Garden Archaeology – Perspectives, Methods and Analyses

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Med nya teoretiskt förankrade metoder, moderna analyser och tekniker har trädgårdsarkeologi etablerats som ett eget forskningsfält i Sverige de senaste två decennierna. Detta har möjliggjort studier av vitt skilda trädgårdsanläggningar, alltifrån från stadsbornas medeltida och tidigmoderna nyttoträdgårdar till kungliga parker med europeiska influenser. Det framtagna källmaterialet, som fram till millennieskiftet var i stort sett okänt, ger en helt ny kunskap om trädgårdarnas betydelse i sin samtid, dess ägare och brukare, utformning, skötsel samt odlingsstrategier och vilka växter som har odlats i anläggningarna.

I artikeln presenteras några de nya metoderna och analyserna samt vilka perspektiv av det förflutna som resultaten från undersökningarna kan belysa. Detta exemplifieras med ett par nyligen genomförda trädgårdsarkeologiska projekt, på Djurgården och Södermalm i Stockholm samt i Carl von Linnés hem i Uppsala.

Garden archaeology is a relatively recent field of research in Sweden. Despite this, significant new insights have been gained over the past decades regarding how past generations designed, cultivated, and managed their gardens, as well as what was grown in horticultural settings. This previously hidden archive of knowledge continues to inspire new research questions and encourages the exploration of innovative methods and analytical approaches.

What, then, is a garden? A garden is a defined and manageable space dedicated to cultivating fruits and berries, vegetables, herbs and ornamental plants. During the medieval and the early modern periods, a variety of terms were used to describe

different types of gardens: *trädgård* (orchard), *kålgård* (kitchen or utilitarian garden), *kryddgård* (herb garden), and *humlegård* (hop garden). A less common term is *lustgård* (pleasure garden). The fragmented written sources from the 13th Century mention various types of gardens in castles, monasteries, and towns, as well as in farmers' villages and hamlets. These records suggest that garden culture became increasingly significant from this period onwards, a notion further supported by archaeological evidence. Additionally, the written sources indicate that gardens were owned and managed by both men and women, as well as by noblemen and religious or secular institutions (Lindeblad 2006; Lindeblad & Nordström 2014; Andréasson Sjögren 2021:79ff; Andréasson Sjögren 2025:161–167).

Historic gardens can be studied from a variety of perspectives and provide alternative views on everyday life in different social and economic settings. Studies of historic gardens make it possible to shed light on issues that move between diverse dimensions of everyday life, like the practical and the enjoyable, horticulture and production, as well as economics and cultural symbolism (cf. Wolschke-Bulmahn 2002:2–11, Bodin & Hedlund 2013:9–13).

In this paper, we will present a brief overview of the development of garden archaeology in Sweden, highlighting applicable research perspectives, newly developed methods, and the most valuable source materials. This will be illustrated with examples from recent garden archaeology projects, including both restoration initiatives and contract archaeology. These examples, of course, provide only a brief insight into the past decades of garden archaeological research in Sweden. However, they may help highlight the diversity and complexity of this field of study.

Pioneer projects in historic parks

Garden archaeology emerged as a new field of research in Sweden during the 1990s, initially on a small scale. Excavations of historic parks and gardens at estates, manors, and castles were undertaken as part of restoration and research projects, primarily to confirm or refute structures identified in historic maps and illustrations. The pioneering garden archaeologists, such as Katarina Frost, Inger Ernstsson, and Ingrid Dyhlén Täckman, drew inspiration from British garden archaeology and contemporary projects in the Netherlands. These early excavations were relatively small in scale compared to those conducted today and were fewer in number. Nevertheless, these initial projects have played a crucial role in developing garden archaeology in Sweden (Andreasson Sjögren 2016; Andreasson Sjögren 2025:9ff).

This branch of garden archaeology, focusing on the parks and gardens of the elite in past societies, has expanded significantly over the past

two decades. More recent examples include Rosenlund in Jönköping, Johanneberg in Gothenburg, Axmar Bruk in the province of Gästrikland, and Djurgården in Stockholm (see below) (Franzén 2019; Lindeblad et al. 2019; Bramstång Plura et al. 2021; Blennå & Lindeblad 2022). These historic parks and gardens are often, to some extent, still in use, meaning that remnants of historic elements such as trees, fences, and stone structures remain visible. In restoration projects, collaboration between landscape architects, art historians, scientific specialists, and archaeologists is essential to acquire the broadest possible understanding of these gardens and parks.

