

WHO WERE THE FIRST GLASSMAKERS IN ENGLISH AMERICA?

Jamestown, Virginia, has been called the "birthplace" of America, because it is the site of the first permanent English settlement in America. While England organized this key settlement and supplied most of its colonists, a number of Continental Europeans also made their contributions as artisans and specialists. We know that among these specialists were several Continental glassmakers, but their specific country of origin is still in question. When Captain John Smith, the governor of the first permanent English colony, recorded the arrival of glassmakers at Jamestown, Virginia, in 1608, he lumped them together with other craftsmen from Germany and Poland.

Recently I visited the Colonial National Historical Park, which includes the site of Jamestown. I wanted to see if I could discover any clues to the identity of these important American pioneers.

A leaflet in the Jamestown Visitors Center run by the National Park Service urges guests to "visit the GLASSHOUSE where craftsmen demonstrate the art of 17th century glass-blowing, one of Virginia's first industries, established in 1608."¹ There is no mention of the nationality of the glassmakers. A German translation of the same leaflet is equally silent on this subject.

In his *Generall Historie of Virginia*, John Smith stated that in October 1608 about seventy settlers arrived, including "eight Dutchmen and Poles."² He indicated that the men were hired to make pitch, tar, glass, clapboard and soap ashes.³ Elsewhere he identifies the "Dutchmen" as Germans.⁴ The eight craftsmen included three German carpenters, Adam, Franz and Samuel, as well as some glassmakers. Among the new arrivals were also several Polish makers of soap ashes and potashes, pitch, and tar. Three of the Poles are known by name, Robert, Molasco, and Matthew.

The glassmakers who came to Jamestown in 1608 were probably all of the same nationality because it is unlikely that the Virginia Company of London, which organized the colony, would have sent to Poland for one set of glassmakers and to Germany for another. A single

language would have facilitated communication among the glassmakers as they went about their difficult craft. In Europe a glasshouse was run by a master and several helpers; it is probable that a particular master traveled to America with his own helpers.

It is difficult to determine how many glassmakers actually came to Jamestown. If three Poles are to be counted among the eight craftsmen who arrived in 1608, only two unnamed glassmakers, a master and an assistant, remain unaccounted for. Yet two men seem too few to operate the three ovens and the kiln which were excavated near Jamestown. J. C. Harrington, the archeologist who excavated the ovens, wrote, "The crew that actually made the glass articles would probably have consisted of two or, at the most, three experienced glass workers with one or two helpers. In addition, there would have been a number of other helpers, or 'boys,' who did the unskilled work or performed more particular jobs under the supervision of the glass workers. There may have been as many as five of these helpers. . . ."⁵ It is worth noting in this regard that when the English made a second attempt to manufacture glass at Jamestown in 1621, they brought over six glassmakers plus their families, which presumably included apprentices.⁶

The American historian Conway Whittle Sams resolves the difficulty by interpreting Captain Smith's phrase "eight Dutchmen and Poles" to mean eight Dutchmen *plus* Poles.⁷ The Jacobean apparently had no expression equivalent to the modern "plus"; they had to content themselves with the word "and" to convey both meanings. In speech it would, of course, have been readily apparent which use of "and" was meant; less so in written form. Sams' interpretation would leave five glassmakers, a sufficient number to have run the operation.

The craftsmen set to work presently to build a glasshouse. Councilor William Strachey described it as "a goodly house . . . with all offices and furnaces thereto belonging." The glasshouse included three furnaces: a fritting furnace for preheating the glass ingredients; a

working furnace for melting the glass and for keeping it at a working temperature; and an annealing furnace for slowly cooling the finished pieces. There was also a kiln to fire pots used in melting the glass. The glass house was built on the mainland about a mile from James Fort, which stood on a peninsula. The glasshouse was convenient to the James River, the beaches of which supplied the sand for glassmaking. The foundations of the furnaces and the kiln have been uncovered. An historical marker at the entrance to the enclosure which protects the remains of the glassmaking furnaces reads:

