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Clay Tobacco Pipes and Smokeways in Eighteenth-Century Sweden

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When the Smoke Clears

Clay Tobacco Pipes and Smokeways in Eighteenth-Century Sweden

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When the Smoke Clears

Clay Tobacco Pipes and Smokeways
in Eighteenth-Century Sweden

Robert Bergman Carter



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Abstract:

This doctoral thesis explores potential source value of clay tobacco pipes made and consumed in Sweden in the eighteenth century beyond their currently applied uses as chronometric artifacts. In particular, this study is focused on exploring the ways in which clay tobacco pipes signaled socioeconomic differentiation in their contemporaneity and how such aspects may be understood based on archaeologically recovered fragments of pipes.

Tobacco smoking was socially ubiquitous in eighteenth-century Sweden. It is therefore argued that the practice of tobacco smoking, similarly to other ubiquitous consumption practices, must therefore have been differentiated and differentiating depending on the socioeconomic status of its carriers. To conceptualize differentiated and differentiating smoking, the study introduces the heuristic concept of smokeways. Differentiating smokeways are believed to have left identifiable traces in the archaeological record. The study employs a source-pluralistic approach that considers manufacturing standards of the clay tobacco pipe industry, traces that users left on archaeologically recovered pipes, as well as documentary and pictorial sources relating attitudes towards the smokeways that created these traces.

Archival documents from policymakers, manufacturing descriptions, price information from different makers, census and household examination records show that by and large, the industry adapted its production to demands from both policymakers and consumers to fit notions of appropriate and recognizable smokeways. Whereas price information shows that the symbolic value of certain types of pipes may have depreciated over time, a standardization of the output of pipe factories and workshops in terms of prices, types, production quality, and pipe stem-lengths indicates that many clay tobacco pipes would have been immediately recognizable as markers of socioeconomic status in the studied period. While this homogenization has impeded precise identifications of pipes not marked with maker-specific marks, it strongly suggests that many types of pipes were successful and long-lasting indicators of socioeconomic status.

Many of the attributes resulting from these explicitly socially differentiating industry standards remain observable on archaeologically recovered pipe fragments. Similarly, beyond immediate consumer choice, traces left on archaeologically recovered pipes as a result of their users' socially differentiating smokeways are also explored. These traces include bite marks on stems, signs of reuse and mending, as well as traces of relatively brief periods use.

Written and pictorial sources that relay contemporaneous attitudes towards the smokeways that resulted in these traces confirm that not only the type of pipe that a smoker used signaled status – the ways in which pipes were used are a factor to consider. The studied evidence indicates that views on appropriate, archaeologically visible, smokeways varied and shifted synchronously, diachronically, and regionally. For example, attitudes toward smokeways that resulted in bite marks on stems and pipe notches in teeth, while strongly associated with smokers on the lower end of the socioeconomic scale, appear to have shifted throughout the studied period, appear to have become increasingly acceptable as the century progressed. Views on blackened or seasoned clay pipes also appear to have varied throughout the studied period, with increased acceptance possibly traceable to the diffusion of significantly more expensive seasoned meerschaum bowls.

This research demonstrates how, by recording attributes related to relative price along with traces of use and modifications, it is possible to utilize archaeologically recovered fragments of clay tobacco pipes as evidence of socially differentiating smokeways. In recording, presenting, and discussing such attributes, when coupled to historical evidence, we may reach a more detailed understanding of past expressions and experiences of differentiation, inequality, and social ambition.

Key words: Historical Archaeology, Clay Tobacco Pipes, Tobacco Smoking, Smokeways, Practice Theory, Source Pluralism, Eighteenth Century Sweden

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When the Smoke Clears

Clay Tobacco Pipes and Smokeways
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Robert Bergman Carter



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1 Introduction

1.1 Introductory remarks: overlooked source values?

Lappatäkta in Järvsö in Hälsingland, Sweden known to have been inhabited by members of a Sami family between the years 1786 and 1812 or 1813, was excavated during two seasons in 2017 and 2018 (Björk,& Blennå 2020). Among animal bones, pottery, buttons and coins recovered from the site were also around 60 fragments of clay tobacco pipes. While glass buttons, metal pendants and animal bones, which deviated from assemblages from other croft-sites, were all interpreted as potential signifiers of the crofters' ethnicity and social status, the application of clay tobacco pipes was restricted to being identified, dated and recorded to the best abilities of Arne Åkerhagen (2020, pp. 43–48).

Even though the date-range for the site occupancy was already known from documentary sources, Åkerhagen, in a format that he applied for pipe reports for the contract archaeology firms that made use of his services since the 1990s, presents the assumed origins and production date-ranges of a selection of the different pipes. Nothing is noted about any potential source value related to what these fragmented pipes may have signified in terms of the socioeconomic status or ethnicity of their users. Notably, only the fragments that are chronometrically diagnostic have been included in this report. This also means that fragments potentially showing signs of modifications, such as whittling or bite marks on stems are overlooked (figs. 1 & 2). Looking at the excavation reports that contain Åkerhagen's reports as appendices makes it clear that this has been the general case since pipe reports began to be published in Sweden.



Figure 1. A stem fragment with bite marks recovered from Lappatäkta, Hälsingland, Sweden. Fnr. 102. Photo by Robert Bergman Carter.



Figure 2. A mouthpiece fragment with bite marks recovered from Lappatähta. Fnr. 27d. Photo by Robert Bergman Carter.

In Sweden as in any Northern European country, fragments of clay tobacco pipes are one of the most commonly encountered artifacts during archaeological investigations of postmedieval sites. Attesting to widespread tobacco smoking and employed in archaeological analyses of contextual chronology, pipe fragments are now collected during archaeological excavations, processed, recorded and published as parts of archaeological reports. Göran Tagesson (2019, p. 33) notes that “dendrochronological analyses, coin-, and clay pipe-dates etc.” are employed in Swedish archaeology to provide chronological information with “a high enough resolution of [depositional] sequences to be able to discuss connections to the written sources” (ibid. p, 32). While this belief in the chronometric aspects of pipe fragments means that they are collected rather than discarded (a practice abandoned not long ago), this is generally also the current limit of their source value for Swedish archaeology.

David Higgins, in his doctoral thesis on Broseley clay tobacco pipes from 1987 (pp. 14–15), states that an archaeologist:

will want an accurate date structure for the excavated contexts and to know how the style and decoration of individual pieces reflect the individuals who created the site, how far the pipes have travelled and what this tells us about trade and communication s in that area.

While a look at excavation reports from nearly any early-modern site in Sweden make it evident that archaeologists in Sweden seize upon the source value of pipes as dating evidence and as indicators of tobacco consumption, little attention is paid to these fragments’ potential source values reflecting the individuals who created the site. As noted by Higgins, these, and other “diverse and searching questions can only be asked and answered if a considerable amount of groundwork has already been done” (1987, p. 15).

Pipe fragments recovered from the Swedish archaeological record can generally be traced to three pipe-producing countries: England, the Netherlands and Sweden. A substantial amount of systematic and convincing groundwork has been published in the two former countries – groundwork that has proven the potentials of pipes to reflect the individuals who created the sites and contexts that the pipe fragments have been recovered from. In Sweden, however, approaches to aspects that may shed

light on issues beyond production and use dates have not received serious attention. This may be because, as noted by Craig Cessford (2001, n.p.):

Clay pipes belong to what might be termed the familiar recent past. They are not conceived of as alien or different but as something that is already understood so that their role and function does not require explicit discussion as we already think we know what it was.

Briefly put, pipes are held to be evidence of tobacco smoking. This has meant that pipe fragments have occasionally been applied as evidence of the diffusion of tobacco smoking in different social groups (see Stenbäck Lönnquist & Welinder 2008). This supposed familiarity also becomes apparent as generalizations and misconceptions concerning the uses of pipes are continuously propagated in publications by Swedish archaeologists. For example, the idea that clay pipes in general should be seen as single-use items that were disposed of after one use is recurrently promulgated (see, for example, Karlsson 2006, p. 101; Arkeologerna 2021). Similarly, the claim that pipes were sold pre-packed with tobacco from pharmacies, where they would also have been consumed, well into the eighteenth century (Karlsson 2006, p. 101) is another reiterated notion for which there is no convincing evidence. Incidentally, the stem fragments with bite marks recovered from Lappatäkta and other sites contradict both of these claims.

It is possible that interpretations of socioeconomic status based on Dutch pipes recovered from the Swedish archaeological record has been stymied by the fact that nearly all publications on pipes made in the Netherlands are in Dutch, a language not spoken or understood by many Swedes. A language barrier does not explain why publications in English, which present evidence that similarly to Dutch findings show links between socioeconomic status of consumers and variations to style and production quality of pipes, have not had a wider impact in Swedish archaeology.

In England, despite substantial amounts of groundwork having been carried out to identify pipe makers and variations in production quality, Cessford noted in 2001 that clay tobacco pipes were “under theorised” (n.p.). Moreover, Cessford suggested that in order for clay pipes to be used “more widely as a source of socio-economic evidence, then they need to be placed in a much firmer context” (ibid. n.p.). The study at hand is inspired by clay tobacco pipe research that time and again has presented approaches to interpreting clay tobacco pipe fragments beyond their chronometric attributes. In particular, the study at hand is focused on the roles that clay tobacco pipes manufactured and used in Sweden may have filled as indicators of socioeconomic status during the eighteenth century. The aim is to contextualize the uses of clay tobacco pipes with a specific focus on eighteenth-century Sweden from a perspective that considers their functions as material elements in a consumption-practice with variations.

As tobacco smoking using (mostly) clay tobacco pipes was ubiquitous in eighteenth-century Sweden, varying ways of smoking were applied to signal socioeconomic status. This study proposes that an acknowledgement of the existence of different and differentiating smokeways that have left distinct traces in archaeological and archival records can contribute to fulfill a desire expressed by Cessford a quarter of a century ago; that clay pipe studies may “escape from being regarded by archaeologists solely as a useful form of dating evidence to be used more widely as a source of socio-economic evidence” (ibid., n.p.). As we shall see, the pipes themselves and the traces left on them through manufacture, use, and discard, when combined with sentiments of the smokeways that produced them as gathered from the historical record, possess potentials for approaches to the study of idealized consumption, differentiation, and disenfranchisement in eighteenth-century Sweden.

1.2 Notes to the reader

This study aims to identify physical attributes resulting from smokeways connected to eighteenth-century notions of socioeconomic differentiation that potentially remain visible, and as such can be identified on fragments of clay tobacco pipes recovered from the archaeological record. While three biographical stages of clay tobacco pipe consumption are believed to be particularly present in the archival record – manufacturing, sale, and use – three potential biographical stages of clay tobacco pipe consumption are believed to be particularly salient on pipes from the archaeological record – manufacturing, use (including selection and reuse), and discard. By combining pipes from the archaeological record to what can be learned about the consumption of them from archival sources, inferences can be made about issues relating to relative prices paid for individual pipes, to what individual pipe types may have signified in their contemporaneity, and to about what smokeways were considered appropriate or inappropriate for people of different social stations.

Chapter 2 presents previous research in a field that can be referred to as clay pipe research, as well as examples of applied interpretative potentials of clay tobacco pipes beyond their primarily applied chronometric functions. Many works mentioned here have served as a background and inspirations for the problem formulations, aims, research questions, methods and theoretical approaches of the study at hand.

Further background to the study at hand is presented in chapter 3. As clay pipes were (and, in some cases, still are) used for the consumption of tobacco, the third chapter of this study presents a background that considers conceptions of consumption with a focus on tobacco in early-modern Europe in general and Sweden in particular. This chapter contrasts contemporary statements that tobacco belongs among luxury goods, to sources indicating a ubiquitous, complex, and differentiating consumption of different types of tobacco in eighteenth-century Sweden. Via the establishment of tobacco smoking as a near ubiquitous yet nuanced practice, this chapter also presents how social differentiation was upheld through ideals of recognizable and differentiating consumption. Problem formulations, aims, and research questions are as such formulated based on previous research in the field of clay tobacco pipe research and the potential possibilities of nuancing the ubiquitous practice of tobacco smoking through the concept of smokeways.

Against a background of differences in definitions of consumption in Sweden, particularly between the academic disciplines of historical archaeology, history, and the history of ideas, I have felt it necessary to define the concept of consumption as applied for an understanding of the concept of smokeways outlined in this study. Chapter 4 therefore presents a theoretical definition of consumption drawing heavily on both historical archaeological, economic historical, and sociological schools of thought. The definition outlined encompasses procurement, use and discard of things in a wide sense and is coupled to both biographical expectations of things and to theories of social practices being made up of elements.

In many cases, clay tobacco pipes can be dated through makers' marks that have been identified through documents preserved in the archival record. Chapter 5, presenting methods and some source materials, argues for a similar source-pluralistic method for interpreting smokeways and their resulting traces in the archaeological record. As any reader will notice, there are many instances in this study where there is feedback between evidence from one or several sources presented in one chapter that has consequences for interpretations of evidence from sources applied in another chapter.

An attempt has therefore been made to structure each chapter according both to chronological order of the source material, to the research questions addressed in each chapter, and to some extent to the biographical stages of the pipes themselves. Therefore, conceptions about idealized consumption of pipes and the characteristics of pipes introduce the study at hand. The first chapter to present and discuss evidence of smokeways related to pipes, Chapter 6, focuses on archival sources that emanate from discussions concerning policymaking that regulated imports of pipes and the domestic pipe industry in the first half of the eighteenth century, as well as industry standards applied in the production centers in which the imported pipes were produced. The purposes of this chapter are first to establish the fact that there were idealized consumption practices that included clay tobacco pipes, and secondly to present how these idealized consumption practices can be interpreted by combining an understanding of industry standards and the marks these have left on imported pipes in the archaeological record. This, as we shall see, also serves the purpose of illustrating standards on which the domestic pipe industry was modelled and provides insight into conceptions of idealized consumers of its production as well.

Chapters 7, 8 and 9 are focused on identifying industry standards of the Swedish clay tobacco pipe industry. The main purpose of these chapters is to identify attributes visible on domestic pipes and pipe fragments related to prices of pipes gathered from the archival record. These industry standards, based on conclusions of previous chapters, are believed to be in part the results of demands placed on pipe makers by policymakers based on idealized, socially differentiating, and group-specific smokeways.

Chapter 10 aims to analyze how smokeways are described and depicted as potentially socioeconomically differentiating in the written and pictorial record from the Swedish eighteenth century. The primary aim of this chapter is to identify how varying aspects of selection, use, and discard related to smokeways of different social groups described or portrayed are potentially observable on fragments of pipes recovered from the archaeological record. As these sources describe or depict the use, and occasionally the reuse and discard of pipes, they are relevant for interpretations of which smokeways were considered appropriate or deviant for the subjects described or depicted. As will become evident, interpretations of socially differentiating smokeways based on the pipes and smokeways described and depicted in these source materials are both strengthened and assisted by an understanding of industry standards and how these affected the prices and appearances of contemporaneously available clay tobacco pipes.

This study, therefore, can be likened to a stratigraphy of epistemology, where information, or evidence, from several previously presented sources is a requirement for the following interpretations. For example – the understanding of industry standards and price variations is a requirement for interpretations both of how these are manifested in the archaeological record as well as how these are represented in historical sources.

Thereafter follow six appendices. Appendix I presents a chronology of Swedish pipe makers that has been compiled based on a combination of sources encountered and employed during work with this study. This has proven to be of some relevance for the understanding of continuity in production, not only at particular factories and workshops, but also of particular pipe types.

Appendix II presents both transcriptions of price information from pipe manufacturers and merchants as well as comparative lists of known pipe types and their prices, spanning from the 1730s to the 1820s. A selection of the information presented here has also been included in a comparative presentation of pipe types and smokeways in chapters 9 and 10.

Appendix III presents a recording practice for archaeologically recovered fragments of clay tobacco pipes that is based on observations from the previous chapters. The recording practice considers both chronometric attributes of pipes as well as attributes indicative of differences in production quality and potential variations to smokeways indicative of socioeconomic status. Although this study is focused on eighteenth-century Sweden with a focus on the Swedish pipe industry, the recording practice also considers and allows for the recording of chronometric attributes of clay tobacco pipes from other pipe producing countries.

Appendix IV presents factory inventories gathered from estate inventories of pipe makers. The focus here is primarily on tools used in the Swedish pipe making industry of the eighteenth century. Many of these tools were (and are still) used for making pipes of different production qualities and traces of the tools and the manufacturing steps in which they are applied are known to have left traces on pipes.

Appendix V consists of transcribed descriptions of factories and manufacturing techniques from various Swedish eighteenth-century sources. Many of them are applied for the establishment of industry standards presented in chapters 7 and 8.

Appendix VI is a glossary intended for readers who are unfamiliar with clay tobacco pipe nomenclature used throughout this text. Included here are also the Swedish terms used both in period documents and in previous publications, primarily by Arne Åkerhagen.

Regarding a majority of archival sources presented at length in the following text, translations to English are presented in the body text while transcriptions of the original texts in Swedish, Dutch, or French are in footnotes. Only occasionally have the originals been excluded. In these cases, it is noted in square brackets as translated by the author. Moreover, several of the archival sources consulted are not paginated, which is the reason why page or folio numbers are not always specified after the so-called NAD-codes. The NAD-codes are unique digital identifiers that can be used to locate the consulted volumes on the national archive database (NAD) of *Riksarkivet* – the Swedish National Archives.

2 Previous research

2.1 Introduction

Providing an all-encompassing chapter on previous research carried out in the field of clay pipes and tobacco is a difficult task as evidenced from the extensive bibliography on publications dealing with clay pipes presented on the websites of the Society for Clay Pipe Research, the National Pipe Archive, the publications of the Stichting PKN, the Pijpenkabinet in Amsterdam, the journal of the Académie Internationale de la Pipe, and the BAR-series titled *The Archaeology of the Clay Tobacco Pipe*.¹ What follows below is a presentation of general developments and trends observed in the field of clay pipe research.

This chapter is divided into two main sections, the first focusing on research on pipes as chronometric artifacts, broadly outlining some of the most significant contributions that have enabled pipe bowls and stem fragments with decorations to be applied for obtaining depositional dates. The stark majority of imported pipes recovered from archaeological contexts in Sweden were manufactured in either the Netherlands or in England, and morphological similarities of pipes made in Sweden also show that Swedish pipe factories and workshops primarily copied types made in these two countries. Research relating to the products of Dutch and English pipes are therefore highly relevant for the understanding of pipes in the Swedish archaeological record, which is the main focus of this study. Pipes from Norway are known to occur in the Swedish archaeological record, and it is reasonable to assume that hitherto unidentified products from Danish and Finnish pipe factories may be represented as well. Therefore, research outlining the identification of these is also included.

The second section presents examples of interpretative potentials of research beyond chronometrics. Though far from exhaustive, the aim of the section is to show some of the topics explored and to identify lacunae in pipe research and its applications in Swedish archaeology. While the primary geographical focus of this section is Sweden, research from other Nordic countries, Australia, the Netherlands, England, and North America have also been included, as these have also served as inspirations to the study at hand.

2.1.1 The backgrounds of clay tobacco pipe research

The most immediate background to the genesis of research on the topic of clay tobacco pipes in the nineteenth century is the curiosity of pipe collectors. The distinction between pipe collectors, amateur historians and archaeologists and professional archaeologists and historians is sometimes difficult to discern among early publications on the topic of clay tobacco pipes. When the field of clay pipe research gained traction among archaeologists beginning around the mid-twentieth century, reference lists show how akribia and academic earnestness increased.

¹ See also Eugene Umberger (1996), in particular pages 135–187.

Much of the literature published between the late nineteenth century to the first half of the twentieth century relating to social aspects of tobacco in general, and also to historical pipes and paraphernalia related to the consumption of tobacco was written by and for collectors of pipes of various materials and origins, snuff boxes, snuff spoons, snuff bottles, pipe tampers, ashtrays, tobacco boxes and jars, advertising materials from tobacco shops or manufacturers etc., or to smokers and/or users of tobacco in other forms (Fairholt 1859; Timmins 1870; Pritchett 1890; Blondel 1891; Dunhill 1924; Pinto 1961). Particularly Pritchett's *Smokiana* (1890), Blondel's *Le Tabac – Le Livre des Fumeurs et des Priseurs* (1891), and Alfred Dunhill's *Pipe Book* (1924) present ethnographical pipes and brief accounts of practices surrounding smoking in different countries and continents. These publications treat pipes in part as artifacts apt for categorization and, in turn, as operational markers and attributes of significance to interpretations of social aspects such as ethnicity, culture, and occasionally socioeconomic status. Distinctions, in these works, are made according to origin, and occasionally production dates and the social settings in which pipes from different regions were purportedly employed. In detailing variations in materials, shapes and forms of artifacts used in the different practices of tobacco consumption, publications such as these can therefore be seen as the foundation on which subsequent pipe research, and later applications of pipe research in the disciplines of archaeology and historical archaeology have been formulated.

As attempts were made to categorize collections of European pipes according to origin and production date, an increase in the amount of publications tracing bowl-shapes, makers' marks and decorations on clay pipes and clay pipe fragments ensued. The results of these attempts are the foundations for subsequent bowl-form typologies, catalogs of makers' marks and decoration styles that have remained more or less valid for the identification of pipe fragments recovered from the archaeological record. In the Netherlands, the first publication on the topic of the archaeology of clay tobacco pipes, which also suggested that pipes had been used by ancient Romans and Celts, was published in 1860 (Westerhoff). This publication in turn inspired similar research in England. As examples of publications that inspired subsequent classifications of pipes, Benedict Goes (1993, p. 11) mentions some of the earliest attempts at classifying pipes; one of the oldest being the 1862 article 'On Old Broseleys' (Thursfield 1862, pp. 79–81) and F.G. Hilton Price's systematic classifications (1900; 1901).

2.2 Clay pipes as chronometric artifacts

2.2.1 Clay pipes in England

Not until the 1950s and 1960s, following urban densification and rebuilding after World War II did archaeologically recovered pipe fragments receive serious attention from specialists, as evidenced by articles published by David Atkinson (see bibliography in Higgins 2013). Among the typologies for primarily English pipes from this period are Adrian Oswald's 'Evolution and Chronology of English Pipes' (1961, pp. 55–62), Atkinson's and Oswald's simplified London typology (1969, pp. 171–227) and 'A Brief Guide for the Identification of Dutch Clay Tobacco Pipes Found in England' (Atkinson & Oswald 1972, pp. 175–182), which are foundational for the application of pipes as chronometric artifacts and subsequently applied by archaeologists in countries to which British (and Dutch) pipes were exported. The 1975 publication of *Clay Pipes for the Archaeologist* (Oswald 1975), with typologies and county makers lists, with later additions in subsequent BAR volumes of *The*

Archaeology of the Clay Tobacco Pipe has remained current for the identification of makers and production dates for pipes made in the British Isles (see, for example Davey 1979; 1980; 1981; 1982; 1985; 1987; Jung 2003; White, Davey & Higgins 2004), the Netherlands (Duco 1980; 1982), the United States of America, and to a lesser extent, Denmark (Ahlefeldt-Laurvig 1980) and Sweden (Bonds 1980).

The National Pipe Archive (NPA), a charitable organization based under the University of Liverpool since 1993, provides an archive of pipe studies primarily focused on the British Isles. Its website contains, among many other things, lists of pipe makers, a stamp catalog, regional typologies, and a bibliography organized after countries and topics.

2.2.2 Clay pipes from the Netherlands

As in England, collectors, amateur historians and archaeologists in the Netherlands also played a significant part in highlighting the value of clay tobacco pipes for postmedieval archaeology, primarily when applied as chronometric artifacts; D.A. Goedewaagen published his findings after researching the pipe industry of Gouda by linking marks on pipes to marks known from guild records (Goedewaagen & Helbers 1942; and extensive bibliography in Duco 1987, p 151) are representative of this era in Dutch pipe research.

This was followed by attempts to apply mathematical formulae based on measurements of Dutch pipes for obtaining production dates, which was championed by F.W. Friederichs. Friederichs' *Pijpelogie* (1975) presents mathematical formula for dating Dutch pipe bowls based on the above-mentioned observation of a gradual increase in pipe bowl capacity. The formula, known as either the Friederichs-formula or the HBO-formula, was designed to calculate the volume of bowls by measuring H, the height of the bowl from behind the heel to the rim of the bowl, B, the diameter of the bowl at its widest part, and O, the diameter of the tobacco chamber measured beneath the bottering on the rim, in the bowl proper. Thus, H is multiplied by B, which in turn is multiplied by O, and once the product has been obtained, that number is compared to 12 curves in a diagram with dates spanning from 1580 to 1930 on the X-axis and the product of the formula on the Y-axis with accompanying typologies. The date obtained by this method, Friederichs claimed, would be a +/- date accuracy of five years for Dutch bowls.

The HBO formula has been proven erroneous and less reliable than typological deductive method of dating pipes a number of times, often resulting in dates that are too late (Duco 1981; Wallin 1982; Wallin 1983), and has fallen out of favor in Europe along with other formulae-based methods or measurements for obtaining production dates for clay tobacco pipes.² It is however notable that the measurements of the HBO-formula are often included as occasional bases for dates in Åkerhagen's catalogs (see, for example, 2012b; 2012c).

Founded in 1978, the Stichting Pijpologische Kring Nederland, now known as the PKN, publishes a quarterly magazine, a yearbook, and has published extensively on the topic of clay tobacco pipes in the Netherlands (see full bibliography on website). The PKN's ten-year jubilee publication *De kleipijp als Bodemvondst* (Tymstra & van der Meulen 1988), and *Productiecentra van Nederlandse kleipijpen: een overzicht van de stand van zaken* (van Oostveen & Stam 2011), present overviews of the Dutch pipe making industry and its products.

² Formulae-based methods are still applied in the USA to a great extent. See below.

The PKN is also behind publications presenting catalogs of makers marks and historical details of specific production centers like Gouda (van der Meulen 2003), Leeuwarden (Carmiggelt 1988), Leiden (van der Meulen & Tupan 1980), Alphen aan den Rijn (van der Meulen 1986), Schoonhoven (van Oostveen and Kleijweg 2009), Gorinchem (van der Meulen, Brinkerink & von Hout 1992) and also a compilation on the Belgian clay pipe industry (Stam 2019a). *Goudse Pijpenmakers en hun Merken* (van der Meulen 2003), containing a catalog of makers marks of pipe makers in Gouda is another significant PKN-publication.

Another Dutch institution, operated since the 1970s by Don Duco, whose research and publications deal with clay tobacco pipes as well as pipes made from other materials, opium pipes and other smoking utensils, is the Pijpenkabinet in Amsterdam (formerly Leiden). *Pijpelijntjes*, a journal published by Duco from 1975 to 1985, focuses primarily on Dutch clay pipes yet includes articles on clay pipes and related research from all over the world. Duco has also published several books, particularly on the clay pipe industry of Gouda (1982; 2003) and has contributed to the above-mentioned BAR-series on clay pipes for the archaeologist (1980; 1981). Among Duco's publications which have proved seminal for archaeologists working with the post-medieval and European colonial period is *De Nederlandse Kleipijp – Handboek voor Dateren en Determineren* (1987) in which Duco presents a deductive methodology for identifying pipes based on shapes, marks and decorations which is widely applied in current archaeology in many regions where Dutch pipes are part of the archaeological record. Duco's role in bridging the gap between clay pipe research and archaeology cannot be overstated, *De Nederlandse Kleipijp [...] (1987)* along with *Merken en merkenrecht van de pijpenmakers in Gouda* (2003) may be among the most cited works on Dutch clay tobacco pipes as of this date and are also widely used by the above mentioned PKN and its associated archaeologists for determining production dates and centers of archaeologically recovered pipes.³

Duco has termed his method *de deductieve dateringsmethode* – the deductive dating method (1987, pp. 138–146). The method utilizes three categories of source materials which can be combined; the first is the *algemeene kenmerken* – which entails identification of the general characteristics or attributes of pipes which correspond to a certain period when they were in fashion, or period of use. The second is the *bedrijfsgebonden kenmerken* – which is the identification of characteristic attributes of the industry standards employed in the making of individual pipes. This is facilitated significantly by an understanding of categorizations of quality standards that are contemporaneous to the periods when the pipes were made, and can be obtained by comparing pipes to other pipes and to archival sources such as manufacturing descriptions and price lists. Comparative studies of contemporaneous pipes, guild standards and manufacturing descriptions from the archival record have enabled an empirically based understanding of such characteristics in the Netherlands. The third category is referred to as *externe gegevens* – literally external data or external information. This category includes archival information related to any aspect of clay tobacco pipes, from comparative studies of manufacturing descriptions to price lists, guild records, depictions of pipes and smokers, and descriptions of pipes, smokers, and smoking in writing. Included in this category are also stratigraphical and contextual analyses.