Establishing a new field of research

Since the turn of the millennium, studies and excavations of historic gardens have become more frequent within contract archaeology. As a result, most of the garden archaeological research has been conducted within this framework. In most cases, the precise locations of these gardens remain unknown before excavation, as they are not visible in advance. These gardens are concealed by modern-day built-up areas in both urban and rural areas. Once excavated, these gardens are not intended for reconstruction. The fact that they are entirely invisible today and that the objective is not to physically reconstruct them distinguishes them from the projects mentioned above, not only in terms of methods and analysis but also in research questions.

In this branch of garden archaeology, methods, analyses, and questions have been inspired by Scandinavian landscape and agrarian archaeology, as well as British and American garden archaeology. The objects of research and research questions are constantly broadened, and the latest excavation methods and analyses are used. One example of an important development is the systematic use of archaeobotanical analyses as an integrated part of the excavations (Currie 2005; Lindeblad 2006; Lindeblad & Petersson 2009; Heimdahl 2010; Gleason 2013; Lindeblad & Nordström 2014).

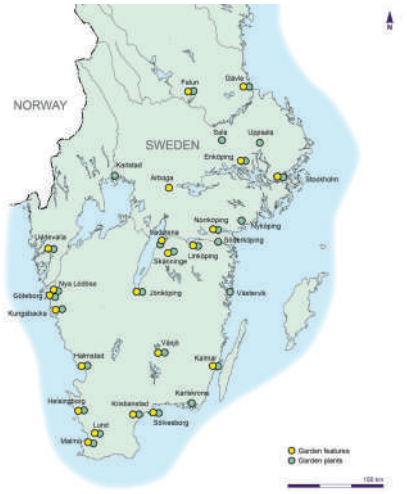

Figure 1. Map of the southern parts of Sweden showing where garden features and plants have been identified through archaeological excavations in medieval and early modern towns. Illustration: The Archaeologists, National Historical Museums.

Most archaeological excavations in historical gardens have been carried out in kitchen gardens within medieval and early modern towns (figure 1). This is primarily because garden remains tend to be better preserved in urban environments than in rural areas. Although a few excavations of gardens at farmsteads in the countryside have taken place, there remains a significant gap in our understanding of these historical gardens and their horticultural practices.

Source materials and methods

Garden archaeology is a subfield of historical archaeology (cf. Andrén 1998), meaning that archaeological evidence is integrated with other sources such as historical maps, written records, photographs, paintings, and other visual materials. In garden excavations, archaeological remains serve as the primary source material, providing insights into garden soils, various constructions, and artefacts. These elements reveal information about the garden's size, design, and the materials used in its construction. Discarded artefacts found within garden soils, along with scientific soil analyses, allow for the dating of garden features and help address questions related to plant cultivation, fertilisation, irrigation, and composting.

This underscores the necessity of a multidisciplinary approach when studying historic gardens to generate innovative knowledge. Maximising interaction throughout all stages of the project – from planning and fieldwork to analysis and final research outcomes – is crucial. Close collaboration between archaeologists and other specialists is therefore essential. A key development in this regard has been the shift of certain microscopic analyses from the laboratory to the field, allowing for rapid examination of materials still *in situ*. This enables archaeologists to gain insights into the micro-content of layers during excavation, facilitating more nuanced interpretations. Additionally, the archaeobotanical analyses benefit from *in situ* studies of deposits, further enriching archaeological interpretations.

Results from the past two decades of garden archaeology have demonstrated that features such as paths, terraces, cultivation beds, enclosures, compost bins, and water sources are often remarkably well preserved. Artefacts frequently survive within the buried garden soil and other cultural deposits, providing valuable insights into the individuals who cultivated the garden and the social status of the household that owned or used it. Furthermore, these artefacts can offer evidence of the tools and garden pots once employed in maintaining the garden (cf. Currie 2005; Lindeblad & Nordström 2014).

