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A PRELIMINARY HISTORICAL STUDY

OF

GLASS HOUSE POINT

(WITH SPECIAL EMPHASIS ON THE

FIRST ATTEMPTS AT GLASSMAKING

IN VIRGINIA.)

By:
Charles E. Hatch, Jr.,
Junior Historical Technician.
December 4, 1940.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
COLONIAL NATIONAL HISTORICAL PARK
YORKTOWN, VIRGINIA

1. PREFATORY STATEMENT:

On the mainland across from the northwestern tip of Jamestown Island lies a point of land commonly referred to as Glass Point, or Glass House Point. Formerly Jamestown Island was a peninsula attached to the mainland by way of Glass House Point.[1] The old seventeenth century highway from Jamestown ran from "James Cittie" across the isthmus to Glass House Point, and then turned inland. In this way the history of the point became directly connected with the Island, the name itself arising, probably, from one or both of the early attempts at glassmaking in the colony (1608-1609 and 1621-1624). Because of its proximity to the town, because of its historical associations with the Island, and because of the discovery of what are apparently the remains of one, or both, of these early glass factories, this area is significant historically and is of concern to Colonial National Historical Park. It is of special interest in research and study in certain aspects of the work at Jamestown. Then, too, the consideration that the Colonial Parkway may approach the Island from

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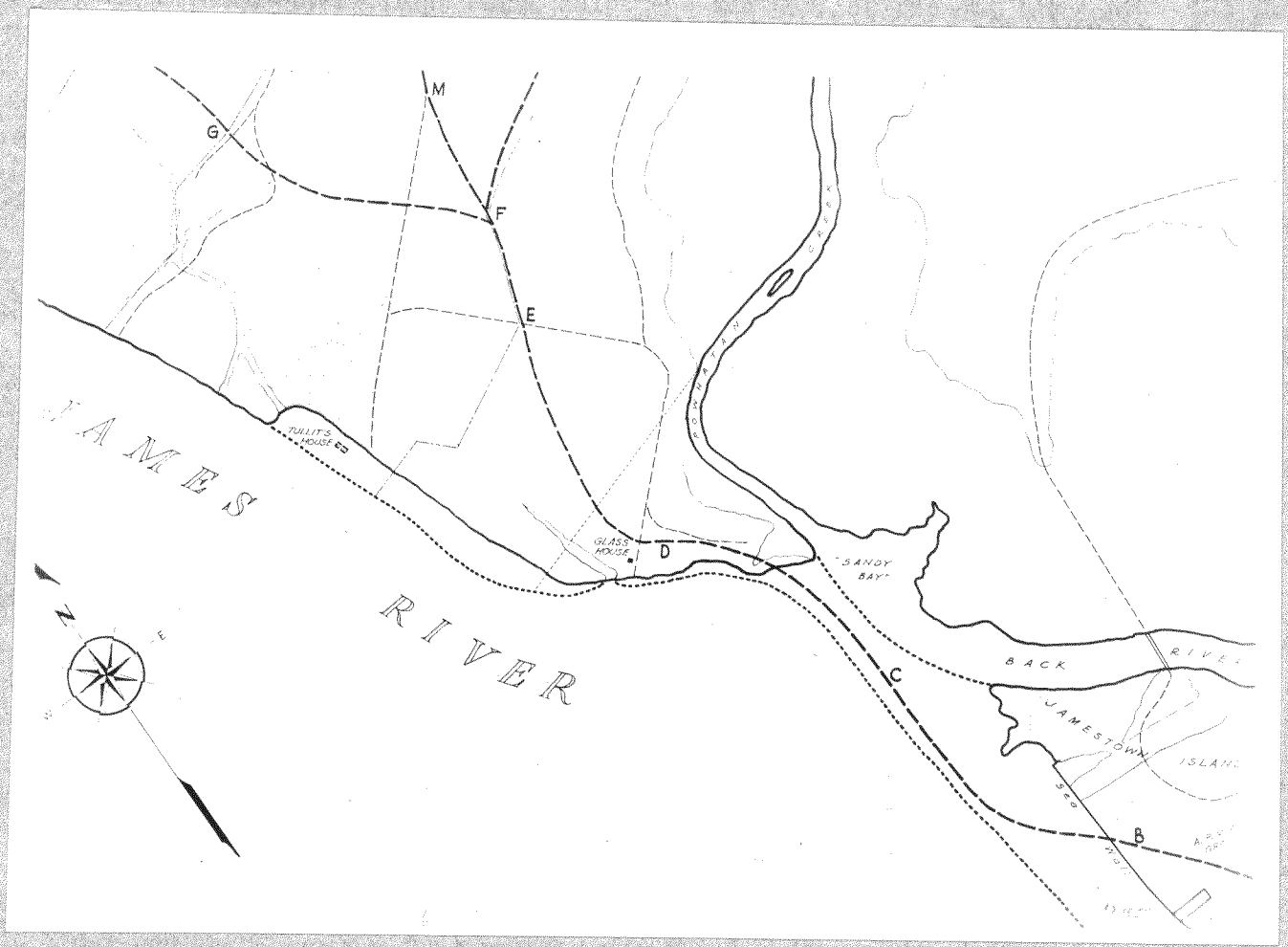
1 Charles E. Hatch, Jr., "A Preliminary Historical Study Unit A, Northwestern End of Jamestown Island in Colonial National Historical Park", National Park Service Report; (September 14, 1939); pp. 39-50.

this point -- via Glass House Point and the site of the old isthmus -- makes this interest of immediate concern. Because of this and to assist future planning a preliminary study of the first attempts at glassmaking in the colony, together with a consideration of the Glass House Point area, has been made.

The study deals first of all with early glass manufacture---the first two glassmaking enterprises attempted by the English in the present United States. To supplement the fragmentary history of these two glassmaking ventures a limited amount of material has been assembled to illustrate the type of physical plant that the early glassmakers may have built and used. This, it is hoped, will prove of value when the area is investigated by the archeological technicians. It is thought that this study may serve as the documentary study to precede actual archeological investigation. Additional facts are presented to assist in a more careful evaluation of the Glass House Point area in general. These may be of value in the preparation of plans for any future construction or physical development that may affect the area.



Map. No. 1

Photograph of Section of "Jamestown Island to Green Spring". Preliminary Historical Base Map prepared by Associate Archeologist J. C. Harrington, September, 1940.

Note the relation of the "Glass House" site to the old contours, to "Sandy Bay", and to Jamestown Island.

CNHP #8541

Photograph No. 1

Aerial View Showing Glass House Point and Adjoining Area.

(Glass House Point encircled in ink, approximate site of glass furnace located in 1931 denoted by X.)

CHP #7753

Photograph No. 2.

Looking From a Point Near the Site of the Glass Furnace Toward Jamestown.

CNHP #8417

2. THE FIRST GLASSMAKING VENTURE, 1608-1609:

The Virginia Company of London was a corporate organization interested first of all in financial profit for its individual investors. It was only natural that in the early months of Virginia colonization there were concrete efforts made to get some enterprise underway that would yield funds to enlarge the venture and to reward the investors. Another of the expectations of the Company in the settlement of Virginia was that it would yield a supply of a number of articles which the English, at the time, were purchasing, in part at least, from foreign countries---such, for example as pitch, tar, flax, cordage, masts, yards, timber, and other naval stores, as well as glass and soap ashes.[2] It is not surprising that with the "Second Supply" for Virginia came men, eight Poles and Dutchmen, to manufacture pitch, tar, glass, and soap ashes, and to erect saw mills.[3] In the short interval between the arrival of the supply in October, 1608, and its departure "tryals of pitch, tarre, glasse, frankincense, and sope ashes..." were produced and sent out for England under "Captaine Newport". Thus, glass was produced in Virginia as early as the fall of 1608. This ranks as the first of such productions by the English in America.[4]

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2 Philip Alexander Bruce, Economic History of Virginia in the Seventeenth Century (New York, 1935); v. 1, p. 41.

3 Edward Arber, (ed.), The Travels and Works of Captain John Smith (Edinburgh, 1910); part 1, p. 434.

4 Arber, Works...John Smith; part 1, pp. 125-9 and part 2, pp. 489, 443.

Unfortunately little is known of this first enterprise. To produce glass a good deal of equipment is necessary. First of all there must be the furnace and certain auxiliary furnaces, together with the necessary tools. Two types of furnaces were in use in Europe and in England in the fifteenth, sixteenth and early seventeenth centuries. Both of these employed more or less the same basic features. One was an oblong building of "stones and clay", possibly 15' x 10', with an arched crown; the other was circular and, in shape, much resembled a beehive. In each there was a compartment for firing, necessary to supply the high temperature needed in melting and fusing the glass in order that it might be worked; a section over or around the fire-box, where the glass was placed in the furnace; and a division for annealing, or cooling, the glass slowly. Normally, adjoining the furnace was a tunnel-shaped oven possibly 18' x 4' also used in cooling the glass. Besides there were needed a complementary number of small ovens and kilns---one for baking and heating the crucibles (pots in which the glass was made), one for burning wood from which potash was extracted (potash furnished the alkali ingredient for the glass), and a third in which the raw materials were mixed and given a preliminary fusing. The descriptive title "glass house" normally applied to the shelter, or structure, built over and around the plant for protection. The glass-house could be omitted, however, and in the early days of glassmaking was not always used. The earliest glass was made in furnaces operating

in the open.[5]

A knowledge of European and English glass furnaces and glass plants does not of itself give a picture of the first American works. It can serve simply as good background material. Nevertheless, since the first glass workers in America were born and trained Europeans familiar only with European techniques, naturally they would have used them. There were no American techniques in 1608. It is reasonable and logical to assume that any glass furnace erected in 1608 would have been a close counterpart of the English or European, and that techniques, equipment and products would have been basically the same.[6]

It appears that the first furnace was set up in America in the fall of 1608. Captain John Smith, the president of the colony, in anticipation of the Second Supply, which arrived in October, had prepared buildings and storage for materials and provisions that were expected. It has been suggested that this preparation may have included the construction of a glass furnace. This would seem doubtful since, apparently, there were no trained glassworkers in the colony before the supply arrived, and there is little to indicate that Smith had any knowledge that the workers were coming. Production did begin in a very short time after the arrival. This fact aids in fixing the date of the construction

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5
Harry J. Powell, Glass Making in England (Cambridge, England, 1923); pp. 11-15. For some remarks regarding early glassmaking see Appendix A "Some Remarks on Early Glass Manufacture".

6
N. Hudson Moore, Old Glass European and American (New York, 1935); p. 79.

of the first glass furnace in America within somewhat close limits--- between the arrival of the Second Supply in October, 1608, and its departure late in the same year.[7]

According to Captain Smith "the Glasse-house, a place in the woods" was built "neare a myle from James Towne".[8] In this statement there is no mention of direction, yet later he implies direction in his account of a fight that occurred between him and the "King of the Paspaheigh". On this occasion he had journeyed to the glasshouse to apprehend a recalcitrant colonist who was staying there. On his arrival "this Dutchman" was gone, yet he dispatched a party after him and alone started back to town. But "hee incountred the King of Paspaheigh" and a fight ensued. During the course of the struggle the Indian forced Smith "into the river". Despite this Smith gained the upper hand and in the end subdued him.[9] From this incident it is possible to glean a few facts about the glasshouse location. Captain Smith went to the glasshouse which was about a mile from Jamestown. Here he encountered a Paspahegh chief (the seat of the Paspaheghs was west of Glass House

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7 Maude Pellard Hull, Early Glass-Making in Virginia (c. 1933); pp. 8-12.

8 Arber, Works...John Smith; part 1, pp. 150-1 and part 2, p. 467.

9 Ibid., part 1, pp. 24-25, 150-1, and part 2, p. 467.
Tyler states that Smith, during his hand to hand encounter, engaged "Wowinchopunck" chief of the Paspahegh Indians. Lyon G. Tyler, The Cradle of the Republic (Richmond, 1906), p. 153.

Point and Jamestown on the Chickahominy River); began his return to Jamestown alone and on foot (the main way to the Island was across Glass House Point and the isthmus); and during the fight was forced to the river (indicating that he was near it). All of this seems to point to a location on or near the present Glass House Point, which roughly speaking is a mile from Jamestown, was between the town and the Paspahegh Indian village, borders on the river, and was the location of the highway to the Island. A statement by William Strachey in 1612 adds something to the confirmation of this. He remarked that the glasshouse was "a little without the Island where Jamestown stands".[10] Here there was abundant wood for firing the furnace and for furnishing the potash (alkali) necessary for glass. The sand on the shores of "Sandy Bay", along the isthmus, may have been expected to yield the essential silica. This summarizes the documentary evidence regarding the location of the furnace and, as can be seen, it is not too definite. The discovery of a glassworks on Glass House Point, however, adds weight to assigning this as the location, a fact that will merit additional discussion later.

The type of plant erected in 1608 is not defined in the contemporary records. At the site of the furnaces on Glass House Point, which were uncovered by Jesse Dimmick in September, 1931, were found "the remains

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10 R. H. Major (ed.), William Strachey, The Historie of Travaile into Virginia Britannia...Publication of the Hakluyt Society (London, 1849); p. 71.

of three crude furnaces" constructed, at least in part, of "large river boulders" together with crucible fragments, glazed rock, glass fragments and other items of like nature.[11] These remains have not been dated, yet they are, it would appear, the existent evidences of the glass enterprise of 1608-1609, or that of 1621-1624. Seemingly, although a scientific study of them awaits future action, the structural features as indicated could have been used in 1608, as well as in 1621. The use of stone in 1608 certainly can be explained on the basis of lack of other building material such as brick, and on the fact that there was English and European precedent for the use of such material. The description "large river boulders" implies that the stones may have been simply gathered along the river shore. The presence of what seem to be the remains of three furnaces fits, in part, the needs that faced the glassworkers. In the work facilities were needed for burning wood for potash, preparing raw materials by preliminary fusion, working the glass, and arrangements for annealing. Moreover, it is a matter of record that the plant of 1608 did have the essential furnaces as well as "offices". In 1612 William Strachey wrote

"the country wants not salsedink to make glasse

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11 Jesse Dimmick to Horace M. Albright, March 14, 1932; Neil M. Judd to Dr. A. Wetmore, June 29, 1932 (report on visit to see excavated glass furnaces, visit made June 26, 1932). Both items in Colonial National Historical Park, Central File #740-02.3, "Research: Glass House Point".

of, and of which we have made some stoore in a goodly howse sett up for the same purpose, with all offices and furnaces thereto belonging..." [12]

It would be interesting to know all of the implications of the term 'glasse-house' as used by the contemporary writers in reference to the glasshouse of 1608. From the usage it could have been a general term describing the furnaces and other features needed in the process, or it could have been a larger structure built to house the furnaces and to give them protection from the weather, even large enough to provide living space for the workers. Glass can be and was for a long time made, as already noted, in furnaces in the open woods, yet by this date protecting shelters and houses were in use in Europe.[13] Strachey seems to indicate housing as well as furnaces for he writes 'in a goodly howse sett up...with all offices and furnaces thereto belonging'. It may be significant that Smith mentioned the 'glasse-house' and not the glass furnace.

In 1608 it would not have been safe or practical to set up a glass factory on Glass House Point without adequate protection to be provided by persons living or stationed near it. If the furnaces built in 1608 were on Glass House Point, they were some distance from the stockade on the Island and the later blockhouse on the Island end of the isthmus.

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12 Strachey, Historie: p. 71.

13 See Appendix A.

Besides, Glass House Point was not far from Indian towns and Indians were continually lurking in the area. Several remarks by Smith indicate that there were persons living near the glassworks. During his fight with the Paspahegh chief near the "glasse-house" he was alone until he noticed "two of the Poles vpon the sandes" who "came in" to where the fight was taking place. This proves nothing, yet it indicates that some of the Poles, who, together with the Dutch, were sent over to make glass, were spending their time around the glasshouse. They may have been living there. It is a fact that one of the Dutch, "a stout young fellow", who for a time deserted to Powhatan and conspired against Smith, went "disguised Salvage like, to the glasses-house... where was the randavus for all the vnsuspected villany". Had there not been shelter and quarters at the glasshouse he would have had little reason to hide there.[14] There were living accommodations associated with the glass factory of 1621-1624.

To produce glass a certain amount of equipment is necessary in addition to furnaces, buildings, and even living quarters. This, it is safe to assume, was brought by the glassmen when they came in the Second Supply. They had too little time to make their blowpipes, pontees, shaping tools, and crucibles even if they could have made them in the colony. It goes almost without question that their first

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14 Arber, Works...John Smith; part 1, pp. 150-1 and part 2, p. 467.

fire-clay crucibles for melting glass were brought with them, since it required upwards of twelve months to prepare them.[15]

One of the confusing problems in regard to the first glass enterprise is the nature of the product turned out. Smith says that "tryals of pitch, tarre, glasse..." were sent home when Newport departed in 1608, and he recounts that in the spring of 1609 "we so quietly followed our businesse, that in three moneths [February-April, 1609] wee made three or foure Last of Tarre, Pitch, and Sope ashes; produced a tryall of Glasse;..."[16] In the winter of 1608-1609 "His Majesty's Councill of Virginia" wrote hopefully of the glass venture to "The Corporation of Plymouth" stating "The staple and certain Comodities we have are, soap-ashes,...timber,...making of Glass and Iron,..."[17] In all of this there is no mention of an individual product such as bottles, drinking glasses, or beads. Apparently the documentary data holds little information on this phase of the problem. Beads, it would seem, could have been made. Certainly they were needed and were used in the Indian trade and Smith was a practical man. Just after the departure of the Second Supply he contrasted with Powhatan and the pay-

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15 Moore, Old Glass; p. 11.

16 Arber, Works...John Smith; part 2, p. 471.

17 Alexander Brown (ed.), The Genesis of the United States (Boston, 1890); v. 1, p. 229.

ment was to be made, in part, with beads.[18] These beads could have been brought from England, yet at the time the glass factory had promise. Beads were, and continued to be, used in Indian trade. Concrete proof that they were made in Virginia, however, is lacking. As to the probable manufacture of bottles the same is the case. Conceivably in the trial of glass sent home in 1608 there were bottles, since in England they probably would have been a better measure of ability to produce glass than beads.[19]

Various students interested in this problem have offered their convictions about the product of the early glassworkers. Some say that the chief product was beads, others that it was bottles, and examples,

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18 Arber, Works...John Smith; part 1, p. 130 and part 2, p. 447; Charles Campbell, History of the Colony and Ancient Dominion of Virginia (Philadelphia, 1860), p. 65.

