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# Bartram Broadside

Published by the John Bartram Association for the 'noble & curious friends' of Historic Bartram's Garden, Philadelphia

## Preface

*Archaeology dictates the scale and scope of any physical changes made at Historic Bartram's Garden. In this edition of the* Bartram Broadside, *Curator of Historic Collections Joel T. Fry shows just how important archaeological survey is to revealing – and preserving – the Garden's past. Before any physical changes, such as the restoration of a wetland, pond, or building, are begun, we require an archaeological investigation followed by a full report. The discovery of even miniscule traces of the past, a tiny chip of Woodland period Indian pottery or flakes of jasper, can have huge significance in our understanding and interpretation of the site. We recognize that the genuine history embodied in archaeological resources is impossible to duplicate and not to be ignored.*

*And what a record has been amassed in more than 23 years of archaeological investigation. We have uncovered conclusive evidence of prehistoric man occupying the site. Along with fine examples of 18th century coins and domestic ceramics, the Garden has yielded hundreds of hand-thrown redware flowerpot sherds, enough to reconstruct all or a portion of 200 vessels, and thousands of fragments of greenhouse glass. With less than 1% of the 45-acre site archaeologically surveyed to date, more than 25,000 artifacts have been recovered. Just as important is the invaluable information gleaned about key landscape features of the 18th and 19th century garden, like the cobble paths, garden beds, pond, and fence lines. When I assert that Bartram's is the best documented historic garden in America, I am thinking not only of what the Bartrams left in the form of letters, lists, drawings, and catalogues; my bold claim is bolstered by the body of archaeological work completed by Fry.*

*Fry knows a lot about Historic Bartram's Garden, literally from the ground up. He has been deeply involved with Bartram archaeology for the last 18 years, first as a graduate student supervisor for digs conducted in 1980 under the auspices of the University of Pennsylvania Museum and later as an independent consultant. As a historical archaeologist with a talent for botany he has dug dozens of test units at Historic Bartram's Garden and researched and written numerous studies. He also has worked extensively at the Fairmount Water Works and local historic sites including Cliveden, Belmont, and The Woodlands. His archaeological lectures offered through the University Museum Outreach program are always well received and beginning in 1999 he will lecture on Philadelphia archaeology for the Wagner Free Institute of Science.*

*I think you will find it fascinating to read about Historic Bartram's Garden's extensive archaeological history and thrilling to think about what still lies undisturbed in the soil, just waiting to be discovered.*

Martha Leigh Wolf, Executive Director

## Archaeological Research at Historic Bartram's Garden

**Joel T. Fry**

Published histories of John and William Bartram have concentrated on their travels and explorations. But collecting trips represent only a portion of their varied scientific pursuits. The most significant contribution of the Bartram family may have been the patient cultivation of their garden for more than a century.

Although the site of the Bartram garden has been preserved as a city owned historic site since 1891, serious efforts to restore and replant the historic garden can be traced to the re-discovery of the 1758 *"Draught…"* of the house and garden. The drawing was found in England at the library of the Earl of Derby in 1955 and first published in 1956 (Povey 1956). It initially seemed a simple task to recreate many of the details from the drawing, but the *"Draught…"* provides only a glimpse of the garden at one brief interval, and an impressionistic glimpse at that. It has proved difficult to correlate the drawing with the complex overlay of events that has resulted in the garden site of today. Over the past two decades archaeological research has begun to reveals missing details of time and place at the historic garden. Only a small portion of this work has been published and available to the public (Cotter et al. 1992: 275-281). Archaeology achieves its goals through a slow accumulation of knowledge. Each excavation exposes new facts which taken together create a more accurate picture of the past. Archaeology also has the potential to surprise, and excavations at Bartram's Garden have revealed strong evidence of prehistoric man at the Bartram site.

Archaeological research may not be an entirely new phenomenon at Bartram's Garden. For their day, both John and William Bartram possessed an uncommon interest in archaeological sites and archaeological artifacts. This curiosity was part of the universal marvel of enlightenment science, the philosophy that drove the Bartrams to create their garden. John and William Bartram turned this tradition of scientific inquiry to the analysis of ancient sites with an understanding that surpassed many of the experts who followed in the next century.


*House and upper garden detail from* "A Draught of John Bartram's House and Garden…1758." *This plan of the Bartram family garden was likely drawn by William Bartram with annotations by his father. (Private Collection).*

In the decade of the 1740's John Bartram's correspondence is filled with mentions of Indian curiosities and antiquities. In the fall of 1740, in an account of his exploration of the east branch of the Delaware, John Bartram wrote Peter Collinson:

> "…I crosed the Paiqualian mountains on Jersey side near the top of which I saw A heape of stone thrown together containing several wagon load its said an indian king was laid there; I wanted badly to pull the heap to peices to

"Serious efforts to restore and replant the historic garden can be traced to the re-discovery of the 1758 *"Draught…"* of the house and garden."

> search what antiquities I could find laid with this royal body but I was afraid of disturbing the Indians hard by" (Berkeley and Berkeley 1992: 140).

Bartram sent Hans Sloane a triangular arrowhead of white crystal and a jasper axe in 1741. In the fall of 1742 he wrote Sloan "I have procured an indian pipe made of soft stone intire: it was dug by chance out of an ould indian grave…" (Berkeley and Berkeley 1992: 178-179, 207-208). Bartram sent samples of a variety of Indian potsherds to Gronovious in Leiden (Berkeley and Berkeley 1992: 242-243). Peter Kalm, the student of Linnaeus, recorded a long discourse on "Indian Pottery" in his journal after talking with Bartram.

> November the 18th [1748]. *Indian Pottery*. Mr. Bartram showed me an earthen pot, which had been found in a place where the Indians formerly lived. He who first dug it out kept grease and fat in it with which to smear his shoes, boots and all sorts of leather. Mr. Bartram bought the pot of that man; it was yet entire and not damaged. I could perceive no glaze or color upon it, but on the outside it was very much ornamented and upon the whole well made. Mr. Bartram showed me several pieces of broken earthen vessels which the Indians formerly made use of. It plainly appeared in all these that they were not made of mere clay, but that different materials had been mixed with it, according to the nature of the places where they were made… (Kalm 1937: 172-173).

Writing Cadwallader Colden in 1746, Bartram described a detailed analysis he performed on "A large Cake of indian bread" found in a grave four feet below ground in Burlington, NJ,:

> I have A bit of it now by me which I have examined by the Microscope it appears to be composed of materials reduced to very fine particles by grinding between two smooth stones I believe the kernels of hicory nuts entered into the composition. if Indian corn was another it certainly underwent A laborious tritition I held A live Coal to it which imediately reduced to A Coal & ashes it emitted A thick smoak & smelled like A burnt crust but A little earthish… (Berkeley and Berkeley 1992: 272).

Bartram continued to make observations on archaeological sites and artifacts during his travels in eastern North America. In Florida in 1766, on the St. John's River at Lake George, John and William Bartram explored the mound site of Mount Royal:

> …about noon we landed at Mount Royal, and went to an Indian Tumulus which is about 100 Yards in Diameter almost round and near 20 foot high. We found some Bones scattered on it. This must be very Ancient as there were Live Oaks 3 foot in Diameter growing upon it. What a prodigious Multitude of Indians must have Labored to raise it… (J. Bartram 1765-66).

William Bartram shared his father's interest in Indian antiquities and during his travels in the South from 1773-1776 he was enthusiastic in his exploration of ancient Indian towns and mound sites. On Colonel's Island, Georgia, William undertook some elementary archaeological excavation in his examination of a shell mound:

> I observed, amongst the shells of the conical mounds, fragments of earthen vessels, and of other utensils, the manufacture of the ancients: about the centre of one of them, the rim of an earthen pot appeared amongst the shells and earth, which I carefully removed, and drew it out, almost whole: this pot was curiously wrought all over the outside, representing basket work and was undoubtedly esteemed a very ingenious performance, by the people, at the age of its construction. (W. Bartram 1791: 5-6; Waselkov and Braund 1995: 34 and note).

