

WONDROUS GLASS

REFLECTIONS ON THE WORLD OF ROME



WONDROUS GLASS

REFLECTIONS ON THE WORLD OF ROME

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

by
Margaret Cool Root
with the assistance of
Laurie A. McCoy

Kelsey Museum of Archaeology
The University of Michigan
Ann Arbor

Copyright © 1982, Kelsey Museum
of Archaeology, The University of
Michigan

This catalogue was written in conjunction with the special exhibition WONDROUS GLASS held at the Kelsey Museum from July 20-December 12, 1982. Both the exhibition and this publication were made possible with the support of the National Endowment for the Arts, a Federal Agency, and the College of Literature, Science and the Arts of The University of Michigan.

On the cover:
A Blown-Glass Urn from Italy (1:1)

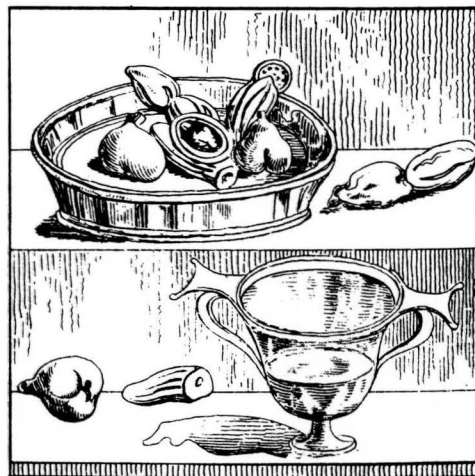
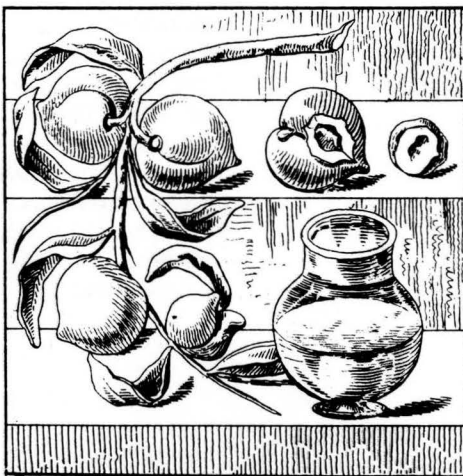
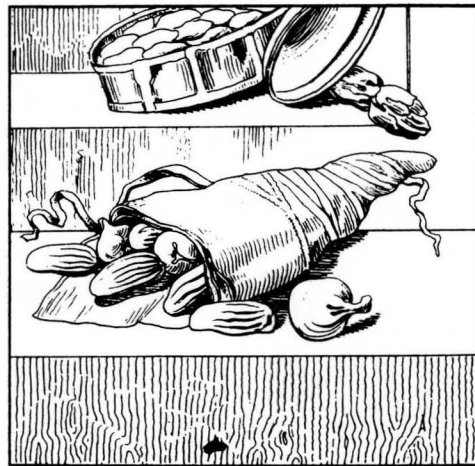
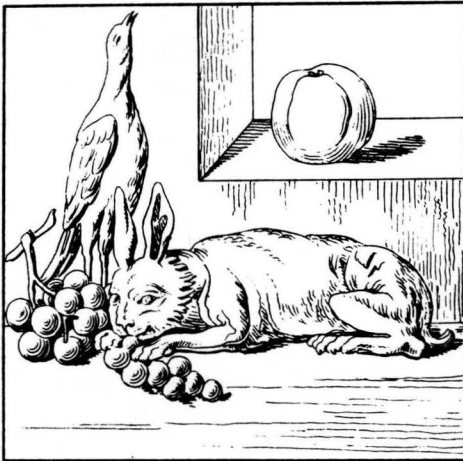
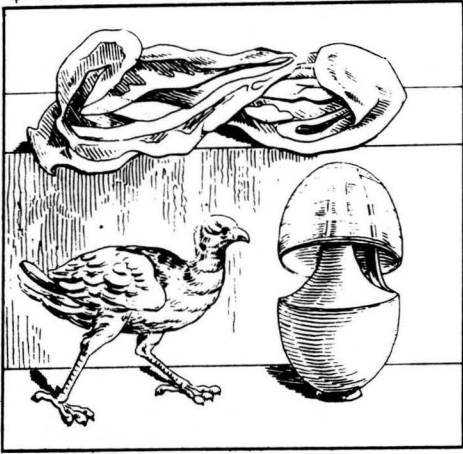
All photographs in this publication were taken by Ken Pokorny with the exception of the following, which we gratefully acknowledge: Pls. 1, 2, 3, & 6 (Karais Excavation Photographs); Pl. 8 (Fred Anderegg); Pl. 17 (Courtesy of The Corning Museum of Glass); Pl. 26 (Courtesy of Estelle S. Brettman, Executive Director, International Committee for the Preservation of the Catacombs in Italy).

For
Clifton and Susan Olds

PEINTURES
Waterci.

4^e Série.

48.



H. Roux, aine

A. d H. V. 2. P. 303.

Frontispiece. Engraving after a group of still life paintings from Her- culaneum (Photo Panels 13 & 14)

CONTENTS

ACKNOWLEDGMENTS 7

INTRODUCTION

Ancient Glass in the Kelsey
Museum 9

ROMAN GLASS-MAKING

The Background 11
Glass of the Roman Empire ... 13
Decorative Techniques of Roman
Glass 14
Special Uses for Glass 18
Wondrous Glass: Images and
Allegories 21

CHECKLIST OF OBJECTS IN THE EXHIBITION

Vitrine I 25
Vitrine II 25
Vitrine III 26
Vitrine IV 28
Vitrine V 30
Vitrine VI 32
Vitrine VII 33
Vitrine VIII 35
Vitrine IX 36
Vitrine X 36
Vitrine XI 37
Vitrine XII 37
Vitrine XIII 38
Vitrine XIV 39
Vitrine XV 39
Vitrine XVI 40
Vitrine XVII 40
Vitrine XVIII 42
Vitrine XIX 42

CHECKLIST OF PHOTO PANELS IN
THE EXHIBITION 45

CHECKLIST OF TEXT PANELS IN THE
EXHIBITION 47

FURTHER READING 48

ACKNOWLEDGMENTS

The exhibition which this catalogue documents has been a long time in the planning. Many people have helped with the work involved. In 1979/80, a group of graduate students in the Department of the History of Art and the Interdepartmental Program in Classical Art and Archaeology participated in an introductory study unit with me – a learning experience which did much to bring ideas for the exhibition into focus. The members of this group were Mary Ann Eaverly, Julia Eisendrath, Lauren Arnold, Nick Stavriniades, and Ann van Rosevelt. Julia Eisendrath continued on to devote much time and thought to a meticulous inventory of the glass collections in the Museum. This was a laborious project, essential to the efficient production of the exhibition.

Two graduate students arrived fresh on the scene in 1981/82: Victoria Weston (History of Art and Japanese Studies) and Laurie McCoy (Classical Art and Archaeology). I am most grateful to them for their cheerful industriousness through a long winter of snowy forays to the Graduate Library. Laurie McCoy has seen the project through to its completion, collaborating with me on research. In addition, Prof. John D'Arms, Ms. Norma Jenkins (Research Librarian at The Corning Museum of Glass), Dr. Aileen Gatten, and Prof. Charles Witke have provided indispensable help on specific scholarly problems – from the topography of Puteoli, to Sino-Roman relations in antiquity and obscure Chinese rhapsodists, to vexing questions of mirrors and metaphors, Isidorus, and Alexander's glass submarine.

I should like to thank Paul Cunningham for assistance with the grant proposal for the exhibition; and the National Endowment for the Arts (a Federal Agency) and the College of Literature, Science and the Arts of The University of

Michigan for their support of the project. Special thanks go to Ginny and Cruse Moss, to the Department of Antiquities of Jerusalem, to The Corning Museum of Glass (especially Sidney M. Goldstein), and to The Toledo Museum of Art (especially Kurt Luckner) for their generous cooperation as lenders of objects for the exhibition.

As always, the staff at University Publications Office and the staff and volunteers at the Museum have made a tremendous effort to assist with every aspect of WONDROUS GLASS. Individually, they are: Carol Hellman and Carol Ann Taylor, editor and designer of the catalogue, respectively; Ken Pokorny, photographer of this very difficult material; Amy Rosenberg, assisted by Susanna Pauli, in the painstaking conservation and cleaning of the objects; Lisa Vihos and Rachel Vargas for typing and many related jobs; Pamela Reister, as registrar in charge of the myriad tasks attendant upon a loan exhibition; Diane Brown, for her administration of accounts, her work on publicity, her expert typing, and her responsible, happy efficiency on all conceivable matters; and finally, David Slee – the designer and technician who has turned ideas into visible realities through a chain of encounters with wood, plexiglass, and light.

Margaret Cool Root
Assistant Curator of Collections
Kelsey Museum of Archaeology

INTRODUCTION

Ancient Glass in the Kelsey Museum

The Kelsey Museum holds a unique position with respect to museums in the United States which have extensive collections of ancient glass. Most of our glass is from excavations conducted by The University of Michigan in the 1920s and 1930s: specifically at Seleucia-on-the-Tigris in Iraq, Sephoris in Palestine, Dimé and Karanis in Egypt. Of the glass that does not derive from controlled excavations, all but a few pieces came to the Museum in large groups from well-documented personal collections acquired long ago in the lands of origin of the objects: the Askren and Ruthven Collections from Egypt; the Kelsey and Gréau Collections primarily from Cologne; the De Criscio Collection from Puteoli, Italy; the Cesnola Collection from Cyprus; the Havemeyer Collection from Syria and Rome. Thus, although we have neither an encyclopedic corpus of ancient glass nor a world-renown masterpiece such as the Populonia Bottle or the Portland Vase, still we occupy a special and important place in the area of glass studies.

Reflecting the traditional strengths of our collections more generally, the ancient glass in the Museum is essentially and specifically *Roman* glass. That is to say, it is glass produced within the Greater Mediterranean sphere from the first century B.C. to the seventh century A.D. (We shall justify this chronological definition shortly.)

The single most important group of glass in the Kelsey Museum is that from Karanis in the Egyptian Fayoum (west of the Delta). In 1924 The University of Michigan purchased the collection of Dr. D. L. Askren (a long-time resident of the Fayoum). This corpus consisted of about 180 vessels which are universally acknowledged to have

come from the site of Karanis, long ravaged by the area's "sebbakh" diggers (fertilizer entrepreneurs). In that same year, The University began excavations at the site which lasted until 1935. These excavations yielded hundreds of complete vessels as well as thousands of fragments. Most of this material came to the Kelsey Museum as a result of divisions with the Egyptian Government.

The houses at Karanis had undergone successive occupation from the late third century B.C. up to the sixth century A.D. Thus, the glass uncovered there spans the Ptolemaic period through the period of the Roman Empire and the "late antique." With the exception of a small amount of luxury-ware imported from Alexandria—that great Delta cosmopolis and center of artistic endeavor—the quantities of glass from Karanis seem to have been made in the town itself. The stratigraphy of the site is not without its problems. Furthermore, through the correlative analysis of dated coins and papyri found in direct association with the glass we can only establish the fact that, indeed, specific vessels were *in use* during the periods defined by the dated material. Establishing dates for the manufacture of the glass is another matter entirely. Because the glass at Karanis was highly prized and was passed on from one generation to another, contextual associations—while of great interest in other ways—can be misleading for the archaeologist bent on fixing precise developmental schemata for ancient glass. In 1936, D. B. Harden published a monumental catalogue of the glass excavated at Karanis in the first five seasons (1924/25–1928/29). Fully aware of the difficulties and limitations alluded to above, Harden produced a work of scholarship which remains one of the key building blocks for the construction of a history of Roman

glass. The material deserves continuing scholarly reappraisal in order to integrate it with discoveries made in other areas during the last half-century. By the same token, the publication of a scholarly catalogue of the Karanis glass from the later years of the campaign is a priority item on the Museum's agenda.

This exhibition catalogue does not, of course, pretend to accomplish either of these long-term goals in a systematic way—even though we have considered recent scholarship and have made use of many previously unpublished glasses in the Museum. Rather, our aim here is to suggest the cultural significance of glass in the world of Rome from the period of Rome's ascendancy as a unifying and dominating world force to the period when historical events had set civilization upon a course of cultural regionalism. This expansive temporal parameter for the "Roman" period enables us to view the material evidence as part of a humanistic continuum that certainly did not unravel with the conversion of Constantine or the rise of Byzantium. So too geographically, this world of Rome that we wish to describe through its glass is more extensive than the traditional boundaries of power would suggest. It embraced the vastness of Asia beyond the strict confines of imperial domain—as initiatives of trade and diplomacy linked West with East across the land and maritime Silk Routes.

The glass produced in this orb of interconnectedness captured the imaginations of contemporary poets, painters, and students of the natural sciences. Their testimony supplies valuable documentation of the forms and uses of glass. Furthermore, the paintings and discussions of glass left to us by the world of Rome reawaken in us a sense of the magical and contradictory essences of glass: its ability to be at once either heavy or

light; sturdy or fragile; opaque or translucent; colorful or colorless; refracting or reflecting. Thus, the story of glass we shall offer here juxtaposes actual antiquities with the ancients' perceptions of them.

In view of this aim, the glass from Karanis is truly a treasure for it was recovered from the homes of ordinary people: unearthed along with their money, their tax rolls, their cult objects, cooking pots, and toys. Some of the glass was found tucked away in hiding places, such as the two Alexandrian goblets stacked one atop the other in a hole in a window sill covered by a ceramic pot lid (Pl. 1; XIII:13). These goblets were created at least 100 years before the period of their final use in the house. St. Augustine's words ring true here:

Are we not frailer than if we were of glass? For even if glass is fragile, yet if cared for, it lasts a long time, and you find grandsons and great-grandsons drinking out of the cups of their grandfathers and great-grandfathers. Such fragile objects have been preserved throughout the years.

(Text Panel 17)

Pl. 1. The discovery of two heirloom goblets XIII:13



And indeed, it is as if the excavation photo documenting the discovery of the two heirlooms had been staged deliberately to contrast the fragility of the flesh with the durability of well-tended antiques!

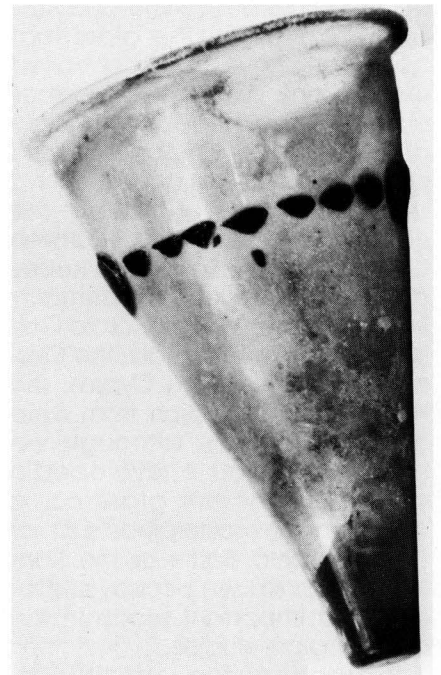
Moving from the sublime to the mundane, we come upon hoards of glass which suggest a more cavalier attitude toward the glorious medium. Something like the modern custard dish that is usurped for paper clip storage is the rather dignified beaker which was found inelegantly stuffed with a crumpled wad of linen and two bone pins (Pl. 2). The family inhabiting house B 121 at Karanis evidently had a distinct penchant for innovative uses of their glass containers. In the same hoard together with the beaker was found a conical vessel of the type usually interpreted as a lamp for suspension (Pls. 24-25). But *this* "lamp"

Pl. 2. A beaker stuffed with linen and two bone pins



seems to have acquired a new function on an even lighter side of life. It contained four bone dice (Pl. 3). The moral of this story is that the functional analysis of material evidence is necessarily a game of chance—dependent ultimately upon the disconcertingly capricious resourcefulness of the people behind the objects.

