

## *Curiosities of Glassmaking Exhibition Checklist*

The result of months of digging into the Museum's vast collections, "Curiosities of Glassmaking" presents an array of unusual objects made of glass that date from antiquity to the present day. Sometimes peculiar, often mysterious, and generally inspired, the selections are arranged in categories and by types in a manner that is purposefully inconsistent with displays elsewhere in the Museum.

Instead of documenting the chronological development of glass over the centuries, this exhibition mixes different periods, as well as various types and functions of glass. Ancient and contemporary glass may be united by a shared theme and glasses that are unrelated to each other may be shown together in a new context. Visitors are invited to observe the many unique properties of glass, such as how it is formed in nature, how it mimics other materials, how it may be used to deflect evil, how it serves medical and scientific and household purposes, and how it may portray the natural world.

The title of the exhibition refers to a popular 19th-century manual, *Curiosities of Glass Making*. Published in London in 1849 by the well-known glassmaker Apsley Pellatt, it revealed many secrets of ancient and modern glassmaking to an enthusiastic public.

Although glass has been employed for everyday things throughout most of its history, it has also always been recognized as possessing arcane aspects. Medieval and Renaissance encyclopedias—such as the 13th-century *De Proprietatibus Rerum* (On the properties of things) by Bartholomaeus Anglicus or Giambattista della Porta's *Magiae Naturalis* (Natural magic), first published in 1558—recorded many special uses for glass, such as clearing eyes and kidneys, smoothing skin, counterfeiting gemstones, creating artificial fire, and effecting the spontaneous generation of animals.

In this exhibition, the notion of collecting and displaying glass curiosities is inspired by the large Victorian-era museum displays of odd, exotic, and unusual objects that often included archeological artifacts, geological specimens, and assorted trophy animals. This type of presentation originated in the private collections of curiosities, popular from the 17th century on, that served as the foundation for many important museum collections in Europe and America today.

## *Curiosities of the Home*

Glass is an ordinary material that we use every day without thinking twice about it. These strange objects may inspire viewers to look for odd uses of glass in their own homes, or to find and collect their own examples of unusual objects in glass.

Vessel  
Roman, 1st–2nd century  
Blown glass  
66.1.233

This object is traditionally called a child's feeder, but there is no archeological or documentary evidence to support this interpretation. It may have been used for another purpose, such as filling oil lamps.

#### Bird Feeder

Germany, about 1475–1550

Blown glass

77.3.56, gift of Johannes Josef Halm

#### Fire Grenades

Europe, 17th–18th century

Blown glass

84.3.12; 98.3.23, gift of The Wunsch Foundation Inc.

Until good protective equipment was developed, firefighters could not get very close to fires. Instead, they filled grenades like these with water and tossed them into a fire to put it out.

#### Hourglass

Probably England, about 1800–1850

Blown glass; wood, sand, wax

68.2.3

This sandglass measures about half an hour. Hourglasses were first depicted in the 14th century. They were first mentioned in a 14th-century ship's inventory, which suggests that they were used as navigating devices. Hourglasses can measure periods of time ranging from a few minutes to an hour or more.

#### Powder Horn

**John Long** (American, dates unknown)

United States, 1820–1840

Blown glass

64.4.17

#### Bird Feeder

United States, Sandwich, Massachusetts, Boston and Sandwich Glass Company, 1830–1840

Mold-blown glass

2004.4.384

#### Rolling Pin

United States, 1870–1880

Blown glass

70.4.84

#### String Holder

United States, about 1890–1900

Pressed glass

72.4.115, gift of Preston Bassett

#### Chain

United States, 1890–1910

Lampworked glass

71.4.101

This 8-foot long chain is decorative.

#### Bank

United States, 19th century

Blown and hot-worked glass

91.4.80, gift of Samuel Schwartz in memory of Esther Ipps Schwartz

### Thimbles

France or possibly Bohemia, about 1900  
Molded glass, cut, gilded  
2006.3.58

### Stocking Darner

United States, Corning, New York, Steuben Division, Corning Glass Works, about 1903–1933  
Blown and hot-worked glass  
2001.4.35, gift of Gerald M. Eggert

### Glass-Tipped Bullets

United States, Corning, New York, Corning Glass Works, 1942  
Molded borosilicate glass; metal casing  
70.4.176, .177, gifts of Otto W. Hilbert  
These bullets were made during World War II to address metal shortages.

### 12-Gauge Shotgun Shell with Glass Shot

United States, Corning, New York, Corning Glass Works, 1942–1943  
Molded borosilicate glass; brass, paper  
70.4.175, gift of Otto W. Hilbert

### Silver Streak Electric Iron and Silver Streak Iron Cover

United States, Corning, New York, Corning Glass Works and Saunders Machine and Tool Corporation, designed in 1943 and made in 1946  
Molded borosilicate glass; aluminum, steel, and electrical components  
2005.4.22; 65.4.3, gift of Otto W. Hilbert  
The Silver Streak Pyrex iron was designed during World War II as a way to conserve metal. By the time these irons were put into production, however, the war had ended and they were no longer necessary. They were produced for only one year.