William Bartram's *Travels…* is filled with descriptions of ancient Indian towns, old fields, conical mounds, terraces and banks. Even more comprehensive, his descriptions of contemporary Creek and Cherokee villages remain an important historic and ethnographic document for current research. Bartram may have been unique among his time for his open-minded, scientific recording of Indian society and culture, and for his perceptive comparisons between archaeological remains and the lifeways of the current inhabitants of the Southeast (Waselkov and Braund 1995: 199-213).

Although as yet we have no evidence to suggest John and William Bartram knew their own garden was a rich archaeological site, it is not hard to imagine that they were accustomed to overturning prehistoric points, flakes, and fragments of vessels as they cultivated their garden and tilled their farm. They were probably unaware that their life's work at the garden was creating archaeological deposits as well.

Two decades of archaeological work at Bartram's Garden has revealed a deeply layered site preserving evidence from a very broad range of human occupation. As a prehistoric archaeological site, Bartram's Garden preserves evidence of occupation from the Archaic through the Woodland periods. There is a potential for 17th century Swedish colonial remains, although none have yet been conclusively identified. Bartram's Garden is best categorized as an 18th century Anglo-American colonial site—the house, garden, and farm of John Bartram (1699-1777). Three further generations of the Bartram family continued their founder's creation, elaborating and enlarging the plantings, while maintaining elements with the reverence of historic preservation. The historic garden is preserved as a complex archaeological site, reflecting over a century of active cultivation. Early 19th century commercial activity at the garden resulted in plant production on an industrial scale and glasshouses proliferated to house the collection of tender plants. After 1850 the garden site

"I wanted badly to pull the heap to peices to search what antiquities I could find laid with this royal body but I was afraid of disturbing the Indians hard by…."

entered a period of quiescence, as part of the large estate of Andrew M. Eastwick (1811-1879). The city of Philadelphia acquired the historic garden in 1891, and the site has endured for more than a century as a public park. Every phase of historic activity has left traces that are encountered during archaeological research.

### 1975 Common Flower Garden and Seed House

The John Bartram Association unsuccessfully sought funding to initiate an archaeological study of the Bartram site as early as 1969. Professional archaeological research finally began at the garden in June of 1975 to solve a simple historic question: was there once a central path through the Common Flower Garden? This garden, indicated on the 1758 *"Draught…"* was to be replanted in the central bed east of the Bartram House for the approaching Bicentennial celebration. An 1849 engraved view of the Bartram House shows a path centered on the house (Darlington 1849: frontispiece). The sod was broken and a 5' x 10' excavation unit was opened in the upper garden, centered just east of the porch of the Bartram House. At the same time test cores examined soils and soil stratigraphy on the terrace east of the Bartram House, and in *Room #1* or the southernmost room of the Seed House [see page 8]. This excavation was a small part of a documentary summary and archaeological feasibility study for the garden site, conducted by Jeffrey L. Kenyon of the *Museum Historic Research Center* [M.H.R.C.] of the University Museum at the University of Pennsylvania (Kenyon et al. 1975).

Both the test excavation and the soil cores from the garden terrace revealed strong positive evidence for a buried central path. [It has since been discovered that this path was in existence until ca. 1930 as demonstrated by several historic photographs.] Archaeological evidence indicated the path had been paved in at least two episodes: first with coarse gravely orange-red sandy clay, and more recently with crushed cinders, but neither paving could be closely dated. The soil cores also suggested brick or brick fragments were associated with the path, possibly as an edging or edge drain. Few historic artifacts were uncovered in this initial test and no prehistoric remains were encountered. Artifacts were primarily retrieved from fill soil and recent features located above the presumed pathway, and the artifact collection represented a wide mix of dates. This mix of artifacts has proved all too common in archaeological research at Bartram's Garden, the result of long-term horticultural activities.

*British half-penny, reign of George II, "old head" portrait – (ca. 1740-1754). Recovered during 1977 excavation beneath the south end of the kitchen. A similar well worn half-penny was found in the Common Flower Garden.*

*In 1739 and 1740, John Bartram received cash payments of £10 from Collinson in the form of half-pence [4800 copper coins!]. In July 1739 Bartram wrote Collinson* "the cash …came in the very nick of time, when I wanted to pay the mortgage interest."

The soil cores from *Room #1* of the Seed House produced little useful information. Flotation of the soil samples for seeds and organic remains was disappointing (Kenyon et al. 1975, Appendix). As will be seen *Room #1* proved to be one of the most significant historic structures at the garden, but at this early stage of research, its original purpose was unknown. A large number of late 19th century household artifacts—mostly glass and whiteware ceramic vessels—were visible scattered on the surface of the dirt sub-floor of this room. Looting pits in the northwest and southwest corners of the room indicated unauthorized excavation had already taken place.

The Kenyon M.H.R.C. report concluded with recommendations for further archaeological work. The suggestions included electronic reconnaissance of the entire garden with remote-sensing devices, and excavations at three specific areas of the site—beneath the Kitchen of the Bartram House (mistakenly thought to be a filled cellar), at the site of the Study east of the house, and at the southern end of the Seed House.

### 1977 Bartram House

Between May and October 1977, the staff of *John M. Dickey, A.I.A.*, an architectural preservation firm preparing a detailed historic structure report on the Bartram House, undertook some cursory archaeological excavations based on Kenyon's recommendation for investigation beneath the kitchen. A brief summary appendix to the 1978 Historic Structures Report for the Bartram House contains all that is known of these excavations (Glenn 1978: vol. 2, Appendix III: Archaeology). No additional field notes, plans, or photographs are known to survive from this work, and no final report or artifact analysis was ever provided by the Dickey staff. [The artifacts recovered in 1977 are currently housed at the Bartram House, and were examined and catalogued along with the archaeological collections recovered in 1979 and 1980 by the University of Pennsylvania (Parrington 1979: Appendix B).]

These investigations were aimed at discovering simple answers to particular structural questions—the presence or absence of earlier foundation walls, masonry joints from additions, etc. The archaeological work was seen as an adjunct to the architectural investigation and as a result excavation did not follow generally accepted archaeological techniques. Excavation around an historic structure is never simple, and a structure with a complex history of additions and alterations can be particularly difficult to interpret. The brief summary of work in the historic structure report indicates something of the stratigraphy present, and the text suggests features were identified, but apparently artifacts were not segregated from features, and often not even by stratigraphic layer. The result is an interesting collection of artifacts—including some significant remains dating to the mid-18th century which should be associated with the life of

"Excavation began in the area of the Study and New Flower Garden indicated on the *"Draught"* of the house and garden sent to Peter Collinson in 1758."

John Bartram—but important archaeological data has been lost because of poor excavation procedures.

Summarizing these tests as a whole, they demonstrated large numbers of historic artifacts are preserved at the Bartram site. Mid-18th to early 19th century ceramic and glass vessel fragments—correlating with the Bartram family occupation of the house—were recovered from beneath the kitchen and exterior adjacent to the west wall of the Bartram House. To date the best collection of 18th century artifacts recovered at Bartram's Garden has come from these poorly documented tests. Many of the glass and ceramic vessels were represented by large fragments and can be partially reconstructed.

