

A BRIEF HISTORY OF GLASSMAKING

and its impact on southern New Jersey

by John A. Rossi



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Preface

To write the complete story of glassmaking would be impossible; so much of that story is unknown or the product of speculation. What is known, however, supplies a rich and fascinating record of the miraculous discovery of an ancient art that evolved gradually into the indispensable industry we have today. My aim is to highlight that record and the emergence of southern New Jersey as a principal center of the American glass industry.

Historically, glass has been described in many superlatives. To me its most accurate description is "miracle worker." Glass is indeed a miracle in its discovery, its multiplicity of uses, its many colors, its strength and durability, its transparency. I question whether there is any other manufactured material that is more than 5,000 years old and still retains its basic composition. Pottery and weaving are no doubt older, and essentially unchanged in their manufacturing process, but glass is different in that a metamorphic change takes place as it becomes glass. The chemistry of glass is what distinguishes it from other ancient crafts.

Hidden in the glass formulation of crystal sand, limestone, and soda ash is a chemistry, which to this day is not fully understood. It takes place when these ingredients are transformed by intense heat into a syrupy, viscous mass, which dissolves the quartz crystals and changes into a noncrystalline form upon cooling. That chemistry remained a secret for centuries. Formulas have been found etched in clay tablets that are dated centuries before the time of Christ.

Discovery of Glass is a Mystery

Glass is older than recorded history. Long before man discovered the secret of making glass, natural glass occurred in the following ways:

- (1) Sand was fused into slender glass tubes by lightning; hence, the source of the term *petrified lightning*.
- (2) The extreme heat from volcanic eruptions fused rocks and sand into a glass substance called obsidian, which one day would be shaped by stone age man into such useful applications as knives, arrowheads, beads, and bowls.
- (3) The impact of meteorites on the earth's surface may have formed tektites, a variety of small, rounded objects, dark brown to green in color, composed of silicate glass.

Where manufactured glass came from and who were the first to amalgamate silica sand, soda, and limestone in a high-temperature crucible are unknown. We only know that it occurred at some time beyond 3,000 BC in Egypt and possibly between the Tigris and Euphrates rivers in Mesopotamia (now eastern Iraq) or Syria, areas where the essential ingredients of glass were readily available and where ancient glass artifacts have been unearthed by archaeologists. Historians generally point to the advanced civilization achieved in the Upper Kingdom of Egypt and to Mesopotamia as the cultures where manufactured glass first appeared simultaneously between 500 and 3000 BC. Formulation of glass was so basic that, like the wheel, it has remained essentially unchanged to the present day.

Manufactured glass is most likely an outgrowth of the pottery making industry which existed before biblical times—perhaps as early as 10,000 B.C. at the outset of the Neolithic period. Because pottery was at first sun-dried and porous, glassy silicate materials were probably used by chance as glazes to seal these vessels to increase their utility, permanence, and eye appeal. Experimentation and sheer persistence led early man to realize eventually that firing clay pots made them stronger and less soluble. He learned that the application of certain "water glasses" to the surface could make them even better when fired. Problems of contamination were reduced or eliminated, and pottery became suitable for storage of liquids.

Magic of Making Glass

Glass began to appear almost magically, as an independent material specifically colored to substitute for precious and semi-precious stones. The ancients ground and polished these glass stones and inlaid them into sophisticated jewelry. Glass beads were strung through drilled holes and worn around the neck. Manufactured glass could be overlaid in several colors with relative ease. But the "magic" of making these decorative glass items was not only a slow and laborious process, it was also expensive. Such ornamentation could be afforded only by the royalty, nobility, and high priests of the times—even though slaves may well have been the artisans who supplied the knowledge, skills, and labor for the process.

Glass is a unique material which requires eight to ten hours to melt. Even at high temperatures the many bubbles produced do not release easily. The glass viscosity is such at near 2,000 degrees Fahrenheit that bubbles move so slowly through the molten material it was almost impossible to find bubble-free objects of glass until relatively recent times. Ancient artisans did develop the specific knowledge to make glass in various colors—mainly blues and greens representative of the gem stones lapis lazuli and malachite—but clear glass without significant color did not appear on the scene until the time of Christ. Ultimately, glass was no longer a luxury. Merchants discovered that glass was much better than wood, leather, or clay for carrying and preserving wines, honey, oils, and other commodities. Hollow glass vessels were manufactured by a process called core casting or dipping. For example, such early objects as vials for perfumes and toiletries were made by dipping a clay stick into the crucible of molten glass and withdrawing the glass-coated stick, allowing it to cool. The clay core of the cooled stick was carefully removed a few grains at a time. Re-heating and decorating the glazed vessel with multicolored strings of glass in spiral and combed patterns were a common practice, as revealed in scores of decorative artifacts.