19 Henry Spelman writing in 1609 speaks a great deal concerning the value of beads in the Indian trade in Virginia. He gives nothing, however, that would indicate the source of the beads. Henry Spelman, Relation of Virginia (reprint, London, 1872); pp. 22-32. In 1608 Captain Ratcliffe was using copper beads in the trade with the natives. Apparently blue beads were the most highly valued. Possibly the value placed on these was due to the color being like that of the sky. It is reputed that Smith implied that only the greatest kings could wear beads of such color. Conway Whittle Sams, The Conquest of Virginia: The Second Attempt (1606-1610) (Norfolk, Virginia, 1929); pp. 410, 411, 701. Possibly not all of the glass objects used in trade were beads. Francis Moguel reporting on Virginia to the Spanish Council of State in the summer of 1610 relates that the Indians "attend a market which the English hold daily near the Fort and bring to them there the commodities of the country to exchange them for many little trifles which the English give them, as knives, glass, mirrors, little bells, &c". Brown, Genesis of U. S; v. 1, p. 396.

or fragments, of both have been offered as coming from the Jamestown works. Yet in all of the discussion conclusive proof has not been advanced. Possibly the answer lies in the identification of the site and the study of the remains through scientific archeological investigation.[20] The articles produced by the Dutch and Poles in 1608-1609, whether bottles, beads or other objects, easily may have been of the English or Venetian influence. The glassworkers coming to Virginia with the Second Supply may well have spent some time in England before their departure, or in the actual manufacture of glass, they could have been assisted by some of the English colonists. As for the Venetian influence, it is an historical fact that Venetian workers were plying their trade in the Netherlands in the sixteenth and seventeenth

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20
Moore states "and bottles only were made, as these are the eldest branch of industry in this country". Moore, Old Glass; pp. 209-210.
Walbridge records that, "It was a glass bottle factory". William S. Walbridge, American Bottles Old and New (Toledo, Ohio, 1920); p. 11.
Van Rensselaer writes, "they always made bottles in bulbous shape and probably carboys". Stephen Van Rensselaer, Early American Bottles and Flasks (Peterborough, New Hampshire, 1926); p. 204.
Yonge says, "beads were manufactured for trading with the Indians". Samuel H. Yonge, The Site of Old "James Towne" 1607-1698 (Richmond, 1930); p. 23.
Hall states that there are no records as to what the first glass venture produced, yet she ventures the guess that the workers made beads for the Indian trade as well as bottles and other objects. Hall, Early Glass-Making in Virginia; pp. 9-10.

centuries.[21]

The length of the period of operation for this first glass factory is clouded in a scarcity of information. It was operating in the late fall of 1608, and in the winter of 1608-1609 it was looked upon for good results, being referred to as a "staple and certain" commodity.[22] A little later Smith's account of progress made in the colony in the spring of 1609 specifically states that a "tryall of glasse" was produced. After this, records of production appear to be non-existant. In the fall of 1609 Smith's term as president expired. Shortly thereafter he was injured in a gun powder explosion and returned to England. Then followed that terrible winter known as the Starving Time, which ultimately, in June, led to the decision to abandon the colony. However, this departure from Virginia was not made and the colonists returned to Jamestown to begin anew. These troublous times must have stopped the production of glass, certainly in the winter of 1609-1610 and the spring of 1610, even if operations had continued after the spring

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21 The Encyclopedia Britannica (Fourteenth Edition, 1929); v. 10, p. 402; Powell, Glass Making in England; pp. 17-21.
Powell writes that in the last half of the sixteenth century, due to religious troubles in France and the Low Countries and interruptions in trade and manufacture, many foreign glassworkers considered moving to England and sought monoplies for glassmaking. Some did go to England and the introduction of these workers from Italy and the Low Countries, later, had a far reaching influence on the English glass industry.

22 Brown, Genesis of U. S.; v. 1, p. 239.

of 1609.[23]

It does not appear that production was resumed after the return of the colonists to Jamestown in 1610. "Instructions for such things as are to be sente from Virginia" in 1610 mentions "Pitche and Tarre" yet has no reference to glass. Apparently "truckinge stuffe" including "beades" continued to be sent out from England. At least such was the case in 1619.[24] Despite this, occasional reference to the glasshouse continued to be made. Such references could have been in the sense of a landmark, or mention of prior activity. In July of 1610 the Governor and Council of Virginia wrote from Virginia that Indians lying in ambush had killed many men about the blockhouse and "glass-house". Later in 1612 Strachey recorded his brief sketch of the glass factory and added, "we have made some steere", yet he used only the past tense and gave no implication that production was continuing.[25]

There is little surprise that the first glass venture was a failure. The colony was too young to begin manufacturing on a profitable scale.

23
Kane, The Conquest of Virginia: The Third Attempt, 1610-1624 (New York, 1939); p. 114; Bruce, Economic History of Virginia; v. 2, p. 441; Hull, Glass-Making in Virginia; pp. 8-12.

24
Brown, Genesis of U. S.; v. 1, pp. 384-6; Susan Myra Kingsbury (ed.), The Records of the Virginia Company of London (Washington, 1906-1935); v. 3, p. 196.

25
Brown, Genesis of U. S.; v. 1, pp. 384-6; Strachey, Historie; p. 71; Tyler, Cradle of the Republic (1906); p. 154.

Too much remained to be done, as events proved, to make the settlement secure and to insure the food supply. Smith, in criticizing the attempt at the very beginning, well summarized the conditions:

> "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 seaventie more without victualls to worke, was not so well advised nor considered of, as it should have beene."

He warned against expecting too much from the new industries:

> "...you must not expect from vs any such matter, which are but a many of ignorant miserable soules, that are scarce able to get wherewith to live, and defend our selves against the inconstant Salvages..."

It was useless, he continued:

> "to send to Germany or Polesland for glasse-men and the rest, till we are able to sustaine our selves, and relieve them when they come. It were better to give five hundred pound a tun for these grosse Commodities...then send for them hither, till more necessary things be provided". [26]

Perhaps a few remarks about the glassmen themselves would be of interest. As recorded, they were "Poles" and "Dutchmen" to the number of eight. Three of them are known by name -- Adam, Francis, and Samuel, all Dutch, the first two described as "stout Dutchmen". Just which of the members of the group were these skilled in glassmaking is not known.

26
Arber, Works...John Smith; part 2, pp. 434, 443-5.

The eight men were sent over to produce a number of articles, only one of them glass. Some of the Dutch were carpenters, it is assumed, since they were entrusted with that type of work. Three of the Dutch took refuge with Powhatan in the winter of 1608-1609, and presumably they were not on hand when the trial of glass was made in the spring of 1609. This may imply that the Poles were the glassworkers. Smith's reference to the Poles on the beach by the river during his single-handed fight at the glasshouse may be an indication that the Poles lived there.[27]

Just how much experience in the art of glassmaking the Dutch and Poles had received is unknown, yet some knowledge was necessary. Of early American glassworkers Rhea Mansfield Knittle, author of Early American Glass, writes:

> "The majority of the glass-house proprietors [in America] before 1825 were foreign-born-English, Dutch, Germans and Bohemians; few of them, however, had received technical training or had been connected with glass manufacture in Europe".[28]

In this respect it is interesting to note that the first glass to be produced seems to have been made under orders from Smith, yet without

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27 Ibid; part 1, pp. 130-159 and part 2, pp. 475-487. Smith, without reason, consistently refers to the Dutch as being Germans. William Stith, The History of the First Discovery and Settlement of Virginia (New York, 1865); pp. 77, 82, 95, and 97.

28 Encyclopedia Britannica (Fourteenth Edition); v. 10, p. 409.

his direct supervision, for

> "the President [Smith] dispersed so many as were able, some for Glasse, others for Tarre, Pitch, and Sope-ashes, leaving them with the Fort to the Councils oversight.
> But 30 of vs he [Smith] conducted downe the river some 5 myles from Pamaq towne, to learne to make Clapboard, cut downe trees, and lye in weeds." [29]

Above all, the Dutch workers were not trustworthy, as events proved. They proved unruly and very difficult to manage, as did the Venetians of 1621-1624. After the departure of the Second Supply Smith dispatched several of the Dutch to build Powhatan a house. When the building was complete they preferred to remain with the Indian chief, probably because he could assure them a better food supply and more comforts. Soon they were conspiring to assist Powhatan in overthrowing Smith. Adam and Francis went to Jamestown in Smith's absence and sought to win supporters and to get arms. While the Indians were being instructed in the use of these arms, Francis took post at the glasshouse. At this stage in the conspiracy, Smith took successful steps to block it. He, himself, with a party, marched to the glasshouse to seize Francis, who managed to escape for a time. Later Smith sent William Volde to force the Dutch to return to Jamestown, yet he, too,

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29
Arber, Works...John Smith; part 2, p. 439.
In a letter to the Treasurer and Council of Virginia Captain Smith took the credit for the early production of glass. "In their absence I followed the new begun workes of Pitch and Tarre, Glasse, Sope-ashes and Clapboard; whereof some small quantities we have sent you". Arber, Works...John Smith; part 2, p. 443.

turned traitor and a new conspiracy was begun. Smith, however, was forewarned in time. Matters continued in this way until the fall of 1609, when Adam came back on pardon and Samuel remained with Powhatan. In the winter of 1609-1610 Adam and Francis went again to Powhatan. After the arrival of Lord de la Warr in June, 1610, the Dutch again suggested treachery to the Indian leader. This time Powhatan mistrusted them and he had his braves beat out "their brains". As to the subsequent course followed by the other workers after 1609 the records remain silent.[30]

In spite of the difficulties attending the colony in 1608-1609, attempts were made to begin production in the new world. In the case of glass the enterprise was a failure, yet despite obstacles there was some production---glass was made on at least two occasions. This probably gave encouragement to the workers who began the second attempt in 1621. The priority has been claimed that the production of glass in 1608 was the first "made-in-America" article to be exported from the English colonies.[31]

30
Arber, Works...John Smith; part 1, pp. 130-159 and part 2, pp. 475-487. From the narrative regarding the Dutch, as given by Smith, it appears that when Jamestown was abandoned for a few days in June, 1610, some of the Dutch were with Powhatan and did not participate in the withdrawal.

31
Rhea Mansfield Knittle in Encyclopedia Britannica (Fourteenth Edition); v. 10, p. 409.

5. THE SECOND GLASSMAKING VENTURE, 1621-1624.

After the Starving Time in the winter of 1609-1610 little more was heard of the first glass enterprise except for occasional mention of and reference to the glasshouse. Apparently the glass industry failed in its first attempt. It was not until more than a decade later, in 1621, that the revival of the enterprise received serious and energetic support. This can be considered the second attempt to produce glass in the colony.[32]

The first mention of this second attempt appears to have been on June 11, 1621. At the time it was reported to the Virginia Company of London at "a Preparative Court held for Virginia":

> "yi one Capt: [William] Norton made an offer & would vndertake to ꝓcure 6 straungers in makinge of Glasse and Beade to goe over to Virginia to be imployed in the saide worke for the Company for no other consideracõn than onely the halfe profitts of their laborꝭ, and the said Norton would likewise goe att his owne charge and cary with him some servants and is contented to putt himselfe vppon the consideracõn of yᵉ Company for what hee shall have to dyrect and oversee the said ꝑsons in their saide worke". [33]

This proposal by Norton was referred to the committee for consideration and action.

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[32] Bruce, Economic History of Virginia; v. 2, pp. 441-2.

[33] Kingsbury, Records of the Virginia Company; v. 1, p. 484.

At the Quarter Court for the Company on June 13, the committee made a full report disclosing that Norton

> "resolved to plant himselfe in Virginia with his familie att his owne charges beinge aboute the number of Tenn ꝑsonns, and to make offer to carry over with him 4: Italliyans and two servants of his owne whome hee had ꝑsuaded to goe with their wives and Children on Condicon they may be furnished in good manner att the Companies charge, which six ꝑsonns shall within three monethe after their arivall in Virginia sett vpp a Glasse ffurnace and make all manner of Beads & Glasse..."

As compensation they asked for one-half of the profits and a monopoly for seven years. The committee agreed that such a patent could be granted "without makinge presydent for Monopolies". Among other things Norton promised to supervise all work as well as "to instruct and traine vp Apprentices". As just compensation the committee considered that his share should be one-fifth of the Company's share (which was one-half of the total) and, in addition, 400 acres of land. The court agreed with the committee report, for the most part, and accepted the obligations of fitting out the glassworkers, granting the seven year patent, giving Norton a stipulated one-fifth of the company's interest, and allowing "two men more for cuttinge of wood for the sayd works", one of which was to be furnished at Norton's own expense. The Company, however, reserved ownership and control of "Beads wch is the matter of Trade with the Indians properly belongings to the Companie".[34]

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[34] Ibid., pp. 493-4.

At a committee meeting on June 18 the proposition was given additional consideration, seemingly from the financial angle, and on June 25 it was reconsidered at the General Court. The cost of equipping and transporting the eleven persons was placed at £150.[35] This was considered too great a sum for the Company to provide. To surmount this difficulty a proposition advanced by George Sandys, recently appointed resident treasurer in Virginia, was accepted tentatively. He agreed to accept the "said Italyans to himselfe" instead of men that the Company would have to furnish him "in respect of his office" as treasurer of the colony in Virginia. This, until such time as the Company would reimburse him, would leave the Company with the sole cost of transporting the families of the glassworkers. The workers themselves had agreed to this and proposed to produce glass as "Tennants att halfe" with the seven year grant "of pryveledge that they onely and no other except such as the Company shall send vnto them may be ꝑmitted to make round Glasse drinckinge Glasse or Beads..."[36] It appears that the meeting ended in agreement and that the new venture

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35
Presumably this referred to four Italians, two wives, three children and two servants.

36
The workers, "in lieve of their moytie of their Beads they ar to have valuable consyderacon in some other Comodities att such Rates as the Governor and Counsell of State in Virginia shall thinke fitt who are likewise to stint and proporcon what quantytie of Beads they shall thinke requisite to be made from time to time." Kingsbury, Records of the Virginia Company; v. 1, p. 499.

was due for a propitious beginning. "Captaine Norton likewise promised to be redie with his people within 14 daies to take Shippinge".[37]

However, delay ensued again. On July 2, at an Extraordinary Court held for Virginia, it was decided that the agreement with Sandys should be cancelled, probably because a number of the Company members felt disgruntled that "a Bargaine of this nature should be translated from the Company to one mans pryvate use and benefitt". It was resolved that the Company should "againe entertaine the Bargaine into their hands" despite the fact that it could well "bringe themselves in debte for the same". To increase the difficulties Captain Norton now presented a bill[38]

> "amountinge to £0[li] wch hee demaunds ꝑtly for clearinge the apparrell of the Italyans glasemen engaged for debt, and ꝑtly for buyinge some materialls for their Glass worke wth out wch they could doe nothinge".

Apparently this extended the cost of the enterprise beyond the estimate and at a court on June 10 the whole proposal was referred back to the committee for additional study.[39]

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37 Kingsbury, Records of the Virginia Company: v. 1, pp. 498-500. It was reiterated that "Captaine Norton is to have the oversight & govment of the said Italyans".

38 Kingsbury, Records of the Virginia Company: v. 1, pp. 500-1.

39 Ibid: p. 507.

At the Extraordinary Court on July 12, 1621 the glass enterprise was reviewed from the beginning and discussed in detail. The crux of the matter seems to have been that Norton's "new charge" of £80 made the enterprise too expensive. After "much dispute about itt" in the court meeting, it was decided that "the Companies stocke were no ways able to goe through with so greate a charge". Norton was released from his contract and the matter was closed. Despite this action the door was left open for another method of financing the enterprise. The Company was willing "to yeild the same bargaine to pryvate Adventurers yt would be willinge to vndertake the same".[40] Thus, in the case of the glass project, as in other expensive projects, the Company fell back on the old "subsidiary joint-stocks".[41]

On July 16 "pryvate Adventurers" appeared before the court stating that they hoped to promote the glass enterprise. Because of the nature of the enterprise, of "speciall consequence" to all in view of the fact

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40
Ibid; pp. 510-512.
In this discussion it evolved that six Italians and their families were scheduled to go to Virginia -- the total being 11 in all. It was stated also that furnishing the worker called for "apparrell, Victuall, Tooles and all other materialls and necessaries fittinge for their vse, and of the ꝑformance of the said worke". The "new charge" for £80 requested by Captain Norton was "to be disbursed ꝑtlie for redeeminge the said workmens apparrell and Tooles engaged now for Debts, and ꝑtly for such materialls as hee feared could not be had in Virginia, and without which they could not ꝑceed in their said worke..."
41
Frank Wesley Craven, Dissolution of the Virginia Company (New York, 1932); pp. 191, 194.

that "the Commoditie of Beads was like to preue the Veric Ceyne of that Country", the Company was asked to come in for a share in the joint stock. The plans called for raising "at least 400li". The court agreed that the Company should enter for a "fowerth parte". In the discussion certain changes were made that were not considered or stipulated in the old agreement although the one was simply a continuation of the other brought in by financial need. The seven year patent was approved as was a seven year patent for making "Beade", 50 acres were to be granted for each person transported, and it was stipulated that until "they may be able to build theire houses" the glassworkers could use Mr. Whitacre's "Guest house".[42]

With these fundamentals out of the way the adventurers proceeded with organization. A committee was named to make additional study, and the stock was thrown open to those willing to invest £10 or more. Nicholas Ferrar was named as treasurer. Two members of the Company and six of the adventurers were named to meet in session and to set down instructions for Captain Norton "for his better direccon in the managinge of the said Glasse worke".[43]

After this meeting plans for the enterprise were pushed actively.

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42 Kingsbury, Records of the Virginia Company; v. 1, pp. 512-514

43 Ibid; v. 1, pp. 512-14.

On July 25 the Company dispatched a letter to the colonial authorities stating:

> "We comend unto you Capt. Wm. Norton who is now sett out by the general Company and many private adventurers for the erectinge of a Glass worke; we desire he may be planted with his gange in the Guest house that Lieutenant Whittakers hath erected us, there to reside till he hath found a convenient place to erect his furnace, in the choice whereof we desire you to give him your best assistance, and especially have a care to sent him neare some well inhabited place, that neither his Gange be subject to surprise, nor the commodities of glasse and beads be vilified by too common a sale to the Indians".[44]

This letter was followed by another to the Governor and Council on August 12. This continued that Norton's "cheife employments" were to be "The makinge of beads...being the mony you trade with the natives". Here again it was emphasized that they should not through "to much abundance [be] vilified or the Virginians at all p̄mitted to see or vndrstand the manufacture of them;"[45]

On August 21 the Company prepared still another letter for Virginia emphasizing the interest of the Company in the venture and urging that

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44
Edward D. Neill, History of the Virginia Company of London (Albany, 1869); p. 231.

