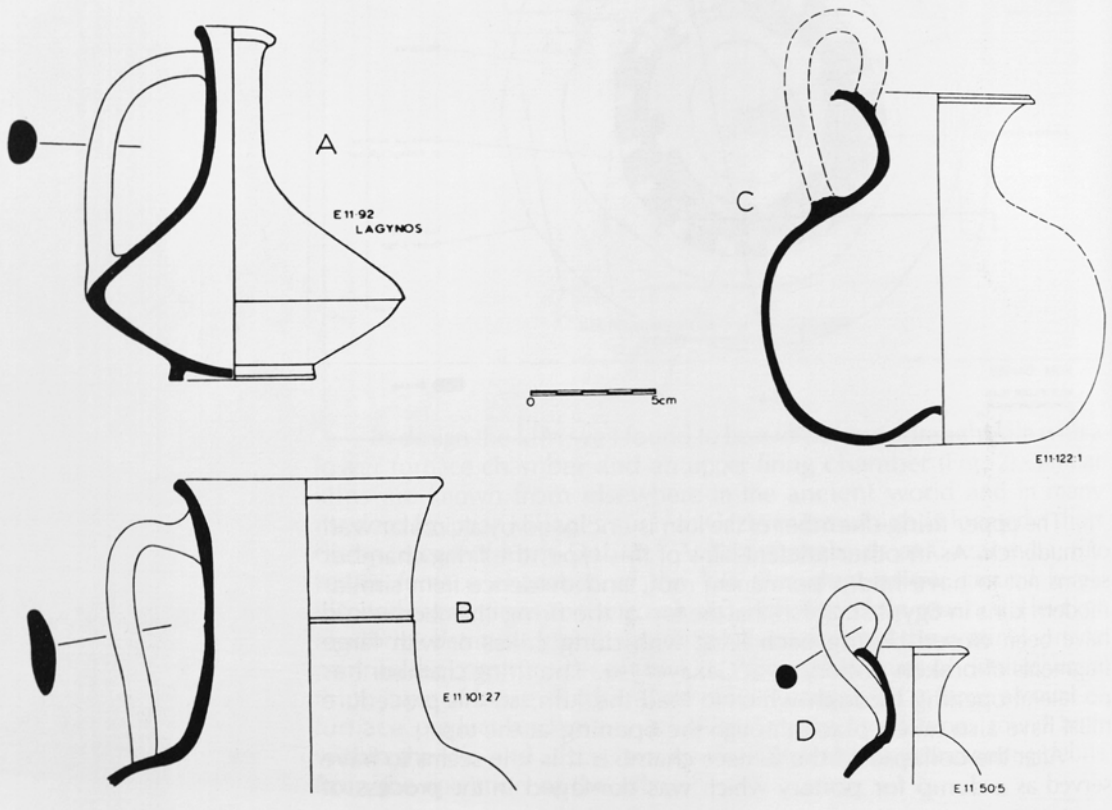
3. The kiln at Kom Dahab: plan.

The upper firing chamber of the kiln is enclosed by a circular wall of mudbrick. As in other ancient kilns of this type, the firing chamber seems not to have had a permanent roof, and evidence from similar modern kilns in Egypt suggests that the top of the firing chamber would have been closed during each firing with dung cakes or with large fragments of broken pottery as at Gazayer Isa. The firing chamber has no lateral opening through which to load the kiln, so this procedure must have also taken place through the opening at the top.

After the collapse of the furnace chamber this kiln seems to have served as a dump for pottery which was damaged in the process of

manufacture, both prior to firing (as is evidenced by the large number of unbaked sherds) and as a result of firing accidents (as is seen in the large number of "wasters"). For example, several pots such as the pitcher with indented base (Fig. 4:C) were shattered or blown during firing. Blowing can occur under several conditions. The clay may have been improperly prepared, the vessel may have been inadequately dried before firing so that steam was generated in the body of the vessel during firing, or there may have been too rapid a rise in temperature during the early stages of firing.[6] Other pottery, such as the amphora neck (Fig. 5:G), was badly warped. Warping is generally due to an uneven distribution of heat during firing which results in one side of the vessel contracting more rapidly than the other upon cooling.[7] Finally, many of the vases such as the pitchers (Fig. 4:B, D) were split or cracked over part or most of the vessel. Such splitting or cracking results when the kiln is cooled too rapidly after firing or when a draft is allowed to enter the kiln during firing.[8]

A *terminus ante quem* for the utilization of this kiln is supplied by material from the debris accumulated after the dome of the furnace chamber had collapsed. This material included many pottery sherds and a single intact vessel, a *lagynos* (small wine jug) with an angular