By necessity, wood was the fuel used to fire the furnaces to melt the mineral components of glass. Obviously, many wood cutters and countless acres of forests were devoted to the adornment of royal palaces and their occupants. But wood burning alone was not sufficient, and it can be assumed that techniques from copper and bronze manufacturing were adapted to produce the intense heat required—notably the air bellows. Better glasses would be made as furnaces improved, mineral deposits were identified, and craftsmanship advanced, but it was the invention of the blow pipe in about 200 B.C. that turned glassmaking into an industry. It is hard to believe that it took 3,000 years of glassmaking to produce a simple blow pipe, which again is so fundamental that it has remained essentially unchanged since its introduction.

Emerging Glass Industry

Glass factories or "glass houses" were scattered around the rim of the Mediterranean. Army-controlled glass furnaces flourished in all corners of the Roman Empire. Rome is credited with the discovery of the blow pipe, probably by conquest. Probably a Syrian invention, the pipe's purpose was to extract a gob of molten glass from the furnace and blow it into a hollow vessel. Artisans in the many countries under Roman rule became masters at blowing, painting, and gilding glass, producing remarkably beautiful vases, urns, cameos, plates, and other works of art in a variety of shapes limited only by the glassblower's imagination. A vase made in Rome about A.D. 70 (owned today by the British Museum) is celebrated as one of the world's most valuable glass objects.

Very little information is available on the glass industry during the Dark Ages, when the Goths, Huns, and other barbaric hordes invaded the Roman Empire and nearly wiped out the civilized world's accumulated knowledge, including the art of making glass. The art survived largely because of a few monks and their ability to write and preserve the glass formulations.

From the ashes of fire and plunder arose Venice. It was this island city on the northern Adriatic Sea which gave rise to the renaissance of glass making during the Crusades just as Florence mothered the revival of learning and art. For 500 years, Venice dominated the glass industry in all its facets. Venetian designed, manufactured, and marketed objects of glass art so exquisite and intricate in their lacework patterns that they are treasured today in museums throughout the world. The secret of glassmaking was so prized by Venetians that the penalty for betraying that secret was death. Armed guards patrolled the streets in an effort to apprehend foreign agents who attempted to bribe the workers to teach them the art.

By the 15th century, thanks to pirates and privateers, the glassmaking art had spread throughout Spain, France, Germany, the Slavic countries, Poland, and to the nations along the North Sea. The next major development occurred in England in 1676, where Ravincraft added lead to an otherwise lackluster glass. The lead added to the batch gave the glass a bright, crystal clear luminosity combined with the lead to give the glass a bell-sounding quality that enhanced its desirability. Even in jolly old England the glass industry was fathered by a Venetian ex-patriot.

One of two Europeans who could be called the founder of modern glass technology was the 19th century German chemist, Otto Schott, who was

the first to investigate the physical properties and composition of glass by the application of scientific methods. The other was Ernst Abbe, a university professor and co-owner of a German firm which made sophisticated optical instruments. In 1884 Schott and Abbe established the *Glastechnisches Laboratorium Schott and Genossen*. There Schott concentrated entirely on glass research, and one of his first major breakthroughs was a low expansion thermometer glass. During his long lifetime, Schott was responsible for many developments that would impact on the worldwide glass industry we know today.

Early American Glass

Glass manufacture arrived on American shores before the *Mayflower*. As one of the first English industries established in the Virginia colony at Jamestown in 1608, one of its initial functions was to produce glass beads and other colorful trinkets for trade with the Indians. Purposely included among the colonists were a number of "Dutchmen and Poles" who were glassmakers. In 1609 Captain John Smith wrote that "wee made three or foure lots of tarre, pitch, and sope ashes; produced a tryal of glass." Although artifacts located near the site of Jamestown's original glasshouse show the evidence of melting pots and green glass fragments, Smith failed to describe the type or quality of glass produced.