Pl. 3. A conical vessel containing four dice



ROMAN GLASS-MAKING

The Background

Glass is formed when sand (silica), soda (alkali), and lime are fused at high temperatures. The color of the glass can be altered by adjusting the atmosphere in the furnace and by adding specific metal oxides to the glass "batch" (such as cobalt for dark blue, antimony and lead for yellow, manganese for purple, tin for opaque white, antimony and manganese for colorless glass). A venerable legend perpetuated as late as the seventh century A.D. in the writings of Isidore of Seville gives a suitably miraculous explanation for the discovery of this elemental – yet truly wondrous – material:

This was its origin: in a part of Syria which is called Phoenicia, there is a swamp close to Judaea, around the base of Mt. Carmel, from which the Bellus River arises . . . whose sands are purified from contamination by the torrent's flow. The story is that here a ship of natron [sodium carbonate] merchants had been shipwrecked; when they were scattered about on the shore preparing food and no stones were at hand for propping up their pots, they brought lumps of natron from the ship. The sand of the shore became mixed with the burning natron and translucent streams of a new liquid flowed forth: and this was the origin of glass.

(Text Panel 1)

It is not surprising that the ancient authorities thought of Phoenicia as the birthplace of glass, for the Syro-Palestine region did indeed become a major center of glass production in antiquity, along with Egypt. However, glass seems actually to have been "discovered" not in Phoenicia, but in Mesopotamia. Archaeological research now places the first evidence of true glass there at around 2500 B.C. At first it was used for beads, seals, and architectural

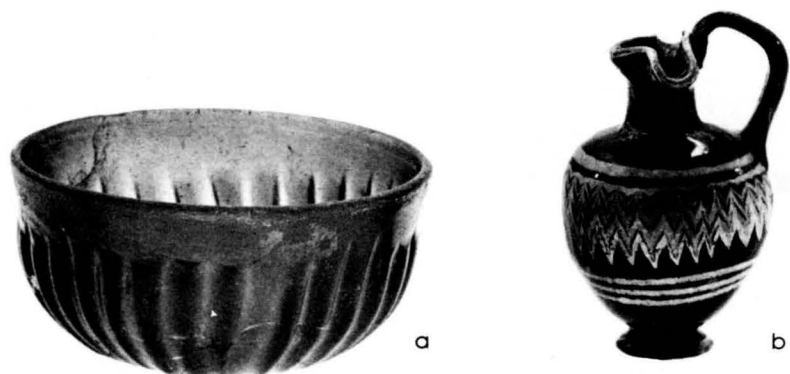
decoration. Some 1,000 years elapsed before glass vessels are known to have been produced. Vessels of glass quickly became widespread in the second half of the second millennium B.C. They were popular not only in Mesopotamia but also in Egypt and the Aegean. The earliest vessels were core-formed. Opaque, dark glass in its molten state was wound around a clay core attached to a metal rod. The skin of hot glass was fashioned with tools in order to shape its external features. Lighter colored strands of hot glass were then trailed on the surface and often "dragged" to produce festoon patterns. The pot surface was marvered (that is, rolled on a smooth, flat surface to produce a level finish). Finally, it was cooled slowly before the clay core was scraped out of the hardened vessel. This glassware typically imitated forms originally established for ceramic, metal, and stone vessels (Pl. 4b).

Somewhat later, the molding technique was developed, whereby glass chips or molten glass were packed or forced into a mold and then fused. After a molded vessel was annealed (cooled slowly in a special chamber of the glass furnace), it was often ground and polished in order to refine the rim and any other

rough edges. One typical shape for molded vessels of the late Hellenistic and early Roman periods (c. 150-50 B.C.) was the so-called pillar-molded bowl (Pl. 4a). Here exterior ribs radiate up from the base, stopping abruptly near the rim to allow a smooth margin around the circumference. This type is ubiquitous; and it attests to the free and rapid exchange of ideas in glass-making throughout the Greater Mediterranean sphere. Fragmentary examples in the collections of the Kelsey Museum range from Seleucia, to Karanis, to Puteoli (II:7a,c,d). The site of Tel Anafa in Israel (recently excavated jointly by the Universities of Michigan and Missouri) has provided critical information on the chronological limits of these bowls within the Roman period (II:7b).

Around 50 B.C. a revolutionary development occurred in the history of glass-making: the invention of free-blowing. This landmark achievement did almost certainly take place in Syro-Palestine even if the basic discovery of glass did not. Perhaps the significance attached to the Syro-Palestine glasshouses because of the discovery there of the blowing technique is at the root of the ancients' tendency to attribute to Phoenicia the

Pl. 4. (a) A "pillar-molded" bowl II:6; (b) a core-formed oinochoe II:2



invention of the actual material as well.

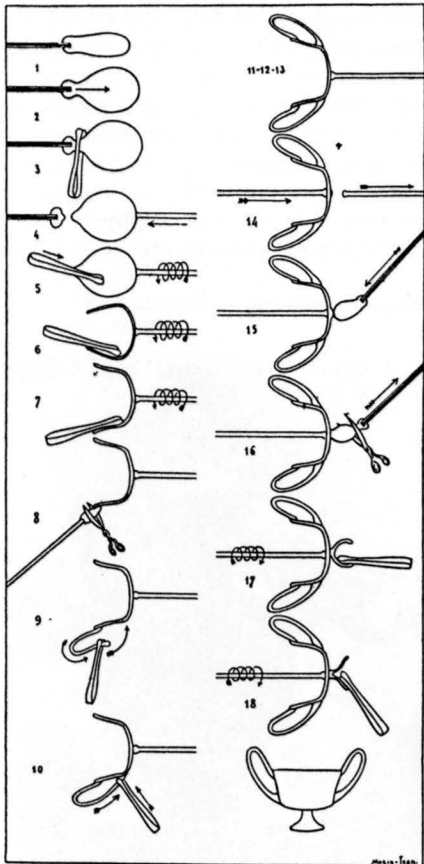
The free-blowing process required a continuously fired furnace. A wad of molten glass was gathered on the end of a long metal pipe. By blowing air through this pipe, the molten "gather" became a bubble of glass that could be manipulated with tools and reheated periodically for easier working. After the application of elements such as base-pedestals, a metal rod ("pontil rod") was thrust onto the bottom of the vessel and the top was cracked off the blow-pipe. Then, with further reheating, the top of the vessel received its final shaping; and elements such as handles and decorative trails were applied from a molten gather (Fig. 1). Vessels

produced in this way often preserve a scar, or "pontil mark," on the base from the removal of the pontil rod. When complete, the vessel was placed in the annealing chamber of the furnace.

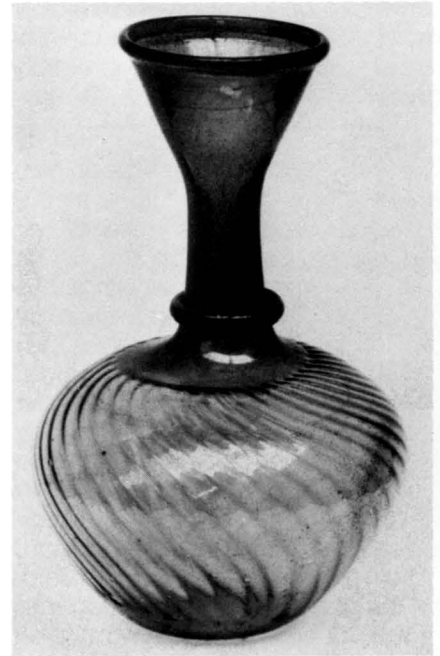
With the development of free-blowing, the rather staid uniformity and refinement of cast vessels often gave way to directives of speed, spontaneity, and formal ingenuity. Less architectural in profile, blown vessels of antiquity often achieved a graceful, thin-walled elegance (Pl. 5) or a loose, plastically volumetric vigor (Cover Illustration). Depending upon the quality of the raw glass, the finished product might yield a bubbly, grainy texture or a compact and pure one. The iridescence seen on much ancient glass was not a deliberate effect created by the glass-maker. It was caused by devitrification (chemical decomposition) due primarily to prolonged contact of the objects with moist and acidic soil in their archaeological contexts. Paradoxically, vessels displaying this opaline quality are coveted by many collectors of antiquities because of their aesthetic appeal; and the effect is frequently imitated by modern glass-artists.

Since the majority of glass artifacts in the collections of the Kelsey Museum come from Egypt, with its dry climate, relatively few of them illustrate this phenomenon. They appear for the most part as they were intended to look some 1500 years ago (Pl. 6).

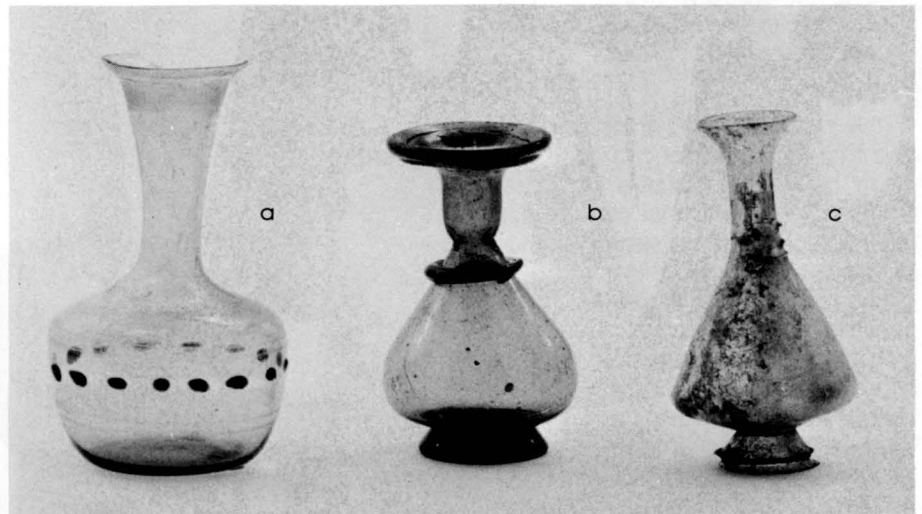
Fig. 1. Sketch of glass-blowing method observed in Venice, 1912
Morin-Jean, *La Verrière en Gaule sous l'Empire Romain*, 1913, fig. 353



Pl. 6. A flask XVII:9



Pl. 5. Three flasks (a) XVII:34; (b) XVII:8; (c) XVII:6



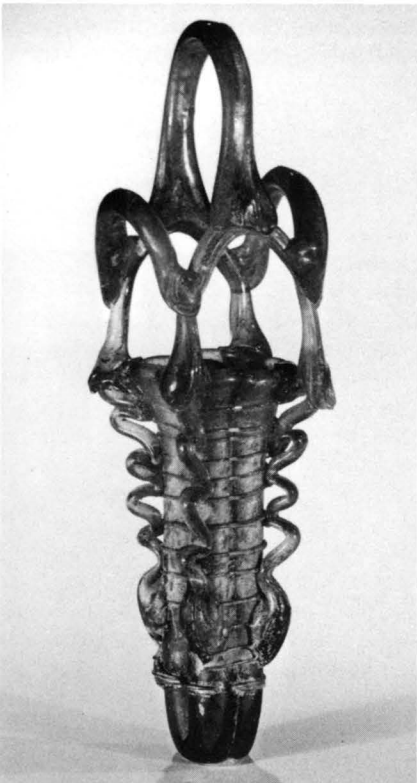
Glass of the Roman Empire

The invention of glass-blowing occurred within an historically critical span of time. In the middle years of the first century B.C., the power of Rome was fanning out to embrace East and West in a military/political hegemony that would provide the substructure for expansive trade networks and patterns of cultural exchange. The

Pl. 7. Fragment of a Partho-Sasanian faceted bowl XVI:3



Pl. 8. Basket-shaped multiple flask XVI:1



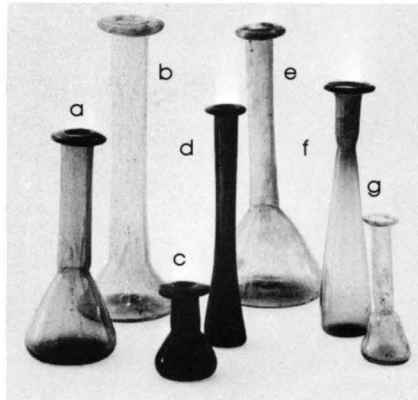
blossoming of this internationalism is mirrored in the glass industry of the Roman Empire. Rome asserted its control over the two dominant glass-making centers of the late first millennium (Syro-Palestine and Egypt) in 62 and 30 B.C., respectively. Simultaneously, the raw territories of the West (where glass had no history) were being brought within the orb.

It is telling that the earliest known ancient representation of glass-blowing has been found not on an object from Phoenicia, but on an object from Split, Yugoslavia: a decorated clay lamp datable to the first century B.C. (Photo Panel 2); and, while Syro-Palestine and Egypt maintained their traditional importance as glass-making centers, glasshouses were already in operation in Cologne, Germany (to offer one example) by the middle of the first century B.C. Cologne rapidly developed a major industry which was continuously responsive to trends set further east, while also responsive to local predilections. Until well into the fifth century A.D., when effects of the political dissolution of Empire began to be reflected perceptibly on the level of material culture, there was a remarkable unity in glass-making across the entire extent of Rome's purview. Not only did glass products travel

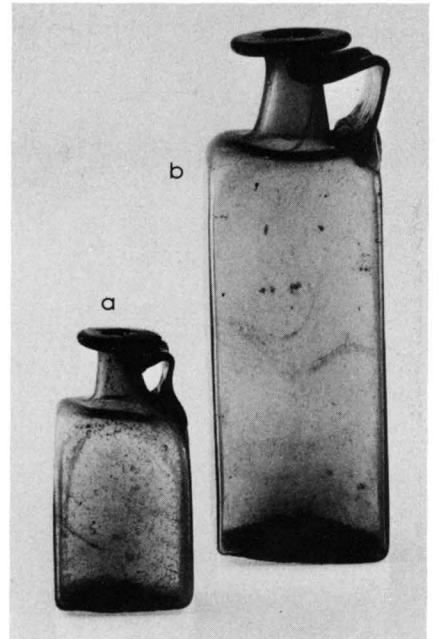
(both as objects of intrinsic trade value [Pls. 7 and 8] and as receptacles for liquid commodities [Pls. 9 and 10]), but so also did glass-makers. This is clear from a variety of textual, epigraphical, and artifactual evidence.

Within a few hundred years from the invention of free-blowing, glass-blowers had developed almost all the major decorative techniques which are used by glass artists even to the present day. Thus, in essence, the glass of the Roman Empire provides a telescoped view of the techniques of art in glass generally, from antiquity until the emergence of the studio movement in our own era. The one major exception was the concept of stained glass windows, not envisioned until the Middle Ages.

Pl. 9. Unguentaria and a flat-bottomed bottle flask
(a) XII: 3; (b) XII:4; (c) XII:11; (d) XII:8;
(e) XII:2; (f) XII:10; (g) XII:1



Pl. 10. Shipping jugs (a) X:6; (b) X:5



Decorative Techniques of Roman Glass

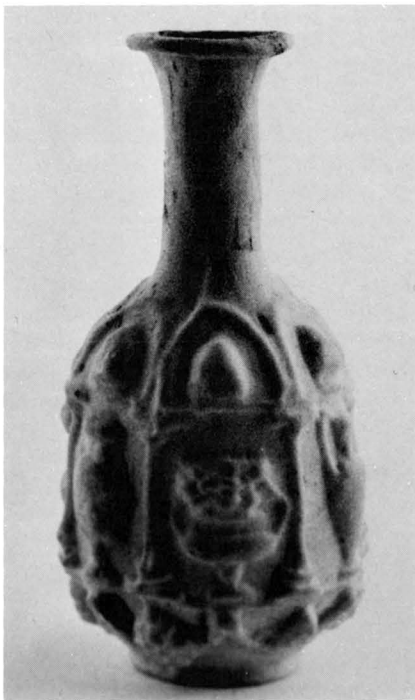
When a glass vessel is being blown, and thus is still in its heated state, its surface form as well as its shape can be manipulated in many ways. In Roman times glass-makers took full advantage of the decorative potentials of their medium. A major by-product of the invention of blowing was the invention of mold-blowing. Here, a molten gather of glass was blown directly into a mold of two or more sides. Using this technique, thin-walled vessels with complex figural or geometric patterns (sometimes including inscriptions) could be created repeatedly and quickly (Pl. 11). The logo of the glass-maker Ennion frequently appears as part of the decorative scheme on his mold-blown vessels: "Ennion made me. Let the buyer remember him!" Through mold-blown inscriptions such as these we glimpse something of the glass-makers themselves. Regrettably, however,

inscriptions of glass-makers on objects other than their products are very rare. For all the interest taken by Roman authors in the qualities of glass, allusions to the people who created it are few and far between. One curious story passed down from Pliny to Isidore of Seville describes the fate of a glass-maker at the court of Tiberius [A.D. 14-37] (Text Panel 3). The craftsman demonstrated to Caesar that he had invented a means of tempering glass so that it would not break when dropped but could be hammered back into shape like a bronze vessel. When the man admitted that he alone knew of this new treatment for glass, Tiberius had him beheaded "lest when this became known, gold would be valued like mud, and the values of all metals be debased." To what could this tale possibly refer? It is tempting to postulate that it has something (however obscure) to do with the invention of mold-blowing. If not the actual inventor of mold-blowing, Ennion was certainly one of the very earliest masters of the technique. An Ennion-signed cup found at Corinth in Greece in a sealed deposit together with a coin of A.D. 37-41 now provides us with a firm date

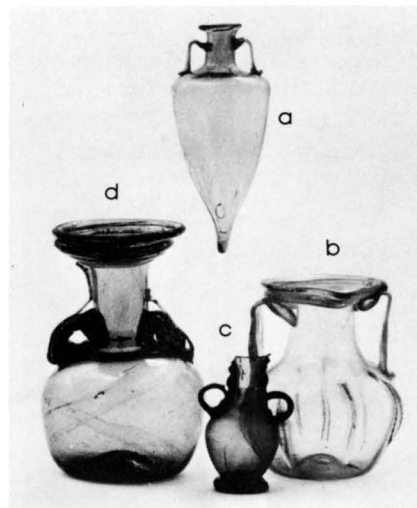
for the early range of his career. It dovetails neatly with the setting of this peculiar story in the reign of Tiberius.

