Collections Jennifer Bailey Forbes, Registrar J'Laine Newcombe, Chief Preparator Larry Eishen, and Preparators Jim Liccione and Brett von Ende for their team effort in organizing, designing and installing the exhibition. Jennifer also oversaw the publication of the brochure. We would not have been able to present the exhibition without the generous support of our Supporting Sponsors: Mr. and Mrs. William T. Carey, the Museum's 20/20 Vision for the Future Fund, and the Patricia M. Patten Endowment; and Patron Sponsors: Deborah E. Cochrane, Mr. and Mrs. William L. Frick, Mr. and Mrs. Edward A. Michael, Patricia and Neil Stalter, and the Friends of the Vero Beach Museum of Art Endowment Fund. Glass from the Ancient World is also supported in part by an award from the National Endowment for

the Arts. We offer them our sincere thanks and grateful appreciation. LUCINDA H. GEDEON, Ph.D Director/CEO

## when certain types of rocks melt, cool and solidify as a result of

Ancient Glass

Checklist #43

volcanic eruptions, lightning strikes, or the impact of meteorites. Early man is believed to have used cutting tools made of obsidian (a natural glass) to make various primitive tools and weapons. According to the Roman historian Pliny the Elder (23-79 CE), Phoenician merchants were thought to have discovered glass on the Levantine Coast. Little is known about man's first efforts to make glass, although it is widely believed that glassmaking was discovered in

Mesopotamia. By the third millennium BCE, the basic raw materials of glass were being used to produce glazes on ceramic

Natural glass has existed since the beginning of time, formed

pots and vessels, and by 2,500 BCE, solid glass beads and amulets were being made. The oldest fragments of hollow glass vessels, however, appeared in the 16th and 15th centuries BCE in Egypt and Mesopotamia. At the beginning of the 18th Dynasty (c. 1539–1292 BCE), Egyptian glassmakers are thought to have developed a method for producing hollow glass vessels by making a core mold of compacted clay and dung and winding molten glass around it. While still soft, the glass-covered mold could be rolled on a slab of

stone in order to smooth and decorate it. Next, the glassmaker would trail glass threads of brilliant color over its surface, and when the vessel was finished, he would remove the core with a pointed instrument. At roughly the same time, an independent glass industry developed in Mesopotamia, where core-formed vessels similar to those made in Egypt were being produced. There is little evidence of further evolution until the 9th century BCE, when glassmaking revived in Egypt and the Near East. Over the next millennium, glass production centered in Alexandria in Egypt and near Sidon on the Levantine Coast, from where it is

thought to have eventually spread to Italy. During this period of experimentation and innovation, glassmakers perfected and/or

explored a number of different techniques, including core forming, rod forming, and mold casting. Clay tablets unearthed from the extensive library of the Assyrian king Ashurbanipal (685-627 BCE) include the first written instructions on how to make glass and how to construct a glass furnace.

A major breakthrough in glassmaking occurred with the invention of the blowpipe. Attributed to Syrian glassmakers in the 1st century BCE, the blowpipe allowed the glassmaker to inflate molten glass with his breath

and create a host of new shapes and forms. By order of the Emperor Augustus (63 BCE-14 CE), who wanted to concentrate the production of various crafts on the Italian mainland, glassmakers from Syria and Egypt were imported as slaves, and by the 1st century CE, the glassmaker's craft had been transformed into an industry. It was about this time that glassmakers began blowing glass inside molds, greatly increasing the variety of shapes possible for hollow cast items. The Romans did much to spread glassmaking technology. With their conquests, elaborate network of roads, trade relations, and strong political and economic infrastructure, the Romans created the conditions for the flourishing of glassmaking across Western Europe and the Mediterranean.

During the reign of Augustus, for example, glass vessels began to appear throughout Italy, Gaul, Germany, and Spain. Roman glass has even been found as far afield as China, shipped along the silk routes. The popularity of Roman glass rested not only on its usefulness and reasonable price but also on its transparency and the beauty of its forms and colors. During the 1st through the 3rd centuries CE, the major centers of glass production centered in Egypt, Syria, Palestine, and in the Rhine Valley in Germany. A host of different shapes emerged, including cosmetic and perfume containers, drinking and eating vessels, flasks, and other shapes and forms meant to imitate ceramics and metal. By the 5th century CE, however, the use of glass declined and many previously known techniques

disappeared. It was not until the 7th century CE that glassmaking

it has continued to be a viable and functional art form to this day.

reemerged as a prominent art form in Europe and the Middle East, where

JOHN OLBRANTZ The Maribeth Collins Director Hallie Ford Museum of Art Willamette University Salem, Oregon

Bull's Head

1st Century C.E.