The surface levels just beneath the kitchen floorboards also produced a number of small artifacts—coins, toys, etc.—dating to the later 19th and early 20th centuries, probably lost through cracks in the floor by more recent generations of tourists or caretakers resident in the house. Artifacts were also recovered from above-ground explorations beneath the flooring of the third floor attic space of the house. The investigation produced roughly six liters of archaeo-botanic materials—including seeds and fragments of husks, stems, chaff, cobs, etc. Nesting rodents, probably either squirrels or rats, apparently dragged this fluffy mass of plant material beneath the floor joists. These plant remains have not been properly analyzed or dated, but preliminary observation suggests they are largely from North American species.

## 1979 Seed House

The long outbuilding complex now known as the Seed House became the focus of archaeological investigations in 1979. The work was undertaken by the *Museum Institute for Conservation Archaeology* [M.I.C.A.], at the University of Pennsylvania, Dr. Robert L. Schuyler principal investigator and Michael Parrington, field director (Parrington: 1979). These excavations were aimed at architectural analysis, and took place in conjunction with an historic structure survey of the Seed House, again by the firm of *John Dickey A.I.A.* (Engle 1980).

Excavation took place for a week each in June and October of 1979. Six excavation units were opened, both within the Seed House and outside, adjacent to its walls. These excavations concentrated on the southern three rooms of the compound structure, *Rooms #1, #2,* and *#3.* In addition a small shovel test was excavated in the base of the ice pit which occupies the cellar beneath *Room #3.* No examination of *Room #4* was undertaken at this time leaving the study of the structure curiously incomplete. Excavation efforts returned to the *Seed House* in 1989-1990 for a re-analysis of the entire structure, in part to supplement the work done in 1979 and in part to correct the many errors in the historic structure report

The six excavation units placed around the Seed House exposed very simple stratigraphy and produced little evidence beyond the surviving architecture. The units located outside the structure exposed several areas of dark organic-stained soil, close to the surface. These were characterized as recent planting holes. Relatively few artifacts were discovered in any of these tests, excluding Unit 1 within *Room #1.* Artifacts that were encountered on the exterior were of mixed-context and broken into small fragments with few cross-mends. This scattered surface midden dated from the second half of the 19th to the early 20th century, apparently the result of fill and grading around the outbuilding after it left the hands of the Bartram family.

An exception was the massive artifact collection recovered from the excavation unit within *Room #1* of the Seed House. Beneath the partially intact framed floor, the shallow cellar of the room had been used for trash disposal at the turn of this century. The cellar was filled with a trash deposit, 1'-2' thick. The excavators retained only a diagnostic sample of these artifacts because of the large number of complete or nearly complete vessels encountered. The artifacts generally fall into the period between 1890 and 1910. The collection retained includes tools and tool fragments; kitchen utensils; lamp parts; over 25 ceramic vessels—generally coarse white porcelain or whiteware, many with trademarks; and 87 glass vessels—largely patent medicine bottles, or food and beverage containers (Parrington 1979: 15-17, Appendix A). These have also been discussed and some illustrated (Parrington: 1981).

## 1980 Study and New Flower Garden

Large-scale archaeological excavations were undertaken at Bartram's Garden in 1980 in two phases: first from May to August as a summer field school offered through the *College of General Studies* and the *American Civilization Department* of the University of Pennsylvania, and latter from September to November as a graduate level laboratory class in Historical Archaeology offered by the *American Civilization Department*. Both phases were under the direction of Dr. Robert L. Schuyler.

Excavation began in the area of the Study and New Flower Garden indicated on the *"Draught…"* of the house and garden sent to Peter Collinson in 1758. Four excavation units, 5' x 10', were laid out across the predicted location of the detached outbuilding, which was presumably razed when John Bartram enlarged and elaborated the river facade of his house between ca. 1758 and 1770. Upon completion of the four units in the area of the Study, several of the units were expanded to clarify the features that were uncovered.

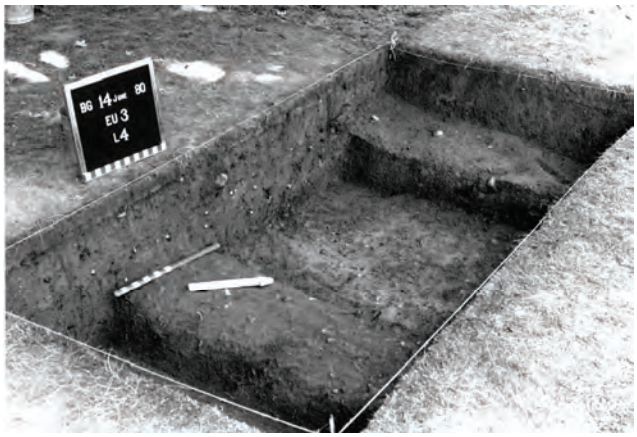
Research at the location of John Bartram's Study hoped to uncover both evidence of the early structure and a representative collection of mid-18th century artifacts from a Pennsylvania Quaker family. An extensive search produced only ambiguous evidence for the structure, and a small collection of 18th century artifacts mixed with later periods in re-deposited or disturbed contexts. The Study was a small structure, possibly 10'x 10' or smaller, and later garden paths and the southeast corner of the enlarged Bartram House may have obliterated any traces of the outbuilding. A

"A series of deeply dug garden beds ran in parallel rows, north to south… between 2'-3' wide and… deeply cultivated to as much as 4' below the surface."

number of unsuspected garden features were encountered, however, and the tests proved that many of the historic divisions within Bartram's Garden remain intact.

Just below the grass, late 19th and 20th century planting holes were exposed. The upper 6" or more of soil at the garden is a distinctive sooty black. It appears to be a recently developed soil composed of the fallout of coal dust and particulate matter from the heavily polluted atmosphere of the surrounding industrial city, perhaps with some build-up of organic material from recent mulch. Below this black soil, earlier 19th century and 18th century garden features were preserved. A feature in the form of a large spiral was encountered early in the excavation, spanning three of the excavation units, roughly 15' across. This spiral may be either the remains of an attempt to fertilize one of the historic box trees in the Upper Garden, or the framework for a mid-19th century patterned flowerbed. Below, a series of deeply dug garden beds ran in parallel rows, north to south. These beds varied between 2'-3' wide and were deeply cultivated, to as much as 4' below the surface. Narrow benches of relatively undisturbed subsoil marked the divisions between beds, and probably indicate the location of grass paths. Artifact content suggested these beds were in use between ca. 1760-1850, correlating with the creation of John Bartram's New Flower Garden and the Bartram family continuation of their botanic garden.

At the time of these excavations in 1980, the two surviving garden pathways before the eastern, or river facade of the house curved inward towards the classical porch. It is not known when the paths were laid in this curve, but they first appear so in an illustration of the house from 1849 (Darlington 1849: frontispiece). In the 1758 *"Draught…"* of the Bartram House and garden the paths all run straight and at right angles. The southern path then led directly to the door of the Study. Where the modern stone-edged asphalt path curved to the north, a small section of the original historic paving was preserved intact below ground along the original course, and was exposed during excavation. Although cut




*Deeply cultivated garden beds in the* New Flower Garden, *exposed during the 1980 excavations.*

*Cobble edging and a fragment of path along the edge of the* New Flower Garden, *exposed in two excavation units in 1980. This path would have led to the Study on the 1758 "*Draught...." *The current path has been restored to take the same course.*

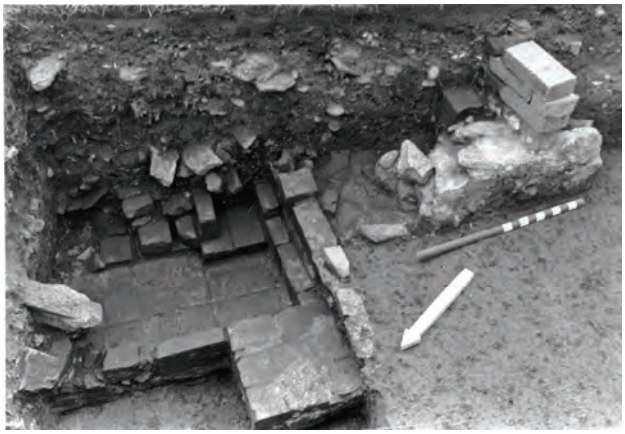
through by later features, a fragment of the clay and gravel paving survived and most of the cobble edging from the south side of the path. The original paving was a compacted gravely-clay soil, and the path was flanked with rows of small cobbles laid on edge forming a shallow U-shaped drain, presumably on either side. [In early 1987, the paths of the upper terrace were straightened and re-laid to their original locations, and the 20th century asphalt paving was replaced with loose crushed-rock gravel. A portion of the original cobble edging is still preserved intact along the edge of the southern path about 8" below the modern surface.]