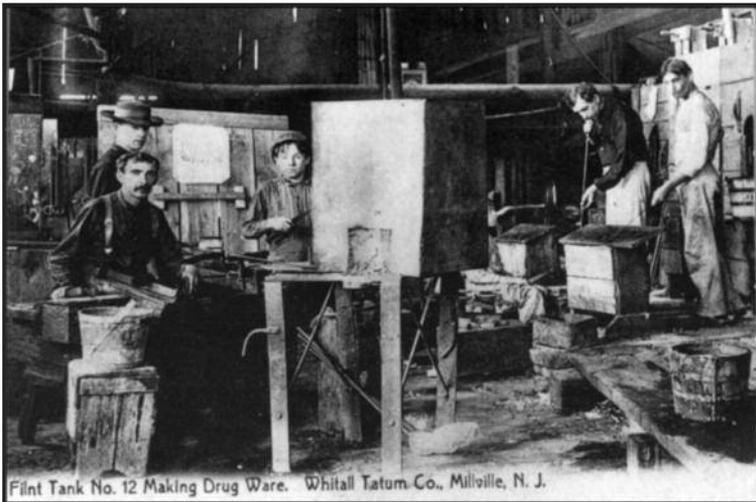
The Jamestown site was not the best possible location. Not only was it accessible to Indian raids and looting, it also was settled on swampland that was unhealthy and unproductive. There the colonists struggled to live off a bounty which had sustained the Indians for thousands of years. By early 1610 starvation, disease, and native hostilities had reduced Virginia from 500 to 60 settlers who had to survive on "dogges, cattts, rattts, and myce" after they ate the horses and shoe leather. The colony was wiped out, and its industry was destroyed—including glassmaking.

In 1621, after the colony had recovered, another glasshouse facility was set up with the arrival of six Italian glassmakers at Jamestown. Only a few simple glass vessels were manufactured, and this facility did not survive the Indian massacre of 1622.

Failed attempts to establish glass factories are recorded in New England (1639), New Amsterdam (1664), and Philadelphia (1683). As elsewhere—beginning with the ancients—fire was often the demon which destroyed many of America's early glassmaking facilities.

Glass Succeeds in South Jersey

In effect, the American glass industry got its start in 1739, when Caspar Wistar emigrated from Germany in 1717 and built a glass factory in Salem County, New Jersey. Recognized today as one of the great names in American glass, the German-born Wistar had built his reputation several years earlier as a Philadelphia manufacturer of brass buttons. Once he crossed the Delaware River from Philadelphia and observed the very sandy soil in the middle of a forest with a stream running through it, Wistar's imagination quickly turned to glass. Aware that South Jersey possessed all the ingredients he needed for a successful glass facility, he bought 30 acres of wooded land in what is now the small Salem County town of Alloway.



Wistar then sent an agent to Germany to obtain four experts skilled in glassmaking. Those men were Caspar Halter, John Martin Halter, Johannis Wentzel, and Simeon Kreismayer. The arrangement which Wistar made with his foreign associates was to operate a plant for producing glass items to be sold in America. The Germans would furnish the skilled labor, he would supply the money. By 1739 Wistar's free-blown, dark green bottles, of various capacities, had captured the large Philadelphia market. This obviously concerned the glassmakers in England who claimed exclusive marketing rights throughout the empire, and they tried to bring pressure on Wistar for patent violation. Though he was an English loyalist, Wistar was also a businessman who ignored the king's patent and soon prospered

handsomely, expanding production to include glass canes, pitchers, and bowls which are valuable collectors' items today.

Some of the early success of the Wistar Glass Factory came from the manufacture of flat glass, which was fairly clear despite the presence of bubbles and variations in thickness. Flat glass, made only in small sizes, was difficult and expensive to ship to the colonies from England because of the high incidence of breakage. Distance and rough seas eliminated Wistar's English competition. One major application for his flat glass was the window pane, which brought daylight into churches, public buildings, and homes of the wealthy. Today you can see examples of these handmade, double-hung glass windows preserved in colonial buildings still standing.

During the 40 years that Wistar and his son Richard operated America's first commercially viable glass factory, the entrepreneur was tirelessly ambitious and exploitive in accumulating wealth. The indentured servants brought to New Jersey to work in the glass factory found themselves continually in debt to the company store. But in colonial America it was necessary to go only a few miles through the woods to start anew. The Stanger Brothers did exactly that, as did many runaway indentured servants whose desire to share in the American promise expanded South Jersey's glass industry over and over again.

