



THE CORNING MUSEUM OF GLASS

# Glass

A Pocket Dictionary of Terms  
Commonly Used to Describe  
Glass and Glassmaking

REVISED EDITION

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*Les Pins (Pines)*, blown, applied, cut, engraved.  
France, Emile Gallé, dated 1903. H. 17.8 cm (88.3.31).  
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COMPILED BY  
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THE CORNING MUSEUM OF GLASS

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# PREFACE

This short dictionary, originally published in 1993, is intended to help students and collectors of glass to understand some of the unfamiliar words that they may encounter in books, catalogs, and museum labels. It contains definitions of words and phrases that describe glassmakers' materials, techniques, tools, and products. Words that appear in **boldface** type in the definitions have their own entries elsewhere in the dictionary.

The illustrations have been selected from objects in The Corning Museum of Glass. They are described on pages 91–94.

Many of the definitions in the original edition were based on the glossary in the catalog that accompanied the exhibition "Treasures from The Corning Museum of Glass," which was shown at the Yokohama Museum of Art in 1992. The catalog was produced jointly by the Corning and Yokohama museums, and I am grateful to our Japanese colleagues for allowing the glossary to be revised and enlarged for the original *Pocket Dictionary*.

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DAVID WHITEHOUSE

*Executive Director*

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**A** **Abrasion:** The technique of **grinding** shallow decoration with a wheel or some other device. The decorated areas are left unpolished.

**Acanthus:** (1) A group of Mediterranean, Asian, and African plants with large, spiny leaves; hence (2) ornament that resembles the leaves of the species *Acanthus spinosus*.



*Acid-etched vase. France, Maurice Marinot, about 1934. H. 17 cm.*

**Acid etching:** The process of etching the surface of glass with **hydrofluoric acid**. Acid-etched decoration is produced by covering the glass with an acid-resistant substance such as wax, through which the design is scratched. The object is then immersed in hydrofluoric acid, or a mixture of dilute hydrofluoric acid and potassium fluoride is applied to etch the exposed areas of glass. Acid etching was first developed on a commercial scale by Richardson's of Stourbridge, England, which registered a patent in 1857. An effect superficially similar to **weathering** can be obtained by exposing glass to fumes of hydrofluoric acid to make an all-over matte surface.

**Acid polishing:** The process of making a glossy, **polished** surface by dipping the object, usually of **cut** glass, into a mixture of **hydrofluoric** and sulfuric acids. This technique was developed in the late 19th century.

**Acid stamping:** The process of **acid-etching** a trademark or signature into glass after it has been **annealed**, using a device that resembles a rubber stamp to apply the acid.

**Aeolipile** (from Greek): The name sometimes given to globular or pear-shaped objects with a narrow neck and mouth. The function of these objects is uncertain. The word was originally applied to a device, invented in the second century B.C., in which a closed, water-filled vessel, when heated, was made to rotate by jets of steam issuing from one or more projecting, bent tubes. Most surviving aeolipiles, however, are Islamic; they are believed to be containers. *See also Grenade.*

**Agate glass:** *See Calcedonio.*

**Air trap, air lock:** An air-filled void, which may be of almost any shape. Air traps in stems are frequently tear-shaped or elongated and spirally twisted. *See Diamond air trap, Pegging, and Twist.*

**Air twist:** *See Twist.*

**Alabaster glass:** A type of translucent white glass, similar to **opal glass**, first produced in Bohemia in the 19th century. In the 1920s, Frederick Carder (1863–1963) introduced alabaster glass at Steuben Glass Works in Corning, New York. Carder's alabaster glass has an **iridescent** finish made by spraying the object with stannous chloride and then reheating it.

**Alabastron** (from Greek), **alabastrum** (from Latin): A small bottle or flask for perfume or toilet oil, usually with a flattened rim, a narrow neck, a cylindrical body, and two small handles.

**Ale glass:** A type of English drinking glass for ale or beer. Ale glasses, first made in the 17th century, have a tall and conical cup, a stem, and a foot. They may be **enameled**,



**engraved**, or **gilded** with representations of hops or barley.

**Alembic** (from Arabic *al-anbiq*, “the still”): An apparatus used for distilling.

**Alkali**: In glassmaking, a soluble salt consisting mainly of potassium carbonate or sodium carbonate. It is one of the essential ingredients of **glass**, generally accounting for about 15–20 percent of the **batch**. The alkali is a **flux**, which reduces the melting point of the major constituent of glass, **silica**.

**Almorraja** (Spanish), **almorratxa** (Catalan): A rose water **sprinkler** with many spouts, made in northern Spain between the 16th and 18th centuries.

**Amberina**: A type of **Art Glass** that varies in color from amber to ruby or purple on the same object. This shaded effect is due to the presence of gold in the **batch**. The object is amber when it emerges from the **lehr**, but partial reheating causes the affected portion to become red or purple. Amberina, developed by Joseph Locke (1846–1936) at the New England Glass Company in East Cambridge, Massachusetts, was patented in 1883.

**Amen glass**: A rare type of English wineglass with a drawn stem. The bowl is decorated by **diamond-point engraving** with verses from the Jacobite hymn followed by the word “Amen,” and with emblems associated with the Jacobite uprising of 1715. *See also* **Jacobite glass**.

**Amphora** (from Latin): A jar with two handles.

**Amphoriskos** (from Greek, “small amphora”): A small jar with two handles, used for perfume or toilet oil in the pre-Roman and Roman periods.

**Amulet**: A charm believed to protect the wearer against evil or to bring good fortune.

**Ancient glass:** A term frequently used to mean all pre-Roman and ancient Roman glass.

**Annagelb, Annagrün** (German): Two types of glass colored by adding uranium oxide to the **batch**. *Annagelb* is yellow, and *Annagrün* is green. They were developed by Josef Riedel (1816–1894), who named them for his wife, Anna, and they were made from 1834. *See also Uranium glass.*

**Annealing:** The process of slowly cooling a completed object in an auxiliary part of the glass **furnace**, or in a separate furnace. This is an integral part of glassmaking because if a hot glass object is allowed to cool too quickly, it will be highly strained by the time it reaches room temperature; indeed, it may break, either as it cools or at some later date. Highly strained glasses break easily if subjected to mechanical or thermal shock. *See also Lehr.*



**Applied decoration:** Heated glass elements (such as **canes** and **trails**) applied during manufacture to a glass object that is still hot, and either left in relief or **marvered** until they are flush with the surface. *See also Marquetry and Pick-up decoration.*

**Appliqué:** In glassworking, a **bit** of hot glass, usually small and disk-shaped, attached to the surface of an object for decorative purposes. Appliqués can be decorated by pressing them in a **mold** before they are attached, or they can be stamped after they are attached.

*Amphoriskos. Eastern Mediterranean, 2nd–1st century B.C. H. 24 cm.*

**Arabesque:** (1) In Islamic art, an intricate pattern of interlaced ornament consisting of curvilinear stems and tendrils that terminate in leaves; (2) in Renaissance and later European art, a pattern of interlaced curvilinear stems, scrolls, and leaves, sometimes containing animal motifs.

**Argand lamp:** An oil-burning lamp with a glass **chimney**, named for the Swiss physicist and inventor Aimé Argand (1750–1803), who invented the tubular wick burner in 1782. Argand lamps are efficient because the tubular wick feeds oxygen to the flame and the chimney increases the draft.

**Art Deco** (from French, Exposition Internationale des Arts Décoratifs et Industriels Modernes, an exhibition in Paris in 1925): A style of design that originated in the 1920s and was popular in western Europe and the United States in the 1930s. Art Deco is distinguished by simple, streamlined shapes and frequently by non-representational motifs.



*Art Nouveau vase.  
France, Emile Gallé,  
1903. H. 17.8 cm.*

**Art Glass:** (1) Several types of glass with newly developed surface textures, shaded colors, or **casing**, made in the United States from about 1870 and in Europe between about 1880 and 1900; (2) more generally, especially when written “art glass,” any ornamental glassware made since the mid-19th century.

**Art Nouveau** (from French, “new art”): An international late 19th- and early 20th-century decorative style charac-

*Aurene vase. U.S., Frederick Carder, about 1910. H. 17.1 cm.*



terized by organic foliate forms, sinuous lines, and non-geometric, “whiplash” curves. Art Nouveau originated in Europe in the late 1880s, and reached the peak of its popularity around 1900. In America, it inspired, among others, Louis Comfort Tiffany (1848–1933). The name is derived from La Maison de l’Art Nouveau, a gallery for interior design that opened in Paris in 1896. The German term for Art Nouveau is *Jugendstil*.

**Aryballos** (from Greek): A small globular flask with two handles, used by the ancient Greeks and Romans to contain toilet oil.

**At-the-fire:** The process of reheating a **blown** glass object at the **glory hole** during manufacture, to permit further inflation, manipulation with **tools**, or **fire polishing**.

**At-the-flame (at-the-lamp, lampworking):** See **Flame-working**.

**Aurene:** A type of ornamental glass with an **iridescent** surface made by spraying the glass with stannous chloride or lead chloride and reheating it under controlled atmospheric conditions. Aurene was developed by Frederick Carder (1863–1963) at Steuben Glass Works in Corning, New York, in 1904.

**Aventurine** (from French *aventure*, “chance”): Translucent glass with sparkling inclusions of gold, copper, or chromic oxide, first made in Venice in the 15th century. Aventurine glass imitates the mineral of the same name, a variety of translucent quartz spangled with mica or other minerals.

**Avolio** (Italian): A small quantity of glass that joins the **stem** and the **foot** of **goblets** and similar forms.

**B** **Baluster**: A type of English drinking glass of the late 17th and 18th centuries, with the stem in the form of a baluster. (In architecture, a baluster is a short vertical support with a circular section and a vasselike outline.)



*Baluster goblet.  
England, probably  
1707. H. 23.5 cm.*

**Balustroid**: A variety of **baluster** glass with an elongated stem, current in England between about 1725 and 1760.

**Bandwurmglas** (German, “tapeworm glass”): A variety of **Stangenglas** decorated with a notched **trail** wound spirally, like a worm, around the wall. Glasses of this type were made in Germany between the 15th and 17th centuries.

**Bar:** A single piece of glass formed by **fusing** several **canes** or **rods**. A bar can be cut into numerous slices, all with the same design, to be used as **inlays** or appliquéés, or in making **mosaic glass**.

**Barilla** (from Spanish): (1) A plant, *Salsola soda*, which grows extensively on seashores in the western Mediterranean and the Canary Islands; hence (2) an impure **alkali** made by burning plants of this and related species, formerly used in the manufacture of soap and **glass**.

**Base-ring:** See **Foot-ring**.

**Batch:** The mixture of raw materials (often **silica**, **soda** or **potash**, and **lime**) that is melted in a **pot** or **tank** to make **glass**. **Cullet**, as well as minor ingredients such as colorants, can be added to the batch to help the melting process.

**Battledore:** A glassworker's tool in the form of a square wooden paddle with a handle. Battledores are used to smooth the bottoms of vessels and other objects.

**Battuto** (Italian, "beaten"): The word used to describe the multifaceted **wheel-engraved** surface that resembles beaten metal. See also *Martelé*.

**Bear jar:** A 19th-century American **pressed glass** jar in the form of a bear, probably for bear grease.

**Bench:** See **Chair**.

**Berkemeyer** (German): A type of drinking glass, similar to a *Römer*, but with a funnel-shaped mouth. It was made in Germany and the Low Countries in the 16th and 17th centuries.

**Berry set:** A large bowl with matching smaller bowls, used for serving fruit and other desserts.



*Biedermeier beakers.  
Austria, about 1811–1828.  
H. (tallest) 11 cm.*

**Biedermeier style:** A style of decorative art favored by the middle class in Germanic Europe between about 1815 and 1848. The name is derived from Gottlieb Biedermeier, the pseudonymous author of the satirical verses of Ludwig Eichrodt (1827–1892) and Adolf Kussmaul (1822–1902). During the period in which the Biedermeier style was popular, glassmaking revived in Bohemia, where new kinds of glass such as **Lithyalin** and elaborate **flashed, wheel-engraved**, and **enameled** glasses were produced for middle-class consumers.

**Bird fountain:** A **flameworked** centerpiece or mantel ornament consisting of a tall fountain with two birds perched on the rim, and two or more shorter pedestals, each with a bird on the top. The birds have tails made of glass fibers. Bird fountains were made in England in the mid-19th century.

**Bit:** A mass of molten glass, usually small and freshly gathered from the **furnace**. In a team of glassworkers, the bit gatherer removes bits from the furnace, using a bit iron. Bits are also known as gobs.

**Bitters bottle:** A bottle for bitters, alcoholic beverages flavored with bitter herbs. Bitters, sold as medicine rather than as liquor (and for this reason, taxed more

leniently), were immensely popular in America in the second half of the 19th century.

**Black bottle:** A popular term for bottles of iron-rich dark green or dark brown glass, the color of which protected the contents. “Black” glass was first made in England in the mid-17th century.

**Blank:** Any cooled glass object that requires further forming or decoration to be **finished**.

**Blankschnitt** (German, “smooth cut”): A style of **engraved** decoration in which the relief effect is enhanced by **polishing** the ground part of the **intaglio**. *Blankschnitt* decoration is frequently found on glasses engraved in the German city of Nuremberg in the 17th and 18th centuries.

**Bleeding glass:** *See Cupping glass.*

**Blobbing:** The technique of decorating hot glass by dropping onto the surface blobs of molten glass, usually of a different color or colors.

**Block:** A tool made from a block of wood hollowed out to form a hemispherical recess. After it has been dipped in water to reduce charring and to create a “cushion” of steam, the block is used to form the **gather** into a sphere before it is inflated.

**Blowing:** The technique of forming an object by inflating a **gather** or **gob** of molten glass on the end of a **blowpipe**. Traditionally and in modern furnace working, the **gaffer** blows through the tube, slightly inflating the gob, which is then manipulated into the required form by swinging it, rolling it on a **marver**, or shaping it with **tools** or in a **mold**. It is then inflated to the desired size. In **flameworking**, one end of the glass tube is heated and closed immediately, after which the worker blows into the other end and manipulates the hot glass.



**Blown three-mold glass:** Glassware made in America between about 1815 and 1835 that was **blown** in a full-size **mold** that (despite the popular name) consisted of between two and five pieces.

**Blowpipe:** An iron or steel tube, usually four to five feet long, for **blowing** glass. Blowpipes have a mouthpiece at one end and are usually fitted at the other end with a metal ring that helps to retain the **gather**.

**Borosilicate glass:** Glass in which the **flux** is boric oxide instead of **alkali**. The first borosilicate glass was created by Otto Schott in 1882. It has a low coefficient of expansion and therefore withstands sudden changes of temperature.