### Bake-A-Round Bread Tube

United States, Corning, New York, Corning Glass Works, 1970s  
Machine-made borosilicate glass tube; metal oven rack, paper recipe  
2003.4.72, anonymous gift  
Made for a limited time in the 1970s, the Bake-A-Round was a novel use for industrial glass tubing. Surprisingly, many people still use their Bake-a-Rounds, and the original recipes, which can be hard to find, are traded on the Web.

## *Unconventional Drinking Glasses, Trick Glasses and Glass Flatware*

Since Roman times, glassmakers have enjoyed creating glasses in forms designed to amuse and bewilder. Trick glasses are meant to entertain, and the way that they hold or distribute liquid is usually unpredictable, which makes them perfect for drinking games.

One of the more unexpected uses for glass is as flatware, which has been made since Roman times. The fact that a glass spoon can easily break suggests that it was not meant for everyday use. Although glass-handled knives, forks, and spoons were safer, they were probably reserved for use by guests.

Spoon

Probably Roman Empire, 1st century B.C.–4th century A.D.

Blown and hot-worked glass

54.1.105

Goblet with Blue Knop

Probably the Netherlands, 16th–17th century

Blown glass

79.3.1128, bequest of Jerome Strauss

No one knows what purpose the blue bulb in this glass may have served. It has been suggested that bowls with similar blue knops may have been filled with water and small fish and then hung above sickbeds to entertain patients.

Spoon

Italy, 17th century

Blown and hot-worked glass, gilded

50.3.73

Double-Walled Wineglass

Italy or Spain, about 1650

Blown *filigrana*

79.3.877, gift of The Ruth Bryan Strauss Memorial Foundation

Trick Glass in the Form of Bagpipes

Germany, 1650–1750

Optic-blown glass; applied decoration

64.3.87

Mug

Spain, Andalusia, probably Almería, about 1700–1850

Blown and cased glass; applied handle

79.3.600, gift of The Ruth Bryan Strauss Memorial Foundation

The transparent glass of this vessel has been cased with a darker, opaque layer of glass to make it seem as if the mug is full of beer or wine.

*Zwischengoldglas* Beaker with Dice

Bohemia, 1725

Blown glass, cut, and engraved glass; gold-foil decoration, ivory dice

79.3.364, gift of Jerome Strauss

Knife and Fork

Probably Bohemia, about 1740–1750

Blown glass, gilded; metal

74.3.133

Knife and Fork

Italy, 18th century

Fused *murrine*, cut; metal

81.3.5, 81.3.6

Large Spoon

United States, 1840–1870

Blown lead glass, cut

71.4.90

Knife, Fork, and Spoon

Probably Bohemia, about 1875–1900

Cut glass, gilded

66.3.12, gift of Mr. and Mrs. John Davis Hatch

Trick Glass  
France, possibly second half of the 19th century  
Blown glass; liquid  
99.3.119

Knife, Fork, and Spoon  
**Jean E. Puiforcat** (French, 1897–1945)  
France, Paris, about 1925–1935  
Molded glass; silver  
83.3.220

*Bedspring Cone Cup*  
**Buster Simpson** (American, b. 1942)  
With the assistance of Therman Statom  
United States, Seattle, Washington, 1983  
Hot-worked glass; chromed bedspring  
86.4.21

Goblet with Stem in the Form of a Spring  
**Elio Quarisa** (Italian, b. 1936)  
United States, Corning, New York, 2002  
Blown glass  
2007.4.13, gift of the artist  
This type of stem was first made in the 1880s by the Italian glassworks  
Barovier & Toso.

“Glasses and Pills” Tumbler  
**Maria Grazia Rosin** (Italian, b. 1958)  
Italy, Murano, 2005  
Blown and flameworked glass  
2005.3.37 C, gift of the artist and Caterina Tognon Arte Contemporanea,  
Venice

## *Glass Imitating Other Materials*

Throughout its history, glass has been used to imitate other, usually more costly, materials. Ancient craftsmen made precious bowls of glass that looked like turquoise and rock crystal. Later, glass was used as a substitute for luxury wares made of precious and semiprecious stones (including rubies, emeralds, sapphires, agates, and marbles) and other fashionable materials, such as porcelain. Pure colorless glasses were developed to compete with rock crystal objects, and counterfeit glass gems have been popular since the Renaissance.

Goblet Imitating Porcelain  
France, 17th century  
Mold-blown and hot-worked glass  
98.3.61, gift of The Wunsch Foundation Inc.

Ice-Glass Beaker  
The Netherlands, 17th century  
Blown glass  
79.3.175, gift of The Ruth Bryan Strauss Memorial Foundation

Ruby Glass Cup  
Southern Germany, about 1690–1710

Blown glass, engraved  
79.3.378, bequest of Jerome Strauss

Covered Mug Possibly Imitating Ceramic  
Probably Germany, about 1700  
Blown glass  
79.3.495, bequest of Jerome Strauss

Covered Sapphire Blue Goblet  
England, about 1760–1780  
Blown glass, cut  
79.2.112, bequest of Jerome Strauss

Cup and Saucer Possibly Imitating Snowflake Obsidian  
Europe, 18th century  
Blown glass  
79.3.493, bequest of Jerome Strauss

Serpentine Beaker  
Germany, Saxony, probably Zobnitz, about 1810–1840  
Cut stone  
74.7.12  
This beaker entered the Museum's collection as a glass vessel, but it was later determined to be stone.