### Greenhouses

The latter part of the summer was spent in testing the broad open terrace to the east of the outbuilding complex at the garden. Four 5' x 10' units were spaced 10' apart on a single grid line 30' east of the east end of the Coach House [see plan page 9]. The remains of at least two and possibly more glasshouse structures were discovered in this open field. The complex deposits within one of the demolished greenhouses required an extension of the excavation schedule into the fall. Work was only completed in late November 1980.

Excavation soon produced ample evidence of heavy activity in this area in the first half of the 19th century. At this time the Bartram family garden functioned as a large-scale commercial nursery. Tests here revealed small glimpses of two or more large structures. One was an early 19th century "*Greenhouse & Orangehouse*," 65' x 30', which may have been built by John Bartram, Jr. and William Bartram ca. 1800. The other, a heated greenhouse, is likely the "*New Holland & Stove House*," 68' x 14', built by Robert Carr ca. 1817 (Fry 1990, Gordon 1837). The "*Greenhouse & Orangehouse*" survived to be photographed about 1880, and was evidently razed about the time the city of Philadelphia acquired

"The single excavation unit located near the rear wall of the "*New Holland & Stove House*" contained over 2500 flowerpot fragments."



*Excavation Unit 11, in November of 1980 exposing the front wall and part of the interior of the* "New Holland & Stove House," *looking east. A heating flue turns a right angle on the floor.*

Bartram's Garden.

In addition to structural evidence, these excavations produced a large collection of artifacts. The four excavation units produced close to 5000 sherds from hand-thrown redware flowerpots, dating ca. 1800-1840. The single excavation unit located near the rear wall of the "*New Holland & Stove House*" contained over 2500 flowerpot fragments. More than 50 pots could be reconstructed in a complete state, and the estimated minimum number of vessels ran to several hundred. Most, if not all the pots, came from local Philadelphia potters and seven major rim forms and ornament types have been distinguished with a wide range of sizes and functional shapes. Large quantities of flat glass were also recovered from the glazing of the structure, as well as assorted framing hardware and roofing slate. Specialized horticultural artifacts—including bell glass fragments, propagating pots, tin and stoneware watering pots and parts of the sheet metal benches from within the heated greenhouse were also recovered (Fry 1995).

A large cast-iron plate was uncovered among the stone slabs that formed the floor of the 19th century "*New Holland & Stove House*." This artifact has been identified as the ornamented front plate of an 18th century Pennsylvania Fireplace (or "Franklin Stove" as they are incorrectly known today). The plate was decorated with a smiling sun face flanked by two complex designs using tulips and other traditional Pennsylvania German motifs. This ornament can be dated ca. 1760 by reference to the sequence of floral patterns found on dated examples of Pennsylvania 5-plate stoves collected by Henry C. Mercer (Mercer 1961: 70-71). It is likely that John Bartram purchased this stove to heat his greenhouse, the first at the garden, erected in 1760. This casting is a unique survival, both for its association with John Bartram, and because it is a portion of only the second known *true* Pennsylvania Fireplace in existence today. (The other is housed in the collections of the Mercer Museum.) Bartram's friend Benjamin Franklin, the inventor, and Robert Grace of Warwick Furnace, Chester County, the manufacturer, only produced 145 castings of the iron fireplace between 1741 and 1765. The example recovered from Bartram's Garden is a new pattern, produced late in the history of the invention, and possibly commissioned by Bartram alone (Fry 1987).

*An assortment of sizes and types of flowerpots from Unit 12 at the rear of the* "New Holland & Stove House."

*Cast-iron stove plate from the floor.of the* "New Holland & Stove House." *The front plate of a* Pennsylvania Fireplace, *probably used to heat John Bartram's 1760 greenhouse.*

## Prehistoric Artifacts

For the first time, excavations in 1980 revealed evidence of prehistoric man at the garden site. Evidence for prehistoric occupation at the Bartram's Garden consists of small stone fragments or flakes scattered over most of the site. A large number of stone or lithic types are present at the site, including jasper, quartz, quartzite, chert, argillite and slate. Several of these stone types are not found locally, and could only have been acquired by travel or trade.

The 1980 excavations produced small to moderate numbers of prehistoric artifacts uniformly across all areas tested. Prehistoric artifacts included flaked stone tools and preforms for tools, utilized flakes, debitage or waste flakes from tool production, fire-cracked rock—a discard from cooking methods, and a single small fragment of coarse ceramic with a schist grit temper. Prehistoric artifacts were generally found in subsoil layers beneath the historic stratigraphy or in the lowest historic strata encountered. As yet no prehistoric features—postholes, storage pits, hearths, etc.—have been identified. The greatest concentration of prehistoric

"The artifact types recovered indicate a broad date range for prehistoric activity at Bartram's Garden, ca. 3000 BC–1000 AD."

artifacts in 1980 came from a test on the terrace east of the outbuilding complex. Located in an open area between the remains of two greenhouse structures, there was apparently less historic disturbance here.

Eight flaked points or point fragments were recovered from the twelve units excavated in 1980, as well as one retouched flake and a large flaked cobble, possibly a chopper or a discarded core or preform. The points vary widely in size and type from a large stemmed point 7.5 cm. long, to a small triangular point 1.4 cm. on a side. There are several stemmed points—side-notched, ear-notched, and base-notched. Several of the points were only represented by tip fragments and are less easily characterized. The artifact types recovered indicate a broad date range for prehistoric activity at Bartram's Garden, ca. 3000 BC–1000 AD. This spans the archaeological cultural periods known as the Late Archaic to the Early-Middle Woodland.

*Native American lithic points and artifacts recovered from Bartram's Garden in 1980.*
**Bottom:** *quartzite chopper, argillite point, jasper point, ceramic sherd, jasper scraper, fragment of historic gun flint.*
**Top:** *quartzite point (broken), gray chert point, quartz point (tip fragment), quartz point, argillite point (broken), quartzite point.*

### 1982–1984 Bartram House Well

In April 1982, following heavy spring rains an area of the brick pavement to the north of the Bartram House collapsed, revealing the site of an historic Well. The Well was centered on the north end of the Bartram House, adjacent to the shed addition that now houses restrooms. This Well was probably in use by the Bartram family from at least the mid-18th century, and may have continued as the major source of water for the house through the early 20th century. By the late 19th century photographs show the Well was surrounded by a small frame enclosure attached to the north shed, which then served as a summer kitchen for the Bartram House. The Well was apparently left intact by the 1926 restoration of the house, but the frame enclosure was removed sometime before the 1950's. In 1955-1956 the summer kitchen was gutted for modern restrooms, and the original schist stone paving to the north of the Bartram House was removed and replaced with brick. The Well was partially hidden beneath the new brick pavement

*The Bartram house* Well, *centered north of the summer kitchen wing at the north end of the house. Approximately 13' of the shaft was cleared in 1982-1984. Looking south.*

and slightly overlapped by the north wall of the reconstructed shed wing.