Height: 1 7/8 inches

Egypt that range in purpose from functional vessels to ritualistic and decorative objects, the exhibition serves to illustrate the birth and evolution of ancient glassmaking skills and techniques. We are most grateful to Vero Beach resident Richard Brockway, who has made his extraordinary collection available to us for this exhibition. Mr. Brockway has spent more than 45 years pursuing his passion for ancient art and building an antiquities collection that incorporates ceramics, sculpture mosaics, glass and coins. Approximately 69 glass objects drawn from the Brockway collection and 6 objects from The Toledo Museum of Art, that complement the Brockway collection, are on view. In Toledo our thanks go to Director Don Bacigalupi and Curator of Decorative Arts and Glass Jutta-Annette Page for their generosity in making works from their collection available to us. A special note of thanks goes to John Olbrantz, The Maribeth Collins Director of the Hallie Ford Museum of Art at Willamette University, who originally organized an exhibition based on the Brockway collection, for contributing the essay for the brochure as well as his expertise and knowledge of the work. On staff congratulations and kudos to Curator of Exhibitions and

We are most pleased to present this exhibition of glass objects from antiquity. Showcasing work from the Near East, Greece, Rome and

Acknowledgments





Ushabti Figures Ushabti Egyptian, New Kingdom, 18th Dynasty, c. 1539-1292 B.C.E. Faience, mold-cast Height: 6 1/4 inches

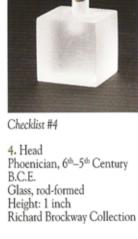
Glass from the

Ancient World

Checklist

Richard Brockway Collection Group of Three Ushabtis Egyptian, Late Period, 26th dynasty, c. 663–525 B.C.E. Faience, mold cast Height: each approximately 4 inches Richard Brockway Collection

Ushabti Egyptian, Late Period, 26th dynasty, c. 663-525 B.C.E. Faience, mold cast Height: 7 inches Richard Brockway Collection Jewelry and Decorative Objects

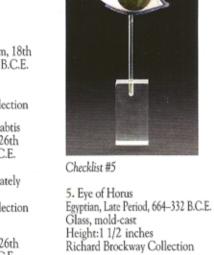


Roman, 1st-3std Century C.E.

Richard Brockway Collection

Eastern Mediterranean (Syro-Palestinian), about 4th Century

Blue glass, blown Height: 2 1/4 inches



6. Black Beads

Glass, rod-formed and mold-cast Approximately 15 inches in total length Richard Brockway Collection 7. Mosaic Inlay with Decorative Egyptian, Ptolemaic Period,

Greek, Hellenistic Period,

4th-1st Century B.C.E.

332-30 B.C.E. Mosaic glass, fused, polished Height: 1 1/2 inches Richard Brockway Collection 8. Red, Blue, and White Beads (Necklace)

Egyptian, Ptolemaic-Roman Periods, 332 B.C.E.–363 C.E. Glass, rod-formed Approximately 20 inches in total Richard Brockway Collection 9. Amber/Green Bracelet Phoenician, 1st Century B.C.E.– 1st Century C.E.

Glass, mold-cast Diameter: 3 1/2 inches Richard Brockway Collection

Green Bracelet Phoenician, 1st Century B.C.E.-1st Century C.E. Glass, mold-cast Diameter: 3 5/8 inches Richard Brockway Co 12. Lump of Glass Material from a

Roman, 1st Century B.C.E.-

Glass, mold-blown, applied trails

Richard Brockway Collection

2<sup>nd</sup> Century C.E. Raw glass Height: 1 1/2 inches Richard Brockway Collection Pair of Blue Zodiac Sign Pendants, Lion and Scorpion Roman, 1<sup>st</sup> –3<sup>sd</sup> Century C.E.

Glass, rod-formed, stamped Height: each approximately 7/8 Richard Brockway Collection 14. Game Counters (3 Pieces) Roman, 1st –3rd Century C.E. Glass, hand-manipulated

Richard Brockway Collection 15. Dark Blue Amulet Egyptian, Coptic Period, 363–642 C.E. Ground glass, mold-cast, stamped Height: 1 1/2 inches Richard Brockway Collection

4th-1st Century B.C.E. Glass, core-formed, applied rim and handles Height: 3 5/8 inches Richard Brockway Collection

Height: 4 3/8 inches Richard Brockway Collection Height 3 3/4 inches

Roman, 1st-3rd Century C.E.