³ It is noteworthy that van der Meulen's *Goudse Pijpenmakers en hun Merken* and Duco's *Merken en merkenrecht van de pijpenmakers in Gouda* were both published in 2003.

2.2.3 Clay pipes in The United States of America

In North America, stems of clay tobacco pipes are commonly employed for obtaining mean occupation dates through different regression bore hole diameter formulae based on findings from 1954, when J.C. Harrington published *Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes* (pp. 10–14). In this article, Harrington presents the theory that the diameter of bore holes in the stems of clay pipes decreased over time in a seemingly predictable manner as a result of increased stem lengths, and that relative production dates of stem fragments can be obtained by measuring bore hole diameters using drill bits varying in size from 9/64" to 4/64". Harrington then defined five general time periods, 1620–1650, 1650–1680, 1680–1710, 1710–1750, and 1750–1800, showing in a histogram how bore hole diameters decreased between the years 1620 and 1800. Harrington states that he only used English pipe stems for his study yet fails to specify how this is known.⁴

Harrington in turn inspired a number of similar attempts to date pipe stems, among them the Binford regression formula, $Y=1931.85-38.26X$. The formula suggests that the regression of the diameter of bore holes would be 0 in the year 1931 and that a mean production date, Y, can be obtained from measuring and calculating a median bore hole diameter by measuring a sample meeting four prerequisites. These four prerequisites are that the sample stems must predate the year 1780, the sample must be randomly selected, the sample is representative of the site, and that the depositional rate at the site must have remained constant. Binford explains that 1780 is the year in which the production of white clay pipes began in North America, and that makers on this continent used older styles of instruments which would lead to erroneous dates (Binford 1962. pp. 66–67). Lee Hanson Jr. presented an even more intricate set of ten straight line regression formulae designed to allow testing hypothetical settlement or site dates spanning from 60 years to 130 years (1971 [1969], pp. 2–15). Hanson's formulae have never seen wide use, likely due to the fact that it received severe criticism from Binford and that Hanson himself withdrew his formulae in 1971.

Yet another formula was presented in 1971 by Robert Heighton and Kathleen Deagan (pp. 220–229). In agreeing with Hanson's criticism of Binford's linear regression formula, Heighton and Deagan suggested a curvilinear logarithmic formula as well as a point of origin formula based on the mean bore diameter and a regular decrease in stem bore diameters of 22 years. The logarithmic formula is $(X=(-\log Y + 1.04435)/0.05324)$ and the point of origin formula depends on the date acquired from the logarithmic formula and is thus $(\text{date}=1600+22X)$.

For North American archaeology, research publications assessing which of these formulae provide the most accurate method for dating clay pipe assemblages is nearly a genre in itself, and has now also come to include methods for dating Chesapeake/Colono pipes manufactured in the colonies (Monroe, Mallios & Emmett 2004).⁵

⁴ This would be possible in cases where the stems were part of a fragment with a relatively intact bowl, the stem was incusely marked with a known maker's mark from England, or if the pipe stems on which the study was based had been excavated from a production site or preferably several production sites in England.

⁵ As previously mentioned, bore diameters along with all other formula-based methods for obtaining production dates for clay pipes are not commonly employed in Europe. In Sweden, Åkerhagen often inconclusively based production dates on bore diameters based on the belief that stems with diameters of 3mm or more are more likely to have been made in the seventeenth century than later. Bore diameters of pipes made in Swedish factories and workshops can vary widely; a comparison of bore diameters of stems marked with name bands known to have been produced within a timespan of seven to eight years differed between 0.2mm and 0.5mm. This shows that the method is not reliable for Swedish

2.2.4 Clay pipes from Sweden

Although Göran Tagesson (2019, p. 32) has pointed to the potentials of linking datable clay tobacco pipes recovered from Swedish archaeological contexts, along with coins, and dates obtained from dendrochronological analyses to historical sources, the role of clay tobacco pipes within Swedish archaeology has primarily been as chronometric artifacts. There are several Swedish publications evaluating various methods for obtaining production dates for pipes from both the Netherlands and England (Wallin 1982; Wallin 1983; Menander 2003; Åkerhagen 2012a). Clay pipe research in Sweden has relied heavily on research from the Netherlands and England, especially for methods for obtaining production dates. Determining production dates and identifying makers has remained the major theme in Swedish publications on the topic since the late 1960s; for example, a chapter on tobacco and a clay pipe from the warship *Wasa* by Carl-Olof Cederlund was published in *Fataburen* in 1966 (pp. 41–54) presents these potentials.

For pipes manufactured in Sweden, attempts at outlining the history and production of the eighteenth-century clay pipe factory in Varberg (Puktörne 1968, pp. 61–82) is one of the first publications attempting to link domestically manufactured pipes to archival documents. Gunvor Bonds' chapter on pipes recovered along the shoreline of Djurgården in Stockholm, 'Kritpipor från Ryssviken' (1977, pp. 33–56) was one of the first surveys of the Swedish clay pipe industry of the eighteenth century. This chapter was also translated and published in the BAR-series *The Archaeology of the Clay Tobacco Pipe* (1980, pp. 273–298). By comparing initials on bowls and name bands stamped on stems to archival sources relating to charters for pipe manufacturing and annual reports from factories to the *Kommerskollegium* (henceforth the National Board of Trade) and other archival sources, Bonds identified a number of pipes recovered on the foreshore of Djurgården by linking them to factory and workshop owners in Stockholm and other parts of Sweden. In doing so, Bonds presents the chronometric potentials of Swedish pipe fragments and provided a foundation for subsequent research in the field.⁶

As in Denmark and Norway, and as noted by Bonds (1980, p. 288), Swedish eighteenth-century pipe factories and workshops modelled their production after pipe styles made primarily in England and the Netherlands, the general bowl-form typologies for pipes made in these countries are applicable to obtain rough production date intervals as *terminus post quem*.⁷ For more exact production dates of Swedish pipes, much like in England and the Netherlands, workshop or factory-specific marking traditions that can be linked to information such as guild records from the documentary record is required.⁸

pipes. Moreover, for arguments against using measurements of bores or bowls to obtain production dates for Dutch pipes, many which are valid for pipes made elsewhere, see Duco's 'The Clay Pipe in the Seventeenth Century Netherlands' (1981, p. 386ff) and *De Nederlandse Kleipijp – Handboek voor Dateren en Determineren* (1987, p. 135ff).

⁶ Bond's chronology is primarily based on a combination of the Stockholm property register, letters of charter, annual reports to the National Board of Trade and the census of 1755. The chronology focuses primarily on 1750s Stockholm and has overlooked crucial details. This in turn has led to erroneous production dates for several factories having been published by subsequent researchers. See appendix I for an up-to-date chronology of Swedish pipe makers.

⁷ Especially a less tulip-shaped version of the London type 23 with a spur and the London type 25 were generally the most copied. Of the Dutch pipe types known to have been copied in Sweden are Duco's 3rd and 4th base types, the oval bowls and the so-called *kromkop*.

⁸ As will be shown, archival evidence shows that the production date ranges for most factories suggested by Bonds and Åkerhagen are incorrect and require revisions.

During archaeological excavations in preparation for the construction of the offices of *Sveriges Kommuner och Landsting* (henceforth the Swedish Association of Local Authorities and Regions) in the first half of the 1980s, archaeologists encountered a warehouse containing a yet to be calculated amount of clay tobacco pipes in what turned out to have been a warehouse that belonged to the Stockholm pipe factory owner Olof Forsberg. Coincidentally, two price lists dated to 1743 and 1747 were found at the Swedish Royal Library at almost the same time.⁹ This excavation, along with the discovery of the price lists, resulted in an upsurge in clay pipe research in Sweden; a report (Brynja 1984), an exhibition with a catalog (*Kritpipor [...] 1985*), and a number of publications in both domestic (Ljung & Nelson 1985; Ljung 1986, pp. 14–16) and international publications (Brynja 1988) as well as an unpublished secondary report (Brynja, Loewe & Duco 1987), and an unpublished tertiary report by Arne Åkerhagen (1992) attempting to determine the number of pipe molds that was represented in the assemblage.¹⁰

For over three decades, amateur archaeologist Arne Åkerhagen was the main authority on clay pipes in Sweden. Åkerhagen's background as a diver led to him wanting to find out more about the many pipes that he had recovered from the sea- and lakebeds in the vicinity of Stockholm. One of his first publications was *Drottningholm som dykobjekt* (1981), presenting finds from the waters surrounding the royal castle, among these were clay tobacco pipes. This was followed by *Kritpipor i Svenska Vatten* (1982) presenting pipes recovered while diving. Åkerhagen published extensively in *Marinarkeologisk tidskrift* (1993, p. 9; 1994a, pp. 4–5; 1994b, pp. 4–5; 1994c, pp. 14–16; 1995a, pp. 22–23; 1995b, pp. 10–14) presenting the basics of clay pipe research and guidelines for identifying dates and origins of pipes alongside illustrations of pipes from Swedish pipe makers.¹¹

As Åkerhagen became a member of the Society of Clay Pipe Research, the Académie Internationale de la Pipe, and the resident clay pipe maker at what was then known as *Tobaks- & Tändsticksmuseum* – the Tobacco and Match Museum, at Skansen in Stockholm, his credibility among professional archaeologists as a clay pipe specialist increased. As of the early 1990s, Åkerhagen provided contract archaeologists with specialist clay pipe reports for pipe assemblages recovered across the country *pro bono*, a role he maintained until the late 2010s. As per the requests from the archaeologists who sent him pipes for analyses, the focus of these reports are production dates and origins of pipes. Production quality and signs of use are addressed comparatively sparingly.

The Tobacco and Match Museum, where Åkerhagen was employed as a pipe maker, funded many of Åkerhagen's travels and publications. Among these publications are several guides to methods of identifying pipes, acting as compilations of typologies from primarily England and the Netherlands and various methods for obtaining production dates. *Pipmakare i Värmlandsskogarna – de sista kritpipsmakarna i Sverige* (1994d) presenting pipes and details on previously unknown clay pipe

⁹ A price list from 1753 was discovered during the work with this thesis and corresponds more closely to the types recovered than the two previously known price lists. See chapter 8 on the pipes in the Forsberg assemblage.

¹⁰ One unfortunate effect of a combination of the recovery of Forsberg pipes marked with N/3 in molded relief from the site and a lack of awareness of the output of other factories has been that other pipes with an N and a number mark, commonly 2, 3 or 4, in molded relief, have uncritically been attributed to the Forsberg factory (see for example Åkerhagen 2012b, p. 131, p. 353, p. 384) when in fact, several other pipe factories and workshops used similar markings. Factories in Falun, Norrköping, Arboga, and several factories in Stockholm marked pipes with N and a number in molded relief, as will be shown in the following chapters and in Appendix II.

¹¹ Åkerhagen included discredited methods for dating pipes such as the HxBxO-method, and he often uncritically applied bore hole measurements for dating pipe stems.

makers active in Värmland during the second half of the nineteenth century is one of the first examples of Åkerhagen's independent research.

Svenska Kritpipstillverkare och deras pipor (2004), in part built on Bond's research is also a result of his combined role as a diver and a clay pipe specialist associated with the Tobacco and Match Museum. This role allowed Åkerhagen access to museum collections across Sweden, archaeological assemblages, and private collections belonging to fellow divers. This enabled Åkerhagen to develop methods for identifying Swedish armorial pipes, successfully coupling four separate Stockholm makers to pipes from the archaeological record. Åkerhagen's last book, *Den Svenska Kritpipan – pipor, tillverkare och fynd* (2012a) is a compilation of pipe-studies and archival sources. This book also contains a CD-ROM with two catalogs (2012b & 2012c) with pipes held by Swedish museums and private collectors that enables comparisons of recently recovered pipes.

As an amateur archaeologist, Åkerhagen rarely included references to his source material and several of the production date spans he provided for pipe factories and pipe makers have since been proven to be inaccurate. Åkerhagen's research was rarely questioned in Sweden, while in Finland (Ainasoja 2001, p. 80) it has previously been noted that there is a need for an improved understanding of the chronology and output of Swedish pipe factories and workshops from the eighteenth century onwards. Dates based on lobed pipes and so-called star pipes attributed to Stockholm manufacturers Carl Wettervik or his widow are perceived as particularly problematic. My own research has shown how Bonds' and Åkerhagen's proposed production date ranges for most workshops and factories need to be revised (see Appendix I). The consequences of these revisions for Swedish archaeology are currently difficult to assess.

2.2.5 Pipes from Finland, Norway, and Denmark

It is reasonable to assume that pipes from countries neighboring Sweden have entered the archaeological record of what is now Sweden. Finnish pipes in particular, as the country was part of Sweden until the year 1809, are believed to have entered the archaeological record of what is currently Sweden proper.

It is evident that further research into the Finnish pipe workshops and factories is needed as there are not many publications on the topic; misconceptions as to the production dates of one of at least two Helsinki workshops were published as recently as 2001 (Ainasoja 2001, p. 18). Jacob Seela's article in *Nordenskiöldsamfundets tidskrift* dedicated to pipe making in Finland and Finnish pipes (1983, pp. 56–81) outlines the history of pipe making in the country, briefly presenting nineteenth-century pipe factories in Åbo, Tammerfors, and Björneborg, and with a particular focus on the pipes made at the faience factory Fortuna in Nagu.¹² As this publication and these pipe factories appear to have been unknown to Åkerhagen, there is reason to believe that he may erroneously have identified a number of Finnish pipes in the Swedish archaeological record as having been made in Sweden. Moreover, the first master pipe maker at the Fortuna factory came from a Stockholm factory and supposedly brought molds from Sweden (see Appendix I and Seela 1983).

Regarding clay tobacco-pipe research in Norway, Børre Ludvigsen (2009, p. 113) states that:

¹² Seela's observations on the production in Helsinki have been shown to be incomplete. See Appendix I on makers in Helsinki.

the Norwegian pipe industry was small and is reasonably well documented both in the archives and archaeologically. Apart from the lost sites in Oslo and a future survey of possible material from Rist's factory at Drøbak, there is an abundance of material available for compilation and analysis.

Research into the Norwegian clay tobacco pipe industry began as early as 1943, when Anneke Pettersen and Henning Alsvik published research-based findings of pipes from an excavation at the site of Jacob Boy's pipe factory in Drammen outside Oslo (1943). This publication established production dates, pipe types, and the prices of the pipes manufactured at the factory. As such, many pipes made at the Boy factory can be identified by type, price, and production date.¹³ Similarly, 16 types of clay pipes manufactured at Christopher Bocklum's factory in Larkollen were identified during excavations at the factory site (Hernæs & Ludvigsen 1982–1983).

Pettersen and Alsvik also mention Boy's successor Christian Finchenhoff (1943, p. 28) and one competitor – Knud Rist's pipe factory in Drøbak. An online article published on the website of *Verneforeningen Gamle Drøbak* outlines the chronology of owners of the Rist factory in Husvik (Magnussen & Lindblad n.d., n.p. [with bibliography]). Børre Ludvigsen, in a brief overview of Norwegian clay pipe makers published in the *Journal of the Académie Internationale de la Pipe* (2009, pp. 109–118), lists 21 makers operating in Norway between the year 1752 until the late nineteenth century. There are however uncertainties as to whether variations in the spelling of the names of Christopher Bocklum and Johan Wichardt have resulted in an additional five makers on the list (ibid., p. 111). As noted by Ludvigsen, and similarly to the situation in Sweden, there remains a need for a catalog of domestic pipes for identification purposes (ibid. p. 118).

In terms of identifying and dating pipes manufactured in Danish workshops and factories, there are not many internationally available publications. Mie Pedersen noted a paucity of publications on the Danish clay pipe industry (2016, p. 7), and nothing has changed since then. Niels Gustav Bardenfleth (2002; 2009) presents overviews of the chronology of Danish pipe makers. Similarly to Åkerhagen's overview, Bardenfleth does not account for much of his source material yet refers to research previously published by Ahlefeldt-Laurvig (1980), to letters of charter and previous research by Anders Monrad Møller (1985) and Peter Linde (1956; 1958).

Ahlefeldt-Laurvig's research appears to be based on the need to date locally made pipes recovered from excavations in Copenhagen yet outlines both a social history of pipe makers in eighteenth-century Denmark and a chronology of known pipe makers in the country (1980, pp. 49–50). Møller (1985) is focused on the pipe makers in Stubbekøbing yet includes Copenhagen makers in his presentation of the history of pipe making in Denmark. The research of Møller is based on a combination of archival sources and pipes from the archaeological record and presents an economic history of the Danish pipe industry along with types, production volumes, price lists, and a distribution map for pipes from Stubbekøbing (ibid., p. 69).

As chronometric evidence, pipes from Danish pipe factories and workshops can, similarly to the situation in Sweden, be applied if factory-specific marks can be traced to production dates known from the documentary record. As noted by Pedersen (2016, p. 7), there are potentials for future research on the topic of the Danish pipe industry.

¹³ As Norway's cultural heritage legislation does not consider archaeological deposits after 1536 as worthy of protection, pipes from Boy's factory have yet to be employed in Norwegian archaeological reports.

2.3 Perspectives on the interpretative potentials of clay tobacco pipes in the field of archaeology

This section presents a brief overview of some of the potential applications of clay pipes beyond their purely chronometric functions that have been raised in research during the last decades. Many of these serve as inspirations for the study at hand. As mentioned above, well-developed bowl-form typologies on both national and regional levels and information on makers and their marks gathered from the documentary record allow many pipe bowls to be identified and their production dated to intervals ranging between 30 to a single year in some cases. An often-cited article by Australian archaeologists Dennis Gojak and Iain Stuart, 'The Potential for the Archaeological Study of Clay Tobacco Pipes from Australian Sites' (1999), presents clay tobacco pipes as an "ideal artefact" for archaeologists (p. 38);

Clay pipes were inexpensive, easy to obtain and used in the daily lives of people in the past. Moreover, they are fragile, which encourages discard. Broken pipes were rarely scavenged and recycled and are therefore likely to have entered the archaeological record in close temporal and spatial proximity to their use. As they are made from fired clay, pipe fragments withstand what Gojak and Stuart call "harsh depositional environments". Many pipes also have names or marks that allow for "easy dating". Pipes also show a "patterned variability through time", have different styles that may "reflect class, status, ethnicity and political affiliation", and finally, pipes are frequently depicted in contemporary pictorial material" which allows them to "enable inferences about the social context of their use".

Gojak and Stuart bemoaned the fact that in 1999, Australian archaeologists had not seized upon the potentials afforded by these ideal artifacts. In Sweden, twenty-five years later, the situation remains similar. There are, however, international exceptions, some of which will be presented below.

2.4 Pipes as evidence of tobacco smoking

Early adopters and the first evidence of tobacco smoking are a common theme in historical narratives on the topic of tobacco (see for example Munthe 1940, pp. 13–14 ; Krantz 1946).¹⁴ Dateable early pipes have thus been employed to establish what I would like to call "national chronologies of smoking", often applied to contest or confirm documentary evidence of the earliest use of tobacco (see Åkerhagen 2012a, p. 25; Bardenfleth 2002), and is in part a legacy of the abovementioned collectors and amateur historians and archaeologists.

Although caveats and criticism against it has been raised (see, for example, Cessford 2001), beyond their use as chronometric artifacts, it is as instruments for tobacco consumption that clay pipes are most commonly interpreted.¹⁵ As such, archaeologically recovered pipes may act as evidence their

¹⁴ Of Munthe and Krantz, Munthe's publication presents a significantly more rigorous academic akribia than Krantz, with footnotes numbering in the hundreds referencing a range of archival records.

¹⁵ Cessford (2001) raised caveats against uncritically linking the existence of clay pipes in the archaeological record to smoking. Although generally intended for use as instruments for smoking tobacco, clay pipes may have entered the archaeological record at moments not directly related to the smoking of tobacco. Examples of pipes entering the archaeological record without having been smoked mentioned by Cessford "include production, distribution and retail" going on to list examples of other alternative uses of pipes such as enemas, in dances, and as instruments of violence.

find-locations' connectedness to a global and often colonial economy at any given time (Johnson 1996, p. 186; Eriksdotter & Nordin 2011, p. 145).

On a more theorized level, the chronometric attributes of pipes have enabled early pipes to be applied in discussions of not only the introduction of tobacco smoking in various countries, but also of the social status of early adopters of tobacco smoking. Although included among other evidence of tobacco consumption, pipes have been employed to analyse and discuss the dissemination and normalization of tobacco in different social spheres in late sixteenth- and early seventeenth-century Amsterdam (Snelders 2023). Lise Loktu, in her master's thesis, demonstrated how dated pipes could be applied to analyze the diffusion of tobacco smoking in Trondheim, Norway. Drawing on Bourdieu's theory of habitus, Loktu (2009 & 2012, pp. 157–170) applied production dates, the origins of pipes and contextual analyses of pipes from separate sites to reach conclusions on how pipes and tobacco smoking initially belonged to the habitus of wealthy burghers in the first four decades of the seventeenth century, and that the practice had transformed into a near ubiquitous public consumerism at taverns by the 1670s.

2.4.1 Pipes as gendered artifacts and smoking as a gendered practice

Along the lines of viewing pipes purely as instruments for tobacco smoking are also examples of pipes and tobacco smoking being viewed as gendered male artifacts. Among archaeologists in Sweden, as mentioned above, pipes are mostly considered as chronometric artifacts or as indicators of smoking, yet they are sometimes also treated as gendered artifacts; for at least three decades, Stig Welinder has championed the view that smoking during the eighteenth and nineteenth centuries was a uniquely male form of tobacco consumption, applying distribution maps of pipes in analyses of gendered zones (1992). Welinder and Ulrika Stenbäck Lönnquist also interpret a fragment of an eighteenth-century clay pipe found at a *fåbod* – a shieling or chalet,¹⁶ as a symbol of a controlling male presence in a typically female environment, as they state that pipes from this century found in Sweden should be considered as uniquely male (2008, p. 173):

Smoking became a phenomenon belonging to male lifestyle and male pleasure. On the continent, examples of women smoking are more frequent, but we have found no paintings or drawings from the Swedish 18th century portraying female smokers. We gave up after finding visual representations of more than fifty male smokers but not a single female one. The pictures display upper-class social life and rural indoor scenes as well as outdoor working scenes, but not a single female smoker. Further there are no female crania earlier than the 19th century reported from North Europe with dental wear-marks from pipe smoking.

As in the case of Stenbäck-Lönnquist and Welinder, views on gendered smoking often seem to be gathered from the interpretations of art historians. Schivelbusch, for example, states that tobacco along with coffee were symbols of the patriarchal society, and that from the seventeenth century onwards, smoking women were the subject for caricature artists (1980, p. 123). As such, female smokers, when they are depicted, are often interpreted as socially deviant. One example of how interpretations of Dutch genre paintings have affected interpretations of archaeologically recovered

¹⁶ The term literal translation of *fåbod* is livestock-cabin (or booth). In function they are similar to shielings and chalets, as seasonal pastoral lodgings.

pipes in Sweden is Jonas Nordin's claim that Dutch seventeenth-century clay pipe bowls have a "phallic shape" and that "everyday smoking had erotic and sexual connotations" (2021, p. 120).¹⁷

Interpretations of pipes as a gendered artifact-group based on Dutch depictions of pipes and smoking have also been questioned, particularly outside of Europe. Evidence suggests that views and sentiments held at one place at one time may not necessarily have been transferred to other regions. For example, connections between interpretations of gendered smoking in Dutch genre paintings and pipes from North American archaeological contexts have been problematized by Julia King, who states that: "It is also clear that attitudes toward women consuming tobacco in the Netherlands were not the same in the colonies" (2007, p. 18).

Although it is certainly possible to consider whether or not public smoking among upper- or middle-class women in the seventeenth century was deviating from social proscriptions of the time and, certainly based on the fact that pipe smoking women in Dutch genre paintings from the period are occasionally interpreted as prostitutes, there are also depictions of smoking women that appear to carry no such implications. There are examples of research suggesting ambivalent attitudes towards tobacco smoking among women dating as far back as its introduction in the Old World. Snelders attributes the ambivalence towards tobacco in the seventeenth-century Netherlands to its initial and general association of tobacco to "low-lives" (2023, p. 15), while art historian Gaskell connects this association to the contemporaneous consideration of female smokers in the seventeenth century as "perverse and degraded" (1997, p. 75). There is, similarly to King's observations, no conclusive evidence to suggest that these Dutch views were mirrored in Sweden or that these paintings had an effect on sentiments in Sweden at the time.

In England, tobacco has also primarily been associated to upper-class masculinity (Smith 2002, pp. 161–169). Woodruff Smith (*ibid.*, p. 169), however, finds that:

Ladies (that is to say, respectable women whose behavior patterns were framed by the context of domestic femininity) were not supposed to smoke or, in most countries, to employ tobacco in any form.

This does not exclude the possibility of women belonging to the lower classes from partaking in the use of tobacco or pipe smoking. A growing body of research from England shows that clay tobacco pipes were ubiquitously used in the eighteenth and nineteenth centuries. A recent study by Anna Davies-Barrett and Sarah Inskip (2024, pp. 133–169) show how traces of tobacco use in the form of lingual staining on teeth and pipe notches on human remains may be used to identify tobacco smokers. Their study combines osteoarchaeological material, historical sources, and clay tobacco pipes and finds that in England (p. 163):

a wider consideration of the historical, osteological and archaeological evidence suggests that tobacco consumption was utilised broadly across societal groups in different ways and in different public and private spaces. The manner in which people consumed tobacco was likely intimately linked to their social identity, demonstrating the relationship between tobacco consumption and the body as a series of embodied actions dictated by age, class, gender, occupation and regional and cultural backgrounds.

¹⁷ However, Nordin includes no references to any study that makes such claims. Had pipes carried phallic connotations, the fact that both men and women used them could be interpreted as smoking of any pipes was socially deviant regardless of the smokers' biological sex.

Regarding the observation that there are fewer female-sexed skeletons with pipe notches in relation to male-sexed skeletons exhibiting these, they suggest that “[w]omen may have opted for less abrasive mouthpieces or stems, or were careful as to how they used pipes to avoid tell-tale tooth damage that physically embodied smoking” (ibid., p. 158). They go on to suggest that so-called cutties, short pipes held between the teeth (generally a prerequisite for forming pipe notches) may have been avoided by women. The implication is that while women smoked pipes, they avoided smoking certain pipes and in certain ways due to social proscriptions.

While lingual staining and pipe notches in teeth can identify smoking individuals of both biological sexes, analyses of significantly more readily available pipe stems, particularly specimens with bite marks, may be applied to identify biological sex of their smokers. DNA-analyses of pipe stems have previously been applied to discuss a female presence in traditionally male environs (Dixon 2006). DNA can be extracted from pipe stems as it “binds easily to silica particles, a component of clay” and has been applied to determine biological sex and “ancestral origins” of their smokers (Schablitsky et al. 2019, p. 13). However, while “DNA analyses can help archaeologists say whether relatively commonplace objects, such as tobacco pipe stems or other personal objects, were used by someone of a certain sex” (Dixon 2006, p. 67), more specific knowledge about the types of pipes used and how they were used may shed further light on living conditions in the past.