The German glassmaking family of Jacob and Catherine Stanger brought early fame to the town of Glassboro in Gloucester County. Originally, five Stanger sons were indentured servants working as apprentices at the Wistar factory. In 1770 when one of the sons, Jacob, deserted Wistar, a reward of \$20.00 for his capture was offered in a Philadelphia newspaper, the Pennsylvania Chronicle. Five years later, Catherine Stanger, now a widow, joined her sons to build the Olive Glass Works in Glassboro. The Stanger glassworks was sold in 1786 to Thomas Heston and Thomas Carpenter, who enlarged the operation and merged with the Whitney Brothers plant in 1813. The combined enterprise became the largest glass factory in South Jersey and established Glassboro as "the Jersey glassmaking town." Whitney purchased the Temperanceville Glass Works in 1834 and became one of the premium manufacturers of glass containers for the nation's drug and spirit companies. After more than 80 prosperous years, the Whitney operation was sold to Owens Bottle Works.

In 1806 James Lee erected the first glass house in Millville. His factory changed hands several times and was finally bought in 1834 by Whitall Brothers, forming the base of what became Whitall Tatum & Company. In

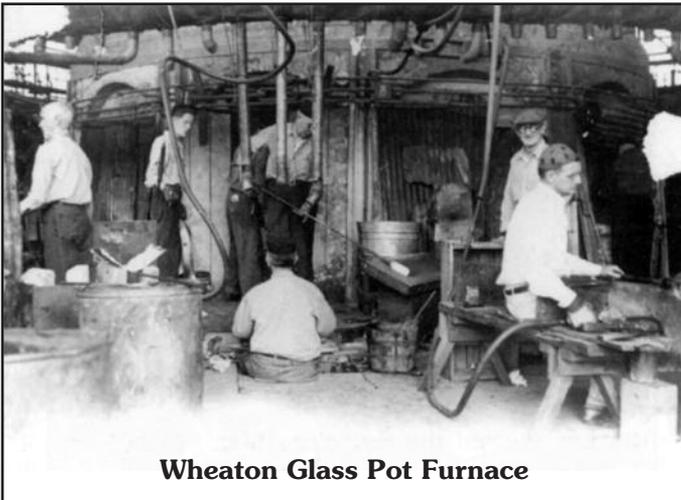
1832 Frederick Schetter built a glass works just south of Millville, but in 1854 it also was incorporated into Whitall Tatum. This facility, after a series of owners during its span of 190 years, now represents the oldest continuously operating glassmaking company in the United States and is owned by American Can Company.

A glassworks founded in Atlantic County by William Coffin and Jonathan Haines in 1817 had as its main production whiskey flasks which bore such colorful names as Weeping Willow, Bunch of Grapes, and Sheaf of Rye. In 1836 the firm became known as Coffin & Hay.

Coffin developed a company community which he named Hammondton (today's Hammonton). He also was involved in the development of Winslow Township in Camden County, where he founded a successful glassworks for Hollowware. Coffin & Hay was leased to the Tillyer Brothers in 1884.

Winslow Township is the home of the famous Waterford Works, named after an Irish town known for the quality of its glass production. Waterford Works was the first South Jersey company to close on Sundays, so that employees could attend church services.

Bottles (or flasks) manufactured in Glassboro, and shaped like a log cabin were used to symbolize the candidacy of William Henry Harrison in the 1840 presidential campaign. The bottles were filled by a Philadelphia drug-gist named E.C. Booz and soon became known as "Booz bottles"-popularizing the term "booze" for whiskey.



Wheaton Glass Pot Furnace

From 1840 to 1860, nearly one-third of America's glass was made in New Jersey. Many small glass shops were formed throughout the southern counties of Salem, Cumberland, Cape May, Gloucester, Atlantic, and Camden. But the industry continued to be dominated by giant mergers and takeovers.

In November 1858 the glass container was revolutionized by the first Mason jar, patented by tinsmith John L. Mason who was born in Vineland in 1832. The screw-top jar was made to Mason's specifications by the Crowley glassworks of Burlington County. At that time, South Jersey was the center of a glass industry which numbered 28 factories.