Glass, free-blown, with two

17. Amphoriskos

applied handles

Glass Blowing Factory in Palestine Roman, 1st Century B.C.E.and trails Height: 3 7/8 inches

Height: 3 inches applied handle and trails Height: 10 inches Height: each approximately 3/16 Richard Brockway Collection

Height: 5 3/4 inches 23. Date Flask
Roman, 1<sup>st</sup>–2<sup>nd</sup> Century C.E.
Glass, free-blown (mouth and neck), mold-blown (body)
Height: 2 5/8 inches Cosmetic Vessels 16. Alabastron Greek, Hellenistic Period,

> Height: 5 inches Richard Brockway Collection

> > 60. Trefoil Pitcher

on body

Roman, 3<sup>rd</sup>–4<sup>th</sup> Century C.E. Glass, mold-blown, with pinches

Height: 5 inches Richard Brockway Collection

Roman, 1st -3rd Century C.E. Blue glass, free-blown, applied Richard Brockway Collection

19. Twin-handled Tube Roman, 1st -3rd Century C.E. Glass, free-blown, applied handles Richard Brockway Collection 20. Twin-handled Vessel

Roman, 1st-3rd Century C.E.

Purple glass, rod-formed, applied handles Richard Brockway Collection 21. Kohl Tube with Basket Handle Roman, 4th –5th Century C.E. Amber-brown glass, free-blown,

22. Spiral Dipping Rod Roman, 4<sup>th</sup> –5<sup>th</sup> Century C.E. Glass, rod-formed Richard Brockway Collection

Richard Brockway Collection 24. Grape Flask Roman, 1<sup>st</sup> –2<sup>nd</sup> Century C.E. Glass, free-blown (mouth and neck), mold-blown (body)

Flask Roman, 1st-3rd Century C.E. Glass, twin applied handles and twin trailing Height: 5/8 inches Richard Brockway Collection 27. Janus-headed Sprinkler Flask Roman, 1st – 3rd Century C.E. Glass, free-blown (mouth and neck), mold-blown (body)

Toledo Museum of Art; Gift of

Edward Drummond Libbey,

25. Head Flask

Eastern Mediterranean

(Syro-Palestinian),

Glass, mold-blown

Height: 3/8 inches

1923.515

s - 2nd Century C.E.

Height: 2 3/4 inches Richard Brockway Collection 28. Pilgrim's Flask Roman, 1<sup>st</sup> –3<sup>sd</sup> Century C.E. Glass, mold-blown, flattened Height: 7 inches Richard Brockway Collection 29. Sprinkler flask Roman, 1st –3std Century C.E. Glass, swirled body with applied

turquoise trailing, clear glass Height: 3 1/2 inches Richard Brockway Collection Glass, mold blown, flaring mouth and rolled rim, decorated with diagonal ribs Roman, 2<sup>nd</sup>–3<sup>nd</sup> Century C.E. Height: 7 inches

Richard Brockway Collection 31. Five-toed Sprinkler Flask Roman, 3<sup>rd</sup>–4<sup>th</sup> Century C.E. Glass, free-blown, indented or dimpled, pinched toes Height: 3 3/4 inches Richard Brockway Collection Roman, 3<sup>od</sup>-4<sup>th</sup> Century C.E. Glass, free-blown, applied and

pinched handles

Height: 5 3/4 inches Richard Brockway Collection

Height: 6 3/8 inches Richard Brockway Collection Janus-headed Sprinkler Flask Roman, 3rd-4th Century C.E. Glass, free-blown (mouth and neck), mold-blown (body) Height: 4 3/4 inches Richard Brockway Collection

Roman, 3rd-4rh Century C.E.

Glass, free-blown, indented or

dimpled, applied twin handles and

neck), pattern-blown (body) green Height: 4 3/8 inches Richard Brockway Collection Flask Roman, 4th -5th Century C.E. Glass, free-blown brown with flaring neck Height: 4 7/8 inches Richard Brockway Collection

35. Sprinkler Flask Roman, 3<sup>rd</sup>-4<sup>rh</sup> Century C.E. Glass, free-blown (mouth and

37. Flask Eastern Mediterranean (Syro-Palestinian), 3<sup>rd</sup>-4<sup>th</sup> Century C.E. Glass, expanded mold-blown and tooled and glass, mold-blown Height: 9 7/16 inches Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.758

Jars and Aryballoi 38. Aryballos Roman, 1st-3st Century C.E. Yellow glass, free-blown, applied handles Height: 3 1/2 inches Richard Brockway Collection Roman, 1st-3rd Century C.E. Blown, rolled rim, twin applied handles Height: 3 inches

Richard Brockway Collection

73. Holy Water Bottle with Original Sack Byzantine, 3<sup>rd</sup>–5<sup>th</sup> Century C.E.

Height: 3 3/4 inches Richard Brockway Collection

Glass, fabric

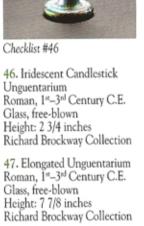
Glass, free blown and tooled with applied decoration Height: 4 3/16 inches Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.1025 42. Aryballos Roman, 4<sup>th</sup>-5<sup>th</sup> Century C.E. Glass, free-blown, applied

handles, green Height: 6 1/4 inches Richard Brockway Collection Roman, 4th–5th Century C.E. Glass, free-blown, applied trails, with zigzag at rim Height: 3 1/8 inches Richard Brockway Collection Unguentaria
44. Unguent Bottle (Oinochoe)

