

2005

The Castello Plan-Evidence of Horticulture in New Netherland or Cartographer's Whimsy?

Richard Schaefer

Meta Fayden Janowitz

Follow this and additional works at: <http://orb.binghamton.edu/neha>



Part of the [Archaeological Anthropology Commons](#)

Recommended Citation

Schaefer, Richard and Janowitz, Meta Fayden (2005) "The Castello Plan-Evidence of Horticulture in New Netherland or Cartographer's Whimsy?," *Northeast Historical Archaeology*: Vol. 34 34, Article 3.
<https://doi.org/10.22191/neha/vol34/iss1/3> Available at: <http://orb.binghamton.edu/neha/vol34/iss1/3>

This Article is brought to you for free and open access by The Open Repository @ Binghamton (The ORB). It has been accepted for inclusion in Northeast Historical Archaeology by an authorized editor of The Open Repository @ Binghamton (The ORB). For more information, please contact ORB@binghamton.edu.

The Castello Plan—Evidence of Horticulture in New Netherland or Cartographer's Whimsy?

Richard Schaefer and Meta Fayden Janowitz

Few descriptions or depictions of horticulture in New Netherland have come down to us, although 17th-century observers' accounts of gardens and orchards present lengthy lists of fruits, vegetables, and flowers transplanted from Europe, as well as those discovered in North America. Perhaps the most evocative source is the mid-century Castello Plan, a view of the settlement of New Amsterdam, which shows elaborate parterres on most of the unoccupied lots. Are the gardens of the Castello Plan fact, or simply cartographer's whimsy? Based on data from both the Netherlands and New Netherland—including artists' depictions, travelers' accounts, and gardening texts—that illustrate the cultural attitudes, cultural materials, and environment the colonists would have known in Europe, the images of gardens depicted on this early view of Manhattan are evaluated.

Peu de descriptions de l'horticulture à New Netherland nous ont été transmises bien que des témoignages sur les jardins et les vergers relatés par des observateurs du XVIIe siècle offrent de longues listes de fruits, de légumes et de fleurs repiqués provenant de l'Europe ainsi que ceux découverts en Amérique du Nord. La source la plus évocatrice pourrait être le plan Castello datant de la moitié du XVIIe siècle qui se veut une vue d'un peuplement de New Amsterdam montrant des parterres élaborés sur la plupart des lots inoccupés. Les jardins du plan Castello sont-ils basés sur des faits ou sont-ils le produit fantaisiste d'un cartographe? Les images des jardins dépeintes sur des vues anciennes de Manhattan sont évaluées à partir de données provenant de descriptions d'artistes, de témoignages de voyageurs et de textes horticoles illustrant les attitudes culturelles, la culture matérielle ainsi que l'environnement que les pionniers auraient connus en Europe.

Er zijn maar weinig beschrijvingen en afbeeldingen van tuinbouw in Nieuw Nederland, hoewel de verhandelingen van 17e-eeuwse schrijvers over tuinen en boomgaarden lange lijsten bevatten van fruit, groenten en bloemen die werden overgebracht vanuit Europa, zowel als soorten die werden ontdekt in Noord Amerika. Wellicht de meest inspirerende bron is het midden 17e-eeuwse Castello Plan – een gezicht op de nederzetting van Nieuw Amsterdam dat uitgebreide parterres laat zien op de meeste lege percelen. Zijn de tuinen in het Castello Plan echt, of gewoonweg een gril van de cartograaf? De afbeeldingen van tuinen in deze vroege weergave van Manhattan worden geëvalueerd aan de hand van informatie uit zowel Nederland als Nieuw Nederland – waaronder afbeeldingen door kunstenaars, beschrijvingen door reizigers, en teksten over tuinieren – die illustreren welke culturele houdingen, materiële voorwerpen, en omgeving de kolonisten in hun thuisland kenden.

To 17th-century Dutch Calvinists, as well as most other Christians of the period, the garden was nature perfected: it was morally instructive and improving because it was what God had intended when he created the Garden of Eden. Even in landscape painting, wild nature was considered barren wilderness. Clipping, trimming, and ordering nature made the Creator's subtext more readable (Kuyper 1980: 153–154). This view was explicit in gardening manuals, such as *De Nederlandtsen Hovenier* ("The Dutch Gardener") written by Jan van der Groen, gardener to the Prince of Orange, first published in 1669 (FIG. 1). In his

"praise of the country life," Van der Groen quotes verses of Jacob Cats describing the moral benefits of the Garden of Eden for Adam—built so that man might "behold the Creator, to see his great wisdom, and incomprehensible might, and what he had brought into being for Mankind" (Van der Groen 1669). Although "abundant nature" is "guided by the eternal God," it often appears awkward or clumsy, but "through art it can be dressed up, made fine, in good order, elegant and pleasurable" (Van der Groen 1683: B1–B2).

The anxious Calvinist, seeking signs of inner grace, could see in his precisely shaped

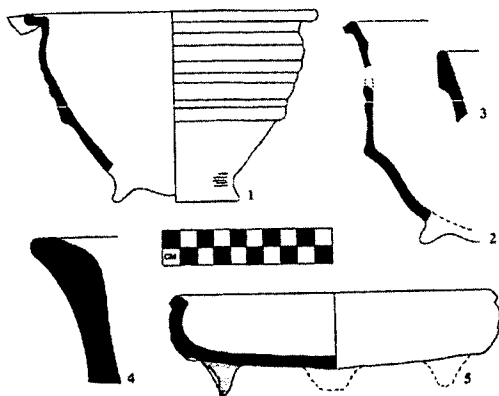


Figure 8. *Bloempotten* (flowerpots) of the 17th century, all of red earthenware. 1) Amsterdam, Taanstraat BP1 A-2, unglazed, holes in base, stump of vertical ear handle present at rim, rim diameter 17 cm; 2) Amsterdam, Taanstraat BP1 A-2, unglazed, five holes in base, footring diameter 9.9 cm, rim diameter 15 cm; 3) Amsterdam, Taanstraat BP2 A-4, unglazed, rim diameter 13 cm; 4) Bergen op Zoom, product of the "Croonenburgh" pottery, lead-glazed, no base, divided into four quarter sections, each with a horizontal ear handle with trefoil attachments, rim diameter ca. 45 cm, height 33 cm; 5) Flowerpot saucer or bulb pot, Amsterdam, second quarter of the 17th century, Oudezijds Achterburgwal A-30, unglazed, three lobe feet, rim diameter 18.7 cm. Drawings by Richard Schaefer.

months when vegetables became scarce and expensive. Herb seeds recovered in 17th-century contexts in Deventer include dill, parsley, coriander, caraway, and fennel (Buurman 1989: 69), all of which could have been grown in pots indoors. Four 17th-century planters recovered from excavations on the Taanstraat in Amsterdam were of unglazed red earthenware, like modern flowerpots. Unglazed flowerpots allow the soil to dry out more quickly than a glazed vessel, an advantage in the damp climate of northern Europe, where plants are likely to rot. All had at least one drainage hole punched in the bottom. The pots were fairly small; the two complete enough to be measured had diameters of 15 cm and 17 cm (Schaefer 1998: 85–86).

The pots were for utilitarian rather than simply decorative purposes. The bulbs of various members of the *Allium* genus, which includes onions and chives, and whose foliage was used for flavoring, were popularly grown. Several red earthenware vessels such as the

parsley pot and the onion pot and pitcher had extra holes punched below the rim, affording an extra opening through which leaves could grow, similar to the modern strawberry pot (Schaefer 1998: 86).

Gardens of the Castello Plan

As noted above, even as the Dutch West India Company began to settle New Netherland and its capital, New Amsterdam, during the 1620s, Dutch garden design was in transition from De Vriesian mannerism to the classical aesthetic. The mid-17th-century Castello Plan of New Amsterdam rendered gardens with sufficient detail to permit some comparison with the gardens of the Old World (FIG. 9). Contemporary descriptions of New Netherland, especially Adriaen van der Donck's 1655 *Beschrijvinge van Nieuw Nederlant*, which describes flora present in the colony, provide additional data.