45
Kingsbury, Records of the Virginia Company: v. 3, p. 495.
The instructions continued: "wee therefore pray you seriously to consider what proportion of beads can be vented and their worth not abated, and intimate the proportion to Capt Norton and his Italians, and certifie the same to us in yor next letters, that accordingly we may limitt the quantitie that shall from time to time be made..."

the officials in Virginia take interest in the enterprise and render every possible assistance particularly in the matter of a suitable location. Norton was to "plant himself in neare to the best inhabited towne, either in Charles City or Henerico, but by no meanes lower than James Cittie; nor remote from people...". It was stated further that should Captain Norton die George Sandys should undertake "the oversight of the worke".[46]

Apparently the glassworkers, provided with the necessary tools and equipment, sailed for Virginia in late August of 1621. Just how soon work was begun is not clear; however, it appears that actual production was not begun in 1621 nor in the winter of 1621-1622. The construction of the plant itself was begun, possibly soon after the arrival and adjustment of the workers. The glasshouse was raised and covered, yet before additional work could be done it was leveled by a "tempest". Not dismayed the workers raised it again and made the necessary repairs. Here the work stood at the time of the massacre in March, 1622.[47]

Support for the glass venture was still active at home. On November

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[46] Neill, History of the Virginia Company; pp. 236-7.

[47] Ibid; Kingsbury, Records of the Virginia Company; v. 4, pp. 23-4; William Waller Hening, Statutes at Large Being a Collection of all the Laws of Virginia (Richmond, 1809); v. 1, p. 116.

21, 1621 the subscription list was thrown open once again to likely investors who had missed the call of the summer subscription. The project was read before the Quarter Court, and it was related that "certen Italians and others to the number of 16 ꝑsons were already sent wch works ['makinge of glasse and beads'] is hoped by this time to be in good forwardness..." The "Iointe Stocke" had already reached £800. It was noted that it would require large funds to promote and continue the "prosecucõn" of it.[48]

It is clear that in the fall of 1621 and in the winter of 1621-1622 plans for the glass factory were pushed at home and progressed steadily in the colony. However, the massacre of March, 1622 wrought havoc in Virginia and disrupted the normal life of the colony. This catastrophe was felt in all lines of endeavor, including the glass industry. But the glassworks were spared and did not suffer destruction even though work was necessarily suspended. George Sandys wrote later concerning the glassworks "ye Indians came vppon vs, wch for a while deferd yᵉ proceedinges". Perhaps, the Governor, Council and Burgesses gave a better view of the effect of the massacre in their answer to Captain Nathaniel Butler's accusations against the colony. After reviewing the progress in staple commodities in vines, mulberry trees, and such, they continued that "the Glass-Works labored after with all possible Care,

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48
Kingsbury, Records of the Virginia Company: v. 1, pp. 557-565.

till the Slaughter by the Indians, and the succeeding Mortality, gave a Ruin to some, and Interruption to all". During the summer that followed the people were "in such a State of Terror and Flight, that they did not even make Corn for their Support and Subsistence".[49]

Just how long it was after the massacre before the glass enterprise was revived it is not clear. Nevertheless it appears that renewed activity was forthcoming in late spring, or early summer. Sandys records:

> "Then they built up yᵉ furnace, wᶜʰ after one forthnight yⁱ yᵉ fire was put in, flew in peeces: yet yᵉ wife of one of yᵉ Italians (whom I have now sent home, havinge receaved many wounds from her husband at severall times, & murder not otherwise to be pᶜuented, for a more damned crew hell never vomited) reuealed in her passion yⁱ Vincentio cracked it wᵗʰ a crew of iron: yet dare wee not punish theire desperat fellowes least yᵉ whole dessigne through theire

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49 Ibid: v. 3, p. 548 and v. 4, pp. 23-24; Stith, The History of the First Discovery and Settlement of Virginia: pp. 218-9, 311.
The massacre did not break up the glass enterprise as has been suggested occasionally. It temporarily stopped the work, yet this was for a time only--until conditions were suitable for renewed effort. It has been suggested that the glassworks were purposely spared, for the Indians were "loath to destroy the queer place that made their colored beads". Maude Pollard Hall states that the works were saved by the timely warning of Chanco, the Indian who warned Jamestown. This could have been the case if the factory was near Jamestown. J. Oldmixon, The British Empire in America (London, 1741), v. 1, p. 371; Hall, Glass-Making in Virginia, pp. 13-15.

Stubbernesse should fish."[50]

It would seem that Norton used workers in addition to the Italians, possibly for work other than actual glass blowing. He had with him John Berland, a smith, probably to care for the necessary iron work, and also one Thomas Wilson who it was reputed "did worke a longe time with Capt. Norton". Apparently Norton did not share all of Sandys' dislike, or distruct, of the glassworkers for it is mentioned that "Mr Peirce Bernardo", one of the Italians, lived with him in the same house.[51]

In June, 1622, in a letter to the Governor and Council, the Virginia Company again recommended "the last yeares undertakinge of the Glass-worke" and other projects. They asked that special care and consideration be given even though "they have missed of the past return". This would indicate that no glass had as yet been produced even though the

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[50] Kingsbury, Records of the Virginia Company, v. 4, pp. 23-4.
Knittle states that as a result of Vincentio's attack on the furnace it was broken "into a thousand shivering pieces". J-152 (Rhea M. Knittle, Early American Glass). [In the historical files of Colonial National Historical Park at Jamestown there is a "mass" of collected documentary material, primary and secondary, collected by former employees. This is classified under the headings L (signifying relation to land, or to land holdings at Jamestown), J (Meaning general references to Jamestown) and V (pertaining to Virginia history with some relation to Jamestown). In this report documentation of these cards will be by letter division and number followed by source as given on the card.]

[51] Governor Wyatt to John Ferrar, April 7, 1623 in Virginia Magazine of History and Biography; v. 6, p. 239; "Minutes of the Council and General Court 1622-1629", in Va. Mag. Hist. and Biog.; v. 24, p. 148.

adventurers had expected a return on their investment before this date. Despite this they were not yet discouraged, and in a letter of June 10, 1622 gave information that "The Adventurers of the Glasse, hane sent Capt Norton a good supplie,..."[52] Hard luck continued to follow the glass enterprise. "The sumer comings on, Capt Norton dyed wth all sa[v]eings one of his seruants, & hee nothinge worth: The Italians fell extreamely sicke:"[53] Presumably this discouraged further activity in 1622. In December of that year the Company entreated the Governor and Council to make a return for the glass project and specified that it be sent home in the Abigail. Even so it would appear doubtful that the enterprise was established securely enough to show a profit, or even a return. In January the London officials were informed that "Mr. Threr", George Sandys, would give them information regarding the "glasse works". As provided in the arrangements made in the summer of 1621, Sandys had fallen into the leadership of the glass project on the death of Captain

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52
Neill, History of the Virginia Company; pp. 306, 310; Kingsbury, Records of the Virginia Company; v. 3, p. 651.

53
Kingsbury, Records of the Virginia Company; v. 4, pp. 23-4.

William Morton in the summer of 1622.[54] He may not have had a great deal to report, for Nathaniel Butler who passed the winter of 1622-1623 in Virginia later wrote that "The Furnaces for Glass and Pots at a stay and in small hopes".[55]

Sandys had more to report in March, 1622-1623 according to his letter of that date to "Mr Farrer", treasurer of the glass adventurers. He related that the Italians who fell sick in the summer of 1622 recovered during the winter. Then he:

> "hyred some men for yt seruice, assisted the wth mine owne, rebuilt the furnace, ingaged myselfe for prouisions for them, & was in a manner a seruant vnto them. The fier hath now beene six weekes in yt furnace, and yett nothing effected. They complaine yt ye sand will not run. (though themselues made choice thereof, and likt it then well enought) & now I am sendinge vp ye riuer

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54
Alexander Brown, The First Republic in America (Boston, 1898), p. 508. Bell, History of the Virginia Company, p. 273. "Virginia Colonial Records, 1621-23" in Va. Mag. Hist. and Biog; v. 14, pp. 34-5.
Captain Morton died indebted to various persons in the colony including those who had been working with him. Apparently Sandys took over the administration of his affairs, promising payment to the creditors "as soone as Capt. Morton's goodes were solde". "Minutes of the Council and General Court, 1622-1629", in Va. Mag. Hist. and Biog; v. 24, pp. 144-5.
55
Gemmy Robinson and H. A. Brock, (eds.) "Abstracts of the Proceedings of the Virginia Company of London 1619-1624". Collections of the Virginia Historical Society, New Series, Volumes 7-8 (Richmond, 1888); v. 8, p. 172; Lyon Gardiner Tyler, Narratives of Early Virginia, 1606-1625 (New York, 1907), p. 414; Bruce, Economic History of Virginia, v. 2, p. 443, f.n.

> to provide the wth better, if it bee to bee had. but I conceaue that they would gladly make the worke to appeare vnfeasable, yt they might by yt meanes be dismissed for England. Much hath beene my trouble herein, and not a little my patience (f hanginge beene called rancall to my face for reprouinge them of theire ryot, negligence & dissension) but, for the dobt wch I am in, for theire sustentation I hope ye aduenturers will see it discharged".[56]

This letter gives concrete evidence that the furnace was operating, even if the output was described as "nothing", between the last of February and the last of March, 1622-1623. It must be that the Italians had attempted to use the sand available at first hand and after fruitless experiments insisted that it was not suitable and "will not run". This information also indicates that the workers were disgruntled even before the furnaces were ready to operate. Some months before Vincentio had, with an iron bar, broken up the first furnace. It would seem that the Italians did not like Virginia even from the beginning. Possibly the hardships were greater than they had expected; then, too, there was the long delay before anything happened. However, something more pressing may have affected them and that could have been the lack of immediate profit. On the other hand, there may have been other reasons

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[56] Kingsbury, Records of the Virginia Company; v. 4, pp. 25-6.

for a lack of harmony between the overseer and the workers.[57]

Sandys, for a time at least, continued his endeavors to make the glass enterprise a successful one. On April 8, 1623 he wrote to John Ferrar that he had sent his shallop and servants up the river to the falls in search of sand for the "Glasse men", yet they were unsuccessful and could locate none that would work. Later he dispatched them to Cape Henry where "they lighted of that w'ch they like", though it might not prove as suitable as hoped for "in the tryal". To be on the safe side he requested that the adventurers dispatch to Virginia several "Hogsheds" of sand from England. He continued that all of the servants were dead and that the provisioning of the workers had fallen to him, much to his detriment since he was "not able to feede my owne familie".[58] Just how successful the Cape Henry sand proved to be is not known. The adventurers in August, 1623 urged special attention to the project for glass and also to that of the shipwrights. From these they hoped to recoup some of the losses sustained in other projects. Just what success was attained in 1623 does not seem to be a matter of record. Some of the trials were failures it is clear, yet proof is lacking that all of them were. Nevertheless, it would seem that any success was strictly limited. In January, 1623-1624, the Governor and Council noted that results,

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57 Ibid., pp. 23-4.

58 Kingsbury, Records of the Virginia Company of London; v. 4, p. 108; Bruce, Economic History of Virginia, v. 1, p. 445.

"success", had not been great even though Sandys' "care and exceeding charge therein were not wanting".[59] For more specific information they referred to the letters of "Mr. Treasurer". Perhaps the prime reason for the lagging results of the glass furnace was found in a statement by the Governor and Council to the King on February 20, 1623:

> "Iron and glass works were in great forwardness [before the massacre] but are now interrupted, and the people are forced to follow the contemptible weed, tobacco, to enable them to sustain their continual wars with the Indians, and to support themselves".[60]

Apparently after the winter of 1623-1624 the glass enterprise became inactive. This seems to have been the case because of the lack of record regarding its progress. Up to this point the references to it are somewhat numerous, if not informative. Beyond this point there is little or no mention of success or progress. In the winter of 1623-1624 five persons were living at the "glass howse", evidently Italian, as their names would imply -- "Vincencio", "Bernardo", "Ould Sheppard his sonn", "Richard Farberer" and "Mrs Bernardo". A year later "Vincencio the Italian" and Bernardo with his wife and child were not listed as

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59 Brown, First Republic; p. 562; Kingsbury, Records of the Virginia Company; v. 4, p. 266; "Virginia in 1623-24" (abstracts of documents) in Va. Mag. Hist. and Biog.; v. 6, p. 376.

60 W. Noel Sainsbury (ed.), Calendar of State Papers, Colonial Series, 1574-1660 (London, 1860); p. 39.

living at the glasshouse, but at "ye Treasurers Plant." From this it would seem that the glasshouse was abandoned at some time in 1624.[61]

In any case by April 25, 1625 the decision had been reached to abandon all ideas of reviving the project. At that time the Council and General Court of Virginia granted Vincentio and Bernardo passes to return to England, binding them to serve the remainder of their time, if the adventurers required it, in England, or in Virginia, should they be returned. In June the Council explained the necessity for the steps, saying:

> "That of the Shipwrightes and glass woorkes geuen in by mr George Sandys ye heerewith send you, the death of one of ye Principall woorkman, an other beinge subiect to the fallinge sickness, and many defects weh render the woorke vnserviable, Hath moved us to Cond/e/scende to the importunate suits of the glass men of returninge for England, weh woorke so longe, as there was any hope, was supported by mr George Sandys to his great charge and hinderemee, we haue taken Cautione of them to be at ye disposall of the Adventurers till the expiratione of the tyme of theire covenants".[62]

61
John Camden Hotten, (ed.) The Original Lists of Persons...Who Went from Great Britain to the American Plantations 1600-1700 (New York, 1931); Reprint of 1874 edition; p. 336; Sainsbury, Calendar of State Papers; p. 57; Bruce, Economic History of Virginia; v. 1, p. 443.
Hall gives as another of the Italians one Boniventure, and ventures the guess that they were all Venetians (Early Glass Making in Virginia; pp. 13-15).

62
H. R. McIlwaine, (ed.) Minutes of the Council and General Court of Colonial Virginia, 1622-32, 1670-76 (Richmond, 1924); p. 56; Kingsbury, Records of the Virginia Company; v. 4, p. 566.

The second attempt at glassmaking found the same fate as the first. Apparently the principal reason was the same in both cases -- the colony was not yet adjusted to support and maintain such an industry. Security and protection from the Indians, the maintenance of a constant and stable food supply, the culture of tobacco, and clearing of additional land, together with the other problems and expectations incident to a new and virgin country not yet stabilized all played their part. Other and less fundamental reasons probably contributed to failure such as poor silica, disagreement between workers and supervisors, and the temperament of the Italians who without doubt came to Virginia for profits that were not forthcoming. The enterprise began with enthusiasm, to be confronted with numerous drawbacks. After the attempts of 1623, it seems to have languished and was abandoned completely in 1625, not to be renewed by the Company, which lost its charter in 1624. As a royal colony, Virginia devoted itself more to agriculture, largely tobacco, than to other things such as industrial ventures.

As to the glass factory erected by the Italians, more is known than of the factory in the attempt of 1608-1609, although the information is not full. It seems likely that the first structure was the glasshouse, erected to furnish shelter for the furnaces and workmen. It may have been large enough to house the workmen together with their families. There were structures which were living quarters and spoken of as the "glass House" in February, 1623/4. These were large enough to accomme-

date at least one glassworker with his wife and child besides two additional men, an Italian and one other. Presumably Captain Norton and the other workmen lived here, too, although this is a matter of inference.[63]

The glasshouse was erected, possibly, in late 1621, then wrecked by a gust of wind and had to be repaired. It does not seem likely that a furnace was erected until after the massacre, possibly in the spring of 1622. The glasshouse already erected may have been used as housing for the workers in the interval. The first furnace was short lived lasting only a "Fortnight" after the fire was started. Then it "flew in peeces", as it was wrecked by Vincentie's "crew of iron". It was not until the winter of 1622/3, or the spring of 1623 that the furnace was rebuilt and fixed for six weeks without mishap, unless the lack of good silica is considered a mishap. Probably this furnace continued in use. In addition to living quarters, the glasshouse and the furnace,

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During testimony presented to the General Court in 1625 it was stated that Mr. Bernardo had lived in the house with Captain Norton. The only record of persons actually living at the glasshouse is dated in the winter of 1623/4. One of the persons listed was Bernardo. The obvious assumption is that Bernardo lived at the glasshouse with Norton and continued there after the latter's death. Of course this is only an assumption since Bernardo could have lived with Norton at some other location and moved to the glasshouse after Norton's death. However, the most likely place for Norton to have lived would have been at the location of the project which he was directing. It would seem that other men serving under Norton also lived with him or, in any case, near him, such as Thomas Wilson and John Burland.

there is no available record of building near the site of the glass enterprise. There is no detailed description of the furnace, nor anything to prove the existence of the usual auxiliary small furnaces and other devices needed. The references to the furnaces and glasshouse, generally speaking, could imply all of this and more. It may be, for example, that Nathaniel Butler's notation, "The Furnaces for Glass and Pots at a stay", meant furnaces for working the glass and a furnace for making crucibles -- for sometimes crucibles were mentioned and referred to as "glass pots". Certainly in a permanently projected enterprise for making glass, crucible making would have been a matter of prime concern. It seems clear that the Italians came over in 1621 with at least a temporary supply of the fire-clay crucibles, as well as their necessary tools -- blowing-irons, pontees, shaping-tools and other instruments for use in plying the glassmaking trade.[64]

As to the type of material used in the construction of the glasshouse, nothing has come to light. In all probability it was some type of timber or frame structure. As for the furnace, wood could not suffice. Brick was the customary material for furnace building at home, yet in 1621 and 1622 it might not have been readily available. It proves nothing, yet it may be of interest to note that Edward Waterhouse, writing of

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64
Kingsbury, Records of the Virginia Company; v. 4, pp. 2f-4; Hotten, Original Lists of Persons; p. 180; Va. Mag. Hist. and Biog; v. 24, pp. 144-5.

Virginia and iron manufacture in 1622, made comment on the presence of "great stones" at "The falling Creek...as though they had been brought thither to advance the erection of these Works". This does indicate that stone was looked upon as a suitable building material.[65]

As for the location of the glassworks begun in 1621, the documentary material yields no precise information. The general instructions given for the glassworkers on August 21, 1621 spoke of location. The Governor and Council were to assist in the choice of a site which should be a "healthfull place" and "near to the best inhabited towne". Charles City and Henrico were proposed and the works were "by no meanes" to be "lower than James Cittie; nor remote from people".[66] Just how seriously these instructions were followed is a matter for conjecture. There are indications that the point selected may have been near Jamestown. The project came out of the massacre of 1622 unscathed so far as physical damage was concerned, indicating that the furnace was in a somewhat protected position. Then, too, Sandys wrote of sending up the river almost to the falls for sand, and later down the river to Cape Henry. This, generally speaking, would place the plant somewhere removed from either the mouth of the James, or the falls. Jamestown easily would have fulfilled that part of the instructions regarding the

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65
Kingsbury, Records of the Virginia Company: v. 3, p. 548.