Weekends from fall 1982 through summer 1984 a small crew of volunteer excavators examined the site of the Well. The Well is brick-lined cylinder 3' in diameter with a dry laid brick lining—except for the six upper courses, which were laid in cement mortar, probably in the later 19th century. The original Well head may have been 2' or more below the present surface grade. At this level, two large stone slabs were set into the Well lining, a single long piece of schist along the entire west edge, and a square schist slab at the southeast, presumably to act as a step or shelf. The dry laid brick lining below was in poor condition, having subsided with large visible cracks. Excavation continued to a depth of 13' below surface in the Well, but work was ended because of safety risks. Slumping of the sandy soil around the Well had loosened the brick lining, making further work impossible without expensive shoring. To the depth reached, the Well was filled with building rubble from the rebuilding of the summer kitchen shed, ca. 1956. Little besides plaster, lath, stone and mortar rubble, cinder blocks, tar paper, etc. was recovered, although occasional ceramic or glass sherds of mixed date were found thin this debris, along with several jasper flakes of prehistoric origin. The Well could still hold important historic artifacts at a greater depth. The site is protected and awaits further investigation.

### 1985 Pond

Development of a landscape master plan for the garden in 1983-1984 led to interest in restoring the historic Pond in the lower garden (Favretti 1984). Restoring and replanting the Bartram Pond became a *desideratum* of the John Bartram Association soon after their founding in 1891. A depression near the center of the lower garden had long been thought to represent the site of the Pond.

In the summer of 1985, David Orr and Douglas Campana from the Mid-Atlantic Regional Office of the National Park Service undertook a soil resistivity study at the site of the Pond. Six traverses were made with twelve electrodes spaced three feet apart across the presumed location of the Pond. These probes measured electrical resistance in surrounding soil to a depth of roughly 3 feet. A large area of very low resistance was encountered and interpreted as waterlogged soil. The

"*Room #4* and the cold cellar may have provided space for the sale and storage of cold beverages and ice cream late in the history of the Bartram Garden."

area, describing a rough circle on the order of 18' in diameter, clearly suggested the saturated clay base to the Pond. The report concluded "it would probably be feasible to fully re-excavate the Pond and thereby restore it to its original function." (Orr 1985).

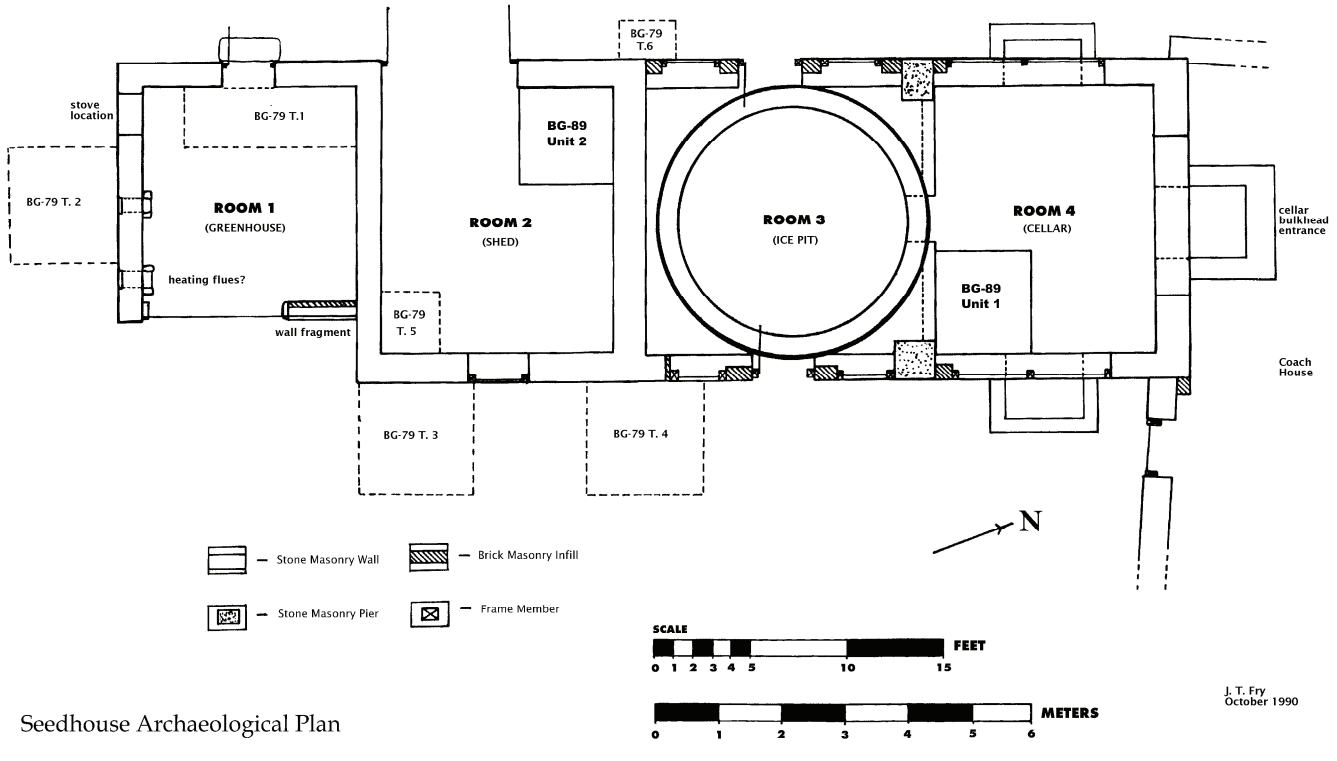
### 1989–1990 Seed House

In 1989–1990 two additional excavation units were opened in the Seed House complex prior to restoration and rehabilitation of the outbuildings at the garden. Excavation units were placed in the cellar of *Room #4* and in *Room* #2, areas not previously examined by archaeological excavation. These additional investigations led to a re-interpretation of the history, function, and evolution of the complex (Fry 1991).

Excavation in the cellar below *Room #4* indicated much recent surface disturbance. A deep layer of organic soil and trash covered the surface, resulting from the decomposition of an earlier framed floor. Beneath, a compacted clay surface had probably formed the original 19th century floor to the cellar room. Room #4 and its cellar, were likely the most recent addition to the Seed House complex, constructed ca. 1830-1850. Evidence was found of a ramp leading down to the stone-lined ice pit in *Room #3*. This ramp probably provided access for the construction of the ice pit. The few artifacts recovered at this depth did not provide a conclusive date for the construction of the ice pit.