For example, Matthew Johnson, in acknowledging that in England, smoking was practiced by both men and women, suggests that certain decorations on clay pipes may have been gendered (1996, p. 186). Although, as suggested by Davies-Barrett and Inskip, it could be argued that cutties (decorated and plain) in certain contexts may have been a gendered male artifact, thus far, no specific decorations on pipes have been identified as specifically gendered. What Davies-Barrett and Inskip note is, perhaps more importantly for the study at hand, that different ways of consuming tobacco in general and smoking in particular, may have had social connotations while also leaving distinct traces in the archaeological record.

A point suggested by Welinder, is that there appears to be reason to believe that perceptions of smoking women, and the occurrence of depictions of smoking women from some countries, may have varied on national or regional levels throughout the early-modern period. As with seventeenth century Sweden, there is no conclusive evidence that indicates that smoking was a uniquely male activity in eighteenth-century Sweden.¹⁸ Rather, it has been suggested that such interpretations are founded in part on contemporary androcentric notions of pipe smoking (Bergman Carter 2014), and as based on findings that may be specific to certain nations or regions. Moreover, as noted by Davies-Barrett and Inskip, “perceptions about the way in which [tobacco] should be used fluctuated with time” (2024, p. 139).

2.4.2 Clay pipes as indicators of activities at sites

As with the generally valid interpretation that clay pipes were used for tobacco smoking, the occurrence of pipes occasionally leads to speculations as to what sorts of activities surrounded tobacco smoking. A commonly held conception is that pipe smoking was associated with leisure and recreation. Matthew Johnson for example suggests a connection between alehouses and pipe smoking (1996, p. 185), and the abovementioned study by Loktu also found connections between a tavern and clay pipes. In Sweden, a relatively large assemblage of visibly smoked pipes recovered from a croft

¹⁸ There are depictions of smoking women from eighteenth-century Sweden that contradict Welinder and Stenbäck Lönnquist (see figs. 82 and 91).

called Torpom in Bohuslän has been claimed to be in congruity with local lore of a clandestine tavern or a speakeasy of sorts at the site, which was also held to be the reason for the vast amounts of bottle glass recovered (Olsson 2004, p. 174).

Excavations in Kv. Gubben in Norrköping, recovered 777 pipe fragments from a layer interpreted as the foundations of a wooden floor in an unheated room. The pipe stems appeared to have fallen between the floorboards as they were aligned and in regular distance intervals. The first interpretation to be presented, based on the sheer number of fragments from the same maker, George Straw of London, was that the room had been used for smoking (Carlsson et al. 2014, p. 162). The report states that the building was owned by merchants yet does not mention the possibility that the many pipe fragments may have been the remains of pipes deemed too broken to sell. Judging from photographs of the pipe bowls these pipes were never smoked, and there is a strong possibility that the room was a warehouse where pipes were stored and sorted prior to being sold.

Pipes are also occasionally seen as evidence of beliefs in the medicinal qualities of tobacco. Pipes recovered from plots that belonged to an apothecary in Karlstad, for example, are seen as indicative of a pharmacy at the location (Karlsson 2006, p. 101). Relatively vast quantities of pipe fragments with no signs of use have also been interpreted as a warehouse or as production sites. In many cases, such interpretations are confirmed by documentary sources (Brynja 1985; Stibéus & Bergman Carter 2025).

2.4.3 Clay pipes as evidence of policies, trade, regional manufacturing traditions, and consumer preference

By tracing the origins and production dates of pipes in an assemblage, pipes may be applied in analyses of trade links in the past (Higgins 1995; Stam 2019b). Another example is Mika Ainasoja's master's thesis (2001) that traces the origins of pipes found in Turku and in Northern Finland. In regard to Swedish pipes, Ainasoja shows how different pipe types made in Stockholm were either marketed to or preferred by people in different regions of eighteenth-century Finland (2001, p. 113) and how protectionist and mercantilist policies may be visualized and understood through clay tobacco pipe assemblages.

In some cases, the effects of disrupted trade can be studied through the combination of provenance and production dates of pipes. Geopolitical events such as wars and embargoes can sometimes be observed in pipe assemblages, as can smuggling during embargoes (Ainasoja 2001; Carlsson et al. 2014, p. 162). Detailed understanding of region-specific morphology, manufacturing techniques and marking traditions may shed light on materialized mercantilist policies, and merchants' and/or smokers' adherences to, or deviations from, embargoes stemming from mercantilist policies (Mehler 2009a; 2009b). Natascha Mehler's PhD thesis (2009a), while setting out to outline a typography and chronology of clay tobacco pipes manufactured in Bavaria, presents how clay tobacco pipes can be applied to visualize mercantilist/protectionist policies. Mehler shows how pipes intended for the Bavarian market manufactured between the late seventeenth century and mid-eighteenth century can be identified in part via chemical analyses, but primarily through morphology, decorations, and initial marks linked to representatives of the Bavarian tobacco monopoly, so-called *Appaltators*. As such, archaeologically recovered pipes with these marks are compared to tax marks found on contemporary cigarette packages (Mehler 2009b, p. 274). A presence or lack of pipes with such marks in Bavarian assemblages can therefore act as chronologically reliable telltale evidence of smokers' adherences to or deviations from regulatory monopoly policies of the period.

By detailed analyses of bowl-forms, milling, surface finish, decorations, and markings, Susie White (2004) successfully identifies regional pipe-styles in the Yorkshire area in a period spanning from the

seventeenth to the nineteenth century. This in turn is of use for the identification and dating of pipes from that region as well as for identifying imports and exports of pipes. Shapes, types, decorations, stem lengths, and other observable attributes of pipes have been linked to national or regional preferences among both makers and smokers. For example, typologies in England and the Netherlands show how particular styles of pipes were preferred for domestic or even local consumption, while others were made for export. A good example of this is the Atkinson and Oswald's London type 24 (pp. 179-180), a so-called elbow pipe without a heel or spur, made for export to the American colonies.

An example of how consumer preference and trade affected the manufacture of pipes is a detailed study of pipe types carried out by Bert van der Lingen (2022). van der Lingen's study is based around the identification of the Dutch manufacture of English-style pipes that were made for export to the Nordic region. The interpretation is that Dutch pipe makers recognized a demand for English bowl-forms in the Nordic countries and began manufacturing similar styles to compete with pipe makers in Yorkshire and London (ibid., pp. 11-24). Similarly, Ron de Haan (2013) presents how, during the seventeenth and eighteenth centuries, socketed pipes were preferred in Spain, Portugal, Italy, Eastern Europe, the Middle East, and Northern Africa, while in Northwestern Europe, stemmed pipes were preferred. The reasons behind this, it is speculated, is that seafaring merchants from Spain, Portugal, and Italy introduced socketed pipe types that subsequently developed in different regions of the Ottoman empire. Throughout this period, the aforementioned countries and the limits of the Ottoman empire are indeed, apart from a few exceptions, also the limits of the widespread use of socketed pipes during the period (de Haan 2013).¹⁹

2.4.4 Clay pipes as markers of ethnicity and political views

North American researchers have provided a number of publications examining the expression of ethnicity of smokers and makers of pipes through decorations and types of clay pipes recovered from the archaeological record. James Deetz for example discusses how so-called Colono pipes, also known as Chesapeake pipes, can be linked to negotiations and expressions of ethnic identity based mostly on their decorations, speculating that the pipes were made in North America by enslaved people of African descent (Deetz 1996, pp. 245–252). Harrington raised the question if pipes of this type recovered from Jamestown may have been made by Native Americans or European colonizers, while a string of publications suggest that the decorative motifs on these pipes can be connected to either Northern European, African, or Native traditions (Agbe-Davies 2004, p. 273). Mouer for example, presents these pipes as an example of creolized folk art, displaying the identity of their smokers as made visible by smoking them in public (Mouer 1993, p. 129). These are topics that remain current and are still under debate.

Among the most ambitious projects to investigate the production and trade in locally produced pipes in Jamestown and its surrounding plantations is Agbe-Davies' *Tobacco, Pipes, and Race in Colonial Virginia: Little Tubes of Mighty Power* (2016), showing how pipe production, rather than pipe smoking, was applied by the laborers of late seventeenth century inhabitants of Virginia. There is hardly any mention of potential smokers of these locally manufactured pipes, and it seems as if it is an unwritten statement that the pipes would have appealed to and have been used by people belonging to a similar social group to the makers of the pipes.

¹⁹ The Swedish pipe type called *turkhufwud* – Turk's bowls or heads – is one such exception. See more about these pipes in chapters 9 and 10.

In some instances, the mere existence of pipes in an assemblage in the United States leads to speculation of the ethnic or cultural identity of their smokers. Particularly during the Victorian period there seems to be a consensus that “immigrant Irish women openly smoked clay pipes [...] in public” (Fox 2015, p. 93), thereby implying that pipes and smoking have the potentials to be interpreted as markers of gender, class, and ethnicity. Pipes with iconography or slogans connected to Irish liberty from England is another example of how clay pipes are applied in interpretations of ethnicity and political affiliations in North America (Cook 1989, p. 221; Reckner 2001; 2004) and in Australia (Gojak & Stuart 1999, p.45).

Similarly, pipes bearing the Swedish coat of arms recovered in Finland have been interpreted as either subversive to Russian rule after 1809, or as smokers of these pipes pledging loyalty to the Swedish crown (Ainasoja 2001, p. 83). These interpretations rely on precise production dates, and the specific pipes referred to are dated to 1755–1827 or 1828. As Ainasoja is rightfully hesitant towards the interpretation that these pipes were used under Russian rule, the conclusion is that they were most likely produced and imported prior to 1809. This aspect is also an example of how potential reciprocity between historical events and archaeologically recovered pipes may improve chronometric aspects of pipes that have remained largely unexplored in Swedish archaeology.

Although primarily intended as a caveat against applying clay pipes for dating sites in Lapland and northern Sweden, Anders Huggert (2008, pp. 23–28) presents how geographic, social and ethnocultural aspects of consumption practices may need to be considered in analyses of pipes from Sami sites. As it were, two pipes made in Gouda, with the heel mark “*speelman*” with the Gouda coat of arms as a side mark, according to Huggert’s identification manufactured between 1750 and 1775 (p. 25), remained in use for up to 150 years. Both pipes have been heavily modified; one retains its original bowl and has a makeshift stem made from cow horn, and the other has been mended with rawhide and fitted with a lid made from a shotgun cartridge. Huggert does not explicitly couple the ethnicity of the smokers of the pipes to the mending techniques and the unusually long periods of use of the pipes, rather he states that “the perception of what was useable and not [...] had a social dimension” (2008, p. 23).²⁰

2.4.5 Clay pipes as indicators of socioeconomic status

Pipes, like other accessories, can serve as a clear and unambiguous identifier of a person's social affiliation and hence have an important role in socially divided societies.

- Gojak & Stuart 1999, p. 45

The fact that pipes were generally cheap, were diverse in quality and form and used publicly makes them an ideal medium to explore facets of society, such as identity and class.

- Davies-Barrett & Inskip, 2024, p. 141

As noted by Huggert (2008), social aspects have been connected to the consumption of not only tobacco, but also to specific types of pipes and to modifications of them. Examples of such modifications are bite marks on stems, which are also connected to abrasions known as pipe notches in incisives on human crania. Both bite marks on stems and pipe notches are regularly interpreted as traces of smokers positioned on the lower end of the socioeconomic scale (Kvaal & Derry 1996, pp. 28–30; Åkerhagen 1999, p. 5; Davies-Barrett & Inskip 2024).

²⁰ “Bedömningen av vad som var användbart och inte hade emellertid en social dimension.”

Don Duco was among the first to suggest that an understanding of types and production quality assessments of clay pipes had potential for analyses of the socioeconomic status of their smokers. Based on finds from Amsterdam, Duco (1981, p. 384) concluded, that:

The seventeenth-century pipe-smoker was very careful about the choice of his pipe. Comparison [sic] of finds from the various areas of Amsterdam showed clearly that each social group chose its own particular kind of pipe.

This conclusion is based on excavations of seventeenth century layers in Amsterdam where it was found that “upper classes, especially those who lived along the [...] canals, usually smoked good-quality, nicely burnished pipes with heel marks” while among pipes found in “sailors' districts many are unmarked or decorated with the side-mark rose with the dot-shaped leaves” (1981, pp. 384–385). While specific find contexts are unspecified by Duco (1981), similar findings are presented by Hans van der Meulen based on pipes recovered from cesspits, latrines and privies in Deventer, Dordrecht, Nijmegen, and Thiel (1999a, pp. 311–316; 1999b, pp. 1067–1090).

Thomas Beaman “endeavors to offer insights into the culture of smoking and ‘smoking behaviors’ at Brunswick Town” by comparing “the presence of [imported] pipes in individual households within the town as well as to other contemporary eighteenth-century archaeological sites in North Carolina” (2005a, p. 51). The study sets out to show how quantitative comparative analyses of how variations in the percentages of pipes to the Carolina Artifact Pattern²¹ median and variations in bowl-to-stem ratio at different sites across North Carolina may shed light on socioeconomic aspects of the past. Beaman, mirroring King’s observations, states that “smoking was a culturally accepted practice by men and women of all social classes in colonial times” (Beaman 2005a, p. 68), although it is acknowledged that “availability and affordability of pipes and tobacco, as well as individual preferences for smoking frequently, smoking only in social situations, or perhaps not smoking at all” may account for variations in assemblages.²² Other hypothetical reasons for variations in clay pipe assemblages presented are occupation periods (i.e. longer occupation periods equals more pipes), building functions (i.e. taverns, stores etc. should result in larger assemblages of pipes than purely residential buildings), and occupants’ smoking frequencies (i.e. heavy smokers produced more pipe fragments while nonsmokers produce no pipe fragments).

Beaman concludes that “status does not appear to be a factor regarding the use of smoking pipes” (2005, p. 86), and that “the town or rural setting of a site does appear to affect the bowl-to-stem ratio of white clay smoking pipes in Colonial North Carolina” (ibid. p. 86). Beaman shows that tobacco pipe smoking was a widespread habit yet falls short of showing any socioeconomic differentiation based on the presence of pipes in the archaeological record. Beaman’s focus is on the practice of smoking in relation to social status, rather than on the quality, price or on signs of modifications of the pipes in the assemblages. This study clearly illustrates how analyses that do not consider production quality and use-wear/modifications will result only in an understanding of the diffusion

²¹ According to the Carolina Artifact Pattern “the expected presence of white clay tobacco pipes in a normal colonial household range from 1.8% to 13.9% of the total artifacts recovered, with a mean value of 5.8%” (South 1977:107). I am uncertain as to how the Carolina Artifact Pattern system functions in terms of including soil characteristics or factors that are detrimental to the preservation of various remains. A site with detrimental depositional conditions for bone material would for example likely result in a larger percentage of other remains.

²² Tobacco was grown in North Carolina and would likely not have entailed a significant expense.

of smoking and, if chronometric attributes are recorded, production dates and tentative use (site occupation) and depositional dates.

It is also important to keep in mind that the availability of pipes in eighteenth-century North Carolina was strongly affected and regulated by British colonial export policies and that the range of pipes available to consumers was limited. I am unaware of any attempts to identify variations in production quality of imported pipes in North American colonial settings. Although falling short of showing nuanced potentials of quantitative analyses of pipe assemblages, Beaman's study strongly suggests a validity to considerations of the anatomy of pipes during recording.²³

The consensus among archaeologists in the United States appears to be that while seventeenth and eighteenth-century white clay pipes may function as evidence of depositional dates and tobacco use, they do not function as markers of status or class of their smokers. Nineteenth century pipes, on the other hand, appear to be generally accepted as being evidence of a presence of smokers of a lower socioeconomic status as at that point in time high-status smokers preferred pipes made from porcelain, wood, or meerschaum, as well as cigars;

the point at which pipes cease to be easily dated [through Binford's stem bore digression formula] falls in the late 18th century, and coincides roughly with the generally accepted date at which they might become useful as indicators of class. The latter use has apparently never been explored, or even considered by archaeologists (Cook, 1989 p. 227).²⁴

The idea that stem lengths of pipes acted as an indicator of social status is an often-recurring theme in archaeological research of clay tobacco pipes. Longer pipes cost more than shorter pipes due to the requirements of greater skills on behalf of the craftspersons involved during a majority of steps of manufacturing, secure packaging and careful handling during transport, and would have required quite static smoking that did not risk breaking their fragile stems, thus limiting their use from smoking during manual labor any form of hands-free smoking. Stem length however, as presented by Duco (1979a; 1979b; 1987), is not the only indicator of production quality and price of pipes; other aspects related to the manufacturing process that affected the price of a pipe range from the use of complicated three or four-part molds, burnishing and polishing of the bowl and stem as well as milling and waxing have also been presented (Duco 1980; 1987).

British pipe-recording praxis considered best practice, although encouraging the recording of aspects related to production quality, appears significantly more cautious in basing interpretations of socioeconomic status of smokers based on production quality assessments of pipe fragments than Dutch counterparts. David Higgins of the National Pipe Archive and the Society of Clay Pipe Research for example, mentions the status of the pipes rather than the status of the smokers of the pipes (Higgins 1995, p. 47). An explanation for this might be that extensive research has shown that production quality varied not only within the production output of individual makers, workshops, and factories in Britain, it also varied according to regional traditions to such an extent that analyses of milling and burnishing applied in some cases may be more indicative of regional traditions than expressions of social and/or socioeconomic status of smokers via production quality and end price (White 2004). A lack of variations may also have limited access to pipes of different qualities and prices, thus making them unsuitable as indicators of status. Another explanation may be the belief

²³ See how this has informed a suggested recording system for clay tobacco pipes in Sweden in Appendix III.

²⁴ I am unaware as to why Cook states that nineteenth century pipes cannot be easily dated. Trade catalogues from most major European pipe factories along with typologies and lists of makers marks used in the period are available.

that even the most expensive pipes would technically have been affordable for poorer smokers. In 2001 for example, Craig Cessford raised a caveat against applying pipes as indicators of the socioeconomic status of smokers in England as pipes “could be classed as belonging to the wide range of cheap luxury items known as ‘populuxe goods’, which appear during this period” (2001, n.p.).

The previously mentioned chapter by Anna Barrett-Davies and Sarah Inskip (2024, p. 163), also acknowledges that:

the manner in which people consumed tobacco was likely intimately linked to their social identity, demonstrating the relationship between tobacco consumption and the body as a series of embodied actions dictated by age, class, gender, occupation, and regional and cultural backgrounds.

A good example of this is the observation that variations in smoking practices, in turn related to social status have resulted in different marks in both documentary and archaeological sources –short pipes were made, marketed to, associated with, and used by, poorer smokers. These short pipes, known as cutties, facilitated clenching between the teeth of their smokers, resulting in so-called pipe notches in the teeth. Wealthier smokers instead used longer pipes that were held by their smokers’ hands resulting in lingual staining on teeth, but little or no notches on the incisors or canines.

During the course of the nineteenth century, even the long-stemmed clay pipes gradually fell out of favor among middle- and upper-class smokers in continental Europe. However, as Duco explains, socketed “figural pipes” from clay pipe firms such as Gambier or Fiolet in France, and the Dutch Goedewaagen factory, remained in use in “intellectual circles” until the 1870s when they became “devalued to a conceptual article” (2014, pp. 151-152).

The Netherlands, the country that has one of the longest and most developed traditions of clay pipe studies, has generated sufficient knowledge of the availability of specific types of pipes at given times in history to enable analyses of consumer preferences and what individual pipes may have signified to their consumers in their contemporaneity. These conclusions seem generally based on contextually excavated pipes from latrines, privies and cesspits that can be associated to individual households or plot residents. As a result, the awareness of the availability of different styles, the period during which particular styles were popular, and which social groups purchased and smoked them is occasionally included in archaeological reports in the Netherlands. One such example is Bas Konijnendijk, who by analyzing production dates, makers, production quality, use wear analyses coupled with the awareness of available pipe types, has shown that it is possible to activate observable attributes of pipes from the archaeological record to make aspects of consumer choice and consumer behaviors in the form of smoking practices in the past more salient. Konijnendijk (2015b, p. 32) includes in his conclusions a discussion of aspects of consumer choice made visible through one pipe assemblage:

The pipes found on Nieuwstraat were smoked between 1890 and 1900. The pipes look like they came from a user who smoked a lot. The pipes have been purchased at small quantities at a time, without preference for a specific brand. Despite the availability of other models during this period, the classic long-stemmed model was preferred. The quality of these pipes would not have been important to the smoker. Given the smoothly finished appearance of the pipes, the lack of a brand preference and the smoking of pipes of no specific brand, the selection of affordable pipes was most important to the smoker, within the already established and conservative model choice.²⁵

²⁵ “De aan de Nieuwstraat gevonden pijpen zijn gerookt tussen 1890 en 1900. De pijpen lijken afkomstig te zijn van één gebruiker, die veel heeft gerookt. Daarbij zijn de pijpen steeds in kleine hoeveelheden tegelijk aangeschaft, zonder

In Sweden there has been an acknowledgment of these interpretative potentials for domestically made pipes that go as far back as Bonds' observation that "the prices of the [Swedish clay] pipes however, indicate different qualities and designs. Different tastes and financial resources had to be satisfied" (1980, p. 288). Beyond the catalogs of Forsberg's pipes (Brynja 1985) and allusions to the significances of different pipe styles produced by Boy (Pettersen 1943), pipe research in the Nordic countries has never seriously considered attributes related to styles, stem lengths, production quality, and price considered by clay pipe researchers in England and the Netherlands. Although exceptions exist (Wacke 2014; Bergman Carter 2016; Pedersen 2016), these interpretative potentials have remained largely unexplored in the Nordic region and often result in hypothetical and anecdotal statements in texts touching on the subject. For example, Christopher McLees, in a study of consumption practices in Trondheim, Norway (McLees 2019, p. 283), explains how:

clay pipes had differing price classes, qualities and degrees of ornamentation. They were also used by both men and women. Various international studies detail clay pipes' design and uses as material means of communicating coded meanings, often of a political or ideological nature.

McLees goes on to describe the particularities of a stub-stemmed red clay pipe-bowl decorated in molded relief with the greater coat of arms of Denmark, the first known example from a Norwegian archaeological context.²⁶ This pipe, McLees proposes, "would have engendered pride in its owner, and, when carried smoked and displayed, it would have eloquently communicated his identity, distinction and affiliations to the gaze of others" (2019, p. 283). There can be no question that McLees acknowledges the potential of interpreting the meanings and significances that individual pipes may have had in their contemporaneity, yet as the register, or backdrop, of other contemporaneously available pipes against which this pipe is claimed to have stood out is not fully understood, interpretations of this type must be considered as speculative.

This situation is mirrored in Sweden. Louise Olsson, in a study of clay tobacco pipe assemblages from four rural environments in Bohuslän, attempts to connect production quality aspects of pipe fragments to expressions of socioeconomic status in the eighteenth century. Olsson explains how decorated pipes were more expensive than plain ones, and that "expensive, lavish pipes and very simple pipes were found" (Olsson 2004, p. 184).²⁷ Unfortunately, the study is flawed in that it fails to compare the pipes to known industry standards of any country and of any period. As such, nearly all pipes deemed to be of high production quality are in fact of the lowest quality and would likely have belonged to the very cheapest available pipes on the market at that time.²⁸

voorkeur voor een vast merk. Ondanks de modelkeuze in deze periode is vastgehouden aan het klassieke model met lange steel. De kwaliteit van deze pijpen zal niet belangrijk geweest zijn voor de roker. Gezien het vlot afgewerkte uiterlijk van de pijpen, het gebrek aan een merkenvoorkeur en het roken uit pijpen van een niet officieel bestaand merk, was de keuze voor betaalbare pijpen het belangrijkste voor de roker, binnen de al vaststaande en conservatieve modelkeuze." (Konijnendijk 2015b, p. 32).

²⁶ Identical bowls have also been recovered in Norrköping, and the museum depot of Kulturen in Lund holds at least one example.

²⁷ "Såväl dyra, påkostade pipor som mycket enkla pipor påträffades."

²⁸ "Holländsk Goudapipa av förnämsta kvalitet, från 1740–1755" (Olsson 2004, p. 169). This pipe, F891, a Gouda pipe with relief decorations on the side with the mark *man in het schilderhuis*, man in a guardhouse, is of a particularly low quality by Dutch standards, but is both erroneously dated and presented by Olsson as a "Dutch Gouda pipe of the finest quality, from 1740 to 1755" (p. 169).

2.5 Concluding discussion

Clay pipes are usually discussed in terms of dates, shapes, export or production place and not with focus on why pipes look the ways they do in a cultural context.

- Johanessen 2011, p. 50 (translation by author)

As noted in the quote above, the chronometric aspects of pipes are those most employed in archaeological reports and publications, yet, as shown by other examples above, there are further potentials to studies of pipes and smoking during the early-modern period. Clay pipes have been used to trace trade routes and global links, to discuss expressions of identity linked to ethnicity, socioeconomic status, and gender. Bite marks on stems are almost universally interpreted as signs of poverty, and, although mainly discussed from the perspective of a chronometric challenge, mended pipes in use for over a century can tentatively be explained as linked to and depending on social aspects.

Previous research has discussed if, or explicitly stated that, certain or occasionally all pipes were gendered (Welinder 1992; Johnson 1996; Stenbäck Lönnquist & Welinder 2007; 2008), if stem length, milling and burnishing of bowls and stems can be linked to socioeconomic status or ambition, if certain decorated pipes can be linked to social class, for which social groups' habitus the first appearance of smoking could be seen as appropriate (Loktu 2009), that bite marks are indicative of poor smokers (Kvaal & Derry 1996; Åkerhagen 1999) and how decorated pipes may relay ethnic identity and political resistance (Cook 1989; Ainasoja 2001).

Although primarily geared towards recording chronometric attributes, there are national differences in how pipes are recorded by specialists in the field which also generate different results. In the United States, a quantitative approach appears to be preferred. When pipes are considered beyond the applicability of bore-hole diameters for dating deposits, they are treated as evidence of widespread smoking or as spatiotemporally contextualized expressions of specific ethnic identities related to groups ranging from Native Americans to African Americans or to the working-class Irish. It is clear that aspects ranging from geographic, to economical, spatiotemporal, political, and to social proscriptions related to tobacco smoking have all left traces in the North American archaeological record.

In Britain, where bowl-form typologies have been established and many pipe makers, factories, and workshops have been identified, there appears to be a hesitancy towards basing explicit interpretations of social status of smokers based on variations in production quality of pipes. English pipe recording praxes call for the recording of attributes that can be related to the "status of a group" of pipes (Higgins 1995, p. 47) while the status of the smokers of the pipes remains implicit. Cessford, for example, believes that fancier pipes, at least in England, and perhaps at various points in time, could be viewed as "populuxe goods" – relatively cheap luxury items that poorer groups could afford (Cessford 2001, n.p.), which may explain this hesitancy.

Dutch pipe researchers, on the other hand, have provided evidence that an understanding of which pipes were available for consumption at a given time and place is foundational if individual pipes are to be credibly applied in analyses of social status through consumption behaviors. Interpretations based on such analyses are enabled in part on contextual analyses, and well-established bowl-form typologies, the awareness of variations in types, stem lengths, and production quality and how these

were linked to variations in both price and spatiotemporal considerations of what constituted appropriate or inappropriate consumption behaviors surrounding smoking.

The potentials of analyses of these types have been implied by scholars writing on the topics of consumption and clay tobacco pipes in the Nordic region for decades. Yet, as very little research and few attempts to identify price classes, qualities and degrees of ornamentation mentioned for example by McLees (2019, p. 283) and Bonds (1980, p. 280) have been carried out in regard to pipes produced in the Nordic countries, the interpretative potentials of these proposed aspects are expressed either as speculative remarks or remain completely unemployed in Nordic archaeology. Moreover, regardless of the state of the research in the Netherlands and England that have confirmed the validity of recording attributes related to prices, decorations, styles, and modifications of pipes made in these respective countries, they have yet to be applied on pipe assemblages recovered in Sweden and the rest of the Nordic countries. As evidenced by other publications (Ainasoja 2001; Olsson 2004), confusion also exists regarding what constituted expensive pipes, both imported and domestic, in the Nordic region.