**Borsella** (Italian): *See Jacks.*

**Bottle glass:** A common, naturally colored, greenish or brownish glass. The color is characteristic of glass that

*Brilliant-cut vase. U.S.,  
J. Hoare and Company,  
1910–1918. H. 50.2 cm.*



includes traces of iron found in the **silica** used as the major ingredient. Such glass is inexpensive to produce, and it is used for such items as bottles, when good quality is not essential. Sometimes, additional iron, in the form of iron oxide (or other materials), is employed to darken the color.

**Bow lathe:** A primitive lathe powered by the use of a bow. The bowstring is looped around the spindle of the lathe and causes it to rotate as the bow is drawn backward and forward.

**Bowl:** (1) A rounded, hollow vessel; (2) the uppermost part of a **goblet**, **tazza**, or wineglass.

**Breakfast set:** A sugar bowl and matching **creamer**.

**Brilliant-cut glass:** Objects with elaborate, deeply **cut** patterns that usually cover the entire surface and are highly **polished**. In the United States, the vogue for brilliant-cut glass lasted from about 1880 to 1915.

**Broad glass:** See **Cylinder glass**.

**Broken-swirl ribbing:** **Mold-blown** decoration that has two sets of ribs. This is made by **blowing** the **gather** in a vertically ribbed **dip mold**, extracting and twisting it to produce a swirled effect, and then redipping it in the same or another dip mold to create a second set of ribs.

**Bubble:** A pocket of gas trapped in glass during manufacture. The term is used both for bubbles introduced intentionally (known as **air traps** or beads) and for unwanted bubbles created during the melting process. Very small bubbles are known as **seeds**. See also **Pulegoso**.

**Bull's-eye pane:** A glass **pane** with a **pontil mark** surrounded by concentric ridges. This was the central part of a large pane of **crown glass**.



*Burmese lamp. U.S., Mt. Washington Glass Company, about 1885–1895. H. 48.5 cm.*

**Burmese:** A type of translucent yellow-shading-to-pink **Art Glass** made by the Mt. Washington Glass Company in New Bedford, Massachusetts, between 1885 and about 1895.

**Burner:** The part of a lamp where the flame is produced.

**Burning fluid:** A mixture of alcohol and turpentine, used as lamp fuel in the 19th century. Burning fluid, which was dangerously explosive, was replaced by kerosene in the late 1850s.

**C Cable:** A pattern resembling the twisted strands of a rope.

**Caddy:** A small, lidded container, usually for tea.

**Cage cup:** An ancient Roman vessel decorated by **undercutting** so that the surface decoration stands free of the body of the glass, supported by struts. The vessel appears, therefore, to be enclosed in an **openwork** cage. Cage cups are sometimes known as **diatreta** or *vasa diatreta*.

**Calcedonio** (Italian, “chalcedony”): Glass marbled with brown, blue, green, and yellow swirls in imitation of chalcedony and other banded semiprecious stones. *Calcedonio* was first made in Venice in the late 15th century.

**Came:** A grooved strip of lead or (rarely) another metal, generally with an H-shaped cross section, used to join separate parts of glass windows.

**Cameo glass:** Glass of one color covered, usually by **cas-**  
**ing**, with one or more layers of contrasting color(s). The  
outer layers are **acid-etched, carved, cut, or engraved**  
to produce a design that stands out from the back-  
ground. The first cameo glasses were made by the  
ancient Romans. The genre was revived in England and,  
to a lesser extent, in America in the late 19th century.

*Cameo glass  
plaque. England,  
George Woodall,  
1898. D. 46.3 cm.*



**Candelabrum:** A candle holder or lamp with several  
arms or branches.

**Candlestick:** A stand with a socket or spike for one  
candle.

**Cane:** A thin, monochrome rod, or a composite rod  
consisting of groups of rods of different colors, which  
are bundled together and fused to form a polychrome  
design that is visible when seen in cross section. See  
**Bar, Millefiori, and Rod.**

**Cántaro** (Spanish), **càntir** (Catalan): A drinking vessel  
shaped like a closed pitcher, with a ring handle at the

center and two spouts, a short one for filling and pouring, and a longer one through which the beverage can be poured into the drinker's mouth.

**Carnival glass:** Inexpensive **pressed glass** with vivid gold, orange, and purple **iridescence**, made in the United States between about 1895 and 1924. It is so called because it was frequently offered as fairground prizes.

**Carving:** The removal of glass from the surface of an object by means of hand-held tools or **sandblasting**.



*Cased vase.*  
Czechoslovakia,  
Karel Wünsch,  
1962. H. 38.6 cm.

**Casing:** The application of a layer of glass over a layer of contrasting color. The **gaffer** either gathers one layer over another **gather**, or inflates a gob of hot glass inside a preformed **blank** of another color. The two components adhere and are inflated together (perhaps with frequent reheating) until they have the desired form. Sometimes, the upper layer is **carved**, **cut**, or **acid-etched** to produce **cameo glass**.

**Casting:** The generic name for a wide variety of techniques used to form glass in a **mold**.

**Castor:** A small vessel with a perforated top from which one casts or sprinkles sugar or condiments such as pepper. A castor set is a matching group of castors, which, together with **cruets**, form a **condiment set**.

**Celery handle:** A handle with vertical ribbing like a celery stalk.

**Celery vase:** A tall, narrow vase used at the table for holding celery.



*Cast medallion of King Louis XIV. France, Bernard Perrot, about 1680–1695. H. (frame) 38.7 cm.*

**Chair:** (1) The bench used by the **gaffer** while forming a glass object. Traditionally, this is a wide bench with arms, on which the gaffer rests the **blowpipe** with its **parison** of molten glass and rolls it backward and forward so that the parison retains its symmetrical shape during the forming process. (2) The team of glassworkers who assist a gaffer.

**Chalk glass:** A colorless glass containing chalk, developed in Bohemia in the late 17th century. Vessels of thick chalk glass were often elaborately **engraved**.

**Chandelier** (from French, “candlestick”): A lighting fixture suspended from the ceiling, with two or more arms bearing lights (originally, candles) or two or more pendent lights. Many chandeliers have faceted **lead glass** arms, candle cups, shafts, and prisms, which reflect the light and sparkle like tiny mirrors.

**Chimney:** A glass tube, open at both ends, used to shield the flame of an oil lamp, to trap soot, and to increase the draft.

**Cinerary urn:** A vessel for cremated human remains. In the Roman period, cremation was a widely used method of disposing of the dead, whose ashes were sometimes placed in glass cinerary urns.

**Cintra:** A type of decorative glass developed by Frederick Carder (1863–1963) at Steuben Glass Works in Corning, New York, before 1917. Most Cintra glass was made by picking up chips of colored glass on the **parison** and then **casing** them with a thin layer of (usually) colorless glass.

**Cire perdue** (French, “lost wax”): See **Lost wax casting**.

**Clamp:** A tool sometimes used instead of a **pontil** to hold the closed end (usually the bottom) of a partly formed glass vessel while the open end (usually the mouth) is being shaped. See also **Gadget**.

**Clapper:** A tool consisting of two rectangular pieces of wood joined at one end by a leather hinge. There is an aperture in one of the pieces of wood, and this holds the stem of a **goblet** or wineglass while it is being made. The clapper is used to squeeze a blob of glass in order to form the foot.

**Claw beaker:** A beaker decorated with claw- or trunk-like protrusions made by applying blobs of hot glass that melted the parts of the wall to which they were attached. The blobs were then **blown** outward and manipulated to resemble hollow claws. Claw beakers were made in Europe between the fifth and seventh centuries A.D. Similar decoration was made in Germany in the 16th century.

**Clichy rose:** A slice of a **cane** depicting an open rose. Canes of this type were frequently used in **paper-**

**weights** made at the Clichy factory in France in the 19th century.

**Clutha:** A type of glass with **air traps** and specks of **aventurine**, patented in the 1890s by James Couper, Christopher Dresser, and George Walton.

**Cluthra:** A type of **Art Glass** developed in the 1920s by Frederick Carder (1863–1963) at Steuben Glass Works in Corning, New York.

**Coil base:** A **trail** of glass drawn out to form a ring or conical foot on which the vessel stands.

**Coin weight:** The term popularly applied to Islamic coin-shaped weights or tokens, most of which were made in Egypt between the eighth and 12th centuries.

**Cold colors:** Pigments applied as decoration to glass by **cold painting**.

**Cold painting:** The technique of decorating an object by applying paint such as artists use on other materials. This is in contrast to enameling, in which powdered glasses of various colors are fused to the surface by heating. *See also* **Enamel**.

**Cold working:** The collective term for the many techniques (such as **copper-wheel engraving** and **cutting**) used to alter or decorate glass when it is cold.

**Collar:** (1) A band of applied glass around the rim of a vessel. On bottles, the collar is used to secure the cork. (2) A threaded metal ring around the **font** of a lamp, used to attach a screw-in burner.

**Colored glass:** Glass that is colored by (1) impurities in the basic ingredients in the **batch** or (2) techniques of coloring glass by one of three main processes: (a) using a dissolved **metallic oxide** to impart a color throughout, (b) forming a dispersion of some substance in a colloidal



state, and (c) suspending particles of pigments to form opaque colors. *See also* **Heat-shaded glass**.

**Combed decoration:** A wavy, festooned, feathery, or zigzag pattern of decoration in two or more colors, produced by applying threads of opaque glass of a color different from that of the molten glass body. The threads are rolled into the glass body by **marvering**, after which they are combed or dragged to achieve the desired effect. *See also* **Feathering** and **Trailing**.



*Mug with combed decoration. U.S., about 1860–1870. H. 15.3 cm.*

**Commedia dell'arte figures** (from Italian): Figures representing the 16 characters in Italian *commedia dell'arte*, a theatrical genre that was especially popular in the 17th and 18th centuries. **Flameworkers** made models of these figures, often copying illustrations in Lelio Riccoboni's *Histoire du théâtre italien* (1728–1731).

**Compote:** A dish, usually with a stem and a base, and sometimes with a cover, for serving compote (fruits cooked in syrup), or a smaller dish of similar form used for individual servings.

**Concentric paperweight:** A type of **paperweight** in which the slices of **canes** are arranged in concentric circles.

**Condiment set:** A group of matching vessels, usually with a tray or rack, that includes containers for salt, pepper, and mustard, and perhaps also **cruets** for oil and vinegar. *See also* **Castor**.

**Cone beaker:** A drinking vessel in the form of an inverted cone. Cone beakers were used in several cultures, including ancient Rome, Sasanian Iran, and early medieval Europe.



*Copper-wheel engraved medallion. Bohemia, Dominik Biemann, 1834. D. 9.5 cm.*

**Copper-wheel engraving:** A technique of decorating the surface of an object. Copper disks (wheels) of various sizes and rim profiles are rotated on a spindle. An abrasive such as Carborundum (in the past, emery was frequently used), mixed with oil, is applied to the edge of the wheel. The wheel presses the abrasive against the glass so that it removes the surface by **grinding**.

**Cord:** A part of the glass that differs in composition from the surrounding matrix. This difference produces a change in the refractive index, which enables the cord to be seen as a streak and so spoils the appearance of the glass.

**Core:** The form to which molten glass is applied in order to make a **core-formed** vessel. In pre-Roman times, the core is thought to have been made of animal dung mixed with clay.

**Core forming:** The technique of forming a vessel by winding or **gathering** molten glass around a **core** sup-

ported by a rod. After forming, the object is removed from the rod and annealed. After **annealing**, the core is removed by scraping.

**Cowhorn:** The large end of a **mosaic glass cane** that is shaped like the tapering horn of a cow.

**Cracking off:** The process of detaching the unwanted portion of the **parison** from the **blowpipe** and the intended rim.

**Crackle glass:** See **Ice glass**.

**Creamer:** A small pitcher for serving cream.

**Crimper:** A tool used for decorating objects by giving them a crimped or wavy edge.

**Cristallo** (Italian, "crystal"): A term first used in Venice in the 14th century to describe glass that resembles colorless **rock crystal**. Most Venetian *cristallo*, however, has a gray or brownish tint.

**Crizzling, crisseling:** The result of chemical instability in glass caused by an imbalance in the ingredients of



*Cristallo goblets. Venice, about 1600. H. (tallest) 17.8 cm.*

the **batch**, particularly an excess of **alkali** or a deficiency of stabilizer (usually **lime**). The instability of the glass results in an attack by atmospheric moisture, which produces a network of cracks in the surface that may feel damp or oily. Crizzling can be slowed or perhaps even halted, but it cannot at present be reversed. Crizzled glass is sometimes described as “sick” or “weeping.”

**Crown glass:** Sheet glass made by **blowing** a **parison**, cutting it open, and rotating it rapidly, with repeated reheating, until the centrifugal force has caused it to become a flat disk. After **annealing**, the disk is cut into **panes** of the required shape and size. **Bull’s-eye panes** come from the centers of the disks and preserve the thickened area where the parison was attached to the **pontil**.

**Crown weight:** A hollow **paperweight** that incorporates thin white or colored filigree **canes** arranged vertically on the sides and drawn together at the top.

**Cruet:** A small, ewerlike vessel, usually with a lip or spout, a handle, and a stopper, for serving condiments at the table.

**Crystal:** A popular term for colorless **lead glass**, which has a high refractive index and consequently is particularly brilliant. In the United Kingdom, glass described as crystal must contain a defined percentage of lead oxide. Today, the word is often used to describe any fine glass tableware.

**Cullet:** (1) Raw glass or pieces of broken glass from a cooled **melt**, intended for use as an ingredient of **batch**; (2) scrap glass intended for recycling.

**Cup plate:** A small plate on which users set their tea or coffee cup while drinking from the saucer. Between



*Cup plate. U.S., about 1831. D. 9.4 cm.*

about 1825 and about 1865, it was fashionable to drink from saucers, and cups were placed on cup plates to avoid staining the tablecloth.

**Cupping glass:** A small cup in which a partial vacuum is created for cupping. Cupping is the technique of drawing blood to the surface of the body, usually for bloodletting.

**Custard glass:** A vessel for an individual serving of custard, a sweetened mixture of milk and eggs, which can be baked, boiled, or frozen.