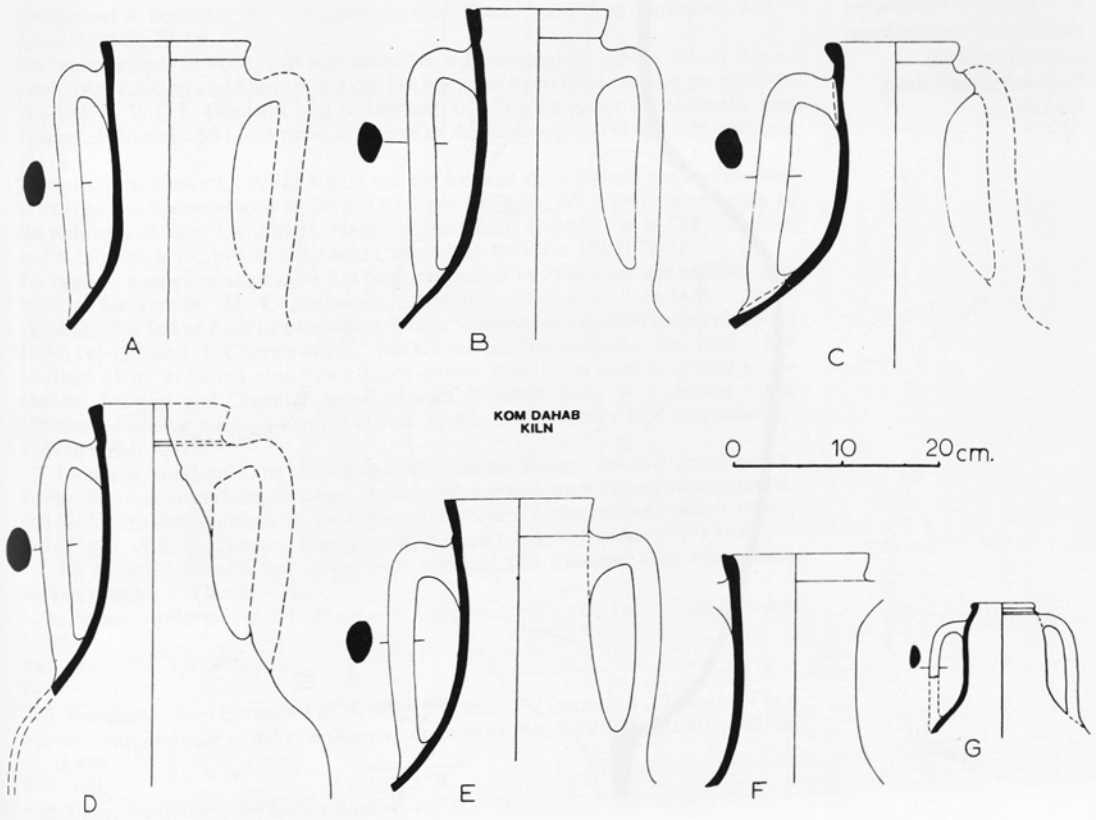


4. Pottery from the kiln at Kom Dahab.

body (Fig. 4:A) found on top of the collapsed wall of the furnace chamber, incompletely fired and with a crack in its handle. At Athens, lagynoi have been recovered from contexts as early as the 3rd century B.C. and as late as the middle of the 1st century B.C., but were most popular during the second half of the 2nd century B.C.[9] Although lagynoi occur in a variety of forms, from squat through round to angular, it appears that shape is of little or no significance as a chronological indicator.[10] The Dahab example, therefore, cannot be dated at present more closely than the second half of the Ptolemaic period. This date is supported by a copper coin found in the same debris, which can most probably be attributed to Ptolemy X who reigned at the beginning of the first century B.C.

The largest category of vases from the kiln is represented by the masses of amphora fragments found throughout the kiln but especially in the collapsed kiln chamber. The amphorae appear in various forms (Fig. 5), some with flaring rims (e.g., Fig. 5:A) and others with smaller, more rounded lips (Fig. 5:C). Because of the large number of body sherds in similar fabric and shapes recovered from the kiln, it has not as yet been possible to restore a complete amphora, but a composite drawing has been made using sections of several amphorae, all of the