When excavating the remains of historic gardens, a modified contextual method is particularly useful, specifically adapted for garden remains (Currie 2005; Gleason 2013;

Figure 2. A cross-section of occupational layers containing buried garden soil from an excavation in the town of Norrköping, Östergötland. At the base of the cross-section, within the yellow sand, traces of earthworm activity and root growth are visible. Above this, the brown homogenised buried garden soil can be seen. In the interface between the sand and the subsoil, distinct traces indicate that the garden soil was cultivated using spades. Photo: The Archaeologists, National Historical Museums.

Lindeblad & Petersson 2009; Lindberg & Lindeblad 2013:79; Lindeblad & Nordström 2014). This method has been developed with the understanding that garden and horticultural remains differ significantly from those of buildings, streets, waste deposits, and conventional occupational layers. Garden soils are typically formed over an extended period and are often largely homogenised due to repeated cultivation. As a result, cultivation layers frequently lack distinct stratigraphy and/or visible structures (figure 2).

To identify the former garden soils, the following criteria are essential:

- Placement and form
- Soil structure and texture
- Organic content

Defining the placement and form of cultivation layers and beds is essential when identifying garden soils *in situ*. Placement and form refer to the stratigraphic morphology and spatial distribution of the strata interpreted as cultivation soil. In general, buried garden soils are characterised by a homogeneous stratum with a thickness of 0.2–0.4 metres, often compressed. In some cases, the continuous addition of new material has resulted in the formation of metre-thick, homogeneous garden soils. Garden features such as paths,

fences, and terraces are typically best preserved in the upper surface of the garden soils and/or in the contact surface between the cultivation layers and the subsoil.

A general three-step method has been developed when excavating and studying the buried soils (cf. Currie 2005; Gleason 2013; Lindeblad & Nordström 2014). The excavation focuses on and has different methods for each of the three levels of the garden soil that empirically holds the most relevant information:

1. The upper surface
2. The underlying garden soils
3. The contact surface between garden soils and sub-soils

With this in mind, it is essential to emphasise that this is a general method for investigating garden soils. As each historic garden possesses its unique characteristics and features, the method must be adapted accordingly to suit the specific garden under examination.

Through the development of these methods, it has become possible to formulate new questions and perspectives that offer insights into past societies – particularly in relation to horticulture, aesthetics, and the individuals who managed and worked in the gardens, among other aspects. In the following section, we will illustrate these themes with recent excavation results from Stockholm and Uppsala.

Garden structures at royal Djurgården – examples of garden archaeology in restoration projects

As previously mentioned, several park restoration projects have been carried out in Sweden, all involving collaboration between various specialists, including landscape architects, archaeobotanists, quaternary geologists, gardeners, and archaeologists with expertise in garden archaeology. In all restoration projects, it is essential to establish a consensus within the team regarding which historical phase of the park or garden will be restored. This requires a thorough analysis of the construction and preservation of garden structures from different periods.

Below, we present results from two restoration projects where ground-penetrating radar (GPR) was utilised. The GPR surveys were conducted and analysed by an archaeologist with specialised competence in 3D documentation. The advantage of this method is that large areas can be examined without causing damage to vegetation, particularly the roots of older trees. Both examples are situated in Royal Djurgården, a large island in Stockholm that has been administered by the reigning monarch from the medieval period to the present day. During the medieval period, Djurgården functioned as a royal hunting park. However, by the Mid-18th Century, this purpose had fallen out of fashion, and parts of the island were made accessible

Figure 3. Kökeritz's map from 1777. The pond is seen in the middle of the park. Map from the Land Survey.

to members of the royal circle. The land was either leased or purchased by private individuals, leading to the construction of smaller mansions with accompanying parks.

Frisens park

The park is situated in the southern part of Djurgården, directly adjacent to the sea. In 1759, the former hunter's residence changed ownership, and the new proprietor erected buildings and established a park (Bolin et al. 1925:109ff; Laine 2003:27–32; Lindeblad et al. 2021). The natural topography of this location is striking, featuring significant variations in elevation and prominent rock outcrops. The park's design was shaped by and enhanced these natural features, incorporating avenues and pathways that linked seating areas, viewpoints, and a constructed pond. The park remains remarkably well preserved, with many historic elements still discernible in the landscape. Frisens Park represents an early example of an English-style landscape park, combined with pronounced Baroque influences at its centre. Contemporary observers regarded the park as a novelty. The recent restoration efforts have primarily focused on the pond and its immediate surroundings. A significant number of historical maps of the park exist, including a highly detailed and precise map from 1777 that accurately depicts various elements of the garden (figure 3).