GLASSMAKING -1608

HERE ON GLASSHOUSE POINT THE JAMESTOWN SETTLERS, IN 1608, BUILT FURNACES, MADE GLASS, AND SHIPPED A "TRIAL" OF IT TO ENGLAND. THIS MARKED THE BEGINNING OF OUR AMERICAN GLASS MANUFACTURE, ONE OF THE NATION'S FIRST "INDUSTRIAL" ENTERPRISES. THE JAMESTOWN GLASSHOUSE FOUNDATION, INC., IN COOPERATION WITH THE UNITED STATES DEPARTMENT OF THE INTERIOR, HAS MADE THIS EXHIBIT POSSIBLE. IT INCLUDES THE ORIGINAL FURNACE REMAINS AND A PERIOD TYPE GLASSHOUSE. FROM SUCH HUMBLE BEGINNINGS AMERICA'S GREAT GLASS INDUSTRY HAS GROWN. IN RECOGNITION OF THIS GREAT ACHIEVEMENT THIS PLAQUE IS PRESENTED.

UNITED STATES

DEPARTMENT OF COMMERCE

A booklet on sale in the replica glasshouse, which is under the jurisdiction of the National Park Service, states:

The Dutchmen appear to have given trouble from the first, and it is doubtful if they ever contributed much to the glassmaking effort, beyond possibly assisting in the initial construction of the glasshouse. We know that some of them were carpenters, for they were sent to Chief Powhatan's village to build houses for the Indians. It appears more likely that the Poles were the glassmakers, for Smith, in his account of the fight with an Indian near the glasshouse, says that the Indian attempted to flee upon 'perceiving two of the Poles.'⁸

The booklet claims that the Dutchmen (actually Germans) contributed little to the glass-

making because they were troublemakers. However, the records show that of the Germans only the three carpenters allegedly gave trouble to Captain Smith, who was in the habit of finding fault with almost all of his associates. It is certainly possible that J. C. Harrington, the author of the booklet, draws unwarranted inferences about all the Germans from the alleged deficiencies of some of them. Harrington surmises that the Poles were the glassmakers because they came to Smith's help "near the glasshouse." Yet Smith's account reveals that he was attacked by the chief of the Paspahugh somewhere on the mile-long road from the glasshouse to James Fort.⁹ The fact that Poles came to Smith's assistance somewhere in the general vicinity of the glasshouse does not seem sufficient reason for identifying the Poles as the glassmakers.

Harrington is alone among historians in assuming that all the glassmakers were Poles. The National Park Service as well as the Commonwealth of Virginia and the eminent British archeologist-historian Ivor Noël Hume count Germans among the glassmakers.¹⁰ The question, then, is not whether some of the glassmakers were German, but whether all the glassmakers were German?

The American historian Philip L. Barbour answers the question in the affirmative. He writes:

... the postulation that the Poles were hired to make glass is based on evidence that is flimsy indeed. Here is all that is known about the matter: Captain Smith was "*returning but from the glasse-house alone*" when he encountered the Werowance of Paspahugh, who first attempted to shoot Smith, but Smith grappled with him. The latter, however, prevented Smith from drawing his falchion, and the two fell into the river. "*Long they struggled in the water, from where the king [chief] perceiving two of the Poles upon the sandes, would have fled: but the President [Smith] held him by the haire and throat til the Poles came in.*" The two quoted passages which I have put in italics are the sole surviving evidence that the Poles were glass experts. Indeed, my research into the history of glassmaking in Poland tends to hint that the Poles were hired for pitch and tar work, and the Germans for the glass, despite the vagueness of John Smith's account. There is no evidence that Poland had

a glass industry of any great consequence in the days of Zygmund III (1587-1632)...¹¹

In all the books available at the Library of Congress on the general history of glassmaking, there is no reference to Polish glassmaking. The German glassmaking industry of the sixteenth- and seventeenth-centuries is, on the other hand, described at length.¹² The German glass industry was not only much older than the Polish one but far more extensive and sophisticated. Indeed, a "Glass Map of Europe" depicting areas of glass production during the sixteenth- and seventeenth-centuries shows no production in Poland while showing three areas of concentration of German glassmaking, the Spessart, the Thuringian forest and the Iser and Riesen mountain ranges.¹³

Ada Polak states in *Glass: Its Makers and Its Public*, "Within the German-speaking areas, the forest glassmaking regions ran from the northern and central areas of Holstein and Hanover, by way of Thuringia, Franconia and Saxony to Bohemia and Silesia."¹⁴ The type of glass produced at Jamestown in 1608-09 was identified as green glass or *Waldglas* by J. C. Harrington, the archeologist who described the ruins of the glasshouse.¹⁵ "The name, forest glass (*waldglas*) which is generally given to the common glass made at many places in Germany in the Middle Ages is derived from the use of potash in the form of beech or other wood ash as an alkali...."¹⁶