**Cutting:** The technique whereby glass is removed from the surface of an object by **grinding** it with rotating wheels made of stone, wood, and cork. The first stage of the process employs a stone wheel under a continuous stream of water. Later, wheels of fine-grained stone and wood, fed with various abrasives, are used to grind and **polish** the surface. *See also* **Carving, Copper-wheel engraving, and Wheel engraving.**

**Cylinder glass:** Window glass made by inflating a large **gather** and swinging it until it forms a cylinder. The cyl-

inder is then detached from the **blowpipe**, and both ends are removed with **shears**. Next, the cylinder (sometimes known as a **muff**) is cut lengthwise, reheated, and either tooled or allowed to **slump** until it assumes the form of a flat sheet. After **annealing**, the sheet is cut into **panes**.

**D** **Daumenglas** (German, “thumb glass”): A large cylindrical or barrel-shaped **forest glass** beaker with circular indentations for the user’s fingers and thumbs. *Daumengläser* were made in Germany and the Netherlands in the 16th and 17th centuries.

**Decanter:** A decorative bottle with a stopper, used for serving wines and spirits.

**Decolorizer:** A substance (such as manganese dioxide or cerium oxide) used to remove or offset the greenish or brownish color in glass that results from (1) iron impurities in the **batch** or (2) iron or other impurities in the **pot** or elsewhere in the production process.

**Depression glass:** Inexpensive, machine-pressed American glassware made between about 1920 and 1950.

**Devitrification:** (1) The process whereby glass becomes partly crystallized as it cools (usually too slowly) from the molten state; (2) the crystals formed by this process. Devitrification can also occur on the surface as a result



Daumenglas.  
Germany,  
17th century.  
OH. 36.8 cm.

of unsuccessful **annealing** or accidental heating to a high temperature. It is *not* caused by chemical reaction between glass and its environment, which is known as **weathering**.

**Diamond air trap:** Decoration consisting of bubbles of air trapped in the glass in a diamond-shaped pattern. This is achieved by **blowing a gather** of glass into a **mold** with projections of the desired design, withdrawing it, and covering it with a second gather, which traps pockets of air in the indentations. This technique was patented by W. H., B. & J. Richardson of England in 1857.

**Diamond-point engraving:** The technique of decorating glass by scratching the surface with a diamond. Diamond-tipped tools may have been used by the ancient Romans and in the medieval Islamic world, but they were popularized by the Venetians in the 16th cen-



*Diamond-point engraved plate. France or Low Countries, about 1630–1640. D. 48.4 cm.*

tury. Diamond-point engraving was carried to some of its greatest artistic heights in the Netherlands during the 17th century. Today, other hard materials, such as tungsten carbide, are used instead of diamonds. See *also Stippling*.

**Diatreta:** A term used by Frederick Carder (1863–1963) to describe **openwork** objects that he made by **lost wax casting**.

***Diatretum, vas diatretum*** (Latin, “openwork vessel”): A term frequently used to refer to a **cake cup**. The plural form is *vasa diatreta*.

**Dichroic glass:** Glass that is one color when seen by reflected light and another color when light shines through it. This is sometimes due to the presence of minute quantities of colloidal gold. Today, some glass-makers achieve a similar effect by applying a dichroic coating to glass that otherwise would not have this property.

**Die sinker:** A maker of metal molds.

**Dip mold:** A cylindrical or truncated conical one-piece mold with a patterned interior. The mold is open at the top so that a **parison** can be dipped into it and then inflated. It is also known as an optic mold.

**Dolphin candlestick:** A **pressed glass candlestick** with a stem in the form of a dolphin, originally made in New England between about 1840 and 1860.

**Double cruet:** See **Gemel**.

**Double-walled:** See ***Zwischengoldglas***.

**Dragon-stem goblet:** A type of **goblet** with the stem in the form of a dragon with a convoluted body, outspread wings, open jaws, and a crest. Known in Italian as *vetri a serpenti* (serpent glasses), dragon-stem gob-





*Dragon-stem goblet. Venice,  
17th century. H. 26.3 cm.*

lets were first made in Venice in the 17th century. They were imitated in the Netherlands by producers of *façon de Venise* glass.

**Drawing:** The process of pulling semi-molten glass to elongate it. It is used, for example, in the production of **canes**.

**Drawn stem:** The stem of a drinking or serving vessel that is drawn out from the main **gather** rather than formed from a separate gather and then applied.

**Dresser set:** A set of matching perfume bottles, powder jars, and similar containers, kept on a woman's dresser.

**Drilling:** The process of using a rotating drill to make a hole.

**Drip pan:** A fixed or removable tray beneath the socket of a **candlestick** or the **font** of a lamp, which prevents spilled fuel or molten wax from escaping.

**Dromedary flask:** A small container consisting of a **blown** glass flask adorned with **trails** that may form an **openwork** "cage" and fused to the back of a camel-like animal, made by manipulating hot glass. Dromedary flasks were made in Syria between about the sixth and eighth centuries A.D.

**Drop burner:** A burner that was dropped into the **font** of a whale oil lamp and held above the fuel by a metal plate larger than the aperture in the font.

**E** *Eglomisé*: See *Verre églomisé*.

**Egyptian blue**: A synthetic material, copper calcium tetrasilicate, with a distinctive blue color. In antiquity, Egyptian blue was made by heating together **silica**, **lime**, and a copper-containing ingredient. It is often confused with **faience** and misleadingly called **frit**.

**Enamel**: A vitreous substance made of finely powdered glass colored with metallic oxide and suspended in an oily medium for ease of application with a brush. The medium burns away during **firing** in a low-temperature **muffle kiln** (about 965°–1300°F or 500°–700°C). Sometimes, several firings are required to **fuse** the different colors of an elaborately enameled object.



*Enameled vase. England, Thomas Webb & Sons,  
late 19th century. H. 25.7 cm.*

**Encased glass**: An object, such as a **paperweight**, that is covered with a layer of colorless glass.

**Encrustation:** See **Sulphide**.

**End-of-day:** See **Frigger**.

**Engraving:** The process of cutting into the surface of an **annealed** glass object either by holding it against a rotating copper wheel fed with an abrasive or by scratching it, usually with a diamond. See also **Carving**, **Cutting**, and **Stippling**.

**Epergne** (from French): A composite, frequently tiered centerpiece used on the dinner table for serving or display in the late 18th and 19th centuries.

**Ewer:** A container with one handle, used for dispensing liquid.

**Eye bead:** A bead decorated with applied or embedded circular elements that resemble eyes.

**F** **Faceting:** The process of **grinding** and **polishing** an object to give the surface a pattern of planes or facets.

**Façon de Venise** (French, “manner, or style, of Venice”): Glass made in imitation of Venetian products, at centers other than Venice itself. *Façon de Venise* glass was popular in many parts of Europe in the 16th and 17th centuries.

**Faience:** A fired **silica** body containing small amounts of **alkali**, and varying greatly in hardness depending on the degree of **sintering**. It is covered with glaze, which may also be present interstitially among the quartz grains within the body. The term “glassy faience” is often used to describe a faience in which the reactions have proceeded to such an extent that the glass phase defines the visual appearance of the material.

**Fake:** A genuine object that has been altered or “improved” for the purpose of enhancing its value.

**Fancy glass:** A term used to describe a very wide variety of 19th-century European and American decorative glass.

**Favrile:** A type of glass with an **iridescent** surface, patented by Louis Comfort Tiffany (1848–1933) in 1894.

**Feathering:** The process of dragging a tool across a series of **trails** while they are semi-molten to impart a pattern resembling feathers. *See also* **Combed decoration**.

**Figural bottle:** A molded bottle in the form of a head or any of a variety of objects. The term is usually applied to American glass of the late 19th and early 20th centuries.

***Filigrana, vetro a filigrana*** (Italian, “filigree glass”):

The generic name for **blown** glass made with colorless, white, and sometimes colored **canes**. The *filigrana* style originated on the island of Murano in the 16th century and spread rapidly to other parts of Europe where **façon de Venise** glass was produced. Manufacture on Murano continued until the 18th century, and it was revived in the 20th century. For the main types of *filigrana*, see ***Vetro a fili***, ***Vetro a reticello***, and ***Vetro a retorti***.

**Finger bowl:** A bowl to hold water for rinsing the fingers at the table.

**Finial:** An ornamental knob.

**Fining:** The physical and chemical process of eliminating bubbles from the **melt** by raising the temperature to make the glass more fluid and adding fining agents such as arsenic and antimony.

**Finishing:** The process of completing the forming or decoration of an object. Finishing can take the form of manipulating the object into its final shape while it is hot, of **cracking off** before **annealing**, or of **cutting**, **enameling**, **grinding**, or **polishing**.

**Fire clay:** Clay capable of being subjected to a high temperature without **fusing**, and therefore used for making crucibles in which glass **batches** are melted. Fire clay is rich **silica**, but it contains only small amounts of **lime**, iron, and **alkali**.

**Fire polishing:** (1) In the hotshop, the reintroduction of a vessel into the **glory hole** to melt the surface and eliminate superficial irregularities; (2) in kiln working, exposing the object to significant heat so that it assumes a smooth surface.

**Firing:** The process of (1) heating the **batch** in order to **fuse** it into glass by exposing it to the required temperature in a crucible or **pot**, (2) reheating unfinished glassware while it is being worked, or (3) reheating glassware in a **muffle** to fuse **enamel** or **gilding**. The melting of the batch may require a temperature of about 2400°–2750°F (1300°–1500°C), whereas the **muffle kiln** may require a temperature of only about 950°–1300°F (500°–700°C).

**Firing glass:** A drinking glass with a bowl, a short stem, and a thick foot. On ceremonial occasions, firing glasses were rapped loudly on the table, making a noise that resembled a volley of gunfire.

**Flameworking:** The technique of forming objects from **rods** and tubes of glass that, when heated in a flame, become soft and can be manipulated into the desired shape. Formerly, the source of the flame was an oil or paraffin lamp used in conjunction with foot-powered bellows; today, gas-fueled torches are used.

**Flashing:** (1) The application of a very thin layer of glass of one color over a layer of contrasting color. This is achieved by dipping a **gather** of hot glass into a crucible containing hot glass of the second color. The upper layer containing hot glass of the second color. The upper layer may be too thin to be worked in relief. “Flashing” is



*Flameworked figurine. France, early 18th century. H. 5.1 cm.*

sometimes used (erroneously) as a synonym for **casings**.  
(2) The act of reheating a **parison** by inserting it into a **glory hole** and then withdrawing it rapidly.

**Flat bouquet:** A decorative arrangement of **canes** in a **paperweight**. The canes imitate a bouquet of flowers and leaves, the flat top of which is parallel to the bottom of the paperweight.

**Flint glass:** A misnomer for English and American **lead glass**. The term came into use in 1674, when George Ravenscroft's new glass formula included ground, calcined flint as a source of **silica**. In the 18th and 19th centuries, the term was applied to **decolorized** glass, even when it contained no flint.

**Flügelglas** (German, "wing glass"): See **Winged goblet**.

**Flute:** A very tall and slender wineglass on a short stem.

**Fluting:** Decoration that consists of narrow vertical grooves (flutes).

**Flux:** A substance that lowers the melting temperature of another substance. For example, a flux is added to

the **batch** in order to facilitate the **fusing** of the **silica**. Fluxes are also added to **enamels** in order to lower their fusion point to below that of the glass body to which they are to be applied. **Potash** and **soda** are fluxes.

**Folded rim:** A rim that has been folded to double its thickness and thereby increase its strength.

**Fondo d'oro** (Italian, "base of gold"): See **Gold glass**.

**Font:** The reservoir for oil in a lamp.

**Foot:** The base of an object; the part on which it rests. See also **Roman foot**.

**Foot-ring:** A separate ring of glass added to the base after the body of the vessel has been formed.



*Forest glass beaker.  
Germany, 15th–16th  
century. H. 7.8 cm.*

**Forest glass:** Glass made in the rural glasshouses of central and northern Europe in the late Middle Ages and the early modern period. Most forest glass was **fluxed** with **potash** derived from the wood with which the **furnaces** were fueled. It is green because of iron impurities in the sand from which it was made. The German term for forest glass is *Waldglas*.

**Forgery:** A copy or imitation of an object, made with the intention of deceiving prospective owners into believing that it is the genuine article.

**Former mold:** A **mold** with the same shape as the desired object, usually a vessel. Flat glass **blanks** are made into vessels by **sagging** them over or into former molds.

**Founding:** The initial phase of melting **batch**. For many modern glasses, the materials must be heated to a tem-

perature of about 2450°F (1400°C). This is followed by a maturing period, during which the molten glass cools to a working temperature of about 2000°F (1100°C).

**Free-blown (off-hand blown) glass:** Glassware shaped solely by inflation with a **blowpipe** and manipulation with **tools**.

**Frigger:** The English term for an object made by a glassworker on his own time. Most friggers were made from the molten glass that remained in the **pot** at the end of the day. Such glass was considered to be a worker's perquisite. American glassworkers referred to friggers as "end-of-day" objects. They are also known as whimsies.

**Frit, fritting:** **Batch** ingredients such as **sand** and **alkali**, which have been partly reacted by heating but not completely melted. After cooling, frit is ground to a powder and melted. Fritting (or **sintering**) is the process of making frit.

**Frosting:** (1) A **matte finish** produced by exposing the object to fumes of **hydrofluoric acid**; (2) a network of small surface cracks caused by **weathering**.

**Full-size mold:** See **Mold**.

**Furnace:** An enclosed structure for the production and application of heat. In glassmaking, furnaces are used for melting the **batch**, maintaining **pots** of glass in a molten state, and reheating partly formed objects at the **glory hole**.

**Fusing:** (1) The process of **founding** or melting the **batch**; (2) heating pieces of glass in a **kiln** or **furnace** until they bond (see **Casting** and **Kiln forming**); (3) heating **enameled** glasses until the enamel bonds with the surface of the object.



**G** **Gadget:** A metal rod with a spring clip that grips the foot of a vessel and so avoids the use of a **pontil**. Gadgets were first used in the late 18th century. See also **Clamp**.

**Gadroon:** A flutelike decorative motif, usually short in proportion to its width, that often approaches an oval form.

**Gaffer** (corruption of “grandfather”): The master craftsman in charge of a **chair**, or team, of hot-glass workers.

**Garage:** A heating chamber used to hold parts of objects that are intended to be assembled on the **blowpipe** while other parts are being made.

**Gather:** (Noun) A mass of molten glass (sometimes called a gob) collected on the end of a **blowpipe**, **pontil**, or **gathering iron**; (verb) to collect molten glass on the end of a tool.

**Gathering iron:** A long, thin rod used to **gather** molten glass.

**Gemel:** A pair of bottles blown separately and then **fused**, usually with the two necks pointing in different directions.

**Gilding:** The process of decorating glass by the use of gold leaf, gold paint, or gold dust. The gilding can be applied with **size**, or amalgamated with mercury. It is then usually attached to the glass by heat. Gold leaf can be **picked up** on a **gather** of hot glass.