Snuff Bottle Imitating Rock Crystal  
Probably Scotland, about 1820–1840  
Blown lead glass, cut, engraved  
79.2.320, bequest of Jerome Strauss

Beaker Imitating Agate  
Bohemia, about 1830–1840  
Blown glass, cut  
75.3.10, gift of Lillian Nassau

“Agate” Beaker  
Southern Bohemia, Georgenthal, glassworks of the count of Buquoy,  
after 1834  
Blown glass, enameled, cut, gilded  
91.3.97, gift of Mrs. K. F. Landegger

Jet-Black Goblet with Pattern of Arches  
France, Saint-Louis, Compagnie des Cristalleries de Saint-Louis, 1840  
Pressed glass  
58.3.193

Marbled Wine or Dessert Glass  
Italy, 1850–1875  
Blown glass  
79.3.1001, gift of The Ruth Bryan Strauss Memorial Foundation

“Chalcedony” Beaker  
Italy, 19th century  
Blown glass  
74.3.161, gift of Jerome Strauss

“Chalcedony” Vase  
Italy, Venice, 19th century  
Blown and hot-worked glass  
71.3.161, gift of Mr. and Mrs. Gillett Welles Sr.

Vase Imitating Jade  
China, 19th century  
Blown glass  
56.6.5, gift of Mrs. E. C. Chadbourne

Cup Imitating Turquoise  
China, 1912–1949  
Blown glass  
56.6.8, gift of Mrs. E. C. Chadbourne

Glass Shoe  
**Frederick Carder** (American, born in England, 1863–1963)  
United States, Corning, New York, Steuben Division, Corning Glass  
Works, 1925  
Mold-blown glass  
66.4.74  
This glass slipper was designed for a movie production of *Cinderella*, but  
the film was never completed.

“Leather” Glove  
**Fulvio Bianconi** (Italian, 1915–1996)  
Italy, Murano, Venini, 1948  
Optic-blown and hot-worked glass; gold-foil decoration  
L.238.3.2000, lent by The Steinberg Foundation

## *Natural and Unnatural Glass*

Scientists tell us that glass is a state of matter rather than a single material. It is formed when a molten material cools so rapidly that there is not enough time for the material’s crystalline structure to re-form. Obsidian, for example, is rock in a glassy state, just as hard candy is sugar in a glassy state. In nature, glasses are formed when sand and rocks are heated to high temperatures and then cooled rapidly.

Chunk of Obsidian  
Collected in the United States  
Volcanic glass; metallic inclusions  
62.7.3, gift of George D. MacBeth  
Obsidian is formed when molten volcanic rock from the interior of the earth (lava) cools rapidly.

Chunk of Obsidian  
Collected in California  
Volcanic glass  
63.7.12, gift of Fred P. Bentley

Spearheads  
United States, about 1000–1500  
Hand-chipped volcanic glass  
62.7.1, gift of The Santa Barbara Museum of Natural History  
Glassy materials have a shiny surface and they show curved, conchoidal (shell-like) fractures. The edges of these spearheads display this characteristic type of fracture.

Obsidian Knife  
Possibly Mexico, 1200–1521  
Hand-chipped volcanic glass

65.1.19, gift of J. J. Klejman

#### Tektites

Collected in Vietnam

Nonvolcanic terrestrial or extraterrestrial glass

59.7.4; 96.7.4, gift of Christopher Sheppard; 2000.7.16, .18, .24, .27, .32, .38, .48, gift of Darryl S. Futrell

Like volcanic glass (obsidian), which is formed when lava cools rapidly, tektites are created when rocks and soil are melted by a meteoritic impact and then rapidly cooled. Tektites are formed at a much higher temperature than volcanic glass and under tremendous pressure. The meteoritic impacts, which occurred millions of years ago, literally melted the rock of the meteor and the surrounding terrestrial rock, creating the spherical forms, comma shapes, drips, and splashes characteristic of tektites.

#### Large Tektite

Collected in Vietnam

Nonvolcanic terrestrial or extraterrestrial glass

2000.7.3, gift of Darryl S. Futrell

Tektites occur in specific geographic areas, which are called tektite strewn-fields. Fields that have yielded many tektites are located in Vietnam (also called Indochina), the Ivory Coast of west Africa, the Philippines, the Czech Republic (where meteoritic moldavites are found), Australia, and in the United States (Georgia and Texas).

#### Spherical Tektites

Collected in Texas and elsewhere

Nonvolcanic terrestrial or extraterrestrial glass

2000.7.4–.6, gift of Darryl S. Futrell

#### Libyan Desert Glass

Sahara, Egypt or Libya, Great Sand Sea, possibly collected in Libya in 1934

Nonvolcanic terrestrial or extraterrestrial glass

2000.7.1, gift of Darryl S. Futrell

Libyan desert glass, which is almost pure silica, ranges from small flakes and nuggets to heavy chunks, such as this impressively large example. It is not known what happened millions of years ago to create this glass, which exists, as far as we know, only in the remote desert region of western Egypt and eastern Libya. It is believed to have either resulted from a meteoritic impact or from a comet exploding in the earth's atmosphere. The composition of Libyan desert glass is quite different from that of other glass of meteoritic origin, such as tektites. Lunar soils also have a high silica content and are glassy.