The Castello Plan is a copy of a now-lost survey of New Amsterdam. It is part of a collection of maps of Dutch colonial possessions acquired by Cosimo de' Medici III, during or shortly after a trip to Holland about 1669. The maps, which appear to be the work of a single artist or atelier, were rediscovered at the Villa Castello near Florence. Historian Isaac Newton Phelps Stokes in his monumental work, *The Iconography of Manhattan Island*, provided enlarged renderings of the plan (FIGS. 10–13), which better reveal details of the town (Cohen and Augustyn 1997: 40; Stokes 1916: 208–348). The accuracy of the depiction of the buildings on the plan has never been called into doubt. The extensive documentary research undertaken by Stokes and his team of scholars has identified the occupants and functions of most of the structures, and this information is frequently cited in historical and genealogical works. The question for the present research is whether or not the gardens shown are true to life or idealizations.

In general, the garden components depicted on the Castello Plan are recognizable. Numerous orchards are present, carefully arranged in parallel rows, as 17th-century manuals suggested (Lauremberg 1631 FIGS. 27, 28; Van der Groen 1683: 103). According to Van der Donck, apples, pears, various kinds of



Figure 1. Frontispiece of the 1670 edition of *De Nederlantsen Hovenier* by Jan van der Groen (Van der Groen 1670).

hedges and carefully planted orchards, as garden historian John Dixon Hunt observes, "a product and symbol of the well-managed soul" (Hunt 1990: 187). The plants themselves were additionally instructive through the still widely held belief in *signatures*, the notion that every plant has a human use, and that God had provided some external indication of the use. For example, yellow herbs cured jaundice, and kidney beans strengthened the kidneys. Only by the mid- to late-17th century did many begin to reject this idea as unscientific, and the use of *simples*, the medicines made of common herbs and flowers, began to fall into disrepute (Thomas 1983: 82, 84). The belief in the efficacy of simples lasted out the century, however, as evidenced by the publication of *Den verstandigen hovenier* ("The Intelligent Gardener"), a companion volume to *Den Nederlantsen Hovenier*, written by "der Medecijnen Doctor" Peter Nylandt. Nylandt listed numerous herbs, plants, and trees, their properties and medicinal uses (Nylandt 1683). Neither had this practice gone out of fashion in New Netherland, as Adriaen van der Donck, in his 1655 *Beschrijvinge van Nieuw Nederlant* ("Description of New Netherland"),

listed 42 "healing herbs," in addition to native herbs and trees, "among which there undoubtedly are good *simplicia*." He also mentioned a "certain chirurgion who was also a botanist" who had a beautiful garden somewhere in New Netherland, "wherein a great variety of medicinal wild plants were collected, but the owner has removed and the garden lies neglected" (Van der Donck 1968 [1655]: 28). This lack of a knowledgeable herbalist in New Netherland was apparently corrected by 1660 when a communication from the Dutch West India Company to Director-General Peter Stuyvesant stated,

As we are told, that Rector Curtius practices medicine there and therefore asked to have a herbarium [a herbal] sent to him, we have been willing to provide him with one herewith, you will hand it to him with the understanding, that it shall not cease to be property of the Company (Stokes 1922: 205).

The useful herbs were part of another important component of Dutch garden design. In addition to their beauty and recreational uses, gardens also had to be practical and productive, providing fruits, vegetables, herbs, and other items for the use of the household. In his list of "country life" attributes, Van der Groen includes the term "profitable" along with healthful, pleasurable, and salutary (Van der Groen 1669; Van der Groen 1683: B1). The idea of profit went beyond mere fruits and vegetables. Although shady paths provided recreational walks, oak, maple, and ash trees were also planted for their valuable wood. A body of water in or around the garden was considered pleasant, but it could also serve as a fishpond (Kuyper 1980: 153, 154). Dutch gardens combined beauty and utility. This was evident when regent and other town families invested in land reclamation, resulting in the draining of the Beemster- (1608–1612), Purmer- (1622) and Schermerpolders (1631). The wealthy Trip family, for example, held 11 large estates by the end of the century. At least one of these, Vredenburg, built from 1639 to 1642 in the former Beemsterpolder, despite its orangerie, flower parterres, topiary summer houses, and collection of rare tub plants, had a design that emphasized investment, as well as classical and Calvinist design tenets: a soberly classical house, gardens of simple symmetry,

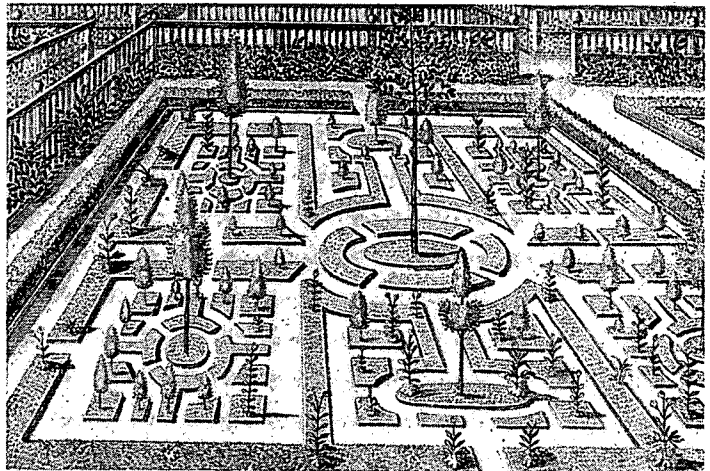
pure proportions, two oak plantations, orchards, kitchen garden, and a working farm (Hunt and De Jong 1988: 116).

In addition to Calvinist or Calvinist-inspired ideology, several environmental factors influenced Dutch garden design, and prevented or at least hindered the construction of the vast integrated baroque designs found in the great 17th-century French gardens. One major influence was topography; the flatness and dampness of the Dutch landscape made it necessary to excavate numerous drainage canals, which constricted any organizational scheme to the areas between the waterways. Strong westerly and northerly winds made it necessary to plant windbreaks to protect orchards and pleasure gardens. Van der Groen specifically recommended oaks, poplars, and elms, while paths with double rows of linden trees were considered a particular Dutch passion. The trees, along with hedges, divided the garden with green walls, creating a series of inward-looking, bordered rooms. This tendency was reinforced and strengthened by cultural attitudes, since the requisite productive components of the garden, such as orchards, meadows, grain fields, and woodlands, were not only physically separated by windbreaks, but were also functionally separate from the portions of the garden planted for pleasure. Furthermore, because of prevailing land use patterns, estates were often parceled together from small lots over a period of years, which meant grafting new plots on to an already existing garden (De Jong 1990: 20–24; Hunt 1990: 183; Van der Groen 1669, 1683).

The 17th century also saw the gradual displacement of the mannerist influence on the decorative arts by a more sober aesthetic, referred to as "classical." The Dutch had inherited the Flemish love of extravagant decoration and display, although they often preferred to limit this to household interiors and present a plainer façade to the public. This extravagance, epitomized by the wild architectural fantasies of Hans Vredeman de Vries (1527–ca. 1604), a Frisian-born

painter, decorator, and engineer, is illustrated in his *Variae architecturae formae* of 1560, which displays intricate strapwork, grotesque ornaments, and the bowdlerization of classical elements. It became a handbook for the Netherlandish mannerist decoration so popular in northern Europe during the second half of the 16th and throughout the 17th centuries (Jellicoe and Jellicoe 1986: 391; Schama 1987: 304–311). Besides architecture, furniture, and household furnishings, De Vries' influence extended into garden design. He produced one of the earliest garden pattern books, *Hortorum viridariumque elegantes et multiplices formae*, published in Antwerp in 1583. His most enduring contribution to garden design was his use of *parterres de pièces coupées*, arrangements of highly intricate beds planted with flowers (FIG. 2). These were often sparsely planted with single specimens, intended for the display of the exotic plants that had begun to pour into Europe in the 16th century as a result of expanding exploration and trade contacts. In general, despite the elaborate ornamentation of its parts, which included statuary, urns, fountains, grottoes, mazes, topiary, arbors, and arbor galleries, the De Vriesian garden was simple in its layout: true to its Netherlandish origins, it was composed of discrete square or rectangular "rooms" surrounded by hedges or trellises, organized around a central axis. De Vries' parterre designs were influential throughout northern

Figure 2. Garden design from *Hortorum viridariumque elegantes et multiplices formae* by Hans Vredeman de Vries, 1583.