Although free-blowing did not offer the advantages of mass-produced uniformity that mold-blowing allowed, the decorative potentials of the technique were seemingly limitless. While free-blowing a vessel, the glass-maker could achieve a variety of surface effects by drawing the glass out in fin- or thorn-like projections (Pl. 12b), by pinching it (Pl. 13c), by ribbing it or corrugating it (Pl. 6), or by indenting it at regular intervals (Pl. 24c and e). Once blown, a vessel could be decorated with thick or thin threads of molten glass trailed on the surface to produce simple coil accents (Pls. 14 and 15), zigzag patterns, undulating "whisker" trails (Pl. 14a) or complex sculptural effects (Pl. 8). Similarly, blobs of molten glass (usually dark blue) could be fused onto the vessel surface either in simple chains or in complex geometric arrangements (Pls. 5a and 24e and f). Decorative glass attachments of contrasting colors could be fused

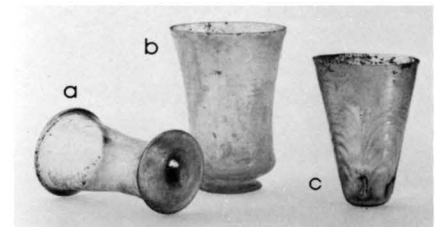
Pl. 11. A mold-blown bottle III:11



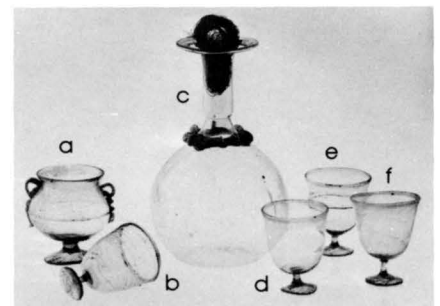
Pl. 12. Two-handed vessels (a) XV:5; (b) XV:1; (c) XV:10; (d) XV:2



Pl. 13. Beakers (a) XIII:18; (b) XIII:1; (c) XIII:12



Pl. 14. Decanter and wine glasses (a) IX:3; (b) IX:5; (c) IX:4; (d) IX:8; (e) IX:7; (f) IX:6



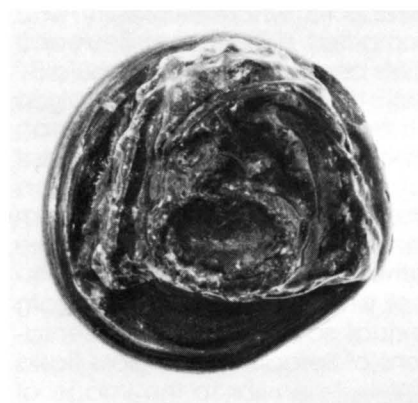
to the warm glass vessel also. These could be molded elements such as rosettes, lion-heads, theater masks, and the like (Pl. 16); or they could be free-blown attachments. Applied elements were often set at the base of the vessel's handle (Fig. 2). Sometimes they were used all over the vessel's surface, however (Fig. 3).

Once cooled, glass vessels could be decorated with cutting techniques performed with emery-wheels of different sizes. Essentially, these techniques exploited the structural similarities of annealed glass to compactly grained stone. Undoubtedly, there was a good deal of overlap between artisans who specialized in gem-carving and those who cut and engraved glass. This is nowhere more evident than in glass cameo work. Blanks for glass cameo vessels were made by casing dark (usually blue) glass with opaque white glass. When cooled, the exterior surface was cut back to produce figural compo-

sitions on multiple planes which exploited the shading variations made possible depending upon the degree of thickness or thinness of the reserved white. Cameo glass had an advantage over cameo carving in shell or stone in that the artisan could control the placement and relative depth of the contrasting materials in his blank. Cameo glass was a development emerging from the prosperity of the Pax Romana of the Augustan period in Rome (27 B.C.-A.D. 14). The technique seems not to have been practiced in ancient

Italy after the first century A.D. Only thirteen complete cameo vessels are presently known worldwide. Preserved fragments number only in the hundreds (see IV:8, 9, 13-15). Dionysiac scenes seem to have been the favored subject matter for cameo vessels. Epic legends were also represented (as, on the famous Portland Vase in The British Museum an enigmatic mythological/epic tale unfolds). Suetonius tells us that the Emperor Nero (A.D. 54-68) "upset the table and dashed to the floor two favorite goblets which he called 'Homeric' after the Homeric tales carved upon them" (Text Panel 5). These goblets were probably cameo-carved. The preciousness of

Pl. 16. A molded attachment III:22



Pl. 15. Table jugs (a) XI:1; (b) XI:2; (c) XI:5; (d) XIV:5; (e) XI:6

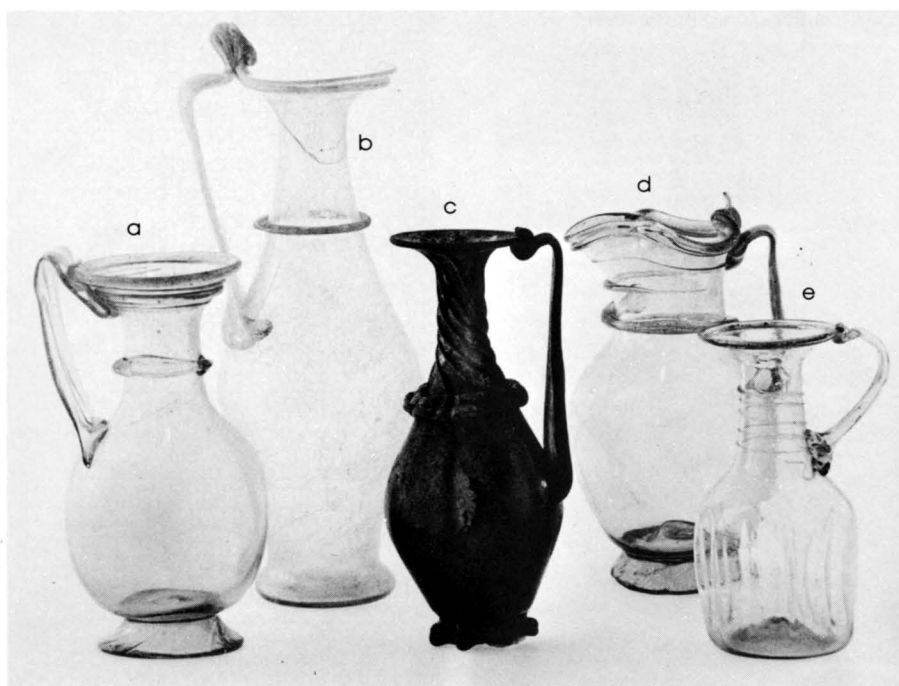


Fig. 2. Sketch of a group of table jugs
A. Kisa, *Das Glas im Altertume*,
vol. I, 1908, p. 71



Fig. 3. Sketch of a vessel with multiple rosette attachments
A. Kisa, *Das Glas im Altertume*,
vol. I, 1908, p. 281



cameo vessels is suggested by a still life painting from Herculaneum in which a cameo-carved jug bearing a scene with a horse and rider figures prominently (Frontispiece; for comparison, IV:15).

Mythological scenes were also engraved into colorless glass vessels. Alexandria produced a coveted class of this genre during the second century A.D. Fragmentary examples of this ware from Karanis prove that such glasses must have been made in Egypt, no doubt at Alexandria for the inhabitants of provincial Karanis were not likely to import luxury items from Rome, Cologne, or Sidon. (See IV:16-18 and 24.) Completely preserved vessels of this type found in the West document complex captioned figural scenes. Vessels which were wheel-cut with elaborate designs of facets and grooves were also greatly prized. Some of these were executed on exquisitely thin glass (IV:19); while others embellish weighty vessels (IV:6).

In Egypt and the West during the fourth century A.D., a more shallow type of engraving was popular – with examples from Karanis (such as XI:4) paralleled impeccably as far away as Cologne. The most famous representatives of this technique are a series of eight flasks which depict around their bulbous bodies the topographical landscape of Puteoli, on the Bay of Naples (Pl. 17). Of these eight, four were found in Italy, two in the Iberian Peninsula, one in North Africa, and one in Cologne. Apparently the bottles were all made at Puteoli – where there was a flourishing glass industry. Four of the known vessels (including the Populonia Bottle, which is the only one of the group housed in a museum of the western hemisphere) preserve dedicatory inscriptions engraved just below the neck. These personal inscriptions were undoubtedly engraved at the time of purchase, requested specifi-

cally by the consumer. The scenes on the vases (with their labeling inscriptions) seem, on the other hand, to be stock types – although no two are exactly alike.

Puteoli was an important commercial city – a bustling port serving the Mediterranean traffic and also exporting a number of local products described by Pliny in his *Natural History*. Thus, one could well imagine businessmen and sailors purchasing vessels such as the Populonia Bottle and carrying them home as prized souvenirs. Four of the eight flasks include a representation of a temple and cult statue of the Egyptian god Serapis (a syncretistic deity who combined concepts of Zeus and Osiris and enjoyed vast popularity both in Egypt and in Italian port cities during Imperial Roman times). Conceivably, then, these four flasks at least were purchased more specifically as souvenirs of cultic pilgrimages to the famous Temple of Serapis at Puteoli which is well known to us from textual sources. The representations of Serapis on the glass flasks are quite similar to the image of

the god as presented in a bronze statuette from Karanis which is thought to be a miniature version of the lost cult statue from the Temple of Serapis at that site (XVIII:B). Along with an eighteenth century engraving after an ancient wall painting of Puteoli (Photo Panel 17), the Populonia Bottle and its companion pieces have provided important documentation for archaeologists concerned with a study of the topography and social history of Puteoli. For our special exhibition the Kelsey Museum has been especially pleased to feature the Populonia Bottle because we hold an important collection of Puteolian inscriptions and related artifacts which provide an intellectual backdrop for this rare vessel.

On the eastern frontier of Rome's active military purview, massive clear vessels embellished with deeply cut facets were a speciality (Pl. 7). Whole vessels of forms similar to our fragment excavated at Seleucia have been found in Japan. One was buried with the Emperor Ankan in A.D. 535. Unlike the devitrified examples found in the Middle East, the cut-glass vessels exported to Japan are still in pristine condition – their facets dazzling like so many mirrors. To date, no *actual* examples of such western ware have been found in China; but on a painted silk banner from the Buddhist caves at Tun Huang, a Bodhisatva holds one of these Partho-Sasanian faceted bowls so that his hand is visible through the sparkling pale green glass (Photo Panel 16). Thus, this striking portrayal vividly documents the presence of western glass at a remote outpost along the Central Asian Silk Route. Further evidence of the Chinese interest in glass from the world of Rome comes in the form of lyrical poems composed by the nobility in praise of such luxury vessels which had "... braved the perils of the desert's limitless wastes, /

Pl. 17. The Populonia Bottle XVIII:1



And crossed the towering, precipitous Pamirs" (Text Panel 20) in order to grace their tables:

Despite the vernal splendor of its hue,
Its clarity surpasses the purest winter ice.

There vessels are produced as though ceramic,
And their rare foreign shapes richly embellished.

(Text Panel 21)

The tour de force of Roman glass-making was the diatretum technique, whereby a blank vessel was cut back to reveal a complex design connected only by narrow reserve struts to the remaining solid wall. One type of diatretum found almost exclusively in the Rhineland was the cage cup variety carved as a lace network around the exterior of the vessel (IV:11). Figural diatreta such as the famous Lycurgus Cup (Photo Panel 3) have a wider distribution. One, depicting the Lighthouse of Alexandria, was found in a hoard of treasures at Begram, near modern Kabul in Afghanistan. These figural diatreta are a late development of the Roman luxury-glass industry. They are understandably rare. After Roman times, the technique of diatretum carving in either mode was not attempted again until the nineteenth century when deliberate imitations of the Roman cage cups were made in Bavaria. The extraordinary delicacy of the Roman diatretum vessels suggests the possibility that they were created on a special commission basis — the glass-carver traveling with the blank vessel to the place where the commission originated. It is difficult to imagine how the Lighthouse diatretum could possibly have arrived at Begram intact had it been carved before the arduous journey from Rome or Alexandria. So delicate and specialized was the carving process that a law was formulated to deal with the contingencies of li-

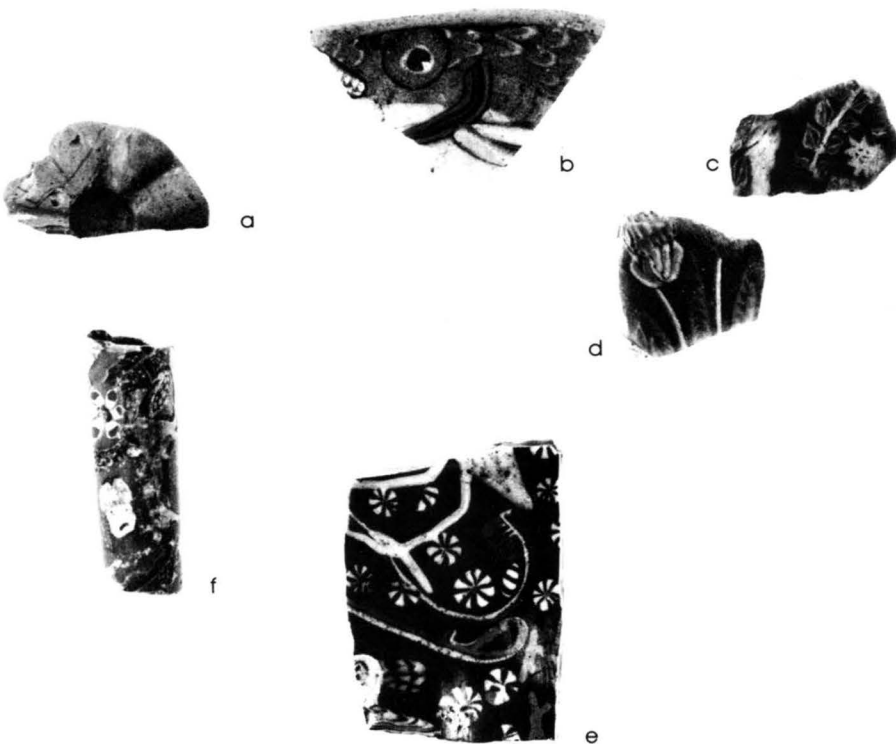
ability for a faulty product, depending upon whether the blank vessel was inherently flawed or whether the glass-carver's ineptitude alone was responsible for a ruined effort (Text Panel 4).

Up to this point we have discussed decorative techniques of the Roman glass-maker which essentially exploit the potentials for *textural* variation. Nuances of color were, however, equally important qualities of glass — appreciated and exploited with finesse by glass-makers in the Roman period. One technique of great versatility in its applications was fused mosaic work or "millefiori," which is an Italian word meaning 1000 flowers. Essentially this technique involves the fusing of colored strips of glass into a rod from which slices can be cut which will present on their sliced surfaces the section-pattern of the fused colors of the rod. These slices of patterned glass were used decoratively as inlays; and they were also fused into the glass matrices of beads and ves-

sels to form overall patterns against a dark ground. Sometimes vessels and wall inlays were created using the millefiori method but placing the various colored and patterned elements in figural compositions (Pl. 18e). Elaborate landscape effects were achieved to the extent that it is sometimes difficult to remember that these designs were executed in fused glass rather than in paint. Interestingly, the vessel fragment V:31 (Pl. 18e) preserves a section of a mosaic glass landscape of birds among branches and flowers which is very reminiscent of a Dynastic Egyptian vignette of birds in an acacia tree seen, for instance, in the Middle Kingdom tomb painting of Khnemhotpe.