*Gilded bottle. England, about 1790. H. 13.1 cm.*



*Gold-glass roundel. Roman Empire,  
4th century A.D. D. 9.7 cm.*

**Glass:** A homogeneous material with a random, liquid-like (noncrystalline) molecular structure. The manufacturing process requires that the raw materials be heated to a temperature sufficient to produce a completely **fused melt**, which, when cooled rapidly, becomes rigid without crystallizing.

**Glazier:** A craftsman who paints and/or assembles glass windows.

**Glory hole:** (1) A hole in the side of a glass **furnace**, used to reheat glass that is being fashioned or decorated; (2) a separate appliance for reheating glass.

**Gob:** See **Bit**.

**Goblet:** A drinking vessel with a bowl that rests on a stemmed foot.

**Gold glass:** The term applied to several types of Hellenistic and ancient Roman glass objects decorated with designs **cut** and/or **engraved** in gold leaf, which is sandwiched between two **fused** layers of glass. Hellenistic gold glass was made by sandwiching the decoration between two closely fitting **cast, ground**,



*Gold ruby goblet. Germany, about 1720–1735. H. 26.9 cm.*

and **polished** vessels, which were then fused. Many Roman gold glasses apparently were made by applying the gold leaf to the surface of an object, reheating it, and inflating a **parison** against the decorated surface.

**Gold ruby:** Deep red glass colored by the addition of gold chloride to the **batch**. The method of making gold ruby glass was perfected by Johann Kunckel (1637–1703) in Potsdam shortly before 1679.

**Gold sandwich glass:** See **Gold glass**.

**Gold-band mosaic glass:** A variety of **ribbon glass** that includes **canes** composed of bands of gold foil laminated between two layers of colorless glass. Gold-band mosaic glass was made in parts of the Roman world in the first century B.C. and the first century A.D.

**Graal:** A type of decorative glass developed by Orrefors of Sweden in 1916. The design is **carved, engraved,** or etched on a **parison** of colored glass, which is then reheated and **cased** in a thick layer of transparent glass of a different color, and inflated.

**Grape flask:** An ancient Roman **mold-blown** flask with the body in the form of a bunch of grapes.

**Grenade:** A type of bottle with a short, narrow neck and a globular body, which apparently was filled with water and thrown into flames to serve as a fire extinguisher.

**Aeolipiles** are sometimes identified, probably incorrectly, as grenades.

**Grinding:** The technique of removing the surface of an object with a rotating wheel fed with an abrasive, or by some other means.

**Grisaille** (from French *gris*, “gray”): (1) A method of decorative painting in monochrome gray especially, but not exclusively, on **stained glass** windows; (2) brown paint made from iron oxide, which, when **fused** to the glass, defines details in a stained glass window.

**Grozing:** The process of breaking away the edge of a glass object with a grozing iron or pliers in order to shape it.

**Guinand:** A **fire-clay** pot used in the manufacture of **optical glass**. It is named after its inventor, Pierre Louis Guinand (1748–1824).

**H** **Hand cooler:** A solid, egg-shaped piece of glass or decorative stone, said to have been used to cool the palms of a woman’s hands.

**Hand press:** A tool shaped like a pair of pliers, with flat jaws containing **molds**. Hand presses were used extensively in Europe for making **chandelier** parts. Later, they were introduced in the United States for pressing stoppers and bases.

**Hard glass:** A generic name for glass (e.g., **borosilicate glass**) with a relatively low coefficient of expansion. **Soft glass** (e.g., **soda-lime glass**), by contrast, has a relatively high coefficient of expansion.

**Hausmaler** (German, “home painter”): A decorator who **enameled** glass or porcelain while working from home independently of the manufacturer.

**Head flask:** A **mold-blown** flask with the body in the form of a human head. Head flasks were popular in the Roman Empire, and examples were made from the first

*Head flask. Roman Empire, 4th–5th century A.D. H. 19.6 cm.*

to fourth centuries A.D. Vessels decorated with two faces placed back to back are sometimes known as “janiform” head flasks (from Janus, the spirit of doorways, who was represented as a double-faced head).

**Heat-resistant glass:** Glass that withstands thermal shock (severe changes of temperature). Such glass can be tempered to make it more heat-resistant, and **borosilicate** glasses such as **Pyrex** are particularly resistant to thermal shock.



**Heat-shaded glass:** Glass that shades from one color to another. For example, **Burmese glass** shades from yellow to pink.

**Hedwig beaker:** A very rare type of thick-walled glass beaker with **relief-cut** decoration of lions, griffins, eagles, and other motifs. Hedwig beakers date from about the 12th century, but their place of manufacture is unknown. They are so called because one of the surviving examples is said to have belonged to Saint Hedwig of Silesia (d. 1243).

**Hinterglasmalerei** (German, “painting behind glass”): See **Reverse painting**.

**Hochschnitt** (German, “high cut”): See **Relief cutting**.

**Hofkellereiglas** (German, “court wine-cellar glass”): A drinking glass used in the buttery of a German court.

**Hookah** (from Arabic *huqqa*): A bell-shaped or globular bottle that is part of the water pipe used mainly in the

Islamic world and India for smoking tobacco. The smoke passes through the water-filled bottle before the smoker inhales it.

**Hot-formed, hot-worked:** The generic term for glass that is manipulated while it is hot.

**Humidor:** A closed container in which the air is kept appropriately humidified (for example, for keeping cigars).

**Humpen** (German, “beaker”): A large cylindrical beaker, usually with **enameled** decoration, made in Germany, Bohemia, and Silesia between the 16th and 18th centuries, and used mainly for drinking beer. *See also Kurfürsten Humpen and Reichsadler Humpen.*

**Hyalith:** Two varieties of glass, opaque black and opaque red, developed by the Bohemian glassmaker Jiří von Buquoy (1781–1851) and patented in 1817 and 1819 respectively.

**Hydrofluoric acid:** A highly corrosive acid that attacks silicates such as glass. Pure hydrofluoric acid dissolves glass, leaving a brilliant, **acid-polished** surface.

**Ice glass:** A decorative effect that causes the surface of the glass to resemble cracked ice. This is achieved by repeatedly plunging a **parison** of hot glass into cold water and withdrawing it quickly. The thermal shock creates fissures in the surface, and these impart a **frosted** appearance after the parison has been reheated to allow the forming process to continue.

**Incalmo** (Italian): The technique of constructing an object, usually a vessel, by **fusing** two or more blown glass elements. The process, first practiced in the Islamic world in the Middle Ages, demands great precision because the edges of the adjoining elements must have precisely the same diameter.

**Inclusions:** A collective term for bubbles, metal and glass particles, and other foreign materials that have been added to the glass for decorative effects.

**Inlay:** Any object embedded in the surface of a larger object. *See also Marquetry.*

**Intaglio** (from Italian, “engraving”): A method of **wheel engraving** whereby the ornamentation is cut into the object and lies below the surface plane. The German name for this technique is *Tiefschnitt*.

**Intarsia** (from Italian *intarsio*, “marquetry”): A type of glass developed by Frederick Carder (1863–1963) about 1920. A design of colored glass was applied to a **parison** of a different color, then **flushed** with a second parison of the same color as the first.

**Intercalaire** (French, “inserted”): The process of applying two layers of decoration, the first being covered with a skin of glass that serves as the surface for the second.



*Iridescent vase. U.S., Tiffany Studios, about 1912. H. 47.6 cm.*

**Iridescence:** The rainbowlike effect that changes according to the angle from which it is viewed or the angle of incidence of the source of light. On **ancient glass**, iridescence is caused by interference effects of light reflected from several layers of **weathering** products. On certain 19th- and 20th-century glasses, iridescence is a deliberate effect achieved by the introduction of metallic substances

into the **batch** or by spraying the surface with stannous chloride or lead chloride and reheating it in a reducing atmosphere.

**J** **Jacks:** A tool with two metal arms joined at one end by a spring. The distance between the arms is controlled by the glassworker, who uses jacks for a variety of purposes while shaping the **parison** (for example, to form the mouths of open vessels). This tool is also known as a *borsella* or *pucellas*.

**Jacobite glass:** An 18th-century English drinking vessel most often used for toasting Prince Charles Edward Stuart (“Bonnie Prince Charlie”). The Jacobites were supporters of the exiled King James II, who abdicated in 1698, and of his descendants James Edward Stuart (the “Old Pretender”) and his son Charles Edward Stuart (the “Young Pretender”). Before the defeat of the Young Pretender in 1746, Jacobite glasses were usually engraved with the English rose, representing the Crown, and an optimistic motto such as “*Redeat*” (Latin, “May he return”). After 1746, glasses at first bore cryptic symbols and messages, but later, secrecy was abandoned. In recent years, many Jacobite glasses have been shown to be **fakes**. *See also Williamite glass.*

**Jelly glass:** A vessel, popular in the 18th century, for serving jelly and other desserts. Jelly glasses usually have an inverted conical bowl, a square stem, and a foot. They may have one or two handles.

**Jugendstil** (German, “youth style”): *See Art Nouveau.*

**K** **Kalkglas** (German, “chalk glass”): *See Chalk glass.*

**Kantharos** (from Greek), **cantharus** (from Latin): A drinking vessel with a bell-shaped body, a foot, and two handles.





*Kiln-formed vessel. U.S.,  
Toots Zynsky, 2004. H. 25.4 cm.*

**Kick:** A concavity in the base of a vessel, usually made by depressing the base with a tool. The provision of a kick strengthens the bottom of the vessel and reduces the vessel's capacity.

**Kiln:** An oven used to process a substance by burning, drying, or heating. In contemporary glassworking, kilns are used to **fuse enamel** and for **kiln-forming** processes such as **slumping**.

**Kiln forming:** The process of **fusing** or shaping glass (usually in or over a **mold**) by heating it in a **kiln**. See also **Slumping**.

**Kiln wash:** A **refractory** powder that can be mixed with water and applied to shelves in a **kiln** or to **mandrels** to prevent glass or glaze from sticking to them. This is also known as **bat wash**.

**Knop:** A component, usually bulbous, of the stem of a drinking glass, hollow or solid, used either singly or in groups, and placed contiguously or with intermediate spacing; also the **finial** at the center of a lid.

**Kohl tube** (from Arabic *kuhl*, a cosmetic): A small tubular container for cosmetics such as kohl. Kohl is a black powder, traditionally pre-



*Kohl tube. Northwestern Iran, 5th–4th century B.C. H. 8.8 cm.*

pared from antimony, used in many parts of the Islamic world to darken the eyelids.

**Krateriskos** (from Greek, “small mixing bowl”): A small vessel with a wide mouth and body, and a foot. The term is often used to describe certain **core-formed** Egyptian vessels of the second millennium B.C.

**Krautstrunk** (German, “cabbage stalk”): A type of beaker with a cup-shaped mouth and a cylindrical or barrel-shaped body decorated with **prunts**, made in Germany between the 15th and 17th centuries. It was the forerunner of the **Römer**.

**Kunckel red**: See **Gold ruby**.

**Kurfürsten Humpen** (German, “electors beaker”): A **Humpen** decorated with images of the Holy Roman emperor and the seven electors of the empire.

**Kuttrolf** (German): A flask with the neck divided into two or more tubes. The *Kuttrolf*, which has Roman antecedents, was produced by German glassworkers in the later Middle Ages; it is also found among Venetian and **façon de Venise** glasses of the 16th and 17th centuries.

**L** **Lacy mosaic glass**: See **Network mosaic glass**.

**Lacy-pattern glass**: Nineteenth-century **pressed glass** whose patterns include extensive **stippling** to



*Lacy-pattern tray. U.S., about 1830–1845. L. 23.8 cm.*

produce a bright, lacelike effect that conceals wrinkles caused when the cold plunger of the pressing machine came into contact with the hot glass.

**Lagynos** (from Greek): A pitcher with a tall, narrow neck and a wide body.

**Lampworking:** *See Flameworking.*

**Lathe cutting:** The technique whereby a **blank** in the general shape of the finished object is mounted on a lathe and (in antiquity) turned with the aid of a bow or handled wheel, while a tool fed with abrasive is held against the surface in order to **polish** it, modify the profile, or **cut** it.

**Latticino, latticinio** (from Italian *latte*, “milk”): Terms formerly used to describe *filigrana*. They have now been abandoned.

**Lattimo** (from Italian *latte*, “milk”): Opaque white glass, usually opacified by tin oxide or arsenic.

**Laub- und Bandelwerk** (German, “leaf and strapwork”): A type of interlaced ornament consisting of foliage and strapwork, popular in Germany and Bohemia in the 18th century.

**Layered glass:** Glass containing layers of different colors. Decorative effects can be obtained by revealing the contrasting colors by **acid etching, carving, cutting, or engraving.**

**Lead glass:** Glass that contains a high percentage of lead oxide (at least 20 percent of the **batch**). In modern times, glass of this type was patented in 1674 by George Ravenscroft (1632–1683), who added a larger amount of lead in 1676. Lead glass is relatively soft, and its refractive index gives a brilliance that may be exploited by covering the surface with polished wheel-cut facets.

Such glass is often known by the term “lead crystal.”  
See also **Flint glass**.

**Leaded glass:** Composite arrangements of pieces of flat glass that are held together by lead (or sometimes by zinc or some other metal) **comes**. **Stained glass** windows are the most prominent examples of leaded glass.

**Lehr, leer:** The oven used for **annealing** glassware. Early lehrs were connected to the **furnace** by flues, but the difficulty of controlling heat and smoke made this arrangement impracticable. Later lehrs were long, brick-lined, separately heated tunnels through which the glass objects were slowly pushed. The glass remained in the lehr for several hours, while it was gradually reheated and then uniformly cooled. Today, lehrs work on a conveyor belt system.

**Lentoid flask:** A flask with a lens-shaped body.

**Lily-pad decoration:** Decoration consisting of a **gather** around the base of the vessel, which has been drawn upward in four or more projections with rounded ends. Lily-pad decoration was introduced to America by German glassworkers. It became popular in New England, New York, and New Jersey in the second quarter of the 19th century.



*Sugar bowl and cream jug  
with lily-pad decoration.  
U.S., about 1835–1850.  
OH. (bowl) 27.2 cm.*

**Lime:** Calcined limestone, which, added to **batch** in small quantities, gives stability. Before the 17th century, when its beneficial effects became known, lime was introduced fortuitously as an impurity in the raw materials. The addition of insufficient lime can cause **crizzling**.

**Linen smoother:** An object believed to have served as a pressing iron. The earliest linen smoothers date from the Middle Ages, and the latest were made in the 18th century.