To advance particular commercial ventures in the New World, the English made some effort to bring over foreign specialists from countries noted for these commercial enterprises. For example, when Sir Humphrey Gilbert set out in 1583 to prospect for precious metals under his patent from Queen Elizabeth, he conveyed along the mineral specialist Master Daniel the Saxon. During the Elizabethan era, Germany led in metallurgy, and the English mineral industry at that time was to a major extent created by German skill. Sir Walter Raleigh likewise brought along a German-Jewish mineral expert, Joachim Gans of Prague, when he attempted a settlement in 1585. The Virginia Company of London fetched German

mineral men to Jamestown as well as French experts in viticulture. In their second attempt to start a glass industry at Jamestown, the English in 1621 brought over Italian glassmakers, who were even more skilled than the Germans, because they could produce clear glass. At no time do we see the English looking for practitioners of a particular industry in a country where that enterprise was not at a high level.

It seems highly probable that the Virginia Company of London would have been more inclined in 1608 to fetch glassmakers from a country with sophisticated glassmaking techniques, such as Germany, than from a country with a relative paucity of glassmakers who were comparatively less skilled. While Polish glassmakers might have come cheaper, the Company could have been far more certain that Germans would be able to produce glass in the Virginia wilderness that was readily salable on the English market.

The high skill of the Germans is evident from the fact that they were welcome in other countries. For example, in 1510, German glassmakers worked in the Italian cities of Perugia, Florence, Bologna and Arezzo.¹⁷ The early glassmakers of Jutland, Denmark, were mainly of German origin.¹⁸ Glassmaking was introduced into Sweden by German glassmakers.¹⁹ In 1569, a London merchant named Anthony Becku tried unsuccessfully to bring German glassmakers to England.²⁰ While the German industry was relatively highly developed at the end of the sixteenth century, Poland had comparatively little industry. Imports to England from Poland consisted mainly of "raw materials and semi-manufactures."²¹

Although little glass was exported from Poland to England,²² Poland did export large quantities of pitch, *tar* and soap ashes.²³ For this reason, one of the men who planned the English colony urged that "Men skilfull in burning of Sope ashes, and in making of Pitch, and Tarre, and Rozen" should be brought to Virginia "out of Prussia and Poland, which are thence to be had for small wages, being there in the manner of slaves."²⁴ What was called Prussia then was part of Poland and would be known later as East Prussia. This advice was in-

deed followed, as the records of the Virginia Company show, and Poles were brought to Jamestown in 1608 to make soap ashes as well as pitch and tar.

Eleanor S. Godfrey believes that the Jamestown glasshouse was established to supply window glass for the London market:

At a time when the scarcity of window glass in London was most acute, there was a daring attempt to supply the market from a new source. London merchants in the newly formed Virginia Company decided to establish a glasshouse in the struggling settlement at Jamestown Virginia....²⁵

In the year 1567 window glass was imported into England from Normandy, Lorraine, and Hesse.²⁶ The province of Hesse included the Spessart Mountains, which were a center of German glassmaking as indicated by Polack and other writers.²⁷ Since Hesse was the German glassmaking region nearest to England and easily accessible via the Rhine, it could very well have been the place of origin of the glassmakers at Jamestown. We do know that glassmakers from Hesse were inclined to migrate. There is documentation of a Hessian glassmaker in the Duchy of Holstein in 1574 and in Sweden in 1591; later we find Hessian names appearing again and again in Dessau, Brandenburg and even in Bohemia.²⁸

The glassmakers at Jamestown went to work so rapidly after their arrival in October 1608 that samples of their product were sent to England in December and arrived there 23 January 1609. More glass was produced in the spring of 1609, but there is no record of glass production after the "Starving Time" during the winter of 1609-1610, when the population shrank from 500 to about sixty.

The production of pitch and tar, as well as of potashes and soap ashes apparently continued, because Poles are referred to as makers of these products as late as 1619 and 1620. In 1619, the Company ordered that "some young men" shall be apprenticed to "the Polonians resident in Virginia," so that "their skill in making pitch and tar and soapashes shall not die with them. . . ."²⁹ While I found no document which establishes conclusively that all the glassmakers at Jamestown were German, there is every likelihood that this was the case. I believe that the glassmakers at Jamestown were the forerunners of those later German glassmakers, such as Kaspar Wistar, Heinrich Wilhelm Stiegel and Johann Friederich Amelung who established the first successful glass factories in this country.³⁰

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NOTES

¹ *The Jamestown Story* (Colonial National Historical Park, National Park Service, U.S. Department of the Interior), no date.