According to the map, the pond had a gently undulating shape and was strategically positioned within the landscape. It was not entirely visible from the south, where the main building was located, but gradually revealed itself upon approach. The surveyor of the map refers to the pond as a "Reservoir." Excavations revealed that the pond had been filled with waste, both from the household and from visitors using the park for recreation. Once emptied, a dry-stone wall lining the interior of the pond became visible, along with a stone foundation for a bridge crossing the pond.

Figure 4. The pond after excavation. Photo: The Archaeologists, National Historical Museums.

The fundamental question regarding the pond was how it was supplied with water and how the water level was regulated. Archaeological investigations identified the inlet and outlet of the pond through limited excavations but were unable to document the full extent of the channel system. To overcome this, ground-penetrating radar was used to survey the larger area containing the channel network. This method allowed the inlet channel to be traced well beyond the excavated sections, thereby providing a more precise understanding of the pond's water supply system.

The Park of the Rosendal Castle

During the 19th Century, Djurgården evolved into a popular recreational area, and the establishment of Rosendal Palace by King Charles XIV John in the 1820s marked the beginning of a new era. A park soon emerged around the palace. The archaeological survey aimed to enhance knowledge of this historic park, focusing particularly on its paths, plantations, seating areas, and viewpoints.

In this example, the restoration focused on a section of the park known in the 19th Century as the Pleasure Grounds. It was created on a former meadow west of the palace and designed to be experienced by carriage or on foot.

Today, this section of the historic park serves as pastureland and has almost entirely lost its park-like character, with no visible remnants above ground. The terrain is flat, featuring only a few natural elevations. Several of these small hills were used as planting and seating areas, as indicated on the 1834 map (figure 5a). To investigate this relatively large area, a ground-penetrating radar (GPR) survey was conducted. The results clearly revealed the locations of the historic pathways, which largely cor-

Figure 5a: A historic map from 1834. The red ring highlights the location of the Pleasure ground. Map from the Land Survey.

responded with their placement on the 1834 map (figures 5a and b).

Subsequent excavations were guided by the GPR data, with several trenches dug across paths, planting beds, and seating areas. The excavations confirmed that the historic park remains were well preserved just beneath the surface vegetation. The paths uncovered had two distinct widths, both aligning with an old Swedish unit of measurement called ”aln” (equivalent to 2 feet or 59.38 centimeters). They measured 1.8 and 2.4 meters, respectively, and were paved with yellow-brown gravel, notably different from the finer, reddish-toned gravel used in the palace courtyard. The archaeobotanical analyses revealed that the paths were not bordered by formal flower beds but rather by natural meadow vegetation, possibly interspersed with individually planted bulbs and other similar elements (Lindeblad et al. 2019).

Figure 5b: The result of the ground penetrating survey. Pär Karlsson, Astacus.

Urban gardens

As previously mentioned, many studies have examined urban gardening in recent decades (figure 1). The above-mentioned archaeological methods and analyses have made it possible to highlight and systematically study urban cultivation more extensively. This recent research indicates, among other things, that town dwellers were more self-sufficient in food production than previously assumed. Gardening was a significant and essential part of daily life, and there is strong evidence to suggest that urban cultivation was an integral aspect of town planning and development from the outset (Lindeblad 2006:30–32; Björklund 2010; Lindeblad & Nordström 2014; Ahrland 2019).

Results from urban excavations also show that town dwellers' gardens varied significantly in size depending on time, location, and ownership. A nobleman's garden in early modern Stockholm could cover up to 50,000 m², while kitchen gardens in late medieval Vadstena measured around 200–300 m². In early modern Kalmar, they were even smaller, only 20–40 m² (Hedvall 2002; Tagesson & Carelli 2016:290–318; Hållans Stenholm & Lindeblad 2023). These variations provide a basis for discussions on the social and economic aspects of urban gardening. Here, we present results from a garden archaeological excavation of a 17th-century vicar's summer residence in southern Stockholm.