**Lion-mask stem:** A hollow stem made by **blowing** the **gather** into a **mold** patterned with two lion's masks, usually separated by festoons. Lion-mask stems, first used in Venice in the 16th century, subsequently became one of the hallmarks of *façon de Venise* glass.

**Lip wrap:** A **trail**, usually of a contrasting color, wrapped around the edge of the rim. It is also known as an edge wrap.

**Lipper:** A glassworker's tool made of wood in the shape of a cone and with a handle. It is used to form the lip at the mouth of a vessel.

**Lithyalin** (from Greek *lithos*, "stone"): A type of glass, developed in Bohemia by Friedrich Egermann (1777–1864), that is opaque and has a marbled surface resembling semiprecious stones.

**Lost wax casting:** A technique adapted from metalworking. The object to be fashioned in glass is modeled in wax and encased in clay or plaster that is heated. The wax melts and is released through vents or "gates," also made of wax, which have been attached to the object before heating. The clay or plaster dries and becomes rigid. This then serves as a **mold**, into which molten or powdered glass is introduced through the gates. If powdered glass is used, the mold is heated in order to

**fuse** the contents. After **annealing**, the mold is removed from the object, which is then finished by **grinding**, **fire polishing**, or **acid etching**.

**Lotus-bud beaker:** A first-century A.D. Roman **mold-blown** vessel decorated with rows of oval or almond-shaped bulges. Although the bulges are usually described as lotus buds, they are probably derived from representations of knotholes in the club of the mythical hero Hercules.

**Loving cup:** A large drinking vessel with two or more handles, passed around at banquets and similar gatherings so that several persons could drink from it in turn.

**Luster:** (1) A shiny metallic effect made by painting the surface with metallic oxides that have been dissolved in acid and mixed with an oily medium. **Firing** in oxygen-free conditions at a temperature of about 1150°F (600°C) causes the metal to deposit in a thin film that, after cleaning, has a distinctive shiny surface. Strictly speaking, this process is a form of **staining**. (2) A glass lighting device, such as a **candelabrum** or **candlestick**, decorated with hanging prismatic drops.

**M** **Maigelein** (German): A type of small hemispherical cup on a base with a **kick**, usually with vertical or swirled ribs, made in Germany in the 15th and 16th centuries.

**Mandrel:** In glassworking, (1) a lathe shaft with a hollow end, designed to receive spindles; (2) a metal rod around which beads and other small objects can be formed.

**Marbled glass:** Glass decorated with streaks of two or more colors, resembling marble. Marbled glass was a Venetian specialty from the 15th to 17th centuries, but it was also made in other times and places. Venetian marbled glass is known as *calcedonio*.

**Marquetry:** A decorating technique whereby pieces of hot glass are applied to still molten glass and **marvered** into the surface, creating an inlaid effect. After the glass is cooled, it is possible to further emphasize these areas by **carving** and **engraving**. *See also Inlay.*

**Martelé** (French, “hammered”): The word used to describe the multifaceted, **wheel-engraved** surface favored by Emile Gallé (1846–1904), Daum, and others to create a textured background that resembles beaten metal. *See also Battuto.*

**Marver** (from French *marbre*, “marble”): (Noun) A smooth, flat surface on which softened glass is rolled, when attached to a **blowpipe** or **pontil**, in order to smooth it or to consolidate applied decoration. (Verb) To roll softened glass on a marver.

**Masonic glass:** A glass object decorated with emblems or inscriptions associated with Freemasons.

**Matsu-no-ke:** A design developed by Frederick Carder (1863–1963) and registered by Stevens & Williams of England in 1884. Its distinctive feature is the presence of applied and tooled sprays of blossoms influenced by Japanese designs. Carder also used the design at Steuben Glass Works in Corning, New York, in the 1920s.

**Matte finish:** A non-shiny finish made by **grinding**, **sandblasting**, or exposing the surface to fumes of **hydrofluoric acid**. *See also Frosting.*

**Melt:** The fluid glass produced by melting **batch**.

**Mercury bottle:** A type of ancient Roman **mold-blown** bottle with a tall body of square or polygonal cross section, the underside of which bears a representation in relief of the god Mercury. Mercury, the messenger of the gods, was associated with commerce.



Vessel with matte finish.  
Czech Republic, František  
Vízner, 1996. H. 10.2 cm.

**Merese:** A flattened, collarlike **knop** placed between the bowl and the stem, on the stem, or between the stem and the foot of a **goblet** or similar form.

**Metal:** A term frequently used as a synonym for **glass**. It is misleading because glass is not a metallic substance, and its use is discouraged.

**Metallic oxide:** The oxide of a metal. Oxides can be used to color glass and **enamel**, or to produce lustered or iridized surfaces. The resultant color depends primarily on the oxide used, but it can be affected by the composition of the glass itself and the presence or absence of oxygen in the **furnace**. See also **Iridescence** and **Luster**.

**Mezza-forma** (Italian, "half-mold"): A term applied to the process of making vertical ribs on the lower part of a **blown** glass object by gathering additional glass on the **parison** and inflating it further in a **dip mold**. This technique is also known as *mezza stampatura* or, in Muranese dialect, *meza stampaura*.

**Milchglas** (German, "milk glass"): See **Lattimo**.

**Milled threading:** Decoration consisting of a **trail** (thread) that has been closely notched either by the use of a runner such as a roulette or by repeated indentation with the edge of the **jacks**.



**Millefiori** (from Italian, “1,000 flowers”): See **Mosaic glass**.

**Mirror monogram:** A monogram written in such a way that each letter is reversed to produce its mirror image, the letter and its image being combined to give a symmetrical ornamental form.

**Moil:** The unwanted top of a blown object. When the last stage in the forming process is the removal of the object from the **blowpipe**, the result is a narrow opening that almost certainly is not what the glassblower desires. After **annealing**, therefore, the top of the object is removed, usually by **cracking off**. The moil from a **mold-blown** object is often known as an **overblow**.

**Molar flask:** A small flask standing on four very short feet resembling the roots of a tooth. The molar flask is a characteristic type of ninth- to 14th-century Islamic perfume bottle. Many examples have simple wheel-cut decoration.



*Mold. Probably Western Asia, 11th–13th century. H. 11.4 cm.*

**Mold:** A form used for shaping and/or decorating molten glass. Some molds (e.g., **dip molds**) impart a pattern to the **parison**, which is then withdrawn, and **blown** and **tooled** to the desired shape and size; other molds (sometimes known as **full-size molds**) are used to give the object its final form, with or without decoration. Dip molds consist of a single part and are usually shaped like beakers. Full-size molds usually have two or more parts and can be opened to extract the object. Nowadays, most molds are made of metal, but stone, wood, plaster, and earthenware molds

were used in the past and are still occasionally employed today.

**Mold blowing:** Inflating a **parison** of hot glass in a **mold**. The glass is forced against the inner surfaces of the mold and assumes its shape, together with any decoration that it bears.

**Mold mark:** See **Seam mark**.

**Mold pressing:** Forcing hot glass into an open or multi-part **mold** by means of a plunger.

**Monteith:** A large bowl to contain ice water for cooling wineglasses. The bowl has a scalloped rim. Wineglasses were suspended in the scallops by their feet so that their bowls could be cooled in the water. Monteiths, usually of silver but sometimes of glass, were popular in the late 17th and 18th centuries.

**Mosaic:** A surface decorated with many small, adjoining pieces of varicolored materials such as stone or glass.

**Mosaic glass:** Objects made from preformed elements placed in a **mold** and heated until they **fuse**. The term “mosaic glass” is preferable to “**millefiori**,” except in the case of Venetian or ***façon de Venise*** glass.

**Mosque lamp:** An Islamic lamp shaped like an inverted bell, with three or more handles from which it was suspended by chains. Many mosque lamps have **gilded** and **enameled** decoration, which often includes inscriptions naming the donor and quoting verses from the Koran.

**Moss Agate:** A variety of **Art Glass** developed by John Northwood (1836–1902) and Frederick Carder (1863–1963) in England in the late 1880s. It was made by **casing** a **parison** of **soda-lime glass** with colorless **lead glass**, then covering it with powdered glass of several colors, and casing it again with lead glass. The object was

shaped and reheated, after which cold water was injected into it, causing the soda-lime glass to develop a network of fine cracks.

**Muff:** A glass cylinder intended to be cut into sheets. See also **Cylinder glass**.

**Muffle:** A **fire-clay** box in which glass (or porcelain) objects are enclosed, when placed in the **muffle kiln**, to protect them from the flames and smoke while they are subjected to low-temperature **firing**, especially in the process of firing **enamels** and **gilding** at temperatures of about 950°–1300°F (500°–700°C).

**Muffle kiln:** A low-temperature kiln for refring glass to **fuse enamel**, fix **gilding**, and produce **luster**. See also **Kiln**.



Murrine cane slice with  
*Lord's Prayer*. U.S., Richard  
Marquis, 1970. H. 1.7 cm.

**Murrhine** (from Latin *murra*, apparently the name of a mineral from which costly vessels [*vasa murrina*] were made): The English adjective “murrhine” and the Italian adjective “*murrino*” are sometimes applied to ancient Roman **mosaic glass**. It is probable, however, that *vasa murrina* were made from a semiprecious stone such as fluorite, rather than from glass.

**Murrina** (Italian), pl. **murrine**: These terms are used inconsistently, especially in the context of contemporary glass. When used as a noun, *murrina* usually refers to a

multicolored element embedded in an object, whereas *murrine* most often refers to slices of a complex **cane**.

**N** **Nappy:** In the United States, a small serving dish.

**Natron:** Sodium sesquicarbonate, originally obtained mainly from the Wadi el-Natrun, northwest of Cairo. It was commonly used by Roman glassmakers as the **alkali** constituent of **batch**.

**Nécessaire** (French, “necessity”): A traveling case containing a drinking glass and a knife, fork, and spoon.

**Nef** (from Old French *nef*, “ship”): A table ornament in the form of a ship, with the hull formed by **blowing** and the rigging consisting of **trails**. Sometimes, there is a spout in the hull.

**Neoclassical:** A style of art, architecture, literature, music, etc., that is based on, or influenced by, classical styles, especially the styles of ancient Greece and Rome.

**Neon, neon lighting:** Neon is an inert gas that, like some other gases, has the properties of high electrical conductivity and strong light-emissive power. Such gases can be introduced into evacuated glass tubes.

Under these conditions, an electrical discharge causes the gas to emit light. Different gases emit different colors;



*Sculpture with neon lighting.*  
U.S., Paul Seide, 1986. H. 48.4 cm.



*Nipt-diamond-waies goblet.  
England, George Ravenscroft,  
1676–1678. H. 18.8 cm.*

for example, neon emits red, and xenon emits blue. Regardless of the gases employed, lighting of this type is known as neon lighting.

**Network mosaic glass:** Hellenistic and Roman glass composed of spirally wound **canes**, usually colorless and white or yellow, that are **fused** to create an overall pattern with a lacy appearance; lacy mosaic glass hence the alternative name.

**Newel, newel post:** Usually, the post at the head and the foot of a flight of stairs, supporting the handrail. In the 19th century, glass **finials** were sometimes used to adorn newel posts.

**Nipt-diamond-waies:** The technique of manipulating adjacent vertical ribs with **pincers** to form a diamond pattern. “Nipt-diamond-waies” was the term used by the English glassmaker George Ravenscroft (1632–1683) in a 1677 advertisement for his new **lead glass**.

**Nuppenbecher** (German, “drop beaker”): A beaker decorated with large, droplike **prunts**, which may be drawn out into pointed projections.

**Obsidian:** A volcanic mineral that was the first form of natural glass used by humans. It is usually black, but it can also be very dark red or green; its splinters are often transparent or translucent.

**Oenochoe** (from Greek, “wine pourer”): A pitcher with a trefoil mouth, used in ancient Greece to transfer wine from the mixing bowl to the cup. Between the sixth and

third centuries B.C., miniature **core-formed** oenoches were used as perfume bottles.

**Omom** (perhaps from Arabic *qumqum*, “sprinkler”): A **sprinkler** with a tall, narrow neck and an oblate spheroid body. *Omoms* were used in the Islamic world for sprinkling perfume.

**Omphalos bowl** (from Greek *omphalos*, “navel”): A bowl with a hollow, raised boss (the “navel”) at the center.

**Opal glass**: Glass that resembles an opal, being translucent and white, with a grayish or bluish tinge.

**Opalescent glass**: (1) A type of late 19th-century **Art Glass**, made by covering a **gather** of colored glass with a layer of colorless glass containing bone ash and arsenic or the mineral cryolite from Greenland. The **parison** was inflated in a **mold** to produce raised decoration. When the parison was reheated, the raised areas became opalescent. (2) A type of glass resembling the iridescent gemstone opal, which was developed by Frederick Carder (1863–1963) at Steuben Glass Works in Corning, New York.

**Openwork**: Work that is perforated. Openwork in glass objects can be made by creating a network of **trails**, by **casting** (see **Diatreta**), or by **cutting** (see **Cage cup**).

**Optic mold**: See **Dip mold**.

**Optical glass**: Glass of extreme purity and with well-defined optical properties, which was originally created for making lenses and prisms.

**Opus sectile** (from Latin, “cut work”): Decoration on a wall or floor, made by fitting together flat elements of different shapes and colors. The ancient Romans sometimes used glass to make opus sectile ornament.

**Ormolu** (from French, “ground gold”): An alloy with a copper base, used for decoration. Some glass objects have ormolu mounts.

**Overblow:** A by-product of **mold blowing**, this is the portion of the **parison** that remains outside the **mold**. The overblow, or **moil**, is usually removed by **cracking off**.

**Overlay:** A layer of glass that covers a layer of a different color, often as the result of **casing** or **flashing**.

**P** **Pallet:** A glassworker’s tool consisting of a square piece of wood or metal and a handle. It is used to flatten the bases of vessels.



*Paperweight. France, Cristallerie de Pantin, about 1870–1880. D. 11.5 cm.*

**Palm column flask:** A tall, narrow cylindrical vessel decorated at the top with stylized palm fronds. Flasks of this type were made by **core forming** in Egypt in the 18th and 19th Dynasties (about 1400–1250 B.C.). They were used as **kohl tubes**.

**Palm cup:** A shallow drinking vessel with a round base that fits in the palm of the hand.

**Pane:** A piece of flat sheet glass used for glazing windows. See also **Crown glass** and **Cylinder glass**.

**Paperweight:** A small, heavy object designed to hold down loose papers. The first glass paperweights were made in the early 1840s in Venice and France, and their manufacture spread rapidly to other parts of Europe and the United States. Glass paperweights ceased to be fashionable in the early 20th century, but the craft of making them revived in the 1950s.