In the case of eighteenth-century Sweden, the variety of pipes available at specific times for consumers to apply as material expressions of social differentiation at different time periods has yet to be identified. As such, it is currently impossible to determine which Swedish pipes could potentially be interpreted as intended for the smokeways of specific customer groups, if they were populuxe goods, or as potentially gendered. Moreover, the possibility that regional, or even national, variations in attitudes towards tobacco consumption in general and pipe smoking behaviors in particular may have existed have primarily been discussed based on notions that smoking was a gendered practice.

A relatively recent development in realized potentials of clay pipe studies is the extraction and analysis of human DNA from pipe stems (Dixon 2006; Schablitsky et al. 2019; Davies-Barrett & Inskip 2024). This means that ancestry and biological sex of pipe smokers can now be added to other potentials offered by find contexts, pipes' chronometric attributes, analyses of use-wear and modifications, and attributes related to relative cost.

3 Background, aims, and research questions

3.1 Background: the consumer- and industrious revolutions in eighteenth-century Europe

Described as “a period of critical consumer transitions” (Blondé & de Mulder 2023, p. 85), there is consensus that Europe, in the period spanning between roughly 1600 and 1800, saw an unprecedented influx of goods imported from overseas that had significant impacts on production, trade, economy, consumer behaviors and everyday lives of people (Smith 2002). Often referred to as a consumer revolution, the imports of goods such as tea, silk, cotton, porcelain, coffee, cocoa, tobacco, and sugar, of which most were initially reserved for European elites, spurred a demand among ever widening societal segments. This led not only to altered consumption patterns among ordinary people, but also to what Jan de Vries has termed “the industrious revolution” (2008). Maxine Berg (2005, p. 19) explains that in the eighteenth century:

[...] Britain’s urban middling classes led the shifts in material culture which also swept through elite households and transformed the habits of the labouring poor. They saved for domestic possessions, selected these, exercised taste in their choices. These were not the basic household tools of everyday life, bought out of necessity not choice. Nor were they the expensive ornament of public display conveying dynasty or national power. The new domestic possessions became consumer goods – teaware and dinner services, glassware, japanned tea tables, boxes, cabinets, and trays, plated tea urns, coffee pots, brass and silver candelabra, cutlery and stamped brassware, and fancy steelware, buckles, buttons and medallions, upholstered furnishings, and carpets.

This shift appears to have been similar in Sweden; Using cotton, porcelain and buttons as examples, Christer Ahlberger (1996, p. 49) writes that in early modern Sweden:

objects had their own cycle where they, at the point of their introduction, were normally luxury objects that were hard to obtain with a high symbolic value. After some time, they became increasingly available to a wider public and their symbolic value decreased. This process often occurred in parallel with the beginnings of a domestic production”.²⁹

The anthology titled *Det svenska begäret: sekler av lyxkonsumtion*, literally translated to the Swedish desire: centuries of luxury consumption (2015) considers effects of the introduction of novel consumer goods in Sweden during the early modern period. Drawing on Maxine Berg and Jan de Vries, central themes of the anthology are “*den nya lyxen*” – the new luxuries, and the industrious revolution. New luxury as a concept is described as a “social, economic, and cultural force” and “a

²⁹ ”Föremålen hade alltså en egen cykel där de vid introducering vanligtvis var svåråtkomliga lyxvaror med ett högt symboliskt värde. Efter en tid blev de alltmer tillgängliga för en bredare allmänhet och deras symbolvärde minskade. Denna process skedde ofta parallellt med att en inhemsk produktion kommit igång” (Ahlberger 1996, p. 49).

socially expanded luxury for enjoyment and pleasure for a broader middle class” (Nyberg & von Wachenfeldt 2015, pp. 15–16).³⁰

The industrious revolution is described as altered consumption behaviors which strongly affected how people organized their lives. Demands for consumer goods, among them dependency-forming goods like tobacco, led to a shift from household economies to market economies, where commercially produced items replaced household production and homemade goods. This demand for goods primarily obtained through markets in turn led to an increased tendency for people to commit to wage labor. In turn, this resulted in the industrial revolution in which goods previously imported were manufactured in Europe for domestic and foreign consumption.

Ahlberger, by comparative studies of the objects of sumptuary laws of the long eighteenth century, shows how sumptuary laws (known in Swedish as *överflödsförordningar* and *bevillningsförordningar*) during the early-modern Swedish consumer revolution was spearheaded by the nobility in the seventeenth century, yet during the eighteenth century, the primary target of sumptuary laws was the peasant or commoner class. The motivations behind the sumptuary laws of the eighteenth century, however, were less founded on estate-social or hierarchical aspects of recognizability and more on national-financial aspects. Mass consumption could not be hindered, but through embargoes and taxation of both imported and domestically produced goods it could be profitable for the nation-state.

3.1.1 Tobacco in Sweden’s eighteenth-century consumer revolution

Although the focus of this study is if and how clay tobacco pipes were employed in socioeconomically differentiating ways, I believe it is essential to contextualize the pipes as instruments for smoking tobacco. Such contextualization requires a basic understanding of perceptions and conceptions of tobacco consumption throughout the period. As Sweden did not have a tobacco-producing colony in the eighteenth century, there is reason to believe that the nation, as opposed to Spain, England, and France (see Smith 2002, p. 161), could not rely on tobacco grown at plantations in its own colonies.

How then, did tobacco and smoking fit into the consumer and industrious revolutions of eighteenth-century Sweden? While social aspects of clay tobacco pipes in Sweden have not been the subject of much research, tobacco figures relatively frequently in studies of social and economic aspects of seventeenth- and eighteenth-century consumption. Previous research presents different and often contradictory views on how tobacco was perceived in the period. While some, drawing on tobacco’s inclusion in sumptuary legislation and debates on superfluous consumption, claim that tobacco was considered a luxury item, others, pointing to household production and a diffusion trajectory that differed from that of other new luxury goods propose that tobacco was viewed as an essential or necessity good in the eighteenth century.

Below, I present arguments for and against these two general perspectives. In comparing these two perspectives to one another as well as to both primary and secondary sources, I argue that both these positions, while often oversimplifying views on tobacco consumption through generalizations, when combined and situated in a context that considers variations in higher resolution, based also on

³⁰ “[...] denna sociala, ekonomiska och kulturella kraft som betecknas den nya lyxen” and “New luxury betecknar således en socialt breddad lyx för njutning och behag för en bredare medelklass” (Nyberg & von Wachenfeldt 2015, pp. 15–16).

primary sources from the period, show the complexities of tobacco consumption in Sweden through the seventeenth to the early twentieth century.

Tobacco is often listed among goods such as sugar, tea, and coffee as examples of the new luxuries, fashion items, and imported colonial wares that acted as driving forces in the consumer revolution of eighteenth-century Sweden (see for example Runefelt 2005, p. 55; Runefelt 2015, p. 46; Rönnbäck 2010, p. 177; Nyberg and von Wachenfeldt 2015, p. 11).³¹ In Swedish archaeological contexts, clay tobacco pipes are therefore occasionally linked to, and considered as evidence of, Sweden's partaking in a particularly European demand for items of consumption made available through colonial enterprises that involved slave labor (see for example Eriksson and Nordin 2011).³²

There are many documentary sources from the eighteenth century that show that the validity of views that tobacco was considered a luxury product in eighteenth-century Sweden is a matter that is in need of nuance. For example, Ahlberger (1996, p. 53), referring to a quote from 1794, proposes that tobacco was viewed as an essential or necessity good rather than a luxury good by the end of the eighteenth century. This quote, however, is a repetition of a sentiment expressed during the first decades of the eighteenth century as well: tobacco, although deplored and bemoaned, had become a necessity that could not be eradicated or easily banned. When faced with increased taxes on tobacco as a result of the sumptuary taxes of 1766, the peasant estate also used as an argument that tobacco was a necessity good for the peasantry and commoners (Grimberg 1922, p. 559). Evidence for this view, although pointed out as an argument against the use of tobacco among the poor, can also be found in seventeenth-century sources; Munthe mentions the Fortification Engineer Per Lindeström's account of poor tobacco users in New Sweden foregoing food for their families in order to get tobacco (Lindeström's original manuscript from 1656 quoted at length in Munthe 1940, pp. 34–36). Although nicotine addiction could not be scientifically explained at the time, numerous other accounts of tobacco users being unable to quit smoking, snuffing, or chewing tobacco exist dating

³¹ Runefelt states that “large efforts were made to create a domestic tobacco manufacturing, which however turned out to be very difficult. When the attempts, by the mid-1760s, appeared to have failed, the sumptuary laws of 1766 introduced severe regulations of the use instead. When an import good could not be replaced, it should still be excluded through bans” (Runefelt 2005, p. 56 [translation by author]). I am not certain where Runefelt has obtained this information. One of his stated sources, Linnaeus' *Iter Vestrogothicum*, describes measures taken at the Alingsås plantation for successful crops in a positive light and describes the operations as successful (1747, pp. 127–129). Several Swedish tobacco plantations remained successful beyond the 1760s. The tobacco factory in Alingsås for example produced 47950 Swedish lbs. of tobacco in 1772, of which 42845 lbs. were made from Swedish leaf (SE/RA/420132/3/D/D a/Da 1/26 1772–1772, p. 490), which is a significant increase from 1768 when nearly half of this amount was produced (SE/RA/420132/3/D/D a/Da 1/22 1768–1768, p. 470). According to Arne Munthe (1940, p. 76) the number of tobacco manufacturers almost doubled between the years 1760 and 1770. Moreover, the sumptuary laws of 1766 did not ban tobacco and was in many aspects a repetition of the sumptuary tax on tobacco from 1747. The age limit of 21 imposed as of 1741 was repeated, and the only significant difference was that everyone was to pay a tax of one daler silver per year for tobacco use, except for servants and commoners' children over the age of 21, who were expected to pay 16 öre per year. Enlisted men, similarly to the 1747 taxation, were not subject to the tax. Not until the 1770s is there a marked decrease in recorded tobacco manufacturing. Munthe for example states that in 1750, 2 842 050 lbs. of tobacco were used by Swedish tobacco manufacturers, of which 1 454 771 lbs. were Swedish tobacco. In 1780, only 1 372 484 lbs. were recorded as used by Swedish tobacco manufacturers (ibid. pp. 75–77). One likely significant reason for this decrease in recorded tobacco production is the effect of an increased household production of tobacco, which is difficult, if not impossible, to quantify based on historical records.

³² While this may certainly be true for some of the tobacco being consumed in Sweden throughout the studied period, tobacco was also imported from the Netherlands and Germany and perhaps most notably – domestically grown on a vast industrial scale beginning in the 1730s, and during the course of the eighteenth century, on a household level for immediate consumption (Ahlberger 1996, p. 53).

back to the seventeenth century and partially explain why tobacco, shortly after its introduction became viewed as an essential consumable.

In Sweden as in Europe, the process of introduction and widespread diffusion of tobacco appears to have differed from other colonial wares. de Vries states that “the smoking of tobacco, perhaps because it could readily be introduced into existing tavern life, spread broadly after its early-seventeenth-century introduction to Europe” (2008, p. 157). Indeed, by the end of the Thirty Years War, archaeologically recovered pipes and historical records attest to the habit of smoking being well established across the social spectrum of Swedish society (see, for example, Marcus 1911; Munthe 1940; Ahlberger 1996, p. 50). The grouping of tobacco with other new luxury items introduced by elites during this period is therefore somewhat problematic when considering Nyberg and von Wachenfeldt’s definition of such goods as initially reserved for elites and used by a broadening middle class in the eighteenth century (2015, p. 16).

It is also important to note that the general belief in medicinal qualities of tobacco, established in the sixteenth and seventeenth centuries (for Swedish examples, see Franck 1931 [1633] and Palmcron/Sparrman 1642), held sway at the beginning of the eighteenth century, particularly during the plague epidemic of 1710 (see, for example Döbelius 1711). This belief in medicinal qualities of tobacco prevailed throughout the eighteenth century (Dahlman 1743; Bergius 1785 [2015], p. 31) and tobacco and smoking were also part of folk medicine (see, for example, *Hushålls och Konst Cabinet* 1758; Norlind 1912, p. 398). The prevalent perception of tobacco as an effective medicine likely also served to both encourage its use and to impede regulations and attempts at complete bans.

Other evidence that views on tobacco as a luxury may need to be revised is that domestic Swedish cultivation of tobacco predates the politically motivated mercantilist and government-subsidized tobacco plantations of the 1730s onwards, and that substantial amounts of the tobacco consumed in the country was not a direct product of any colonial enterprise. Archaeological evidence shows that cultivation of tobacco, albeit likely on a small scale, took place in the period between the 1560s–1610s (Heimdahl 2005; Åkerhagen 2012a, p. 25). Arne Munthe (1940, pp. 56–57) describes how Swedish peasants had begun growing tobacco for household consumption as early as the 1680s, and perhaps earlier. Marcus (1911, p. 5), pointing to a letter from the Landskrona magistrate, believes that tobacco may have been grown in Scania since the 1640s. Similarly, Simon Paulli’s *Flora Danica* lists tobacco among the plants cultivated in the country (1648 p. 361), making it seem plausible that tobacco was also grown in parts that were to become Sweden as early as the 1640s.

There is ample evidence in reports from *Hallrätter* and magistrates that show that Sweden was, beginning in the 1730s, a major producer of tobacco for its domestic users and did not depend exclusively on imports from the British colonies in North America or the Spanish colonies in Central- and South America, nor the Dutch colonies in the East Indies. It is also important to note that these reports do not consider proper household production of tobacco known from oral sources (see, for example Keyland 1919, pp. 100–107).

Moreover, a substantial amount of the tobacco imported to and consumed in Sweden appears to have been imported from Germany, Flanders, and the Netherlands, countries where tobacco was also being grown on a vast scale. Tobacco grown in continental Europe referred to as *Amersfoorter* and *Nieuwkerk* often occur alongside Virginia, Porto Rico, and *Swänska Blader* – Swedish leaves, in estate inventories of tobacco manufacturers. This means that only parts of the tobacco used in Sweden was imported from slavery-based colonial plantation economies. Such tobaccos may fit better into definitions as luxury goods, while tobacco grown in Germany, the Netherlands and Sweden seem less suited for

this category of goods. While goods like porcelain, silk, and sugar underwent the trajectory from expensive imported luxury to affordable domestic product during the eighteenth and nineteenth centuries, significant amounts of the tobacco consumed in Europe and Sweden experienced this transition as early as the seventeenth century.

There is also strong evidence that the sanctioned domestic tobacco plantations of the 1730s were intended to replace imports of tobacco grown in Europe that was also considered low-grade, i.e. the tobacco primarily used by the poor. Munthe (1940, pp.77–78) explains:

the embargo [emanating from the Riksdag of the Estates of 1738–1739] on tobacco leaves from certain northern German production centers were intended to support the domestic tobacco farming but was also motivated by the aspect of quality. The goods targeted by this embargo were considered the worst of its kind.^{33 34}

Thus, it was not the tobacco considered to be of the highest quality that was being replaced by domestic production, it was the cheapest tobacco consumed primarily by the lowest estates, the peasantry, and the commoners, that was considered as appropriate for replacement by domestic production. Complaints against the comparatively poor quality of the domestic tobacco were subsequently also raised by the peasant estate during the Riksdag of 1740–1741 (Landahl 1951, p. 307), further indicating that it was the tobacco consumption of the commoners and the peasantry that was targeted by the combined efforts of an embargo on imported cheap tobacco and an increased, subsidized domestic production.³⁵

A lack of complaints concerning the users' experiences in the burgher estate indicates that its members likely did not themselves use either the cheap imported tobacco or the domestically grown tobacco at the time of the embargo. Complaints against the embargo raised in the burgher estate were not based on experiences of the actual use of the tobacco, instead it was the low quality and high price of the domestic tobacco which made it difficult to sell that was in focus (Staf 1975, pp. 165). The consumption experiences among members of the higher estates were likely not affected by the altered components of the cheapest tobaccos available on the market – the more palatable high-grade tobaccos were still available, now processed by tobacco-workers in Swedish tobacco factories who may however have been less skilled than their Dutch, German or British counterparts.

Arguments against domestic tobacco farming generally include the view that fertile soil that could be used for food production was wasted on tobacco (see, for example *Hushållnings Journalen* 1786-09-?) while arguments against imports of tobacco state negative impacts on national finances as a reason (see, for example Tham 1799). Tobacco was subject to what was certainly expressed as sumptuary taxation in 1718, 1747, 1753, 1763, and again in 1766 (see Marcus 1911, pp. 49–51), yet Ahlberger considers these tax acts motivated by national economic factors rather than “estate-social” factors intended to regulate luxury consumption according to social status (1996, p. 62). Thus, the nation

³³ “Av de från 1738–1739 års riksdag härstammande och redan omtalade åtgärderna syftade importförbudet å tobaksblad från vissa nordtyska produktionscentra givetvis närmast till att stödja den inhemska tobaksodlingen men motiverades också av kvalitetssynpunkten. Den av detta importförbud träffade varan ansågs som den sämsta i sitt slag [...]”.

³⁴ The embargo targeted all ready-made forms of tobacco, which were now supposed to be manufactured in Sweden. Unprocessed leaves, as long as they were not from Pomerania, Brandenburg or Luneburg (Modée 1746, pp. 1495–1496), could still be imported. This meant that the Swedish market was still open for high-end tobacco leaves for domestic processing.

³⁵

profited from a widened consumption of tobacco by taxing whoever used it and regardless of where it was grown. This view is also proposed by Marcus (1911, pp. 49–50), who states that all attempts at taxing tobacco during the eighteenth century were of a fiscal nature.

The second tobacco tax to be imposed on individuals, from 1747, was levied according to the social estate to which the taxpayer belonged, with higher rates for nobles, burghers, and priests than for commoners (Modée 1749, p. 2446). As a sumptuary tax in a protectionist political context, this gradation could be understood from a perspective that considers feasible a higher tax being levied from those who consumed expensive imported tobacco considered a luxury, and a lower tax being levied from those who consumed cheaper, domestically grown tobacco considered along the lines of a necessity good.

The tax act from 1766 taxed everyone except servants (*tjänstehjon*) equally. Protests against the generalized tax rate of 1 daler silver per annum that were raised in the peasant estate in the Riksdag of 1766, where the floor speaker stated that it was unfair “that a poor crofter and a general should pay the same tax for smoking tobacco, when both of them smoked tobacco that varied a lot in expense” (Landahl 1973, p. 291).³⁶ Neither of the tax acts were proper attempts to regulate the consumption of tobacco in a manner that markedly limited its use according to social status. Rather they should, as pointed out by Ahlberger, perhaps more appropriately be considered as symptomatic of considerations of the importance of tobacco consumption for the national finances of Sweden during the eighteenth century.

Widely consumed domestically grown, homegrown, and cheap imported tobacco was most likely considered as belonging among necessity goods, while tobacco leaves, snuff blends, fancy rolled and pressed tobacco and packaged pre-cut tobacco made from Virginia leaf and other imported expensive tobaccos are perhaps better described and understood as luxury goods in their time.³⁷ As late as the 1870s, pre-packaged and pre-cut tobacco in cartridges known as *karduser* was considered so expensive that “only the priest, the innkeeper, and factory owners smoked it” (Saxon c. 1870s quoted in Conradsson 1987, p. 20; see also Sahlberg 1809).³⁸ Thus, it seems as if the types and origins of the tobacco being consumed are more worthy of consideration in discussions of luxury consumption than what has been the case. This issue is hardly touched upon in recent literature on the topic of consumption in early modern Sweden, and although highly relevant for discussions about the importance of different types of tobacco for differentiating smokeways during the studied period, unfortunately also falls outside the scope of this study.³⁹

³⁶ ”Talemannen medgaf obilligheten deraf, att en fattig torpare och en generalsperson skola betala lika stor contribution för tobaksrökning, då likwäl hwardera af dem röka mycket olika dyr tobak.”

³⁷ See for example *En wäl förbättrad tobaks-brödra-ordning [...]* (Anonymous 1730s) which suggests that tobacco grown in Hanau in Germany was considered superior.

³⁸ “Den var dock så dyr att endast prästen, gästgivaren och bruksherrarne rökte den”.

³⁹ I have no doubt that the future will bring methods for analyzing the charred remains of tobacco that often line the insides of clay tobacco pipe-bowls to determine where the tobacco has been grown and perhaps even if and what flavoring agents were used. Metabolomics analyses have now successfully been applied on charred remains of smoking substances in pipes in the New World to distinguish different strains of tobacco (Brownstein, Tushingham, Damito, Nguyen & Gang 2020). See also gas chromatography/mass spectroscopy (GC/MS) applied to identify nicotine in pipe residues (Rafferty et al. 2012).

3.1.2 Concluding discussion

There can be no doubt that tobacco smoking was well-established and widespread across societal segments of eighteenth-century Sweden. Current Swedish research often oversimplifies tobacco consumption in the period by grouping all tobacco consumption with goods like sugar and tea, associated to the concept new luxury when, as presented above, tobacco in many cases seems to have been considered a necessity good. Evidence suggests that this conception of tobacco may have been established in the seventeenth century. While particular types of tobacco appear to have been considered better and therefore fit definitions of luxury goods more closely, documentary evidence shows that this sentiment does not seem to have included the types used by the wider demographic segments of eighteenth-century Sweden. It is notable that it was the cheap tobacco primarily used by commoners and peasants that was banned in 1739 and replaced by domestic production rather than the expensive imported types preferred by the upper classes, and that protests against the general taxation of 1766 explicitly mentions that commoners smoked cheap tobacco and while people higher up on the social scale smoked expensive tobacco. There is documentary evidence to support this as being the case well into the nineteenth century (and beyond [e.g. consider contemporary differences in perceptions cigarettes that cost between SEK70 and 95 per pack and premium Cuban cigars that can cost around SEK1000 each]). Variations in quality, origin, and price of tobacco thus appears to be aspects that were relevant to perceptions of whether tobacco was a luxury or necessity good in eighteenth-century Sweden and strongly suggests that an awareness of nuances of the historic consumption of tobacco in the form of historic tobacco types may shed further light on its role as a socially differentiating good.

3.2 Consumption and social order – recognizability through consumption

A starting point of this study is that Swedish eighteenth-century society was strictly hierarchically divided according to the estates of the realm – the nobility, the priesthood, burghers, and commoners/peasants – with roots in a Western medieval feudal perception of social order (see for example Franzén 2009; Runefelt 2015). This hierarchy was partially, and poignantly, upheld through appearances made possible through the employment and display of things. Runefelt (2015, p. 43) finds that

belonging to a social estate was not immediately visible, but had to be constantly staged through clothes, objects, rites, gesticulations, speech, rooms, places, and so on.⁴⁰

This order had to be manifested in ways that were recognizable to a majority to fulfil its purpose. Views on consumption in eighteenth-century Sweden were highly paradoxical. Runefelt notes that “exclusive and expensive products were allowed to exist”, yet any unregulated consumption of these products was considered dangerous (ibid., pp. 32–33). What was considered as appropriate consumption of specific things was strongly linked to their consumers’ social standing. Certain goods were expected and intended to be linked to a specific social group, thereby creating recognizability. This social order and the hierarchy upheld by the use of things was perceived as threatened by the

⁴⁰ ”Ståndstillhörigheten kunde inte ses omedelbart utan den måste hela tiden iscensättas med medel såsom kläder, föremål, riter, gester, tal, rum, platser och så vidare.”

consumption of goods previously reserved for the wealthy by those of lesser means (Runefelt 2015, p. 44):

Since recognizability did not exist in any other way than through constant staging, there was an opportunity for individuals and groups to employ new consumption practices to challenge it and conduct everyday politics.

Following fashions was considered appropriate for those who were expected to be able to afford to do so. The general view was that consumption of certain products should be reserved for the wealthy elites while commoners and peasants, idealized as virtuous, innocent, and simple, were not supposed, or in many cases not allowed, to partake of such goods.⁴¹

A notion of conservative permanency also permeated views on consumption in eighteenth-century Sweden. Recognizability in the eighteenth century, according to Runefelt's analysis, required this permanency of unaltered appearances tied to social status. According to Runefelt, it was not until (primarily urban) social life had become heterogenized in the early modern period that it became increasingly difficult to recognize social position through material culture in the public sphere. For Sweden's part, Runefelt has identified the late eighteenth century as the point in time that subtle signifiers gained importance as "new tools" (Runefelt 2015, p. 164) for marking social status.⁴² Material culture, things, although recognizable as expensive or inexpensive and thus often associated to social status, were no longer singularly efficient in producing differentiation. A nexus of manners and environs in which things were exposed and how they were used all factored into judgments of recognizable appropriateness related to social status.

While contemporary "differences in consumption are often quite subtle, a matter of nuances, and are evidence of complex cultural codes at work that extend well beyond class structure (or, indeed, any other kind of social structure)" (Smith 2002, p. 26), expressions of the social order in the premodern and parts of the early modern period were not intended to be subtle (Runefelt 2015, p. 37). Styles (quoted in Berg 2005, p. 6) notes that several of the consumer goods that were introduced during the early modern period became:

indispensable props in the genteel performances that constituted politeness, whether in the dining room or the assembly room. Your gentility was judged by whether you owned the right items, whether they were sufficiently genteel in their design, and whether you were capable of using them in the right way.

Although this study, as previously mentioned, does not consider tobacco as necessarily belonging among colonial or luxury goods during the studied period, tobacco consumption in the form of pipe smoking is still considered among the consumption practices, which though widely established in the century preceding the studied period, remained as an arena to stage hierarchical recognizability in the eighteenth century. Different types of tobacco, regardless of origin or price, especially when packed and smoked in pipes, although perhaps identifiable from the scents produced by their smoke, were not as immediately suitable for displaying recognizable differentiation as other tobacco-related

⁴¹ A theme of Runefelt's is however to make visible the contradictory nature of arguments for the consumption of domestically produced luxury items on a wide scale as beneficial for the Swedish national economy and arguments for its detrimental effects on the same (as well as resulting in moral decay).

⁴² "I litteraturen kring 1800 finns det spår av att det behövdes nya redskap för social identifikation och urskillning" (Runefelt 2015, p. 164).

paraphernalia. The material objects from which these tobaccos were smoked – the pipes, which are also near-ubiquitous in the archaeological record of the period, would have been conspicuous and therefore well-suited for practices aimed at creating the desired recognizability.

Higgins (1987, pp. 43-44) notes the immediacy of recognizability of pipes in their contemporaneity accordingly:

To the seventeenth, eighteenth or nineteenth century smoker the complete form of the pipe would have conveyed an immediately perceived range of information. The price, style and status of the pipe would all have been recognised, together with the implications about type of person who would own that style of pipe and the places in which its use would be expected. If we are to understand and interpret the pipes we find, we must first be able to recognise with the same degree of precision the differences between the form of the pipes and then link that information to the different classes of society and situations in which they were used. We need to know which pipes were of the same form or length, whether they had straight or curved stems, and how these differences related to the standing of the pipe. Also the degree to which regional, temporal, social or stylistic differences are likely to exist and how the recovery of pipes can explore these issues.

A background for this study, as such, is a combination of the hypothesis that Higgin's observation was likely also true in eighteenth-century Sweden. Additionally, it is believed that an understanding of the right and wrong ways of using the pipes, as indicated by Davies-Barrett and Inskip (2024) and Konijnendijk (2015), will allow pipe fragments to serve previously unemployed functions in the field of Swedish archaeology.

3.2.1.1 Concluding discussion

While tobacco may have been an example of a new luxury in seventeenth-century Sweden, at least parts of the tobacco consumed in Sweden experienced the trajectory from expensive imported luxury to affordable domestic product earlier than many other goods that are commonly referred to as new luxuries that were part of the consumer revolution and the industrious revolution of the early modern period. I find it important to acknowledge that, similarly to the rest of Europe, tobacco and many forms of its consumption were well-established in Sweden at the beginning of the eighteenth century. Archival sources from the period and previous research alike suggest that the most widely used types of tobacco – domestically grown either on subsidized plantations or on farms for household consumption, was considered a necessity good rather than a luxury good. Meanwhile, types imported from North and South America and certain types from continental Europe considered at the time to be of higher quality are likely better understood as luxury goods.