An early modern summer residence

The written historical sources concerning Stockholm mention gardens, herb gardens, and cabbage gardens as early as the 15th Century. These older terms were used at least until the 19th Century. Although the distinctions between them were fluid and changed over time, a cabbage garden referred to a vegetable plot, a garden was an orchard, and an herb garden was used for growing spices and medicinal plants (cf. Larsson 2009; Larsson 2014; Dyhlén-Täckman 2020).

Malmgårdar, which were garden estates with manor-like residences built of stone or wood, were first mentioned in Stockholm in the mid-16th Century (Bengtsson 2007:64). By the 18th Century, there were around a hundred *malmgårdar* in the capital, with the largest number located on Södermalm. They were owned by wealthy burghers or noblemen, many of whom resided on Stadsholmen and used their *malmgårdar* as summer retreats and for horticulture. Large gardens and cultivated plots were an integral part of urban life both in the medieval period and in the 17th and 18th centuries. They were labour-intensive, and according to a census from the 1670s, no fewer than 50 gardeners were working in Södermalm (Bengtsson 2007; Ahrland 2019). The *malmgårdar* of Stockholm remain largely unexplored archaeologically. However, a major archaeological investigation of a *malmgård* has been carried out in

Figure 6. Reconstruction of the garden based on the archaeological results. Jens Heimdahl, The Archaeologists, National Historical Museums.

Figure 7. One of the garden quarters, where white sand was laid out, most likely to create a contrast to the darker paths and cultivation beds. Photo: The Archaeologists, National Historical Museums.

the Riddaren block on Östermalm, where the terraced garden was dated to the 18th Century (Lindeblad & Hållans Stenholm, in manuscript). Smaller excavations have also been conducted in garden settings, including Piperska Trädgården on Kungsholmen and Björns Trädgård near Medborgarplatsen on Södermalm (Dyhlén-Täckman 2020).

The excavated garden was located in the Rosendal quarter, on the outskirts of 17th-century Stockholm, and was owned by a vicar in the latter half of the century. He was a highly prestigious individual, serving as the priest to the court and queen (Hållans Stenholm & Lindeblad 2023). The garden remnants in Rosendal appear to be unique within a Swedish urban context due to their complexity, variability, and exceptionally diverse and well-preserved archaeobotanical material. Plant residues, as well as finds related to fertilisation and soil improvement, were abundant. These discoveries significantly contributed to understanding the varieties of cultivated plants and historical garden management practices. The excavation provided a rare and detailed insight into the design and development of a well-preserved 17th-century urban garden. The garden was quite large, circa 1 700 m^2, which raises questions about surplus production.

Spatial structure and design

The garden features were remarkably well preserved and meticulously organised in a Baroque style, with distinct garden quarters, planting beds, paths, and planting pits for bushes and trees. The layout was structured into at least four rectangular garden quarters, separated by gravel paths: two running north-south and two east-west, parallel to the fence that marked the northern boundary of the plot. The gravel used for the paths has been analysed and documented. Its geological composition, grain size, and colour are all essential elements

contributing to the garden's aesthetic expression. Additionally, two smaller cultivation areas were located near the main building (figures 6 & 7).

Cultivated plants

As mentioned, plants are central to the character and function of a garden; therefore, close collaboration with archaeobotanists plays a crucial role in the excavation of historic gardens in Sweden. The excavation in the Rosendal quarter serves as a good example, as it yielded exceptionally well-preserved plant seeds. Throughout the excavation, an archaeobotanist conducted continuous field analyses, which were instrumental in making informed decisions about sampling priorities and identifying material for further analysis at an early stage in the research process. The archaeobotanical analysis revealed a diverse range of cultivated plants, including vegetables, herbs, medicinal plants, fruits, and berries. Cabbage, turnips, and beets were particularly abundant, while basil, onions, and red and black currants were also present. Coriander and purslane are further examples of cultivated species identified in the analysis (Heimdahl 2023).