#### Fulgurites

Collected in Michigan and Arizona

Glass

64.7.9, gift of Harvey Franz; 63.7.30, gift of Dr. Monroe McIver

Fulgurites, sometimes called petrified lightning, are found everywhere. They are formed when lightning strikes sand dunes. Fulgurites vary in length from a few inches to several feet, and they break easily. The longest recorded example measures 17 feet.

#### Glass Sponge

Probably collected in the 19th century

Glass; wood and glass display dome

2005.7.26

Sponges are among the oldest known multicellular animals. The spicules (needlelike structures) that form the sponge's skeleton are made

of different materials such as silica, carbonates, and protein fibers. Glass sponges, which live in the deep ocean, have skeletons made of silica spicules. This skeleton of the sponge known as *Euplectella* is a lattice of silica. A scientific study of its substructure and refractive properties found that the sponge's silica spicules transmit light in a similar way to the optical fibers used in telecommunications.

#### Trinitite

United States, White Sands, New Mexico, Trinity test site, 1945

Glass

2006.4.237, gift in memory of Stephen P. Tooney

These samples were collected at the Trinity test site of what is now the White Sands Missile Range in White Sands, New Mexico. Trinitite was unintentionally created by the United States Army on July 16, 1945, during the testing of the Trinity atomic bomb. The trinitite appears to have formed as sand was sucked up into the nuclear fireball, falling back to the ground in a rain of molten glass. These specimens are no longer radioactive.

#### *Miranda VIII*

**John Leighton** (American, b. 1948)

United States, Oakland, California, 1991

Cast glass; wire

2004.4.67, gift of the artist in memory of his father, Jasper L. Leighton

Although this sculpture was made by an artist and not by nature, the ancient-looking, crusty surface is reminiscent of the glass formed by the impacts of meteorites.

## *Glass Oddities*

With the exception of the Klein Bottle, the glass in this group has not been annealed (allowed to cool slowly). Because of the internal stresses that are created when the surface of the glass cools faster than its interior, unannealed glass can explode at any time. These items are displayed inside their own case, where they can do no harm if they self-destruct during the exhibition.

#### Klein Bottle

United States, Oakland, California, Acme Klein Bottle Company, 2006

Flameworked borosilicate glass

2007.4.14

The Klein Bottle is not meant to be functional but to illustrate a mathematical principle. Its surface is continuous, which means that the vessel does not have a conventional interior and exterior. The Acme Klein Bottle company's Web site states that "in 1882, Felix Klein imagined sewing two Möbius Loops together to create a single-sided bottle with no boundary. Its inside is its outside. It contains itself." Christian Felix Klein (1849–1925) was a German mathematician best known for his reorganization of the study of geometry in the late 19th century.

#### Prince Rupert's Drops

Prince Rupert's drops are created by dripping hot glass into cold water, which forms a solid tadpole-shaped droplet with a long, thin tail.

Because the water rapidly cools the outside of the droplet while the interior remains hot, stresses are created inside the glass. Although a Prince Rupert's drop can withstand blows from a blunt instrument on its

bulbous end, it will explode if the tail is broken or even slightly damaged. The drop is said to have been discovered in the mid 17th-century by Rupert, count palatine of the Rhine and duke of Bavaria, commonly known as Prince Rupert of the Rhine (1619–1682).

#### Bologna Vial

A Bologna vial is an unannealed glass vial of any form and of any kind of glass that is much thicker at the bottom than at the top. This glass can be hit with a blunt instrument without breaking, but if the inside or outside surface is scratched, the stresses inside the glass cause the vial to explode.

## *Glass for Medical Uses*

Easy to clean and sterilize, glass is a preferred material for all kinds of medical purposes. One of the more quaint—and today bizarre—uses of glass in medicine is related to the practice of bloodletting, or phlebotomy.

### Cupping Glass

Possibly Islamic, 8th–11th century

Blown glass

65.1.31

### Mortar (Fragment) and Pestle

Europe, 17th century

Blown and hot-worked glass

2006.3.78, gift of The Wunsch Foundation Inc.

This mortar and pestle were found in Amsterdam.

### Woman's Urinal

Northern Europe, 18th century

Blown glass

69.3.13

### Five Bleeding Instruments in a Travel Case

England, about 1810–1830

Blown glass; wood, brass, steel, chamois, velvet

79.2.2

This set includes a brass scarificator, used to make multiple cuts in a patient's skin, and several cupping glasses. The blood removed from the body during a bloodletting procedure could be caught in shallow bowls or in small glass cups. Heated air created a vacuum inside the cups, which caused the blood to flow into them. This practice was called cupping.