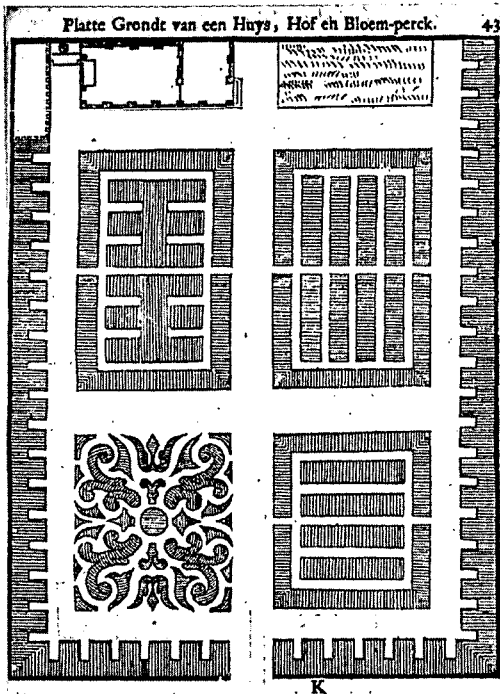


Figure 3. Plan of a house, garden, flower parterre (Van der Groen 1670).

Europe, and their influence can be seen in Salomon de Caus's 1620 publication, *Hortus palatinus*.... illustrating his designs for the Elector Palatine's gardens in Heidelberg (De Caus 1980 [1620]), and in Crispin van de Passe's illustrations of gardens in the books of his 1614 *Hortus floridus* (Crisp 1924: FIGS. 140, 141; Jellicoe and Jellicoe 1986: 141; Van de Passe 1928 [1614]: title page).

Perhaps no publication reveals the durability of De Vriesian garden design as does Van der Groen's *Den Nederlandtsen Hovenier*, which was simultaneously published in Dutch, French, and German in 1669, and was regularly reprinted through 1721 (FIGS. 3 and 4). Although in 1669 Van der Groen had included some up-to-date designs for trellises, galleries, portals, and obelisks based on the work of Dutch classical architect Pieter Post, and as gardener to the Prince of Orange was in a position to assimilate and disseminate the new grammar of Dutch classical garden design, his "Two Hundred Garden-Models" were derivative of earlier published designs, including those of De Vries (1980 [1583]) and literally copying an albeit simple orchard layout from

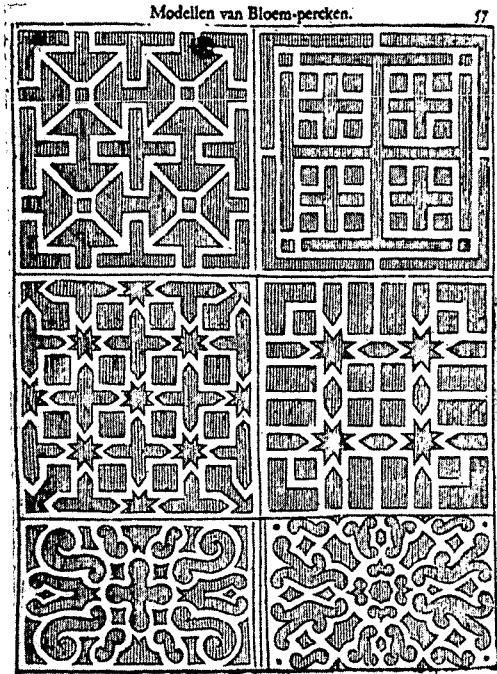


Figure 4. Models of flower parterres based on De Vriesian designs (Van der Groen 1670).

Lauremberg's *Horticultura* of 1631 (Lauremberg 1631: 157, FIGS. 27, 28; Van der Groen 1669). Even at the time the first edition of the *Hovenier* was published, the parterre designs were completely out of style, and the subsequent editions, published for the next 52 years, gave all of Europe a false impression of Dutch gardening (Jellicoe and Jellicoe 1986: 141, 391).

In fact, Dutch garden design was not static, and even as colonists were settling New Netherland during the 1620s, the Dutch classical garden was taking shape. Although displaying many typically Dutch traits in common with the De Vriesian garden, particularly the division of the garden into discrete rooms by windbreaks and hedges as well as the marriage of utility and beauty, the classical garden departed from earlier Dutch models in its employment of classical ideas of symmetry, harmony, and proportion as derived from the writings of Vitruvius and Renaissance interpretations of classical style via Alberti and Palladio. During the Eighty Years War, these principles were disseminated through the development of military science and engi-

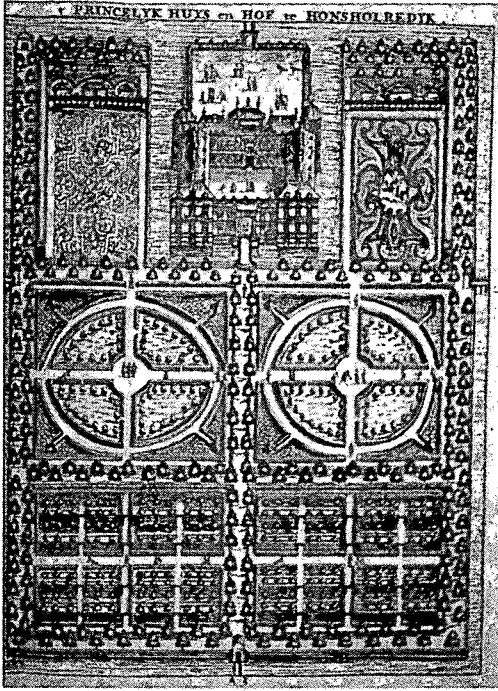


Figure 5. The Princely House and Garden at Honselaarsdyk, laid out in 1621 employing Renaissance concepts of proportion and symmetry (Van der Groen 1670).

neering under the patronage of Prince Maurice (1567–1625) and his tutor, Flemish mathematician and engineer Simon Stevin (Hopper 1982: 25–26). At the engineering school in Leiden, founded by Maurice and with a curriculum supervised by Stevin, classical rules of mathematical proportions and geometry of space were applied to forts, army camps, and city planning. Stevin, in his theoretical designs for the ideal city, considered rectangular plans to be best suited to the flat Dutch landscape, as were the symmetrical and orthogonal distribution of buildings and squares (Hopper 1982: 25–26).

The transference of these ideas from fortifications to the garden is not so peculiar, since garden design was not a separate profession but was considered surveyors' work (De Jong 1990: 22, 23). One of the first expressions of classical concepts in a Dutch garden was in the restricted area of the stadtholder's quarters (*Buitenhof*) in The Hague, as Maurice had them laid out ca. 1620. The garden was a rectangle made up of two equal squares, a 2:1 propor-

tion considered harmonious. Within each square was inscribed a circle formed by the parterres; quartered by paths, and surrounded and reinforced by a *berceau*, a covered gallery formed from trained hedges. The circle and square were considered the two most perfect geometric figures. The symmetry also represented the bilateral symmetry of animals, a symbol of the harmony of nature and a reflection of the Creator. In a similar vein, Constantijn Huygens compared the layout of his country estate, Hofwijk (1640), to the human body, with the house as the head, a horizontal path its waist, and so on (Hopper 1982: 28; Kuyper 1980: 153, 154).