**Parcioffi** (Italian): **Jacks** with blades made of wood.

**Parison** (from French *paraison*): A **gather**, on the end of a **blowpipe**, that is already partly inflated.

**Passglas** (German, “pass glass”): A tall cylindrical drinking vessel with **trailed** or **enameled** horizontal marks. The drinker was supposed to gulp only enough to reach the next horizontal mark, and then pass the glass to the next person. If he drank too much, he was required to reach the next mark, and so on.

**Paste, glass paste:** These terms and their French and Italian equivalents, *pâte de verre* and *pasta vitrea*, have been used since at least the 17th century to describe the composition of small objects such as medallions and imitations of precious stones. However, their use to describe such objects is incorrect (they were made with molten glass, sometimes with a high lead content), and



*Pâte de verre relief.*  
France, François-Emile  
Décorchemont, about  
1930. H. 33 cm.



they should be restricted to objects of *pâte de verre*, as described in the next entry.

***Pâte de verre*** (French, “glass paste”): A material produced by grinding glass into a fine powder, adding a binder to create a paste, and adding a **fluxing** medium to facilitate melting. The paste is brushed or tamped into a **mold**, dried, and **fused** by **firing**. After **annealing**, the object is removed from the mold and **finished**.

**Patella cup** (from Latin *patella*, “small dish; kneecap”): A first-century A.D. Roman drinking cup with a double-convex profile and a **foot-ring**.

**Pattern-molded glass**: Glassware that has been **blown** into a **mold** whose interior has a raised pattern so that the object shows the pattern with a concavity on the inside, underlying the convexity on the outside. Pattern molds are not used to impart the final form to the object.

**Peachblow**: A type of **Art Glass** made by several American factories in the late 19th century. It resembled the peach bloom glaze on 17th- to 18th-century Chinese porcelain such as the celebrated Morgan Vase. Most Peachblow glass had a surface that shaded from opaque cream to pink or red, sometimes over opaque white. Similar glass was made in England by Thomas Webb & Sons and Stevens & Williams.

**Pegging**: The process of pricking molten glass with a tool that leaves small, air-filled



*Peachblow vase. U.S., Hobbs, Brockunier and Company, about 1886–1891. OH. 25.5 cm.*

hollows. When the glass is covered with a second **gather**, the hollows become **air traps**. This technique is used to decorate **knops** and **paperweights**.

**Pezzato** (Italian, “dappled”): A type of decorated glass developed in 1950–1951 by Fulvio Bianconi (1915–1996) for Venini & C. of Murano. The object is covered with a patchwork of rectangles of different colors, created by placing sections of flattened **canes** side by side on a metal plate, heating the slices until the glass is soft, and then picking them up on a colorless **parison**, smoothing them on a **marver**, and inflating the parison to the desired shape and size.

**Phiale** (from Greek *phialē*, “bowl” or “pan”): A broad, flat bowl for drinking or pouring libations.

**Pick-up decoration**: A technique whereby a hot **parison** is rolled in chips of glass, which are picked up, **marvered**, and inflated.

**Piece mold**: A **mold** made of two or more parts.

**Piggin**: A small cylindrical drinking vessel, often of wood, with one stave longer than the rest and serving as a handle.

**Pilgrim flask**: A flat flask with a ring on each side of the neck for the insertion of cords by which it can be suspended.

**Pillar-molded glass**: A term used by 19th-century English glassmakers to describe vessels with **mold-blown** vertical ribs but no corresponding indentations on the interior. This effect was achieved by partly inflating the **gather**, allowing it to cool sufficiently to become somewhat rigid, and then gathering an outer layer of glass around it. The **parison** was then further inflated in a ribbed **dip mold**, which shaped the soft outer layer

without affecting the inner layer. The term is frequently but incorrectly applied to ancient Roman **ribbed bowls**, which were made in a different manner.

**Pincers:** A glassworker's tool used for decorating objects by pinching the glass while it is hot.

**Plaque:** An ornamental plate or tablet intended to be hung up as a wall decoration or inserted in a piece of furniture.

**Plastic:** Susceptible to being modeled or shaped. When it is in a molten state, glass can be described as plastic.

**Plate glass:** Flat glass of high quality, formed by rolling molten glass on a metal plate and later **grinding** and **polishing** it until the surfaces are parallel and completely smooth.

**Plating:** A 19th-century American synonym for **casings**.

**Pokal** (German): A covered **goblet** with a flared bowl, made mostly in Germany between the 17th and 19th centuries, and used for drinking toasts.

**Polishing:** Smoothing the surface of an object when it is cold by holding it against a rotating wheel fed with a fine abrasive such as pumice or cerium oxide. Glass can also be polished with hand-held tools.

**Polycandelson** (from Greek *polykandelon*): A lighting fixture consisting of a metal ring with apertures to hold cone-shaped lamps, suspended by three chains.

**Pomona:** A type of **Art Glass** developed by Joseph Locke (1846–1936) at the New England Glass Company and patented in 1885. Made of colorless glass, it was **mold-blown** repeatedly, partly etched and stained amber or rose, and decorated with blue and amber garlands of flowers and fruits.



Porrone. Spain, late 17th–18th century.  
H. (larger) 27.2 cm.

**Pontil, pontil mark:** The pontil, or punty, is a solid metal rod that is usually tipped with a wad of hot glass, then applied to the base of a vessel to hold it during manufacture. It often leaves an irregular or ring-shaped scar on the base when removed. This is called the “pontil mark.”

**Porringer:** A shallow dish, usually with one or two horizontal handles, for porridge or similar food. Porridge is either a soft food made by boiling meal of cereals or legumes in milk or water until it becomes thick, or a soup of meat and vegetables, often thickened with cereal.

**Porrón** (Spanish): A type of drinking vessel with a narrow neck, a long and tapering spout, and no handle, used in Spain for drinking wine by pouring it into the mouth.

**Posset pot:** A spouted vessel used for consuming posset, a beverage of hot milk curdled by wine or ale, usually spiced or sweetened, and thickened with oatmeal or bread. The drinker sucked the liquid through the spout and ate the residue with a spoon.

**Post:** The glass used to attach a second **pontil** to glass that is about to be pulled into a **cane**.

**Post technique:** Instead of being applied to a vessel with a wad, the **pontil** is attached to a flat plate of glass called a “post,” which is then affixed to the base or **foot-ring** of the vessel.

**Pot:** A **fire-clay** container in which **batch** is **fused** and kept molten. The glassworker **gathers** glass directly from the pot.

**Potash:** Potassium carbonate. It is an alternative to **soda** as a source of **alkali** in the manufacture of glass.

**Potash- or Potassium-lime glass:** A form of glass containing three major compounds in varying proportions: **silica** (usually about 60–75 percent), **potash** (12–18 percent), and **lime** (5–12 percent). **Forest glass** is a common type of potassium-lime glass. Potash glass is slightly denser than **soda-lime glass**; it passes from the molten to the rigid state more quickly, and it is therefore more difficult to manipulate into elaborate forms. However, it is harder and more brilliant, and it lends itself to decorative techniques such as facet **cutting** and **copper-wheel engraving**.

**Preserving jar:** A jar for preserving food. The term refers to jars with a variety of methods for sealing the contents. John Landis Mason perfected the first inexpensive method of sealing glass jars in 1858.

**Pressed glass:** Glassware formed by placing a blob of molten glass in a metal mold and pressing it with a metal plunger or “follower” to form the inside shape. The resultant piece, termed “**mold-pressed**,” has an interior form independent of the exterior, in contrast to **mold-blown** glass, whose interior corresponds to the outer form. The process of pressing glass was first

mechanized in the United States between 1820 and 1830.

**Prince Rupert's drop:** A solid, hollow glass object, about two inches long, with a bulbous end and a narrow, curving "tail." It is made by dropping a blob of hot glass into cold water and leaving it there until it has cooled. The rounded end resists a blow, but because of internal stress due to the absence of **annealing**, the tail shatters into numerous fragments if it is broken or scratched. These objects, which have aroused great curiosity, were introduced into England by Prince Rupert (1619–1682), nephew of Charles II. Samuel Pepys described them in his diary on January 13, 1662.

**Printy, printie:** A circular or oval wheel-cut depression.

**Prismatic cutting:** A decorative pattern of long, mitered grooves, cut horizontally in straight lines so that the top edges of each groove touch the edges of the adjoining grooves. Prismatic cutting is usually found on the necks of pitchers and decanters.

**Prunt:** A blob of glass applied to a glass object primarily as decoration, but also to afford a firm grip in the absence of a handle.



*Pressed glass fruit basket. U.S., Boston and Sandwich Glass Company, 1845–1860. H. 21.2 cm.*

Punch set. France, Cristalleries de Baccarat, about 1867. OH. (bowl) 56.5 cm.



**Pucellas** (from Italian): See **Jacks**.

**Pulegoso** (Italian, from the dialect word *pulega*, “bubble”): Glass containing numerous bubbles of all sizes, produced by adding bicarbonate of soda, gasoline, or other substances to the **melt**. The bubbles make the glass semiopaque and give the surface an irregular texture. *Pulegoso* was developed by Napoleone Martinuzzi (1892–1977) on the island of Murano, Italy, in the 1920s.

**Pulling**: See **Drawing**.

**Punch bowl**: A bowl for mixing and serving punch. Traditionally, punch was composed of wines or liquors, mixed with hot water or milk, and flavored with sugar, lemons, or spices. Fruit punches, with or without alcohol, are also common.

**Punty**: See **Pontil**.

**Puzzle glass**: See **Trick glass**.

**Pyrex**: A type of **borosilicate glass** perfected in 1915 by W. C. Taylor and Eugene Sullivan of Corning Glass Works in Corning, New York. Pyrex rods can be used in **flame-working**.

**Pyxis** (from Greek and Latin), pl. **pyxides**: A covered box for the toilet table, used to contain cosmetics, medicines, and jewelry.

**Q Quarry**: A small square- or diamond-shaped **pane**.

**Quincunx** (from Latin, “five-twelfths”): An arrangement of five objects in a square or rectangle, with one at each corner and one in the middle, like the five spots on dice.

**Prunts** and other motifs are sometimes arranged in a quincunx pattern.

**R Raised diamond cutting**: An all-over pattern of raised four-sided diamonds of pyramidal form, each with a sharp apex, **cut** with a mitered wheel. It was produced by English and Irish glass cutters between about 1780 and 1825.

**Raspberry prunt**: A flat, circular **prunt** with an impressed design resembling a raspberry.



Reichsadler  
Humpen. *Bohemia*,  
1574. H. 26.4 cm.

**Reactive glass**: A type of glass, made by Louis Comfort Tiffany (1848–1933), that changed color when it was reheated.

**Reducing atmosphere**: An atmosphere in a **kiln** or **furnace** that is deficient in oxygen. Sometimes, a reducing atmosphere is created deliberately to reduce oxides to their metallic state, as in the case of **luster** pigments.

**Refractory**: A substance, usually clay with a high **silica** content, capable of resisting high temperatures. **Furnaces** and **pots** are made from refractory materials.

**Reichsadler Humpen** (German, “imperial eagle beaker”): A **Humpen** decorated with



a heraldic two-headed eagle whose wings bear the insignia of the Holy Roman Empire.

**Relief cutting:** A type of **cut** glass with decoration in high relief, made by removing the background.

**Resist:** A substance that resists or prevents a particular action. During the process of **acid etching** or **sandblasting**, parts of the surface are protected with a resist.

**Reticello:** See *Vetro a reticello*.

**Retort:** A vessel with a long neck, bent downward, in which liquids subjected to distillation are heated.

**Retorti, retortoli:** See *Vetro a retorti*.

**Reverse foil engraving:** A decorative technique in which gold or silver leaf is applied to the back side of a piece of glass, **engraved**, and protected by varnish, metal foil, or another piece of glass. See also *Verre églomisé*.

**Reverse painting:** The term applied to a number of decorative techniques, all of which involve painting, on the back side of the glass, a design that is viewed from the front (that is, through the glass). Because of this, the painter must apply the pigments in the reverse of the normal order, beginning with the highlights and ending with the background.

**Rhyton** (from Greek): A drinking vessel used in many parts of the ancient world. Most ancient glass rhytons are of the Roman period. They are in the form of a horn, sometimes with the head of an animal at the tip. The tip is perforated, and one drank from it by holding the rhyton above one's head and catching the stream of liquid in the mouth.

**Ribbed bowl:** An ancient Roman vessel decorated with a continuous band of vertical ribs.



*Ribbon glass cup. Roman Empire, about 25 B.C.–A.D. 50. H. 4.8 cm.*

**Ribbon glass:** (1) A type of first-century A.D. Roman **mosaic glass** that consists of ribbonlike **canes** arranged in parallel rows or geometric patterns; (2) a type of **vetro a reticello** made in Venice and at other places where **façon de Venise** glass was produced.

**Rigaree:** A raised band or pattern of bands, usually made by **crimping** applied **trails**.

**Rock crystal:** Quartz (chemically pure silicon dioxide), which is usually colorless. From earliest times, glass-makers sought to imitate it.

**Rock-crystal engraving:** A style of **copper-wheel engraving** that, combined with **polishing**, gave glass objects the appearance of **rock crystal**. The style was introduced by Thomas Webb & Sons of England in the 1870s.

**Rod:** A monochrome segment of glass cut from a **trail**.

**Rod forming:** The technique of winding molten glass around the tip of a narrow metal tool or wire coated with clay or **kiln wash** to act as a separating agent. It is used for making narrow objects such as beads and pendants.

**Rolling pin:** A cylindrical object, usually made of wood but sometimes of glass, for rolling out dough or pasta

to the required thickness. Many glass rolling pins are **friggers**, with a knob at each end so that they can be suspended by a cord.

**Roman foot:** A flangelike base formed by folding. The ancient Romans were the first glassworkers to make bases in this manner.

**Römer** (German), **roemer** (Dutch): A drinking vessel for wine or beer. It has an ovoid mouth, a cylindrical body, and a conical foot. The body is usually decorated with **prunts**.

**Rotary polishing:** The process of **polishing** an object with tools and an abrasive while turning it on a lathe.

**Rummer:** A type of 19th-century English **goblet**, with a short stem and a square or domed foot.

**Rüsselbecher** (German, “trunk beaker”): See **Claw beaker**.

**S** **Sagging:** See **Slumping**.

**Salt, saltcellar** (from French *salière*, “salt dish”): A small bowl used at the table for salt.

**Salver:** A tray for serving. At first, salvers were used primarily for presenting objects to rulers. More recently, the word is used to denote trays used for presenting letters or visiting cards, or for serving refreshments.