### Cupping Glass

United States or possibly England, 19th century

Blown glass

76.4.4, gift of Alfred Wolkenberg

## *Glass Related to the Eye and Ear*

### Optical Model of the Eye

Probably France, 19th century

Optical glass; brass, lacquered metal (probably copper)

2004.3.40

### Case Illustrating the Making of Prosthetic Glass Eyes

United States, Needham, Massachusetts, Tamworth Associates,  
1929–1940

Lampworked glass; display box

52.4.58

This case was created for display in a doctor's office or for use by a traveling salesman. It shows the steps involved in making glass eyes, from the original rods to the finished products. Each artificial eye was made for a specific patient (to match his or her remaining eye), and the coloring was carefully applied. During the Renaissance, European

lampworkers produced glass eyes by heating and manipulating hollow glass rods over the flame of a lamp. Itinerant craftsmen brought the technique to America in the 19th century, and by 1900, there were makers of glass eyes in all of the major Eastern cities. Today, most artificial eyes are made of plastic.

Prosthetic Eyes

Japan, Amagasaki, Iwaki Glass Company, 1926

Flameworked glass

61.6.41, gift of Kuranosuke Iwaki

Prosthetic Eye

United States, Needham, Massachusetts, Tamworth Associates,  
1929–1940

Flameworked glass

52.4.58

*Ear Level*

**Jocelyne Prince** (Canadian, b. 1963)

United States, Providence, Rhode Island, 1994

Blown glass; steel, motor oil, cotton batting, metal; assembled

98.4.18

This eccentric object was inspired by medical models of the ear and other parts of the body.

*Apotropaic Glass, or Glass That Averts Evil*

Among the earliest objects made in glass are eye beads, which date to the third millennium B.C. Like modern eye beads, they are meant to deflect the evil eye, which is believed to cause sickness in people and in animals. The evil eye is caused by envy and jealousy, and it may be intentionally or unintentionally given. An eye bead offers the wearer protection from the evil eye, as well as general protection against negative energy and ill will.

Eye Beads

China, 1122–221 B.C.

Hot-worked glass

51.6.556, 68.6.3

Eye Beads

Attributed to Iran, 10th century B.C.

Hot-worked glass

74.1.4

Eye Bead

Probably Egypt or possibly Near East, 8th–4th century B.C.

Core-formed glass

54.1.144

Eye Bead

Eastern Mediterranean, probably Carthage or possibly Egypt,  
6th–3rd century B.C.

Core-formed glass, trail-decorated

54.1.23, gift of Fahim Kouchakji

Eye Beads and Pendant

Eastern Mediterranean or Carthage, 600–250 B.C.  
Core-formed glass, trail-decorated  
54.1.140, .143

Eye Beads  
China, 4th century B.C.  
Hot-worked glass  
51.6.554, .572

*Wedjet*-Eye Ring  
Egypt, 3rd–1st century B.C.  
Hot-worked glass or glassy faience  
76.1.95, gift of Carl Berkowitz and Derek Content  
The *wedjet* eye is the best known of the Egyptian protective amulets, and it was believed to have strong healing powers. It represents the eye of the falcon-headed god Horus, and it was worn in life and in death.

Eye Bead  
Roman Empire, 1st century B.C.–1st century A.D.  
Fused and hot-worked mosaic glass  
54.1.152

*Magatama* Amulets  
Japan, Nara period, 710–794  
Molded glass, cut  
61.6.1, .4, .58; 71.6.14, gift of Dorothy Blair  
*Magatama* are traditional curved beads that are said to represent the human spirit, and the wearer is believed to have the special protection of the gods. In modern Japan, the form of the *magatama* is still used as a visual representation of the human spirit.

Eye Beads  
Italy, 19th century  
Fused and hot-worked mosaic glass  
73.3.48, .156

Eye Beads  
Possibly Middle East, 19th or 20th century  
Hot-worked glass  
70.3.240

Witch Ball  
United States, about 1806–1853  
Blown glass  
50.4.469  
The evil eye is not the only source of ambient negativity and ill will. “Witches,” for example, can include anyone who actively wishes misfortune or sickness on others, or who causes others to suffer. The witch ball is believed to be the ancestor of the Christmas tree ornament, which was originally meant to protect gifts from outsiders who might covet them. In the United States, witch balls were traditionally filled with colorful bits of paper and string to confuse and repel witches who might be lurking around the house.

Witch Ball  
United States, Midwest, about 1816–1830  
Optic-blown glass  
50.4.103

Witch Ball  
United States, 1820–1860

Blown glass  
62.4.37

Witch Ball  
United States, 19th century  
Optic-blown glass  
50.4.287

Eye Beads  
Turkey, Istanbul, about 1968  
Hot-worked glass  
75.3.37

In addition to beads with the symbol of the eye, any brilliant blue bead is effective in dispelling the evil eye.

Eye Beads  
Turkey, Izmir vicinity, about 1991  
Hot-worked glass  
91.3.105, gift of M. Vest and T. Sode

*Maşallah* Bird on Globe Holding An Eye Bead  
Turkey, Eskişehir, Eskişehir Prison, about 1997  
Glass beads, heart-shaped glass evil eye bead; plastic beads and spacers, nylon thread, cardboard  
2007.3.62, gift of Stephen P. Koob  
*Maşallah*—a Turkish word adapted from the Arabic *ma sha' Allah* (“what wonders has God willed”)—is an expression of thanks for a good omen. The *maşallah* birds, which are made by prison inmates, protect drivers.