Eastern Mediterranean or Italian,

mid-4th-early 3td centuries B.C.E. Glass, core-formed with applied marvered and unmarvered decoration and applied handle and base Height: 4 5/8 inches Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.149 45. Iridescent Candlestick

Unguentarium Roman, 1st–3td Century C.E. Glass, free-blown Height: 4 5/8 inches Richard Brockway Collection



Roman, 1st-3std Century C.E. Glass, free-blown Height: 4 3/4 inches Richard Brockway Collection 49. Iridescent Unguentarium Roman, 1st-3std Century C.E. Glass, free-blown Iridescent Height: 5 3/4 inches

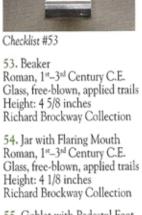
48. Iridescent Unguentarium

Richard Brockway Collection 50. Unguentarium Roman, 1st-3rd century C.E. Glass, mold-blown with band around body Height: 6 1/4 inches Richard Brockway Collection 51. Unguentarium with Tall Neck

Roman, 1st-3rd Century C.E.

Height: 7 1/4 inches Richard Brockway Collection Beakers and Drinking Vessels 52. Baby Feeder Roman, 1st-3std Century C.E. Glass, blown with applied handle Height: approximately 3 inches Richard Brockway Collection

Glass, free-blown



55. Goblet with Pedestal Foot Roman, 3<sup>rd</sup>-4<sup>th</sup> Century C.E. Glass, free-blown Height: 3 1/4 inches Richard Brockway Collection 56. Beaker Roman, 4<sup>th</sup>–5<sup>th</sup> Century C.E. Glass, free-blown, applied dots Height: 5 inches

Richard Brockway Collection Pitchers 57. Pitcher Roman, 1st-3rd Century C.E. Glass, free-blown, applied handle and blue rim Height: 6 1/2 inches Richard Brockway Collection

58. Six-sided Pitcher Roman, 1st-3sd Century C.E. Glass, free-blown (mouth and neck), mold-blown (body), applied neck coil and handle Height: 5 1/2 inches Richard Brockway Collection 59. Six-sided Pitcher Roman, 1<sup>st</sup> −3<sup>td</sup> Century C.E. Glass, mold-blown

Height: 5 inches

Richard Brockway Collection

61. Single-handled Pitcher Roman, 4<sup>th</sup>–5<sup>th</sup> Century C.E. Glass, free-blown, applied neck coil, handle and trails Height: 4 1/4 inches Richard Brockway Collection 62. Amber Bowl Greek, Hellenistic Period, 2nd-1st Century B.C.E. Glass, mold-cast, wheel cut on Height: 13/4 inches Richard Brockway Collection

Probably Italian, late 1st Century B.C.E.—early 1st Century C.E. Glass, assembled from sections of

cane and cast with rotary polishing Height: 1 15/32 inches, Diameter (lip): 3 17/32 inches Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.1396 64. Ribbed Bowl Syro-Palestinian or Italian, late 1st Century B.C.E.-mid-1st

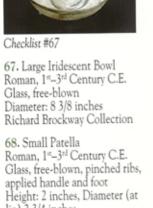
63. Bowl (Patella)

Century C.E. Glass, sagged with rotary-and firepolishing, cut on interior Height: 2 3/8 inches Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.509 65. Bowl Roman, 1st-3std Century C.E.

Richard Brockway Collection 66. Bowl with Lid Roman, 1st -3rd Century C.E. Glass, blown Height: 3 inches Richard Brockway Collection

Glass, free-blown, applied foot

Height: 2 inches



lip) 2 3/4 inches Richard Brockway Collection 69. Facet-cut Bowl Sassanian, 4th-6th Century C.E. Glass, blown and wheel-cut

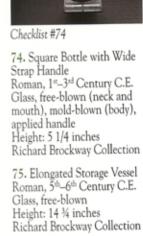
Diameter: 3 1/2 inches Richard Brockway Collection Storage Vessels and Bottles 70. Cinerary Urn with Lid Roman, 1st-3std Century C.E. Glass, free-blown Height: 12 inches Richard Brockway Collection Roman, 1st-3rd Century C.E.

Glass, free-blown (mouth and neck), mold-blown (body), applied handle Height: 7 inches Richard Brockway Collection 72. Storage Bottle with Strap Roman, 1st-3nd Century C.E. Glass, free-blown (mouth and neck), mold-blown (body), applied

handle, wheel cut on exterior

Richard Brockway Collection

Height: 9 1/4 inches



Photographs courtesy of

Frank Miller

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