There were many variations on the concept of fused mosaic glass. Gold-band glass was a luxury ware in which gold-leaf and swirls

Pl. 18. Decorative inlays of glass (a) VI:19; (b) VII:17; (c) V:23; (d) V:24; (e) V:31; (f) VII:4



of colored glass were fused within a sandwich of colorless glass. Emerging out of the tradition was the technique of gold glass — where figural representations in gold leaf were sandwiched in colorless glass. This method of decoration was used effectively in the late Roman period for the embellishment of cup tondos. These tondos (such as that on Photo Panel 4) have been preserved as detached elements because their owners broke them away from the surrounding cup walls in order to imbed them in the walls of the catacombs as funerary emblems. The appeal of the gold-glass tondos for this purpose lay in the fact that they were commissioned pieces, often including a representation of the owner and an inscription giving his or her name or a salutation. Many of these gold-glass tondos supply important material for the study of the iconography of Judaism and Christianity in the first half of the first millennium A.D.

In addition to the traditions of coloristic effects which relied on the fusion of variously colored glasses, the glass-makers of Roman times also developed the technique of enamel painting onto the surface of glass vessels. From Karanis, several fragments have been preserved which provide a

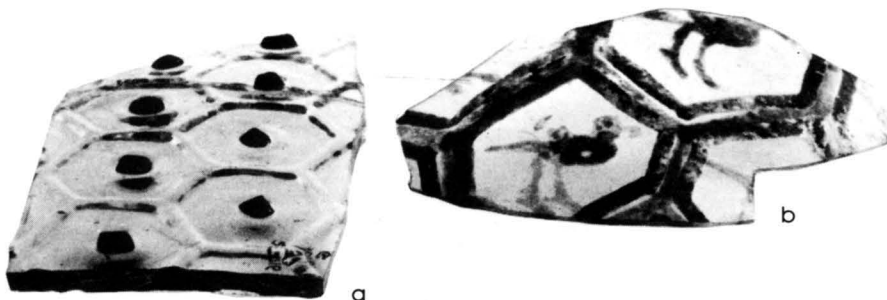
sense of the range of colors used in enamel painting (V:25-26). A cup fragment from The Corning Museum of Glass demonstrates the dynamic effects possible with this technique (V:27). A lovely fragment of enamel painted glass in the Kelsey Museum (Pl. 19) displays an allover pattern of birds in hexagons. It is a late piece, dating from that interesting period of art in Egypt when Roman traditions were merging with nascent Islamic decorative modes. The mold-blown vessel fragment illustrated along with this piece demonstrates that the allover polygon pattern had already been established in the Roman period. Furthermore, the comparison suggests the easy interchangeability of motifs from one decorative technique in glass to another.

Special Uses for Glass

The coloristic potentials of glass determined its great popularity for special decorative uses. Fused mosaic glass of marble-like or figural patterns was employed, for instance, to adorn the surfaces of walls and furniture. When Pliny describes the Theater of Scourus, built in 58 B.C. — where the second story of the stage building was faced with glass — he is probably alluding to mosaic glass made to imitate the swirling grains of marble (*Natural History* XXXV. 24). Object VII:12 is an example of this type of architectural embellishment. At Karanis, an interesting variant of the marbling effect produced by means of the mosaic glass technique is documented by object VII:13. Here, a strip of colorless glass was laid over a base of stucco which had been *painted* to resemble marble. The practice of painting expanses of wall to imitate various marbles was a common one in Roman times (seen, for example, in the background of Pl. 28.); but by overlaying the painted zone with colorless glass, the Karanidian decorator achieved a richly reflective surface.

Figural inlays of mosaic glass also decorated walls and furnishings. A striking piece from Karanis (Pl. 18f) preserves a small, exquisitely detailed theater mask set amid a profusion of flowers. This object is thick and tubular, with a longitudinal perforation too narrow to recommend the suggestion that it formed the neck of a long-necked flask. More likely it was a decorative furniture element. Mosaic glass in bold patterns seems to have been used throughout the Empire period to decorate walls. The fish and floral motifs seen on Pl. 18 have close parallels from Italy, while these examples come from Egypt. The fragment which preserves part of a scene of birds in a tree is, however, definitely from a vessel, the

Pl. 19. (a) A mold-blown vessel fragment V:29; (b) An enamel painted vessel fragment V:28



exterior of which was left in the severe black of the matrix glass and decorated only with two wheel-cut rings. A larger scale version of this same motif – also in fused mosaic technique – is housed in The Corning Museum of Glass. The mosaic glass panel in Corning was unquestionably used to face a wall. Thus, it effectively closes the gap between the traditional wall painting motif of birds in an acacia tree from Dynastic Egypt (mentioned earlier) and the appearance of a small-scale version on the interior of a fused mosaic glass vessel.

Colorful opaque inlays for opus sectile mosaic were found at Karanis (e.g., Pl. 18a). In this technique, the motifs were created from pre-formed shapes fitted together, such as the rosette shown here, with its central depression intended for a circular insert of contrasting color. Glass also came to be used in place of marble for tessera mosaics laid on floors, walls, and vaulted ceilings. The advantage of glass tesserae over marble ones rested primarily with their consistently glittery quality and their range of colors, which could be produced on demand. According to Pliny, glass mosaic for walls and ceilings was introduced at Rome in the late first century B.C.

The myriad uses made of opaque and colorful glass notwithstanding, clear glass was the most frequently admired in the world of Rome. In Pliny's words:

... there is no other material nowadays that is more pliable or more adaptable, even to painting. However, the most highly valued glass is colorless and transparent. ...

(*Natural History* XXXVI. 66)

Surely the single most remarkable quality of glass is its ability to contain objects and liquids and yet also to admit light and permit a view from within or without. Exploiting this property, glass was put

to many special uses in Roman times – ranging, as we might expect, from the ridiculous to the sublime. Glazed windows became quite common during the first century A.D. Fragments of such glass found at Karanis (VI:20-21) demonstrate that this early window glazing was rather thick by our standards. Although it let light in and kept wind and rain out, it was not transparent – only translucent. Yet we can gain a sense of the healthy respect in which the ancients held their ability to create architectural enclosures that admitted light by reading Paul the Silentiary's rhapsodic description of Santa Sophia:

Thus rises on high the deep bosomed vault, borne above triple voids below; and through five-fold openings, pierced in its back, filled with thin plates of glass, comes the morning light scattering sparkling rays.

(*Text Panel 8*)

The Romans made use of the quality of transparency for practical jokes as well as for truly practical purposes. The false-bottomed wine glass (VI:1) is a delightful example of the former. Here, the wine was poured through a hole in the base of the cup. After the wine had filled the entire space between the false bottom of the cup and the real bottom, the hole was plugged. Thus was achieved the appearance of a glass brim-full of wine. Another specialized use of glass at the banquet table is deplored by Seneca:

A mullet does not seem fresh enough unless it dies in the hands of the banqueter; they are passed around enclosed in glass jars, and their color is watched while they expire.

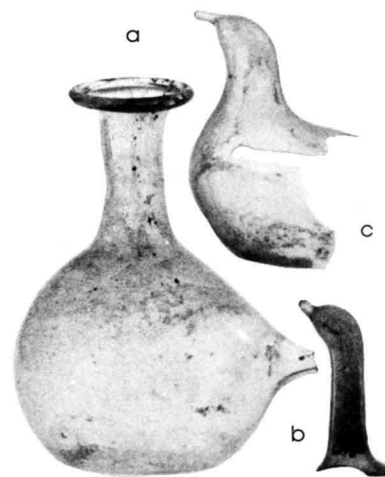
(*Text Panel 12*)

To be sure, the transparency of glass opened up whole new worlds of observation. Most commonly it was a case of being on

the outside looking in – as to observe the demise of the mullet. In one instance, however, we find glass being perceived as a useful medium in a situation where the person is on the inside looking out at the fish. The story of Alexander's exploration of the depths of the sea in a glass submarine, is of course, fabulous. Yet it has its roots in the fact that during the period when the legends of Alexander were developing, glass was coming into its own as a material of virtually unlimited versatility. (*Text Panel 11*; *Photo Panel 6*).

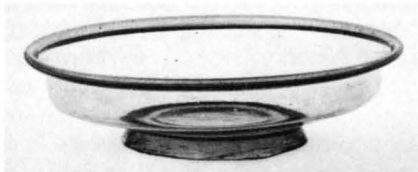
Practical and fanciful vessels of clear glass are illustrated by the spouted "feeder" bottle and the two fragmentary bird-shaped perfume bottles here (Pl. 20). We take for granted the fact that it is a fine thing to be able to see how much a child or an invalid is drinking, but how marvelous this ability must have seemed in the early years of glass-blowing!

Pl. 20. (a) A spouted "feeder" vessel VII:1; (b & c) Fragmentary bird-shaped perfume bottles VII:29 & VII:30



Dinnerware was sometimes made of glass (Pl. 21). It was especially good for summer banqueting, according to Propertius. And drinking cups of glass came in every conceivable shape and size (Pls. 1, 13, 14, 22, 23). At Karanis, conical glass vessels were used both as drinking cups and, apparently, as oil lamps to be held in fixtures for suspension (Pl. 24). In his study of the conical vessels from the site, D. B. Harden noted that many were coated on the interior with an oily residue. He concluded that they must have been the precursors of the conical glass oil lamps which are well known from actual examples suspended from metal polycandelon fixtures in mosques of the Islamic world

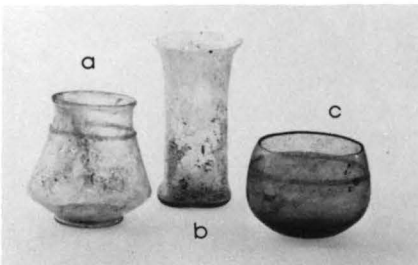
Pl. 21. A shallow bowl XIV:2



Pl. 22. A modiolus XIII:9



Pl. 23. Beakers (a) XIII:8; (b) XIII:2; (c) XIII:7



(Pl. 25). Chandeliers of this type are suggested in descriptions by several Roman authors. The hanging lamps to be seen in Hagia Sophia today (Photo Panel 20) must be very close to the sixth century originals extolled by Paul the Silentiary:

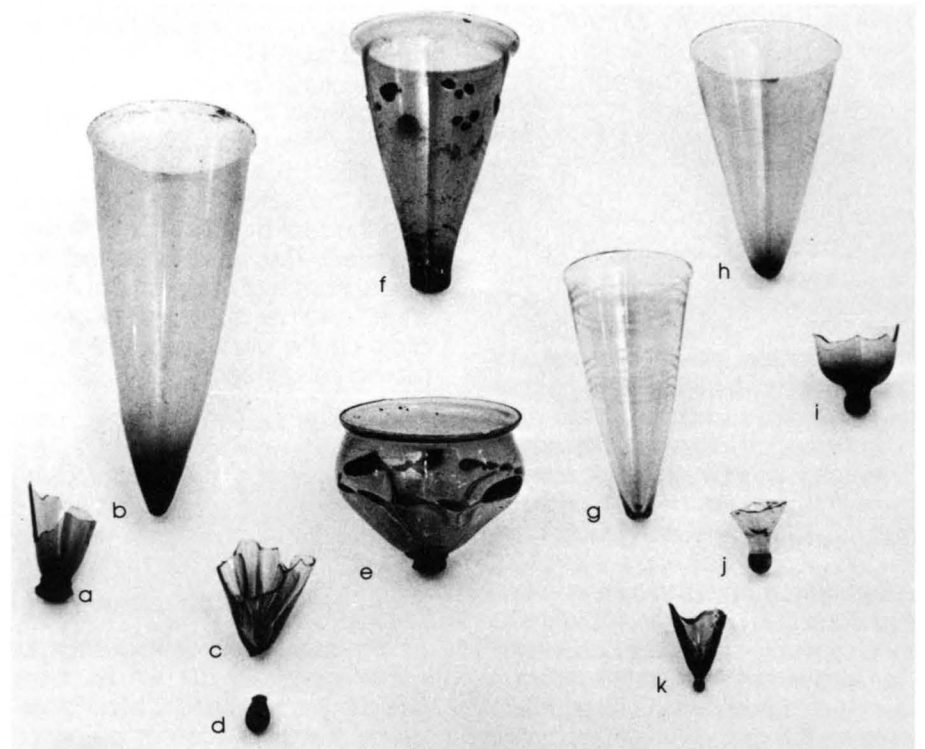
And beneath each chain he has caused to be fitted silver discs, hanging circle-wise in the air, round the space in the center of the church. Thus these discs, pendant from their lofty courses, form a coronet above the heads of men. They have been pierced too by the weapon of the skillful workman, in order that they may receive shafts of fire-wrought glass and hold light on high for men at night.

(Text Panel 24)

Pl. 25. Hexagonal mosque lamp XIX:1



Pl. 24. Conical lamps and fragments (a) XIX:1/8; (b) XIX:6; (c) XIX:IV/3; (d) XIX:1/6; (e) XIX:10; (f) K.M. 5086; (g) K.M. 5622; (h) K.M. 5544; (i) XIX:1/2; (j) XIX:1/1; (k) XIX:1/5



Wondrous Glass: Images and Allegories

The invention of glass-blowing occurred at a time when thinkers were pondering the physical phenomena around them. For Lucretius, the properties of matter were a primary concern – not least the properties which enable us to see through glass but not through other materials. He writes:

Though voice may pass un-
harm'd through winding pores
In things, yet images demur; for these
Are rent asunder – save it be
they stream
Through passages unbent, as
those of glass,
Wherethrough all atoms speed
their winged flight.

(Text Panel 15)

Not long after these thoughts were formulated, glass became a favorite subject for still life painters eager to explore the qualities of transparency, color, and light. The earliest still life representations featuring glass vessels all depict the objects filled with fruit. The well-known cubiculum painting from Boscoreale may be the earliest extant example of the type (Photo Panel 15). As a motif, the still life with fruit goes back to Classical Greek prototypes known to us only through the descriptions of them by Roman authors. Pliny notes that Zeuxis “produced a picture of grapes so successfully that birds flew up to the stage-building” (Text Panel 16). Roman paintings such as the lovely example from the catacomb of San Sebastiano (Pl. 26) may be a play on the theme of fruit rendered so faithfully as to deceive the viewer. Is this meant to be a picture of an actual bird approaching an actual bowl of fruit – or a picture of an actual bird approaching a *painting* of a bowl of fruit? In any case, the thin-walled transparency of blown-glass vessels such

as the carchesium from Toledo (Pl. 27), which closely resembles the vessel in the San Sebastiano painting, challenged the painter to capture the optical qualities of the glass container as well as the image of the fruit within.

Painters and poets were also intrigued at this time with the similarities between glass and water. Still life paintings from Herculaneum depict clear glass vessels filled with water (Frontispiece and Text Panel 11). In these versions, the glass is transparent, and the water within is a glimmering surface of light. In a more lyrical way, the painting from Boscoreale also juxtaposes the qualities of glass and water. Here, the glass bowl of fruit, painted as if sitting on a window sill, is adjacent to an idyllic landscape scene in which shimmering-clear brook water trickles down over the rocks. Only a few years later, Horace was to compose his ode to the spring of Bandusia; and indeed, poem and painting evoke the same image of glass:

O spring of Bandusia, more
shining than glass, deserving of
sweet wine and flowers, tomor-
row you will be presented with
a kid whose forehead, swelling

Pl. 26. Painting in the Catacomb of San Sebastiano, Rome (Photo Panel 10)



with the tips of horns, gives
promise of both love and bat-
tles; in vain: for he, the offspring
of a playful flock, shall stain for
you your chill waters with his red
blood.

The black hour of the flaring
Dog-Star knows no means to
touch you: you provide pleasing
coolness for tired oxen and the
straggling herd.

You also shall become one of
the famous fountains, since I de-
scribe the oak-tree planted over
your hollowed rocks from which
your chattering waters jump
down.