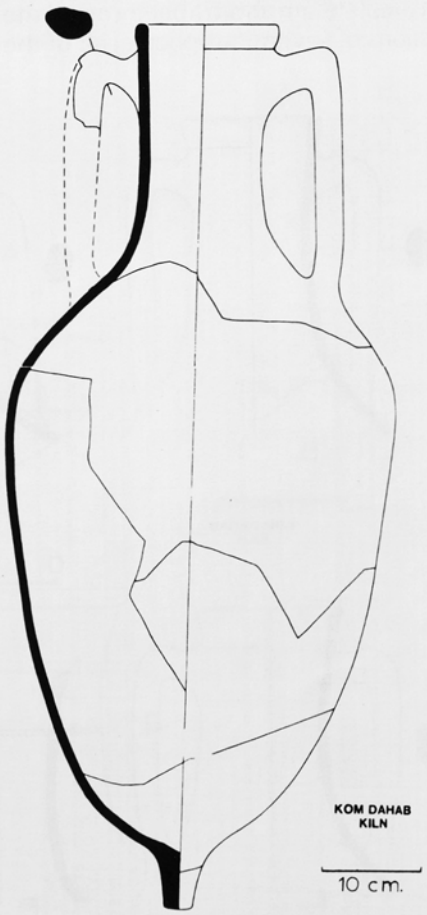
5. Series of amphora rim profiles from the kiln at Kom Dahab.



same fabric (Fig. 6). In the past, it has been suggested that during the Ptolemaic period Alexandria, and probably Egypt as a whole, had to import amphorae from Greece in order to meet the demand for storage vessels.[11] With the recent discovery of the large kilns at Kom Dahab and Tell Fara'in, however, we are in a position to suggest that production of amphorae and indeed many other vessels took place on a large scale in the Nile Delta.

Other activities of the 1983 season included the conclusion of a substantial program of core-drilling at Naukratis and its environs in an attempt to ascertain the stratigraphy below the present water table and to locate the ancient course of the canopic branch of the Nile near which the ancient city of Naukratis was supposed to have been situated.

Finally, our regional survey was completed with the addition of the last few sites to the gazetteer of archaeological monuments in the



6. Suggested composite drawing of an amphora, assembled from fragments from Kom Dahab.

western Nile Delta being compiled by the Naukratis Project. These sites are daily being damaged by the digging of the local *sebakhin* (farmers) and by the erosion caused by the seasonal rains. It is imperative that they be recorded as fully as possible before they are lost forever.

The Naukratis Project now enters its publication phase which will result in a series of monographs that will appear over the next three years. We hope to update *Muse* readers on the progress of this research in a future issue of this publication.

WILLIAM D. E. COULSON
University of Minnesota-Minneapolis

ALBERT LEONARD, JR.
University of Missouri-Columbia

[1]The 1983 season was sponsored by a matching grant from the National Endowment for the Humanities, with additional funds provided by the Social Sciences and Humanities Research Council of Canada and the University of Minnesota, and other monies by Carleton College, the College of St. Catherine's, and Gustavus Adolphus College, all within the state of Minnesota, and by the Museum of Art and Archaeology at the University of Missouri-Columbia.

[2]Field director of the excavation at Kom Ge'if during the 1983 season was Cynthia Johnson Leonard. For our earlier work in the South Mound at Naukratis, see W.D.E. Coulson and A. Leonard, Jr., "Excavations in the South Mound at Naukratis: 1981," *Muse* 15 (1981) 39-45.

[3]The field supervisor at Kom Firin was James Rehard, assisted by James Contursi, Laura Lewis, Laura Paulson and Denise Provost. For a plan of Kom Firin showing the position of Kiln A, cf. W.D.E. Coulson and A. Leonard, Jr., "Investigations at Naukratis and Environs, 1980 and 1981," *American Journal of Archaeology* 86 (1982) 376-380 and Ill. 12.

[4]As in past years, Nancy C. Wilke supervised the work at Kom Dahab. She was assisted in 1983 by Lisa Greenberg, a student at Carleton College. For a preliminary study of the early work at Kom Dahab, cf. Nancy Wilke,"Kom Dahab," in W.D.E. Coulson and A. Leonard, Jr., *Cities of the Delta* I, *Naukratis* (Malibu 1981) 73-77.

[5]For example, a series of such kilns has been excavated in Ptolemaic and early Roman levels at Tell Fara'in, D. Charlesworth, "The Industrial Area," in M.W. Seton-Williams, "The Tell el Fara'in Expedition, 1967, "*Journal of Egyptian Archaeology* 53 (1967) 149-155; and D. Charlesworth, "Tell el-Fara'in: The Industrial Site, 1968," *JEA* 55 (1969) 23-30. In Nubia about two dozen similar kilns have been excavated in the Meroitic, X-Group and Christian levels at eight different sites, W.Y. Adams, "The Christian Potteries at Faras," *Kush* 9 (1961) 30-43, and "Pottery Kiln Excavations," *Kush* 10 (1962) 62-75.