66
Neill, History of the London Company: pp. 236-7.

best inhabited town and proximity to the life of the colony, while a position on Glass House Point would have been up river and not "lower than James Cittie". The documentary data, however, fails to fix the location. Wherever the location a constant supply of wood was essential. There is little likelihood that the English regulation of 1615 compelling the use of coal, to replace the use of wood, in glass furnaces, would have had effect in Virginia. The motive behind this was the conservation of the forests, a step not necessary in Virginia.[67] As in the case of the 1608-1609 venture the motives behind the selection of a site would have been protection, a wood supply, a source of silica, and possibly building material. In 1621 Glass House Point may have offered these advantages, particularly the first three. Mention is made of such a possibility because of the remains of the undated glass furnace found at Glass House Point. It seems clear that they date from either the first or the second attempt at glassmaking.

The question of production during the second attempt is an openly debatable subject, since documentary proof is lacking and archeological discoveries are not conclusive. An examination of the proceedings leading up to the dispatch of the workers in 1621 reveals that a number of items were enumerated for production -- "Glasse", "round Glasse", 'drinckinge Glasse" and "Beads" -- first of all beads for the Indian trade. It is clear that expectations ran high that the production

67 Moore, Old Glass, p. 109.

of beads would yield good profit. Measures were taken to guard the secret of bead manufacture and to limit production to protect the value. If the hopes of the glass adventurers and Company were considered by the workers, then beads would have been number one on the list for production. The furnace was erected, fired for a time and trials run, yet here available information stops without actual record of successful effort, or the actual production of merchantable produce. The most suggestive bit of information, so far as the manufacture of beads is concerned, is the report of a trading venture sent out by George Sandys, presumably some time in 1624 since the report was made to the Council and General Court on December 9, 1624.

Robert Poole reported that he had been employed by "My Tresurer" and sent out on a trading voyage in the "Pynnace called ye Elizabeth". During the expedition he traded "ten [?] armes length of some beads" for one "Tubb of Corne" and thirteen for another. Captain Croshaw exchanged "10000 of blew beades" for a canoe for which beads he promised to give Sandys full satisfaction. Poole, in addition, traded "20000 of blew beades" for "matts". For guide service he expended "4 or 500 of blue bead". During the expedition he traded for skins and other items, although for this he does not relate the number of beads used. He was careful to note that he did not use any of the "Tresurers" beads for his own private use, yet "all ye shipps Company did truck and

trade for skins, butt where they hadd the Truck he knoweth nott".[68]

This report shows that Sandys, the Treasurer, was engaged in trade in 1624 and that he had a quantity of beads. It does not indicate the source of his supply, which may have been imported from England or Europe. However, if the glass venture did produce beads Sandys, the supervisor of the work and treasurer of the colony, would have been the person to dispose of them. Exchanging beads for Indian produce would have been the correct method of procedure. There is other reference to the use of beads at Jamestown and in Virginia in the years of the glass enterprise, yet nothing to prove that they were produced in the colony. They easily could have been sent over from England as they had been before 1621 and were after 1625.[69] It is on the basis of chance archeological finds and the collection of glass items from, or near, the old glass factory site at Glass House Point near Jamestown, that students of glass, glassmaking, and history have made statements and advanced opinions regarding the production of the first furnaces in America.

68
McIlwaine, Minutes of the Council and General Court; pp. 29-30.

69
"Virginia in 1623" (Abstracts) in Va. Mag. Hist. and Biog; v. 6, p. 237; "Virginia in 1629 and 1630" (Abstracts) in Va. Mag of Hist. and Biog; v. 7, p. 390; Bruce, Economic History of Virginia; v. 2, pp. 139, 540.

4. GLASS HOUSE POINT AND THE GLASS ENTERPRISES.

Glass House Point across from Jamestown evidently derives its name from one of the early glassworks. In 1654 Francis Meryson received a patent for "Twenty four Acres of Land comonly known by the name of the Glass house", located in James City County. This record relates the early disposition of the area and traces its ownership from the first grant by John Harvey who made it over "by bill of Sale" to Anthony Coleman. Beyond the reference to "the Glass house", there is little here to give location.[70] However, during Bacon's Rebellion, in Bacon's attack on Jamestown by way of the main road across Glass House Point, while he was evidently encamped on the mainland and fortifying the isthmus, he posted a sentry on "top of a Brick Chimney (hard by)", "On Col. Meryson's Plantation". This locates Meryson's plantation as on the mainland very close to the isthmus, and, presuming that his plantation was on the land patented in 1654, it would fix the location as being on Glass House Point.[71] A deed for a tract of land given by the trustees for William Broadribb to Joseph Chermerson in 1708 con-

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70 Jamestown: Land Patents (Typescript of land records relating to Jamestown in the State Land Office, Richmond, Virginia; prepared in 1935 for Colonial National Historical Park), p. 108. Patent in Patent Book 5, pp. 367-368.

71 "Narrative of Bacon's Rebellion" in Va. Mag. of Hist. and Biog.; v. 4, p. 145; Hatch, "Unit A Study", pp. 45-47.

firms this. It was for "Twenty four Acres More or Less: being Comonly Known by the Name of the Glass House", located in the county and parish of James City "binding part of it. Upon ye Back Creek &c---". Back Creek bounds Glass House Point on one side, and James River on the other.[72] This twenty-four acre tract when placed on Glass House Point checks with other property adjoining it which can be located with a considerable degree of assurance on the ground today.[73]

It seems safe to conclude that Glass House Point by 1654 and earlier had become identified locally as the Glass House Tract. In view of the fact that a glassworks of some type has been actually located there, the origin of the name Glass House, Glass House Point, or Glass Point seems clear. Since the term Glass House was in use by, or before, 1654 it is obvious that the glasshouse dated from the glass enterprise of 1608-1609, or that of 1621-1624. There is no record of attempts other than these two before 1654.[74]

72
Ambler Papers from the Library of Congress, Washington, D. C. (Typescript form bound into one volume, dated April 8, 1935; in Colonial National Historical Park Historical Division Files), p. 178. (Ambler Paper No. 78).

73
Ambler Papers; pp. 178, 194-5. (Ambler Papers Nos. 77, 84, 87, 89); see "Jamestown Island to Green Spring Preliminary Historic Base Map", NHP Col. 2075 (Map compiled and drawn by J. C. Harrington, September, 1940.)

74
Edward D. Neill, Virginia Carolorum (Albany, N.Y., 1886); p. 284, f.n.

As already pointed out, the documentary data seems to indicate that the glass factory of 1608-1609 was located on Glass House Point. This location satisfies the descriptions given and meets the requirements of Smith's "neare a myle from James Towne" and Strachey's "a little without the island, where Jamestown stands". As for the factory of 1621-1624 there is nothing in the documentary evidence to disprove the thesis that the factory was on Glass House Point, yet on the other hand there is nothing to give absolute proof that it was located there. It is clear, however, that the facts do not indicate any other specific, or general, location, and Glass House Point can easily satisfy the meager data.[75] It appears likely that the same inducements for erecting a furnace here would have been present in 1608 and in 1621. If it is assumed that the first furnace was here, then the matter of precedent and even remains may have influenced the workers in the choice of a site for the second venture.[76] On the basis of documentary data, the actual discovery of a furnace on the ground, the location of glass and glass fragments, and the existence of objects attributed to the Jamestown manufacture, opinions have been advanced that the area was the site

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75 Arber, Works...John Smith; part 2, pp. 467-8; Strachey, Historie, p. 71.

76 Hull, Glass-Making in Virginia; pp. 20-1.

of the first attempt, second attempt, or both attempts.[77] It is clear that the problem has not been settled beyond doubt, but it is significant that there is agreement that at least one of the first attempts, and possibly both attempts, were in this area.

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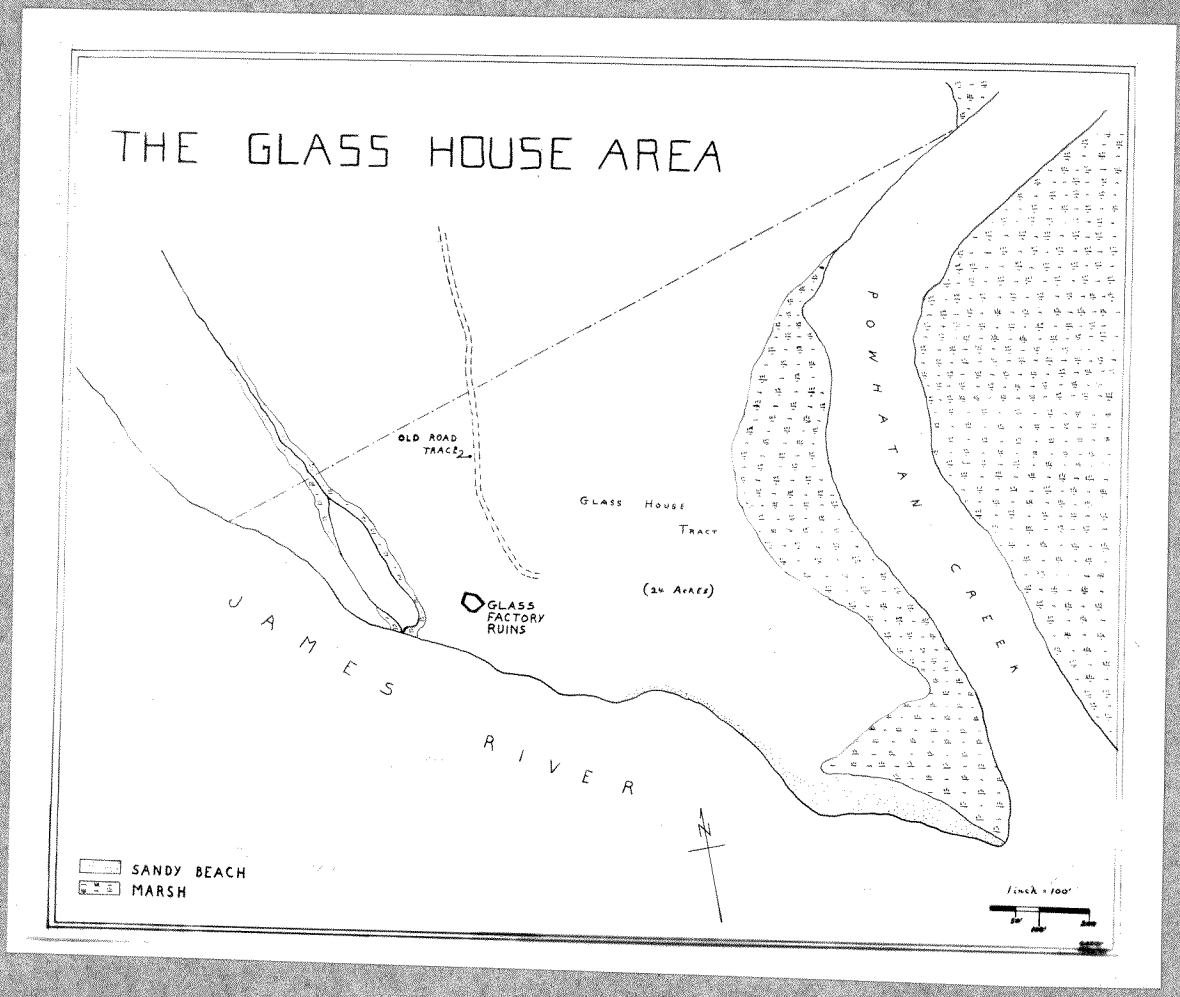
77 Yonge locates the first attempt here. Yonge, Site of Old "James Town"; p. 23; Tyler, it would seem, makes it the site of the second attempt and states that the chimney used by Bacon for a sentry post was "probably a relic of the glass factory...". Tyler, Cradle of the Republic (1906); pp. 155-6, 14-15 (map). Hull and Jesse Dimmick, discoverer of the factory site, believe that both ventures were conducted on the same site. Hull, Glass-Making in Virginia, p. 20. Sams concurs in this. Sams, Conquest of Virginia: Second Attempt; p. 582, f.n. George C. Gregory, student of early Jamestown, feels that it was not the site of the first attempt. (Memorandum for Superintendent Robinson by B. Floyd Flickinger, dated May 5, 1932, in Colonial National Historical Park, Central File #740-02.3, "Research: Glass House Point").



Map No. 2

The Glass House Point Area.

CHHP #8540

5. ARCHEOLOGICAL DISCOVERIES.

Mr. Jesse Dimmick, while living above Jamestown at his home "Ambler-on-James", had a special interest in exploration to discover the remains of one of the old glassworks which he believed to have been located on his property. He was attracted to a slope near the river where he began to investigate. The location was within less than a mile of Jamestown, close to the James River on the extreme eastern boundary of his property. Here in September, 1931 he located the remains of an old glass furnace. The discovery aroused considerable interest. Besides the visit of H. H. White, who assisted in the limited excavations in October, Dr. Neil M. Judd, Curator, Division of Archeology, Smithsonian Institution, representatives of the National Park Service, particularly from Colonial National Historical Park, and others visited the excavation while it was open or just afterwards. Eventually Mr. Dimmick closed the excavation and erected a fence around the site until such

time as it could be studied scientifically by qualified experts.[78]

In reporting on his work Dimmick wrote: "I have recently found on my property, on that part known as the 'glass house' tract of 24 acres, the ruins of old glass kilns, and in the ruins are fragments of the containers in which glass was melted, slag &c."[79] Dr. Judd visited the site in June, 1932 and prepared this description of what he saw:

> "Here the remains of three crude furnaces, exposed by the owner of the land, Mr. Jesse Dimmick, in September, 1931, merit closer attention than it was possible to give during our brief examination.
>
> "The Glass Point furnaces are now represented by one or two courses of large river boulders, laid in what appears to be an earth morter, forming chambers approximately 18 inches wide by 5 feet long. The floors and inner, closed ends of these

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78
Hall, Glass-Making in Virginia; pp. 6,20; H. H. White to the Association for the Preservation of Virginia Antiquities, May 6, 1939. Copy of letter, supplied by Lawrence Dawson of Charlottesville, Virginia, now in Colonial National Historical Park Historical Division File #740-02.3, "Research: Glass House Point".

Some time after the discovery it was proposed that a Ceramic Arts Museum be established on the site of the glasshouse. At the solicitation of the then Governor of Virginia (1933), Dr.H. J. Mekenrode was named chairman of the commission. A move was made to obtain the financial backing of the leading glass industries in the country. On September 8, 1933 the Acting Superintendent of Colonial National Historical Park accepted appointment to the commission for the promotion of a National Museum of Ceramic Art. Apparently the committee did not get beyond the preliminary ground work and little more was heard of its activities. B. Floyd Flickinger to John Garland Pollard, September 8, 1933 and B. Floyd Flickinger to T. E. Chatelain, August 18, 1933. Letters in Colonial National Historical Park, Central File #740-02.3.

79
Jesse Dimmick to W. A. R. Goodwin, March 1, 1932. Letter in Colonial National Historical Park, Central File #740-02.3.

> chambers are partially glazed with what may be glass but what I believe to be a vitrification of the quartzite boulders and sandy mortar caused by fire."[80]

Other persons visiting the site made partial descriptions of the remains revealing that three, or parts of three, furnaces were uncovered. The larger one, about six feet in length, made of "river stone", was nearly all uncovered. The two smaller ones were several feet away. H. H. White reported that "Some evidence of actual 'metal' founding was present but few if any evidences of glass blowing or manipulating for beads, for instance, of which so much has been written."[81]

As to the actual presence of glass and evidences of glassmaking aside from the furnace, White, in 1939, described the material taken from the site as consisting of "glass pot fragments, glass drippings, small rolled or balled objects, fragments of blown objects and red clay roof or floor tile."[82] Mamie Pollard Hall, describing the results of the excavation, it would seem from a first hand view, spoke of large

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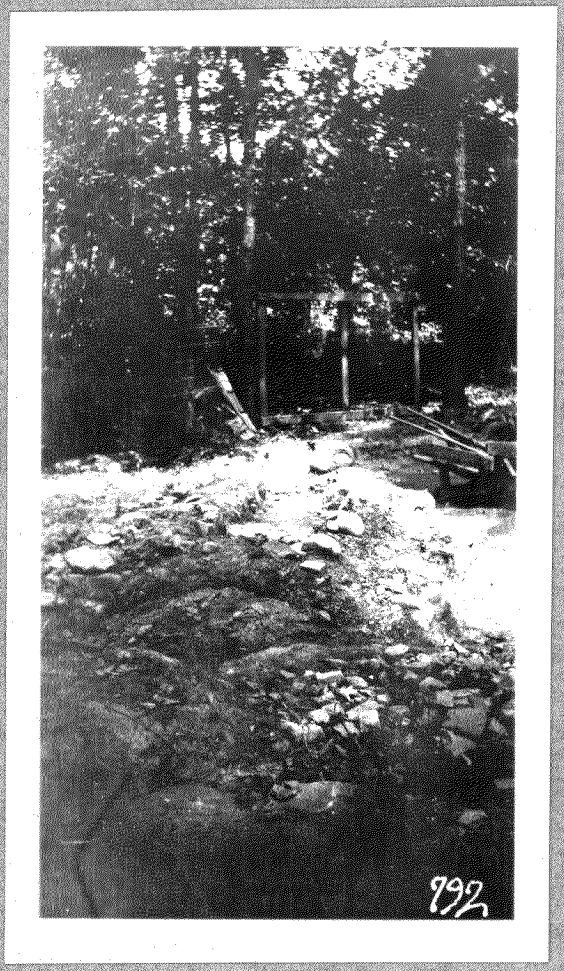
80
Neil M. Judd, Report on Visit to Glass House Point in Company with V. H. Chatelain on June 26 and 27, 1932, in Colonial National Historical Park, Central File #740-02.3..

81
H. H. White to the Director, National Park Service, May 10, 1933, and "Memorandum for Superintendent Robinson" by R. Floyd Flickinger, May 5, 1932 (describing visit to Glass House Point on September 27) in Colonial National Historical Park, Central File #740-02.3

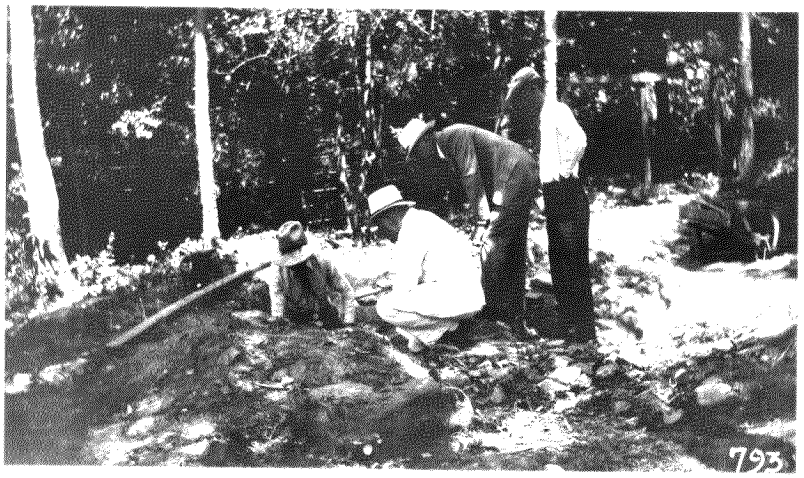
82
H. H. White to Association for Preservation of Virginia Antiquities, May 9, 1939, Letter in Colonial National Historical Park, Historical Division File #740-02.3.