(Text Panel 19)

The imagery associated with
glass in the other poems by Hor-

Pl. 27. A carchesium VIII:1



ace is sometimes evocative of darker thoughts. "Indiscreet trust" is "as clear as glass and ready-charged with secrets to repeat" in Ode 18 of Book I (Text Panel 18); and Circe, in contrast to the faithful Penelope, is "like glass" in Ode 17 of Book I. So too, in the visual imagery of Roman art there is a darker side to the portrayal of one quality of glass, at any rate: its quality of reflection. In every culture, mirrors are laden with associations of deep psycho-social significance. Rome was certainly no exception. A mirror could be any reflecting surface. In the Pompeian wall paintings, imagery of reflection seems always to be of a foreboding kind: Narcissus with his face reflected in the dark pool of water (Photo Panel 9); Thetis reflected pensively in the gleaming shield of Achilles (Photo Panel 8); and the enigmatic scene of a woman in the Villa of the Mysteries whose image is reflected in a hand mirror (Pl. 28). This last scene is puzzling on two counts. The image we are shown in the mirror is not the proper image that would be depicted if the painter's aim had been to show a rendition of actuality. Rather, we see a strange scene in which the standing companion looks down into the mirror; and in the mirror she sees the same view of the seated woman that we see from outside the picture. Furthermore, the form of the mirror is unusual, and perhaps unique. It must be either of silver or glass set into a folding, square "compact."

Pliny speaks of glass mirrors on several occasions. In one instance he is very explicit on the subject:

Silver mirrors have come to be preferred [to bronze ones]; they were first made by Pasiteles in the period of Pompey the Great [106-48 B.C.]. But it has recently come to be believed that a more reliable reflection is given by applying a layer of gold to the back of glass.

(Text panel 14)

By the seventh century, glass seems entirely to have usurped the place of metal for mirrors. At least, Isidore of Seville tells us that "no other material is more fitting for mirrors . . ." (Text Panel 7).

Whether the mirror in the Villa of the Mysteries is a very early glass one, or whether it is an unusual silver one, its powers of reflection transcend the ordinary and venture off into a zone of allegory which we on the outside looking in are not yet equipped to comprehend. As we attempt to understand the sometimes enigmatic world of Rome, glass certainly acts as a mirror on its art, its poetry, its observations of nature, its cults and social mores, and its networks of trade and diplomacy. The images we perceive are of a complex, many-faceted society. And this is as it should be — for these images reflect back upon the complexities and antitheses inherent in glass itself. Even the derivation of the

Latin word for glass — "vitrum" has been much disputed by etymologists beginning with Isidore. He tells us:

It is called glass [vitrum] because it is, with its clearness, transparent to the vision [visus]. For in other materials whatever is contained inside is hidden, whereas in glass whatever clearness or appearance is manifested on the outside, it is the same inside, and though enclosed in a certain manner, is manifest.

(*Etymologies* XVI. 16)

Thus, according to Isidore, "vitrum" comes from "videre" — meaning "to see." Later etymologists have suggested other ideas on the subject. One proposes the Sanskrit "vithura" — meaning "fragile, brittle, breakable thing." Another proposes a derivation from the Latin "virere" — meaning "to be green." Still another proposes a descent from the Sanskrit "vitras" or "vétas" — meaning "white, light, shining."

And so it is that wondrous glass means many things.

Pl. 28. Facsimile reproduction of a painting of a woman reflected in a mirror, Villa of the Mysteries (Photo Panel 7)



CHECKLISTS

OBJECTS IN THE EXHIBITION

Vitrine I: Wondrous Glass

1. SPHERICAL URN [Cover Illustration]
Bluish glass
H. 26.5 cm.
Second century A.D.
From Italy: Havemeyer Collection
Kelsey Museum 88860

Vitrine II: Ancient Glass-Making

1. CORE-FORMED "HEART" BEAD
Blue glass with contrasting lines and zigzag
L. 1.9 cm.
Dynastic Period
From Egypt: Ruthven Collection
Kelsey Museum 70.3.394
2. CORE-FORMED OINOCHOE [Pl. 4b]
Blue glass with contrasting belly decoration of stripes and multiple zigzags
H. 10.0 cm.
Fifth century B.C.
From the Eastern Mediterranean: Toledo Exchange
Kelsey Museum 77.2.1
3. CORE-FORMED NECK FRAGMENT
Brown glass with contrasting bands
H. 4.2 cm.
Dynastic Period
From Egypt: Askren Collection
Kelsey Museum 5315
4. CORE-FORMED NECK FRAGMENT
Blue glass with white rings and festoons
H. 4.6 cm.
First century B.C.
From U-M Excavations at Karanis
Kelsey Museum 6357
5. CORE-FORMED NECK FRAGMENT
Blue glass with white flames
L. 2.4 cm.
First century A.D.
From U-M Excavations at Dimé
Kelsey Museum 25720
6. MOLDED BOWL [Pl. 4a]
Blue glass, "pillar-mold" form
H. 5.6 cm. Diam. 11.5 cm.
Late first century B.C.
From Syria: Havemeyer Collection
Kelsey Museum 88851

- 7a-d. RIM FRAGMENTS FROM MOLDED BOWLS
 - a. From U-M Excavations at Seleucia
5.8 × 4.7 cm.
Kelsey Museum 36349
 - b. From U-M/Missouri Excavations at Tel Anafa
7.8 × 6.8 cm.
Courtesy of the Department of Antiquities, Jerusalem
 - c. From Puteoli: De Criscio Collection
7.3 × 3.9 cm.
Kelsey Museum 2693
 - d. From U-M Excavations at Karanis
4.1 × 3.0 cm.
Kelsey Museum 6121
8. MOLDED CONICAL BOWL
Colorless glass, iridescent
H. 8.6 cm. Diam. 16.1 cm.
Second or early first century B.C.
From Syro-Palestine: Toledo Exchange
Kelsey Museum 77.2.3
9. CARINATED MOLDED BOWL
Greenish glass; narrow ribs; wheel-cut double ring at bottom of bowl
H. 4.8 cm. Diam. 12.8 cm.
First century A.D.
From Italy: Havemeyer Collection
Kelsey Museum 88854
10. FRAGMENT OF A LID (?)
Green glass lump, flattened at bottom; loop handle
L. 6.9 cm. H. 4.2 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5987
- 11a-b. FRAGMENTS OF UNWORKED GLASS BATCH
L. 3.3 cm. and 4.7 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6019 and 25636

12. DEEP FOOTED BOWL
Green glass
H. 5.3 cm. Diam. 12.4 cm.
Third or fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5026
13. FRAGMENT OF A MOLDED
BOWL PRESERVING COM-
PLETE PROFILE
Greenish-colorless glass
H. 4.7 cm.
First century B.C. to first cen-
tury A.D.
From U-M Excavations at
Karais
Kelsey Museum 6412
14. FRAGMENT OF A BLOWN
CONICAL BOWL WITH
FOLDED RIM
Colorless glass with impurities
H. 6.2 cm. Diam. 15.7 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karais
Kelsey Museum 25730
- 15a-b. FRAGMENTS OF COIL-
RIMMED BOWLS
Second or third century A.D.
From U-M Excavations at
Karais
a. Yellow glass with green
coils
4.8 × 3.7 cm.
b. Pale purple glass with
blue coils
6.1 × 3.7 cm.
Kelsey Museum 23860 and
25616
16. HANDLE ATTACHED TO NECK
AND SHOULDER FRAGMENT
Green glass on pale green
vessel
H. 8.8 cm.
Second to fourth century A.D.
From U-M Excavations at
Karais
Kelsey Museum 6400
17. U-SHAPED WINE GLASS
Yellowish glass with trail at
mid-body
H. 9.5 cm.
Third or fourth century A.D.
From U-M Excavations at
Karais
Kelsey Museum 6395
18. UNGUENTARIUM (TOILET
BOTTLE)
Blue-green glass
H. 6.9 cm.
Third to fifth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5190
19. PAD-BASED BEAKER
Greenish glass now irides-
cent with trail one-third
down body
H. 10.2 cm.
Fourth or early fifth century
A.D.
From: Syro-Palestine: Have-
meyer Collection
Kelsey Museum 88850
- Vitrine III:
Decorative Techniques —
Manipulations of Surface
Form
1. TALL JAR
Yellow glass with green,
open-work zigzags at
neck; indents on body
H. 15.7 cm.
Fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5123
2. SMALL JAR
Yellow glass with open-work
zigzags at neck; indents
on body
H. 9.2 cm.
Fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5125
3. FLASK
Greenish glass with pinched
decoration suggestive of
fish swimming
H. 13.5 cm.
Early fourth century A.D.
From Cologne: Kelsey
Collection
Kelsey Museum 1664
4. FRAGMENT OF CONICAL
LAMP
Greenish glass with white
marvered-in festoons and
blue blobs
L. 4.1 cm.
Fourth to sixth century A.D.
From U-M Excavations at
Karais
Kelsey Museum 6056
5. BODY FRAGMENT OF A
GOBLET
Colorless glass with snake-
threading
L. 3.7 cm.
Second century A.D.
From U-M Excavations at
Karais
Kelsey Museum 6133

-
6. SMALL JUG
Green glass with shoulder coil and ribbon handle
H. 7.6 cm.
Fourth or fifth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5158
7. FRAGMENT OF A JAR
Yellow glass with pinched ribs and greenish coil base
H. 10.3 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6427
8. FRAGMENT OF A BEAKER
Colorless glass with solid base and ruffled walls
H. 7.3 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5542
9. SPRINKLER
Colorless glass with tooled thorn decoration
H. 13.7 cm.
Third or fourth century A.D.
Probably from Syria
The Corning Museum of Glass 59.1.147
10. RIM FRAGMENT OF A MOLD-BLOWN HONEY-COMB BEAKER
Green glass
L. 4.7 cm.
Fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6184
11. MOLD-BLOWN BOTTLE [Pl. 11]
Opaque white glass, pattern of vessels in six niches
H. 8.1 cm.
First century A.D.
From Syro-Palestine: Toledo Exchange
Kelsey Museum 77.2.2
12. MOLD-BLOWN HEAD FLASK
Brown glass
H. 8.65 cm.
First or second century A.D.
From Syro-Palestine
The Toledo Museum of Art 23.515
13. MOLD-BLOWN BOTTLE
Green glass, pattern of roundels and ridges
H. 9.7 cm.
Seventh to ninth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5153
14. FRAGMENT OF SHALLOW MOLD-BLOWN BOWL
Green glass, pattern of roundels in squares
W. 5.5 cm.
Fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6021
15. TWO FRAGMENTS OF A MOLD-BLOWN HEAD FLASK
Green glass, maker's mark molded on base
Max. H. 8.5 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6181
16. BOTTLE WITH APPLIED DECORATION
Greenish-colorless glass, now milky
H. 13.0 cm.
Sixth to eighth century A.D.
Probably from Syria
The Corning Museum of Glass 55.1.107
17. MOLDED ATTACHMENT FOR A VESSEL
Green glass, lion's head
Diam. 3.3 cm.
Fourth century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.9
18. FRAGMENTARY MOLDED ATTACHMENT FOR A VESSEL
Brown glass, horse and rider
Pres. Diam. 3.2 cm.
Second to fourth century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 70.3.490
19. MOLDED ATTACHMENT FOR A VESSEL
Green glass, lion's head
Diam. 3.0 cm.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.202
20. ROSETTE ATTACHMENT STAMPED FROM A COIL
Colorless glass attached to colorless glass vessel
Diam. 2.3 cm.
Second to fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5887
21. ROSETTE ATTACHMENT STAMPED FROM A COIL
Green glass attached to fragment of colorless glass vessel
Diam. 1.9 cm.
Second to fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6220
- 22-24. THREE MOLDED ATTACHMENTS [Pl. 16]
Blue glass, theater mask faces
Diam. 3.5 cm.
First or second century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.8, 65.3.163, 65.3.10

25. FRAGMENTARY MOLDED PHALERA
Blue glass, preserving imperial portrait bust and subsidiary portrait head – perhaps Tiberius and Germanicus
Diam. 4.0 cm.
First quarter of the first century A.D.
From Italy
The Toledo Museum of Art 23.1646
26. TWO-HANDLED GOBLET
Greenish glass with whisker trails below handles and zigzag trailing on belly
H. 10.5 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5949
27. CONICAL LAMP
Green glass with blue blobs set in alternating solitary/five-dot pattern
H. 10.0 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6428
28. FREE-BLOWN FISH ATTACHMENT
Colorless glass with blue-green detailing
L. 3.8 cm.
Third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 70.3.952

Vitrine IV:
Decorative Techniques –
Glass as Sculpture

1. FRAGMENT OF A FACET-CUT VESSEL
Thick, colorless glass; large shallow circular facets – not contiguous
6.5 × 3.7 cm.
Second century A.D.
From U-M Excavations at Seleucia
Kelsey Museum 19007
2. RIM FRAGMENT OF A FACET-CUT GOBLET
Thin, colorless glass; contiguous lozenge-shaped facets
6.0 × 5.8 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6430
3. FRAGMENT OF A FACET-CUT VESSEL
Thin, colorless glass; lozenge-shaped facets within wheel-cut hexagons
5.0 × 3.8 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6356
4. FRAGMENT OF A FACET-CUT ARYBALLOS
Thick, colorless glass; circular facets arranged in and between large wheel-cut circles and grooves
8.5 × 6.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23803

5. BASE FRAGMENT OF A FACET-CUT GOBLET
Thick, colorless glass; contiguous diamond-shaped facets
Base Diam. 4.2 cm. Pres. H. 5.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6362
6. FRAGMENT OF A FACET-CUT VESSEL
Thick, colorless glass; large shallow circular facets – not contiguous
5.0 × 4.5 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23746
7. FRAGMENTARY CAMEO PLAQUE, INCOMPLETELY WORKED
Opaque white on brown glass, preserving profile female face, Flavian hairstyle
6.4 × 5.5 cm.
First century A.D.
Probably from Rome
The Toledo Museum of Art 23.1637
- 8a-b. TWO JOINING (?) RIM FRAGMENTS OF A CAMEO PLATTER
Opaque white on blue glass, bird and floral design
L. 5.5 cm. and 18.5 cm.
First century B.C. or first century A.D.
Probably from Rome
The Toledo Museum of Art 23.1607 and 23.1590
9. RIM FRAGMENT OF A CAMEO PLATTER
Opaque white on blue glass, floral motifs
L. 7.8 cm.
First century B.C. or first century A.D.
Probably from Rome
The Toledo Museum of Art 23.1606

10. FRAGMENT OF A TABLE JUG
Greenish glass with wheel-cut and faceted decoration
9.5 × 7.9 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6027
11. PLASTIC REPLICA OF THE TRIER CAGE CUP
The Corning Museum of Glass
Original:
Yellowish-colorless glass
H. 18.0 cm. Upper Diam. 15.5 cm.
Probably third century A.D.
Rheinischen Landesmuseums Trier
12. FRAGMENT OF A TABLE JUG
Greenish glass with wheel-cut and faceted decoration
9.8 × 8.0 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5860
13. FRAGMENT OF A CAMEO CUP
Opaque white on blue glass, preserving satyr's head against curtain in Dionysiac setting
5.4 × 2.2 cm.
Second century A.D.
Probably from Rome
The Toledo Museum of Art 23.1536
14. FRAGMENT OF A CAMEO CUP
Opaque white on blue glass, preserving face of a man who is touching his beard; part of a thyrsus
4.7 × 4.0 cm.
Mid-first century A.D.
Probably from Rome
The Corning Museum of Glass 68.1.17
15. FRAGMENT OF A CAMEO VESSEL
Opaque white on blue glass, preserving part of a horse and rider
3.9 × 2.2 cm.
First century A.D.
Probably from Rome
The Toledo Museum of Art 23.1547
16. RIM FRAGMENT OF A WHEEL-CUT BOWL
Thin, colorless glass; deep herring-bone pattern above beginning of a representational zone
5.5 × 3.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6101
17. FRAGMENT OF A WHEEL-CUT VESSEL
Thin, colorless glass; section of a representational zone
5.5 × 2.1 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10291
18. FRAGMENT OF A WHEEL-CUT VESSEL
Thin, colorless glass; section of a representational zone showing a spotted garment
3.0 × 2.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10292
19. FRAGMENT OF A WHEEL-CUT AND FACETED ARYBALLOS
Thin, colorless glass; shallow circular facets within circles
5.0 × 3.3 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23851
20. RIM FRAGMENT OF A WHEEL-CUT BOWL
Thin, colorless glass; zone of grooves above lozenge-shaped facets
12.0 × 7.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6193
21. FRAGMENT OF A WHEEL-CUT AND FACETED ARYBALLOS
Thick, colorless glass; deep grooves and shallow facets
8.5 × 6.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6423
- 22a-b. TWO JOINING FRAGMENTS OF A SHALLOW WHEEL-CUT BOWL
Thin, colorless glass; vertical pattern of spiraling grooves capped by pointed arcs
14.0 × 5.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10288 and 6098
- 23a-b. TWO NON-JOINING FRAGMENTS OF A SHALLOW FACET-CUT VESSEL
Thin, colorless glass; lozenge-shaped facets radiating out from circular facets
5.5 × 3.5 cm. and 4.7 × 2.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5883 a-b
- 24a-b. TWO NON-JOINING BASE FRAGMENTS OF A SHALLOW WHEEL-CUT VESSEL
Thick, colorless glass; representational motif (a dolphin?)
5.4 × 3.8 cm. and 4.1 × 2.3 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10289 a-b