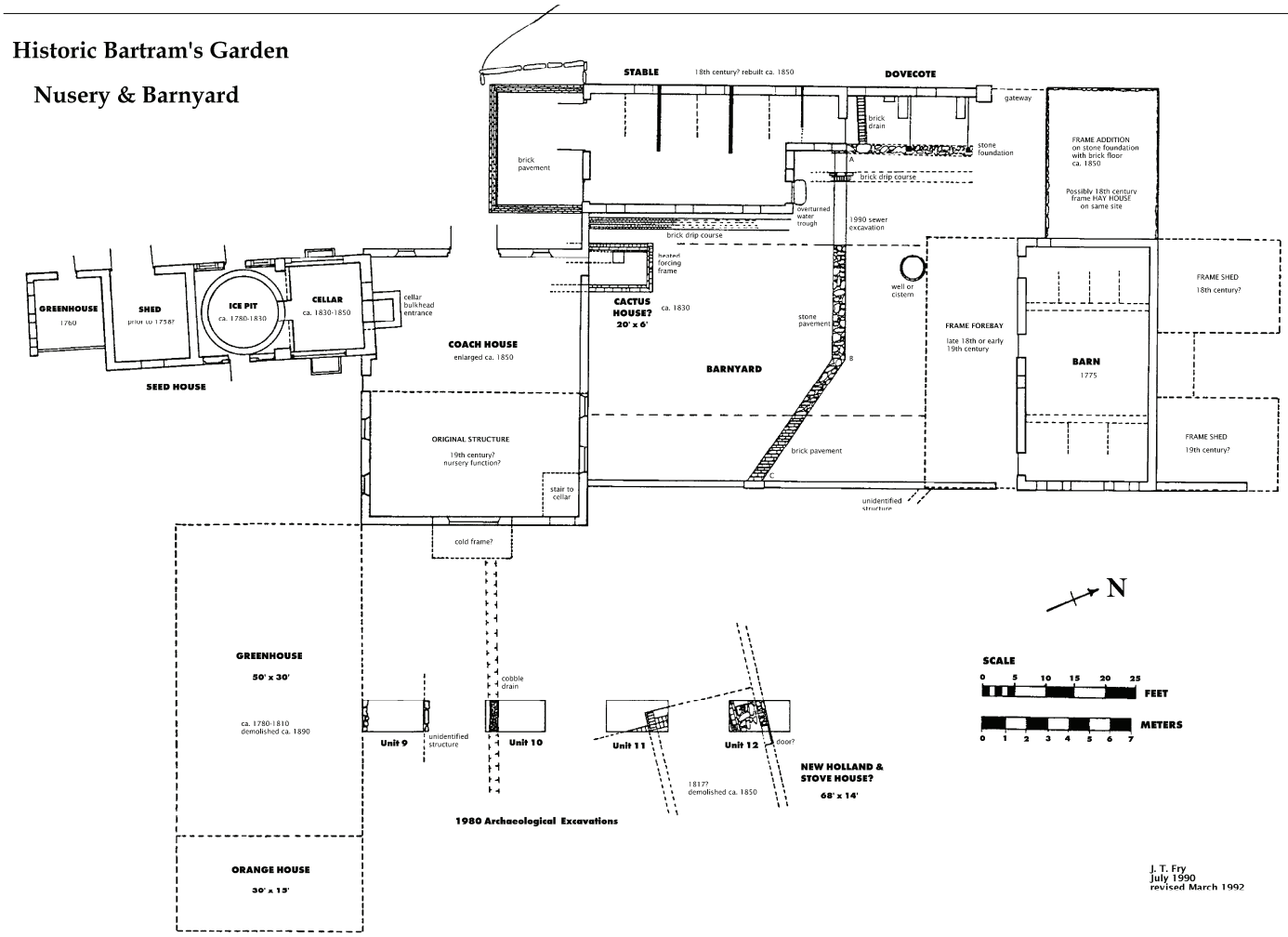
Excavation in *Room* #2, possibly the oldest portion of the complex, revealed a sequence of earthen floors and subfloors. A vast quantity of flat glass was recovered from this unit, particularly against the north wall of the room. Possibly a mixture of surplus panes from the nursery glasshouses was stored or discarded here. Several panes of a curiously heavy dark-green flat glass could be reconstructed. This glass differed from the bulk of the collection and may be significantly earlier in date. It may be 18th century window glass made locally, possibly from the Wistarburg Works in southern New Jersey, and could date from John Bartram's original greenhouse, ca. 1760 (Fry 1991: 54–65).

A portion of *Room* #2, of what is now know as the Seed House, was constructed prior to 1759, probably as a small storage shed or carriage shed. In 1760 John Bartram enlarged the complex with the addition of *Room #1* the first greenhouse at the garden. *Room #1* may have connected to an enlarged *Room* #2 at this date. Sometime after 1760 and before 1830 a 16' deep ice pit was constructed to the north of *Room* #2. Two large stone piers to the north initially supported the roof above the pit and *Room* #2 may have been enlarged to the east at this time to support the roof as well. Between 1830 and 1850 a new cold cellar was dug to the north of the ice pit. *Room #4* above was constructed with wide, chest high openings on the east, west, and north sides. *Room #4* and the cold cellar may have provided space for the sale and storage of cold beverages and ice cream late in the history of Bartram's Garden, or could have been a sale space for plants and horticultural materials. After 1850, *Room #3 and Room #4* were completely enclosed and window sashes installed. The space then served as offices for the Eastwick estate. The east roof of the old greenhouse, *Room #1*, may have been raised at this time




Seedhouse Archaeological Plan

"Trenching in the barnyard fill exposed the historic barnyard surface, well preserved beneath several feet of later fill."




as the entire complex was unified under a single roof.

### Prehistoric Artifacts

Excavation within *Room* #2 of the Seed House revealed a prehistoric site partially intact beneath the historic structure. The shallow foundation excavation for this room and subsequent build-up of floor layers worked to preserve the prehistoric remains. Subsoil layers below the interior clay floor of the room contained flakes of quartz, quartzite, jasper, chert, and much fire-cracked quartzite cobble.

The excavation unit produced a white quartz broad point with a base-notched stem—possibly a re-sharpened point, and a jasper point tip fragment. A single human tooth, a spatulate lower incisor, was also found in association with prehistoric lithics. This suggests prehistoric human remains may be preserved at the site, but later historic artifacts were also mixed in the strata and could account for the tooth as well.

### 1990 Barnyard

In 1990, construction work in the Barnyard, in and around the Seed House, and adjacent to the north wing of the Bartram House revealed a number of interesting archaeological features. This work was part of a major construction project comprising restoration and renovation of the outbuildings, and paving of the barnyard at Bartram's Garden. Construction was monitored for archaeological data following completion of a Phase I archaeological assessment of the paving project at the request of the Pennsylvania Historical and Museum Commission (Fry 1990). Monitoring concentrated on large intrusions caused by construction including grading in the barnyard and adjacent to the Barn and a number of utility trenches cut to provide utility service to the Seed House, Stable and Bartram House. The results of this monitoring work were summarized as part of an historic structure report prepared for the Barn (Fry 1992).

Trenching in the barnyard fill exposed the historic barnyard surface, well preserved beneath several feet of later fill. Portions of the walled yard were paved with cobbles and schist slabs, and a smaller area to the east was paved with brick. A circular brick lined well or cistern was uncovered approximately 17' south of the southwest corner of the Barn. The stone foundation and brick paving that formed the base of the large frame

"The discovery of a Woodland site compliments earlier Archaic finds at several locations on the grounds at Historic Bartram's Garden."

addition on the west side of the Barn, ca. 1850, was also exposed. A small brick structure, possibly a nursery or greenhouse building was exposed at the southwest corner of the barnyard, extending beneath the northwest corner of the Coach House. In most cases these historic features were preserved intact, and survive buried below the clean fill that forms the base for the current brick paving in the barnyard (Fry 1992: 63–68).

### 1996 South Meadow and Wetland

In 1996 an archaeological survey was part of the planning process for the wetland restoration project in the southern meadow ground at Bartram's Garden. This Phase I survey investigated the potential for archaeological resources in a one acre section at the north end of the proposed 2 to 3 acre wetland restoration site adjacent to the Schuylkill River. An initial soil survey had found 20th century fill above probable lake or pond sediments to south, but suggested prehistoric evidence could be preserved along the north edge of the proposed restoration site.

*Shovel test survey of the proposed wetland site in 1996.*

Property records for this tract begin in 1697, when the land was part of a plantation deeded to Andrew Souplis, a French Huguenot. John Bartram purchased the 50 acre property from the heirs of Souplis in 1739, and added most of it to his farm and garden. The land remained in the Bartram family until 1850.Historic documents indicate the proposed wetland site was originally an area of tidal flats along the river bank, later drained for meadow land. This meadow ground was periodically flooded in the 18th and 19th centuries, and probably became a large standing pond after 1850. The ground was incorporated into the city owned Bartram Park in 1897, and was filled and graded for park use by 1918.