In 1887 the Vineland Glass Works was founded for the purpose of manufacturing window glass, single and double strengths, by the "cylinder" method which had been used successfully for centuries.

In 1889 George Jonas built the Minotola Glass Company, which was later sold to Owens Illinois Glass, along with Cumberland Glass Manufacturing Company which had been established in Bridgeton.

During the same period, in 1888, T.C. Wheaton Glass Company was formed from a shop that would soon flourish under the guidance of the keen entrepreneur, Dr. Theodore Corson Wheaton. Through four generations of Wheaton management, the company became one of the largest privately held glass businesses in the United States, with sales of nearly \$500 million a year and worldwide employment in excess of 5,000 people.



Whitehall-Tatum in Millville, NJ -Oldest continuously operating glass plant in the USA

Blood plasma bottles, first used in World War II, were produced by the Wheaton plant in Millville. This homegrown company is now controlled by foreign ownership.

Within 10 years of its founding in 1895, the Salem Glass Works was one of the top manufacturers of hollowware in the world. Prior to the 20th century almost all the glass factories in South Jersey were built around a bottle culture. But establishment of the Vineland Flint Glass Works (Durand) in 1897 would change that culture to one of tubing. An advantage of glass tubing was that it could be used to make smaller, more delicate packages for the pharmaceutical industry. Tubing, like all of glassmaking, was a manual operation for centuries. But when its market potential caught the industrial eye, this ancient craft was mechanized.



Tooling a "carboy" at Wheaton Glass in 1946

Modern Glass Era in South Jersey

Colonel Ewan Kimble, a native of South Jersey, spent his youth in the southern Millville glass factories. In the last century it was a common practice to employ young men and women in all industries—a practice which grew increasingly distasteful because of abuses. Wages were low and hours were long. Everything was done laboriously by hand. But this would change.

Kimble moved to Chicago as a young man and set up a glassworks in his own name. Then in 1905 he purchased a one-third interest in the Vineland Flint Glass Tube Company. In 1911 when the two firms merged it marked the beginning of the Kimble manufacturing presence in South Jersey. Kimble's early competitor was the Durand-Koering Glass Company which was formed in Vineland in 1915.

By that time, Owens of the Owens-Illinois Glass Company—the man who made the first effective automatic bottle blowing machine—had created a technological advance that caused severe unemployment and an end to the proliferation of glass shops in the area. Owens changed the bottle industry

from a pot furnace manual operation to a profitable tank furnace system that was capable of producing more bottles in a single shift than a five-man team could do in a week.

Kimble now had available a large workforce of people who had mastered the magic of glass: how to melt, form, and work the syrupy material. Soon the company was automatically making ampoules and vials for the pharmaceutical industry, and during World War I the company benefited from the explosion which occurred in the demand for glass products in the science industry.

Over the years, South Jersey has provided the nation with individuals trained in the skills of making and marketing glass. These people have moved throughout the populated areas to create a variety of glass operations to service local markets. As a result, South Jersey has been called "the mother of the glass industry in the United States."

Today, in South Jersey, we have in an area of a few square miles a higher concentration of glass companies than in any other location in America, and perhaps in the world. The glass expertise focused in this area rivals the technical know-how of Pittsburgh at the height of steel production, not in size but talent. Ours is a unique and essential specialty that has brought pride to the people of South Jersey for more than 250 years.

A Partial South Jersey Glass Honor Roll

I have mentioned only a fraction of the many companies which have spanned the South Jersey glass industry, notably in the Vineland-Millville area. The following is a list of the glass firms which had their start in the area prior to 1900:

- 1739-1780 Wistar Glass Works, Alloway, Salem County
- 1781-1824 Stanger Brothers/Olive Glass Works; Glassboro, Gloucester County (merged with Harmony Glass in 1824)
- 1799-1885 Eagle Glass Works; Port Elizabeth, Cumberland County
- 1804-1825 Clementon Glass Works; Clementon, Camden County
- 1806-1939 Whitall Tatum Company; Millville, Cumberland County (sold to Armstrong Cork in 1939)
- 1811-1818 Union Glass Factory; Port Elizabeth, Cumberland County
- 1812-1844 Columbia Glass Works; Knowlton Township, Warren County
- 1813-1837 Harmony Glass Works; Glassboro, Gloucester County (became Whitney Brothers in 1837)
- 1814-1868 Marshallville Glass Works; Marshallville, Cape May County
Franklin Glass Works, Malaga Glass & Manufacturing Company; Malaga, Gloucester County
- 1817-1857 Coffin & Hay; Hammonton, Atlantic County
- 1824-1880 Waterford Glass Works; Waterford, Camden County
- 1825-1877 Estellville Glass Company; Estellville, Atlantic County
- 1827-1877 Jackson Glass Works; Waterford, Camden County
- 1831-1884 Winslow Glass Works; Winslow, Camden County
- 1831-1855 Isabella/New Brooklyn Glass Works; New Brooklyn, Camden County
- 1832-1854 Schetter Glass Works; South Millville, Cumberland County (sold to Whitall Tatum Company in 1854)