One cultivation bed, positioned particularly favourable with a south-facing orientation, contained an extraordinarily rich variety of plant remains, with over 20 identified species. These included staple crops, vegetables, herbs, and ornamental flowers, as well as heat-loving plants such as basil. The macrofossil assemblage was especially rich in remains of cabbage, tobacco, and poppies. While cabbage may seem like an ordinary crop to grow in such a prominent location, it is important to note that certain varieties, such as cauliflower, Brussels sprouts, and red cabbage, were considered prestigious and even decorative. Notably, henbane was also identified in this cultivation bed, providing clear evidence that it was grown as a medicinal plant within the garden. The high diversity of herbs and vegetables in the same bed suggests that multiple species were cultivated simultaneously, possibly indicating a carefully planned and intensive planting strategy.

Another south-facing cultivation bed was characterised by onions and purslane. Of particular interest in this bed was the presence of garden carnation, a purely ornamental plant cultivated for use as a cut flower. Columbine, another decorative species, was also identified. Additionally, traces of grapes were found in the material. In most cases, grape and fig remains in archaeological contexts are indicators of latrine waste, suggesting that dried figs and raisins were part of the household's diet. However, two grape seeds were discovered in one of the cultivation beds, and notably, the surrounding soil lacked other signs of latrine waste. This supports the interpretation that a grapevine may have been actively cultivated in this bed. A similar pattern was observed with a fig kernel found in a planting pit, which also lacked latrine waste, raising the

possibility that fig trees were grown on the plot. However, a source-critical perspective is necessary, as figs contain large quantities of seeds that can easily spread beyond their original locations.

Another interesting aspect of the planting beds was the discovery of traces of plant supports in the form of sticks and poles. These could have been used for a variety of plants, including climbing species such as peas and beans. However, since these plants typically require charring for their remains to be preserved, they rarely leave traces in the archaeobotanical material. This finding adds another layer to the understanding of cultivation techniques and plant management within the garden.

The north-facing cultivation beds contained large quantities of medicinal plants, indicating the practice of household remedies. It was not uncommon for priests to take an interest in such plants, and their presence in this garden likely reflects the particular interests of its owner. As previously mentioned, tobacco was considered a medicinal plant during this period, and it is noteworthy that two different species of tobacco were identified in this context. Contemporary sources suggest that these species were believed to possess slightly different medicinal properties (Franck & Hernodius 1633).

Cultivation and gardening

Several analysed samples provide insights into cultivation strategies such as irrigation, fertilisation, and soil improvement (Heimdahl 2023). The diversity of plants – including staple crops, vegetables, medicinal herbs, and spices – suggests that crop rotation was practised, with different crops grown in different seasons. The soil was enriched using household waste, including kitchen scraps. In some cases, threshing residues and brewery waste were also evident. Kitchen waste included bone fragments, fish bones and scales, oyster shells, hazelnut and almond shells, and charred grains. Additionally, compost pits were present in the garden, with some samples revealing herbaceous fragments, indicating that cultivation soil was also improved using composted organic material.

Archaeobotanical analysis, particularly from the cultivation beds, also revealed traces of aquatic animals in several soil samples. The presence of ephippia (eggs from hibernation states during wintering) from water fleas (Daphnia), often found in garden environments and cultivated soils, suggests the use of irrigation. Irrigation was a labour-intensive practice that distinguished small-scale horticulture from large-scale arable farming, further emphasising the intensive care and management of this garden.

To summarise, a total of 51 plant species have been identified in this garden. The plant remains were precisely dated and contextualised within specific garden beds. Several species were previously unknown in

Stockholm (Hansson & O'Meadhra 2020; Heimdahl 2023). This study thus makes a significant contribution to the understanding of early modern urban gardening, both in Stockholm and from a national perspective.

Artefacts in historical gardens

The artefacts discovered in historical gardens have so far been a relatively underutilised resource in Swedish research. Garden soils often contain a diverse range of artefacts with varying origins and informational value. These artefacts can be categorised into three main groups (cf. Currie 2005; Lindeblad & Nordström 2014):

1. **Artefacts used by gardeners**, such as discarded flowerpots and garden tools.
2. **Artefacts introduced through fertilisers and soil improvements**, which typically form the largest category. These include animal bones, pottery, glass, and metal items. Their informational value increases when it is possible to determine the original source of the fertiliser, for instance, whether it came from the household using the garden.
3. **Artefacts lost or discarded by visitors or workers**, such as coins, buttons, and broken clay pipes, may provide insight into the people who frequented the garden, whether as guests, students, or labourers.