A survey of historic documentation suggested no significant historic resources were located within the Phase I survey area, but stone foundations from an earlier river embankment, as well as several as yet unidentified and undated stone and wood features are located on the Schuylkill shore, beyond the present river wall. These features may be the remains of 18th century hydraulic engineering, river navigation, or fisheries at the Bartram site. These features await future investigation.

The excavation survey consisted of 20 shovel tests and a meter square excavation unit. These excavations revealed recent, large-scale surface disturbance over the entire survey area. Brick rubble scattered in soil strata at the northern end of the survey area suggests a nearby historic structure. A mid-19th century engine house and greenhouse associated with the Eastwick mansion was located to the north, just beyond the survey zone. Beneath this recent graded fill, areas of historic plowzone soil remained intact toward the northern end of the survey tract. Scattered historic artifacts of widely varying date were mixed in the cultivation level, but at insignificant concentrations. Prehistoric artifacts, lithic debitage, and small quantities of prehistoric ceramic were consistently recovered from the historic cultivation stratum. The meter square produced the largest collection of prehistoric lithics recovered to date at the garden, including a small triangular jasper point.

The collection of prehistoric artifacts, tools, and lithic debitage suggests a portion of a Woodland period site, possibly a Late Woodland site is located at the northern end of the survey area. The prehistoric component is not intact, but has been disturbed by historic cultivation. The discovery of a Woodland site compliments earlier Archaic finds at several locations on the grounds. As one of only a handful of identified prehistoric locations in Philadelphia County, this archaeological site is a significant resource that should be protected. Bartram's Garden is likely the only location remaining on the Lower Schuylkill with any prospect for prehistoric archaeology. At the conclusion of archaeological testing at the proposed wetland site, approximately 20 acres of Bartram's Garden was recorded on the Pennsylvania Archaeological Site Survey of the Pennsylvania Historical and Museum Commission, and given state recognition as site **36 PH 14.**

### Pond

In July 1996 attention returned to the site of the Pond in the lower garden at Bartram's Garden. Using the data obtained from the 1985 resistivity survey, a plan for archaeological testing was developed. Stakes were placed to mark the area of lowest resistance. This was found to conform to a visible depression just south of the large Red Maple in the center of the lower garden. An archaeological grid was established across the Pond site. For this first year, a small test excavation was planned, and only two 5' x 5' excavation units were laid out. Excavation was ably assisted by Dave Ley, summer intern for Historic Collections at Bartram's Garden, and by high school students (from nearby John Bartram High School) who were part of a Philadelphia Urban Resources Partnership (PURP) program. The first test, Unit 1, was placed near the center of the depression in the area with the lowest measured soil resistance. The second unit was placed 5 feet to the south where it was hoped it would intersect the south bank of the Pond.

Unit 1, near the center of the suspected Pond, proved to have a very simple stratigraphy. Beneath a recent surface build-up of organic soil, a single deep

"Excavation into this compacted clay revealed traces of an arc of small stakes, which had been set along the edge of the bank about a foot apart."

layer of fill covered what had once been the bottom of the Pond. This fill layer contained many large iron artifacts, including iron hoops and what appeared to be circular lids—probably the remains of large storage barrels, as well as many fragments from 20th century glass vessels. Beneath this fill a relatively thin waterlogged layer of black soil with a peat-like consistency was found on top of a compacted gray-brown clay, identified as the Pond bottom. Fragments of bark, twigs, and leaves could be recognized, preserved in the spongy organic soil which built-up while the Pond was open. A large number of bricks, particularly yellow bricks were scattered across the top of this water-deposited soil—apparently thrown into the Pond around the time it was filled. (In renovating the edging and gutters to paths at Bartram's Garden, the City used yellow brick in the early 20th century. This brick-edged paving was in turn replaced by the current asphalt with stone edgings in 1933–1936.) Artifacts recovered from the bottom deposits implied that the historic Pond site had been thoroughly cleaned, repaired, and rebuilt in the early 20th century, leaving little but traces of the outline of the original Pond. Nevertheless, samples of the peaty soil were saved for future analysis.

Excavation in Unit 2 proved much more complex, but again confirmed remains of the historic Pond. Under a thin build-up of surface organic soil, a variety of fill soils and features were exposed. Among the surprising mixture of soil type and color, a compacted clay surface, sloping downward toward Unit 1 to the north, indicated the bank of the Pond. As excavation progressed it became clear that the bank had been repaired or rebuilt on several occasions. At the highest level, a thin surface of gray-brown clay had been laid over a number of fills, including some very loose deposits of coal ash. This again suggested an otherwise undocumented attempt to restore the banks of the Pond in the early 20th century. The porous fills and thin clay lining used in this reconstruction also suggest the restoration must have soon failed. A section of terracotta drainpipe extended in to Unit 2 at the northwest corner. This may have served as a source of water for the restoration.

The interior of the Pond was filled with a greater variety of soils than encountered in Unit 1, but artifacts again suggested a 20th century date for the filling. Several of the fill layers contained massive amounts of shattered glass and some entire glass vessels. Many of the vessels could often be identified as milk bottles, condiment bottles, mason jars, and other household items, generally dating to the 1930's. At the very bottom of the Pond a thin buildup of peaty organic soil was again encountered. A bronze token, 1" in diameter was found in this bottom soil. Labeled **"Gold Beater, Canal Street, New York,"** the token was apparently advertising for a jeweler or dentist.

Probing into the south bank of the Pond, a core layer of much denser clay was uncovered. This white to pale brown clay had been mixed and densely packed forming a unique "calico" colored surface. This clay was clean, natural clay subsoil that was probably originally excavated from nearby at the garden site. Archaeological investigation of this compacted clay revealed traces of an arc of small stakes, which had been set along the edge of the bank about a foot apart. These stakes may have been set to mark the outline of the Pond during construction, or to support the bank, or they could have formed a short fence around the Pond. The stake holes indicated the stakes were irregular, with sharp angular sides, suggesting they had been split with an axe. This suggests an early construction date. The few artifacts recovered from this original bank were also consistent with an 18th century date.

The summer of 1996 was a season of extreme rain, and by mid-August, Unit 1 flooded and further excavation proved impossible. Unit 2 flooded occasionally through the summer, but drained enough to complete work by early fall. Excavation work in 1996 had confirmed the location of the Pond in the historic garden, and found a trace of the original 18th century bank. The initial archaeological work suggested the Pond had been cleaned and restored in the early 20th century only to be refilled in the 1930's.

### Demonstration Bed

In October 1996, a single 5' x 5' test excavation was placed at the southwest corner of the "Demonstration Bed" in the lower garden, just prior to cultivation for replanting. The large central bed of 8000 square feet located just west of the Pond had been chosen to test a more historically accurate mix of woody and herbaceous plants. The impending cultivation with a small backhoe threatened to destroy any archaeological remains in this portion of the historic garden. In spite of more than a decade of previous archaeological work, little was known of archaeological preservation in the lower garden. The tests at the Pond and a single unit by the terrace wall in 1980 were the only excavations to date.

Excavation at the southwest corner of the "Demonstration Bed" exposed shallow evidence of recent planting, and a densely compacted, oily surface soil, probably the result of frequent mowing with heavy machinery. With depth, a rich cultivated soil was exposed, with root stains and traces from a large tree just to the north of the test unit. This uniformly mixed soil is the remains of the beds of the historic garden. No indication of bed divisions, size or shape was exposed in the relatively small area of this excavation. Few historic artifacts were recovered from this location, but prehistoric stone flakes and fire-cracked rock became common near the bottom of the historic layers. Surprisingly, natural subsoil in this part of the lower garden was found to verge on pure sand with depth.