Photograph No. 3

View of the Site of the Glass Furnace on Glass House Point, June, 1932.

CMHP #792



Photograph No. 4

Examination of the Site of the Glass Furnace on Glass House Point, June, 1932
Persons shown, left to right, are Jesse Dimmick; William M. Robinson, Jr.; Neil Judd; V. E. Chatelain.

CNHP #793

Photograph No. 8.
Additional View of the Site of the Glass Furnace
on Glass House Point, June, 1932.
Persons shown, left to right, are Dr. Neil Judd
and Mr. V. E. Chatelain.

CNHP #791

Photograph No. 6
Site of Glass Furnace on Glass House Point.
Photograph furnished by the Association for the Preservation of Virginia Antiquities.

CHHP #8514

Photograph No. 7.

Site of the Glass Furnace on Glass House Point.
Photograph furnished by the Association
for the Preservation of Virginia Antiquities.

CNHP #8509

Photograph No. 8.

Probable Fragments from Glass Furnace on Glass House Point.
Photograph furnished by the Association for the Preservation of Virginia Antiquities.

CNHP #8513

segments of clay glasspots, some of them showing "the effects of the explosion which terminated their usefulness". Some fragments made of clay she felt to be segments of section molds. "One segment, at least, appears to have been a section of a three-mold pattern". The colors prevailing in the fragments and slag she defined as green, red, amber, dull brown and olive green. Certain of her descriptions are interesting and are quoted below for consideration:

> "In addition to beads and bottle fragments Mr. Dimmick has recovered three very small entire bottles, three inches or less in height, and each of a different shape and design. The glass in these is almost clear and extremely thin and fragile looking. While the shapes are rather crudely formed, they represent a remarkably ambitious attempt, for the times, at delicate and artistic workmanship.
>
> "Mr. Dimmick has found some small pieces of what appears to be window glass; also a small section of several triangles of glass bound with bands of extremely soft lead, but it has not been determined whether or not these are contemporary relics of the original glass works." [83]

In a letter written on April 26, 1938 Worth Bailey, former museum technician for the Jamestown Island Archeological Project, who made a study of Jamestown glass, commented that he noted the existence of a "glory hole", quantities of clay, and fragments of glass in the ruins

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[83] Hall, Early Glass-Making in Virginia, pp. 21-2.

and remains.[84] Perhaps the collection of fragments and relics made by Dimmick at the time of the excavation gives a better picture of what was discovered at the site than any other material available at the present time. By special arrangement the widow of Mr. Dimmick loaned these objects, or the more interesting and best examples of them, to be displayed at the New York World's Fair during the 1940 season. Mr. Lawrence Dawson of Charlottesville prepared them for use at the fair and his inventory is particularly illuminating.

In addition to crucible, glory hole and slag fragments, Dawson noted (1) ten fragments of green glass all of which show definite signs of working, (2) thirty-two pieces of green glass drippings, or "tailings", of various shapes, (3) slag showing much evidence and many traces of blue glass, some almost pure glass, and (4) twenty-five small "leads", ball-like pieces of slag, rounded in shape. A number of the fragments, some of them quite large, were conglomerate masses of fused slag and crucible, or fused crucible, molten glass of various hues, and slag.

Crucible fragments seem to have been the most common type of relic. These fragments were sometimes large, sometimes small, some glazed,

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84
Worth Bailey to Miss Ellen Bagby, April 26, 1939. Copy of letter supplied by Lawrence Dawson and now in Colonial National Historical Park, Historical Division File #740-02.8.
In fact Bailey stated: "I have seen photographs of the excavation and have recognized in the remains a strong analogy to seventeenth century furnaces discussed in Powell's Glassmaking in England".

others not glazed. Some pieces came from the bottom of tan, or reddish, crucibles, some showing as much as five inches of the rim, and others giving the arc of curve. The existence of small and large crucibles, some thick and heavy and others very thin and delicate, was evidenced. A few of the fragments seem to have been almost like stone, and one had exterior channelings or fluting. Some were rough and others had a fine surface, yet quite a few of the fragments showed chipped areas and sharp indentations as if struck with a heavy object.[85] The colors in the crucible fragments, both the glaze and glass drippings, show a wide variety varying from black to transparent and including brown, blue, white and green, sometimes in heavy color, sometimes in very delicate shades. Perhaps blue and green in the various hues occur most often in the drippings, while brown and black predominate in

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85 "A Detailed and Itemized List of the Jesse Dimmick, Jamestown Glass Factory Relics Which are Being Loaned to Glass Inc. for Exhibit at the 1940 New York World's Fair by Mrs. Jeannette Dimmick, The Owner of the Relics", May 10, 1940. List prepared by and a copy supplied by Lawrence Dawson and now in Colonial National Historical Park, Historical Division File #740-02.3 Dawson comments concerning one of the objects: "Large crucible fragment showing deep indentation as from the impact of a crow bar on the convex side, and having smaller indentations and streakings of green glass".

inner glaze with varying shades of outer glaze.[86]

There are numerous fragments of "glory-holes" bearing largely a dark green glaze. These fragments show the arc of curve in many cases, indicating small, medium and large arcs. Many of the fragments show no arc of curve at all. Dawson enumerates a number of slag fragments that are largely fused with crucible fragments or crucible fragments and molten glass showing colors including blue and green. A number of fragments he listed as "conglomerate masses" implying that it was a fused mass of crucible, slag, and molten glass, sometimes containing a section from a glory hole. From the description of this mass of material, about 200 pieces, there is ample proof of the existence and operation of a furnace, yet little that would help fix the date of the furnace, or even determine the type of product.[87]

An analysis was made by the Massachusetts Institute of Technology of some glass adhering to one of the crucible fragments. The report

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86
The various colors of glaze on both inside and outside of the fragments include brown, light brown, red-brown, black, black-green, blue, blue tinge, blue flecked, dark blue, light blue, sky-blue, reddish, white, transparent, green, olive green, light green, slag green, blue green, and cream. The colors shown in the glass drippings include blue, light blue, dark blue, green, blue green, olive green, light olive green, cream green, dark green, green tinge, pink, brown, light brown, black, cream, and cream white.

87
"A Detailed and Itemized List of the Jesse Dimmick Jamestown Glass Factory Relics which are Being Loaned to Glass Inc. for Exhibit at the 1940 New York World's Fair by Mrs. Jeannette Dimmick, the Owner of the Relics", May 10, 1940, Prepared by Lawrence Dawson.

stated that it was "a rather soft lime glass" and very similar to early English glass except for a high content of alumina, something that could have been absorbed from the clay pots and not added as an ingredient. The absence of a definite quantity of lead oxide was given special note. It was not until somewhat late in the seventeenth century that this became a common element in the composition of English glass.[88]

From those who saw the glass furnace remains uncovered have come various comments on the identity of the ruins, and the general consensus of opinion is that it is the site of an early glass plant, and, in all probability, the site of one of the first attempts, either that of 1608-1609 or that of 1621-1624. One of the more definite statements was that made by H. E. White in May, 1939:

88
"Copy of an Analysis of Some Glass from a Crucible Found on the Site of the Jamestown Glass House". (Analysed by the Massachusetts Institute of Technology) April 24, 1939. Copy furnished by Lawrence Dawson and now in Colonial National Historical Park, Historical Division File #740-02.2.

The analysis:

The glass analysed was a layer of bright green glass on one of the clay furnace pot fragments. The results showed:

Silica.....	56.3%	Iron Oxide.....	.4%
Lead Oxide...	Trace	Lime.....	4.6%
Alumina.....	9.8%	Soda.....	16.3%
		Potash.....	3.1%

> "Based upon the historical evidence and the nature of this material it is my opinion that the site uncovered is the experiment of the first glass house attempt at Jamestown."[89]

Obviously a complete and scientific excavation of the site together with a study of the artifacts and features found would hold promise of furnishing additional information. Such a study might even provide some means of dating the ruins and establishing their nature and type. Dr. Judd, on examination of the site, felt that such was the case and advised extreme caution when he wrote:

> "We are concerned here with a rude, short-lived factory; the remains of its products will be meager at best. But these remnants are historically important. The nature of the glass fragments found during the course of such excavations might be expected eventually to date the period of the furnaces; Venetian glass beads will cer-

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89 H. H. White to the Association for the Preservation of Virginia Antiquities, May 6, 1938; Worth Bailey to Miss Ellen Bagby, April 26, 1935; "Memorandum for Superintendent Robinson" by E. Floyd Flickinger, May 5, 1932.

tainly identify the glass houses of 1621."[90]

This study should make mention of beads and other items of glass that have been found on, or near, Glass House Point, along the shore of Jamestown Island at its western extremity, and even on the Island itself, that have come to be attributed, directly or indirectly, to the early glass enterprises. In some cases these items may have come directly from the site of the furnace. Such fragments, mostly beads, while not particularly numerous, seem scattered over a wide area and

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90
Neil Judd to A. Wetmore, June 29, 1932 in Colonial National Historical Park, Central File #740-02.8.
Although it is beyond the scope of this study perhaps some mention should be made of the discovery of what may prove to be a glass furnace near Green Spring, several miles from Jamestown. This was located by Paul Greisenemer and as reported by Maude Pollard Hull, "Examination disclosed other bricks in the mound, and this led to the discovery of a well constructed and heavily glazed glass-pot, well covered with earth and sand." This was four miles from Jamestown. Two bricks were found with the date 1666 and one with the initials "E.A.L." The principal glass specimens found were parts of heavy bottles with rather large bases. Beyond the actual discovery nothing seems to be known of this site and there appears to be reluctance to make commitments concerning it. E. E. White commented: "The fragments and pot on the Green Spring tract near the ruins of Governor Berkeley's mansion are incorrect and cannot be justified as to the type of workmanship and glass with the glass remaining in the big pot built of brick. The workmanship as evidenced by these fragments covers a period of about 150 years". E. E. White to the Director, National Park Service, May 10, 1933 in Colonial National Historical Park, Central File #740-02.8; Hull, Glass-Making in Virginia; pp. 16-19.

are largely in the hands of collectors and museums.[91] Knittle, in a general description of the so-called "Jamestown beads" writes:

> "Beads catalogued as 'Jamestown' are in some cases very thin and fragile; in others, heavy and coarse. They are found in red, blue, green and white opaque colorings. The forms may be oval, circular, or cylindrical. They may be decorated by flecks of contrasting color or by threads of glass incised or applied to the body."[92]

The Pennsylvania Museum of Art has a number of glass items in its collection which the late Dr. Edwin Atlee Barber, curator for the museum, assigned to the glass enterprise of 1621-1624. These consist of beads,

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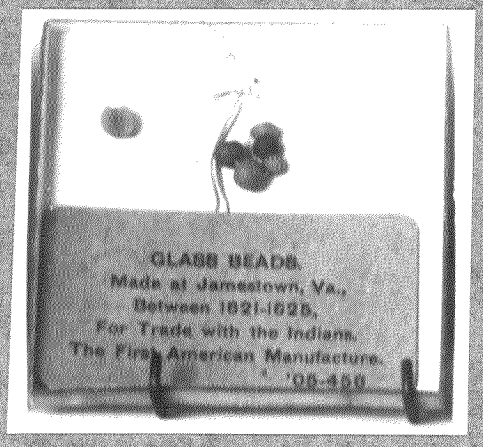
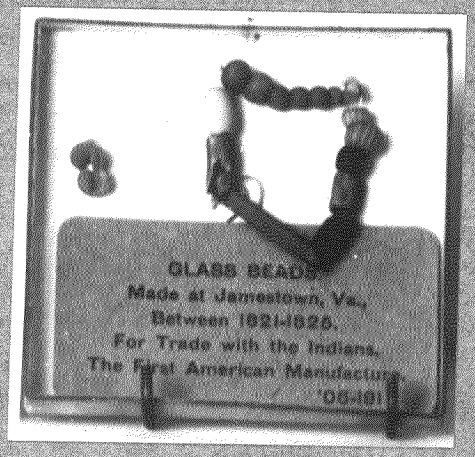
91

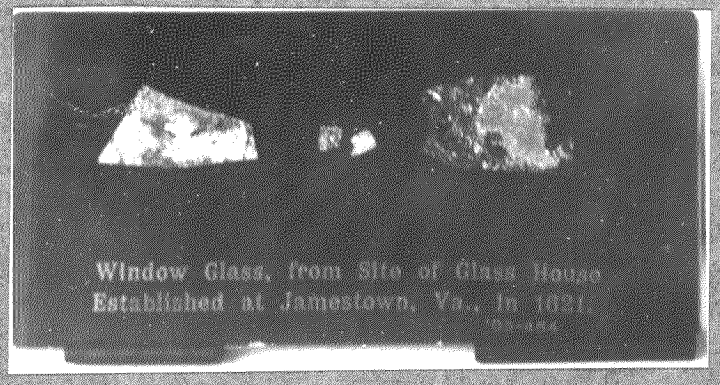
The Encyclopedia Britannica: v. 10, p. 409; Tyler, Cradle of the Republic (1906), p. 105; J-120 (Martha Perrine Munger, "James Town 1607-1698, Matrix of the United States", Americana, XXIII (July, 1929), 266-76). A photograph of five beads on a string is given in Fifty Years of Glass Making 1869-1919 (Pittsburg, c. 1920) with the label "Glass Beads Made at Jamestown, Va., 1621-1625". No mention is made regarding how the beads were obtained.

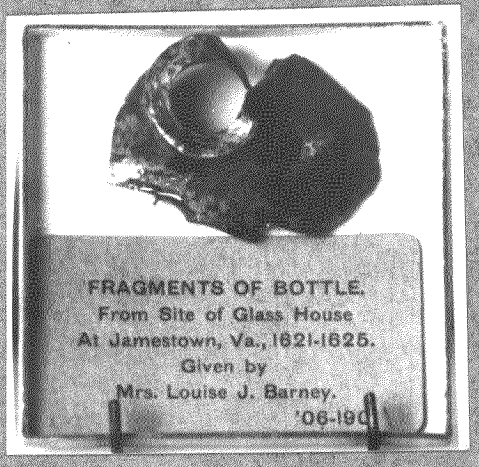
92

Rhea Mansfield Knittle, Early American Glass (New York, 1929), pp.89 ff. Knittle's remarks concerning the origin of these beads are interesting since she assumes that some of them were made at Jamestown. "The Italians evidently amused themselves by employing as many different shapes, colors, and combinations as possible with their limited facilities. That these fragments are diverse need not make one skeptical, and there is every reason to believe that other interesting specimens will be found in the future." Dr. Edward Atlee Barber was so confident of the ability and fine training of the Italians that he suggested that their obvious discontent was due to the lack of a need for their artistic wares since "coarse glass bottles and window glass were the most pressing needs,..." Bailey, Worth, "A Report on Beads and Other Glass Fragments Reputed to Have Been Made at Jamestown Based on the Collection of the Pennsylvania Museum of Art", National Park Service Report, July 1, 1936.





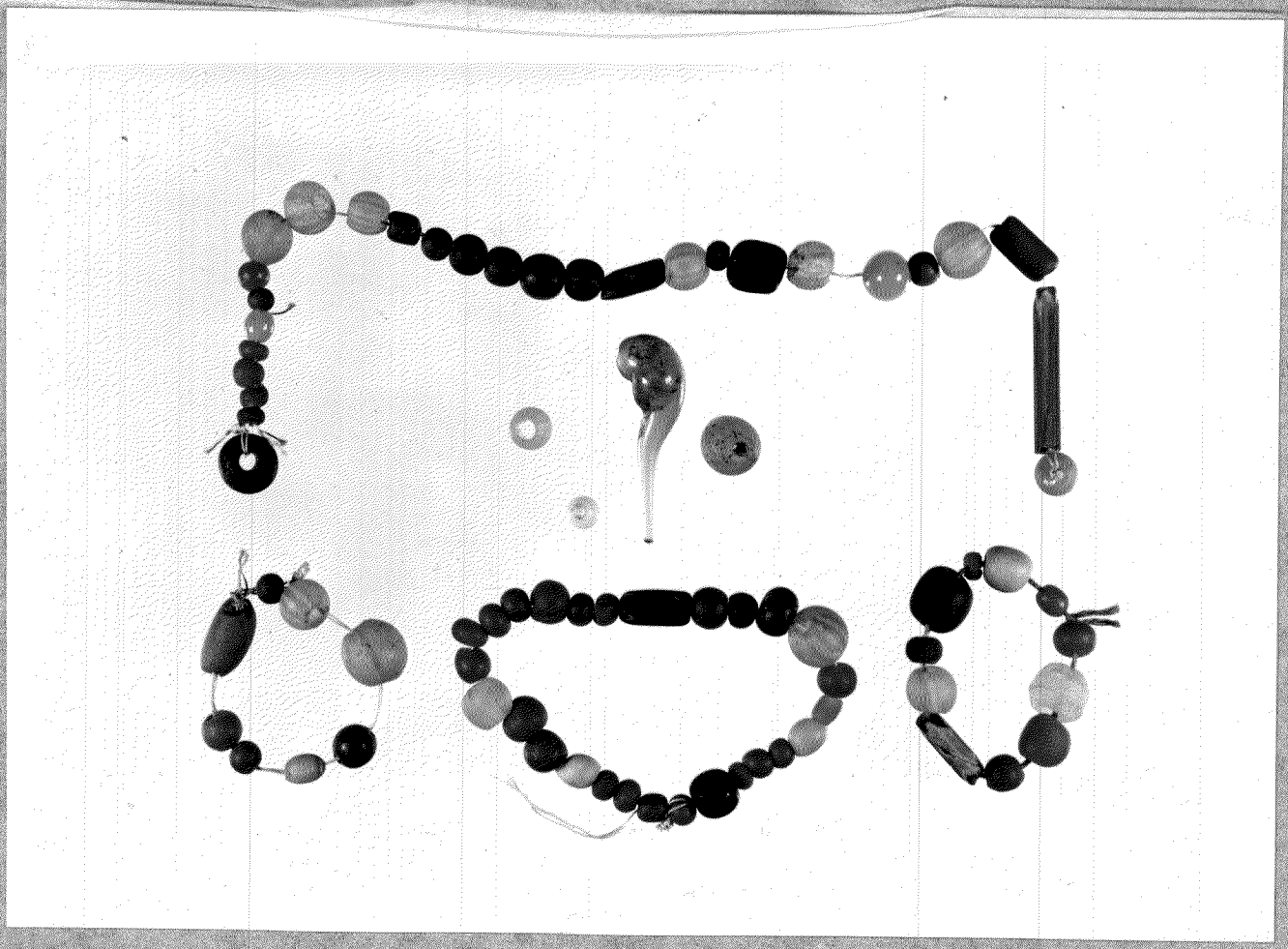




Photograph No. 9

**Some Glass Items in the Pennsylvania Museum of Art.
Photographs furnished by the museum.**

CNHP #'s 8451-55.