- 1834-1841 Temperanceville Glass Works; Lewisville, Cumberland County (sold to Thomas Whitney in 1841)
- 1835-1856 Free Will Glass Works; Williamstown, Camden County (sold to Washington Glass in 1856)
- 1836-? Dennisville Glass Manufacturing Company; Dennisville, Cape May County
- 1836-1846 Stratton, Buck & Company; Bridgeton, Cumberland County (became Joel Bodine & Sons in 1846)
- 1837-1918 Whitney Brothers Glass Works; Glassboro, Gloucester County (sold to Owens Bottle Works in 1918)
- 1838-1860 Milford/Pendleton Glass Works; Milford, Burlington County
- 1839-1917 Washington Glass Works; Williamstown Glass Manufacturing Company, Williamstown, Gloucester County
- 1840-1899 Medford Glass Company; Medford, Burlington County (became Star Glass Company in 1899)
- 1841-1857 Excelsior Flint Glass Works; Camden, Camden County
- 1842-1858 Greenbank Glass Works; Greenbank, Burlington County
- 1845-1858 New Columbia Glass Works; New Columbia, Burlington County
- 1846-1867 Batsto Glass Works; Batsto, Burlington County
- 1846-1863 Joel Bodine & Sons; Bridgeton, Cumberland County (became Cohansey Glass Company in 1863)
- 1848-1885 Tansboro Glass Company; Tansboro, Camden County
- 1849-1883 Warrick & Stanger; Lewisville, Gloucester County
- 1850-1863 Fislerville Glass Works; Fislerville (Clayton), Gloucester County (became Moore Brothers in 1863)
- 1851-1866 Crowleytown/Atlantic Glass Works; Crowleytown, Burlington County

- 1851-1866 Lebanon Glass Works; Woodland Township, Burlington County
- 1858-1870 Bulltown Glass Works; Waldo, Burlington County
- 1860-1874 Holtz, Clark & Taylor; Salem, Salem County (sold to Gayner Glass Company in 1874)
- 1860-1873 Scott & Rapp; Herman City, Burlington County
- 1862-1895 Hall, Pancoast & Craven; Salem, Salem County (became Salem Glass Works in 1895)
- 1863-1912 Moore Brothers Glass Works; Clayton, Gloucester County
- 1863-1908 Quinton Glass Works; Quinton, Salem County (sold to Hires Turner Glass Company in 1908)
- 1865-? Westville Flint Glass Works; Camden, Camden County
- 1870-1900 Cohansey Glass Manufacturing Company; Bridgeton, Cumberland County
- 1871-? Millville Glass & Manufacturing Company; Millville, Cumberland County
- 1874-1956 Gayner Glass Works; Salem, Salem County
- 1879-1885 West Side Glass Manufacturing Company; Bridgeton, Cumberland County
- 1879-1895 Getsinger & Sons; Bridgeton, Cumberland County
- 1880-? Fislser & Morgan/F.M. Pierce Company; Clayton, Gloucester County
- 1881-1912 Woodbury Glass Works; Woodbury, Gloucester County
- 1882-1889 More, Jonas, More Glass Company; Bridgeton, Cumberland County (sold to Cumberland Glass Company in 1889)
- 1883-1886 Camden Glass Works; Camden, Camden County
- 1884-1903 Atco Glass Manufacturing Company; Atco, Camden County