² John Smith, *The Generall Historie of Virginia, New-England, and the Summer Isles with the names of the Adventurers, Planters, and Governours from their first beginning An: 1584 to the present 1624* (London: Michael Sparkes, 1624), Libro 3, 73.

³ Smith stated, "As for the hyring of the Poles and Dutch-men, to make Pitch, Tar, Glasse, Milles, and Sope ashes when the Country is replenished with people, and necessaries, would have done well, but to send them and seautientie more without victualls to worke, was not so well aduised nor considered of, as it should have beene" (*Historie*, 66).

⁴ Smith identified the "Dutchmen" as Germans when he stated, "to send into Germany or Poleand for glassemen & the rest" while the colony was not yet on its feet was not a good idea (*Historie*, 72).

⁵ J. C. Harrington, *A Tryal of Glasse: The Story of Glassmaking at Jamestown*. (Richmond, VA: Eastern National Park & Monument Association, 1972), 40.

⁶ Harrington, 11.

⁷ Conway Whittle Sams, *The Conquest of Virginia: The Second Attempt* (Norfolk, VA: Keyser-Doherty Printing Co., 1929), 628.

⁸ Harrington, 10.

⁹ Smith says that upon "returning from the Glasse-house alone . . . he incountered the King of Paspahagh, a most strong stout Salvage . . ." (*Historie*, 84).

¹⁰ At the Jamestown Settlement Museum (Jamestown Gallery, Jamestown Economic Experiments) run by the Commonwealth of Virginia, visitors may read, "Because Virginia possessed the natural ingredients for glass—sand, wood ashes, and lime—the [Virginia] Company [of London] hoped that glass production in Virginia would help meet the growing demand for the commodity in England. In 1608, the Company sent Polish and German craftsmen

to Jamestown to operate a glasshouse."

At the entrance to the enclosure protecting the furnace ruins, an introductory tape by the National Park Service informs the visitor that "Polish and German glassmakers" built the glassmaking furnaces.

Noel Hume refers to "Glassmakers, German" in the index to his book *The Virginia Adventure: Roanoke to James Towne: An Archeological and Historical Odyssey* (New York: Alfred A. Knopf, 1994). On page 216, he writes, "The [glassmaking] operation was manned by some of the Dutchmen (really Germans—i.e., Deutschmänner) and Poles brought over with the Second Supply, and by 1610 they had set up what was then described as a 'goodlie howse . . . with all offices and furnaces thereto belonging" and situated 'a little without the Island where James towne standes.'"

¹¹"The Identity of the First Poles in America" in *William & Mary Quarterly*, 3rd series, XXI (January 1964), 90.

¹²For example, in *A History of Technology: Volume III From the Renaissance to the Industrial Revolution c. 1500 - c. 1750* (Oxford: Clarendon Press, 1957) there is extensive description of German glassmaking but not a word on Polish. The *Encyclopedia Americana* (International Edition, Danbury, Conn.: Grolier, 1994), 798, discusses sixteenth-century glassmaking in various German states under "Glass and Glassware" but is silent on Poland. Historical German glassmaking techniques are discussed in *The New Encyclopaedia Britannica*, Micropaedia, Vol. 5, "Glass," 296-297, but again there is no mention of Poland.

The author asked Dr. Gerhard E. Sollbach, member of the faculty of the Historical Institute of the University of Dortmund, to help with identification of the glassmakers at Jamestown. He, in turn, asked a Polish colleague, who "when he went to Poland for a research visit (University of Oppeln) this summer, checked the literature (so far as his time allowed him to do it) for any information on glassmaking in Poland around 1600—but without any success. As he told me, this seems to have been no subject for Polish historians" (personal communication of 15 November 1995).

¹³Ada Polak, *Glass: Its Makers and Its Public* (London: Weidenfeld and Nicolson, 1975).

¹⁴Polak, 44-45.

¹⁵Harrington, 31-33.

¹⁶Reginald G. Haggard, *Glass and Glassmakers* (New York: Roy Publishers, 1961), 28.