For similar, modern kilns throughout the Mediterranean, see R. Hampe and A. Winter, *Bei Töpfern und Töpferinnen in Kreta, Messenien und Zypern* (Mainz 1962), and *Bei Töpfern und Zieglern in Süditalien, Sizilien und Griechenland* (Mainz 1965); and in Egypt, W.S. Blackman, *The Fellahin of Upper Egypt* (London 1927) 148.

The Naukratis Project has undertaken study of the fourteen kilns and pottery working complex at Gazayer Isa.

[6]H.W. Hodges, *Artifacts: An Introduction to Early Materials and Technology* (London 1964) 41.

[7]Ibid.

[8]Ibid.

[9]H.A. Thompson, "Two Centuries of Hellenistic Pottery," *Hesperia* 3 (1934) 451. For a lagynos similar in shape to the one under discussion cf. no. E 72, pp. 403-405 and fig. 92, p. 404.

[10]Ibid., 450.

[11]P.M. Fraser, *Ptolemaic Alexandria* (Oxford 1972) 168.

about the authors

Jane C. Biers is Curator of Ancient Art at the Museum of Art and Archaeology, University of Missouri-Columbia. She received a Ph.D. at the University of California-Berkeley, writing her dissertation on "A Roman Bath at Corinth," which is now in press. Other publications include monographs on Cypriote archaeology, articles in *Muse* (3, 16), and in the *International Journal of Nautical Archaeology* (1977). Her excavation experience has been in England, Greece, Israel and Portugal.

William R. Biers, Professor of Classical Archaeology in the Department of Art History and Archaeology at the University of Missouri-Columbia, has excavated extensively in Turkey, Israel, Greece and Portugal, and is a frequent contributor to *Muse* (see volumes 5, 6, 7, 13, 15 and 16). His book, *The Archaeology of Greece*, published by Cornell University Press, is a standard text for university students in archaeology.

Maura F. Cornman is the Conservator at the Museum of Art and Archaeology and Adjunct Assistant Professor in the Department of Art History and Archaeology at the University of Missouri. With an M.Sc. in Art Conservation from the University of Delaware, she has been associated with the University of Missouri since 1973, on excavations, in museum conservation, and in teaching The Curatorial Care of Collections. Her particular area of interest and publication is the compositional nature of artistic and artifactual materials and their adulteration or forgery.

William Coulson is Associate Professor of Classics and Classical Archaeology at the University of Minnesota where he has taught since 1968. He received his Ph.D. from Princeton University and has worked on excavations at Nichoria (Greece) and Tel Mikhal (Israel). He is at present Co-Director of the Naukratis excavations.

Albert Leonard, Jr. is Associate Professor in the Department of Art History and Archaeology at the University of Missouri-Columbia. With a Ph.D. in 1976 from the University of Chicago, he has been Director or Co-Principal Investigator of excavations in Greece, Italy, Jordan, Cyprus and Portugal, and is currently Co-Director of the Naukratis excavations.

Lucy Roy Sibley received her Ph.D. from the University of Missouri-Columbia with a concentration in historic textiles. She currently holds the rank of Assistant Professor at the University of Georgia in the Department of Clothing, Textiles and Interiors. She is curator of the Department's Historic Costume and Textile Collection. Her research activities stem from an interest in how people used textiles and clothing in the past, particularly those textile products recovered from archaeological contexts.

Kathleen Warner Slane, Assistant Professor of Art History and Archaeology at the University of Missouri-Columbia, joined the department in 1982 after having taught at Bryn Mawr College and MacMaster University. She received her Ph.D. in Roman archaeology in 1978. She has worked on Roman excavations in England, Italy, Greece and Cyprus, and is presently studying Roman pottery from excavations at Corinth and the terra sigillata from Tel Anafa. She is now Co-Director of the excavations at Mirobriga.

David Soren, Chairman of the Department of Classics at the University of Arizona, was formerly with the Department of Art History and Archaeology at the University of Missouri-Columbia; he is a regular contributor to *Muse* (9, 13, 14, 15 and 16). In addition to his work as Director at Mirobriga in 1982 and 1983, he has directed excavations at several sites in Tunisia and will continue his work at Kourion on Cyprus in 1984.

John G. Younger is Associate Professor of Classical Studies at Duke University and has written extensively on the sealstones of Minoan and Mycenaean Greece and their significance for the general art history of the pre-Classical period.