Documentary evidence shows that the supply and availability of tobacco was varied in eighteenth-century Sweden. Different types were imported or domestically grown, produced and marketed with consumers from different social groups in mind. This shows that current generalizations that hold pipes as evidence of their users partaking in a consumption of luxury goods of the period are in need of nuance. It is possible that future methods of analysis can shed light on the origins of tobaccos smoked based on charred remains on the insides of bowls, thus enabling a better understanding of the roles of individuals in global or domestic networks of consumption during the period. Meanwhile, if such generalizations were true, a short pipe with bite marks mere centimeters from its bowl would be considered as evidence of its consumer partaking on near-equal terms of consumption as smokers of long-stemmed pipes of the highest quality imported from the Netherlands.

The hypotheses of this study is based on observations primarily made in the Netherlands (Duco 1980; 1981; 1987; van Oostveen Bonnema and van Oostveen Bonnema 1999; Konijnendijk 2015) , but also England (Higgins 1995; Davey 1995; Cessford 2001 with references; Barrett-Davies and Inskip 2024), and Australia (Gojak and Stuart 1999), that archaeologically recovered fragments of clay tobacco pipes can relay consumption behaviors of people who once used them, and that these consumption behaviors may at times have been specific to socioeconomic groups. A general consensus of the abovementioned sources is that longer, polished, expensive pipes often decorated with milling were used by wealthier smokers while short and coarse relatively inexpensive pipes were used by poorer smokers. Another observation presented in a number of these publications is that bite marks on stems and signs of extended use on bowls, as well as pipe notches in teeth are generally associated with poorer smokers.

As shown by Konijnendijk (2015), a specialized understanding of pipe types, traces of use, spatiotemporal context, and the social significances of these aspects, when combined, allow pipes to relay information about the people who used the pipes and the society in which they were employed. There are, as we shall see, several requirements that must be met before inferences of this kind can be convincingly presented as based on fragments of clay tobacco pipes. An approach to pipes that contextualize them as employed in expressions and negotiations of socioeconomic recognizability, as explicitly stated by Higgins (1987), placing pipes on par with other objects used at the time to stage differentiation is thus a fundamental assumption for this study.

As a remedy for a perceived under-theorization of pipes, Cessford (2001) suggested that clay pipes from archaeological assemblages should be contextualized as one of several elements in a “tobacco consumption package”, construed primarily to highlight the need for an approach to tobacco consumption that acknowledges a multifaceted range of material culture associated to it. “The ‘tobacco consumption package’”, Cessford states, “is defined as any item linked to the production, distribution or consumption of tobacco” (ibid. n.p.). This view is valid for transparency in terms of awareness of the existence of different forms of tobacco consumption, for acknowledging and exploring the primary functional role that the pipes filled for the people who used them, and as a means of contextualizing and conceptualizing any form of material culture associated with tobacco consumption. Taken to its extreme, as tobacco was so ubiquitously consumed, the concept of a tobacco consumption package can be interpreted as encompassing all facets, material and intangible, involved in the consumption of it.

It is not difficult to appreciate the utility of the concept for contextualizing any artifact or ecofact related to tobacco in potentially (and likely) complex networks of interconnected material and immaterial aspects of agriculture, enslavement, global trade, disenfranchisement and inequality in consumption and addressing such matters. The potentials of the tobacco consumption package as a concept may be vast, yet as a tool for analyses of specific socially differentiating nuances in various modes of tobacco consumption in general, and for the sake of this study, variations to tobacco smoking in pipes, it lacks specificity. While enabling acknowledgment of intricacies of the existence of any tobacco-related material culture – from living quarters of the enslaved, tobacco seed and tools used to grow it at plantations in colonies, to ships, docks, shops, tools, snuff boxes, ember tongs, pipes, and all people affected by these things, the concept of the tobacco consumption package suggested by Cessford is not specifically geared towards detailed approaches to socially differentiating aspects of the uses of pipes.

3.3 Problem formulation

In 2024, reiterating Cessford's call for theorization of pipes from 2001, Miguel Martins de Sousa and Tânia Manuel Casimiro stated that internationally, "pipes are yet to be considered in wider theoretical approaches discussing social, cultural and economic dynamics" (2024, p. 122). The most basic assumptions and immediate background of this present study is that aspects of recognizability of clay tobacco pipe-consumption have only been superficially explored in Sweden. Here, interpretative potentials presented by clay pipe research in countries such as England and the Netherlands have remained almost completely unexplored. Compared to the situation in these two countries, the understanding of industry standards and attributes related to the prices of pipes – some of the most basic requirements for such contextualizations – have hardly been touched upon. For example, although acknowledged (Bonds 1980), the identification of attributes of variations in production quality related to price differences of both imported and domestic pipes have not been widely explored. When such analyses have been attempted, poor quality pipes have often been mistaken for high quality pipes (see, for example, Olsson 2004, p. 184). Similarly, differences in smoking practices often associated with the social or socioeconomic status of smokers, known to be visible in the form of traces of use and modifications on pipe fragments as shown in pipe analyses and recording praxes in the Netherlands, have not been widely explored.

Based on the aforementioned previous research on clay tobacco pipes and smoking in Sweden during the eighteenth century, I have identified four general matters which need to be addressed to inform and increase the validity of interpretations of socioeconomic differentiation based on clay tobacco pipes recovered from the Swedish archaeological record. The first matter is that although socioeconomically distinguishing attributes of clay tobacco pipes manufactured in Sweden have been suggested in previous publications, little has been done by ways of identifying attributes visible on the pipe fragments themselves that can be tied to variations in production quality and prices of domestic pipes, or to modifications of them by their users believed to be associated to how clay pipes were used as indicators of social status. Based on estate inventories of Stockholm pipe makers, or rather, pipe factory owners Daniel Almqvist and Olof Aspegren, Bonds noted that "the prices of the pipes [...] show different qualities and designs. Different tastes and financial resources had to be satisfied" (1980, p. 288). While Bonds identified and acknowledged different qualities and designs in the archival record and tentatively coupled them to pipe fragments, few subsequent systematic attempts at identifying and quantifying such differences in pipe assemblages from the archaeological record have been carried out.

As shown by Dutch and English clay pipe research, an understanding of industry standards and attributes related to the prices of pipes are basic prerequisites for contextualizing pipes as material culture employed for the display of social differentiation. Cessford (2001, n.p.), however, warned that expensive clay pipes may have been "populuxe goods" – that even the most expensive types were technically obtainable even by the poor. As an empirically based understanding of the attributes and characteristics of expensive and inexpensive pipes manufactured in Sweden does not exist, it is not currently possible to determine whether or not particular pipes belonged in this group. In other words – it is not currently possible to distinguish domestically manufactured inexpensive pipes from expensive pipes. For example, while juxtapositions of archaeologically recovered pipes to depictions of smokers are currently possible, such comparisons run the risk of remaining superficial due to the fact that industry standards and the attributes of these are not currently understood. Claims that the social inferences of particular pipes, and how they are held or placed in, for example, paintings,

therefore remain speculative. In other words, the identification of industry standards and the physical attributes of Swedish pipes and the coupling of these to surviving manufacturing descriptions, price information and other relevant archival sources is an almost completely unexplored field of research. A lack of identified industry standards and price differences also entails difficulties in linking meanings and potential synchronic and diachronic shifts in significances of pipes in historical depictions and descriptions of pipes and smoking as well as archaeological contexts.

The second matter is that clay tobacco pipes and the use of them in eighteenth-century Sweden have, apart from tobacco smoking as a gendered practice, not been widely theoretically contextualized. When considered beyond their applications as chronometric artifacts, pipe fragments are primarily considered as material remains of instruments for tobacco smoking. As such, it is the consumption form – tobacco smoking – which has been under scrutiny and contrasted to the use of snuff or chewing tobacco (or indeed abstaining from tobacco), rather than exploring potential nuances of the singular practice of tobacco smoking in which the pipes played a significant part. Briefly stated: tobacco smoking in eighteenth-century Sweden has with few exceptions been treated as a generic practice with little or no variation. It is believed that by acknowledging the potential existence of different and differentiating group-specific *ways* of using pipes may shed further light on this matter. Therefore, it is believed that a heuristic term, similarly to lifeways, folkways, or foodways, applied to include specificities of particular ways of smoking is believed to facilitate this conceptualization.

The third issue to address is the fact that in Sweden there has been no standardized recording practice that considers any potential source value beyond production dates and geographic origins of clay pipes. This becomes apparent when juxtaposing information provided in Arne Åkerhagen's clay pipe reports to small finds-databases from the contract archaeology firms that employed him. In many cases, apart from categorizing attributes such as material, amount, weight, and occasional comments or observations on decorations, only production dates have been transferred from Åkerhagen's reports into small finds-datasets during finds registration. In other words, attributes of pipes proven by previous research in other countries to hold relevance for interpretations of socioeconomic differentiation have generally not been included in recording practices of Swedish archaeology.

A fourth matter that also became apparent to me while searching for information on types, production quality, and prices of pipes in archival sources is that the chronology of the Swedish clay pipe industry has not been properly outlined. Production date ranges and changes of ownership at several factories suggested by Bonds (1977; 1980), Loewe (1985) and Åkerhagen (2012) have been found to contain several inaccuracies. Without a systematic evaluation of the effect that inaccurate production date-spans for certain factories and workshops has had on the chronological sequencing of archaeological contexts and phases it is currently not possible to determine the effect of these findings. However, as shown by documentary sources presented below, previously published production date ranges for pipes from some factories and workshops need revisions ranging between a few years up to several decades. This means that the identification of domestically manufactured pipes based on previous research may not reach their full potential of chronological precision. In turn, this means that couplings of pipes and the closely dateable historic record may not be as reliable as, for example, Tagesson (2019, p. 32) has previously claimed.

3.3.1 A summary of identified problems

In Sweden, there are four significant matters that have stymied applications of archaeologically recovered clay tobacco pipes as evidence of socioeconomic status;

- The first is that the industry standards and the output of Swedish pipe factories and workshops is, when compared to the Netherlands and England, poorly understood in terms of variations in production quality, prices, and types.
- The second obstacle is a lack of heuristic terminology to facilitate theorization of the practices surrounding tobacco pipe smoking.
- The third obstacle identified is a lack of a registration praxis that acknowledges or considers pipe fragments beyond their chronometric attributes.
- The fourth issue is that the chronology of Swedish pipe factories and workshops has not been adequately mapped, which has made synchronic and diachronic couplings between Swedish pipes to any observations from the closely datable documentary record unreliable.

3.4 Aims

The overarching aim of this study is to contextualize clay tobacco pipes in Swedish archaeology by considering them as an artifact group worthy of attention beyond their applications as conveniently datable artifacts. Drawing on the potentials suggested by Duco (1987), Higgins (1987), Gojak and Stuart (1999), and Cessford (2001), among others, the primary aim is to explore potential source values of fragments of eighteenth-century clay pipes recovered from the Swedish archaeological record with an approach that considers potential functions that pipes filled as markers of social status. Although clay pipes can, and indeed should, primarily be interpreted as objects used for the consumption of tobacco, interpretations of social proscriptions surrounding its use make up only a part of the study at hand. While not ignoring this primary function, the aim rather, is to focus on if and how the clay pipes themselves were considered and employed as markers of social status, and to determine the potential traces thereof that remain visible on fragments recovered from the archaeological record to this day. This view aims to encompass both attributes related to prices resulting from manufacturing steps, known from the Netherlands, England, and from Swedish archival sources, and attributes related to modifications as results of use, potential reuse, and discard.

The approach that I suggest is one that considers clay pipes as material elements employed in a consumption practice with variations. These variations of the same practice – tobacco smoking in clay pipes – are to be understood via a heuristic concept that is aimed at locating the functions of pipes as elements in patterned consumption practices that were idealized and group-specific. The heuristic concept that I propose to conceptualize potential variations is “*smokeways*”. It is hoped that this term, much in the manner that terms like *foodways* and *folkways* have been used to contextualize, conceptualize, and understand different *ways* of food consumption and adherences to patterned group-specific mores, will facilitate analyses and discussions about different *ways* of smoking and lead to new and empirically based observations.

While my aim is to identify and determine potential group-specific smokeways tied to socioeconomic status which may have left their mark in the archaeological record, I wish to be clear about the fact that I am perfectly aware of the alternative forms of tobacco consumption that existed in the studied

period, and that these were also employed to signal social status. Likewise, although this falls beyond the scope of this study, I also wish to acknowledge the likelihood of the use of different types of pipe tobaccos which may also have played important roles in differentiating smokeways. The term *tobaccoways* may be a useful term to conceptualize these distinctions. For variations in the use of nasal snuff, the term *snuffways* may be employed to conceptualize variations in the consumption practice of inhaling ground or grated tobacco.⁴³ As shown by previous research, variations in tobacco consumption modes did signal belonging – chewing tobacco for example was strongly connected to sailors and people working in locations where smoking was forbidden due to fire hazards. Snuff is a good example of a tobacco consumption practice that was surrounded by etiquette and luxury accessories among the elite, yet among Swedish commoners, snuff and oral snus was stored in wooden, horn, or brass boxes and likely used with little regard to, or even awareness of, etiquette rules of the wealthy.

Neither chewing tobacco nor snuff has left as tangible an impact as pipe smoking in the Swedish archaeological record, and different types or blends of tobacco are currently not detectable in the charred residual remains of tobacco left in bowls through chemical analyses. Meanwhile, the ubiquity of pipe fragments at archaeological investigations of early-modern sites along with abundant documentary evidence shows that tobacco pipe smoking appears to have been a habit shared by people across the social spectrum of eighteenth-century Sweden. Yet while idealized differentiating consumption practices associated to other items categorized as *new luxury* have been established and studied, particularly by Swedish academics working primarily with archival records mentioned above, very little is known about potential variations in the consumption of clay tobacco pipes – one of the most commonly encountered and archaeologically tangible indications of the use of these goods. This study presupposes that tobacco smoking, much like the consumption of cloths and foodstuffs like sugar, coffee, and tea was subject to similar regulations, and sets out to explore those/which aspects of differentiating smokeways that archaeologically recovered pipes have the potentials to contribute to the understanding of differentiation and inequality in eighteenth-century Swedish society. The aim, as such, is to investigate if and how pipe smoking, through the heuristic concept of smokeways, much like the consumption of food has been approached through the foodways concept, may be employed to make social inequality visible through the archaeological record when applied to fragments of clay tobacco pipes.

As much as variations in smokeways are presupposed in this study material elements, in this case the clay tobacco pipes, applied as parts of them are believed to have been significant for the expression of socioeconomic status. Although it has previously been suggested that the output of the Swedish clay pipe factories of the eighteenth century was heterogeneous and adapted to meet the varied demands of different “tastes and financial resources” (Bonds 1980, p. 288), there has never been a survey of archaeological and documentary evidence related to these factories and workshops. The second aim of this study, therefore, is to attempt to outline the product ranges of the Swedish clay pipe makers of the eighteenth and early nineteenth centuries in order to better understand the characteristics and attributes of the varied products believed to have been marketed to and used by different socioeconomic groups throughout the period.

⁴³ There are several examples of varied manners of taking snuff; Schivelbusch for example presents one of the most meticulously performed ritualized manners from 1750 (1980, p. 137). See also for example Benson Earle Hill (1840). See also Barrett-Davies & Inskip on women rubbing snuff onto their gums to avoid being detected as tobacco users (2024, p. 158).

What is hoped to be gained from this is a future facilitation of the identification of relative variations in production quality and prices of the once intact pipes that are recovered from the archaeological record by the hundreds, if not thousands, each year. It is believed that an understanding of relative prices of both individual pipes and contextual assemblages will assist in establishing a better understanding of the smokeways practiced at different sites and at different times. As stated by Daniel Miller, “the extraordinary degree of [a purchased] item’s specificity becomes apparent when it is contrasted with all those other goods it is not” (1994 [1987], p. 190). It is for example not currently possible to determine whether relatively expensive clay tobacco pipes can truly be considered *populuxe* goods as there have only been few attempts at identifying the characteristics of either expensive or inexpensive pipes made in Swedish factories of the eighteenth and early nineteenth centuries.

Any such findings, in turn, are believed to be highly relevant for outlining a recording system that will enable observable and quantifiable characteristics or attributes related to smokeways to be recorded and studied. The third aim of this study is to provide empirical evidence for the recording of attributes which are relatable to the relative cost of pipes in the eighteenth and early nineteenth centuries. This recording system will also consider potential attributes that are results of other smokeways identified in the documentary record which may also be visible on pipes from the archaeological record. By recording such attributes, it is hoped that potentially patterned, group-specific smokeways may become salient, thereby enabling aspects of clay tobacco pipes beyond chronometry to be employed in archaeological interpretations of consumption practices of the early-modern period.

All parts of an intact pipe, consisting of a bowl, a stem and a mouthpiece, are believed to have potential source value for studies of smokeways; bowls and stem junctures showing signs of extended use through discoloring and stems with signs of whittling or bite marks, when juxtaposed to bowls showing hardly any signs of having been smoked and stems and mouthpieces with no bite marks are believed to be evidence related to social status that have previously been overlooked in Sweden.⁴⁴ Therefore, another aim of this study is to examine the source value of fragments previously considered undiagnostic. Examples of this are undecorated stem fragments and mouthpieces, which have been nearly completely overlooked in Swedish archaeology, which means that little is known about their potential source value.

The final aim of this study is to attempt to establish a chronology of Swedish pipe factories and workshops and to outline what is known about the pipes they made. Without establishing an understanding of different factories’ and workshops’ products and when these would have been available, it is difficult to address and assess any potential meanings that individual clay pipes may have had in their contemporaneity. The aim of the study at hand is not to produce a catalog of pipes, but rather to outline any potential industry standards intended to relay the recognizability of the social hierarchies of the eighteenth century.

⁴⁴ Dutch and English recording praxes call for the registration of signs of use and surface treatment of all parts of pipes as these are considered relevant to interpretations of the status of either the smokers or the pipes.

3.4.1 A summary of aims

To explore the possibility that variations to the practice of tobacco smoking, expressed socioeconomic status. This is believed to be facilitated by introducing the heuristic concept of smokeways.

- To gain and present an understanding of the variety of clay tobacco pipes available in Sweden from the beginning of the eighteenth century until the beginning of the nineteenth century.
- To establish a chronology of Swedish pipe manufacturers and their production in order to better understand their output, i.e. the material elements employed in potentially varying smokeways.
- To juxtapose descriptions and depictions of pipes and the sentiments towards the smokeways they portray. This is done to compare marks left by specific smokeways in the archaeological record in the form of observable attributes on pipes and pipe fragments to contemporaneous perceptions of the smokeways that created them.
- To outline a recording practice for clay tobacco pipe fragments in the Swedish archaeological record that considers attributes that are relevant both for chronometric identification as well as for visualizing socioeconomically differentiating smokeways.

3.5 Research questions

It has already been established that attempts to uphold the social hierarchy through regulations of consumption were common in Sweden throughout the eighteenth century. While the protection and regulation of some materials used to display recognizability of this social hierarchy were in part expressed through policies such as sumptuary laws and excise taxes, other consumption practices were guarded through less official means, still intended to control the use and display of materials associated to the social groups conceived of as being proper. Such social control mechanisms took the form of etiquette and mores on one side, and taboos and condemnations on the other.

Believed to be integral to notions of appropriate smokeways is one of the material elements that was employed in these the practices – the different clay tobacco pipes. As shown by previous research in the Netherlands (Duco 1987; Walker 1971, van Oostveen-Bonnema & van Oostveen-Bonnema 2001), England (Davey 1985 p. 166; Higgins 1987; Higgins 2017), Australia (Gojak & Stuart 1999) production quality, visible through surface finish such as polishing and milling as well as the length of stems, affected the price of clay pipes. The price of pipes, as such, has therefore also been connected to socioeconomic status in these countries. As very little has been done to gain better insight into the output, and as such, the varieties of pipes available to smokers in eighteenth-century Sweden, the first questions which needs to be addressed is: *what pipes were available to eighteenth-century smokers in Sweden?* and *which characteristics or attributes still visible on pipe fragments recovered from the archaeological record are associated to inexpensive and expensive pipes respectively?*

These interrogatives are particularly relevant for the attributes of domestically produced pipes of which little is known in terms of variations in production quality in relation to prices. With an exception for a brief period during the late 1630s in Gothenburg, and possibly during the 1650s in Stockholm (see Appendix I), domestic pipes begin to appear during the first decades of the eighteenth century and almost completely replace imported pipes when embargoes against foreign pipes were enacted in the 1740s. It is not currently known when the embargo was overturned: a newspaper article

from 1819 refers to the embargo as still being in effect in that year (*Inrikes Tidningar* 05-12-1819, p. 6). Domestic makers continued to report production, with some, such as Olof Hjalmar Åkerlind, Norrtelje kakelfabrik and others, making pipes well into the 1840s and likely later (see Appendix I). Although imported pipes occur in the archaeological record throughout the eighteenth century, domestic makers faced little foreign competition, and the smokers of Sweden remained dependent on their output as potential mediators of social differentiation and signifiers of status.

In lieu of outright bans and sumptuary laws regulating types of pipes being used, it is through understanding the etiquettes and mores of pipe smoking – the smokeways, and the traces these may have left in the archaeological record from alternative sources that this study sets out to contextualize clay tobacco pipes. Tobacco use was affected by excise taxes, age restrictions, and, in the case of smoking – geographical bans. The excise taxes were often lenient towards those who could not afford to pay them, and were easily evaded (Ahlberger 1996), and the age restrictions did not apply to all groups – enlisted men under the age of 21 were exempted.⁴⁵

Smoking bans had more to do with the risk of fire associated with smoking in certain locations than with social proscriptions (Falk 2020). Yet rules, often unspoken, appear to have regulated the practice of smoking, at least among people higher up on the social scale of eighteenth-century Sweden. Examples of this can be found in the documentary record throughout the century, beginning with Haquin Spegel's statement that tobacco (it is uncertain if Spegel was referring to smoking or snuffing or both) was a secret confectionery among the gentry in *Thet öpna Paradis* (1705), and the affront expressed by the chambermaid Sara, mistaken for the lady of the house, when a visiting suitor, a landed farmer from the countryside, smokes in her lady's chamber (Gyllenborg 1740 [1737], p. 38).

These sources often imply that adherence, or indeed very often, a lack of adherence to rules associated with tobacco smoking had significance as markers of status. In other words, these sources are commenting on appropriate or inappropriate consumption behaviors. Runefelt (2015, p. 13) states that:

in every social perception, every vision of political order, there are inherent perceptions of what constitutes proper and improper consumption. Conversely, there is a social perception (and hence a perception of people) behind every statement on consumption.

The hypothesis of this study being that the creation, maintenance, upholding, and reproduction of rules, explicit or implicit, created recognizability of social belonging. These variations, or nuances, in the consumption practice of smoking are what I wish to refer to as different smokeways – social-group-specific tobacco smoking practices with associated more or less outspoken rules that would have signaled the social belonging of smokers to both non-practicing beholders and other practitioners “in the know”. Different smokeways are thus also believed to have left different traces in the archaeological record. The hypothesis as well as the following interrogatives as such draw extensively on the potentials of clay tobacco pipes outlined by Gojak and Stuart (1999) as well as on previous research that has indicated social significances to variations in smoking practices (Higgins 1987, pp. 47–48; Bergman Carter 2013; Bergman Carter 2016; Davies-Barrett and Inskip 2024).

⁴⁵ Along with unrecorded household production and smuggling of tobacco, the possibility that tobacco consumption rates among enlisted men suggests that archival information such as tax records are unreliable sources for studies of the diffusion of tobacco consumption.

The next research questions to be explored are thus: *which group practiced what type of smokeways and when*. The hypothesis is that smokers (and non-smokers) on the upper end of the social scale, those who are generally better represented in the historical record of the time, defined the right, acceptable and appropriate ways by contrasting these to the ways that were their opposite – the wrong ways. It is therefore believed that an understanding of differentiating smokeways may be gained, or rather drawn out, from the historical record. In short – *what were the rules of appropriate smoking in eighteenth-century Sweden*, is therefore one of the research questions that this study will attempt to answer. The hypothesis is that this will shed light on smokeways that were considered appropriate and inappropriate among the social elite and hence make their opposites – the smokeways of peasants and commoners salient and, perhaps, *vice versa*.

As this is a study that focuses on the source value of fragments from the archaeological record, the following question is – *which of these smokeways remain visible on the pipes and fragments themselves?* This interrogative considers, but is not limited to, actions taken by people that are believed to have left lasting impressions on pipe fragments known from other countries to be connected to status such as selection, bite marks on stems, refitting of stems, and other signs of extended use.

To conclude, the hypothesis of this study is that fragments of eighteenth-century clay tobacco pipes, when viewed from a perspective that considers variations in smokeways specific to the socioeconomic status of smokers, have the potential to act as tangible material manifestations of notions and ideals of hierarchical recognizability which were widely available during the studied period as well as in assemblages from excavations of early-modern sites. The above stated interrogatives are designed to identify any such variations in smokeways, connect potential specific smokeways to social groups, and make salient some which may still be visible on fragments in the archaeological record.

4 Theoretical considerations

4.1 Clay tobacco pipes and the archaeology of mass consumption

Daniel Miller, in *Material Culture and Mass Consumption* (1994 [1987]) points to changes and transformations in the material culture and consumption behaviors that took place in colonial North America from around the year 1660. Based on observations presented by James Deetz and Henry Glassie, Miller uses an increase in individual serving vessels and porcelain in archaeological assemblages, a change in architecture and gravestones to explain a “shift from communal use to individual use” (ibid., p. 141). The period saw an increased focus on the individual expressed through personal ownership and use, the consumption, of things. This pre-industrial change, Miller proposes, resulted in new demands as well as novel ways of “incorporating the emergence of mass produced items” (ibid. 141) in the everyday lives of people.

These mass-produced items (and the offset of the industrial revolution), Miller explains, were a result or a side effect of a demand for expensive, often imported objects being replaced by domestically manufactured objects. Miller’s example is British spice traders, who had to tap into established trading patterns in the East Indies and were forced to purchase silk and calicoes in South Asia in order to obtain access to the intended trade in spices. When quantities of these cloths entered the British market as a byproduct of the spice trade, demand for them escalated rapidly, acting as an incentive to produce cheaper and more readily available domestic versions, thus initiating mechanized domestic production.

Clay tobacco pipes could easily replace calicoes as an example of a byproduct of another trade item – the trade in tobacco, and most certainly as one of the first truly mass-produced items of consumption that are also present in the archaeological record. Jordan Goodman, quoting a translation of Mathias de l’Obel’s *Stirpium adversaria nova* [...] from 1570 (Dickson 1954, p. 44f, in Goodman 2004 [1993], p. 47), shows how tobacco and pipes were first introduced by European sailors returning from the New World. The production of clay tobacco pipes began in England only a few years later (Oswald 1975, pp. 3–6). In England, clay pipe production had, by the end of the seventeenth century, already seen the introduction of a production-specific machine-like vise known as the gin press (see fig. 30) that sped up production compared to previously used hand-held stoppers. In England, the Netherlands and, as we shall see – Sweden, pipe workshops made their wares in a manner that could unproblematically be described as a proto-assembly-line or proto-industrial style. Larger workshops and factories divided labor towards finished products based on specific tasks related to separate steps in the production. Jan de Vries proposes that clay tobacco pipes “may have been the first ‘throwaway’ consumer item, the Bic lighter of their time” (2008, p. 157). It is, I suggest, as one of the first mass-produced consumer goods which was widely available and used by many that clay tobacco pipes should be considered and theoretically contextualized.