Photograph No. 10

Photograph of a Collection of Beads in the Possession of Mr. Arthur Ayers, Jamestown, Virginia.

These were found over a long period of time by Mr. Ayers, chiefly on the river shore at Jamestown. Note the glass object in the center. This has the characteristics of an unshaped glass dripping. Its color is a clear green. A large number of the beads are of a clear blue color. Other colors include white, brown, green, and various hues of blue. Some are of the "gooseberry" type, some are opaque and some translucent. Most all of them show wear as if by the action of water and sand.

CWHP #8560

fragments of flat glass like window panes, and parts of finished products. Sworn affidavits state that these items were found sometime before or after 1900 on the river shore at Jamestown, particularly after a high tide, on the Island itself and about Jamestown foundations by persons living on or near Jamestown Island. Barber felt quite confident in identifying these items with the early "Jamestown enterprises", even though other scholars and experts have not agreed. His description of the beads is quite detailed and instructive:

> "Among these most interesting examples of seventeenth century workmanship, which were originally of globular form and about the size of an average pea, are several of dull blue color covered with minute longitudinal striations, while others are transparent and of a pale pinkish or greenish tint rubbed with broad lines of white, somewhat resembling in appearance a small gooseberry. Some have been so worn by the action of the water that they have been reduced to half or a quarter of their original size, while others are coated with a beautiful iridescent patination caused by three centuries of exposure to action of the elements. In coloring and workmanship they

strongly resemble the Murano products of that period."[93]

Barber was equally confident in identifying other objects such as the knob and lid cover of a glass vessel found in the same manner as the beads. This item is extremely thin and delicate, being of a pale olive brown tint and in color and texture bearing the Venetian influence. In

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93

Bailey, "A Report on Beads..."; copies of letters and affidavits supplied by the Pennsylvania Museum of Art (Affidavit signed by Rhea Durham, December 1, 1905; Affidavit signed by Louise J. Barney; Lettie C. Garrett to Mr. Barber, dated November 7, 1905) now in Colonial National Historical Park, Historical Division File #740-02.3.

At this point it may be well to give the description of one of the most common types of Venetian beads of the period as described by Moore: "The Chevron bead is perhaps the most important of all Venetian beads, not alone on account of its size, but because of its wide distribution. These beads are made from canes built up from layers of colored glass, generally blue, red, and green, divided by thin layers of opaque white glass which are so placed that the opaque glass forms a star-like pattern on a cross-section. They vary in size from one-third of an inch to two and a half inches, and the usual type is cylindrical with rounded ends. These beads are very beautiful, and have been made at Murano so long that the time of their introduction is unknown...They have been found in the remotest spots of the earth, Upper Egypt and Nubia, Zanzibar and India, Central Africa, South Sea Islands, Peru, Canada, and even in the graves of American Indians." Moore, Old Glass, pp. 32-3.

the same manner he attributes window glass to the same enterprise.[94]

In addition to the glass items at the Pennsylvania Museum of Art there are others in the hands of various collectors and museums.[95] There are some in the Toledo Museum of Art of which the director, Blake-Moore Goodwin, writes:

> "We have some beads in our collection from Jamestown, or presumably from Jamestown. I speak of them thus because I think certain ones are actually beads that were made there and others, while probably found there, might quite

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94
Bailey, "A Report on Beads..."
Barber, writing of the glass knob fragment, comments: "The knob itself is crudely formed and resembles an irregular, circular button, but the parts of the cover which still adhere to it are exceedingly thin and delicate and a fragment of the edge shows that it had been turned under to form a rim. The color of this example is of a pale olive tint showing distinctly in coloring and texture, and in the manner of making, the Venetian or Murano influence". Of the window glass he writes: "That window glass was made here to some extent, however, seems probable since small pieces have been picked up on the same site, two of which, now before me, show that it was well made and of exceeding thinness, but now entirely covered with the exquisite iridescence which can only be imparted by burial in the soil for hundreds of years." Bailey, "A Report on Beads..."

95
Bailey speaks of beads in the Pennsylvania Museum of Art, in the Toledo Museum of Art, in the Garvan Collection, and in the hands of Mrs. Harry Loomis Munger of Dayton, Ohio, and Howe, the collector. He also mentions certain glass items presented by Fiske Kimball to the University of Virginia. Bailey, "A Report on Beads..." Then, too, the Association for the Preservation of Virginia Antiquities has some in its Jamestown Relic House. Mr. Arthur Ayers, living near Jamestown, has a fine collection of about 75 that he made a number of years ago.

as well have been made elsewhere."[96]

It would be difficult indeed to give conclusive proof that beads found by chance adjacent to the glasshouse site, or on the western portion of the Island, were actually made at Jamestown. Beads have long been an item for trade with natives in many lands, and countless numbers have been produced in Europe for that trade. Such were imported to the colony possibly before, and certainly during, and after the end of the glass enterprises. It is only natural that Venetian beads should have been used. They were beautiful, available, and the discovery of them in the remote sections of the world testifies to their widespread use. It is not startling that they have been found in American Indian graves all the way from Rhode Island to Florida. As to trade in the early colony, much of it must have occurred in and near Jamestown. In such trade it is only natural that many of the beads were lost. Some of them would have been lost in the town and along the main road across the isthmus to the hinterland. As for the finding of glass vessel fragments and bits of window panes on the Island and even on Glass House Point, this in itself is not proof of glass manufacture. Both areas were inhabited and people living here did not lack all items of glass not made in America. It would be natural, as has been the case

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96 Blake-Moore Godwin to Hibert Cox, September 11, 1940. Colonial National Historical Park, Historical Division File #740-02.3

in the archeological work at Jamestown, to find glass fragments --- of drinking glasses, vessels, and even window panes --- in abandoned house sites at Jamestown, or in the vicinity. As for items washed by the river on to the shore, their place of origin could be little more than a guess, unless the workmanship shown was very close to that of a site that had been identified as to product and workmanship, or unless they were found in large quantities, neither of which seems to have been the case. Of course, if such items were actually taken from the ruins of a glass factory, in sufficient amount, then the circumstances would be different.

6. OTHER PHYSICAL DEVELOPMENT IN THE GLASS HOUSE POINT AREA.

Even though the emphasis in this study is upon the early glass-making attempts of the Virginia colonists and the relation of these attempts to the Glass House Point area, it is well to consider other seventeenth century developments and activities that occurred in, or near the Glass House Point tract, or were directly concerned with it. Mention of these is necessary to get a well rounded view of the historical significance of the area.

A. Governor's Land.

In the instructions issued to Governor Yeardley in 1618 provision was made to lay out and settle:

> "...by bounds and metes of three thousand acres of Land in the best and most convenient place of the Territories of James Town in Virginia and near adjoining to the said Town to be the Land and Seat of the Governor of Virginia...to be called by the name of the Governor's Land...shall be of the freed grounds by the common Labour of the people sent thither at the Company's Charges and of the Lands formerly conquered or purchased of the Paspeheies and the ground next adjoining."[97]

The precise location of this tract of 3,000 acres set aside for the Governor's use and profit to be worked for him by men sent over by the Company, is not definite, but its approximate location can

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97 "Instructions to Governor Yeardley, 1618" in Va. Mag. Hist. and Biog.; v. 2, p. 155.

be determined. Beginning at the mouth of the Chickahominy River, some distance up the James from Jamestown, and extending down the river, 3,000 acres were set aside for the Company, and adjoining it along the river were the 3,000 acres set aside for the Governor. This placed the Governor's land very close to Jamestown, apparently still in the area once used by the Paspahegh Indians.[98]

Evidently the area was worked out soon after Yeardley's arrival, for soon tenants were dispatched to develop and cultivate it. There is mention of eighty persons sent over for the purpose in 1619, and references to fifty that had arrived somewhat earlier than the group of eighty. Even before Yeardley had arrived settlers had already established themselves on this land. It was noted that "Some Smale parcells" had been granted in the time of Sir Thomas Gates and some planted by Sir Samuel Argall. In 1621 a minister "mr Mant Wyatt", was sent out "to be Preacher to the Governors Tenãts..."[99]

The undetermined bounds of the Governor's land were spoken of by William Clayborne, Surveyor General of Virginia, who stated early in 1625 that as to this tract "how much that Land was or where the bounds

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98
Brown, First Republic, pp. 823-4; Kingsbury, Records of the Virginia Company: v. 4, p. 555.

99
Kingsbury, Records of the Virginia Company: v. 3, pp. 115, 485 and v. 4, p. 555.

were, no man could ever say otherwise than by reputation". In any case it would appear that he surveyed it in, or about, the year 1625.[100] It is a matter of record that another survey, or a corrected one, of the Governor's land, along with adjoining property, was made before June, 1645 by the surveyors James Crockett and John Senior.[101] By court action of June 7, 1638, it would appear that "the maine land in Pasbyhayes", including the Governor's land, was thrown open to lease in fifty acre parcels for twenty-one years. In all probability this was something of a military measure for each lessee was required to "plant & seate" upon such land "with five man well armed".[102] In 1639 a further order of Court encouraged leasing land in "Pasbyhaies", "for better securing and strengthening James Cittie". Following the orders of 1638 and 1639 leases were made such as that to John Fitchett for 82 acres in 1638 and that to Anthony Coleman for 82 1/2 acres in 1643. These leases mentioned Paspahegh and the main yet made no reference to the Governor's land. However, in a lease for 25 acres to William

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100
Nell Marion Nugent, Cavaliers and Pioneers, Abstracts of Virginia Land Patents and Grants 1623-1800 (Richmond, 1934); v. 1, p. 160; "Title to Green Spring" in Va. Mag. Hist. and Biog.; v. 5, p. 384.

101
Nugent, Cavaliers and Pioneers, Abstracts of Virginia Land Patents; v. 1, p. 160.

102
Ibid; pp. 97, 139, 145, 305.

Drummond in 1648 there was reference to 25 acres of the Governor's land. The policy of leasing the Governor's land for a small nominal rent continued all through the seventeenth and well into the eighteenth century. In 1707 John Tullit was holding some of the lands as tenant, "under the Governor of the Dominion of Virginia for the Time being at the rents Usually paid for such lands". Later Philip Ludwell held leases for some of the Governor's land.[103]

It is not certain that Glass House Point was included in the Governor's 3,000 acres, in fact the opposite seems to have been the case. If Glass House Point was not included then the 3,000 acres did border on the 24 acre "Glasse House" tract on the western side if not all around it on the land side. The indication that the "Glasse House" tract was not included is that John Harvey disposed of it "by bill of Sale", and not by expressed lease, to Anthony Coleman. From this point it was transferred by private individuals without mention of lease. Thus, in the seventeenth century, it was not leased as were parts of the Governor's land. If originally it had been a part of the 3,000 acres it appears likely that its status would have been that of the other land -- that is, subject to lease and not to outright sale. As to why it might not have been included, the answer would be, perhaps,

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103
Ambler Papers, pp. 172-7 (Ambler Papers Nos. 77, 89).

that is had already been assigned a use that precluded development as Governor's land. Possibly either its use as a glass factory site, a prior grant, or proximity to or even temporary inclusion in the town limits would have been sufficient.[104]

B. Argall's Town.

Argall's Town (Argall's Gift or Argall's Hundred) was a settlement with a brief history. It appears that Argall came to Virginia as governor, in 1617, with certain instructions regarding the distribution and seating of land. Also, he represented a group of associates eager to settle and develop some of the best lands, on "personal charge", for immediate and future profit. On his private adventure he staked out an area between Jamestown and the Chickahominy River in the Paspehegh country. This he proceeded to develop. He contracted with some of the settlers of Martin's Hundred to cut down the wood and to clear 300 acres for a stipulated £600. Next he hired Captain William Powell to clear the ground to erect houses at the rate of £50 each. Apparently his project had some success for in 1619 Thomas Pawlett and Edward Sourgaing represented Argall's Town in the first assembly. In January, 1619/20 John Rolfe wrote:

104
Jamestown: Land Patents; p. 108; See Harrington, "Jamestown Island to Green Spring" (map) NHP Col. 2075.

> "Martyres Hundred men seated at Argalls Towne with good & convenyent houses hane done best of all the New-Comers. Many who were industrious having reaped good croppe, but most not of equall spiritt and industrious hane less, yet exceeded other New-Comers. Many of these hane also died by sycknes, but not comparable to other place." [105]

In 1618 Yeardley came to Virginia with orders "directly forbidding that a charter of land granted to Captain Samuell Argall and his associates bearing Date of the twentieth of March, 1616, be entered in your records". His explanation was that Argall had "wrongfully seated" land "wch both he had instructions, and Sr George Yeardley Comission to lay out for yᵉ Governors use". Thus, he had preempted land already designated for the governor's use. Yeardley set aside the Governor's land as instructed, and from those already seated there he proceeded to collect rent. He had brought with him 50 tenants for the 3,000 acres and found six "remayning of Capt Argalls guarde" as well as others. Argall, it seems, did not confine his misappropriation of lands to those of the Governor, for he was involved in reassigning the college lands as well. In the Assembly of 1619 the "Inhabitants of Paspaheigh, alias Argall's towne" petitioned for "absolute discharge" from obligations to Argall and those that he employed in building the town. The Assembly

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105

Kingsbury, Records of the Virginia Company; v.3, pp. 68-9, 175, 247; Tyler, Cradle of the Republic (1906);p. 232; Craven, Dissolution of the Virginia Company; p. 174; Same, Conquest of Virginia; Third Attempt; pp.313, 344-9.

doubted its authority and recommended the petition to the Treasurer, Council, and Company. Apparently the action was favorable and the people of Argall's Town either became tenants of the Governor, or moved away.[106]

The question at this point is what relation, if any, did Argall's Town have with Glass House Point. The answer is that locations for Argall's Town have been proposed at various points from the "Glasse house" tract to well up into the Governor's land. Documentary data does not seem to fix a location, yet the implication is that it was on the Governor's land. Most of those who have studied the problem accept this. Alexander Brown's opinion that it was on the Governor's land a little more than a mile from Jamestown seems to reflect the general opinion. This would place it west or northwest of the "Glasse House" tract, although somewhat near it. Such would fit the description of Argall's enlarged limits for Jamestown as given in April, 1619 as "the whole island, with part of the main land lying on the East side of Argall town, and adjoining upon the said Island, also the neck-of-land on the north part,..." It would seem that the description "part of the main land lying on the East side of Argall town"

106
Tyler, Cradle of the Republic (1906), p. 232; Kingsbury, Records of the Virginia Company, v. 2, pp. 264-268; v. 3, pp. 98-109, 175, 255; and v. 4, p. 585; "Instructions to Governor Yeardley, 1618", Va. Mag. Hist. and Biog; v. 2, pp. 154-165.

could refer only to the Glass House Point area.[107]

C. The Seventeenth Century Highway.

The "Great Road", or main highway, leading to Jamestown was across the isthmus that connected what is now Glass House Point to the southwestern tip of Jamestown Island. Although mention of such a main thoroughfare is not so frequent in the first decades as it is in the middle and later part of the seventeenth and in the eighteenth centuries, it can be assumed that such was the outlet to the mainland from the very first.[108] The road probably first touched the present glasshouse area at the tip of the point and then may have connected with the old road trace still visible some distance beyond (see Map No. 2). This trace is clearly that of an old road and there is some evidence to establish it as a part of the old highway to Jamestown.[109]

The presence of the main thoroughfare to "James Cittie" would enhance the historic interest of the glasshouse tract. Over this route

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107
Brown, First Republic, pp. 287, 322-3; Tyler, Cradle of the Republic (1906); map opposite pp. 200-201.
It would seem that Sams differs with this for on his map "Jamestown Island and Surrounding Country", he apparently locates Argall's Town in 1619 in Glass House Point itself. Sams, Conquest of Virginia: Second Attempt, p. 162a.

108
Hatch, "Unit A Study"; pp. 39-43, 51-7. This gives a discussion of the isthmus and the "Great Road" across the isthmus and on the Island at the western end.

109
Harrington, "Jamestown Island to Green Spring" (map) NHP Col. 2075.

moved many of the early settlers as they went out from Jamestown to trade, to settle, or to explore, on foot, on horseback, or even by cart or other wheeled vehicle. Over this route came travelers, visitors, tradesmen, Indians, burgesses and citizens to their business in the town or to their homes.

D. The Maryson Plantation.

The study of events, or developments, on the glasshouse tract is not detailed, in fact not much is known, yet there are some records. In a property transfer of 1654 the "Twenty four Acres of Land comonly

known by the name of the Glass house" fell to the ownership of Francis Meryson.[110] In this transfer it is established that formerly, as Governor, Sir John Harvey "by bill of Sale" deeded the property to

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110 Jamestown: Land Patents, p. 108.

Colonel Francis Meryson, son of Richard Meryson who was Secretary of State to James I, after serving as Major in the Army of Charles I, left England, and came to Virginia in 1649. In just a few years he came to the front in political affairs in the colony. In 1655/6 he was speaker for the House of Burgesses, in 1660 a member of the Quarter Court at James City, in 1660/1 a member of the assembly law revision committee, and also, in 1661 he was elected by the council to serve as governor during the absence of Sir William Berkeley, who was in England from the summer of 1661 until the fall of 1662. He was a close personal friend of Berkeley. In 1662 he was named captain of the fort at Point Comfort and the recipient of "the Castle duties".

In 1663 Berkeley granted him permission to go to England with a yearly stipend of £200. It seems that, in England, he worked toward the nullification of the much disliked grant made by the crown to Lords Arlington and Culpeper. Apparently he remained in England until sent out with Herbert Jeffries and John Berry as commissioners to investigate the causes of Bacon's Rebellion and the condition of affairs in Virginia. In the "True Narrative of the Rise, Progresse, and Cessation of the Late Rebellion..." the commissioners rendered their report. Later he returned to England where he died within a short time.