Other gardens, such as those laid out by 1621 at Honselaarsdyk by Maurice's brother, Frederick Henry (FIG. 5), also employed Renaissance concepts of proportion and symmetry: the circle in the square; strict symmetry in form and function on each side of a central path/axis; and the house at the head. Honselaarsdyk also displayed a Calvinist garden sensibility by combining the beautiful with productive orchards and woods (Hopper 1982: 26, 33–37).

The flat countryside and the featureless reclaimed lands of the polders were well suited to the orthogonal distribution promoted by Dutch classical engineering and planning. Rapid increases in Dutch population during the 16th and 17th centuries encouraged the movement to establish country estates and fostered the development of a commercial horticulture industry. As towns grew and became more crowded, the demand for fresh fruits and vegetables grew louder and more concentrated, particularly around Amsterdam. By the start of the 17th century, commercial vegetable farming had become the specialty of the areas around Leiden and Delft; over the course of the century, such farming spread toward Amsterdam and the Westland (around Beverwyck). At the same time, wealthy merchants and businessmen, looking for new investments as well as an escape from crowded, immoral, and unhealthy town life, had begun to create country retreats (De Jong 1990: 24–26, 32): "This is certain," Van der Groen writes, "that outside in the country, so much falseness and godlessness does not occur as in the cities" (Van der Groen 1683:

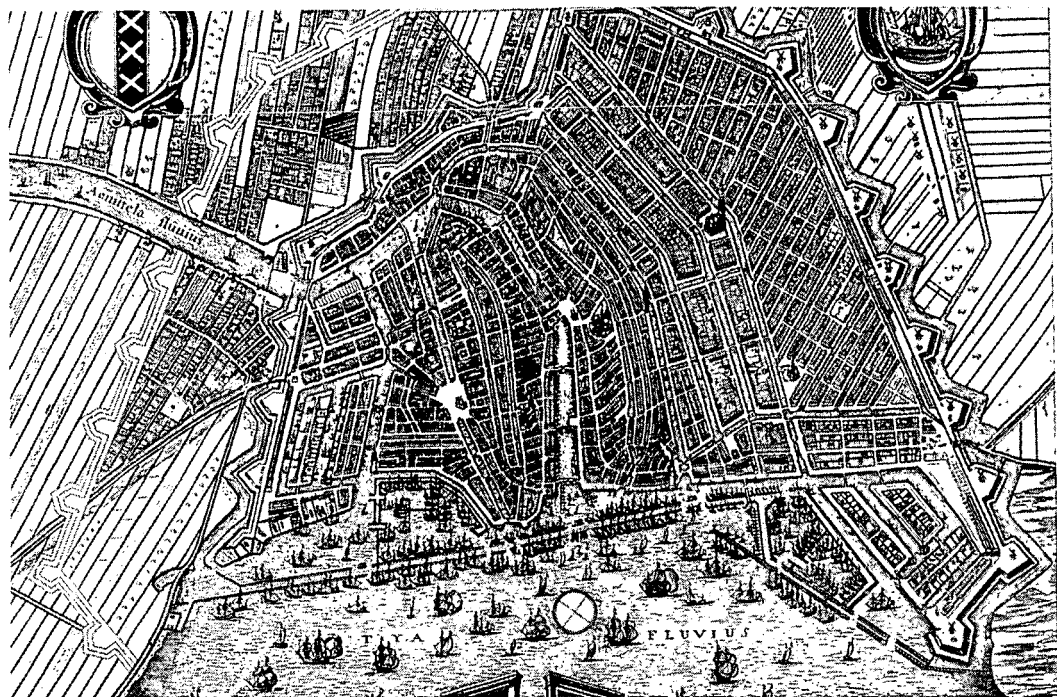


Figure 6. D'Avity's 1646 map of Amsterdam.

B2). The retreats began as homesteads in the early 17th century, where a farmer oversaw the estate and the owner reserved a gentleman's room in the farmhouse. The next stage in development was the construction of a separate dwelling with small garden adjacent to the farm, and finally a separate house/mansion/villa surrounded by ordered meadows, orchards, woods, vegetable, herb, and flowerbeds. As a result of the increasing demand for plants to furnish these estates, and the suitability of its sandy soil, Haarlem became the center of flower and bulb growing, while Gouda, already the center for tree-raising by the 15th century, received competition from the aptly-named town of Boskoop (literally "forest purchase") in the 17th (De Jong 1990: 27, 32).

The modular, inward-looking and multi-purpose nature of Dutch garden design was easily adaptable to the restricted space of town gardens. Private gardens in Amsterdam, because of the lack of room, were small and simple in design. The D'Avity map of 1646 (FIG. 6) shows gardens only outside the ramparts and in the newer, less crowded, western

part of the city, especially the wealthy areas along the Heren-, Keizers- and Prinsengrachten. Laws designed to minimize the danger of fires proscribed building on back lots, limiting the heights of fences and prohibiting the construction of summerhouses (pavilions). Design possibilities were further restricted if the lot had to accommodate a chicken run, a privy, a stable, an outdoor or summer kitchen, and a bleaching green (Hunt and De Jong 1988: 127). A flower and vegetable garden were often combined, once again uniting beauty and utility.

Some of the larger gardens belonged to hospitals, orphanages, and public buildings. The Amsterdam Oude Mannen- en Vrouwengasthuis, an almshouse for 150 old men and women, enclosed a courtyard divided into two parts by a central path. In 1614, and at least until 1663, the courtyard was planted with trees, probably as an orchard, and one half was a flower garden with a cruciform path and a wooden pavilion at the center (Hunt and De Jong 1988: 127-128). Crowded city conditions also promoted the ring of garden and orchard plots with their small sea-

sonal structures that surrounded most town walls, which survive to the present day in some areas. These plots were purchased or rented by the not-wealthy, and their development, as can be seen in Figure 7, created a transitional area between city and country, which, with its tree-planted paths, became a popular place for walks and outdoor recreation (De Jong 1990: 29–30; D'Avity 1646).

Another option for even the gardenless city-dweller was the potted plant (FIG. 8). Peter Mundy, a 17th-century visitor to the United Provinces, commented that there were no fields or meadows to walk in, and that town dwellers had "little gardens, Flower potts, in which latter very curious or rare rootes, plantts, Flowers, etts.;" (quoted in Temple 1925: 75). Tender or exotic plants in pots and tubs were important decorative items and status symbols in both De Vriesian and classical Dutch gardens. Van der Groen describes the care of oranges, lemons, olives, figs, oleander, laurel, myrtle, among others, and

includes an illustration of how to place the containers in the garden. The tubs and pots, often modeled on classical urns, were brought out-of-doors when the weather was warm enough, and carefully arranged along the paths, on railings and ledges, in special niches, and even in the parterres (Van der Groen 1683: 3). A planter of this class was recovered among the kiln wasters of the Croonenburgh pottery in the potting center of Bergen op Zoom (FIG. 8 #4). When assembled it was large enough to hold a small tree: with a height of 33 cm and a diameter gradually flaring to approximately 45 cm, this example was lead-glazed, baseless, and made in four sections, each with a horizontal ear handle ending in decorative clover-shaped attachments. It was obviously intended to be sunk in the soil of a garden or greenhouse (Schaefer 1998: 86).

Many plant containers had a more utilitarian purpose and appearance and were used to grow herbs, an important component of the Dutch diet, particularly during the winter

Figure 7. Detail of the 1646 D'Avity map.