The connection between social status and the appropriation and use of such goods in early modern European society, where burgeoning mass production and mass consumption lead to an increased

availability of objects for people to employ in negotiations of social status is part of what this study aims to explore. Viewing pipes merely as utilitarian objects intended for use in tobacco smoking does no service in the search for explanations as to why there were so many different varieties of clay pipes available to consumers. In this study, therefore, contemporaneously available variations in styles, stem-lengths and production quality of pipes will be interpreted as attempts by pipe makers to meet consumer demands for appropriate material elements in smokeways intended to enact differentiation through recognizability. Long and polished expensive varieties of clay tobacco pipes available to eighteenth-century smokers could, at least during the majority of the studied period, be seen as good examples of Thorstein Veblen's concept of conspicuous consumption (1953 [1899]), or as items "closely tied to a class, by tradition [...] or price [...]" (Bourdieu 1984, p. 22). Yet as smoking appears to have been widespread in all classes or estates of eighteenth-century Sweden, for such pipes to fill functions as elements of conspicuous consumption, they required equally recognizable coarse and less expensive pipes which could stand in their direct contrast.

Pipes and the smokeways in which they were employed are believed to have required contrasts that enabled evaluative juxtapositions as they occurred synchronically and/or changed diachronically. Contrasts between these mass-produced things, as expressed both through variations in attributes of the things themselves and through the capacity of the consumer to identify, classify, acknowledge, and actively decide which object to employ in practices is what Miller (1994, p. 190) describes as evident in the selection of items in contexts of mass consumerism:

On purchase, the vast morass of the possible goods is replaced by the specificity of the particular item. The extraordinary degree of that item's specificity becomes apparent when it is contrasted with all those other goods it is not. Furthermore, this specificity is usually related to a person, either the purchaser or the intended user, and the two are inseparable; that is, the specific nature of that person is confirmed in the particularity of the selection, the relation between this object and others providing a dimension through which the social position of the intended individual is experienced.

This experience of social positioning through selection must be understood as occurring for the purchaser as well as for those witnessing the act of purchasing and subsequent use. As much as I am inclined to agree with Miller, selection is only one of the events in the smokeways-biography of a pipe required for it to hold significance in negotiations of status and distinction. I therefore feel it necessary to explain what is meant by the word consumption in this study.

4.1.1 A definition of consumption and expected biographies of things

Most definitions of consumption in the above quoted literature on the topic are limited to purchasing as the only way that consumables were procured during the early modern period. Joyce Appleby for example defines consumption as "the desiring, acquiring and enjoying of goods and services which one has purchased" (1993, p. 162). Meanwhile, Colin Campbell's definition of consumption can be seen as partially suitable for the archaeology of mass-produced items such as clay pipes and as particularly relevant for archaeological analyses of consumption practices, as it includes "the selection, purchase, use, maintenance, repair and disposal of any product [...]" (Campbell 1995: 102).⁴⁶

⁴⁶ I also wish to acknowledge that there are other ways of procuring things meant for consumption; the transaction money, service, or thing for a thing are not the only ways that things can or could be obtained or procured. Home made things are, at least in the eyes of archaeologists, also consumed. It is also important to keep in mind that theft

Campbell's definition includes an aspect of consumption which is relevant to interpretations of archaeologically recovered objects, namely that they have (often) entered the archaeological record because they have been disposed of. While certainly valid for analyses of most archaeologically recovered things from the point of purchase or procurement onwards in the lifecycle or biography of a thing, this view on consumption is limited and limiting from an archaeological perspective on consumption for three reasons that will be outlined below.

First of all, these definitions seem to demand that things can only be consumed if they are paid for. This view excludes other procurement methods such as bartering, theft, scavenging, and household production from the definition of consumption. While examples of homemade pipes are rare (although they likely exist) in Swedish archaeological contexts, there is strong evidence to suggest that peasants in many cases were self-sufficient tobacco-growers and users during several decades during the late eighteenth and early nineteenth centuries (see Stolt 1892 quoted in Ahlberger 1996, p. 53), and perhaps as early as the late seventeenth century (see Munthe 1940, p. 56). This means that some of them rarely, or perhaps never, purchased tobacco. As such, the peasantry's use of tobacco risks falling outside the definitions of consumption presented in these works.⁴⁷

Secondly, and closely associated with the examples stated above and below, is the fact that objects intended for consumption that have entered the archaeological record prior to reaching a market or a consumer cannot be firmly contextualized in the theoretical frameworks of consumption outlined by Campbell, Appleby, de Vries, or even Bourdieu or Veblen. As these objects never reached a consumer, their interpretative value becomes limited to their potentially symptomatic symbolic value of the consumer demand that motivated their existence.⁴⁸ This view becomes highly problematic for clay pipe research, which has often employed kiln wasters, unsmoked pipes that are parts of cargoes on wrecks, and in this study – an abandoned warehouse – to assess stem lengths and types available at particular points in time.

Thirdly, views of scholars working with historical documents often imply that all consumption was a form of public display in one form or another. This may be related to the fact that descriptions or depictions of the use of things in historical records are treated as explicit examples of experiences expressed and documented either by consumers themselves or by those observing the acts of consumption. These documented acts of consumption are therefore the only sources available to analyze. Drawing this theoretical argument to its most extreme, all consumption must therefore have been conspicuous as it must have caught the attentive eye of someone who documented it for it to even exist in the documentary record. Even though the documentation of a consumption event in itself, for the sake of argument, may be in the form of a diary note never intended by its author for public circulation, it becomes evidential to this act of consumption having taken place as it becomes available to researchers of historical documents. This diary note then, in an almost ironic twist, has suddenly become public and therefore becomes validly interpreted as such. This leads to the

can occur at nearly any point in the biography of a small thing. Theft may have occurred either from workshops or factories, transports, merchants, and people are also possible ways to acquire things. Scavenging is another possibility which could also be considered as consumption of sorts.

⁴⁷ As a result of sumptuary taxes of 1747 and 1766, even those among peasant class who were self-sufficient were expected to pay for their use of tobacco. Census records recorded the use of tobacco in many parishes yet according to Ahlberger these are unreliable as "the possibilities of evasion were great and these figures should only be considered as minimum estimate" (1996, p. 52).

⁴⁸ This also means that inventories listed in insurance claims cannot technically be considered in analyses of consumption.

questions: does “inconspicuous consumption” exist for scholars who limit their sources to the historical record? Must the uses of things have been documented in writing or in images for it to be considered true consumption?

Archaeological contexts are riddled with things that were most certainly *used* even though they may never have been purchased or paid for in any form, never used in public contexts, and very likely never documented as they never took part in any use-events considered worthy of contemporaneous documentation. This seems often to be the case for commonplace objects and everyday practices which are not often mentioned in historical sources. Tobacco use in any form is one such practice, and in the case of clay tobacco pipes, they are one such group of objects. Travel journals from the eighteenth-century written by foreign visitors to Sweden rarely mention smoking or tobacco (see for example Finnsson 1935 [1772]; Miranda 1950 [1787]), and when they do, they are usually remarks on curiosities, such as seemingly unexpectedly fancy pipes in use by the Sami (Schmidt 1992 [1801], p. 84). This means that these everyday practices that employed these things risk falling outside definitions of consumption based solely on the lack of their appearances in contemporaneous documentation. Another risk of relying merely on historical sources for understanding living conditions of the past through consumption is that the use of things by marginalized or impoverished groups of populations, those whose use of things is either not represented or satirized and mocked in writing or in pictorial sources, are overlooked.

Sociologist Alan Warde has noted that “consumption cannot be restricted to, nor defined by, market exchange” (2005, p. 137). “Consumption”, according to Warde, should be seen “as a process whereby agents engage in appropriation and appreciation, whether for utilitarian, expressive or contemplative purposes, of goods, services, performances, information or ambience, whether purchased or not, over which the agent has some degree of discretion” (ibid.). Although this definition does not explicitly include mending and discard, it is suitable for this study as it encompasses all forms of appropriation and degrees of agency on behalf of those doing the consumption.

Turning to an archaeological definition of consumption that I wish to combine with Campbell’s, de Vries’, Miller’s and perhaps most notably, Warde’s, is that of James Deetz. Deetz unproblematically uses the word consumption in *In Small Things Forgotten* (1996 [1977]) when writing about people’s *use* of things and the often-fragmented pieces of things that appear at archaeological excavations and that act as evidence of past consumption. A striking example are the consumption practices of enslaved Africans and African Americans in North America – people who rarely had disposable incomes to procure or appropriate things that they ate, wore, or the houses they lived in – made visible through archaeological assemblages of material culture that they have left behind. Deetz considers archaeological remains as “material residue” of people’s existence (ibid., p. 11). Thus, Deetz ascribes them with source value more relevant than intentionally preserved objects for the understanding and interpretations of people’s everyday lives (1996 [1977], p. 8);

If we were to rely on museum collections, we might get an impression of a much richer level of material wealth than truly was the case. This is because most museums save the unusual and the valuable object, and individuals now and in the past consign commonplace objects to the dump.

As such, archaeology, to a great extent, deals with objects that have reached a conceptual end to their once envisaged biographical stages of functionality, or use-life. This in turn has implications for conceptualizing consumption based on the residue thereof. In order to better grasp potential variations in consumption practices through variations in formations of archaeological assemblages, it seems valid to approach fragments of clay tobacco pipes from a point of view that considers the

cultural biographies of things. Although I am not fully inclined to agree with the behavioral approach to archaeological assemblages advocated by Skibo and Schiffer (2008), their acknowledgement that “[t]he relationships between people and artifacts” should be “discussed in terms of regularities discerned in processes of manufacture, use, and disposal” and that these “make up the life histories of material things [...]” (2008, p. 6) is certainly appealing for a study that traces people’s consumption based partially on the things that these people considered as having lost their usefulness. Such a view may explain how different smokeways have resulted in variations in the formation of the archaeological record.

Central to this study is therefore Kopytoff’s observation that people generally have “biographical expectations of things” (1986, p. 67) – that there are expected trajectories of objects which may also be specific to individuals and groups based on complex conceptions of appropriateness that may range beyond merely utilitarian aspects. Such a view may for example explain why, in certain milieus, pipe bowls that show signs of having been smoked only a few times have entered the archaeological record in great numbers, while at others, bowls showing signs of extended use make up the majority. In cases such as this it is also important to be mindful of temporal and social context as well as shifting trends.⁴⁹

4.2 The mores of smoking and social practice theory

The patterning of social life is a consequence of the established understandings of what courses of action are not inappropriate.

- Alan Warde 2005, p. 140

4.2.1 Foodways, folkways, smokeways and the mores of smoking

Associated closely with the concepts of respectability and recognizability through consumption practices are the right and the wrong ways of doing things. A person performing or practicing the right ways of doing things will rarely encounter criticism or condemnation while wrong ways of doing things may be criticized and condemned. Tobacco smoking, as any consumption practice is, and was, surrounded by rules and proscriptions that dictated what types of behaviors were and are considered appropriate and inappropriate. As mentioned above, examples of this were alluded to by Åkerhagen (1999) and Bonds (1977) yet never expanded upon or widely applied in analyses of Swedish clay pipe assemblages. These different manners or *ways* of smoking are what I refer to as smokeways. Drawing on Deetz’s extensive use of the term *foodways* used to conceptualize and discuss variations and social differentiation in food consumption as made visible through archaeological assemblages (1996 [1977], pp. 68–88), my hope is that the term smokeways can function as a heuristic concept that facilitates analytical contextualizations of variations to the practice of smoking and, in the study at hand, how these are visible in the archaeological record.

The most immediate background to Deetz’s use of foodways comes from folklorist Jay Anderson’s thesis *A Solid Sufficiency: An Ethnography of Yeoman Foodways in Stuart England* (1971). Anderson’s

⁴⁹ As shown by Konijnendijk (2015), an understanding of the traces of use, style of pipe, the relative use-dates of pipes along with an understanding of contemporaneously dominant mores of smoking have the potential to detect adherences or deviations to mores of smoking. For example, it was the height of fashion in French bohemian circles in the mid-nineteenth century to smoke well-seasoned clay pipes.

definition of foodways is “the whole interrelated system of food conceptualization, procurement, distribution, preservation, preparation, and consumption shared by all members of a particular group” (quoted in Deetz 1996 [1977], p. 73). Deetz uses the term to explain diachronic changes in the use of pottery (p. 84) and as a means to understand synchronic differentiation of social status (p. 75). Foodways as a term, however, originally draws from the word *folkways* which, according to one of its first users, sociologist William Graham Sumner (1940 [1906], p. 546), is synonymous with mores that determine group-specific actions of everyday life:

Mores define the limits which make anything right. At every turn we find new evidence that the mores can make anything right. What they do is that they cover a usage in dress, language, behavior, manners, etc., with the mantle of current custom, and give it regulation and limits within which it becomes unquestionable. The limit is generally a limit of toleration. Literature, pictures, exhibitions, celebrations, and festivals are controlled by some undefined, and probably undefinable, standard of decency and propriety, which sets a limit of toleration on the appeals to fun, sensuality, and various prejudices. In regard to all social customs, the mores sanction them by defining them and giving them form. Such regulated customs are etiquette. The regulation by the mores always gives order and form, and thus surrounds life with limits within which we may and beyond which we may not pursue our interests [...].

Why then is this study drawing on terminology applied for contextualizing differentiation through the consumption of food? For one, evidence for tobacco being considered as belonging among victuals exists from the sixteenth century.⁵⁰ A recurring topic in historical sources both praising and condemning the use of tobacco from the seventeenth and eighteenth century is to draw parallels between foodstuffs and tobacco. In most European countries, to smoke tobacco was referred to as drinking tobacco throughout the first half of the seventeenth century. Some eighteenth-century sources claim that tobacco was a substitute for food, or that tobacco users would prefer going without food before going without tobacco (see for example Spiegel 1705 in Munthe 1940, p. 22; Broocman 2016 [1736], p. 240). Nicotine, the active and addictive substance in tobacco, is an effective suppressor of hunger and appetite and remains in use as such to this day (Picciotto & Kelly 2021, pp. 1–15).

Nicotine addiction, making addicts consume tobacco regularly, is one likely reason that smoking may have contributed to parallels being drawn between its use and the consumption of food throughout the early modern period. Although nicotine can be absorbed by the skin, among smokers it is primarily absorbed through membranes in the mouth, sinuses and, if the smoke is inhaled, through the lungs. Nicotine acts on the nicotinic cholinergic receptors in the brain, which trigger the release of neurotransmitters that have rewarding psychoactive effects including “pleasure, stimulation, and mood modulation” (Benowitz 2008, p. 3). Clinical aspects of nicotine addiction have been found to include psychoactive effects of nicotine and conditioned behavior; “[t]he basis of nicotine addiction is a combination of positive reinforcements, including enhancement of mood and avoidance of withdrawal symptoms” (Benowitz 2010, pp. 2298–2299). Smokers have been described as “notoriously recalcitrant to change” in their use of tobacco products due to the addictive properties of nicotine and tobacco smoking is referred to as a compulsive behavior (Stolerman & Jarvis 1995, p. 2). Thus, once addicted, and regardless of social status, smokers tend (and, for the sake of this

⁵⁰ The belief that tobacco could replace food or drink is one that dates back at least to Nicolas Monardes in the late sixteenth century and is often featured in medical descriptions of tobacco throughout the seventeenth century (Goodman 2004 [1993], p. 44).

study – tended) to maintain their smoking or tobacco habits, much like the maintained consumption of food. This also explains why studies have found that “pipes are [...] chronologically and socially ubiquitous” (Higgins 1987, p. 24).

Hypothetically, and as an example, a member of the elite partaking in a ubiquitous consumption practice, in this case tobacco pipe smoking, that was shared by people across the social spectrum during the studied period would, in order to maintain recognizable distinction, adapt the practice to achieve these ends.⁵¹ Pierre Bourdieu, who studied, among other things, French eating habits in the 1970s, successfully showed how social differentiation was upheld through reproductions of habitus-appropriate eating patterns (1984, p. 185). Similarly, “table manners”, along with “the art of conversation, musical culture or the sense of propriety” are among the aspects raised by Bourdieu as being part of people’s cultural capital, and when employed in the correct manners (or ways), are “legitimate manners” that are “tacitly recognized as the supreme excellence [of taste]” (1984, pp. 70–71). As such, *what* people eat, *how* people eat, and arguably, the material assemblage, including tableware, employed in their eating and the surroundings – the *milieu* where eating takes place have the potential to communicate and reproduce social differentiation. While this study is certainly inspired by Bourdieu’s notions of class-structured classificatory properties of practices through perceptions and expressions of taste (1984), his focus is not placed on the importance that things, material culture, have been found to have for expressions of taste. Rather, without going into detail about attributes of objects, Bourdieu appears to take for granted a French or Western understanding of the evaluative significances of things and their associations to social class.

This taking for granted of the attributes of things and what they implied in the past is instead highlighted by Deetz (1996 [1977], p. 75):

We know that foodways of differing social classes differed significantly. Because of this, not only would families of modest means not be able to afford the more costly varieties of pottery, but the types would differ also as a result of differences in their use.

I have previously found examples in historical sources where, rather than tobacco smoking being criticized, it was differences in its use, the manners – or *ways* – in which tobacco smoking was practiced that was being criticized (Bergman Carter 2013). This was done via the argument that those being criticized were deviating from conceptions of appropriate manners, from hegemonic mores of smoking.⁵² Group-specific mores of smoking can thus be seen as having affected both the formation of the archaeological record as well as the deviation from them resulting in their occurrence in the historical record. The argument was then as it is now, that if archaeologically recovered traces of food consumption such as animal bones, seeds, grains, pollen, pottery fragments, cutlery, and hearths along with historical evidence in the form of cookbooks, estate inventories, depictions of food in still lifes and eating and drinking in genre paintings, and many other source materials can be applied for analyses of socially differentiating foodways – then similar evidence related to tobacco smoking should be equally valid for analyses of varied smokeways.

⁵¹ This may account for both a decrease in depictions of pipes as high-status symbols in Dutch paintings towards the end of the seventeenth century as noted by Benno Tempel (2004), and for the association between the taking of snuff and the aristocracy during the same period.

⁵² The term applied in Swedish was *rökskick*, a portmanteau based on the Swedish word smoke – *rök*, and the Swedish word for table manners – *bordsskick*.

4.2.2 Social practice theory and smokeways

Provided that the transpositioning of the eating of food and drinking of beverages for that of clay tobacco pipe smoking is accepted in the sense that patterned, group-specific consumption practices existed (and indeed still exist), this will then enable not only the acknowledgment of their potential existence, but also a methodological study of their variations – of different and differentiating smokeways. For decades, archaeology has been concerned with consumption as a social practice; drawing on Daniel Miller, Robert Preucel and Lynn Meskell's (2004, p. 14) state that:

[...] consumption is part of how people define themselves and their identities from the clothes they wear to the furnishings in their homes. Social practices of consumption serve as ways to conforming to social norms and beliefs as well as means of challenging power and authority.

As a definition of how consumption is to be understood in this study has been outlined above, I turn now to defining how the term practice is understood in this study. Elisabeth Shove, Mika Pantzar and Matt Watson (2012, p. 135), drawing on Allan Pred (1981), state that:

systems of class and power are sustained through the social reproduction of dominant projects. In [Pred's] account, and in ours, such projects become dominant and remain so because they are enacted at many levels at once, being reproduced through the daily paths and the life paths of individuals and through the parallel reproduction of institutions, including those of work and family life.

Previous research on early modern consumption makes it evident that maintaining differentiation through recognizable consumption practices could easily fit the description of a “dominant project” of the upper echelons of Swedish eighteenth-century society. “Dominant projects”, therefore, are “complexes of practices” (Shove, Pantzar & Watson 2012, p. 135), in which smokeways is to be understood as being one potentially significant set.

Sociologist Alan Warde, who has studied socially differentiating aspects of food-related practices (see, for example, Warde 1997, 2016; Warde & Martens 2000; Kjærnes, Harvey & Warde 2007), has also written extensively about differentiated and differentiating variations in consumption practices (Edgell, Hetherington & Warde 1996; Warde 2005; 2017). Practices, according to Warde, are differentiated and differentiating: “empirical evidence indicates differences between groups of people with regard to their understandings of a practice, the procedures they adopt and the values to which they aspire” and “it is because practices are internally differentiated that they are able to generate disputes about taste” (Warde 2005, p. 139). For the purposes of this study then, this view proposes that it is variation to the practice of pipe smoking that was part in the staging of differentiation.

Sociologist Andreas Reckwitz (2002, p. 250) defines a practice as:

a routinized way in which bodies are moved, objects are handled, subjects are treated, things are described and the world is understood. To say that practices are ‘social practices’ is indeed a tautology: A practice is social, as it is a ‘type’ of behaving and understanding that appears at different locales and at different points of time and is carried out by different body/minds.

Reckwitz also proposes that practices are recognizable, or understandable not only to the practitioner, “carrier” or “agent”, but also to any “potential observers (at least in the same culture)” (2002, p. 250), which includes the communicative aspects of judgment of adherence or deviation to what would be

perceived as normative. In other words, these are behavioral, physical, and mental aspects which are categorizational and required for a practice to occur.

How then, does one go about identifying variations in a practice? Elisabeth Shove, Mika Pantzar and Matt Watson (2012) present practices as consisting of links between three elements: material, meaning, and knowledge. The material elements of a practice are the physical objects – people, things, environments. Pipes from the archaeological record in this sense are viewed as fragmented material remains of their actual, or in cases of wrecks, abandonment, or as wasters, intended employment in smokeways. Although clay tobacco pipes were mass produced and may to the unaccustomed contemporary beholder be similar-looking, variations in production as well as stem length means that there is considerable variation in this particular element. Other examples of material elements of smokeways may also be paraphernalia such as pipe cases, tobacco boxes and pouches, tampers, ember tongs and sun-glasses and other objects used for lighting pipes.

The knowledge-element are the skills and know-how involved in tasks – the understandings of how things are done. In the case of smokeways this includes the knowledge of what pipe to appropriate, how smokers handled their pipes, including but not limited to how they were held, lit, stored, transported, how they were smoked and displayed. Meaning, according to Shove, Pantzar and Watson, are “symbolic meanings, ideas and aspirations” (2012, p. 14) and “the social and symbolic significance of participation at any one moment” (ibid. p. 23). The element of meaning thus lies at the core of how smokeways were intended to be perceived by smokers themselves and how they were perceived by their onlookers and other participants. In this study, the meaning element encompasses significances of hierarchical ordering and distinguishing features of particular smokeways and how these were perceived in their contemporaneity.

Shove, Pantzar and Watson see that that not only the elements themselves have differentiating potential; “links and connections between elements and practices are rooted in past inequalities and constitutive of similar patterns in the future” (2012, p. 136). This suggests both a need to acknowledge that the enactment (or enforcement) of inequalities were, and still are, dynamic, and a need to comprehend how (and which) links are relevant to differentiation. Drawing on Bourdieu, Shove, Pantzar and Watson state that the ability to determine appropriateness of practices lies in “the specification of relevant elements” and that “their circulation/distribution are “intimately connected” (2012, p. 135). Thus, a study of socially differentiating aspects of smokeways is a study of how variations in the elements of smokeways were linked, organized, and operationalized by their carriers – the smokers, as well as how they were perceived by contemporaneous onlookers.

4.3 Summary and concluding discussion

It has previously been claimed that clay pipe studies have “focused almost exclusively upon clay pipes as isolated artifact without seeking to place them in any more meaningful context” and that they are “under theorised” (Cessford 2001, n.p.). This study therefore sets out to contextualize clay tobacco pipes as items of mass consumption employed in negotiations of social differentiation by drawing on theories of social practices wherein theories of differentiating consumption practices are key. Drawing primarily on Colin Campbell (1995), Daniel Miller (1994 [1987]), Alan Warde (2005), and James Deetz (1996 [1977]), consumption is defined as people’s appropriation, use, mending, modifying, and discarding of things, regardless of whether appropriation was carried out via market exchange, trade, scavenging, or theft. This view includes an awareness of differentiating attributes of material

culture applied during production. Included in this is also a biographical perspective drawing on Igor Kopytoff (1987) that considers people's biographical expectations of things as being integral to interpretations of socially differentiating consumption practices.

To contextualize consumption of tobacco through clay pipe smoking (in this study), it is then argued that *smokeways*, a heuristic concept used to analyze differentiating aspects of tobacco smoking that draws from an equally heuristic concept – *foodways* – often used to discuss group-specific food consumption in the archaeological and historical record, is valid. Arguments for this validity are the biological imperative of nicotine addiction, evidence that tobacco during the studied period was often considered a necessity good on par with food, and that it enables conceptualizations of variations in the manners or ways in which smoking was practiced which were considered as either conforming to or deviating from concurrent and shifting mores of different social groups.

It is therefore through the concept of different and differentiating *smokeways* that smoking as a consumption practice is understood in this study. This study presupposes that upholding the recognizability of social order through consumption practices was what Shove, Pantzar and Watson (2012) would define as a dominant project of the upper classes, or estates, in eighteenth-century Sweden. The use of tobacco in general, and of smoking in particular, is known and as shown above, to have been widespread across the social spectrum and by men and women in eighteenth-century Sweden. As the ends of dominant projects encompass and affect a multitude of social practices of those invested in them, it is believed that clay tobacco pipe smoking was among the practices that was subject to hierarchical categorizations.

It is through variations of practice in the three elements material, competence, and meaning, as well as in shifting and varying links between these, as outlined by Shove, Pantzar and Watson, that *smokeways* can be analyzed. The main focus of this study will be on the source value of clay tobacco pipes as significant material elements in *smokeways*. Yet it is by contextualizing pipes in practice variations that encompass know-how and meaning that they may increase our understanding of the scale in which they were employed in a significantly greater, dominant project of enacting and reproducing social recognizability.

5 Some methods and source materials

The goal for the pluralist approach is to reach a deeper and more complex form of source usage in relation to the individual questions.

- Janken Myrdal 2012, p. 160

On a more general level, the combined use of archaeological and documentary materials should permit us to say something about the past that could not have been said using only one set of data.

- James Deetz 1996 [1977], p. 32

5.1 Introduction

It is a privilege of archaeologists working with the material culture of the early-modern period to have the possibility to turn to depictions and written accounts of people, places, objects, and events. Such combinations of source materials may allow for contextualizations and interpretations the often-fragmented versions of a once less fragmented past to grapple questions relating to the uses, production-, use-, and discard-dates, functions, and meanings of things (and sites) by the people who once used them. As pointed out by Gojak and Stuart, clay tobacco pipes, as they can often be narrowly dated, are ideal artifacts to couple with historical sources as they are “depicted frequently in contemporary pictorial material, to enable inferences about the social context of [their] use to be made” (1999, p. 38). Likewise, clay tobacco pipes and tobacco smoking also occur relatively frequently in the written record of the Swedish eighteenth century, which I argue, also holds the potential to enable inferences about the social context of their use.

A method generally applied to obtain production dates for clay tobacco pipes and their makers is to couple pipes from the archaeological record to information about their makers obtained from archival records. It is by linking initials, names, marks, and/or place names stamped or molded onto pipes to names and places known in the archival record to be associated with pipe making that have enabled typologies and lists coupling marks and initials to makers and dates of operation. The coupling of pipes from the archaeological record to archival sources such as price information, tools and pipes mentioned in estate inventories of pipe makers, and archival documents relating to the staff at factories has, apart from the Forsberg assemblage and estate inventories of Olof Aspegren and Daniel Almqvist, remained largely unexplored in Sweden.

In the Netherlands and in England, this method has resulted in a better understanding of potential variations in the production of individual makers, factories, and workshops, and variations on regional levels. Analyses of variations in production methods applied in the form of tool marks on pipes from known factories and workshops, and archival sources stating differences in price and production quality have led to an increased recognition of the potential source values of clay pipe fragments. The results of such analyses, in turn, have been applied for what is considered credible and empirically based analyses and discussions of socioeconomic status based on an understanding of the

relative expenditures that people in the past made for tobacco pipes (see for example Duco 1987; Bonnema van Oostveen & Bonnema van Oostveen 2001; Higgins 2017).

The study at hand deals with a range of source materials that may independently provide an understanding of clay tobacco pipe production at one factory or workshop, or the consumption of pipes at one place and at a specific time. Such sources, when combined with other sources such as census records, magistrate records, travel journals, manufacturing descriptions, poems, songs, etiquette guidelines, depictions of smokers, and archaeologically recovered pipes, and traces left by makers and users on the surfaces of said pipes have the potential to generate new insights to views on the consumption, i.e. the production, transport, sale, use, potential reuse, and discard of clay tobacco pipes in the past.