Evidence observed while monitoring the backhoe cultivation of this bed suggests the remains of an earlier path was preserved along the north edge of the bed. The current path veers north from the grid of the garden to intersect the site of John Bartram's large cypress. The original pathway may have paralleled the existing long walks to the river, and so run angled somewhat south of the current asphalt pavement.

"A hard round seed from one of these earlier deposits may be from the American lotus (*Nelumbo lutea*), known to have been grown in the Bartram pond."

### 1997 Pond

Excavation at the Pond site resumed in July 1997. Using the two 5' x 5' units opened in 1996 as a beginning, new excavation units were laid out on the same grid to expose a complete east-west cross-section of the clay lining and fill. Plans for restoration of the Pond were underway and it was hoped the existing clay lining could be re-used in the reconstruction. Excavations in 1997 concentrated on exposing the outlines of the bank and the gray-brown clay lining dating from the early 20th century. Excavation proceeded only to the clay lining, leaving it intact. The deepest excavations encountered water and several units partially flooded during the summer. Towards the end of the years work, when it had been decided to use a modern man-made liner for the current reconstruction, a small test cut through the 20th century clay lining to investigate the archaeological deposits below.

Excavation in 1997 was again assisted by 10 high school interns who were part of the PURP program. Five new 5' x 5' excavation units were opened within the Pond. An additional unit tested the garden soil to the west, between the Pond and the adjacent garden path. Here a simple stratigraphy exposed evidence for deep historic cultivation

*The* Pond *at the end of excavation in 1997, looking west. The clay lining is exposed by alternate 5' x 5' excacvation units.*

above very sandy well-drained subsoil, similar to the soils encountered in the test of the demonstration plot in 1996. At the completion of excavation at the Pond site, a long trench was laid out to the northeast to look for evidence of the underground connection from the Pond to the Spring House indicated on the 1758 "*Draught…*" of the garden.

Excavation in 1997 produced evidence for a similar, simple sequence of fills within the Pond. Several distinctly different soils were used to make up the fill, but all contained artifacts of similar date, suggesting the Pond was filled at one instance, probably in the mid-1930's. A thin black peaty layer was again found at the base of these fill soils, apparently deposited under water on the compacted gray-brown clay lining of the 20th century reconstruction of the Pond. This water-logged organic soil preserved fragments of twigs and leaves, and a several of seeds were recovered including pawpaw (*Asimina triloba*), hickory (*Carya* spp), and a hard, olive-like seed (*Osmanthus* or *Chionanthus*?) Although samples of these preserved organics were saved, archaeological evidence suggests that the material accumulated in the early 20th century. If the Pond had not been thoroughly cleaned in the early decades of the 20th century more significant organic materials might have remained from the historic garden.

By the end of a second summer's excavation, the curve and contour of the filled Pond were clearly defined. This was of course the 20th century recreation, not the original historic Bartram Pond. Excavation units were placed around the Pond except for the northwest side where the heavy roots of the large Red Maple made excavation impossible. The Pond was circular, and a little less than 25 feet in diameter. The banks were best preserved along the west and south and suggested a depth of 3 feet at most at the center. The banks sloped rapidly down to the maximum depth forming a smooth bowl-like depression. Along the east side the bank had been cut down a foot or more, possibly by mechanical grading. (One of the layers of fill within the Pond was a white to light brown clay that resembled the original bank material. The bank may have been cut down and thrown in the depression when the Pond was filled.) On the whole the shape and sharp contour of the 20th century Pond were extremely artificial, and unsuited for planting.*

Excavations in 1996 and 1997 did reveal some evidence for the 18th century Bartram Pond. Part of the original bank was well preserved beneath the southwestern side of the 20th century lining. Excavation at the northeastern edge of the Pond also uncovered traces of the original clay bank, but here the rebuilding of the Pond early in this century and modern grading and planting had worked to destroy all but incomplete traces of the original bank. Late in the excavation season the 20th century clay lining was removed from one of the units in the center of the Pond and strata below excavated. Pockets of organic material were recovered at the base of the gray-brown clay that formed the 20th century lining of the Pond. A hard round seed from one of these earlier deposits may be from the American lotus (*Nelumbo lutea*), known to have been grown in the Bartram Pond. A shallow trench was also uncovered running north–south roughly across the middle of the Pond. This could have been served as a drain for the 18th century Pond, or may have been part of the means of directing the water underground to the Bartram Spring House. Beneath the Pond lining, natural subsoil was exposed—a striated sandy clay which varied from pure sand to very dense clay. This natural soil would not have reliably pooled water without an artificial waterproof lining.

Following work at the Pond site, a 10' x 2.5' trench was laid out across the centerline of the Pond, 35 feet north of the north bank. It was hoped this test would intersect the underground connection between the Pond to the Spring House shown on the 1758 *"Draught…."* While no evidence for an underground pipe or conduit

* Recently, an early 20th c. photographic image of the recreated pond has been discovered by greatly enlarging a 1917 view of the lower garden. It shows a circular depression, only partially filled if at all, surrounded by bare lawn. A wooden signboard stands adjacent.

"The ground was artificially leveled with a great deal of fill above a narrow stream channel or gully which had drained the natural terrace of the garden site…"

was discovered, the soil stratigraphy proved to be some of the most complex yet encountered at the garden. An extremely deep complex of soil layers preserved evidence of activity at this location from prehistoric times to the 20th century. Modern planting holes cut through a clay pavement or path, possibly from the Eastwick era at the garden. Beneath, a deep, well-cultivated garden bed with 18th and early 19th century artifacts gave evidence of the Bartram garden. Soil evidence suggested this bed had been wholly created during the historic period. The ground was artificially leveled with a great deal of fill above a narrow stream channel or gully which had drained the natural terrace of the garden site to the Schuylkill to the east. Jasper and quartzite flakes and fire-cracked rock were found mixed in the soil which filled the stream channel, and possibly from portions of the original surface soil preserved to either side of the stream. Moist conditions in the streambed preserved organic material again, including twigs and leaf fragments. These organic remains have not yet been analyzed, but some appeared to be fragments of domesticated fruit trees. This demonstrates the unpredictable nature of archaeological research. A careful search for evidence from one era may produce entirely unexpected evidence from another time of equal or greater value.

## Conclusion

Our archaeological understanding of the Bartram garden is only at a beginning stage, and there are still many unanswered questions. Most archaeological work to date has concentrated on structures. Because so little of the area of the garden has been explored by archaeological excavation most of the site remains sensitive to disturbance. Modern planting and cultivation can easily impact historic building foundations. It is even easier to destroy the insubstantial soil stains, root, and plant traces, which may preserve the best evidence of the historic garden. It is the policy of the John Bartram Association to protect the archaeological elements of the site, and to research, test and record archaeological remains prior to impact by construction or alteration of the garden

There are many promising locations for further archaeological investigation at Bartram's Garden. Locations of wet soil in the lower garden could prove a fruitful source of information on plant location. Evidence of prehistoric man has been found across the entire garden site, wherever archaeological testing has taken place. This has the potential to add significant information to our knowledge of Native Americans in the Delaware Valley, and could be a significant new component to interpretation at the garden. Determining the location of the fences that bounded the garden on the north and south will define the historic garden. Several tests were placed to look for the north fence line in the summer of 1997 without success, but this work will continue in the near future. There may have been as many as three Summerhouses in the garden; the general location of the Spring House is known; and the Cider Mill, the numerous Greenhouses, two or more Wells, and the Bartram House and surviving Outbuildings all remain as precious archaeological resources. Archaeology can expose and aid in interpretation ofthese resources, but even archaeological research is destructive by its very nature. It is important to safeguard these archaeological components, remainders of the Bartram legacy, for future generations at the site.

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**Bartram Broadside** is edited by Joel T. Fry, Curator of Historical Collections, Historic Bartram's Garden. Ideas and contributions on the Bartram connections to history, exploration, horticulture,



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