Vitrine V:
Decorative Techniques —
The Realization of Coloristic
Potentials

1. BASE FRAGMENT OF A BOWL
Millefiori, yellow on green
ground
H. 1.8 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 70.3.25
2. FRAGMENT OF A PLATE
Millefiori, yellow on green
ground
3.2 × 4.1 cm.
Fourth to fifth century A.D. (?)
From U-M Excavations at
Karaniš
Kelsey Museum 5888
3. PATELLA CUP
Millefiori, red and yellow
flowers on black ground
H. 4.4 cm.
First century A.D.
From the Eastern
Mediterranean
The Toledo Museum of Art
23.1394
4. BASE FRAGMENT OF A DISH
Mosaic glass, brown and
white
H. 0.8 cm., W. 5.0 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 70.3.823
5. FRAGMENT OF AN
ALABASTRON
Mosaic gold-band glass with
two wheel-cut rings near
bottom
L. 3.5 cm.
Late first century B.C. or first
century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6290
6. WALL OR FURNITURE INLAY
Reticulated, yellow on color-
less glass
1.2 × 1.0 cm.
First century A.D.
From U-M Excavations at
Dimé
Kelsey Museum 25718
7. FRAGMENT OF A VESSEL
Blue-green glass with streaks
of yellow and white
3.0 × 1.5 cm.
First century B.C. to first cen-
tury A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 25713
8. BASE FRAGMENT OF A "PIL-
LAR MOLDED" BOWL
Blue glass, marbled with
white canes
3.6 × 2.3 cm.
First century B.C. to first cen-
tury A.D.
From U-M Excavations at
Seleucia
Kelsey Museum 18986
9. RIM FRAGMENT OF A VESSEL
Millefiori, red and yellow
flowers on green ground
3.0 × 2.3 cm.
First to third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 25710
10. RIM FRAGMENT OF A VESSEL
Millefiori, red, blue, and
yellow flowers on green
ground
L. 3.0 cm.
Third or fourth century A.D.
(?)
From U-M Excavations at
Karaniš
Kelsey Museum 5658
11. WALL OR FURNITURE INLAYS
Millefiori, blue with red and
white tongue design
0.6 × 0.3 cm.
First century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 29773
12. WALL OR FURNITURE INLAY
Millefiori, alternating red and
blue flowers on white
ground
L. 1.4 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 65.3.141
13. BEAD
Large blue bead with mille-
fiori "eyes"
Diam. 2.2 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 66.1.436
14. BEADS
Millefiori/mosaic glass
Diams. 0.4 cm. - 1.7 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 70.3.438 -
474
15. GAMING PIECE OR RING
BEZEL
Millefiori, blue, red and
green flowers on purple-
black ground
L. 2.7 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 70.3.1058
16. FRAGMENT OF AN INLAY
Millefiori, black on white
ground
2.8 × 2.0 cm.
Second century A.D.
From U-M Excavations at
Seleucia
Kelsey Museum 18952
17. MARBLE FRAGMENT
Orbicular Gabbro
15.5 × 11.5 cm.
From Italy: VanDeman
Collection
Kelsey Museum 6785

18. FRAGMENTARY REVETMENT PLAQUE
Rings of grey, white, yellow and red against a grey background
5.2 × 3.0 cm.
First century B.C. to first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.169
19. BEAD
Millefiori, in red, white, and black
L. 1.7 cm.
First century B.C. to first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 70.3.398
20. ROD OF FUSED MOSAIC GLASS
Checkerboard pattern
L. 1.2 cm.
First century B.C. to first century A.D.
From Egypt
The Toledo Museum of Art 23.316
21. SLICES OF A FUSED MOSAIC ROD
Checkerboard pattern
L. 1.3 cm.
First century B.C. to first century A.D.
Probably from Egypt
The Toledo Museum of Art 80.594 a-d and 80.213 a-c
22. INLAY OR VESSEL FRAGMENT
Mosaic glass, floral elements on blue-grey ground
5.1 × 3.2 cm.
First century B.C. to first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 70.3.22
23. WALL INLAY OR VESSEL FRAGMENT [Pl. 18c]
Mosaic glass, floral elements on blue-grey ground
3.3 × 2.0 cm.
First century B.C. to first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.116
24. WALL INLAY OR VESSEL FRAGMENT [Pl. 18d]
Mosaic glass, with floral elements on blue-grey ground
2.8 × 2.7 cm.
First century B.C. or first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.170
25. FRAGMENTARY BEAKER IN THREE PIECES
Colorless glass with enameled floral decoration
4.4 × 3.7 cm., 5.6 × 2.7 cm., 2.5 × 1.6 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 25691
26. FRAGMENT OF A CONICAL BEAKER
Colorless glass with multi-colored enamel decoration in several registers
4.9 × 2.6 cm.
Third or fourth century A.D.
From Egypt: Karanis surface find
Kelsey Museum 29858
27. RIM FRAGMENT OF A BEAKER
Green glass with enameled chariot scene
5.4 × 4.0 cm.
First or second century A.D.
Probably from Rome
The Corning Museum of Glass 55.1.87
28. FRAGMENT OF A VESSEL [Pl. 19b]
Colorless glass with brown enamel all-over design of birds in hexagons
7.7 × 4.2 cm.
Seventh or eighth century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 70.3.931
29. JOINED FRAGMENTS OF A VESSEL [Pl. 19a]
Colorless glass, molded polygonal design with purple inlays
8.4 × 4.4 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6022 and 25716
30. FRAGMENT OF A VESSEL
Colorless glass with molded design of circles within squares, studded with millefiori
6.0 × 5.0 cm.
Third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 70.3.923
31. FRAGMENT OF A BOWL [Pl. 18e]
Purple-black glass with interior mosaic glass scene of floral elements and birds
5.6 × 4.1 cm.
First century B.C. to first century A.D.
From Egypt: Askren Collection
Kelsey Museum 3248
32. RIM FRAGMENT OF A VESSEL
Colorless glass with inlays
3.5 × 3.0 cm.
Second century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10294

Vitrine VI:

Special Uses for Glass

1. TRICK CUP (FALSE-BOTTOMED WINE GLASS)
Greenish-colorless glass with weathering
H. 6.9 cm.
Probably second or third century A.D.
Probably from Italy
The Corning Museum of Glass 79.1.173
2. "MARBLE"
Pie-bald glass
Diam. 4.6 cm.
Early fourth century A.D. or earlier
From U-M Excavations at Karanis
Kelsey Museum 6382
3. "MARBLE"
Pie-bald glass
Diam. 2.2 cm.
First century B.C. or first century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6387
4. "MARBLE"
Greenish glass
Diam. 3.1 cm.
Third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5976
- 5-6. GAMING PIECES
Greenish glass, flat-bottomed spheres with dimples
Diam. 1.6 cm.
Third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 70.3.1061 and 1062
7. GAMING PIECE
Colorless glass, triangular with engraved concentric circles
L. 3.4 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6016
8. MAGNIFYING LENS
Greenish-colorless glass, now milky
Diam. 7.1 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6332
9. MAGNIFYING LENS
Colorless glass
Diam. 5.2 cm.
Third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5969
10. FIGURINE OF A HORSE
Green glass body with blue detailing
H. 4.9 cm.
Probably third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 70.3.489
11. FRAGMENTARY SQUARE INLAY
Green glass with yellow streaks
L. 3.9 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6409
12. SQUARE INLAY
Blue glass
L. 1.8 cm.
Second to fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 10299
13. SQUARE INLAY
Red glass with black streaks
3.4 × 3.4 cm.
Third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6367
14. MOSAIC TESSERAE
Glass; various shades of blue, violet, and green
L. 0.6 - 2.4 cm.
Provenance unknown:
D'Ooge Collection
15. MOSAIC FRAGMENT
Glass tesserae in plaster, arranged in floral design
32.1 × 12.6 cm.
Fifth or sixth century A.D.
From Carthage: Père DeLatre Collection
Kelsey Museum 93904
16. COIFFURE ELEMENT (?) FOR AN OPUS SECTILE MOSAIC
Blue glass with white speckles
L. 3.4 cm.
Probably fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 25712
- 17-18. FRAGMENTARY ELEMENTS OF OPUS SECTILE MOSAIC
Blue glass strips with depressed star-shapes (inlays now missing)
L. 2.3 cm. and 1.6 cm.
Probably third to fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 25711 and 13723
19. FRAGMENTARY OPUS SECTILE ROSETTE [Pl. 18a]
Orange glass rosette with circular depression (inlay now missing)
Diam. 3.8 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6018
- 20-21. FRAGMENTS OF WINDOW GLASS
Greenish glass
3.5 × 3.1 cm. and 3.7 × 6.5 cm.
Third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5885 and 6245

- 22-25. FOUR SPINDLE WHORLS
Pierced discs of greenish glass (22 & 25) and black glass (23 & 24), all with light-colored mosaic glass quadrant-and-circle patterns
Diams. 4.2 to 3.7 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis (22-24) and From Egypt: Ruthven Collection (25)
Kelsey Museum 5973, 5974, 10300, 70.3.1050
26. BASKET VESSEL
Brown glass with blue rim coil
H. 4.2 cm.
Third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 70.3.1027
27. BASKET VESSEL
Colorless glass with handle of blue glass
H. 4.6 cm.
Third century A.D. or later
From Egypt: Ruthven Collection
Kelsey Museum 65.3.82
28. COSMETIC BOTTLE
Colorless glass, iridescent, with ribbing
H. 7.7 cm.
Probably second or third century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1662
29. TEAR VIAL
Colorless glass
H. 4.0 cm.
Second century A.D. or later
From Egypt: Askren Collection
Kelsey Museum 5258
30. TEAR VIAL
Bluish glass
H. 3.9 cm.
Second century A.D. or later
From Egypt: Askren Collection
Kelsey Museum 5259

31. PHARMACEUTICAL VIAL (TEST TUBE?)
Bluish glass, weathered
H. 9.1 cm.
First or second century A.D.
From Puteoli: De Criscio Collection
Kelsey Museum 1081
32. BOTTLE IN PAINTED WOODEN HOLDER
Colorless glass
H. (incl. holder) 5.1 cm.
First to third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5560
33. FLASK IN A BASKET
Colorless glass
H. 11.0 cm.
Probably third to fifth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5351

Vitrine VII: Special Uses for Glass

1. SPOUTED "FEEDER" VESSEL
[Pl. 20a]
Colorless glass
H. 9.5 cm.
Second century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1673
2. HANDLE OF A SPOON
Brownish-yellow glass, broken off at base of spoon
L. 10.2 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5995
3. AMULET OF HARPOCRATES, THE INFANT HORUS
Greenish glass, formed in a two-part mold with ring at back
L. 1.9 cm.
Probably second century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.240
4. FRAGMENT OF A TUBULAR FURNITURE MEMBER (?)
[Pl. 18f]
Mosaic glass with floral elements and human face
L. 4.8 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 25714
5. CIRCULAR BROOCH OR HARNESS DECORATION
Bronze with millefiori inlays in concentric rings
Diam. 3.5 cm.
First or early second century A.D.
From U-M Excavations at Seleucia
Kelsey Museum 18313

6. WALL OR FURNITURE INLAY
Tessera with millefiori rosette
1.4 × 1.4 cm.
First or early second century
A.D.
From U-M Excavations at
Seleucia
Kelsey Museum 18982
7. FRAGMENT OF A WALL
INLAY
Mosaic glass, depicting
female face
5.9 × 5.0 cm.
Late first century B.C. or first
century A.D.
Probably from Egypt
The Corning Museum of
Glass 66.1.75
8. FRAGMENTS OF INLAY FOR
A WOODEN BOX
Mosaic glass with wave pat-
tern in black and yellow
L. 3.2 cm. and 4.2 cm.
First century A.D.
From U-M Excavations at
Seleucia
Kelsey Museum 18989
9. WALL INLAY
Mosaic glass, yellow on pur-
ple ground, depicting
palmettes above wave
patterns
L. 11.5 cm.
First century B.C. to first cen-
tury A.D.
Probably from Egypt
The Toledo Museum of Art
23.7021
10. WALL OR FURNITURE INLAY
Mosaic glass, yellow petals
on black ground
L. 2.2 cm.
Second or third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6424
11. WALL OR FURNITURE INLAY
FRAGMENT
Mosaic glass, blue band
between wave patterns of
yellow and black
L. 2.6 cm.
Second or third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 25724
12. WALL REVETMENT
Mosaic glass, green and
opaque white swirls in
marble pattern on purple
ground
L. 15.5 cm.
First century B.C. to first cen-
tury A.D.
Probably from Italy
The Toledo Museum of Art
80.621
13. FRAGMENT OF A WALL
RETVEMENT
Colorless glass slab bor-
dered by opaque strip laid
over plaster which has
been painted in marble
pattern and mounted in
sand and pitch
L. 4.7 cm.
Second or third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6000
14. WALL OR FURNITURE INLAY
Mosaic glass, lotus and pal-
mette chain encircling
cloverleaf design
3.5 × 3.5 cm.
Late first century B.C. or first
century A.D.
Probably from Rome
The Corning Museum of
Glass 66.1.81
15. WALL OR FURNITURE INLAY
Mosaic glass, flower chain in
black, red, and yellow on
light blue ground
L. 1.8 cm.
Third or fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6002
16. FURNITURE INLAY
Mosaic glass, lotus and pal-
mette chain encircling
cloverleaf; mounted on
wood
L. 1.9 cm.
Third or fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6284
17. FRAGMENT OF WALL OR
FURNITURE INLAY [Pl. 18b]
Mosaic glass depicting
head of a fish
L. 5.5 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 65.1.135
18. FRAGMENT OF WALL OR
FURNITURE INLAY
Mosaic glass preserving part
of a fish
L. 5.6 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 65.3.185
19. FRAGMENT OF WALL OR
FURNITURE INLAY
Mosaic glass depicting part
of a fish
L. 4.0 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 70.3.19
20. FRAGMENT OF WALL OR
FURNITURE INLAY
Mosaic glass depicting
head of a fish
L. 5.6 cm.
First century B.C. to first cen-
tury A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 65.3.115

21. FRAGMENT OF WALL OR FURNITURE INLAY
Mosaic glass depicting tail and fin of a fish
L. 5.0 cm.
First century B.C. to first century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 65.3.153
- 22-24. FRAGMENTARY COSMETIC APPLICATORS
Blue, colorless, and iridescent colorless glass respectively
L. 6.3 cm., 2.9 cm., and 3.6 cm.
Second century A.D.
From U-M Excavations at Karanis (22-23) and Seleucia (24)
Kelsey Museum 5884, 5994, and 18971
25. BEAD
Red and opaque white glass cased in colorless glass
L. 1.5 cm.
Probably third or fourth century A.D.
From U-M Excavations at Sepphoris
Kelsey Museum 89830
26. RING
Greenish glass, plain band with convex profile
Diam. 1.9 cm.
First or second century A.D.
From U-M Excavations at Seleucia
Kelsey Museum 18963
27. BRACELET
Bluish-green glass, plain with convex profile
Diam. 7.4 cm.
Probably third or fourth century A.D.
From U-M Excavations at Sepphoris

Kelsey Museum 89820

28. FRAGMENTARY BRACELET
Black glass with transverse indents
Diam. 7.7 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 25696
29. FRAGMENT OF A BIRD-SHAPED PERFUME BOTTLE [Pl. 20b]
Colorless glass, preserving head and neck of a goose (?)
L. 4.6 cm.
First or second century A.D.
From Puteoli: De Criscio Collection
Kelsey Museum 93836
30. FRAGMENT OF A BIRD-SHAPED PERFUME BOTTLE [Pl. 20c]
Colorless glass, preserving head and breast of a bird
H. 6.5 cm.
First or second century A.D.
From Puteoli: De Criscio Collection
Kelsey Museum 2785