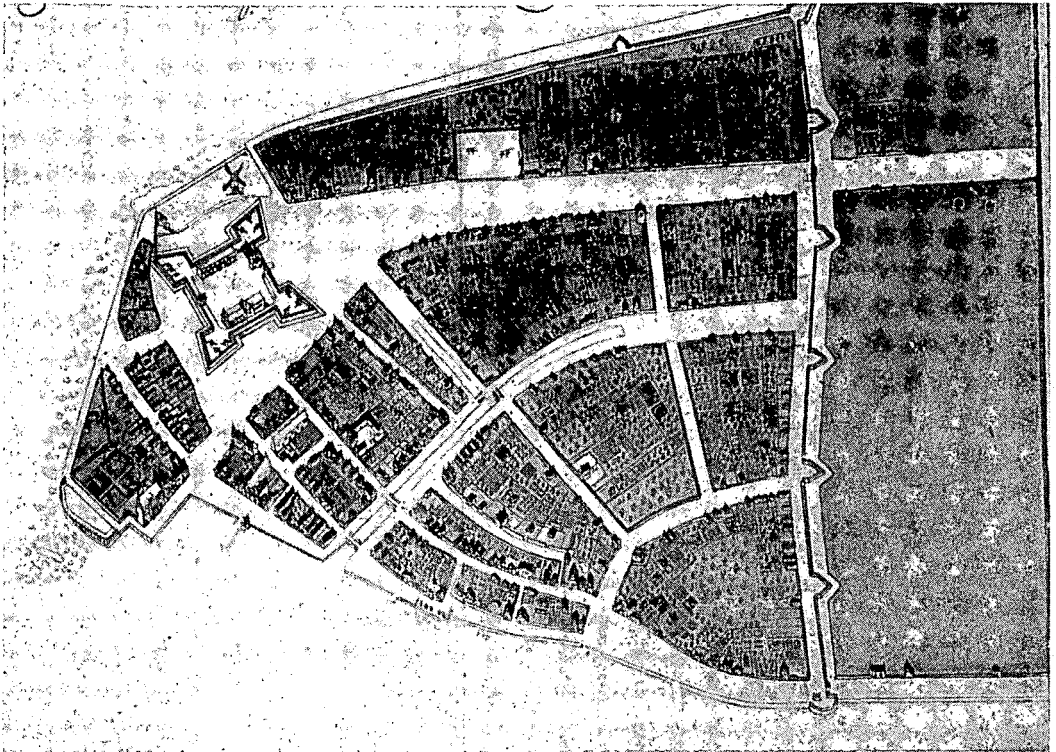


Figure 9. The Castello Plan of New Amsterdam, based on a survey ordered on June 17, 1660 (Stokes 1916: C.PL.82).

cherries, several varieties of peaches and apricots, plums, almonds, persimmons, figs, currants, gooseberries, and thorn apples were present in New Netherland (Van der Donck 1968: 24). Although the Castello Plan leaves blank spaces between the trees, Van der Groen's instructions for planting an orchard of apples, pears, or other large fruit trees indicate that a number of plants would normally have thrived in these areas. Until the desired orchard was established, Van der Groen suggested that cherry or plum trees be planted, and when these were overshadowed by the larger trees, they be removed and the lightly-shaded areas planted with currant or gooseberry bushes (Van der Groen 1669: 16-17, 1683: 9).

The Castello Plan also shows areas with paths outlining central beds shaped like diamonds, circles, and ovals, probably flower, herb, or kitchen gardens. Despite their utility, kitchen gardens were formerly highly decorative, containing many useful plants that we now consider simply flowers. Contemporary

herbals still included the medical properties and uses of roses and peonies, for example (Nylandt 1682: 40, 276), but, with the declining belief in "*simplicia*," they seem to have begun a slow migration to the flower garden. Such remedies, however, had not gone completely out of fashion in New Netherland, as indicated by the above quote from Van der Donck concerning the 42 "healing herbs" and "*simplicia*" (Van der Donck 1968: 28). Van der Donck also declared that Netherlanders "have introduced every kind of garden vegetables," cultivating all the herbs and vegetables he believed were "commonly found in a kitchen garden," in addition to some indigenous varieties of beans, melon, and squash (Van der Donck 1968: 23, 27-28, 67-71).

Many of the more elaborately shaped beds on the Plan have a four-lobed flower shape in the central area. This flower shape seems to be a parterre, identifying a pleasure garden planted with flowers. These surely included those that Van der Donck described as introduced from the Netherlands, such as violets,

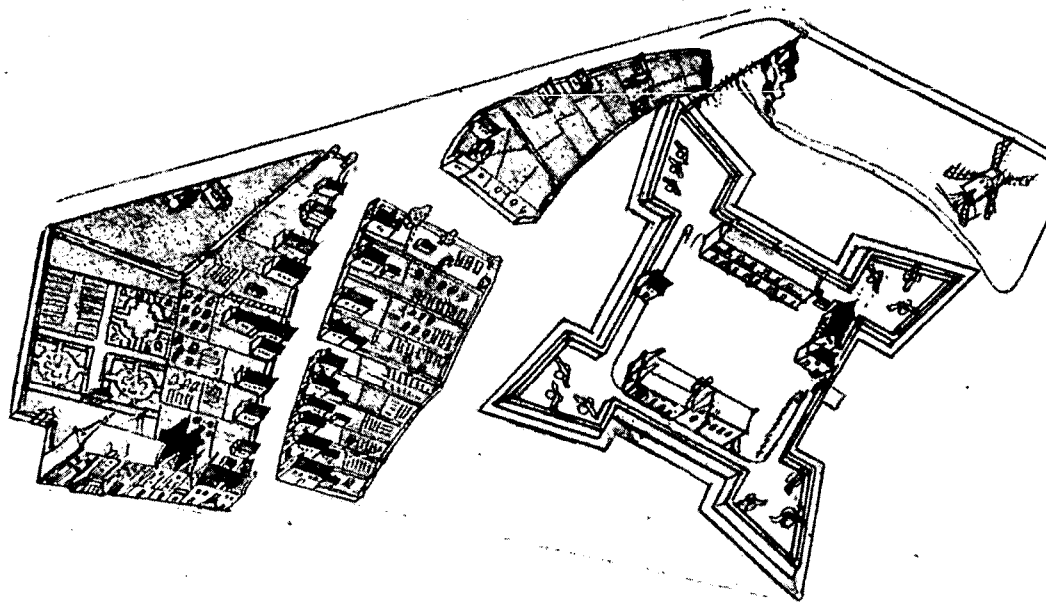


Figure 10. Detail from the Castello Plan, including the blocks between later Whitehall Street, Bridge Street, and State Street. Peter Stuyvesant's house and garden are at the extreme left. The site of the fort became the location of the United States Custom House built in 1907, now the Smithsonian Institution's National Museum of the American Indian (Stokes 1916: C.PL.82a).

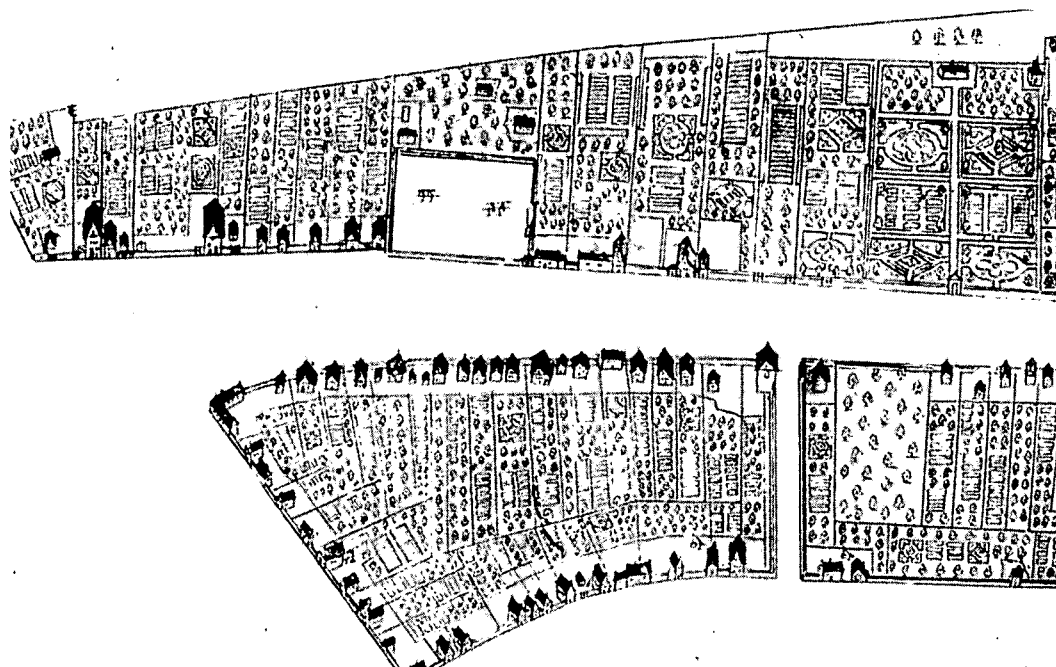


Figure 11. Detail from the Castello Plan, including the blocks on both sides of Broadway between the Battery, Greenwich Street, Rector Street, Wall Street, Broad Street, and Beaver Street (Stokes 1916: C.PL.82b). The West India Company gardens are at the upper right.