5.2 Clay tobacco pipes, smokeways, and the deductive method – source pluralism, and conjectural clues

Pipemakers are usually identified, and researched through documentary sources, whilst their output is identified and interpreted from artefactual remains.

- David Higgins, 1987, p. 17.

Ontologically, many of the archival sources applied in this study were not created with the intention of providing detailed information about how pipes were made or how they were used. Some sources applied in this study stem from intents of assessing taxes or values of estates or production volumes. For example, when the census officer and scribe working in Norrköping in 1760 set to work recording the titles of the staff at the *Stiernan* pipe factory (SE/VALA/01979/E III a/16 1760, p. 949), their intentions were not to inform anyone, more than 250 years later, that polished pipes were manufactured at this factory. Yet by recording the professional title of the otherwise unnamed wife of the journeyman Eric Qwarnberg as “*glarska*” – polishtress, it is possible to reach the conclusion that relatively expensive pipes considered in their time to be of a high production quality were indeed manufactured at this factory. This conclusion can be strengthened by comparisons of descriptions of clay pipe making at other contemporaneous factories and an understanding and knowledge of the specific traces of tools applied in the process of making pipes of varying prices.

The approach to the source materials in this study includes interpretations and comparisons of details on archaeologically recovered pipes and in archival sources that are comparable to how Ginzburg argues for the application of conjectural evidence (1980). For example, tools applied in pipe making that are listed in estate inventories of pipe factory owners are here linked to specific steps in the manufacturing process known from traces on pipes and archival records alike to have been related to production quality and price. Similarly, the fact that the name of a journeyman working under a certain master at a specific factory appears in the archival record is treated as evidence that this journeyman was familiar with the manufacturing techniques applied at one factory when he, and often also his family, moved to work at another pipe factory. As such, migrations of masters and journeymen are treated as indications that manufacturing techniques were diffused to and employed at other factories, and that this would also have affected morphologies and qualities of the pipes manufactured there. In turn, these migrations may further be held as indications for a demand for the products resulting from the skills of these masters, in their time deemed necessary for applications in differentiating smokeways.

There are many examples of this, but one of the best is that of Lars Ask, who began his career in pipe making at the pipe factory in Alingsås as an apprentice in 1738 (SE/GLA/13005 AI:1 1732–1745, p. 15). As a journeyman, Ask worked at the pipe factory in Varberg in 1761 (SE/RA/55203/55203.13/64 1761, p. 1420) and Karlskrona (SE/SVAR/LLA-132100011 1764), after which he moved to Stockholm where he became the master pipe maker at what was known as the Aspegren factory on Kungsholmen (SE/SSA/0011/A I a/3 1761–1767, fol. 76). In 1771, likely as a result the bankruptcy of his employer Carl Fredrik Wallström, Lars Ask moved back to Alingsås, where he became the master pipe maker (SE/GLA/13005/C/1, 1688–1730 [sic]). This suggests that Ask's knowledge of pipe making may have had an impact on the output of the factories he worked in, especially in his roles as a master pipe maker.

In the field of clay pipe research, this method can be described as part of a comparative and deductive process applied for the identification of pipes. In order to establish when and where a fragment of pipe was made, how it was made and by whom, and for whom, the method also includes establishing all those things that the fragment is not. The method therefore requires a specialized understanding which is often based on comparisons of relatively large and varied ranges of source materials; from detailed and contextual analyses of archaeologically recovered pipes to guild records (where available and applicable), manufacturing descriptions, and to depictions and descriptions of pipes and smokers. Don Duco has termed the method *de deductieve dateringsmethode* – the deductive dating method (1987, pp. 138–146). As previously mentioned, the method distinguishes between three categories of source materials which can be combined; the first is the *algemeene kenmerken* – the general characteristics or attributes of pipes which correspond to a certain period when they were in fashion, or period of use. The second is the *bedrijfsgebonden kenmerken* – reflections of characteristics of the industry standards employed in the making of individual pipes. This is facilitated significantly by an understanding of categorizations of quality standards that are contemporaneous to the periods when the pipes were made. Comparative studies of contemporaneous pipes, guild standards and manufacturing descriptions from the archival record have enabled an empirically based understanding of such characteristics in the Netherlands.

The third category is referred to as “*externe gegevens*” – literally external data or external information. This category can be construed as including archival historic information related to any aspect of clay tobacco pipes, from comparative studies of manufacturing descriptions to price lists, guild records, depictions of pipes and smokers, and descriptions of pipes, smokers, and smoking in writing. Included in this category are also stratigraphical and contextual analyses. This source category can be misunderstood as it may appear that sources can be almost indiscriminately applied. However, such sources, when applied with contextual awareness including production or publication dates and geographical origin, and most often against a backdrop of established empirical evidence from the previous two categories, can be applied to gain insight into aspects of production, sale, use, and discard of pipes not available from any singular sources.

Although the primary focus of this deductive method is to identify and record chronometric attributes of pipes, it also encompasses determinations, assessments, and quantifications of attributes that have been found to be connected to the social status or social ambitions of the consumers of the pipes in the form of making salient an awareness of consumer choice based on variations in and of contemporaneously available types, production quality, and contextual awareness. There is, as such, feedback of information obtained from different source materials that are allowed to function synergistically in the identification of pipes and analyses and interpretations of socially differentiating consumption of them.

In its conclusions, based on a combination of sources, this multi-source approach to clay tobacco pipes is reminiscent of the method Janken Myrdal refers to as source pluralism (2012, pp. 155–187). Clay pipe researchers, generally not being outspoken proponents or practitioners of methods firmly defined as being historical or archaeological, have relied on a combination of archaeological material, archaeological stratigraphical and contextual method, and written documents from guilds and advertising materials, for obtaining production date spans of individual masters, workshops, and factories. Since pipes enable relatively well-defined chronologies to be established, they may also be compared to synchronous archival and pictographic sources which may “enable inferences about the social context of their use” (Gojak & Stuart 1999, p. 38).

The application of a plentitude of source materials is often perceived of as a necessity among researchers who focus on pipes. In an article on the topic of Norwegian meerschaum pipes of the nineteenth century, Hakon Kierulf (2009, p. 177) explains that:

Given the dearth of information on these ordinary types of pipes, it has been necessary to seek information from many disparate sources, such as museums in Norway as well as in other countries, local historians, old goldsmithing firms and associations, silver experts, former and present tobacco companies, tobacco wholesalers and retailers, art galleries, theatres, national libraries, and associations connected with old authors. Furthermore, a thorough search has been conducted of literature relating to tobacco and pipes, old paintings, drawings and photos, silver, carving, furniture, dramas, old lyric and prose literature, and articles and advertisements in old newspapers.

This approach to source materials, while seemingly lacking formal structure, resulted in a better understanding of chronological aspects of these pipes, their uses, users, and material culture and spatiotemporal aspects associated with this particular type of pipe.

There are also similarities between methods employed in the Netherlands to identify pipes and their makers and the methods employed in North American colonial archaeology to classify ceramics. “Classificatory congruence”, Andrén writes, pointing to a chapter in Mary C. Beaudry’s *Documentary Archaeology in the New World* (1989, pp. 51–67), may exist between the archaeological record and the written record (Andrén 1997, p. 163).⁵³ In the case cited, the congruence between pottery fragments and the often function-related names of vessels led to categorizational source value of the once held functions of ceramics in colonial North America. Fragments can thus be applied in interpretations of activities and social dynamics at sites. They can also be compared to price lists, enabling comparative analyses of variations in their occurrence at various sites (Andrén 1997, p. 163), again enabling inference between material culture and social status.

The very reason that many clay pipe fragments can be identified today is a result of comparative, deductive, and contextual analyses that have generated well-established regional bowl-form typologies combined with comparative studies of makers’ marks on pipes and guild records and other archival sources relating to the craft and use. Myrdal’s statement that “[t]he [source pluralist] method relies on the principle that the credibility of information is strengthened when disparate sources agree, while credibility is weakened if the sources contradict each other” (2012, p. 157), neatly synthesizes the comparative deductive method used to identify and classify clay tobacco pipes and, for the sake of

⁵³ See also Baugher & Venables (1987, pp. 31–53) who note that amounts of expensive wares in archaeological assemblages are not necessarily indicative of class.

this study – to identify if, when, how and by whom they were potentially applied in negotiations of social differentiation.

The opposite may also be true. Archaeology is particularly well equipped to produce evidence that may contradict or nuance statements preserved in historical sources; pipes that can be interpreted as “populuxe goods” – expensive high-quality pipes recovered from contexts inhabited by commoners is one such example. A requirement for identifying such a phenomenon in the archaeological record, however, still depends on interpretations based on a plurality of sources.

5.2.1 A method for interpretations of smokeways in texts and images

Interpretations of what pipes, as material elements in smokeways, signified in their contemporaneity are believed to be facilitated by an understanding of industry standards applied by the pipe factories and workshops, and how these are visible on pipes and pipe fragments from the archaeological record. Such interpretations are held to gain validity when traces of these standards visible on pipes can be coupled with other archival evidence relating to intended or ideal consumers of certain types of pipes. These interpretations may be further analyzed by comparing them to sources relating to the use, potential reuse, and discard of clay pipes.

Chapter 10 therefore turns to written and pictorial sources describing or depicting the uses of pipes and tobacco smoking. As noted by Runefelt (2015, p. 13 [translation by author]): “in every social perception, every vision of political order, there are inherent perceptions of what constitutes proper and improper consumption. Conversely, there is a social perception (and hence a perception of people) behind every statement on consumption”. When defining consumption from the theoretical and heuristic perspective of smokeways as outlined above, traces of the manufacture, use and disposal of clay tobacco pipes may be construed as any source – archaeological, archival, or pictographic – pertaining to pipes and/or smoking as having relevance to interpretations of their consumption.

The elements of practice according to Shove, Pantzar and Watson (2012) – competence, material and meaning – are here to be understood as intertwined in depictions and descriptions of smokers and pipes. Intended audiences – readers of texts and beholders of depictions – are in this study assumed to have been expected to be familiar with the subjects of writings and depictions. From a perspective that considers differentiating aspects of smokeways this is construed to be a mutual understanding between author and contemporaneous recipient of what different types of pipes, how and by whom they were applied as parts of smokeways, signified.

Bearing in mind the aforementioned notion and importance of recognizability of social status through consumption prevalent in eighteenth-century Sweden, a basic assumption of this part of the study is that eighteenth-century authors and artists described or depicted smoking and smokers as either conforming to, or deviating from, idealized smokeways. The practices depicted or described would have had to be in concord with both explicit and implicit proscriptions and more or less mutual group-specific agreements that regulated behaviors, including smokeways, to have made sense to contemporaneous audiences. In other words: a basic assumption of this study is that practices, and the material elements they included, had to be consistent with or appropriate to mutual agreements on the appropriate consumption related to the social stations of the subjects. If this is apparently not the case, a feasible conclusion is that such details have been intentionally described or depicted to achieve a satirical or mocking effect.

Interpretations of smokeways in the written record are, in part based on the abovementioned quote by Runefeldt that every statement on consumption can relay a “social perception of people” (2015, p. 13). Along such a line, this study is based on the assumption that any depiction or description of smoking also conveys a social perception of the smokeways described or portrayed.

Carlo Ginzburg, writing about historians’ interpretations of the writings of individuals belonging to dominant groups recording subordinates’ behaviors, stated that “this means that the thoughts, the beliefs, and the aspirations of the peasants and artisans of the past reach us (if and when they do) almost always through distorting viewpoints and intermediaries” (1992 [1980], XV). Bearing this in mind, archival sources condemning, ridiculing, or praising specific smokeways become particularly relevant when they are allowed to act as mediators of attitudes towards variations to practices that as such can be interpreted as closely linked to social status. It is by juxtaposing and contrasting sources expressing such explicitly or implicitly expressed opinions that enables a multitude of glimpses into perceptions of smokeways that can form a wider understanding of how pipes and smoking were operationalized as differentiating.

In a search for means to obtain information about recreational and leisure activities of the working classes in England in the past from archival sources, Gareth Stedman Jones (1977, p. 163) notes that:

The sharply delineated foreground is occupied by puritan, methodist and evangelical moral reformers, gentry deciding where to place their patronage, prescient magistrates, calculating employers, prurient municipal elites, entrepreneurial publicans and rationalising merchants of leisure. Behind this obtrusive phalanx, we can just make out the blurred and rather undifferentiated features of the rural and urban masses. Once or twice, the generally dim profiles are illuminated by a flashpoint of class conflict.

Such flashpoints can be interpreted as the results of conflicting ideologies and “material situations” (ibid.) that were perceived and recorded by upper classes as parts of practices of social control. As such, instances where smoking women are described as old hags (Angerstein 2001 [1753–1755], p. 146), smokers of tobacco that had already been chewed as lacking taste (anonymous 1730s), and habitual smokers smelling so bad that they would not be well received among respectable people or maidens (Broocman 2016 [1736], pp. 239–240), can be interpreted as being situations when contrasts between people of different social status have been experienced as sufficiently poignant to warrant recording. In viewing descriptions or portrayals of the behaviors of commoners and peasants as such flashpoints, against the backdrop of contemporaneous authors’ understandings of proper behaviors – of etiquette and taste – it is possible to gain an understanding of socially differentiating practices.

Some sources are edificatory in their tone and purpose – household books and etiquette books most often authored with implied readers from the burgher estate or the landed gentry in mind, occasionally contain instructions on how to associate with commoners and peasants under their employ. Broocman (2016 [1736], p 96), for example states that:

However, they [the masters and their closest servants] should not become too familiar with them [peasants, crofters and day laborers], play/gamble with them, smoke tobacco, make rude or coarse jokes or undertake anything similar, whereby they will easily lose their reputation with the people [...].⁵⁴

⁵⁴ ”[D]ock likwäl skola the [herrskalet och deras betienter] icke giöra sig alt förgemena med them [bönder, torpare och dagswercks-folcket], med them spela, röka tobak, liderligit och groft skiämt drifwa, eller något dylikt företaga, hwarigenom the lätteligen sitt anseende hos folcket förlora [...]”.

Sources such as this, while implicitly pointing out the social ubiquity of pipe smoking, also show how etiquette related to social differentiation meant that for high-status people to smoke in the presence of their inferiors would risk their reputations being tarnished.

Some sources relating to the use of pipes were likely intended to be both edifying and humorous at the same time. Satirical texts, such as the regulations a fictional brotherhood of tobacco smokers from the 1730s (anonymous 1730s, the greater part translated from a German 1680 original), outlines 27 rules for smokers. As we will see, the combination of an understanding of which pipes were available at the time along with implicit and explicit notions of who was expected to smoke what type of pipe at the time of its publication sheds light on aspects of smokeways that would otherwise be unintelligible. Such interpretations in turn can be applied, or added, to interpretations of archaeologically recovered pipes as well as other historical sources.

Other texts presented, such as some of Carl Michael Bellman's verses mentioning pipes or smoking were not authored with intentions to inform us, centuries later, about potential connotations between social status and the ways that pipes were smoked. Interpretations of the smokeways described in these sources require social contextualizations of the events that are described and estimations of the physical attributes of the pipes and smokeways being described. A good example is the mentioning of pipes in Fredman's Epistel No. 9 (Bellman 1790, p. 19):

See Jergen Puckel fanning his hat
Pipe in mouth, and brandy like water⁵⁵

As Jergen Puckel, a German journeyman, is described as dancing, the implication is that the pipe is held not with a hand, but by the teeth. Smokeways that include clenching of stems of short pipes were, as we shall see, primarily and strongly associated with smokers on the lower end of the social scale at the time. Pipe-clenching generally also necessitates the use of a shorter, most often less expensive pipe. Such pipes are referred to as "*nubb*" in at least three of Bellman's works and the word would most likely have triggered immediate connotations to socioeconomic status among contemporaneous audiences and readers of his lyrics. Thus, a perspective that considers the socially differentiating roles of smokeways entails an awareness of not only relative prices of pipes as an indicator of socioeconomic status, but also of the practical motivations behind people's selections and uses of particular pipes and what the pipes and associated smokeways would have signified in their time.

The aim of the analyses of depictions of smokers presented in Chapter 10 is to investigate both how pipes and smoking were used to signify social status in eighteenth-century Sweden, and to identify smokeways related to social status that may be visible on archaeologically recovered fragments of pipes. Therefore, the results of Chapters 7, 8, and 9, outlining industry standards and how these affected appearances of specific pipes are applied and combined with attempts to determine social context of depictions of pipes and smokers. Feedback between different sources once again becomes essential to reach conclusions about what different types of pipes and smokeways were intended to signify in descriptions and depictions.

The previously mentioned congruence between material culture, in this case clay tobacco pipes, and social status, can be observed in Dutch art of the seventeenth century. Pipes of different lengths and qualities, although employed as symbols for the transience of life and as allegories for the senses of smell

⁵⁵ Si Jergen Puckel fläktar med hatten,
pipan i mun, och brännvin som vatten

or taste (Tempel 2004, p. 208), were tropes simultaneously employed as symbols to enhance messages of the social status of its depicted subjects in Dutch genre paintings and still lives during the seventeenth century. Quite simply: peasants are most commonly depicted with short pipes, while smokers belonging to the higher estates are depicted smoking longer pipes. The lengths and qualities of the pipes depicted in use by smokers in these paintings were most likely in concord with contemporaneous ideals of the smokeways associated with the social status of their smokers (see figs. 3, 4, and 5).



Figure 3. Dutch peasants depicted with short pipes. Detail of "Peasants in an Interior", by Adriaen van Ostade, 1661. Rijksmuseum, Amsterdam. CC PDM 1.0.



Figure 4. In Dutch art, the association of short pipes to peasants continued throughout the eighteenth century. Detail of "Peasant Family in their Cottage", by Cornelis Kruseman, 1817. Rijksmuseum, Amsterdam. CC PDM 1.0.



Figure 5. Smoking burghers are nearly always depicted with long pipes in Dutch seventeenth-century artworks. Detail of “Interior with a Woman Feeding a Parrot”, by Jan Havicksz. Steen, c. 1660 - c. 1670. Rijksmuseum, Amsterdam. CC PDM 1.0.

As noted by Julia King (2007), applying Dutch art for interpretations of archaeological assemblages recovered in non-Dutch (North American colonial) contexts may be problematic, as local ideals and consumption behaviors may have differed from those depicted. However, King also states that:

Researchers using Dutch art and archaeological data as evidence about the past have available to them not just the objects themselves but also the context in which the objects were used or found. Artistic context includes the types and associations of behaviors and material culture depicted in Dutch paintings, and it can refer to the social and cultural circumstances of a painting's production. Archaeological context refers to the horizontal and vertical associations of artifacts, features, and stratigraphy [...] (ibid. pp. 15–16).

As it were, historical archaeologists working with the early-modern period in Sweden do not have to rely exclusively on Dutch genre paintings for interpretations of social contexts of uses of material culture. Indeed, there are several examples of depictions of pipes and smoking from seventeenth- and eighteenth-century Sweden, seemingly making connections between the social and cultural contexts of depictions of smokers less problematic, at least from a geographic point of view. However, an art historian would likely argue that many Swedish artists of the eighteenth century were trained in France and/or the Netherlands, and that Swedish eighteenth-century depictions of smokers are apparently inspired by Dutch (and English) genre paintings (see chapter 10). This seemingly shared iconography may not necessarily be problematic for interpretations of smokeways as it may also imply shared views and ideals of appropriate consumption. Measures are nonetheless taken to avoid basing interpretations of the significances of smokeways in eighteenth-century Sweden based on depictions of non-Swedish smokers.

5.2.2 Source Materials

This section only briefly outlines the source materials applied in the following chapters. Each subsequent chapter, however, presents more detailed accounts of specific sources and methods applied therein. Chapter 6 below is divided into two sections that apply a range of source materials, most which can be categorized as edifying or descriptive. The first section presents evidence relating to idealized differentiating smokeways from the archival record dating to the first five decades of the eighteenth century. These include charters for pipe making, protocols from the Riksdag of the Estates and *Handels- och manufakturdeputationen* – the committee for trade and manufactories – which was organized under the National Board of Trade. Contextually, these sources must be understood as emanating from both mercantilist policies and ideals about recognizability of domestic consumption in Sweden at the time. Notions of idealized consumption of pipes are often explicitly stated in the archival records of policymakers involved in regulating imports and the pipe industry of the first half of the eighteenth century. Protocols from the *Handels- och manufakturdeputationen*, whose task it was to prepare propositions for the Riksdag of the Estates, and to which representatives from the peasant estate were not allowed, are particularly explicit in statements regarding idealized consumers of pipes.

The second section presents information about pipes imported to Sweden from England and the Netherlands during the first half of the eighteenth century and consults three general categories of source materials. The first category is related to the craft of pipe making in the eighteenth century in these countries and consists of secondary sources in the form of manufacturing descriptions and previous research on stem lengths and types (Ayto 1979; Duco 1979a & 1979b; 1981; Oswald 1975; Walker 1971). The second category of source materials pertain to the availability of these pipes in Sweden during the first four decades of the eighteenth century. Among these sources are estate inventories of merchants, newspapers mentioning inbound ships carrying pipes from different cities, protocols from the Riksdag of the Estates, Jonas Alströmer's travel journal from a visit to Hull, previously published import numbers from Swedish toll records (Puktörne 1968, p. 69). The third category is made up of pipes contained in Åkerhagen's reference catalogs (2012b & 2012c) and publications on pipes made in England (Pearce 2013) and the Netherlands (van der Lingen 2022) for export to the Baltic region in general and Sweden in particular.

Regarding estate inventories, census records and household examination records, these have in part been sourced through *Arkiv Digital*, though primarily through local sections and digitized documents of *Riksarkivet*, the National Archives of Sweden. The names of many tobacco merchants and manufacturers are known from previous research (for example, Angelin 1950), which has facilitated the inclusion of such sources. Meanwhile, search phrases applied in the digitally available databases of *Arkiv Digital* to obtain estate inventories have been *tobakshandlare* – tobacco merchant, and variations of words for merchant, for example *handelsman* and *krämare*. Many, though far from all, returns of these search phrases have been studied in search of inventoried pipes.

Chapters 7 and 8 are based on the argument that comparisons of Swedish accounts of pipe making methods to manufacturing techniques in other countries, particularly the Netherlands and England, are valid in order to determine the compliances of Swedish pipe manufacturers to standards and idealized consumption enabled by the foregoing consumption of imported pipes. The main source for this comparative study is a previously unpublished account of the manufacturing process at the Alingsås pipe factory, most likely from the late 1730s or early 1740s. Other sources applied for this comparative study are manufacturing descriptions from other Swedish factories, estate inventories of factory owners listing tools associated to manufacturing steps that remain visible on pipe fragments

from the archaeological record, and census- and household examination records which have enabled a better understanding of the diffusion of the craft across Swedish pipe factories.

It is important to note that imports of pipes to Sweden were subjected to two embargoes during the 1740s. The first embargo, from 1741, encompassed pipes of 18 inches and shorter. The embargo of 1747 was a complete ban on foreign pipes. One of the conditions of the embargoes of 1741 and 1747 was that the substitutions of imported pipes were expected to be met directly by domestic products. This part of the study therefore compares what can be learned from archival material related to Swedish pipe making to similar accounts from Don Duco's account of the manufacturing process in pipe workshops and factories in Gouda (1980), Iain C. Walker's paper on Dutch manufacturing methods (1971), Duhamel du Monceau's detailed *L'Art de Faire Les Pipes A Fumer Le Tabac* (1771), and Adrian Oswald's account of English pipe makers' tools and methods (1975) provides a better understanding of the expectations on the supply of pipes that was to be met by domestic makers.

Chapter 7 includes a brief account of the introduction and diffusion in Sweden of the knowledge of pipe making as a craft. It is in part based on Bert van der Lingen's article on Dutch pipe makers in Sweden (2007), and in part on what has now been found in census records, household examination records, and factory staff inventories. The aim of this section is to trace where the knowledge of the craft of pipe making came from, how the origin of pipe makers may have affected the morphology and production quality of the pipes produced, and to present which factories and workshops may have been influenced via the itineracy of masters, journeymen, and to a likely lesser extent, apprentices.⁵⁶

To better understand how production and quality was perceived by makers and consumers in Swedish eighteenth-century factories, it is also necessary to present an account of how Swedish pipe factories and workshops were regulated at the time. A section on the labor organization and quality controls under the regulatory agencies *Hall- och manufakturätten*, in turn operating under the National Board of Trade, is also included. The aim of this section is to examine how production quality was controlled and how specific tasks at factories were assigned depending on the skill levels of the workers.

Chapters 8 and 9 present what has been learned from comparative analyses of intact pipes from Olof Forsberg's factory, price information from the same factory, and other Swedish pipe factories, workshops, and merchants. Tables presenting types, costs, and chronological data can be found in Appendix II. In chapter 9, some of the most common types are presented and discussed from a perspective that considers idealized smokeways and how these may be visible in the archaeological record.

Chapter 10 consists of analyses of smokeways as described in writing and as depicted in contemporaneous pictographic material. The source material applied for analyses of written descriptions of smokeways have in part been gathered from Edgar Lund's bibliography on Swedish tobacco themed literature – *Svensk tobakslitteratur – anteckningar till en bibliografi* (1935) which is part of the series *Bibliotheca Nicotiana*. Many of the works listed therein have also been referenced by Munthe, Krantz, and de la Motte. While I have also included some sources from the seventeenth and nineteenth centuries to contextualize attitudes towards and beliefs regarding medicinal qualities of

⁵⁶ While extensive research has gone into tracing pipe factory staff in census records, tax records and household examination records, only a relatively brief account is published here. See Future research under chapter 11 for a discussion on the potential of these sources.

tobacco and comparative analyses of altered smokeways, the scope of the source selection from this bibliography has been focused on sources published or created during the eighteenth century.

This chapter, similarly to Chapters 6–9 also includes sources gathered from the newspaper archive of *Kungliga Biblioteket* – the National Library of Sweden. This archive is comprised of digitized Swedish newspapers from 1645 to today which have been scanned using optical character recognition (henceforth OCR). The vast majority of newspapers from the eighteenth century are printed in blackletter/fraktur while the automated OCR-scanner appears to have been set for Latin script. This has proven somewhat problematic and may have resulted in omissions of potentially relevant sources. However, several different types of search phrases with query modulators have been applied to query the archive database. Search words applied include *tobak* – tobacco, *tobakspipa* – tobacco pipe, *röka* – to smoke, and variations of these words. Of particular interest have been advertisements for tobacco pipes and instructions for smoking and descriptions of smoking etiquette. Similarly, the *Litteraturbanken* – the Swedish Literature Bank, has also provided digitized OCR-scans of Swedish literature.

Depictions of smokers have been partially sourced via the digitally available catalogs of the Swedish National Museum and the Nordic Museum using search phrases similar to those described above. However, it was quickly discovered that far from all depictions of pipes or smoking have been cataloged with keywords like pipe or tobacco. Accordingly, the works of artists found to have included pipes and smoking relatively frequently in their works, such as Pehr Hilleström, Johan Sevenbom, and Elias Martin have been screened individually without the use of search phrases.

Other depictions, such as a mural from a butcher's home in Norrköping, the painting of the Ottoman emissary Mustapha Aga and Courbet's self-portrait, have been encountered by coincidence while visiting museums or while reading books on the topic of tobacco and smoking. These depictions, although less-than-systematically gathered, have also been included as the credo of this study is that any source that depicts or describes pipes and/or smoking are potential sources for a better understanding of smokeways.

6 Clay tobacco pipes in Sweden, c. 1700–1747

6.1 Differentiating smokeways before the embargo of 1747

6.1.1 Introduction

The following chapter is divided into two parts, both aimed at establishing and exploring the existence and awareness of pipes as material elements in differentiating smokeways during the late seventeenth and early eighteenth century. The first section primarily presents and analyzes archival sources emanating from Swedish policymaking governmental bodies that regulated the trade and manufacture of pipes in eighteenth-century Sweden. Aside from reflecting mercantilist and protectionist ideas of the time, these documents also shed light on idealized smokeways manifested through the pipes themselves. As we shall see, origins, stem lengths, and variations of production quality of pipes were aspects closely linked to socioeconomic status during this period. The second part of this chapter is therefore focused on briefly presenting the types of pipes that were imported to Sweden during the period. This part is based on a combination of source material ranging from archaeologically recovered pipes, newspapers, toll records, and previous research on pipe exports from England and the Netherlands.