Vitrine VIII:

1. FOOTED BOWL (CARCHESIUM) [Pl. 27]
Bluish glass with two small handles
H. 17.5 cm.
First century A.D.
Probably from Italy
The Toledo Museum of Art 23.2404

Vitrine IX:
Decanters and Wine
Glasses

1. POPPY-SHAPED WINE GLASS
Yellow glass
H. 8.0 cm.
Fourth or fifth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5119
2. TALL-NECKED DECANTER
Brownish-yellow glass with
two thick coils on neck
H. 16.6 cm.
Fourth or fifth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5155
3. TWO-HANDLED POPPY-
SHAPED WINE GLASS [Pl. 14a]
Yellow glass with trailing
handles and threading
around belly zone
H. 10.0 cm.
Fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5950
4. DECANTER WITH PALM-FIBER
STOPPER [Pl. 14c]
Yellowish-green glass with
thick green coil at
shoulder
H. 25.1 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5936
5. U-SHAPED WINE GLASS
[Pl. 14b]
Greenish glass with spiral
threading on upper half of
body
H. 8.7 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5966

6. U-SHAPED WINE GLASS
[Pl. 14f]
Greenish glass
H. 9.1 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5963
7. U-SHAPED WINE GLASS
[Pl. 14e]
Greenish glass with spiral
threading on upper half of
body
H. 9.3 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5965
8. U-SHAPED WINE GLASS
[Pl. 14d]
Greenish glass
H. 9.3 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5964

Vitrine X:
One-Handled Shipping
Jugs

1. SQUARE JUG
Green glass
H. 10.2 cm.
First or second century A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 71.1.128
2. CYLINDRICAL JUG
Green glass
H. 19.5 cm.
First or second century A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 67.1.4
3. RECTANGULAR JUG
Green glass
H. 31.5 cm.
Second or third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5582
4. SQUARE JUG
Greenish glass
H. 10.3 cm.
First or second century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5156
5. RECTANGULAR JUG [Pl. 10b]
Green glass
H. 22.4 cm.
First or second century A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 71.1.132
6. RECTANGULAR JUG [Pl. 10a]
Bluish-green glass
H. 11.2 cm.
Second or third century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 6305

Vitrine XI:
Table Jugs

1. FOOTED JUG [Pl. 15a]
Yellow glass with handle;
neck and rim coils
H. 16.0 cm.
Third or fourth century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5345
2. PIRIFORM JUG [Pl. 15b]
Greenish-colorless glass with
green handle; neck and
rim coil
H. 24.6 cm.
Fourth century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5336
3. CYLINDRICAL JUG
Green glass with rim coil and
ribbed handle
H. 26.1 cm.
Fourth century A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 71.1.133
4. CYLINDRICAL JUG
Greenish glass with handle
and rim coil; abraded
geometric motif and
wheel-cut faceting
H. 19.7 cm.
Fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5947
5. TOE-BASED JUG [Pl. 15c]
Amethyst glass with spirally
ribbed neck; scalloped
coil on shoulder; ribbed
handle
H. 16.1 cm.
Third or fourth century A.D.
From Cologne: Gréau
Collection
Kelsey Museum 88839
6. SMALL JUG [Pl. 15e]
Bluish glass with thread
around neck; coil handle;
indents on body
H. 12.7 cm.
Fourth century A.D.
From Egypt: Ruthven
Collection
Kelsey Museum 71.1.127

Vitrine XII:
Bottle-Flasks and
Unguentaria

1. UNGUENTARIUM [Pl. 9g]
Bluish glass
H. 9.0 cm.
First to fourth century A.D.
From Puteoli, Italy: De Criscio
Collection
Kelsey Museum 1080
2. TALL UNGUENTARIUM [Pl. 9e]
Bluish-green glass
H. 19.2 cm.
Second to fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5168
3. UNGUENTARIUM [Pl. 9a]
Green glass
H. 14.5 cm.
Second to fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5587
4. TALL UNGUENTARIUM [Pl. 9b]
Bluish glass
H. 21.3 cm.
Second to fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5166
5. UNGUENTARIUM
Bluish glass
H. 7.1 cm.
Second or third century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5249
6. UNGUENTARIUM
Green glass with marvered
white threads
H. 11.9 cm.
Second century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5174
7. UNGUENTARIUM
Greenish-colorless glass
H. 6.7 cm.
Second to fourth century A.D.
From Cyprus: Cesnola
Collection
Kelsey Museum 88828
8. UNGUENTARIUM [Pl. 9d]
Green glass
H. 15.6 cm.
Third or fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5595
9. UNGUENTARIUM
Green glass
H. 8.9 cm.
Third or fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 88627
10. FLAT-BOTTOMED BOTTLE-
FLASK [Pl. 9f]
Olive green glass
H. 16.8 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5580
11. UNGUENTARIUM [Pl. 9c]
Green glass
H. 5.9 cm.
Second to fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5589
12. BOTTLE-FLASK
Greenish glass
H. 25.0 cm.
Fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5577
13. BOTTLE-FLASK
Yellow glass
H. 18.0 cm.
Fourth century A.D.
From U-M Excavations at
Karaniš
Kelsey Museum 5579

Vitrine XIII:

Beakers and Goblets

1. TALL CARINATED BEAKER [Pl. 13b]
Greenish glass with wheel-cut rings
H. 11.5 cm.
Late first or early second century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 69.3.21
2. TALL BEAKER [Pl. 23b]
Colorless glass, indented
H. 11.5 cm.
Second or third century A.D.
Probably from Syria: Havemeyer Collection
Kelsey Museum 88845
3. CYLINDRICAL BEAKER
Colorless glass with wheel-cut rings
H. 5.7 cm.
Second or third century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1675
4. CYLINDRICAL BEAKER
Greenish glass with multiple engraved rings
H. 9.8 cm.
Second or third century A.D.
Probably from Syria: Havemeyer Collection
Kelsey Museum 88846
5. TALL BEAKER
Green glass with blue trail around upper third
H. 12.5 cm.
Fourth century A.D. or later
From Egypt: Askren Collection
Kelsey Museum 5059
6. BEAKER
Green glass with wheel-cut rings
H. 6.5 cm.
Second or third century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88835
7. BEAKER [Pl. 23c]
Blue glass with wheel-cut rings
H. 7.0 cm.
First century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1669
8. CARINATED BEAKER ON BASE RING [Pl. 23a]
Colorless glass with trail at neck
H. 9.0 cm.
Second or third century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88838
9. ONE-HANDLED BEAKER (MODIOLUS) [Pl. 22]
Greenish glass with milky weathering; wheel-cut rings; blue trail on handle and ringing base
H. 14.8 cm.
Late first century A.D.
From Egypt: Tano 1945
Kelsey Museum 25729
10. BEAKER
Blue-green glass
H. 6.0 cm.
Probably second century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1666
11. BEAKER
Greenish glass with faint engraved rings
H. 6.5 cm.
Probably second century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88837
12. CONICAL BEAKER [Pl. 13c]
Greenish glass, with pinched festoons
H. 10.0 cm.
Early fourth century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1674
13. GOBLET [Pl. 1, bottom]
Colorless glass with deep wheel incisions in concentric rings near rim and base
H. 14.7 cm.
Second or early third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5933
14. BEAKER ON BASE RING
Blue-green glass
H. 10.0 cm.
Late first to third century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5359
15. BEAKER
Green glass
H. 9.0 cm.
First to third century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1660
16. BEAKER
Bluish glass with faint engraved rings
H. 6.5 cm.
First or second century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88831
17. BEAKER
Green glass
H. 6.7 cm.
Second or third century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88834
18. BELL-SHAPED BEAKER ("GLOBE-SHAPED BEAKER") [Pl. 13a]
Green glass
H. 11.5 cm.
Sixth or seventh century A.D.
From Cologne: Kelsey Collection
Kelsey Museum 1670

Vitrine XIV:
Roman Dinnerware

1. SHALLOW BOWL
Greenish glass
H. 6.0 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5506
2. SHALLOW BOWL [Pl. 21]
Transparent yellowish glass
H. 6.0 cm. Diam. 24.8 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5891
3. DEEP BOWL
Greenish glass
H. 6.5 cm. Diam. 12.6 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5533
4. WINE GLASS
Yellowish-colorless glass
H. 8.2 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5551
5. JUG WITH TREFOIL MOUTH
[Pl. 15d]
Brownish glass
H. 15.3 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5948
6. CONICAL BEAKER
Greenish glass
H. 10.7 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5546
7. SHALLOW BOWL
Greenish glass with greyish
blowing spiral
Diam. 14.5 cm.
Fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5012

8. DEEP BOWL WITH LID
Colorless glass
Lid Diam. 9.8 cm. Bowl H. 8.0
cm.
Third or fourth century A.D.
From Cologne; Kelsey
Collection
Kelsey Museum 1659 a & b
9. DEEP BOWL
Bluish glass
H. 6.7 cm. Diam. 12.8 cm.
First century A.D.
From Cologne; Kelsey
Collection
Kelsey Museum 1663
10. PLATE
Colorless glass
Diam. 17.1 cm.
Probably second century
A.D.
From Egypt: Askren
Collection
Kelsey Museum 5001
11. SHALLOW BOWL
Colorless glass
Diam. 14.9 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5910

Vitrine XV:
Two-Handled Flasks

1. TWO-HANDLED JAR-FLASK
[Pl. 12b]
Yellowish glass with rosy
streaks on pronounced
fins; vertically drawn green
handles and green rim coil
H. 11.5 cm.
Fourth or fifth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5161
2. TALL-NECKED FLASK [Pl. 12d]
Greenish-brown glass with
green coil handles and rim
coils
H. 14.0 cm.
Second or third century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5945
3. NECK/RIM FRAGMENT OF A
TALL-NECKED FLASK
Olive green glass with coil
handle(s) decoratively
drawn up to rim
H. 8.0 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 6345
4. TALL-NECKED FLASK
Yellowish glass with green
coil handles
H. 14.5 cm.
Fourth or fifth century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5342
5. AMPHORISKOS FLASK
[Pl. 12a]
Green glass
H. 13.2 cm.
First to third century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5585
6. PERFUME FLASK
Bluish-green glass with coil
handles
H. 6.2 cm.
Third or fourth century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 68.2.71

7. NECK/RIM FRAGMENT OF A PERFUME FLASK
Colorless glass with pale blue coil handles
H. 2.0 cm.
Second to fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5847
8. NECK/RIM FRAGMENT OF A PERFUME FLASK
Colorless glass, coil handles
H. 1.7 cm.
Second to fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23753
9. PERFUME FLASK
Colorless glass with greenish coil handles
H. 4.8 cm.
Second to fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6378
10. SMALL TALL-NECKED FLASK [Pl. 12c]
Blue glass with whiskered coil handles
H. 7.7 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5586
11. NECK/RIM FRAGMENT OF AN OIL FLASK
Green glass with coil handles
H. 2.9 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23734
12. NECK/RIM FRAGMENT OF AN OIL FLASK
Colorless glass with coil handles
H. 3.3 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6073

Vitrine XVI:
Glass Along the Silk Route

1. BASKET-SHAPED MULTIPLE FLASK [Pl. 8]
Bluish-green glass with coils, trails, and basket handles
H. 22.2 cm.
Fifth or sixth century A.D.
From Syro-Palestine: Toledo Exchange
Kelsey Museum 77.2.4
2. CAMEL-SHAPED MULTIPLE FLASK
Amethyst glass with spiral threads
H. 9.0 cm.
Sixth to eighth century A.D.
From Syro-Palestine
The Toledo Museum of Art 23.2049
3. FRAGMENT OF A PARTHO-SASANIAN FACET-CUT BOWL [Pl. 7]
Greenish glass now devitrified and opaque
Pres. Diam. 10.5 cm.
Second century A.D.
From U-M Excavations at Seleucia
Kelsey Museum 36358

Vitrine XVII:
Flasks – Large and Small

1. LARGE FLASK
Colorless glass with rim coil
H. 22.0 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5939
2. SMALL FLASK
Colorless glass with concentric wheel-cut rings
H. 9.5 cm.
First or second century A.D.
From Egypt: Askren Collection
Kelsey Museum 5140
3. TOILET FLASK
Bluish glass
H. 7.4 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6303
4. TOILET FLASK
Colorless glass
H. 5.0 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6265
5. TOILET FLASK
Amethyst glass with pad base and green rim coil
H. 6.2 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6263
6. SMALL FOOTED FLASK [Pl. 5c]
Bluish glass with neck trail
H. 13.3 cm.
Fourth century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88844
7. TOILET FLASK
Greenish glass with pad base
H. 6.2 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6302

-
8. FOOTED FLASK [Pl. 5b]
Green glass with shoulder and rim coils
H. 11.8 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5565
9. FLASK [Pl. 6]
Green glass with neck coil and s-corrugations on body
H. 21.5 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5944
10. TOILET FLASK
Colorless glass with thumb indents
H. 4.7 cm.
Late first to third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5570
11. TOILET FLASK
Bluish glass with thumb indents
H. 5.6 cm.
Late first to third century A.D.
From Egypt: Ruthven Collection
Kelsey Museum 68.2.93
12. FLASK
Bluish glass with blue neck coil; indents and corrugations on body
H. 17.0 cm.
Second or third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 23800
13. BULBOUS FLASK
Colorless glass with folded rim
H. 17.5 cm.
Second century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5334
14. FLASK
Blue-green glass
H. 16 cm.
Second century A.D.
From Egypt: Askren
Kelsey Museum 88624
15. TOILET FLASK
Colorless glass
H. 5.3 cm.
Fourth or fifth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5572
16. MINIATURE FLASK
Green glass
H. 2.0 cm.
Second or third century A.D.
From Egypt: Askren Collection
Kelsey Museum 5243
17. TOILET FLASK
Greenish glass
H. 2.9 cm.
Second or early third century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5568
18. TOILET FLASK
Colorless glass with indents
H. 4.8 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5573
19. TOILET FLASK
Bluish glass
H. 5.9 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5571
20. SMALL FLASK
Yellowish glass
H. 11.0 cm.
First century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88840
21. BULBOUS FLASK
Green glass, weathered
H. 14.7 cm.
Third or fourth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5149
22. TOILET FLASK
Dark blue glass
H. 5.5 cm.
First century A.D. or later
From Egypt: Askren Collection
Kelsey Museum 5242
23. BULBOUS FLASK
Green glass with blue iridescence
H. 20.0 cm.
Third or fourth century A.D.
From Egypt: Askren Collection
Kelsey Museum 5890
24. SQUAT FLASK
Green glass with neck trail and rim coil
H. 14.5 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6260
25. JAR-FLASK
Amethyst glass with vertical ribs on body
H. 10.3 cm.
Second or third century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5346
26. SMALL FLASK
Greenish glass
H. 6.9 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 5557
27. FOOTED JAR-FLASK
Brownish glass with green rim coil and neck trail
H. 10.5 cm.
Third or fourth century A.D.
From U-M Excavations at Karanis
Kelsey Museum 6259
28. FOOTED FLASK
Greenish glass
H. 10.5 cm.
Third or fourth century A.D.
From Cyprus: Cesnola Collection
Kelsey Museum 88827

29. FLASK
Bluish glass
H. 17.1 cm.
Third to fifth century A.D.
From Egypt: Nahman 1927
Kelsey Museum 5335
30. FLASK
Green glass with vertical
corrugations on body
H. 11.5 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5574
31. TOILET FLASK
Pale green glass
H. 3.0 cm.
First or second century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5229
32. SMALL FLASK
Green glass with neck coil
H. 9.7 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 6258
33. TOILET FLASK
Greenish glass with indents
on body
H. 5.5 cm.
Third or fourth century A.D.
From U-M Excavations at
Sepphoris
Kelsey Museum 89962
34. "JEWELLED" FLASK [Pl. 5a]
Green glass with ring of blue
blobs around belly
H. 14.6 cm.
Fourth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5152