His land holdings in Virginia were not extensive. Aside from his 24 acres on Glass House Point in 1655 he leased 120 acres in the "maine" and in 1661 took up an additional 27 acres in the "maine" that had forfeited to the crown. Just how his property was disposed of is not clear. A. W. Waddell, Virginia Historical Portraiture, 1585-1690 (Richmond, 1930); p. 108; Lyon Gardiner Tyler, Encyclopedia of Virginia Biography (New York, 1905); v. 1, p. 49; McIlwaine, Minutes of the Council and General Court; pp. 457, 458, 492, 493, 507; Hening, Statutes at Large; v. 2, pp. vii, 154-5, 159-160; Nugent Abstracts of Virginia Land Patents; v. 1, pp. 92, 195, 305; "Charles City County Grievances 1676" in Va. Mag. Hist. and Biog; v. 3, p. 132; "Historical and Genealogical Notes and Queries" in Va. Mag. Hist. and Biog; v. 12, p. 206; Va. Mag Hist. and Biog; v. 4, pp. 117-154.

Anthony Coleman.[111] Edward and Joseph Knight[112] as joint heirs of Coleman received the property and disposed of it by sale to John Senior.[113] Later Senior assigned it to John Fitchett,[114] who sold

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111 Anthony Coleman had other land west of Jamestown. In 1643 he leased 82 1/2 acres in "Pasbyhaies" and in 1648 had land in the same general area. Nugent, Abstracts of Virginia Land Patents: v. 1, pp. 145, 177, 240, 313. See "The Bygone 'Suburbs of James Cittie'", by Henry Chandlee Forman, William and Mary College Quarterly, Second Series, Vol. 20, No. 4; pp. 475-486.

112 Joseph Knight was the father or brother, probably the former, of Edward Knight. Both owned property west of Glass House Point near the Chickahominy River. The first mention of Edward and Joseph Knight was in 1650. In 1655 Joseph took up Edward's grant which gave him a total of 2,000 acres. There is reference to a Joseph Knight in this vicinity as late as 1665. Nugent, Abstracts of Virginia Land Patents: v. 1, pp. 202, 229, 262, 295, 311, 512, 540.

113 John Senior, surveyor, was in Virginia, it would seem, by 1636. In transporting colonists to Virginia he claimed land in 1643, 1650 and 1651 along the Rappahannock River, along the Piantiank, and across the James from Jamestown. Later in 1652 he owned 12 acres in the lower end of Jamestown Island. In March, 1663/4 "John Senior's Orphant" owned lands in Lancaster County indicating that he may have been dead by this date. Nugent, Abstracts of Virginia Land Patents: v. 1, pp. 39, 160, 199, 221, 225, 240, 271, 278, 279, 310, 353, 477, 495, 514.

114 Presumably John Fitchett was in Virginia in 1635 for at that time the first headright was claimed for him. In 1642 he leased 21 acres in Paspahegh by virtue of the court order of 1638. In 1648 he had land in the area and six years later leased 8 1/2 acres "lying in Pasbehaies near the Block house". In 1662 he had land in James City where he probably lived for a time. Nugent, Abstracts of Virginia Land Patents: v. 1, pp. 25, 68, 99, 139, 177, 232, 392.

it to John Phipps[115] and William Harris.[116] Phipps deeded his interest to Harris and in 1654 Harris assigned it to "Coll. ffrancis Morison". Within the next year Morryson received his grant. All of these transactions took place before 1654 and presumably after John Harvey became Governor in 1629. To what extent and for what purpose the area was used by these owners is not known; however, something might be gleaned by inference from the scant knowledge that is available concerning the

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115
John Phipps, in Virginia as early as 1640, in 1656 was an extensive property holder at Jamestown. He patented 120 acres part within and part without the town liberties, later adding another half acre. Apparently he lived for a time at Jamestown. His other land holdings were in Lancaster County and along the south bank of the Rappahannock. Nugent, Abstracts of Virginia Land Patents; v. 1, pp. 151, 340, 409, 432, 440, 451, 468.

116
There was a William Harris "sonne of William Harris" of James City who in 1658 was "late deceased". The elder Harris had a house at Jamestown and his property ran down into the Island. In 1628 William Harris patented land at Blunt Point on the James. In 1655 William Harris acquired land south of Maryson's 120 acre lease in the "mains". This William may have been the same that, with Anthony Langston, received permission to explore toward the mountains and the west.

A William Harris became a prominent citizen of Henrico where he had land in 1653 and later. Here he was a justice and burgess. There was still another person of the same name in Charles City County who was justice of the peace and a major in the militia in 1657 and 1661 respectively. Hening, Statutes at Large; v. 1, pp. 373, 379, 422, 426; Nugent, Abstracts of Virginia Land Patents; v. 1, pp. 11, 12, 305, 388, 430, 452, 492; "Early Records of Charles City County" in William and Mary Quarterly, First Series; v. 4, pp. 167, 168; "Proceedings of the House of Burgesses, 1652-1661" in Va. Mag. Hist. and Biog; v. 8, p. 291; "Abstracts of Virginia Land Patents" in Va. Mag. Hist. and Biog; v. 4, p. 79.

men themselves and their holdings.

Colonel Meryson became owner of the Glass House Tract in 1654 and renewed his grant in 1655 when he took an additional 21 year lease for 120 acres "in the maine" -- that land known as "Rosefeild". It would seem that he thought of Glass House Point as his plantation. In 1676 when Bacon was attacking Jamestown, by way of the point and isthmus, he posted "a constant sentinel in the daytime on top of a Brick Chimney (hard by)" to observe movements in Jamestown. This chimney Meryson wrote later was on his plantation --- "On Col. Merysons Plantation that was". This would indicate that the 24 acre tract had passed out of Meryson's hands, yet that the chimney may have been that of his plantation dwelling which seems to have been on the point. Certainly a man of his standing would have had a home, and since he was a friend of Berkeley and active in political affairs, he normally would have been near Jamestown. Glass House Point was very close to Jamestown and so far as the records show it was the only tract actually owned by Meryson. His other holdings were by lease.[117]

117
Jamestown: Land Patents; p. 108; Nugent, Abstracts of Virginia Land Patents; v. 1, p. 305; "Narrative of Bacon's Rebellion", Va. Mag. Hist. and Biog; v. 4, p. 145.
It was reported in 1905 that "On this land an old chimney stood... and the brick foundation, or bricks showing where there was an old foundation, are still to be seen". Lottie C. Garrett to Mr.Barber, November 7, 1905. Copy furnished by Pennsylvania Museum of Art in Colonial NationalHisterical Park, Historical Division File #740-02.3. Lyon G. Tyler identified the brick chimney mentioned by Meryson with the remains of one of the glass furnaces. Tyler, Cradle of the Republic (1906); p. 155.

B. Bacon's Rebellion --- Attack of Jamestown.

In September, 1676, Nathaniel Bacon, leading his revolt against Berkeley, brought the actual fighting to Jamestown where the Governor was staying at the time. On September 13, "In the evening Bacon with his tyr'd Body of men, his fforlorne marching some distance before, comes into Paspahayes old ffields and advancing on horseback himselfe on the Sandy Beach before the Towne". Thus Bacon led his men to Glass House Point and the isthmus where he fortified himself. For several days he laid siege to Berkeley's position. How Berkeley fled and how the Rebellion later ended is common knowledge. The item of interest here is in the use that Bacon made of Glass House Point. It has been stated already that he posted a sentry on a nearby chimney, for from here the view of the town would have been excellent. It is reasonable to suppose that his men encamped on the point for the isthmus was narrow and seemingly could not accommodate the fighting and the encampment as well. Bacon remained before the town several days. The first night he spent in "falling of Trees, Cutting of Bushes and throwing up Earth". Presumably the trees and bushes needed were taken from the most convenient spot which would have been the adjoining Glass House Tract.[118]

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118 "Narrative of Bacon's Rebellion" in Va. Mag. Hist. and Biog: v. 5, pp. 142-5.

For a more complete description of the fighting on the isthmus and in the town during these few days see Hatch, "Unit A Study"; pp. 44-50.

F. The Dees House -- Broadribb Ownership.

On June 6, 1708 the trustees for the estate of William Broadribb[119] sold to Joseph Chermerson[120] the "Twenty four acres More or Less: being Comonly Known by the Name of the Glass house" being that "plantation & tract of Land Whereon Emanuell Dees[121] Lately lived". Dees held the plantation by lease from the owner, William Broadribb; however, his lease expired and Broadribb by will directed that his trustees sell it. It was recited in the deed that it was the same property that Meryson received in 1654 although it did not state that Broadribb had purchased directly from Meryson. The deed does make it plain, that in 1708 there was a dwelling with other associated structures on the 24 acre tract. At the death of Broadribb, or at least when he made his will in 1708, Emanuel Dees was living there -- "Now Liveth". Between that time and the date of the sale, June 6, 1708, however, he moved to some other location -- "Lately lived and held by a Lease". With this statement in 1708 concerning a working plantation

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119
In 1653 a headright for William Broadribb was claimed in Henrico and in 1665 Captain William Broadribb patented 695 acres of land in James City County. Nugent, Abstracts of Virginia Land Patents: v. 1, pp. 429, 525.

120
In the York County Records under date of January 18, 1713 the executors for the estate of Joseph Chermerson are mentioned.

121
There seems to be a complete lack of data whereby Emanuel Dees may be identified.

at Glass House Point information at hand for the colonial period ends.[122]

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122 Ambler Papers, p. 178 (Ambler Paper No. 78); "Will of William Breedribb" in William and Mary Quarterly, First Series, v. 14, pp. 35-37.

7. SOME THINGS THAT AN ARCHEOLOGICAL STUDY OF THE AREA MAY REVEAL.

In the light of available historical data, it would seem that a scientific archeological study of the glasshouse tract may reveal:

1. Much information concerning the glass factory site.

   (1) Limits of the area affected by the glasswork there, which in all probability will be much larger than those around the immediate site now known.

   (2) The nature of the plant already discovered -- number of furnaces, type of furnace, dump heaps, ash pits, and the like.

   (3) Manufactured glass objects, or fragments, glass drippings, crucible fragments, etc.

   (4) Type of production, and possibly date of operation, as shown in the fragments and remains.

   (5) Possibly information relative to workman's tools.

   (6) Information about the glasshouse if there was one on the site.

   (7) Study of the area adjacent to the furnace location could reveal the remains of living quarters associated with the site.

2. Traces of the Old Road.

3. Information about living sites, such as is found at similar locations at Jamestown.

4. Possibly information concerning the existence and location of property lines.

8. APPENDICES.

A. Some Remarks on Early Glass Manufacture.

The production of glass is an old story and its discovery lies well back in ancient history. Many of its fundamental technical processes were evolved long before the dawn of the Christian era. In the artistic and technical sense decay set in about the fifth century in Germany, Britain, and the other western European areas. Color range fell, processes were forgotten and earlier forms lost. It was not until the fifteenth century that a recognizable development began in western Europe. Venice took the lead in the revival and for years dominated the glassmaking industry. "The 16th century was the great period of Venetian glass, which, in its technical and artistic perfection, had no equal in the whole world". Among the accomplishments of the Venetians and other Italians, particularly those on the island of Murano, were colorless soda glass, "agate" or "jasper" glass, spun glass, "millefiore" and reticulated glass, painting behind glass, diamond engraving, multi-colored enamel painting, transparent glass, and most artistic use of decoration.[123]

Following the Venetian influence or acting independently a glass revival began all over western Europe in the sixteenth and seventeenth

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123 Powell, Glass-Making in England, p. 5 ff; Encyclopedia Britannica, v. 10, pp. 398, 401.

centuries -- in the Low Countries, in Germany and in England. In commenting on this revival, H. Hudson Moore states: "But it is a fact that most of the early glass, the sixteenth century product, and perhaps even earlier, had a close resemblance, no matter whether it was made in Germany, Holland or the Low Countries. The color of the glass was green as a rule, and the decoration was glass studs or prunts, sometimes varied with threads of glass applied in various ways."

In these countries there developed a heavy Venetian influence. In the sixteenth and seventeenth centuries in the Low Countries there were many glass factories working on both Venetian and German patterns.[124] In Germany where glassmaking reached a wide application it appears that Roman traditions were never wholly extinct. One of the early specialities was the "roemer", or "rummer", wine glass described as:

> "The color is green, the shape somewhat clumsy, and the decoration glass threads down over the surface, or nuppens or prunts applied to the stems. These prunts were in different designs ...These roemers varied from a pale greenish tint to one so dark as to be almost black. The prunts might be lighter, darker or the same shade.

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124 Knittle has noted that soda-lime predominates in Venetian glass, potash-lime in Bohemian and after the latter part of the seventeenth century potash-lead in English, Irish and American glass. Knittle, Early American Glass: p. 4.

"The typical roemer consists of three parts, the cup or bowl, the hollow stem with prunts, and a foot, also hollow, made of a thread of glass coiled round and round."[125]

A revival of glassmaking took place in England, as well as in continental western Europe, yet it was not an isolated development. Influences from Venice and even Germany found their way into the British Isles with marked effect. As early as 1549 there were Venetian workers plying their trade in London. Jacob Verzellini was perhaps among the most noted Venetian workers in England where he made glass from c. 1575 until his death in 1606.[126]

The earliest glass, it is said, was made in open pots with wood as fuel. Since wood, and the proper type of wood particularly, was essential for the furnaces, workers moved quite often from point to point. Gradually there were refinements in techniques with more stability in the furnaces as construction developed into a more permanent form. To aid our understanding of early furnaces a pictorial representation of a German furnace, which first appeared in 1556, has

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125
Moore, Old Glass; pp. 74, 79; Encyclopedia Britannica; v. 10, pp. 402-3.
Moore has individual sections on Venetian, Dutch and Flemish, German and English glass. For plates showing good examples of Venetian and Dutch and Flemish, and German glass see Encyclopedia Britannica; v. 10, pp. 400-1, 402-3.

126
Powell, Glass Making in England; pp. 26-29; Moore, Old Glass; pp. 32-3, 124.

FROM GEORGE AGRICOLA, "DE RE METALLICA" (PUB. BY FROBEN IN 1556)

A LATE 16TH CENTURY GERMAN GLASS FURNACE. REPRODUCED AFTER A CONTEMPORARY DRAWING

In the centre is the main oven, where glass was melted in pots behind each working hole. In the right foreground is a large wooden case packed with vessels of various shapes, and in the rear one of the workmen is shown "blowing" hot glass into the desired shape, after its removal from the oven

Photograph No. 11

View of a Sixteenth Century Glass Furnace. Encyclopedia Britannica, Fourteenth Edition; v. 10, p. 399

CWHP #8429

Fig. 18. Seventeenth century glass furnace; showing blowing-irons, marvers, moulds, and a broken wine-bottle; also arched openings for withdrawal of glass and for working, with temporary screens for reducing the size of these openings.

Photograph No. 12.

A Seventeenth Century Glass Furnace.
See Powell, Glass Making in England, pp. 11-15.

CWHP #8427

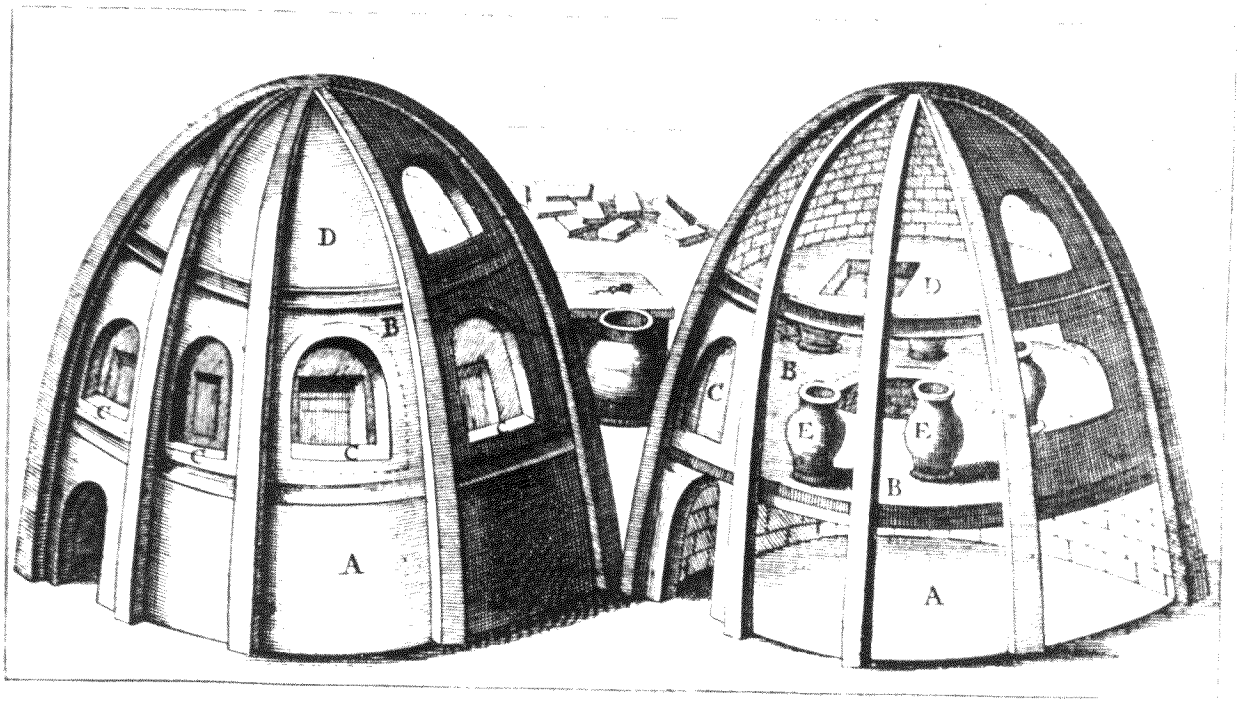

Fig. 16. Seventeenth century glass furnace.
A, Fuel chamber. B, Melting chamber. C, Working openings, with temporary screens or "collars." D, Annealing chamber. E, Crucibles.
Blancourt's *Art of Glass*, English Edition, London, 1699.

Photograph No. 13.

A Seventeenth Century Glass Furnace in Detail.

See Powell, Glass Making in England, pp. 11-15.