**Sand:** The most common form of **silica** used in making glass. It is collected from the seashore or, preferably, from deposits that have fewer impurities. For most present-day glassmaking, sand must have a low iron content. Before being used in a **batch**, it is thoroughly washed, heated to remove carbonaceous matter, and screened to obtain uniformly small grains.

**Sand casting, sand molding:** A forming technique in which molten glass is poured or ladled into a mold of

compacted sand. A rough-textured granular surface results where the glass comes into contact with the sand.

**Sandblasting:** The process of removing glass or imparting a **matte finish** by bombardment with fine grains of sand that are propelled by compressed air.

**Sand-core technique:** A misnomer for **core forming**.

**Satin glass:** A 19th-century term for glass with a **matte finish**.

**Scale:** An accidental inclusion in glass, consisting of corrosion products detached from the metal implements used to stir the **batch** or to form the object.

**Scarab** (from Latin *scarabaeus*, "beetle"): (1) A beetle, usually the scarabaeid beetle, which was revered by the ancient Egyptians; hence (2) a gem in the form of a beetle, with a design in **intaglio** on the flat underside.

**Scavo** (Italian, "excavation"): A technique involving the application, to the surface of an object, of substances that, when heated to about 1470°F (800°C), **fuse** and create an effect similar to **weathering**, thereby imitating glass from an archeological excavation.

**Scheuer** (German): A type of drinking glass with a short cylindrical neck, a hemispherical body, and a single handle that projects outward and upward from the wall.

**Schmelzglas** (German, "enamel glass"): A term applied to several types of decorative glassware, including **calcedonio** and opaque white glass with a red overlay applied by **flashing**. It does *not* refer to glass decorated with **enamel**.

**Schwarzlot** (German, "black lead"): A sepia **enamel** first used in painting **stained glass** and later applied



Schwarzlot tumbler. Germany, early 18th century. H. 9.5 cm.

to glass vessels, either by itself or in combination with other enamels or gold.

**Seal:** Its many meanings include an emblem impressed on wax or some other **plastic** substance as evidence of ownership or authenticity. Since the

17th century, many bottles have borne stamped glass seals that identify the producer of the contents, the tavern in which they were used, or the individual for whom the contents were bottled.

**Seam mark:** A slight, narrow ridge on a glass object, which indicates that it has been made in a **mold**. The seams appear where gaps in the joins between parts of the mold have permitted molten glass to seep during formation. On well-made pieces, the seam marks are usually smoothed away by **grinding** or **fire polishing**.

**Seeds:** Minute bubbles of gas, usually occurring in groups.

**Service:** A matching set of tableware.

**Shearings (cuttings, clippings):** Slivers of waste glass formed by trimming glassware during manufacture.

**Shears:** A tool used to trim excess hot glass from an object in the course of production. Many modern shears are embedded with chips of industrial diamonds.

**Shot glass:** A small drinking glass used to serve a single measure (shot) of liquor, usually whiskey.

**Sick glass:** See **Crizzling**.

**Sidonian glass:** A popular generic name for numerous first-century A.D. Roman **mold-blown** vessels. It is not known how many of these objects were actually made at Sidon, a city on the coast of Lebanon.

**Silica:** Silicon dioxide, a mineral that is the main ingredient of glass. The most common form of silica used in glassmaking has always been **sand**.

**Silver stain:** A deep yellow stain made by painting the surface of the glass with silver nitrate or similar compounds and firing it at a relatively low temperature.

**Silvered glass:** A type of 19th-century glassware with an all-over silver appearance, made by applying a solution of silver nitrate between the walls of a double-walled vessel. The solution was introduced through a hole in the base, which was then sealed to prevent the silver from oxidizing. Silvered glass is sometimes known, mistakenly, as “mercury glass.” The technique was patented in England by Edward Varnish and F. H. Thompson in 1849, and in America by William Leighton in 1855.

**Sintering:** The process of heating a mixture of materials so that they become a coherent mass, but not melting them. *See also Frit.*

*Service. Austria, Josef Hoffmann, about 1915. H. (tallest) 32.8 cm.*



**Size:** In glassworking, the name applied to several glutinous materials, such as glue and resin, used to affix color or gold leaf.

**Skyphos** (from Greek), **scyphus** (from Latin): A cup with a foot and two opposed handles.

**Slag glass:** See **Marbled glass**.

**Slumping:** The process of reheating a **blank** until it becomes soft and gradually flows under its own weight over or into a **former mold** and eventually assumes the shape of the mold. **Soda-lime glass** becomes soft at about 1110°F (600°C). Slumping is also known as sagging.

**Smalt:** Colored glass, often deep blue glass colored with cobalt oxide. Smalts are finely ground to use as colorants for glass and **enamel**.

**Snake-thread decoration:** A type of decoration that consists of **trails** applied in sinuous patterns. It was made by the Romans between the second and fourth centuries A.D.

**Snap:** See **Gadget**.

**Snuff bottle, snuffbox:** A small bottle (in China) or box (in Europe) for powdered tobacco, or snuff. The habit of inhaling snuff, which spread to Europe from the Americas in the 17th century, was introduced to China in the 18th century.

**Soda:** Sodium carbonate. Soda (or alternatively **potash**) is commonly used as the **alkali** ingredient of glass. It serves as a **flux** to reduce the fusion point of the **silica** when the **batch** is melted.

**Soda-lime glass:** Historically, the most common form of glass. It contains three major compounds in varying proportions, but usually **silica** (about 60–75 percent), **soda** (12–18 percent), and **lime** (5–12 percent). Soda-lime

glasses are relatively light, and upon heating, they remain **plastic** and workable over a wide range of temperatures. They lend themselves, therefore, to elaborate manipulative techniques.

**Soffietta** (Italian): A tool used as a puffer to further inflate a vessel after it has been removed from the **blowpipe** and is attached to the **pontil**. It consists of a curved metal tube attached to a conical nozzle. The glassblower reheats the vessel, inserts the nozzle into its mouth so that the aperture is blocked, and then inflates the vessel by blowing through the tube.

**Soft glass:** A generic name for glass (e.g., **soda-lime glass**) with a relatively high coefficient of expansion. The term **hard glass** (e.g., **borosilicate glass**) refers to glass with a relatively low coefficient of expansion.

**Spechter** (German): A drinking glass made in the Spessart region of Germany in the 16th century. Although the term is frequently applied to a tall glass resembling a **Stangenglas**, there is no proof that the usage is correct.

**Spill holder:** A tall, narrow vessel for spills. Spills are thin strips of wood, or folded or twisted pieces of paper, used for lighting candles, pipes, etc. *See also* **Taperstick**.

**Spoon holder:** A tall, narrow container for spoons. Spoon holders were used at the table from the mid-19th century to World War I.

**Sport cup:** A first-century A.D. Roman **mold-blown** drinking vessel decorated with fighting gladiators or a chariot race.

**Sprinkler:** A vessel with a narrow neck, sometimes with a diaphragm at the bottom, that causes the contents to emerge drop by drop.



**Stained glass:** The generic name for decorative windows made of pieces of colored glass fitted into **comes** and set in iron frames. Strictly speaking, the term is inaccurate because, in addition to glass colored by **staining**, glaziers used, and continue to use, glass colored throughout by **metallic oxide**, glass colored by **flashing**, and glass decorated with **enamel**.



*Stained glass window. U.S., Louis Comfort Tiffany, 1905. H. 346.2 cm.*

**Staining:** In glassworking, the process of coloring the surface of glass by the application of silver sulfide or silver chloride, which is then **fired** at a relatively low temperature. The silver imparts a yellow, brownish yellow, or ruby-colored stain, which can be painted, **engraved**, or etched.

**Stangenglas** (German, “pole glass”): A tall, narrow cylindrical drinking vessel (hence the name “pole glass”), usually with a pedestal foot.

**Stem:** The narrow part of a **goblet** or **tazza** that separates the **bowl** and the **foot**.

**Stemware:** The collective name for drinking vessels and serving dishes with a stem supporting the bowl.

**Stick lighting, stickwork:** The process of using a point to scratch internal details in painted or **enameled** decoration.

**Stippling:** (1) The technique of tapping the surface of a glass object with a pointed tool, often with a diamond or tungsten-carbide tip. Each tap produces a mark, and the decoration is composed of many hundreds or thousands of marks. (2) On **lacy-pattern glass**, the stippling is part of the decoration of the **mold**.

**Stirrup cup:** (1) A cup of wine or some other drink handed to a person when on horseback and about to set out on a journey; hence (2) a drinking vessel for consuming such drinks.

**Stone:** Any crystalline inclusion present in glass. Stones consist of unmelted particles of **batch**, fragments of re-



*Stippled bowl. England, Laurence Whistler,  
1974. H. 22.4 cm.*

**factory** material from the **pot**, or **devitrification** crystals. Stones of the first two varieties are generally irregular but rounded; those of the third variety are angular and well formed.

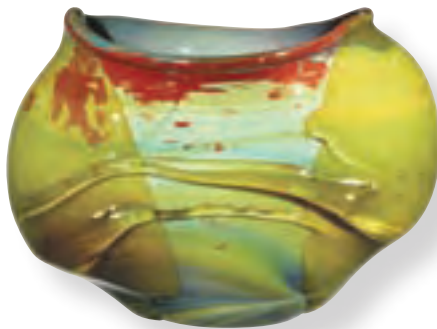
**Strain cracks:** Fissures in the body of a vessel caused by internal strain resulting from inadequate **annealing** and/or accidental thermal shock.

**Strigil** (from Latin *strigilis*, “scraper”): A scraper used by the ancient Romans to remove impurities from the skin after bathing. Although strigils were usually made of metal, a few glass examples are known to exist.

**Striking:** The process of reheating glass after it has cooled, in order to develop color or an opacifying agent that appears only within a limited range of temperatures.

**Studio glass:** A term popularized in the 1960s for unique or limited-edition objects designed and made in a studio rather than a factory, often, but not necessarily, by the same person.

**Studio Glass movement:** A movement that began in the United States in the 1960s and has spread all over



*Studio Glass movement vessel. U.S., Harvey Littleton, 1965. H. 11.4 cm.*



*Basket with sulphides. England, Falcon Glassworks, about 1820–1830. H. 20 cm.*

the world. It is characterized by the proliferation of glass artists who are not affiliated with factories, but work with hot glass in their own studios. The emergence of independent glass artists was made possible by Harvey Littleton and Dominick Labino's development in 1962 of a small **furnace** and easy-to-melt glass.

**Sturzbecher** (German, "turned-upside-down beaker"): See **Cone beaker**.

**Sulphide:** A small ornamental object of white porcelainlike material, made to be encased in glass. The term is also applied to objects that are decorated with sulphides. They were popular in Europe and America throughout the 19th century. The term "sulphide" is probably connected with the use of sulfur by 18th- and 19th-century moldmakers.

**Sweetmeat:** A vessel for serving sweetmeats, sweet food such as preserved or candied fruit and sugared cakes or nuts.

**Swirled ribbing:** A pattern of spiraling vertical ribs made by inflating the **parison** in a **dip mold** with vertical ribs, withdrawing it, and twisting it before continuing to inflate. The pattern is also described as wrythen.

**T** **Table set:** A group of matching objects comprising a sugar bowl, **creamer**, **spoon holder**, and butter dish.

**Taglia** (Italian): A square-ended knife used to shape or sculpt molten glass on the **blowpipe**.

**Tank:** A large receptacle constructed in a **furnace** for melting **batch**. Tanks, which were first used in antiquity, replaced **pots** in larger glass factories in the 19th century.

**Taperstick:** A tall, thin vessel for tapers. Tapers are long wicks coated with wax for use as a spill. *See also* **Spill holder**.

**Tazza** (from Italian, “cup”): An ornamental dish or cup on a stemmed foot. Tazzas were generally made for drinking, for displaying fruit or sweetmeats, and as purely decorative objects.

**Teardrop:** A drop-shaped air bubble enclosed in a glass, usually in the stem.

**Tessera** (from Latin, “small square tablet or block”): A small piece of glass or other suitable material, used in the formation of mosaics.

**Threading:** The process of winding a thin **trail** of glass around an object to create the appearance of parallel lines. In 1876, W. J. Hodgetts of Stourbridge, England, patented a machine that produced very regular and closely spaced threads.

**Tieback:** A device for holding a drawn curtain back from the window. Some 19th- and 20th-century tiebacks have glass pommels or bosses.

**Tiefschnitt** (German, “deep cut”): See **Intaglio**.

**Toddy plate:** A popular term for a small **pressed glass** plate, made between about 1830 and 1870, presumably as a saucer under a toddy glass. Toddy is a beverage composed of whiskey or another liquor, hot water, and sugar.

**Toilet bottle:** A bottle for perfume or toilet water. Ancient Roman toilet bottles are frequently known as **unguentaria**.

**Tool:** Any instrument used by glassworkers to develop and shape an object. Glassworkers’ tools include the **blowpipe, pontil, gathering iron, jacks, shears, clapper, pallet, block, pincers, battledore, lipper, and crimper**.

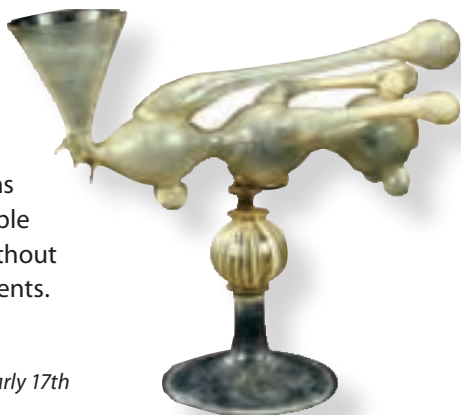
**Tooling:** The result of using a **tool** or tools.

**Trail:** A strand of glass, roughly circular in section, drawn out from a **gather**.

**Trailing:** The process of applying **trails** of glass as decoration on the body, handle, or foot of a vessel. It is done by laying or winding softened threads on a glass object during manufacture. See also **Combed decoration**.

**Trick glass:**

A glass, usually for wine and often of extraordinary shape, designed to be as difficult as possible to drink from without spilling the contents.



*Trick glass. Spain, early 17th century. H. 21.9 cm.*



*Glasses with twists. England, about 1760–1780.  
H. (largest) 20 cm.*

In drinking competitions, any drinker who spilled wine was required to start again with a full glass.

**Trulla** (from Latin): The popular term for an ancient Roman dipper in the form of a shallow bowl with a single horizontal handle.

**Tureen** (from French *terrine*, “flat-bottomed dish”): A deep, usually oval bowl with a lid, for serving soup; also, a smaller vessel with the same form, for serving sauce or gravy.