*Witch Pot*  
**Laura Donefer** (Canadian, b. 1955)  
Canada, Harrowsmith, Ontario, 1999  
Blown glass, beads; mixed media  
2000.4.32, gift of the artist  
Adorned with antlers and stocked with dirt, bones, and other natural materials, this vessel creates its own energy and symbolic power.

## *Scientific and Nonscientific Instruments*

Passion Bottle  
Attributed to **Alexandre Soudart** (French, about 1850–1914)  
France, Sars-Poteries, second half of the 19th century  
Blown and lampworked glass; water  
77.3.25, gift of Countess J. de Vogüé  
This bottle is based on Florentine liquid-in-glass thermometers, which make use of a physical principle first observed by Galileo. As the temperature of the water changes, its density also changes, forcing the glass floaters to descend or ascend. All of the lampworked figurines are associated with the symbolism of the Passion of Christ.

Geissler Tube and Stand  
Probably Germany or England, 1870–1915  
Lampworked glass; wood stand  
97.3.24  
The German physicist Heinrich Geissler (1814–1879) is best known for his invention of sealed glass tubes (called Geissler tubes) in 1857. He created a bluish light by using an electrode to activate the gas sealed inside the tube. The Geissler tube was the precursor of such everyday

necessities as fluorescent lamps, neon signs, and television cathode-ray tubes.

Four Hydrometers in a Case

France, Paris, Salleron Dujardin, 1903

Lampworked glass; mercury, travel case

71.3.174, gift of the Taylor Instrument Company

A hydrometer is an instrument used for determining the specific gravity of liquids. These glass examples consist of a cylindrical stem and a bulb weighted with mercury to make it float upright. The liquid to be tested is poured into a tall jar, and the hydrometer is gently lowered into the liquid until it floats freely. Hydrometers usually contain a paper scale inside the stem so that the specific gravity (where the liquid touches the stem) can be determined.

*Bubble Holder*

**Peter Ivy** (American, b. 1969)

United States, Providence, Rhode Island, 1995

Blown and hot-worked glass; soap bubble; assembled

98.4.22

Peter Ivy constructed this elaborate holder for the most ephemeral of objects: a soap bubble. The soap bubble lasts only for a few hours at most before it needs to be remade.

*Meitnerium IV*

**Richard Craig Meitner** (American, b. 1949)

The Netherlands, Amsterdam, 1997

Blown glass; quartz, wood, gilding

2003.3.4, gift of Barry Friedman Ltd., New York

This piece was inspired by the strange Victorian pseudo-scientific instruments

used to measure different phenomena. Richard Meitner presents a sample of quartz, or rock crystal, which is symbolic of magnetic energy and purity.

*Reliquary Glass and Glass for the Departed*

Glass has been used throughout its history to store and protect valuable specimens, keepsakes, and even human remains.

Reliquary Beaker (*Krautstrunk*)

Southern Germany or Austria, Tyrol, late 15th–early 16th century

Blown glass; wax, bone, fabric

70.3.23

This object was made as a functional drinking vessel that was later reused as a reliquary. Drinking vessels, including goblets, have been found buried in the walls of churches, with their sacred contents—often physical remains—sealed inside. We do not know exactly what is inside this reliquary and we do not plan to open it.

Reliquary for Saint Margaret

Probably Spain, about 1578

Blown glass; brass mount

61.3.110

The reliquary is inscribed, in Latin, “Hoc do Antonius Maria Tosilerius donavit Divae Margarite 1578” (I, A. M. Tosilerius, give this to Saint Margaret, 1578).

### Specimen Glass

United States, possibly Philadelphia, Pennsylvania, about 1820–1840

Blown glass; painted metal lid

2005.4.32, gift of Harley N. Trice

The silver tag attached with a string to the stem of this glass bears the words “The Wistar/1465/Institute.” Inside the glass is a fragment, possibly of stone. The Wistar Institute is a biomedical research facility in Philadelphia.

### *Funny Jars*

**Nancy Jamison Adams** (American, 1852–1932)

**Grace Steen Norman-Wilcox** (American, 1898–1995)

United States, Ohio and California, about 1860–1880 and about 1935–1955

Found blown glass bottles; lacquered tin lids, mixed media

85.4.28, .29, gift of Grace Norman-Wilcox

These keepsake jars were made by Adams and her granddaughter. Reliquary glasses can preserve human remains or other sacred contents, or they can hold cherished memories.

### Copy of a Patent for Preserving the Dead in Glass

Patent No. 748,284, awarded to Joseph Karwowski, Herkimer, New York by the U.S. Patent and Trademark Office, dated December 29, 1903.

The awarding of this patent is truly a mystery because the method described by Karwowski cannot work: the body would be burned by the molten glass used to encase it. The inventor wrote that this patent “has for its object the provision of a means whereby a corpse may be hermetically incased within a block of transparent glass . . . so that it will be prevented from decay and will at all times present a life-like appearance.”

### Illustration of a Glass Casket from a Trade Catalog

United States, Muskogee, Oklahoma, DeCamp Consolidated Glass Casket Company, 1929

Glass coffins, which were cushioned with yards of fabric, were not meant to display the body but rather to hygienically protect it from the elements.