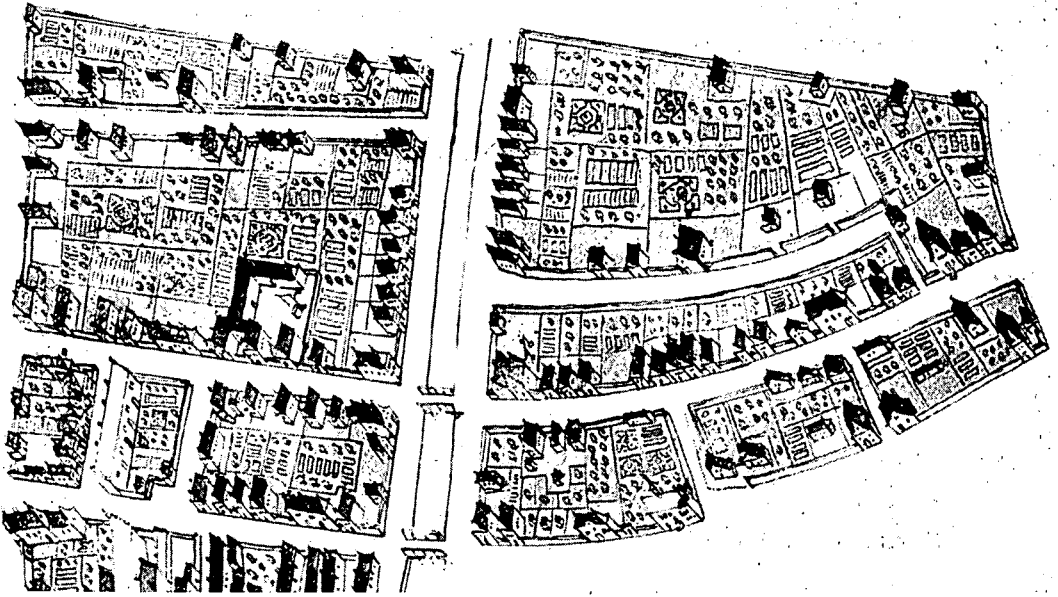


Figure 12. Detail from the Castello Plan, including the blocks between Whitehall Street, Pearl Street, William Street, and Beaver Street (Stokes 1916: C.PL.82c). The Stadt Huys is on the lower right corner of the small block immediately to the right of the canal.

KEY TO CASTELLO PLAN

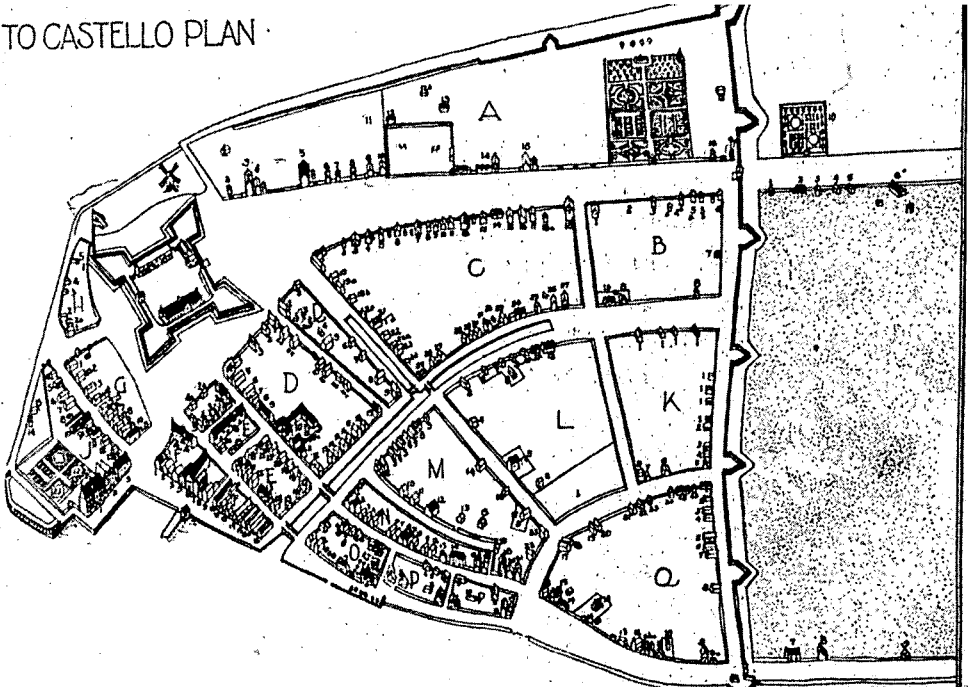


Figure 13. The block key to the Castello Plan prepared by Isaac N.P. Stokes (Stokes 1916: C.PL.82e). The bouwerie of Johannes van Brugh is at the upper right.

pinks, several types of red and white roses, marigolds (*Calendula*), and white lilies, as well as anemones, tulips, and crown imperials. Native American lilies, bellflowers, and sunflowers also found their way into New Netherland gardens (Van der Donck 1968: 27-28).

Because of the Castello Plan's small scale, it is difficult to distinguish specific garden design. Nevertheless, there are at least four lots that are large enough for an overall layout to be discernable. These are the gardens of Peter Stuyvesant (FIG. 10), the gardens of the West India Company (FIG. 11), those at the rear of the Stadt Huys (FIG. 12), and the bouwerie of Johannes van Brugh just outside the palisade (FIG. 13). All are strongly reminiscent of the simplest De Vriesian-style models published by Van der Groen, as well as his figure illustrating "A Dutch Garden and Flower Bed" (FIG. 3). Van der Groen's illustrations show a garden with a cruciform pathway dividing it into four equal squares or *percken* (Van der Groen 1669: FIG. 7, 1683: 43). One of these squares is a flower garden, planted in beds arranged in a star- or flower-shape. Van der Groen gave the gardener the option of devoting two of the four sections to flowers, an option apparently exercised by Stuyvesant and others in New Amsterdam. The remaining three sections of Van der Groen's "Dutch Garden" form a kitchen garden, with beds in parallel rows. One square was for "vegetables and salad," the second for "asparagus, cauliflower and savoy cabbage," and the last was planted with peas, various beans, and carrots. Each square, and the garden as a whole, would be surrounded by fruit trees (cherry, apricot, and peach), trained against the wooden perimeter fence, if room were available. A small building at one end of the garden could have grape vines trained against the walls, and in other open spaces there would be room for a chicken coop or a bleaching green (Van der Groen 1683: 43).

The large gardens on the plan show a kinship with Van der Groen's design. Stuyvesant's garden is composed of four squares divided by a cruciform path. The two squares nearest the house appear to be laid out as floral parterres. The remaining squares seem to be devoted to herbs and vegetables,

one design simple and one elaborate. In keeping with the size of his residence and his position in the colony, Stuyvesant's walled garden had an elaborate gateway leading from the courtyard to the parterres. Another gate led directly to the street.