- 1885-1900 East Lake Glass Works; Bridgeton, Cumberland County
- 1886-? Parker Brothers; Bridgeton, Cumberland County
- 1886-? Crystal Glass Manufacturing Company; Camden, Camden County
- 1888- T.C. Wheaton Company; Millville, Cumberland County
- 1889-1921 George Jonas/Minotola Glass Company; Minotola, Atlantic County
- 1889-1920 Cumberland Glass Manufacturing Company; Bridgeton, Cumberland County (sold to Illinois Glass Company in 1920)
- 1890-1910 Janvier Glass Works; Janvier, Gloucester County
- 1890-1899 Alva Glass Manufacturing Company; Salem, Salem County
- 1892-1897 Vineland Glass Manufacturing Company, Vineland, Cumberland County (bought by Vineland Flint Glass Works)
- 1892-1905 Fairton Glass Works; Fairton, Cumberland County
- 1893-1913 Barnegat Glass Works; Barnegat, Atlantic County
- 1894-1923 Star Glass Works; Medford, Burlington County
- 1895-1898 Elmer Window Light Company; Elmer, Salem County
- 1895-1934 Salem Glass Works; Salem County (sold to Anchor Cap & Closure Company in 1934)
- 1896-1909 Swedesboro Glass Works; Swedesboro, Gloucester County
Elmer Glass Works; Elmer, Salem County
- 1897-1931 Vineland Flint Glass Works; Vineland, Cumberland County (Durand) (bought by Kimble Glass Company in 1931)
- 1899-1901 Magnolia Glass Company; Magnolia, Camden County

Over 250 Years of Glassmaking in South Jersey



South Jersey Today and Tomorrow

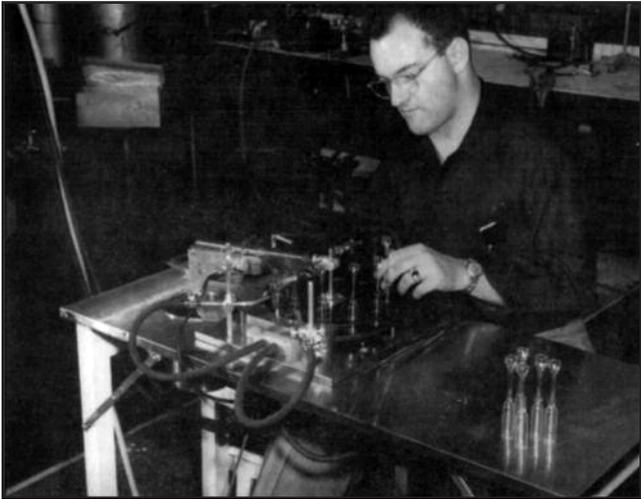
By the 1930s the South Jersey glass industry was beginning to dig its roots deep into the Vineland area. Many of the early company names are still familiar today:

Ace Glass, AMK Glass, Andrews Glass, Arrow Glass, Bellco Glass, Chatas Glass, Chemglass, Colonial Applicator, Comar Glass, Demeo Class, Doerr Glass, Dougherty Glass, Franklin Glass, Friedrich & Dimmock, Galaxy Glass, Glasstron, Kontes Glass, Lab Glass, Lurex Glass, M&I Glass, H.S. Martin, Meteor Glass, National Glass, N.D.S. Technologies, Precision Electronic Glass, Quark Glass, Research Glass, Sarbus Scientific Glass, Tech Glass, Unicorn Industries, V M Glass, Vineland Glass Works (Hoffbauer), Wilmad Glass, and many more.

Because the glass companies in South Jersey have special skills, experience, and products that are always in demand, the industry here has not known a serious depression in well over 100 years. I believe it is because we really have something special. Thanks to those who have gone before, and upon whose shoulders we stand, we are able to see into the next century and beyond—to the research and development of exciting technologies and processes that will continue to open opportunities and expand applications for glass.

Precision Electronic Glass, Inc.

John A. Rossi co-founded Precision Electronic Glass, Incorporated, in 1962 and led that company through forty years of steady growth and development until his retirement in December 1991. Today he is the company's majority stockholder and chairman of the board. Upon his retirement Mr. Rossi transferred management of Precision Electronic Glass to his sons: Phillip M. Rossi, Francis M. Ciancarelli, and Domenic P. Ciancarelli. This family-owned corporation is a major manufacturer of precision glass and quartz products principally fabricated to customer specifications in such diversified worldwide markets as electronics, biomedical, analytical, scientific, laser, and commercial nuclear fuel.



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List of New Jersey Glass Factories Started Prior to 1900, Courtesy of Wheaton Village, Millville, NJ



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