Vitrine XVIII A-F:
Puteoli on the Bay of
Naples

- A. THE POPULONIA BOTTLE [Pl. 17]
Greenish glass with engraved
view of the harbors of
Puteoli and Baiae
H. 18.4 cm.
Second half of the fourth cen-
tury A.D.
From Populonia, Italy: ex-Coll.
Elise Bonaparte, Grand
Duchess of Tuscany
The Corning Museum of Glass
62.1.31
- B. STATUETTE OF SERAPIS-ZEUS
AMUN
Bronze
H. 14.6 cm.
Second or third century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 10881
- C. WALL PAINTING
Bird perching on an olive
branch
31.0 × 2.7 cm.
First to third century A.D.
From Puteoli: De Criscio
Collection
Kelsey Museum 2837
- D. WALL PAINTING
Floral spray
19.0 × 17.5 cm.
First to third century A.D.
From Puteoli: De Criscio
Collection
Kelsey Museum 2691
- E. WALL PAINTING
A fish
41.5 × 29.0 cm.
First to third century A.D.
From Puteoli: De Criscio
Collection
Kelsey Museum 2836
- F. WALL PAINTING
A circus horse
39.5 × 46.0 cm.
First to third century A.D.
From Puteloi: De Criscio
Collection
Kelsey Museum 2835

Vitrine XIX:
Conical Glass Lamps

1. HEXAGONAL MOSQUE LAMP
(POLYCANDELON) [Pl. 25]
Brass with button-based oil
lamps
L. 26.5 cm. on each side
Fifteenth or early sixteenth
century A.D. (Mamluk)
From Old Cairo: Purchased
by Peter Ruthven in the
1930's and wired for elec-
tricity in order to illuminate
the Egyptian Room of the
President's Mansion
Donated to the Museum in
1958 by President and Mrs.
Alexander G. Ruthven
Kelsey Museum 91616
2. CONICAL LAMP
Green glass; small blobs set
in triangle pattern alternat-
ing with solitary large blob;
flattened, hollow base
H. 21.5 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5932
3. CONICAL LAMP
Green glass; blue blobs in
alternating solitary and
3-blob pattern
H. 9.5 cm.
Third to fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5545
4. CONICAL LAMP
Colorless glass; ring of blue
blobs; slightly flattened
hollow base
H. 14.0 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5929

5. CONICAL LAMP
Greenish-brown glass;
applied zigzag and base
H. 18.3 cm.
Fourth or fifth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5550
6. CONICAL LAMP [Pl. 24b]
Greenish glass; solid pointed
base
H. 20.0 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5928
7. CONICAL LAMP
Colorless glass; engraved
bands; slightly flattened
hollow base
H. 12.8 cm.
Third or fourth century A.D.
From U-M Excavations at
Karanis
Kelsey Museum 5922
8. CONICAL LAMP
Greenish glass, weathered;
hollow flattened base
H. 13.3 cm.
Fourth or fifth century A.D.
From El Djem, Tunisia
Collection of Ginny and
Cruse Moss
9. CONICAL LAMP
Colorless glass with reddish
blowing spiral; concave
base with wickholder
H. 12.5 cm.
Seventh century A.D. or later
From Egypt: Askren
Collection
Kelsey Museum 5116
10. BOWL LAMP [Pl. 24e]
Olive green glass; indents on
body; row of blue blobs;
applied blue base
H. 7.8 cm.
Fourth or fifth century A.D.
From Egypt: Askren
Collection
Kelsey Museum 5120
11. BELL-SHAPED LAMP
Greenish glass; hollow stem
H. 11.1 cm.
Fourth to sixth century A.D.
From Syria
The Toledo Museum of Art
23.870
- STUDY GROUP I
Solid elongated bases and
applied bases from conical
lamps
1. From Karanis [Pl. 24j]
Kelsey Museum 6060
 2. From Karanis [Pl. 24i]
Kelsey Museum 6371
 3. From Egypt: Ruthven
Collection
Kelsey Museum 69.3.3
 4. From Karanis
Kelsey Museum 23751
 5. From Karanis [Pl. 24k]
Kelsey Museum 6134
 6. From Karanis [Pl. 24d]
Kelsey Museum 6209
 7. From Karanis
Kelsey Museum (no number)
 8. From Karanis [Pl. 24a]
Kelsey Museum (no number)
 9. From Karanis
Kelsey Museum (no number)
 10. From Karanis
Kelsey Museum 6347
- STUDY GROUP II
Lamp fragments with applied
surface decoration (marvered
festoons and flames; blobbing)
1. From Karanis
Kelsey Museum 23733
 2. From Karanis
Kelsey Museum 6246
 3. From Karanis
Kelsey Museum 5093
 4. From Karanis
Kelsey Museum (no number)
 5. From Egypt: Ruthven
Collection
Kelsey Museum 65.3.174
 6. From Karanis
Kelsey Museum 6031
- STUDY GROUP III
Flattened hollow bases from conical lamps
- 1-8. From Karanis
Kelsey Museum (no numbers)
- STUDY GROUP IV
Lamp fragments showing molded,
tooled, and faceted forms
1. From Karanis
Kelsey Museum 6437
 2. From Karanis
Kelsey Museum 6216
 3. From Karanis [Pl. 24c]
Kelsey Museum 23876
 4. From Karanis
Kelsey Museum 6057 a-b
 5. From Karanis
Kelsey Museum 6178
 6. From Karanis
Kelsey Museum 6215
 7. From Karanis
Kelsey Museum 5817
- STUDY GROUP V
Solid bases from conical lamps
- 1-12. From Karanis
Kelsey Museum (no numbers)

PHOTO PANELS IN THE EXHIBITION

1. TWO ENGRAVINGS OF A GLASS-BLOWER AT WORK
From Diderot's *Encyclopédie des Arts et Métiers*, 1772
Source: C. Zerwick, *A Short History of Glass*, 1980, pages 8 and 11
2. TERRACOTTA LAMP FROM YUGOSLAVIA, DECORATED WITH THE EARLIEST KNOWN REPRESENTATION OF A GLASS-BLOWER
First century A.D.
Split Archaeological Museum
Source: C. Zerwick, *A Short History of Glass*, 1980, page 21
3. THE LYCURGUS CUP: KING LYCURGUS STRANGLING IN A GRAPE-VINE
Diatretum of green glass that turns red with the transmission of light through the vessel—a quality achieved by the addition of gold dust to the batch
Fourth or fifth century A.D.
Probably made in Rome
The British Museum
Source: *Journal of Glass Studies* V, 1963, frontispiece
4. TONDO OF A GOLD-GLASS CUP SHOWING A SHIP-BUILDER IN HIS YARD
Fourth century A.D.
From Italy
The Vatican Museums
Source: *Archäologie und Photographie, Fünfzig Beispiele zur Geschichte und Methode* (D.A.I.)
5. STILL LIFE WALL PAINTING SHOWING A GLASS BOWL OF FRUIT
House of Julia Felix, Pompeii
Late first century B.C.
The Naples Archaeological Museum
Source: A. Maiuri, *Roman Painting*, 1953, page 134
6. DETAIL OF AN ILLUMINATED MANUSCRIPT OF THE ROMANCE OF ALEXANDER SHOWING ALEXANDER IN HIS GLASS SUBMARINE
Flanders, 1340
Source: R. L. Fox, *The Search for Alexander*, 1980, page 41
7. WALL PAINTING OF A WOMAN REFLECTED IN A SILVER OR GLASS MIRROR [Pl. 28]
From the Villa of the Mysteries, Pompeii
Mid-first century B.C.
Source: Facsimile reproduction by Maria Barosso, 1925
Kelsey Museum
8. WALL PAINTING SHOWING THETIS REFLECTED IN THE SHIELD OF ACHILLES
From Pompeii
Before A.D. 79
Source: G. Hartlaub, *Zauber der Spiegel*, 1951, figure 83
9. WALL PAINTING SHOWING NARCISSUS SEEING HIS IMAGE IN THE POOL
From the House of Loreius Tiburtinus, Pompeii
Before A.D. 79
Source: M. Brion, *Pompeii and Herculaneum*, 1960, figure 110
10. DETAIL OF A TROMPE L'OEIL PAINTING OF BIRDS APPROACHING A GLASS BOWL OF FRUIT [Pl. 26]
From the catacomb of San Sebastiano, Rome
Late second century A.D.
Source: Courtesy of Estelle S. Brettman, Executive Director, International Committee for the preservation of the Catacombs in Italy
11. STILL LIFE OF PEACHES AND A GLASS JAR OF WATER
From Herculaneum
Before A.D. 79
The Naples Archaeological Museum
Source: A. Maiuri, *Roman Painting*, 1953, page 136
12. STILL LIFE PAINTING OF A BOWL FILLED WITH FRUIT
From Oplontis
Late first century B.C.
Source: A. de Franciscis, "La Villa Romana di Oplontis," in *Neue Forschungen in Pompeji*, 1975, figure 18
13. ENGRAVING AFTER A TROMPE L'OEIL PAINTING OF A BIRD APPROACHING A JUG CAPPED BY A GLASS BEAKER [Frontispiece]
By H. Roux Ainé, 1875
Original: From Herculaneum
Mid-first century A.D.
The Naples Archaeological Museum
Source: H. Roux Ainé, *Herculaneum et Pompéi*, 1875, plate 48.
14. ENGRAVING AFTER A STILL LIFE PAINTING OF A GOBLET FILLED WITH WATER [Frontispiece]
By H. Roux Ainé, 1875
Original: From Herculaneum
Mid-first century A.D.
The Naples Archaeological Museum
Source: H. Roux Ainé, *Herculaneum et Pompéi*, 1875, plate 48
15. STILL LIFE PAINTING OF A FRUIT-FILLED GLASS BOWL IN A BUCOLIC LANDSCAPE
From Boscoreale
About 40 B.C.
Source: Courtesy of The Metropolitan Museum of Art
16. PAINTED SILK BANNER SHOWING A BODDHISATVA HOLDING A FACETED GLASS BOWL FROM THE WEST
From Buddhist caves at Tun Huang, China
Seventh century A.D.
Source: Courtesy of The British Museum

-
17. ENGRAVING AFTER A LOST WALL PAINTING OF PUTEOLI
By P. S. Bartoli, published in
G. P. Bellori's *Ichnographia*,
1764
Source: S. E. Ostrow, "The
Topography of Puteoli and
Baiae on the Eight Glass
Flasks," in *Puteoli: Studi di
Storia Antica* III, 1979,
figure 9
18. PAINTING OF A CAMPANIAN
HARBOR SCENE
From Stabiae
c. A.D. 70-79
Source: A. Maiuri, *Roman
Painting*, 1953, page 123
19. ENGRAVINGS OF PUTEOLI
ON THE PRAGUE AND ODE-
MIRA GLASS FLASKS
Source: S. E. Ostrow, "The
Topography of Puteoli and
Baiae on the Eight Glass
Flasks," in *Puteoli: Studi di
Storia Antica* III, 1979, fig-
ures 1 and 3
20. INTERIOR OF HAGIA SOPHIA,
ISTANBUL, SHOWING HANG-
ING POLYCANDELON
FIXTURES
Source: A. Grabar, *L'Age d'Or
de Justinien*, 1966, Plate 1
21. MOSAIC DEPICTING JERUSA-
LEM, WITH HANGING GLASS
LAMPS
From the Church of St. John
the Baptist,
Gerasa (Gerash)
Sixth century A.D.
From a painting of the origi-
nal by I. Reich
Source: J. W. Crowfoot,
Churches at Jerash, 1931,
page VII
22. INTERIOR OF HAGIA SOPHIA,
ISTANBUL, SHOWING
ARCADE "TREE" LAMPS
Source: H. Kähler and
C. Mango, *Hagia Sophia*,
1967, illustration 47
23. TOMB PAINTING OF MEN
HOLDING CONICAL BEAK-
ERS, WITH ALLEGORICAL
CAPTIONS OF GOOD WISHES
From Ostia
Third or fourth century A.D.
The Lateran Museum
Source: E. R. Goodenough,
*Jewish Symbols in the
Greco-Roman Period*, III,
1953, figure 637
24. TAPESTRY DEPICTING A MAN
HOLDING A STEMMED CONI-
CAL VESSEL WITH BLOB
DECORATION
From the grave of Aurelius
Colluthus at Antinoë, Egypt
Mid-fifth century A.D.
Source: Courtesy of the
Musées Royaux d'Art et
d'Histoire, Brussels

TEXT PANELS IN THE EXHIBITION

1. On the origin of glass
Isidore of Seville, d. A.D. 636
Etymologies XVI. 16
Translated by Charles Witke
2. Logo of Ennion the glass-maker
Found on numerous mold-blown vessels
First century A.D.
3. Story of Tiberius Caesar and the glass-maker
Isidore of Seville, d. A.D. 636
Etymologies XVI. 16
Translated by Charles Witke
4. Liability law for carvers of diatretra
Ulpian, d. A.D. 228: as preserved in the *Digest* of Justinian
5. Nero and the "Homeric" cameo (?) cups
Suetonius, fl. A.D. 98-138
Nero 47
6. On the colors and versatility of glass
Pliny, d. A.D. 79
Natural History XXXVI. 67
7. On the techniques and uses of glass
Isidore of Seville, d. A.D. 636
Etymologies XVI. 16
Translated by Charles Witke
8. On windows of glass in S. Sophia
Paul the Silentiary, sixth century A.D.
Ode to S. Sophia recited at the dedication of the second church in A.D. 563
9. On the magnifying properties of glass
Seneca, d. A.D. 65
Naturales Quaestiones I. 3 & 6
10. The glass ball for cauterizing
Pliny, d. 79 A.D.
Natural History XXXVII. 28
11. Alexander's glass submarine
Adapted from the Medieval *Alexander Romance*, based on Pseudo-Calisthenes' *Life of Alexander* (c. 100 B.C.)
12. Glass jars for mullets at the banquet
Seneca, d. A.D. 65
Naturales Quaestiones III. 17
13. On reflections
Lucretius, d. 55 B.C.
On the Nature of Things IV. 87
14. On silver and glass mirrors
Pliny, d. A.D. 79
Natural History XXXIII. 45
15. Light through glass
Lucretius, d. 55 B.C.
On the Nature of Things IV. 602
16. On the trompe l'oeil painting of Zeuxis
Pliny, d. A.D. 79
Natural History XXXV. 65
17. On human frailty and the durability of glass
St. Augustine, d. A.D. 430
Sermon XVIII. 7
18. On temperance
Horace, d. 8 B.C.
Book I, Ode 18
19. Spring of Bandusia
Horace, d. 8 B.C.
Book III, Ode 13
20. A couplet from "Rhapsody on a Small Glass Bowl"
P'an Ni, fl. A.D. 290-307
Translated by Aileen Gatten
21. A Quatrain from "Rhapsody on a Soiled Glass Bowl"
Fu Hsien, fl. A.D. 290-307
Translated by Aileen Gatten
22. Antoninus Pius' mission to China
History of the Later Han Dynasty, fasc. 88
Fan Ye, d. A.D. 445
Translated by Aileen Gatten
23. On Puteoli
Pliny, d. A.D. 79
Natural History XXXVI. 14
24. The glass chandeliers of S. Sophia
Paul the Silentiary, sixth century A.D.
Ode to S. Sophia, recited at the dedication of the second church in A.D. 563
25. Lampholders in the Temple of Apollo on the Palatine
Pliny, d. A.D. 79
Natural History XXXIV. 8
26. Trees of glass on the Elysian Field
Lucian, d. c. A.D. 190
Symposium II. 14

FURTHER READING

These publications, all in English, focus on ancient glass in American collections. In addition, the articles on ancient glass in the *Journal of Glass Studies* and in *Readings in Glass History* are highly recommended.

Auth, Susan H. *Ancient Glass in the Newark Museum*. The Newark Museum, 1976.

Goldstein, Sidney M., Rakow, Leonard S., and Rakow, Juliette K. *Cameo Glass*. The Corning Corning Museum of Glass, 1982.

Goldstein, Sidney M. *Pre-Roman and Early Roman Glass in the Corning Museum of Glass*. The Corning Museum of Glass, 1979.

Grose, David. "Ancient Glass," *Museum News*, Vol. XX, no. 3. The Toledo Museum of Art, 1978.

Harden, Donald B. *Roman Glass from Karanis*. The University of Michigan Press, 1936.

_____. *Ancient Glass: Pre-Roman and Roman*. The Royal Archaeological Institute, 1969.

Hayes, John W. *Roman and Pre-Roman Glass in the Royal Ontario Museum*. The Royal Ontario Museum, 1975.

Matheson, Susan B. *Ancient Glass in the Yale University Art Gallery*. Yale University Art Gallery, 1980.

Zumeta, Jay J. "A Recent Acquisition of Ancient Glass at the Kelsey Museum," *Bulletin of the Museums of Art and Archaeology*, Vol. II. The University of Michigan, 1979.