The West India Company's gardens were more elaborate, but only in scope. Dutch compartmentalization and the simple orthogonal distribution of the squares (*percken*) made it easy to expand or contract the design to fit the available space, without ruining the master plan. Van der Groen advised that if a gardener's lot could not accommodate four *percken*, he could dispense with the central path and simply have two squares. Conversely, if he had more space, he could divide the property into 6, 8 or 12 *percken* (Van der Groen 1683: n.p.).

The West India Company gardens, established before 1638, show a strict bilateral symmetry in both form and function on each side of the central path. Orchard is opposite orchard, kitchen garden faces kitchen garden, and parterre faces parterre. The single tree at the center of one of the parterres is typical of De Vries' designs (Crisp 1924: FIGS. CLXXIV, 217, 217a). Unlike Stuyvesant's garden, the West India Company gardens contain two structures; one, at the terminus of the central path, is most likely a garden house. The peaked-roof building at one corner (referred to by Stokes as "a quaint little pagoda") is probably a dovecote or poultry house, garden components recommended by Van der Groen (Stokes 1916: 224).

The Stadt Huys, built in 1641 as a tavern by the West India Company and converted to New Amsterdam's City Hall when the settlement received a municipal charter in 1653, had a garden divided into four *percken* and an orchard. One *perck* was a simple kitchen garden, with parallel beds. Each of the other squares had a round central bed, surrounded by a path that divided the remaining sections of the square into four parts. The orchard flanking the Stadt Huys on two sides might have been planted to provide the patrons of the inn a pleasant place for drinking and conversation. Along the far wall stood what might be a garden house. This may have been its original function, but city records refer to this

edifice as a "hall and little room." In 1656, New Amsterdam's schoolmaster wished to use it as a classroom and dwelling, but the burgo-masters informed him that the building was in disrepair and was "required for other purposes" (Stokes 1916: 319).

Outside the city palisade lay the walled garden of Johannes van Brugh. Of all the gardens discussed here, this one conforms most closely to Van der Groen's model, and it is reminiscent of the garden and orchard plots that developed around most town walls in the Netherlands. The four *percken*, two with rows of parallel beds, and two with the same circular layout as those behind the Stadt Huys, are surrounded by trees planted against the encircling wall.

Archaeological evidence for gardens in New Amsterdam is sparse. Two large-scale archaeological projects in what was New Amsterdam have been undertaken: one on the block occupied by the Stadt Huys (Rothschild, Wall, and Boesch 1987) and the other on the block occupied by the warehouses of the West India Company, known as the Broad Street site (Grossman 1985). No floral analysis of the very limited mid-17th-century contexts at the Stadt Huys excavations was done. At the Broad Street site, floral analysis was carried out on "undisturbed 17th and early 18th century Components;" unfortunately, approximately half of the seeds recovered could not be identified, due at least in part to "limited botanical and museum comparative collections available for study" at that time (Grossman 1985: X-30). Samples were taken from contexts dated to 1640, 1680, and 1720. Of the identified seeds, 45% of the 1640 sample, 30% of the 1680 sample, and less than 10% of the 1720 sample were classified as weeds. Conversely, fruit pits from native European trees and bushes increased from approximately 50% to over 90% of the identifiable sample during the same time period (Grossman 1985: X-30).

The main "weed" identified was purslane (*Portulaca oleracea*), an edible annual introduced to North America from Europe. According to floral analyst Leslie Raymer, "purslane seeds are virtually ubiquitous in historical archaeological contexts in the eastern United States" (Raymer in Yamin and Parker 2004: 159). Purslane was highly regarded in

16th- and 17th-century Europe as a cure for almost any problem to do with heat, from choleric fluxes of the belly to gunpowder burns, to inflammations. In 1653, English apothecary Nicholas Culpeper declared its efficacy for reducing the size of a child's over-prominent navel, among other uses (Culpeper 1990: 146). Beyond its medicinal value, purslane had and has numerous culinary uses; during this period in northern Europe, it was an extremely common salad green (Culpeper 1990: 146; Fuchs 2001: XXXIX). Given purslane's extreme fecundity, however, it would be difficult to say whether it was purposely planted in New Amsterdam or was accidentally introduced.

The existence of purslane and European fruit pits in all the samples from the Broad Street site at least agrees with Van der Donck (Van der Donck 1968: 24, 67) that the flora of New Amsterdam had been altered by the introduction of European plants, but these limited data do not provide information about the configurations and contents of gardens.

No matter the configuration of gardens, gardening is a labor-intensive activity. New Netherland had a chronic labor shortage, even though many of the inhabitants were employees of the West India Company (Cantwell and Wall 2001: 167-187). The West India Company officials also had the use of the labor of enslaved Africans, first brought to New Amsterdam in 1626, but it is questionable if the scarce labor resources available would have been allocated to the creation of elaborate gardens.

There is however, some documentary evidence about the presence of gardens in New Amsterdam. Secretary Cornelius van Tienhoven, in a 1650 document intended as a guide for prospective immigrants as well as a report to the Directors of the West India Company, reported that

after the houses are built in the above described manner, or otherwise according to each person's means and fancy, gardens are made and planted in season with all sorts of pot-herbs, principally parsnips, carrots and cabbage, which bring great plenty into the husbandman's dwelling (O'Callaghan 1856: 365-371).

In September of 1659, Stuyvesant requested the Directors to send over "some medicinal

seeds and plants" for cultivation in New Amsterdam. The Directors answered in December that "the seed would be ordered from the Academical Gardens at Leyden and would be sent herewith" (Bangs 1912: 11; Stokes 1922: 199, 201). At least one skilled horticulturalist was among New Netherland's immigrants: "Pierre le Gardinier [Pierre Cresson], who had been a gardener of the Prince of Orange, and had known him well," arrived in the colony in 1657. He lived on Manhattan Island at Nieuw Haarlem until 1677, when he moved to Staten Island (Danckaerts 1913: 74).

In the latter part of the 17th century, after New Amsterdam became New York City, the town was noted for its fruit trees. Jasper Danckaerts, one of two emissaries of a strict Dutch Protestant sect looking for a suitable place to establish a utopian community, traveled throughout much of the northeast. In his *Journal*, which covered the years 1679–1680, Danckaerts described the lands through which they traveled and the people they encountered. He was most impressed by the abundance of fruit, especially the apples and peaches in New York City gardens (Danckaerts 1913: 44 and *passim*). He noted that in one year (1679) the peaches were so numerous that they could not all be harvested; free-roaming pigs feasted on those that dropped to the ground. Danckaerts does not mention garden layout but this could be because he was simply not interested in the subject.

Gardens and orchards were thus undoubtedly present in New Amsterdam, but it cannot be assumed that the details of the layouts of the gardens on the Castello Plan were drawn from life. This becomes apparent when the minor gardens are scrutinized; they are similar in their designs and layouts and their very abundance and uniformity raise questions about the accuracy of their depiction. As noted above, the Castello Plan was part of a collection of maps of Dutch colonial possessions. It is possible that the unknown copyist who prepared this collection for Cosimo de' Medici III created maps that incorporated artistic conventions considered to be appropriate designs for 17th-century cities. The gardens of the Castello Plan might not be accurate depictions

of the gardens of this nascent city, but might instead be embellishments whose purpose was to make the plan more visually attractive and the city ostensibly more civilized (i.e., conforming to contemporary European ideas of city layout).

The embellishments might have been on the original 1660 survey of New Amsterdam drawn for the Directors of the West India Company by Jacques Cortelyou. Originally from Utrecht, Cortelyou

had studied philosophy in his youth, and spoke Latin and good French. He was a mathematician and sworn land-surveyor [remember, garden design was the job of the surveyor]. He had also formerly learned several sciences, and had some good knowledge of medicine (Danckaerts 1913: 57).