### *Skull*

**Raul Goldoni** (Italian, b. 1919)

Italy, Murano, 1970

Hot-sculpted glass

81.3.37

Uranium glass (also called Vaseline glass) is characterized by intense yellow to green colors that fluoresce bright green under ultraviolet light. It is made by adding uranium to the glass batch. Although most uranium glass will register as radioactive (as can be seen on the Geiger counter placed among these glasses), the amount of radiation is negligible, and the glass is considered safe to handle. The Bohemian glassmaker Josef Riedel is often credited with the first production of uranium glass in 1830. Although it was known as a colorant for glass in England as early as 1817, the first documented example of British

uranium glass dates to 1837. By 1850, uranium glass was being produced by European and American manufacturers.

Bottle

Bohemia, about 1840–1850  
Blown uranium glass, cut  
54.3.50, gift of Ellen D. Sharpe

Covered Sugar Bowl

England, about 1840–1860  
Pressed uranium glass  
66.2.3, gift of Mrs. Alan Cornwell

Wineglass

Probably Bohemia, about 1850  
Blown uranium glass, cut  
79.3.916, gift of The Ruth Bryan Strauss Memorial Foundation

Pocket Beaker

Bohemia, 1850–1875  
Mold-blown uranium glass, cut, engraved  
70.3.320, gift of Jerome Strauss  
The flattened shape of the beaker enabled it to fit comfortably inside a pocket.

Beaker

Austria, Vienna, Fischer, Furchtegott Leberecht, about 1910–1920  
Mold-blown uranium glass, enameled, cut, gilded  
95.3.33

Pair of “Vintage” Pattern Candlesticks

United States, 1920–1930  
Blown uranium glass, engraved  
96.4.45, gift of Edward R. Meddaugh

Salt and Pepper Shakers

United States, Jeannette, Pennsylvania, Jeannette Glass Company, about 1928–1932  
Pressed uranium glass; metal lids  
98.4.147, gift of the Long Island Depression Glass Society, Ltd.

Beads

Possibly Czechoslovakia, 1930s  
Molded uranium glass  
91.3.233, gift of Mrs. Arline B. Oliphant in name of Naisha Butler

## *Neon Glass*

*Frosted Radio Light*

**Paul Seide** (American, b. 1949)  
United States, New York, New York, 1986  
Blown, cased, hot-worked glass; neon, mercury vapor, radio transmitter  
87.4.41, gift of Mike Belkin  
Paul Seide is one of the few pioneering glass artists who began to explore neon in the 1970s. Although we see neon everywhere in the form of building and product signs, Seide and others wanted to use it as a medium for sculpture and installations. Inspired by the light work of

such well-known artists as Dan Flavin and Bruce Nauman, glass artists developed new ways in which neon could be integrated into art. As is typical of Seide's work, the colors of this sculpture change when it is touched.

## *Silvered Glass and Dichroic Glass*

Silvered glass, also called mercury glass, is double-walled glassware with a silver coating inside its walls. Dichroic (two-color) glass changes color in different kinds of lighting. Many 19th-century glass manufacturers attempted to produce silvered glass by using tin, lead, bismuth, mercury, and various compounds. Early examples employed mercury, based on the techniques used for silvering mirrors, but these were unsuccessful. In 1849, the London retailers Hale Thomson and Edward Varnish were granted a patent for their method of making silvered glass.

### Footed Tumbler

England, London, James Powell & Sons (Whitefriars) Ltd. for Hale Thomson,

about 1850–1860

Mold-blown glass, silvered, engraved

66.2.9, gift of Mr. Jerome Strauss

Silvered glass was commonly made with solutions of silver nitrate combined with some form of glucose. The silvering liquid was poured into the space between the walls of the glass vessel through a hole in the bottom, and it adhered to the glass.

### Cased Goblet

England, London, James Powell & Sons (Whitefriars) Ltd. for E. Varnish and Company, about 1850–1860

Blown and cased glass, silvered, cut

79.2.169, bequest of Jerome Strauss

In this goblet, the outer layer of blue glass has been cut away to reveal the silvered glass beneath.

### Pair of Cased Vases

England, London, James Powell & Sons (Whitefriars) Ltd. for E. Varnish and Company, about 1850–1860

Blown and cased glass, silvered, cut

2006.2.6, gift of Freeman T. Freeman

### Cased Vase

England, London, James Powell & Sons (Whitefriars) Ltd. for E. Varnish and Company, about 1850–1860

Blown and cased glass, silvered

60.2.43

### Mug

Possibly Austria, about 1850–1870

Mold-blown glass, silvered

79.3.826, gift of The Ruth Bryan Strauss Memorial Foundation

### Cup and Saucer

Bohemia, mid-19th century

Mold-blown glass, silvered, cut, painted

76.3.9

Vase with Cartouche of Boy in Oriental Costume

**Hugo Wolf** (Bohemian, dates unknown)

Bohemia, Iglau, about 1875–1895

Blown glass, silvered, enameled

2002.3.12

“Alexandrite” Vase

**Heinrich Hussman** (German, 1897–1981)

Czechoslovakia, Karlovy Vary, Ludwig Moser & Söhne, about 1928–1930

Mold-blown neodymium glass, cut

2006.3.2

Hussman invented this type of dichroic glass, which he called Alexandrite. The glass changes from pinkish purple in incandescent light to teal blue in fluorescent light. The color is made by adding the rare-earth element neodymium to the glass batch.