¹⁷Otto Stöber, *Wundersames Glas* (Linz: Landverlag, 1947), 32.

¹⁸Polak, 40.

¹⁹Stöber, 41.

²⁰Eleanor S. Godfrey, *The Development of English Glassmaking, 1560-1640* (Chapel Hill, NC: University of North Carolina Press, 1975), 25.

²¹Henryk Zins, *England and the Baltic in the Elizabethan Era* (Manchester: Manchester University Press, 1972), 217.

²²The surviving port books reveal only small quantities of glass exported from Poland to England. In 1588 the merchant John Knapp imported one barrel of glass from Königsberg, and in 1599 English merchants collected

twenty cases of glass from Elbing" [Königsberg and Elbing were Polish ports.] (Zins, 273).

²³"In 1588 Baltic countries met 41 per cent of London's requirements in pitch and tar . . . almost the whole of England's imports of Baltic pitch and tar came from Danzig and Elbing. . . ." [Danzig, like Elbing, was a Polish port.] (Zins, 246).

²⁴Richard Hakluyt (lawyer), "Inducements to the liking of the voyage intended towards Virginia" written in 1585 and first published as an appendix to John Brereton's *A Brief and true Relation . . .* London, 1602.

²⁵Godfrey, 58.

²⁶Godfrey, 13, estimates that about 400 cases of window glass were imported in 1567 from Normandy, Lorraine and Hesse.

England imported not only window glass from Germany but also chemical glass. English port records show that in 1587-1588, 100 glass stills were imported from Dortmund and 200 "stilling glasses" from Emden. A 1621 petition against the English glass monopolist Sir Robert Mansell claimed that "chimicall glasses, as retorte heades and bod-ies, boulte heades and other like used for extractions distil-lacion and other Chimicall and Physical uses" had been imported from Germany before James I granted Mansell his monopoly and that they were better and cheaper [Ivor Noel Hume, *First and Lost: In Search of America's First English Settlement* (Manteo, NC: National Park Service, Fort Raleigh National Historic Site, 1995), 120-121.]

²⁷Robert Schmidt, *Das Glas* (Berlin: Verlag Georg Reimer, 1912), 131-133, writes that in the sixteenth-century Hesse along with its adjoining forest regions was one of the two top glass-producing regions of Germany. As early as 1406 all glassmakers around the Spessart Mountains organized themselves into a union. In 1557, more than 200 glassmakers gathered at the annual session of the court in the town of Almerode in Hesse. The glass houses in Hesse appear to have conducted a significant export especially along the Rhine.

²⁸Schmidt, 133.

²⁹The records of the Virginia Company of 21 July 1619 state:

Upon some dispute of the Polonians resident in Virginia, it was now agreed (notwithstanding any former order to the contrary) that they shall be enfranchised, and made as free as any inhabitant there whatsoever: and because their skill in making pitch and tar and soapashes shall not die with them, it is agreed that some young men shall be put unto them to learn their skill and knowledge therein for the benefit of the country hereafter [Susan Myra Kingsbury, *Records of the Virginia Company of London* (Washington, DC.: U.S. Government Printing Office, 1935), Vol. I, 251].

Poles are also referred to as makers of pitch and tar as well as soap ashes and potashes under entries of 17 May 1620 and 22 June 1620.

³⁰Jane Shadel Spillman, *Glassmaking: America's First Industry*. (Corning, NY: The Corning Museum of Glass,

First Glassmakers in English America

1976), 8, states: "The first successful glass manufactory in the colonies was that of Caspar Wistar, a Philadelphia brass-button manufacturer, who had immigrated from Germany. He imported German glassblowers in 1739 to staff the factory he established in southern New Jersey. . . . The second successful entrepreneur in glass was also a German. Henry William Stiegel built three glasshouses at Elizabeth Furnace and Manheim, Pennsylvania, between 1763 and 1774, and attempted to produce fine tableware as well as bottles and window glass." A few pages later Spillman continues: "John Frederick Amelung arrived in the new republic in 1784 with men and equipment to develop a large glass factory complex for the manufacture of all types of glass. He came from a glassmaking family in Germany and was backed by a group of merchants in Bremen. Amelung's factory was established in Maryland, at a site [near Frederick] he named New Bremen and was, for a time, successful. He produced the most sophisticated glass which had been made in America up to that time. . . ." (Spillman, 11).