**Twist:** A type of decoration in the stems of 18th-century and later drinking glasses, made by twisting a glass rod embedded with threads of white glass, threads of colored glass, columns of air (**air twists**), or a combination of all three.

**U Undercutting:** The technique of decorating glass in high relief by **cutting** or **carving** away part of the glass between the body of an object and its decoration (e.g., on a **cage cup**).

**Unguentarium** (from Latin), pl. **unguentaria**: A term commonly applied to ancient Roman **toilet bottles**. It appears, however, that the term was “invented” in the 19th century, on analogy with *unguentarius* (perfume seller) and similar Latin words that the Romans used in connection with perfumes.

**Uranium glass**: Glass colored with uranium oxide. The earliest reference to uranium glass appears to date from 1817. It was made popular by Josef Riedel in and after 1834. See also **Annagelb** (which is yellow) and **Annagrün** (which is green).

## V

**Vas diatretum** (Latin), pl. **vasa diatreta**: See **Cage cup**.

**Vermiculée** (French, “vermiculate”) **design**: A convoluted ground pattern resembling worm tracks.

**Verre églomisé** (French): A decorative technique in which gold or silver leaf is applied to the back side of a piece of glass, **engraved**, and protected by varnish, metal foil, or another piece of glass. The name is derived from the French mirror and picture framer Jean-Baptiste Glomy (d. 1786). Decoration of this type, however, had been made since the 13th century, and the term **reverse foil engraving** is preferable.

**Vetro a fili** (Italian, “glass with threads”): A type of **blown** glass made with **canes** that form a pattern of parallel lines.

**Vetro a reticello** (Italian, “glass with a small network”): A type of **blown** glass made with **canes** organized in a crisscross pattern to form a fine net, which may contain tiny **air traps**.

**Vetro a retorti** (Italian, “glass with twists”): A type of **blown** glass made with **canes** that have been twisted to form spiral patterns.



**Vetro di trina** (Italian, “lace glass”): A term loosely applied to various types of **vetro a reticello**.

**Victory beaker**: A first-century A.D. Roman **mold-blown** drinking vessel inscribed in Greek with words meaning “Take the victory.”

**W** **Waldglas** (German, “forest glass”): See **Forest glass**.

**Warzenbecher** (German, “wart beaker”): A heavy glass tumbler made of **forest glass** and decorated with **prunts**. It was produced in Germany in the 16th and 17th centuries.

**Waster**: A defective object discarded during manufacture. Wasters are routinely recycled as **cullet**.

**Water set**: A pitcher with matching tumblers, sometimes with a matching tray.

**Weathering**: Changes on the surface of glass caused by chemical reaction with the environment. Weathering usually involves the leaching of **alkali** from the glass by water, leaving behind siliceous weathering products that are often laminar.

**Weeping glass**: See **Crizzling**.

**Wheel engraving**: A process of decorating the surface of glass by the **grinding** action of a wheel, using disks of various sizes and materials (usually copper, but sometimes stone), and an abrasive in a grease or slurry applied to a wheel, as the engraver holds the object against the underside of the rotating wheel. See *also* **Cutting** and **Copper-wheel engraving**.

**Whimsy**: See **Frigger**.

**Whiskey set**: A **decanter** with matching tumblers, sometimes with a matching tray.



*Wheel-engraved bowl. U.S., Steuben Glass Inc., 1935. H. 17.7 cm.*

**Williamite glass:** A late 17th- and 18th-century English drinking vessel **engraved** with a toast, a symbol (an orange tree, for example), or a motto supporting William of Orange (King William III, r. 1689–1702), or with his portrait. William III was a Protestant, and his political opponents were the Roman Catholic Jacobites. Many Williamite glasses have been shown to be late 19th-century **fakes**, some perhaps executed by the Bohemian glass engraver Franz Tieze (1842–1932). *See also Jacobite glass.*

**Wine set:** A **decanter** with matching wineglasses, sometimes with a matching tray.

**Winged goblet:** A type of **goblet** with the stem in the form of vertical, winglike flanges composed of **trails** arranged in a complex design that may include dragons, sea horses, and other creatures. The German term for a winged goblet is *Flügelglas*.

**Witch ball:** A glass globe intended to be hung in a prominent place to ward off the evil eye.

**Wrythen:** See **Swirled ribbing**.

**Y** **Yard-of-ale:** A type of English ale glass with a trumpet-shaped mouth, a long and narrow neck, and a small globular body. These glasses were often one yard (three feet) long. They contained about one pint and functioned like **trick glasses**. The yard-of-ale came into use in the 1680s and continued into the 19th century.

**Z** **Zanfirico** (Italian): A type of polychrome **cane** made by assembling a bundle of rods of different colors, and heating it until it is soft. The bundle is then attached to two **pontils** and elongated by **drawing**. At the same time, the bundle is twisted to produce a spiral pattern. *Zanfirico*, which is a synonym for *vetro a retorti*, takes its name from the Venetian dealer Antonio Sanquirico, who, in the 1830s, encouraged the revival on Murano of this and other traditional techniques.



*Zwischengoldglas beaker. Bohemia, about 1685–1700. H. 9.5 cm.*

**Zwischengoldglas** (German, “gold between glass”): A type of decoration, produced in Bohemia and Austria in the 18th century, in which a design in gold or silver leaf is incorporated between two vessels that fit together precisely. Unlike Hellenistic and Roman **gold glass**, which is fused, *Zwischengoldglas* is bonded with cement.

# DESCRIPTIONS OF ILLUSTRATED OBJECTS

The number preceding each description below refers to the page on which the object is illustrated. The number in parentheses is the Corning Museum of Glass accession number.

- 6.** Vase, blown, acid-etched. France, Bar-sur-Seine, Maurice Marinot, about 1934. H. 17 cm (65.3.48). Gift of Mlle Florence Marinot.
- 9.** Amphoriskos, core-formed. Eastern Mediterranean, 2nd–1st century B.C. H. 24 cm (55.1.62).
- 11.** Gold Aurene vase, blown, iridized. U.S., Corning, New York, Steuben Glass Works, Frederick Carder, about 1910. H. 17.1 cm (75.4.113). Gift of Corning Glass Works.
- 12.** Baluster goblet, blown, engraved. England, probably 1707. H. 23.5 cm (2005.2.8).
- 14.** Biedermeier beakers, blown, enameled. Austria, Vienna, enameled by Anton Kothgasser and Gottlob Samuel Mohn, about 1811–1828. H. (tallest) 11 cm (92.3.15–19). Gift of Mrs. K. F. Landegger.
- 16.** Vase, “Rookwood” pattern, blown, cut. U.S., Corning, New York, J. Hoare and Company, 1910–1918. H. 50.2 cm (2003.4.16).
- 18.** Burmese lamp, blown. U.S., New Bedford, Massachusetts, Mt. Washington Glass Company, about 1885–1895. H. 48.5 cm (79.4.91). Part gift of William E. Hammond.
- 19.** Plaque, *Moorish Bathers*, cameo-carved. England, Thomas Webb & Sons, carved by George Woodall, 1898. D. 46.3 cm (92.2.10). Bequest of Juliette K. Rakow.
- 20.** *Harlequin Vase*, mold-blown, cased, cut. Czechoslovakia, Nový Bor, Karel Wünsch, 1962. H. 38.6 cm (2004.3.2).
- 21.** Medallion of King Louis XIV, cast, cut, gilded. France, Orléans, Bernard Perrot, about 1680–1695. H. (frame) 38.7 cm (99.3.2).
- 24.** Mug, blown, combed decoration. U.S., about 1860–1870. H. 15.3 cm (79.4.339). Gift of The Ruth Bryan Strauss Memorial Foundation.
- 25.** Portrait medallion, cut, engraved. Bohemia, probably Franzensbad, engraved by Dominik Biemann (signed), dated 1834. D. 9.5 cm (65.3.68).
- 26.** *Cristallo* goblets, blown. Venice, about 1600. H. (tallest) 17.8 cm (61.3.135, 60.3.17, 70.3.8).
- 28.** Cup plate, pressed. U.S., possibly Pennsylvania, about 1831. D. 9.4 cm (2004.4.34).

29. *Daumenglas*, blown, applied. Germany, 17th century. OH. 36.8 cm (51.3.282).
30. Plate with monogram of Gaston of Orléans, blown, diamond-point engraved. France or Low Countries, about 1630–1640. D. 48.4 cm (77.3.34). Museum Endowment Fund purchase.
32. Dragon-stem goblet, blown, mold-blown, applied. Venice, 17th century. H. 26.3 cm (51.3.118).
33. Vase, blown, acid-etched, enameled, gilded. England, Thomas Webb & Sons, late 19th century. H. 25.7 cm (2005.2.5).
37. Figurine of beggar, flame-worked. France, probably Nevers, early 18th century. H. 5.1 cm (59.3.22).
38. *Nuppenbecher*, forest glass, blown, applied. Germany, 15th–16th century. H. 7.8 cm (50.3.38).
40. Toilet water bottle, blown, gilded. England, about 1790. H. 13.1 cm (50.2.56).
41. Gold-glass roundel. Roman Empire, 4th century A.D. D. 9.7 cm (66.1.37).
42. Covered goblet, gold ruby glass, blown, cut. Germany, Brandenburg, about 1720–1735. H. 26.9 cm (79.3.318). Bequest of Jerome Strauss.
44. Head flask, mold-blown. Roman Empire, eastern Mediterranean, 4th–5th century A.D. H. 19.6 cm (59.1.150).
46. Jack-in-the-pulpit vase, blown, iridized. U.S., Corona, New York, Tiffany Studios, about 1912. H. 47.6 cm (62.4.61).
48. *Libertà* (Liberty), fused glass threads. U.S., Toots Zynsky, 2004. H. 25.4 cm (2004.4.28). Gift in part of the family of the late Laura R. Houghton, by exchange.
48. Kohl tube, core-formed. Northwestern Iran, 5th–4th century B.C. H. 8.8 cm (66.1.50).
49. Lacy-pattern tray, pressed. U.S., New England, about 1830–1845. L. 23.8 cm (68.4.501).
51. Covered sugar bowl and cream jug, blown, applied. U.S., New York State, about 1835–1850. OH. (bowl) 27.2 cm (55.4.157, .131).
55. Vessel, cast, cut, acid-etched. Czech Republic, František Vízner, 1996. H. 10.2 cm (2006.3.47). Gift of Andrea and Charles Bronfman.
56. Mold, copper alloy, cast. Probably Western Asia, 11th–13th century. H. 11.4 cm (86.7.15).
58. Slice of *murrine* cane containing entire text of the Lord's Prayer, assembled, heated, pulled. U.S., Richard Marquis, 1970. H. 1.7 cm (94.4.111A). Gift of the artist.
59. *Frosted Radio Light*, blown, neon, mercury. U.S., Paul Seide,

1986. H. 48.4 cm (87.4.41). Part gift of Mike Belkin.
- 60.** Goblet, mold-blown, nipt-diamond-waives, applied. England, London, Savoy glasshouse of George Ravenscroft, 1676–1678. H. 18.8 cm (50.2.2).
- 62.** Paperweight with salamander, lampworked, furnace-worked. France, Pantin, Cristallerie de Pantin, about 1870–1880. D. 11.5 cm (55.3.79). Gift of the Honorable and Mrs. Amory Houghton.
- 63.** Relief, *Sirène au poisson* (Mermaid and fish), *pâte de verre*. France, François-Emile Décorche-mont, about 1930. H. 33 cm (53.3.14).
- 64.** Morgan Vase, Peachblow, blown. U.S., Wheeling, West Virginia, Hobbs, Brockunier and Company, about 1886–1891. OH. 25.5 cm (50.4.328).
- 67.** *Porrones*, blown, applied. Spain, Catalonia, late 17th–18th century. H. (larger) 27.2 cm (79.3.910, .481). Bequest of Jerome Strauss and gift of The Ruth Bryan Strauss Memorial Foundation.
- 69.** Fruit basket, pressed. U.S., Sandwich, Massachusetts, Boston and Sandwich Glass Company, 1845–1860. H. 21.2 cm (2004.4.36).
- 70.** Punch bowl, with ladle, tray, and glasses, cameo glass, blown, cut, acid-etched. France, Baccarat, Compagnie des Verreries et Cristalleries de Baccarat, about 1867.
- OH. (bowl) 56.5 cm (67.3.41). Gift of Mrs. Charles K. Davis.
- 71.** *Reichsadler Humpen*, blown, enameled, gilded. Bohemia, 1574. H. 26.4 cm (60.3.4).
- 73.** Ribbon glass cup, fused canes. Roman Empire, about 25 B.C.–A.D. 50. H. 4.8 cm (72.1.11).
- 76.** *Schwarzlot* tumbler, dip-molded, cut, enameled. Germany, early 18th century. H. 9.5 cm (51.3.121).
- 77.** Tableware set, mold-blown. Austria, Wiener Werkstätte, designed by Josef Hoffmann, about 1915. H. (tallest) 32.8 cm (74.3.24).
- 80.** Window with Hudson River landscape, stained, leaded. U.S., Corona, New York, Tiffany Studios, Louis Comfort Tiffany, 1905. H. 346.2 cm (76.4.22).
- 81.** Bowl, *The Overflowing Landscape*, blown, stipple-engraved. England, Whitefriars, engraved by Laurence Whistler, 1974. H. 22.4 cm (74.2.11).
- 82.** Vessel, blown. U.S., Harvey Littleton, 1965. H. 11.4 cm (66.4.47).
- 83.** Basket with sulphides, molded, encased; stamped metal. England, London, Falcon Glassworks of Apsley Pellatt, about 1820–1830. H. 20 cm (86.2.42). Gift of Mr. and Mrs. Paul Jokelson.
- 85.** Trick glass, blown, applied. Spain, Catalonia, early 17th century. H. 21.9 cm (79.3.280). Gift of

The Ruth Bryan Strauss Memorial Foundation.

**86.** Drinking glasses with twists, blown, engraved. England, about 1760–1780. H. (largest) 20 cm (79.2.79, .84, .87, .48, .81). Group includes bequest of Jerome Strauss and gifts of The Ruth Bryan Strauss Memorial Foundation.

**89.** *Gazelle Bowl*, blown, engraved. U.S., Corning, New York, Steuben Glass Inc., designed by Sidney Waugh, 1935. H. 17.7 cm (90.4.244). Gift of Mr. and Mrs. John K. Olsen.

**90.** *Zwischengoldglas* beaker with the arms of an abbot of Vyšší Brod, Bohemia, blown, cut. Bohemia, about 1685–1700. H. 9.5 cm (79.3.1105). Bequest of Jerome Strauss.