CNRP #8425

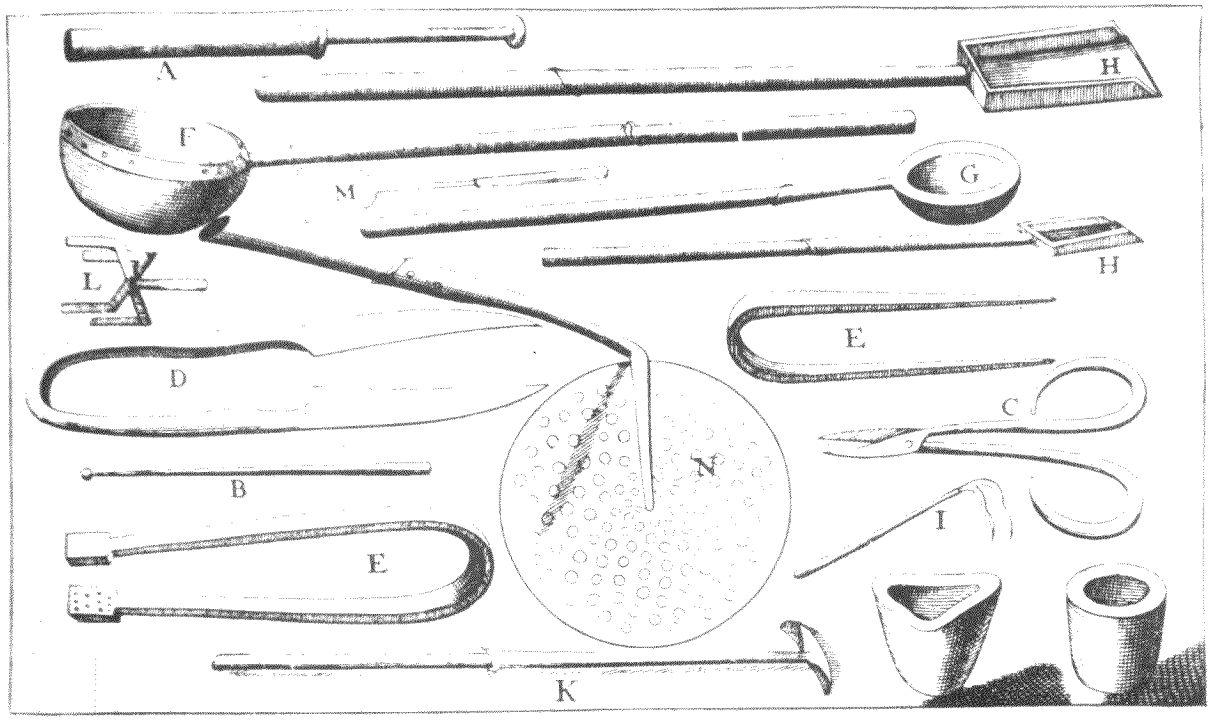

Fig. 17. Glass-making tools.

A, Blowing-iron. B, Pontee or puntee. C, Scissors. D, Shears or shaping-tool. E—N, pincers, ladles, shovels, drainers and other implements used in glass-making in the seventeenth century. Blancourt's *Art of Glass*.

Photograph No. 14.

Seventeenth Century Glassmaking Tools.
See Powell, Glass Making in England, pp. 11-15.

CNHP #8426

been reprinted and also a view of a seventeenth century furnace (see Photographs Nos. 11 and 12). These drawings are much alike, in fact, the similarity is so close that it may be that both have the same origin. In any case, it would suggest that glass furnaces of the late sixteenth and early seventeenth centuries were very much of the same type.

In commenting on early glass factories Harry J. Powell cites that factories first of all needed ample wood, preferably beechwood. With the site selected the glass furnaces and the glasshouse were erected. The glasshouse usually took the form of a temporary wooden structure with large openings left in the roof and walls for the escape of smoke and for free access of air. In summarizing material Powell mentions at least two types of furnaces in the early period -- one an oblong structure and the other circular like an old fashioned beehive.

1. "It was an oblong building of 'stones and clay' about fifteen feet in length by ten feet in width. It was divided perpendicularly by a wall into two chambers, one for melting the glass and the other for annealing or cooling the glassware when made. The whole was covered by an arched crown, the part over the melting chamber being higher than the rest. The crucibles stood on a raised platform in the melting chamber, and fuel, in the form of beech-wood billets, was introduced through an opening at a lower level. There was a small hole in the upper part of the wall dividing the two chambers, and a larger

opening or chimney for the escape of smoke and wasted heat in the crown of the annealing chamber. On a level with the crucible in the walls of the melting chamber were arched apertures, which could without difficulty be wholly or partly closed, for placing the crucibles in position, filling them with raw material and removing the melted glass."

2. "Another, but later form of furnace, was in shape like an old-fashioned beehive with a basement and two vaulted floors. The basement was for burning fuel, the first floor for crucibles, and the upper floor for the first process of annealing the manufactured glass. A central opening through the floors and dome served as chimney, and the walls of each floor had one or more external openings. Adjoining the furnace was a tunnel-shaped oven, called the 'leer', about eighteen feet in length by four feet in width, by two feet in height, with a fireplace and an opening at the end nearest the furnace, and another opening at the opposite end. The glass-ware was removed with a fork from the top floor of the furnace into a movable iron pan resting near the fire in the leer, and was gradually cooled by pushing the pan away from the heat. A pan when filled and moved from the fire was replaced by an empty one. There were at least three other ovens or kilns: one for baking and heating the crucibles, one for burning brake-fern or beech-wood into ash for the extraction of alkali and a

third called the 'calcar' into which the mixture of raw materials underwent a preliminary fusion to form the 'frit'." [127]

Rhea Mansfield Knittle in speaking of early glass factories describes two types of furnaces which she designates as flint glass and bottle glass factories. Even though these may refer to a period later than 1608-1624, brief mention of them is made since it is difficult to fix the date of new construction features. Moreover, even when new changes are effected much of the old remains. Knittle comments that factories differed in construction depending on the product. This was certainly the case as glass production increased, became refined and specialization set in, yet just how much this was the case in the first stages of the industry is not clear.

1. The flint glass[128] furnace room was usually large, square and lofty with an earth floor. The furnace normally occupied the center of the room being circular, or elliptical, in shape and composed of two complete hemispheres, one inside the other, with a space between the walls. The inner compartment contained the fire while the space between the walls gathered and held the smoke before it escaped from a chimney through the center of the roof. Such a furnace could produce

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127 Powell, Glass Making in England; pp. 11-15.

128 Flint glass is usually assigned to the last half of the seventeenth century.

an intense heat.

2. Furnaces for bottle glass, generally speaking, were oblong, or square, composed of a combustion or melting chamber and the cave or ash pit. These two sections were separated by the fire grate, or "seige" -- the latter a raised bank or platform on which crucibles were placed. The grate or fuel space was generally square and often could be charged from two sides. The grate usually rested on a level with the floor under which an ash pit extended for the entire length of the furnace with ends, opening outside the building, to serve as air passages or drafts. Inside the furnace and directly over the crucibles were small holes through which they could be charged. Flames in the melting chamber played directly around the crucibles thus producing intense heat.[129]

The crucibles, or melting pots, constituted an integral part of the glass plant equipment. These pots were open bowls (later covered) made of clay, with incurved mouths, varying in thickness from one to two inches. The largest of these crucibles must have been about twelve inches deep, eleven inches across the base, and nine inches across the contracted mouth. Since they had to stand intense heat they were made only of the most suitable fire clay and had to be almost without blemish.

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129 Knittle, Early American Glass: pp. 21-5.

The process of making them was a difficult and tedious one.[130]

> "If not made of the best materials they would crack, in which case the metal [molten glass] would be lost. Old pots broken up and ground down, then mixed with new clay were found to give the best results, the preparation being about one to three. These pots were built up layer upon layer, each successive layer being carefully dried, so that the process was a lengthy one, and from six months to a year was not an undue time to give to the making." [131]

The most common tools of a glassworker were the blowpipe, pontee, shaping tool and bench, or "chair", although there were numerous others. The blowpipe consisted of a wooden mouthpiece attached to about three feet of small-bore iron pipe. The pontee (pontil or ponty) was a rod of iron, from four to five feet long, used for gathering small pieces of glass or for temporarily holding a glass vessel in the process of manufacture. The shaping tools resembled a large pair of sugar tongs, made of iron, with blades in the place of spoons. It was used to grip a glass bubb, elongate it if necessary, and to press it into the

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130
Powell, Glass Making in England; pp. 11-15; Knittle, Early American Glass; pp. 19-21.
Due to the scarcity of wood in England and since glass furnaces used a large quantity of wood as fuel, by royal proclamation in 1615 the use of wood as fuel in the furnaces was prohibited. Coal was substituted. Coal would produce intense heat, yet the gases generated during its combustion were found to affect the glass in the open crucibles. To alleviate this crucibles were covered with lids, while they were in the furnace.
131
Moore, Old Glass; p. 11.

desired shape. The "chair" was a stool, or seat, with two projecting parallel arms on which the worker balanced the blowpipe, or pontee, carrying the vessel, and rolled it backwards and forwards on the arms while shaping a vessel.[132]

The first step in the manufacture of the glass was the preparation of the "metal", melted glass. The ingredients -- alkali, sand, lime, etc. -- were mixed and given a preliminary heating until they were partly fused.[133] This fused mass, called "frit", was then cooled, broken into fragments and shovelled into crucibles standing in the melting chamber. There the "frit" melted, became fluid, and threw to the surface a scum of impurities. The scum was ladled off and the remaining glass placed in pans of water. The water was then drained off and the glass, when dry, placed again in the crucibles for a final melting. When the glass was fluid the glassworkers took their stations and each "boss-blower" had his crucibles and assistants.

The blowpipe was dipped into the molten glass in the crucible and

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132
Powell, Early Glass Making in England: pp. 11-15.

133
One method of extracting alkali has been noted: "'If it please you to make glass, first cut up much beech-wood and dry it well: then burn it equally, and diligently collecting the ashes, be careful not to mix any dust or stones with them.' The ashes were placed in cauldrons of water and a crude carbonate of potash, known as pearl ash, was obtained by evaporation. Brake-fern, which had been cut when green and 'at such time as the moon was increasing and near its opposition to the sun' was similarly treated." Powell, Glass Making in England: pp. 11-15.

when a sufficient quantity of glass had been collected, or "gathered", it was removed. The hot glass ball was rolled on a polished iron plate until the exterior was regular and of uniform thickness. Then the glass bulb was expanded by blowing and elongated by swinging. The next step was to attach the pontee to the end of the glass opposite the blowpipe and to detach the object from the blowpipe by a sharp, well placed blow. At this stage the detached opening might need reheating by holding it in the furnace through the aperture. Then it could be smoothed, expanded, bound, or colored as desired. Next the "chairman" took the pontee with the attached glass bulb and rolled it backward and forward with one hand, all the while working with simple shaping tools and getting the desired shape and final form. When his task was complete the glass vessel was detached from the pontee by a sharp blow and placed in the "annealing-oven" or "leer". At this point utmost caution was necessary, for it was essential that the hot glass be lowered in temperature with careful precision "in order that the molecules in the inner surface of the vessel should become inactive slowly, yet simultaneously with those of the outer surface; otherwise the glass would fly to bits at the least shock or scratch".[134]

In concluding these remarks on early glass furnaces it may be well to quote from a summary of the remains found when two glass factory sites

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134 Knittle, Early American Glass; pp. 21-5; Powell, Glass Making in England; pp. 11-15.

were excavated in England.

1. In 1960 the site of a glasshouse was excavated at Buckholt near Salisbury -- a site that had operated in the reign of James I:

> "The foundations of a rectangular brick-built furnace were found, and also of four smaller furnaces or ovens, one at each corner of the main furnace. These may have been used for annealing the finished glass, baking crucibles, burning beech-wood for ash or for the preliminary melting of the glass mixture. Amongst the fragments of glass discovered on the site were feet of beakers with wide tubular hems and the base of a square-bottomed tumbler with a beaded edge." 135

2. Another site was excavated at Woodchester near Stroud:

> "The plan of the furnace is circular, an important constructional improvement. In all the scrap-heaps the window-glass fragments are, with a few exceptions, of a greenish tint and of a broad or sheet glass. Associated with the fragments of flat glass found at Chiddingford, flakes of flint, like arrow-heads, have been found which were undoubtedly used for marking if not for cutting the sheets of glass." 136

135
Powell, Glass Making in England; pp. 21-24.

136
Ibid; pp. 21-24.

B. Biographical Sketch - George Sandys.

George Sandys, son of Edwin Sandys, Archbishop of York, was one of the most colorful and interesting of the early Virginians. He was born in 1577 in Oxfordshire, England, and studied at St. Mary's Hall, Oxford. Later he became a traveler of note with visits to France, Italy, Turkey, Egypt, Cyprus and the Holy Land. In 1615 his first literary effort was an account of his travels. In 1619 he was a candidate for the governorship of the Bermudas, yet was defeated by Captain Nathaniel Butler. After this he disposed of his interest in the Bermuda venture although he retained interest in the Virginia enterprise.[137]

In the spring of 1621 the Virginia Company of London, because of "neglect" and delay on the part of earlier governors in respect to the establishment of stable commodities, found it necessary to create a special officer, a Treasurer, to reside in Virginia. The official duties of the Treasurer were to collect rents and duties belonging to the Company, to take in command and to render a report on things recommended "to his peculiar Charge", and to supervise newly projected industries. George Sandys was nominated and elected with only three

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137

Sams, Conquest of Virginia: Third Attempt; p. 414; Brown, Genesis of U. S; v. 2. pp. 994-5; Kingsbury, Records of the Virginia Company; v. 3. pp. 42, 88; "Genealogy" in Va. Mag. Hist. and Biog; v. 29, p. 245.

There is a History of the Sandys Family privately printed in 1907; it was written by Cearley Vivians and edited by Thomas Myles Sandys.

dissenting ballots. His recommendation gave him words of high praise:

> "A gentleman, well knowne vnto them all, as a man very fitt to take that charge vpon him...who indeed was generally so well reputed of, for his approved fidelity sufficiency and integrity: as they conceaved a fitter man could not be chosen for that place." 138

Instructions to the Governor and Counsell urged them to "give him all such countenance, help and power in the execution" of his office.

Sandys came to Virginia in the summer of 1621 in company with Sir Francis Wyatt, newly appointed Governor. Thus, it appears that from the start, he was in general direction of the second trial at glass-making as well as other newly projected industries. Later, after Berkeley's death, he was directly the supervisor of the glass attempt. Other projects under his care were the shipbuilding experiment, the iron enterprise, and the settlement of the college lands. He was, in effect, a director of industry. For compensation as treasurer he was to be allotted land, assigned to the office, and tenants supplied by the Company.[139]

In Virginia Sandys continued for several years as treasurer, receiving the benefits of the treasurer's land and tenants and all the while

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138 Kingsbury, Records of the Virginia Company: v. 1, pp. 480, 488.

139 Ibid: v. 2, p. 108; v. 3, pp. 471-2, 585, 650, 671; v. 4, pp. 75, 186; Neill, History of the Virginia Company: pp. 208, 223; Sams, Conquest of Virginia: Second Attempt, p. 513.

establishing himself as a private planter. From the beginning until he left the colony it appears that he sat in the Virginia Council. This body he felt free to criticize in 1625 as "a verie weake Counsell, few in Number and those for the most part either not respecting greatlye the publique, or of no sufficiencie". It was in 1623 that he planned to go to England to seek relief for Virginia, yet he appears to have given up the idea and instead, in a series of letters presented a condemnation of the Company's policies and practices, suggesting a good investigation. This may have been about the time that he refused to serve longer as treasurer "saying he had nothing to do with it". In 1622, following the Indian massacre, he had led an expedition against the Pappahanna Indians across from Jamestown where his holdings were located.[140]

Sandys in 1622 and 1623 spoke of himself as a planter and made reference to his plantation. In 1624 he patented 400 acres in the precincts of Archer's Hope for his own personal adventure in the George in 1621 and for the transportation of seven others -- four who came with him and three from Somers Island in the same year. Also in 1624 he took out a patent for 300 acres, across the James and up the river from Jamestown, for a bill of adventure amounting to 12½ 10s and for the transportation of four persons. At the time of this later grant

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140

Kingsbury, Records of the Virginia Company: v. 3, p. 483; v. 4, pp. 110-111; Craven, Dissolution of the Virginia Company: pp. 216, 218-9; "Minutes of the Council and General Court of Virginia" in Val Mag. Hist. and Biog: v. 19, p. 116.

for 300 acres it was described as land of "which devidents he is now actually possessed". This holding of "Georg Sandys at his plantacon over the water" was surveyed by William Clayborne. Apparently it was on this 300 acres in "The Territory of Tapcahanna ov9 against James City" that he had established his plantation -- near the 500 acres set aside as "ye place of Treasurer". It was here in 1624-1625 that he had "my house" and "1 silkworm house and garden and a vineyard of 2 acres". In 1623 he had written to have sent him in Virginia "two ffrenchmen skilfull in silkewormes and planting of Vines".[141]

It would appear that Sandys left Virginia late in 1625, or in 1626, and returned to England. In 1631 when he heard that the King was thinking of governing Virginia and the other plantations through a committee or commission made up from members of the Privy Council, he petitioned to be made secretary of the commission since he was "well acquainted with the affairs and conditions of Foreign Plantations having spent in Virginia many of the ripest of his years in public employment under King James". In England he had become a gentleman of the King's Privy Chamber. In 1638, when there was a renewed effort to revive the old company charter, the Virginia Assembly named Sandys as

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141 Nugent, Abstracts of Virginia Land Patents; v. 1, pp. 1, 3, 4, 8; Kingsbury, Records of the Virginia Company; v.4, pp. 64-8, 111, 555; "The Census of 1624-25" in Va. Mag. Hist. and Biog; v. 7, p. 365.

its agent in England to oppose the move. He misunderstood his instructions, or in any case, presented a petition to the House of Commons in favor of a regrant of the charter. Sandys died in March, 1644 at Bexley Abbey in Kent, home of his niece, widow of Governor Wyatt of Virginia.[142]

George Sandys had been a literary man of some talent. His The Relation of a Journey begun An. Dom. 1610 published in 1615 won him some popularity and in Virginia he continued his literary efforts in the translation into English of Ovid's Metamorphoses. Of this in March, 1623, he wrote:

> "Yet amongst the rareing of the seas, the rustling of the Mareuds, and Clamour of Saylers, I translated two bookes, and will perhaps when the sweltring heat of the day confines me to my Chamber give a further assayes for wch I be text I have noe other excuse but that it was the recreacõn of my idle howers,..."[143]

The first edition of this translation appeared in 1626 and others followed. Later he wrote other works. His work led Dryden to describe him as the best versifier of his age, and Pope to comment that English

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142
Brown, Genesis of U. S; v. 2, pp.934-5; "Virginia in 1631" (Records) in Va. Mag. Hist. and Biog; v. 8, p. 43; "Virginia in 1626" (Records) Va.Mag. Hist. and Biog; v. 7, p. 289.

143
Kingsbury, Records of the Virginia Company; v. 4, pp. 64-8.

poetry owed much of its beauty to his translations.[144]

Note:

Throughout this report "Pennsylvania Museum of Art" has been used, as cited by Bailey. In correspondence regarding beads in 1940, the letterhead used in reply bears "Philadelphia Museum of Art". It is not known whether there are two museums (although photograph secured in 1940 appear identical to those procured by Bailey), or whether the name has recently changed.

Charles E. Hatch, Jr.

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Junior Historical Technician.

[Typing completed
January 17, 1941.]

144
Campbell, History of Virginia; pp. 151-2; Brown, Genesis of U. S; v. 2, pp. 994-5; "Genealogy" in Va. Mag. Hist. and Biog; v. 29, p. 245.

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