Not all artefacts found in historical gardens can be divided into these categories, but they can be helpful when analysing the finds material. Like the case of contextualising the plants found in the gardens, the archaeological method used is crucial to successfully analyse the artefacts and retrieve the most information possible from them. In the following section, we will show how different types of flowerpots may be used to interpret various aspects of horticultural issues and the identity of the household owning and using the garden.

Flowerpots from the Linnean household

The Linnean Garden in Uppsala is the oldest Botanical Garden in Sweden, established in 1655 by the Swedish natural scientist, Olof Rudbeck the Elder (1630–1702). The academic Botanical Garden in Uppsala was the largest and most well-known in Sweden. Carl Linnaeus arrived in Uppsala in 1728, moved in with the Rudbeck family and became responsible for the tours of the academic botanical garden to the other medical students. According to some biographers, Linnaeus was quite distraught with the state of the garden, which had suffered greatly in a devastating fire which befell Uppsala in 1702 (Windahl Pontén 2020). It was during this period he laid the foundation for the groundbreaking work of *Systema Naturae* (the new bino-

Figure 8. The reconstructed Linnaeus Garden and private home of the Linnean family in Uppsala, with the excavation in the left corner of the picture. Photo: The Archaeologists, National Historical Museums.

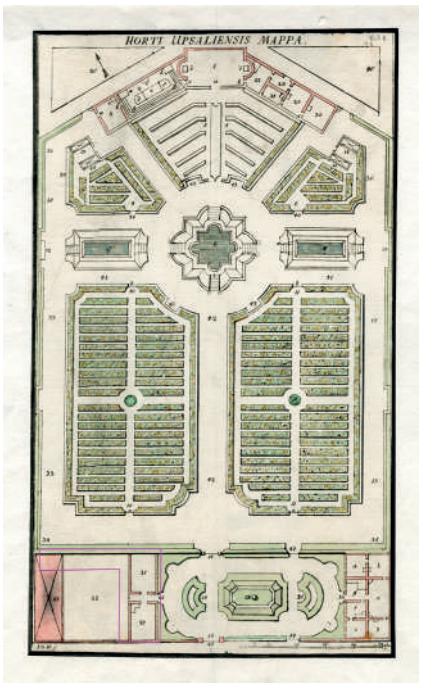

Figure 9. Plan of the renovated Botanical Garden and Prefect Accommodation from 1745. The archaeological excavation is marked. Hallman 1745, Horti Upsaliensis mappa. Tab. I. Uppsala University Library.

mial classification system for plants and animals). In 1741, Linnaeus was installed as Professor of Medicine and Botany at Uppsala University and subsequently, he and his family moved to the newly renovated Prefect accommodations adjacent to the likewise renovated botanical garden (figure 10). The renovated botanical garden was designed based on Linnaeus's new classification system and organised after the seasons. In the back of the garden, a modern orangery had been built for cultivating and preserving exotic tropical plants.

In the autumn of 2022, we had the opportunity to excavate part of Carl Linnaeus's (1707–1778) home in Uppsala (figure 8). This excavation did not cover the actual botanical garden adjacent to the home. The excavation encompassed the outbuilding, part of the courtyard and part of the stables (figures 8 and 9). The building was constructed of a stone foundation, probably with wooden walls, and two storeys high. The house was divided into two rooms, separated by a passage, and both rooms had foundations for fireplaces (figure 9). The house has been interpreted as living and working quarters for people employed in the Linnean household. An overview of the finds' assemblage implies a wealthy burgher household, with the difference that a large part of the ceramic profile consisted of planting pots and urns. The artefacts contribute to our knowledge of the management and cultivators of the Linnean

Botanical Garden, as well as answering questions regarding the socioeconomic status and identity of the Linnean household (Nordström 2025a, in prep, Nordström 2025b).

Planting pots

In Sweden, very little research has been done on flowerpots (planting pots, urns and vases). This might, among other things, be explained by the fact that planting pots used to nurture plants have had a similar design over time, which makes it difficult to differentiate old pots from new pots. The planting pots are hand-turned, made of unglazed earthenware, and typically have a hole in the bottom. In some cases, there can be several holes, both in the bottom and on the sides of the pot. In Sweden, planting pots began to be manufactured by Swedish potters no later than the 17th century. Planting pots were initially used by gardeners in the large formal gardens of castles and manors (Lindqvist 1981). Excavations in Swedish towns have shown an increased use of planting pots by Swedish burghers in their kitchen gardens during the 18th and 19th centuries (e.g., Hedvall 2017).

