

Glass from the Ancient World



Checklist #43

Ancient Glass

Natural glass has existed since the beginning of time, formed when certain types of rocks melt, cool and solidify as a result of 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 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 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 reemerged as a prominent art form in Europe and the Middle East, where it has continued to be a viable and functional art form to this day.

JOHN OLBRANTZ
The Maribeth Collins Director
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Glass from the Ancient World Checklist

Ushabti Figures

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

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

3. 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

4. Head
Phoenician, 6th-5th Century B.C.E.
Glass, rod-formed
Height: 1 inch
Richard Brockway Collection



Checklist #5

5. Eye of Horus
Egyptian, Late Period, 664-332 B.C.E.
Glass, mold-cast
Height: 1 1/2 inches
Richard Brockway Collection

6. Black Beads
Greek, Hellenistic Period, 4th-1st Century B.C.E.
Glass, rod-formed and mold-cast
Approximately 15 inches in total length
Richard Brockway Collection

7. Mosaic Inlay with Decorative Motif
Egyptian, Ptolemaic Period, 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 length
Richard Brockway Collection

9. Amber/Green Bead
Phoenician, 1st Century B.C.E.-1st Century C.E.
Glass, mold-cast
Diameter: 3 1/2 inches
Richard Brockway Collection

10. Ball's Head
Roman, 1st Century B.C.E.-1st Century C.E.
Glass, mold-blown, applied trails
Height: 1 7/8 inches
Richard Brockway Collection

11. Green Bead
Phoenician, 1st Century B.C.E.-1st Century C.E.
Glass, mold-cast
Diameter: 3 5/8 inches
Richard Brockway Collection

12. Lump of Glass Material from a Glass Blowing Factory in Palestine
Roman, 1st Century B.C.E.-2nd Century C.E.
Raw glass
Height: 1 1/2 inches
Richard Brockway Collection

13. Pair of Blue Zodiac Sign Pendants: Lion and Scorpion
Roman, 1st-3rd Century C.E.
Glass, rod-formed, stamped
Height: each approximately 7/8 inch
Richard Brockway Collection

14. Game Counters (3 Pieces)
Roman, 1st-3rd Century C.E.
Glass, hand-manipulated
Height: each approximately 3/16 inch
Richard Brockway Collection

15. Dark Blue Amulet
Egyptian, Coptic Period, 363-642 C.E.
Glass, core-formed, stamped
Height: 1 1/2 inches
Richard Brockway Collection

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

17. Amphoriskos
Roman, 3rd-4th Century C.E.
Glass, free-blown, with two applied handles
Height: 4 3/8 inches
Richard Brockway Collection

18. Bottle
Roman, 1st-3rd Century C.E.
Blue glass, free-blown, applied trails
Height: 3 3/4 inches
Richard Brockway Collection

19. Twin-handled Tube
Roman, 1st-3rd Century C.E.
Glass, free-blown, applied handles and trails
Height: 3 7/8 inches
Richard Brockway Collection

20. Twin-handled Vessel
Roman, 1st-3rd Century C.E.
Purple glass, rod-formed, applied handles
Height: 3 inches
Richard Brockway Collection

21. Kohl Tube with Basket Handle
Roman, 4th-5th Century C.E.
Amber-brown glass, free-blown, applied handle and trails
Height: 10 inches
Richard Brockway Collection

22. Spiral Dipping Rod
Roman, 4th-5th Century C.E.
Glass, rod-formed
Height: 3 3/4 inches
Richard Brockway Collection

23. Spiral Dipping Rod
Roman, 4th-5th Century C.E.
Glass, rod-formed
Height: 3 3/4 inches
Richard Brockway Collection

24. Grape Flask
Roman, 1st-2nd Century C.E.
Glass, free-blown (mouth and neck), mold-blown (body)
Height: 5 inches
Richard Brockway Collection

25. Head Flask
Eastern Mediterranean (Syro-Palestinian), 1st-2nd Century C.E.
Glass, free-blown, indented or dimpled, applied twin handles and trailing
Height: 6 3/8 inches
Richard Brockway Collection

26. 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)
Height: 2 3/4 inches
Richard Brockway Collection

28. Pilgrim's Flask
Roman, 1st-3rd Century C.E.
Glass, mold-blown, flattened
Height: 7 inches
Richard Brockway Collection

29. Sprinkler Flask
Roman, 1st-3rd Century C.E.
Glass, swirling body with applied turquoise trail, clear glass
Height: 3 1/2 inches
Richard Brockway Collection

30. Flask
Glass, mold-blown, flaring mouth and rolled rim, decorated with diagonal ribs
Roman, 2nd-3rd Century C.E.
Height: 7 inches
Richard Brockway Collection

31. Five-toed Sprinkler Flask
Roman, 3rd-4th Century C.E.
Glass, blown and wheel-cut
Diameter: 3 1/2 inches
Height: 9 1/4 inches
Richard Brockway Collection

32. Flask
Roman, 3rd-4th Century C.E.
Glass, free-blown, applied and pinched handles
Height: 5 3/4 inches
Richard Brockway Collection

33. Flask
Roman, 4th-5th Century C.E.
Glass, free-blown brown with flaring neck
Height: 4 7/8 inches
Richard Brockway Collection

34. 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

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

36. Flask
Roman, 4th-5th Century C.E.
Glass, expanded mold-blown with flaring neck
Height: 4 7/8 inches
Richard Brockway Collection

37. Flask
Eastern Mediterranean (Syro-Palestinian), 3rd-4th 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

38. Aryballos
Roman, 1st-3rd Century C.E.
Yellow glass, free-blown, applied handles
Height: 3 1/2 inches
Richard Brockway Collection

39. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

40. Jar
Roman, 1st-3rd Century C.E.
Blue glass, blown
Height: 2 1/4 inches
Richard Brockway Collection

41. Jar
Eastern Mediterranean (Syro-Palestinian), about 4th Century C.E.
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, 4th-5th Century C.E.
Glass, free-blown, applied handles, green
Height: 6 1/4 inches
Richard Brockway Collection

43. Jar
Roman, 4th-5th Century C.E.
Glass, free-blown, applied trails, with zigzag at rim
Height: 3 1/8 inches
Richard Brockway Collection

44. Unguentarium
Eastern Mediterranean or Italian, mid-4th-early 3rd 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-3rd Century C.E.
Glass, free-blown
Height: 4 5/8 inches
Richard Brockway Collection



Checklist #46

46. Iridescent Candlestick
Unguentarium
Roman, 1st-3rd Century C.E.
Glass, free-blown, applied trails
Height: 2 3/4 inches
Richard Brockway Collection

47. Elongated Unguentarium
Roman, 1st-3rd Century C.E.
Glass, free-blown
Height: 7 7/8 inches
Richard Brockway Collection

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

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

50. Unguentarium
Roman, 1st-3rd Century C.E.
Glass, mold-blown with hnd around body
Height: 6 1/4 inches
Richard Brockway Collection

51. Unguentarium with Tall Neck
Roman, 1st-3rd Century C.E.
Glass, free-blown
Height: 7 1/4 inches
Richard Brockway Collection

52. Baby Feeder
Roman, 1st-3rd Century C.E.
Glass, blown with applied handle
Height: approximately 3 inches
Richard Brockway Collection



Checklist #53

53. Beaker
Roman, 1st-3rd Century C.E.
Glass, free-blown, applied trails
Height: 4 5/8 inches
Richard Brockway Collection

54. Jar with Flaring Mouth
Roman, 1st-3rd Century C.E.
Glass, free-blown, applied trails
Height: 4 1/8 inches
Richard Brockway Collection

55. Goblet with Pedestal Foot
Roman, 3rd-4th Century C.E.
Glass, free-blown
Height: 3 1/4 inches
Richard Brockway Collection

56. Beaker
Roman, 4th-5th Century C.E.
Glass, free-blown, applied dots
Height: 3 inches
Richard Brockway Collection

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-3rd 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, 1st-3rd Century C.E.
Glass, mold-blown
Height: 5 inches
Richard Brockway Collection

60. Trefoil Pitcher
Roman, 3rd-4th Century C.E.
Glass, mold-blown, with pinches on body
Height: 5 inches
Richard Brockway Collection

61. Single-handled Pitcher
Roman, 4th-5th 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 interior
Height: 1 3/4 inches
Richard Brockway Collection

63. Bowl (Patella)
Syro-Palestinian or 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 Century C.E.
Glass, sagg with rotary and fire-polishing, cut on interior
Height: 2 3/8 inches
Toledo Museum of Art; Gift of Edward Drummond Libbey, 1923.509

65. Bowl
Roman, 1st-3rd Century C.E.
Glass, free-blown, applied foot
Height: 2 inches
Richard Brockway Collection

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



Checklist #67

67. Large Iridescent Bowl
Roman, 1st-3rd Century C.E.
Glass, free-blown
Diameter: 8 3/8 inches
Richard Brockway Collection

68. Small Patella
Roman, 1st-3rd Century C.E.
Glass, free-blown, pinched ribs
Applied handle and foot
Height: 2 inches, Diameter (at lip) 2 3/4 inches
Richard Brockway Collection

69. Facet-cut Bowl
Sassanid, 4th-6th Century C.E.
Glass, blown and wheel-cut
Diameter: 3 1/2 inches
Height: 9 1/4 inches
Richard Brockway Collection

70. Cinerary Urn with Lid
Roman, 1st-3rd Century C.E.
Glass, free-blown
Height: 12 inches
Richard Brockway Collection

71. Square Storage Bottle
Roman, 1st-3rd Century C.E.
Glass, free-blown (body), applied handle
Height: 7 inches
Richard Brockway Collection

72. Storage Bottle with Strap Handle
Roman, 1st-3rd Century C.E.
Glass, free-blown (mouth and neck), mold-blown (body), applied handle, wheel cut on exterior
Height: 9 1/4 inches
Richard Brockway Collection

73. Holy Water Bottle with Original Neck
Byzantine, 5th-6th Century C.E.
Glass, fabric
Height: 3 3/4 inches
Richard Brockway Collection

74. Square Bottle with Wide Strap Handle
Roman, 1st-3rd Century C.E.
Glass, free-blown (neck and mouth), mold-blown (body), applied handle
Height: 5 1/4 inches
Richard Brockway Collection

75. Elongated Storage Vessel
Roman, 5th-6th Century C.E.
Glass, free-blown
Height: 14 1/4 inches
Richard Brockway Collection

76. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

77. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

78. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

79. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

80. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

81. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

82. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

83. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

84. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

85. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

86. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

87. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

88. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

89. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

90. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

91. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

92. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

93. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

94. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

95. Jar
Roman, 1st-3rd Century C.E.
Blown, rolled rim, twin applied handles
Height: 3 inches
Richard Brockway Collection

Acknowledgments

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

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LUCINDA H. GERDON, PH.D
Director/CEO

Cover image: Checklist #16



Checklist #27



Checklist #70

Glass from the Ancient World Checklist

17. Amphoriskos
Roman, 3rd-4th Century C.E.
Glass, free-blown, with two applied handles
Height: 4 3/8 inches
Richard Brockway Collection