## *Depictions of the Natural World in Glass*

Materials such as clay, wood, stone, and fiber, which can be collected in nature and easily fashioned into objects, may seem more suited than glass to depictions of the natural world. Yet glass is a versatile material than can assume almost any color and imitate almost any surface.

### Beaker with Quail

England, London, workshop of James Giles, about 1760–1770

Blown glass, gilt decoration

64.2.3

### Diorama with Nuns in a Grotto

France, Nevers, 18th–19th century

Flameworked glass; cardboard, paper, wax

61.3.12, gift of Mrs. Howell Howard

Making complex scenes (most often of religious subjects) from glass and other materials was a popular pastime for cloistered nuns.

### Goblet with Spiders

Bohemia, about 1840–1860

Blown glass, stained, engraved

91.3.43, gift of Mrs. Jerome Strauss

### Landscape Glass

United States or possibly England, about 1845–1865

Cut glass lenses; tortoiseshell holder

74.4.98

Colored lenses and reducing glasses were popular for viewing nature from the mid-18th to late 19th centuries. They were called “Claude Lorrain” glasses, after the 17th-century French landscape painter’s atmospheric and complex multi-hued images. Period advertisements describe the landscape glass as “pleasing and useful for viewing clouds, eclipses, and landscapes.”

### Tooth Necklace

Northern or central Europe, probably 1850–1900

Molded glass; animal teeth, shell, fiber

62.3.23

### Pair of “Devil’s Fire” Paperweights

United States, about 1880–1900

Blown and cased glass, cut

78.4.170, .171, gifts of The Honorable and Mrs. Amory Houghton

An unusual decorative theme for paper-weights is the so-called devil’s fire, as

it is known in New Jersey, which is related to the natural phenomena of foxfire and the will-o’-the-wisp. All of these phenomena refer to the soft, glowing lights that are often seen in forests and marshes at night. These lights are thought to be created by bioluminescent fungi.

### Sample of Fiberglass Hair

United States, Corning Glass Works, Corning, New York, 1936

Fiberglass; string

2002.4.20, gift of Pat and Tom James

### *Polyvitrified Huffian*

**Hugh Wesler** (American, b. 1947)  
United States, Madison, Wisconsin, 1979  
Blown glass; display cabinet  
79.4.115, gift of Mr. and Mrs. George B. Wesler  
This is a careful fabrication of a fictional animal skull.

*Crustacean*

**Alfredo Barbini** (Italian, 1912–2007)  
Italy, Murano, about 1985  
Hot-sculpted glass  
86.3.10

*Insects*

**Vittorio Costantini** (Italian, b. 1944)  
Italy, Venice, about 1985–1989  
Flameworked glass  
86.3.66, 89.3.15, 91.3.20, 89.3.25, gift of Susanne K. Frantz

*Scallop Shell*

United States, Corning, New York, Steuben, 1989  
Molded glass  
2004.4.329, The Robert E. and Carol J. Nelson Collection

*Terebra Shell*

**Paul Schulze** (American, b. 1934)  
United States, Corning, New York, Steuben, 1991  
Molded glass  
2004.4.333, The Robert E. and Carol J. Nelson Collection

*Segmentation*

**Michael Scheiner** (American, b. 1956)  
United States, Providence, Rhode Island, 1991  
Mold-blown glass; fiberglass, epoxy resin  
92.4.109  
The hornlike form of this sculpture inspired its inclusion in this exhibition. Treasures of the traditional cabinet of curiosities usually included horns and tusks of exotic and legendary animals.

*Tail*

**Kiki Smith** (American, born in Germany, 1954)  
With the assistance of Michael Scheiner  
United States, New York, New York, 1997  
Cast glass  
2004.4.71  
In her art work, Kiki Smith explores the human body—its skeletal structure and especially its organs and fluids—with the detached eye of the scientist and the poetic mind of the artist. This is a depiction of that strange and fascinating anatomical part which is the human tailbone.

*The Murmur of the Bees*

**Michael Rogers** (American, b. 1955)  
United States, Rochester, New York, 2006  
Engraved and painted antique wood and glass display case; embroidered cotton  
L.1.4.2007, lent by the artist  
Throughout his career, Michael Rogers has admired and been inspired by the life work of Leopold and Rudolf Blaschka, the Bohemian father-and-son lampworkers who used glass to create thousands of scientifically-accurate models of botanical specimens and invertebrates. After acquiring a display case that was once used in the exhibition of the Blaschkas' Glass Flowers at Harvard University, Rogers decided to make

a work about the natural world in honor of the artists. In *The Murmur of the Bees*, Rogers engraved and painted images of bees and their anatomy, copied from 19th-century Victorian illustrations, on the glass of the antique display case. On the inside of the case, white cotton, quilted in the form of a honeycomb by Rogers's wife, Bette, reflects the shadows cast by the engraved images. The effect is that of a busy, silent, and ghostly hive. Bees are associated with royalty, wealth, industry, and obedience. In some religions, they are also a symbol of the soul.