Currie (1993) has investigated the unglazed flowerpots of England and Wales, both in written sources and in archaeological records. He concludes, among other things, that flowerpots (equivalent to what we choose to call planting pots) changed subtly over time. Regional characteristics and datable features can be identified, which suggests that the theory that pots were made to a standard design throughout the early modern period is an overgeneralisation. He also suggests that although pots were used to contain plants throughout history, it was not until circa 1700 that purpose-made flowerpots were manufactured in any quantity (Currie 1993:240). The research on planting pots is still in its infancy in Sweden, and more analyses are needed to increase our knowledge on the development of the uses of this form of ceramics.

The planting pots found in the Linnean household display a wide variety of sizes, as well as the number and placement of holes in the pots (figures 10a). This may indicate that they were used for the cultivation of a variety of species, requiring a greater diversity in the pots. The assemblage of pots from the excavation constitutes a great starting point for further research.

Urns and vases

Other notable finds in the Linnean household included several large urns, likely used for grand floral arrangements and overwintering exotic plants indoors, either at home or in the orangery. Most urns were made of red earthenware, often glazed and decorated with animals, floral motifs, or wave band patterns (figure 10b). Such urns are unusual in the common bourgeois households of early modern Swedish towns. Even larger iron urns were

Figure 10a: Examples of planting pots from the Linnean household (left) and planting pots from Frisens park (right). 10b: Two urns from the Linnean household. To the left, a large urn with a Medusa head. To the right, an urn decorated with a lion head. 10c: The sherd of a yellow tulip vase found during the excavation (left), and the exhibited tulip vase in the Linnean museum in Hammarby, just south of Uppsala, to the (right). Photo: The Archaeologists, National Historical Museums, Uppsala University.

relatively common in historic manor gardens from the mid-17th century onwards (Flink 2004). While expensive, iron urns were likely more durable than ceramic ones, explaining their longer survival in historical gardens. The ceramic urns from the Linnean household are, therefore, of particular interest, as they suggest that both ceramic and iron urns were used simultaneously.

An even rarer find was a fragment of a yellow tulip vase. A similar tulip vase is exhibited in the Linnaeus farmhouse museum in Hammarby, near Uppsala (figure 10c). These vases were likely imported from Holland. In the 17th and 18th centuries, tulips and other flowers were popular decorative motifs in visual arts and material culture, symbolising knowledge, happiness, and prosperity. The 18th century was marked by utilitarianism and a distinct aesthetic, influencing the formation of a new "academic" household in Uppsala, which blended aristocratic, bourgeois, and scholarly ideals (Windahl Pontén 2020).

The abundance of various flowerpots in the Linnean household offers the possibility to try different perspectives of cultivation. The presence of planting pots suggests that plant cultivation for the botanical garden may have taken place within the household itself rather than being solely managed by a gardener and assistants. Meanwhile, the decorative urns and tulip vases indicate that floral arrangements were integrated into everyday life, reflecting cultural and intellectual ideals. These artefacts may be seen as expressions of the academic and aesthetic identity Linnaeus and his family sought to project (Nordström 2025b).

To summarise, further research on planting pots and decorative urns is essential to understanding when purpose-made flowerpots first came into use, how they functioned, and which plant species they housed. The variety of flowerpots can also provide insights into socio-economic relations and identities in early modern Sweden.

Conclusion

During the past 20 years, we have studied a previously unused, often well-preserved and varied archaeological record. Regardless of what kind of garden you study, a multidisciplinary approach is essential to reach good results in your research. Another important factor is that we, in the past 20 years, have simultaneously experienced a theoretical, methodical and technological development within Swedish contract archaeology, which has encouraged us to formulate better-informed scientific questions.

The fact that we have been researching a variety of gardens has also proven very beneficial. The results have shown that the gardens are an important part and a reflection of past societies. Our results show that

garden archaeology answers questions not only regarding horticulture, design, and aesthetics but also about self-sufficiency, economy, division of labour and gender issues. In short, garden archaeology encompasses several dimensions of past societies.

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