Cortelyou thus had the training and knowledge to create an accurate picture of the city and its gardens and to adorn what actually existed. The Cortelyou survey was drawn up in order to inform the Directors of the West India Company of conditions in New Amsterdam, where the burgomasters were concerned that too many inhabitants were involved in land speculation. Instead of building new houses, speculators planted gardens and orchards as they waited for land values to rise. The Directors agreed that the "excessively large plots and gardens" took up space that should have been devoted to new dwellings for the growing population of New Amsterdam (Blackburn and Piwonka 1988: 93). Although we can never be certain of the exact design of these gardens, the Castello Plan does depict gardens that are plausible for the time and place, a familiar bit of *Patria* at the edge of a vast wilderness.

References

- Bangs, Charlotte R. W. Bleecker
1912 *Reminiscences of Old New Utrecht and Gowanus*. Privately published, New York.
- Blackburn, Roderic H., and Ruth Piwonka
1988 *Remembrance of Patria: Dutch Arts and Culture in Colonial America 1609–1776*. Albany Institute of History and Art, Albany.
- Buurman, Janneke
1989 Planten resten. In *Weggegooid en*

- Teruggevonden*, ed. by Hemmy Clevis and Jaap Kottman, 67-69. Stichting Archeologie IJssel/Vechtstreek, Kampen, Netherlands.
- Cantwell, Anne-Marie E., and Diana diZerega Wall
2001 *Unearthing Gotham: The Archaeology of New York City*. Yale University Press, New Haven.
- Cohen, Paul E., and Robert T. Augustyn
1997 *Manhattan in Maps 1527-1995*. Rizzoli, New York.
- Crisp, Frank
1924 *Medieval Gardens*. Two volumes. John Lane, London.
- Culpeper, Nicholas
1990 *Culpeper's Complete Herbal and English Physician Enlarged*. Reprint of 1814 edition. Meyerbooks, Glenwood, Illinois.
- Danckaerts, Jasper
1913 *The Journal of Jasper Danckaerts (1679-1680)*, ed. by B. B. James and J. F. Jameson. Barnes and Noble, New York.
- D'Avity, Pierre
1646 *Neue archontologia cosmica*. Wolfgang Hoffman, Frankfurt am Main, Germany.
- De Caus, Salomon
1980 *Hortus Palatinus: die Entwürfe zum Heidelberger Schlossgarten von Salomon de Caus*. 2 vols. Reprint of *Hortus Palatinus a Friderico rege Boemiae electore Palatino Heidelbergae extractus*, 1620 (commentary by Reinhard Zimmerman). Grune Reihe, Worms, Germany.
- De Jong, Erik
1990 For Profit and Ornament: The Function and Meaning of Dutch Garden Art in the Period of William and Mary, 1650-1702. In *The Dutch Garden in the Seventeenth Century*, ed. by John Dixon Hunt, 13-48. Dunbarton Oaks Colloquium on the History of Landscape Architecture 12. Dunbarton Oaks Research Library and Collection, Washington, DC.
- De Vries, Hans Vredeman
1980 *Hortorum viridariumque elegantes et multiplicis formae*. Reprint of 1583 with additional sheets from 1587. Van Hoeve, Amsterdam.
- Fuchs, Leonhart
2001 *The New Herbal of 1543*. Taschen, Cologne, Germany.
- Grossman, Joel
1985 The Excavation of Augustine Heerman's Warehouse and Associated 17th-Century Dutch West India Company Deposits. Report prepared for Fox and Fowle P.C. and HRO International, on file at the Landmarks Preservation Commission, New York City.
- Hopper, Florence
1982 The Dutch Classical Garden and André Mollet. *Journal of Garden History* 2(1): 25-40.
- Hunt, John Dixon
1990 "But who does not know what a Dutch garden is?": The Dutch Garden in the English Imagination. In *The Dutch Garden in the Seventeenth Century*, ed. by John Dixon Hunt, 175-206. Dunbarton Oaks Colloquium on the History of Landscape Architecture 12. Dunbarton Oaks Research Library and Collection, Washington, DC.
- Hunt, John Dixon, and Erik de Jong, eds.
1988 *The Anglo-Dutch Garden in the Age of William and Mary*. Special double issue of *Journal of Garden History* 8(2, 3), April-September. Taylor & Francis, London.
- Jellicoe, Geoffrey, and Susan Jellicoe, eds.
1986 *The Oxford Companion to Gardens*. Oxford University Press, New York.
- Kuyper, W.
1980 *Dutch Classicist Architecture*. Delft University Press, Delft.
- Lauremberg, Peter
1631 *Horticultura, libris II. comprehensa; huic nostro coelo & solo accommodata; regulis, observationibus, experimentis, & figuris novis instructa: In qua quicquid ad hortum proficue colendum, et eleganter instruendum facit, explicatur*. Matthäus Merian, Frankfurt am Main, Germany.
- Nylandt, Peter
1682 *De Nederlandtse herbarius of kruidt-boeck*. Reprint, 1976. Interbook International, Schiedam, the Netherlands.
1683 *De medicijn-winkel, of ervaren huys-houder*. Included in Part 3 of *Het vermakelyck landt-leven*. Gysbert de Groot, Amsterdam.
- O'Callaghan, E. B., ed.
1856 *Documents Relative to the Colonial History of the State of New-York*. Volume I. Weed, Parsons and Company, Albany.

Rothschild, Nan A., Diana Rockman Wall, and Eugene Boesch
 1987 *The Archaeological Excavations of the Stadt Huys Block: A Final Report.* Manuscript on file at the Landmarks Preservation Commission, New York City.

Schaefer, Richard
 1998 *A Typology of Seventeenth-Century Dutch Ceramics and Its Implications for American Historical Archaeology.* BAR International Series 702. British Archaeological Reports, Oxford.

Schama, Simon
 1987 *The Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age.* Alfred A. Knopf, New York.

Stokes, I. N. Phelps
 1916 *The Iconography of Manhattan Island.* Volume II. Robert Dodd, New York.
 1922 *The Iconography of Manhattan Island.* Volume IV. Robert Dodd, New York.

Temple, Sir Richard Carnac, ed.
 1925 *The Travels of Peter Mundy in Europe and Asia: 1608-1647.* Volume IV of *Travels in Europe: 1639-1647.* Hakluyt Society, London.

Thomas, Keith
 1983 *Man and the Natural World.* Pantheon Books, New York.

Van de Passe, Crispin
 1928 *Hortus Floridus: The First book containinge a very lively and true Description of the Flowers of the Spring.* Reprint of ca. 1614 English translation. The Cresset Press, London.

Van der Donck, Adriaen
 1968 *A Description of the New Netherlands,* ed. by Thomas F. O'Donnell. Translation of the 1655 edition. Syracuse University Press, Syracuse, New York.

Van der Groen, Jan
 1669 *Le jardinier hollandois/der niederlandische gärtner.* Marcus Doornick, Amsterdam.

1670 *Den Nederlandtsen Hovenier.* Marcus Doornick, Amsterdam.

1683 *Den Nederlandtsen Hovenier.* Part I of *Het vermakelijck landt-leven.* Gysbert de Groot, Amsterdam.

Yamin, Rebecca, and Scott Parker
 2004 Route 18 Section 2a Extension Project, Technical Report No. 3: The Bodine/French Meadow Property (28-Mi-85) and the Adjacent Lottery House/Letson Property (28-Mi-217). Report prepared by John Milner Associates, Inc. for Gannett Fleming and the New Jersey Department of Transportation.

Richard Schaefer is a project director for Historical Perspectives, Inc., and lives in New York City. He earned his doctorate at the University of Pennsylvania. His research interests include the 17th century, ceramics, New Netherland, and Dutch colonialism.

Meta Fayden Janowitz is a material specialist for URS Corporation in Burlington, New Jersey. She earned her doctorate from the City University of New York. Her research interests include the 17th century, ceramic history, and the interaction of artifacts and food in colonial and contemporary foodways.

Richard Schaefer
 28-27 215th Street
 Bayside, NY 11360-2629
 (718) 428-3925;
 Ripschae@yahoo.com

Meta Fayden Janowitz
 3 Moore Road
 Montville, NJ 07045-9404
 (609) 386-5444
 Meta_Janowitz@urscorp.com