It is important to note that during the studied period, Swedish pipe manufacturing, similarly to all manufacturing industries not regulated by guild standards, was regulated by charters issued via the *Kommerskollegium* – the National Board of Trade, a government agency acting under the king prior 1719, and thereafter under the legislative Riksdag of the Estates until the coup of King Gustav III in 1772. Although exceptions exist in the form of minor pipe making operations attested to by both archival and archaeological evidence (see Appendix I), charters issued either by the king via the Estates or via the authority of the National Board of Trade, were a requirement for opening a pipe factory.

While domestic policies that regulated manufactories were enforced by the National Board of Trade via *Hallrätter* and city magistrates, policymaking at the Riksdags of the Estates during a period known in Sweden as the Age of Liberty was generally based on propositions from parliamentary committees or subcommittees known as *utskott* and/or their *deputation*. As of the Riksdag of the Estates of 1738–1739 and during the remainder of the Age of Liberty, the parliamentary committee charged with propositions relating to trade and manufactories was the *Handels- och manufakturdeputationen* (*Nordisk familjebok* 1951, p. 600). Prior to 1765, members of *Handels- och manufakturdeputationen* were elected from the *Secreta utskottet* – the secret committee, and *Kammar-, Ekonomi- och Kommersdeputationen* – the subcommittee of the chamber, finances, and commerce. Prior to 1742, as previously mentioned, members of the peasant estate were not allowed to be members of the secret committee as it was believed that they could not be entrusted with the matters discussed there.

Any propositions that were approved in the *Handels- och manufakturdeputationen* were presented to each of the estates of the Riksdags, where they were often further discussed. Referendums were then

held, and when propositions were approved by the estates, they were marked as approved under the authority of the king and enacted on a national level.

6.1.2 The charters of Carl Aspegren

The letter of charter for pipe making granted to the tobacco merchant Carl Aspegren of Stockholm on November 19, 1708 (SE/SSA/0099/E 3/1 1620–1753, fol. 18–20) makes no mention of intentions to compete with foreign pipe makers or of any explicitly mercantilist or protectionist ideologies. Rather, it is the welfare of the city's poor, who, according to the document, would earn gainful employment in the factory that is presented as an argument for granting charters for pipe making. It is not until the renewal of Aspegren's charters in 1729 (SE/SSA/0099/E 3/1 1620–1753, fol. 24–26), which states that sales were hindered by "strong supplies from England and Holland" that a goal of completely replacing foreign pipes with domestic pipes on the Swedish market is stated.⁵⁷

6.1.3 The Riksdag of the Estates of 1734

The argument that foreign pipes posed a threat to the domestic production was repeated at the Riksdag of the Estates of 1734 through an appeal for a 50 percent increase of the import toll tariff on foreign tobacco pipes, from 16 to 24 shilling, and an increase of the tariff for "the longer and finer pipes" to 1 Rixdollar per gross (Westrin 1917, p. 614). The appeal originated with Carl Aspegren's widow, Maria Aspegren, who referenced her late husband's renewed charters, and appears to have been treated both via the *Cammar-, Oeconomie- och Commerce-Deputation* and the Riksdag of the Estates (see SE/RA/6113/I/R 1234 202 1734; Westrin 1917, pp. 614–615; Staf 1965, p. 142).

The 50 percent increase of the tariff on foreign pipes appears to have been passed by the Riksdag of the Estates, and was supposedly enacted beginning on May 1st, 1735, yet Modée (1746) makes no mention of any increase from 16 to 24 shilling.⁵⁸ The proposed increase of the 1 rixdollar tariff on "longer and finer pipes" was not passed as the Riksdag of the Estates considered an increase of more than 250 percent unnecessary since a nation-wide supply of similar domestic pipes could not be guaranteed by the one factory (Westrin 1917, p. 615). The effects of the increased tariff may possibly be observable in the import statistics for the period (see table 1 below). It is likely that the increased tariff at least partially explains the decrease of around 3000 gross of annually imported pipes between the years 1726–1727 and 1738.⁵⁹

⁵⁷ The renewed charters were shared with Jonas Alströmer, who was to open a factory at his recently established manufactory in Alingsås. The Alströmer pipe factory did not begin manufacturing pipes until 1738 (Bergman Carter 2023). The 1729 charters state that the Aspegren and Alströmer factories were to be subsidized through toll free imports of raw materials and that "imports of foreign tobacco pipes may be completely banned, or weighted with tolls to be excluded to the fullest extent possible" ("[...] *utländska Tabacs pipors införsel antingen aldeles måtte blifwa förbiuden, eller ock de med så hög tull belagde som dem i görligaste måtto utestänga kan* [...]") SE/SSA/0099/E 3/1 1620–1753).

⁵⁸ However, 3-percent city-specific taxes for imported pipes earmarked for *Spinnhus-fonden* – (female) workhouse foundation of Stockholm (and Gothenburg) is mentioned as enacted in 1731 and in 1735 (Modée 1746, p. 936 & p. 1245).

⁵⁹ According to Olof Forsberg's estimates in a *Pro Memoria* (SE/RA/6122/8/R 2766: 17E 1740–1741) submitted as part of his plea for an embargo, 5389 1/8 gross of pipes were imported in 1737, 6579 1/2 gross were imported in 1738, and 6309 1/2 gross were imported in 1739. In this document he also states that the pipes manufactured at his factory, ranging between 4200 and 5000 gross, accounted for the remaining consumption. These figures differ marginally from those presented by Puktorne above and show that domestic production and the new tariff appear to have had impacts on imports.

6.1.4 The Riksdag of the Estates of 1740–1741

Concerns raised at the 1741 Riksdag of the Estates however indicate that the replacement of foreign pipes with domestic pipes had been a challenge, possibly due to difficult logistics of transporting pipes from Stockholm and Alingsås to the staple towns across Sweden. Emanating from a purported lacking supply of pipes, the Mayor of Halmstad, Peter Mellin, and the councilman known only as P. Wallberg from Gävle, applied to the *Handels- och manufakturdeputationen* for charters for pipe manufacturing in their respective cities (SE/RA/6122/8/R 2766 1740–1741, 17–17C). These applications were met with criticism from both Olof Forsberg, who had procured the Aspegren pipe factory, and Jonas Alströmer, whose Alingsås pipe factory had recently commenced operations, with almost eight years remaining of exclusive charters for pipe making (see SE/RA/6122/8/R 2766 1740–1741, 17D–17F).⁶⁰ It is also noteworthy that a Norrköping merchant named Olof Lindahl appears to have been granted charters for pipe making from either the National Board of Trade or the Norrköping *Hallrätt* sometime in the late 1730s or 1740 at the latest.⁶¹

Forsberg, seemingly motivated by what he claimed were erroneously issued charters for pipe making to Lindahl along with the requests by Mellin and Wallberg, presented the *Handels- och manufakturdeputationen* with arguments against issuing further charters and arguments for an embargo against foreign pipes. Among the evidence presented by Forsberg are estimates and calculations of imports and production volumes at his own factory (SE/RA/6122/8/R 2766 1740–1741, 17E). Indeed, Forsberg stated that he had not only calculated that the productions at his own and at Alströmer's factories should suffice for the domestic consumption, making further domestic production superfluous, but also echoing Maria Aspegren's argument from 1734, that foreign pipes were a threat to his operations and to the national interests and finances of Sweden. These were the primary reasons behind his intentions to apply for a full embargo against foreign pipes (SE/RA/6122/8/R 2766 1740–1741, 17D).⁶² Alströmer stated that his own and Forsberg's factories combined could produce 20 000 gross per annum, or twice the amount of pipes required for their estimated national consumption (SE/RA/6122/8/R 2763 1740–1741, fol. 221–223). Meanwhile, Forsberg stated in a separate elaborate estimate of the production at his factory that, if fully staffed and operational, he could manufacture 19170 gross of pipes per annum (SE/RA/6122/8/R 2766 1740–1741, 17E).⁶³

⁶⁰ See Appendix I for a more detailed account of the transition of ownership of the Aspegren factory.

⁶¹ Forsberg refers to this Norrköping factory in several documents, among these, the annual factory report to the Hallrätt of 1740–1741, where it is described as recently opened (SE/RA/420132/3/D/D a/Da 1/1 1740–1747). A report to the Norrköping Hallrätt submitted to the *Manufakturkontoret*, on the other hand, states that charters had been granted to Lindahl, yet that he had not started making pipes since he lacked a permit to do so (SE/RA/4113/3/B/B 1/198 1736–1742, p. 26). Lindahl received charters for pipe making again in 1756 (see also Norrköping under Appendix I).

⁶² "[...] ock att således ingen utom Alingsåhs må här i riket få anlägga något Tobaks Pipbruk, utan iag wid min tillståndige Rättighet nådgunstigast skyddad och handhafd warde, hafwandes iag för öfrigit den underdån ödmiukaste tillförsikt, att, Högl: Deputationen af det underdån Ödmiukaste Memorial, som inom kort, ifrån Högl. Urskilnings Deputation, lärer insändas, ock hwaruti jag om förbod emot utländska Pipors införsel underdån ödmiuk ansökning gjordt nådgunstigast finna lärer, att flere Pipbruk här i riket utom de 2ne privilegierade, icke heller nödige äro, så wida hela riket af deras tillwärcckning, har ett så tillräckeligt förråd, som i anseende till Consumtionen betarfwas" (SE/RA/6122/8/R 2766 1741, 17D).

⁶³ See Appendix V.

The *Handels- och manufakturdeputationen* appear to have been convinced by Forsberg and Alströmer that their factories would successfully be able to supply pipes of up to three quarters of an ell (18 Swedish inches) and thus recommended the Riksdag of the Estates to enforce an embargo on such pipes. When it came to the “longer and finer pipes” however, the *Handels- och manufakturdeputationen* raised concerns that Forsberg and Alströmer would not be able to supply such pipes and thus recommended that longer and finer pipes be exempted from any embargo until they could be produced domestically.

Forsberg’s plea refers to pipes made at his and Olof Aspegren’s factory from domestic red clay as “pipes for the commoners” (SE/RA/6122/8/R 2766, 1740–1741, 17D)⁶⁴ While these pipes are the only type explicitly stated as intended for a specific social segment, Forsberg, Alströmer, and the general consensus of the *Handels- och manufakturdeputationen*, and the Riksdag of the Estates, was that inexpensive short and coarse pipes were intended for consumption by commoners, while more expensive longer and polished pipes were intended for consumption by burghers, the clergy and the nobility – the groups who were expected to be able to afford to purchase them.

According to protocols from all the Estates, the recommendation from *Handels- och manufakturdeputationen* was approved by the House of Nobles (Landahl 1890, p. 636), the House of Burghers (Staf 1975, p. 593), the House of the Clergy (Lundhem 1994, p. 390), and the House of Peasants (Landahl 1951, p. 234). As with the increased tariffs on imported pipes, Modée (1749) makes no reference to this embargo, yet documents from the Riksdag of the Estates from 1747 (see for example SE/RA/6122/10/R 2898 1746–1747, fol. 329–332; SE/RA/6122/10/R 2900 1746–1747, pp. 530–540), and the subsequent full embargo of 1747 (Anonymous/Kongl. Tryckeriet 1747) all refer to the embargo against pipes of 18 inches and shorter from 1741.

Among the conditions of the embargo of 1741 were that the domestic pipes were to be less expensive and of a similar or better quality than similar imported pipes. Forsberg and Alströmer were also promised that a full embargo on foreign pipes would be enacted provided that their factories would be able to produce the longer and finer pipes. Another condition of the embargo was that prices of pipes were to be made publicly available throughout the kingdom through advertisements or notifications (SE/RA/6122/10/R 2900 1746–1747, pp. 530–540).

Forsberg’s factory was quick to begin publishing advertisements in *Posttidningar*, the first one being published while discussions in the *Handels- och manufakturdeputationen* were still ongoing (fig. 6). No similar published price statements or advertisements are known to have survived from Alströmer’s factory in Alingsås. A reason for this may be that Alingsås pipes could be distributed and sold through so-called *fabriksbodar*, literally factory booths, or *manufactoriebodar*, literally manufactory booths. While Forsberg’s factory appears to have had only one such booth in Stockholm, the Alingsås pipe factory may have distributed its pipes through booths operated as retailers of goods from the other factories under the *Alingsås Manufakturverk*, which existed in several *stapelstäder* – cities with charters for foreign trade, and *uppstäder* – cities with charters for domestic trade. It is possible that publishing prices in these booths was deemed a sufficient form of advertising. Another explanation may be that the Alingsås factory also communicated directly with retailers of its wares rather than to the public to allow for independent pricing. A comparison of pipe prices in the 1749 annual report from the Alingsås factory (SE/RA/420132/3/D/D a/Da 1/4 1749–1749, p. 10) to what are most likely Alingsås pipes in

⁶⁴ “[...] på en och annan Orth här inrikes, finnas leer, som fuller låter arbeta sig tämeligen wäl, men i bränningen blifwer det aldeles rödt, och har jag deraf låtit göra Pipor för Allmogen som ock funnit afnämare [...]” (SE/RA/6122/8/R 2766, 1740–1741: 17D).

the 1749 estate inventory of the Uddevalla merchant Erich Ruthenbeck (SE/GLA/11954/F II a/3 1748–1756 p. 182) shows a markup of prices for longer types, while the shortest type has a stated value identical to the one in the annual factory report. This may indicate that the Alingsås factory kept its prices undisclosed to the public so that independent merchants could set their own prices.⁶⁵

The embargo against pipes shorter than three quarters of an ell (18 Swedish inches) is the likely cause of the drastic decrease in imported pipes visible in the toll records presented by Puktörne (1968, p. 69 & table X below); imports of foreign pipes dropped from 6095 gross in 1741 to 525 1/3 gross in 1742. This may be interpreted as the majority of pipes previously imported were the shorter and cheaper pipes as well as pipes considered to be, as we shall see, medium length pipes. Such pipes were now to be replaced by domestically produced pipes from Forsberg's factory in Stockholm and Alströmer's factory in Alingsås.

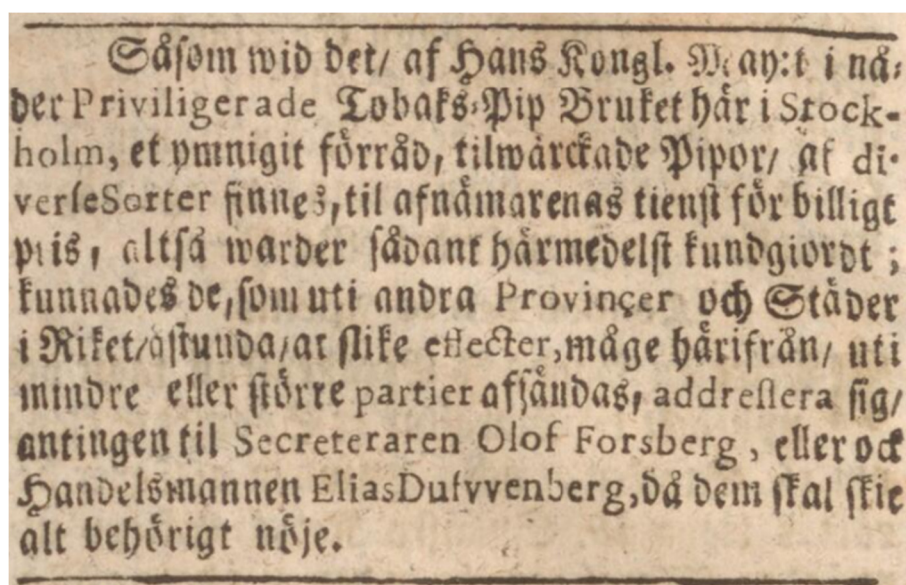


Figure 6. The currently oldest known advertisement from Olof Forsberg's pipe factory in Stockholm (Posttidningar 04-30-1741, p. 4) predates the statement from Handels- och manufakturdeputationen recommending an embargo against foreign pipes 18 inches and shorter by a week. It states that there was an ample supply of pipes of various sorts that were reasonably priced that could be shipped from Stockholm to the entire kingdom, including provinces.

While imports of long, high-quality Dutch pipes were allowed to continue, it was short Dutch pipes of all qualities, and nearly all types of English pipes that were impacted by the embargo of 1741. The only pipes eligible for import to Sweden as a result of this embargo were the very longest pipes in production in England, the 24-inch pipes, as well as Dutch pipes of the *maatpijp*-length of 21 inches or longer.⁶⁶ Looking once again to the toll records in table X below, it is clear that the amount of imported Dutch pipes quickly surpassed the amount of imported English pipes after the year 1742,

⁶⁵ While the National Board of Trade, via the *Hallrätter* and magistrates were able to regulate wholesale prices from factories by stipulating against increased prices, there appear to have been no regulations of retailers' potential markups on pipes. Publishing prices per gross in national newspapers would have kept consumers informed of factory prices, yet it is likely that markups were made for single pipes and possibly also for pipes sold by the dozen, half-dozen or *tjog* – 20 units.

⁶⁶ Even the English 18-inch pipes in Crom's estate inventory from 1746 (although he died in 1743) were encompassed by the embargo, suggesting that the pipes listed may either have been a stock predating the embargo, or pipes that had been smuggled.

likely as a combined result of the embargo, the possibility that pipes longer than 18 inches were not widely produced in England at the time, and that smokers of long pipes preferred high quality Dutch pipes. As such, the situation resembles that of the embargo on tobacco considered to be of a low quality from Northern Germany from 1739 discussed above. Domestically produced pipes and tobacco were intended to be consumed primarily by commoners, while burghers, nobles, and members of the priesthood, who were also the groups most concerned by the potential lack of longer and finer pipes, could maintain distinction and recognizability through both the tobacco they smoked as well as the pipes they used to smoke it in.

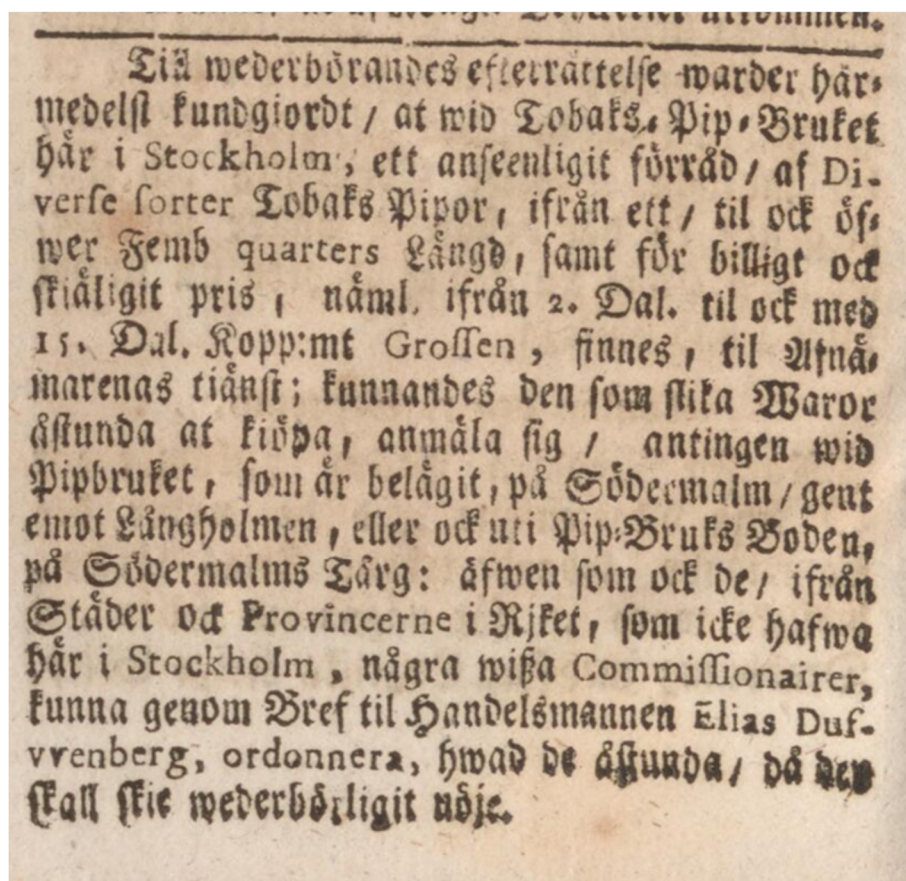


Figure 7. An advertisement from Olof Forsberg's pipe factory in Stockholm stating that pipes of various sorts, ranging from one to five quarters of an ell (6 to 30 inches), ranging in price from 2 dalers to 15 dalers in price per gross could be purchased either from the factory, the factory booth on Södermalms Torg, or ordered to any town or province in the kingdom (*Posttidningar*, 10-08-1741, p. 4).

6.1.5 The Riksdag of the Estates of 1742–1743

Olof Forsberg, having asserted that his factory could also manufacture pipes longer than 18 inches as early as the 1740–1741 Riksdag of the Estates and in a newspaper advertisement (fig. 8), once again lobbied at the *Handels- och manufakturdeputationen* for a full embargo against foreign pipes during the Riksdag of the Estates of 1742–1743. At this point in time, Forsberg's factory was one of three pipe factories that claimed exclusive privileges for pipe making – apart from Alströmer's factory in Alingsås, Forsberg's former master pipe maker, Olof Aspegren, had opened a factory at Marieberg on Kungsholmen in Stockholm in 1742. As in 1741, the Forsberg factory also published a number of advertisements in *Posttidningar*, among them a price list, which does not appear to have been

preserved, in order to meet demands from the Riksdag of the Estates (fig. 9). The protocols of the *Handels- och manufakturdeputationen* (SE/RA/6122/9/R 2836 1742–1743, pp. 870–872) contains a description of an inspection of the Forsberg factory carried out by representatives from the *Handels- och manufakturdeputationen* and the National Board of Trade, in which Forsberg's appeal for a full embargo on foreign pipes is a recurring theme. The inspection emanated in a letter (SE/RA/6122/10/R 2900 1746–1747, fol. 537–538) which states that:

[...] Concerning the manufacturing of the longer and finer sorts of tobacco pipes, he [Forsberg] has spared no effort or expense to achieve this, so that the kingdom now truly could do without similar sorts from abroad, because he makes different kinds from three to over five quarters [of an ell's] length, both after Dutch and English *façons* and are sold at a lower price than the foreign; wherefore he applies to your royal highness' collegium's [the National Board of Trade] willingness to make the humble remonstrance, so that these aforementioned longer and finer sorts of foreign tobacco pipes, henceforth from import to the kingdom most graciously may be banned. Now, most gracious king! As your royal highness through a missive of October 14th 1741 graciously decreed, that the pipe factories be urged to increase production of the longer and finer sorts of tobacco pipes, so that these are available in the kingdom, and therefore henceforth be avoided, that such sorts be imported from abroad, and the secretary Forsberg in servile compliance, has requisitioned the necessary requisites of newly built houses, machines, molds and tools, beside the hitherto unknown science of preparing the raw material to the required fineness, whereto ample expenses have surely been made, yet whereof he has difficulties reaping rewards, as long as these finer and longer pipes are allowed to be imported to the kingdom, since there are, notwithstanding the fees under which they are subjected, wherethrough besides the expense at the purchase and import become quite expensive, they are fully in abundance certainly brought here and sold, which principally would emanate from some who trade in these are less willing and inclined to promote the domestic manufacture by trade; thus, and while the collegium [the National Board of Trade] has duly inspected the factory, and found that the manufacture of longer and finer tobacco pipes as well as the coarser/rougher sorts are well underway, and are manufactured to such an extent that there are large quantities unsold, and that therefore, as well as in considering that Forsberg's co-stakeholder Aspegren has separated from the factory and established one here in the city on Kungsholmen, through which the production has been multiplied, the collegium [the National Board of Trade] certainly finds that these pipe factories, alongside the *Commercie Råd* [trade councilman] Alström on Nollhaga by Alingsås can achieve a higher production, than the consumption of these goods in the kingdom requires; Thus the collegium [the National Board of Trade] finds itself disposed, your royal highness, to propose, and humbly subject to your royal highness' pleasure, that a general embargo against foreign pipes may be enacted, and if some certain time could be set, so that no one out of ignorance of the embargo may be inconvenienced, this time, the subservient collegium thinks, could begin in the immediately following month of July.

And: von Drake, Olof von Törne, B: von Hofsten, Hendr. Kalmeter, H. Kolthof, C.G. Bungencrona, Er. Urlander

Stockholm February 3rd, 1743⁶⁷

⁶⁷ "[...] Hwad åter tillwärcnkningen af de längre och finare Sorter Tobaks Pipor angår, skall han haft all möda och omkostnader osparda, at bringa den i sådant stånd, at Riket nu wärkeligen skal kunna umbära, utlåta slika Sorter utifrån inkomma, i ty hos honom diverse slag ifrån 3 til och öfwer 5 quarters längd, både efter Hollenska och Engelska *façon*er skola göras, och jämwäl säljas till mindre pris än de utländske; hwarföre han anhåller det hos Eders Kongl. Maj:ts Collegium wille göra den underdånige föreställning, så at desse sidstnämde längre och finare Sorter af

As this letter is included as an appendix to a plea submitted by Forsberg, Aspegren, and Alströmer during the Riksdag of the Estates of 1746–1747 (SE/RA/6122/10/R 2900 1746–1747, fol. 537–538), which also states that the case was never presented to and processed by the Estates, and the fact that it is not mentioned in the protocols of any of the Estates, it appears as if it never reached the Riksdag of the Estates of 1742–1743.⁶⁸

Indeed, the Riksdag of the Estates of 1742–1743 did not result in any alterations of the embargo of 1741. From a perspective that considers differentiating smokeways it is noteworthy that a continuous supply of what is referred to as the longer and finer pipes remained a concern of both the *Handels- och manufakturdeputationen* and the National Board of Trade. It is thus apparent that the supply of long, presumably polished, pipes was an important matter to policy makers. Another noteworthy aspect of this document is the statement that even though there existed a supply of domestically manufactured long pipes that were less expensive than imported pipes, the people who appear to have been their intended consumers instead preferred to pay a premium for the imported, assumedly Dutch pipes. These longer and finer pipes, as such, may be interpreted as essential, or indeed necessity goods, for those who purchased them, and as the document states that toll tariffs and markups had little or no effect on these consumers' propensity to buy them, only an embargo would be able to replace them completely.

utrikes Tobaks Pipor, hädanefter til införsel i Riket allernådigst måtte förbiudas. Nu allernådigste Konung! Som Eders Kongl. Majjt. genom skrifwelse af d. 14 Octobr. 1741 i nåder förkunnat, det Pipebruken måtte tillhållas, at med större drift anlägga sig om de längre och finare Sorter Tobaks Pipors tillwärcckning, på det inom Riket deraf måtte finnas tillgång, och dermedelst framdeles undwikas, at låta slika Sorter utifrån inkomma, och Secreteraren Forsberg til underdånigst följte theraf til en sådan tilwärcckning förskaffat sig de nödwändige *Requisita* af nybygde hus, *machiner*, formar och redskap, jämte den hittills här i Riket, förut obekante wettenskapen at praeparera sielfwa rudimaterien til den finhet, som wederbör, hwartil säkert fordrats nog dryg bekostnad, men hwaraf han desto swårare lærer kunna erhålla någon nytta, så länge deße finare och längre slags Pipor få i Riket införas, som det finnas, at oaktadt de afgifter de samma äro underkastade, hwarigenom jämte omkostnaden wid inkiöpet och tilförslen blifwa nog dyra, de lika fult til myckenhet wärkeligen hitbragte och försälde, hwilcket förnämligast deraf lærer härröra, at en dehl, som därmed handla äro mindre willige och benägne, at beforda den Inrikes tillwärcckningen till afsättning; altså och emedan Collegium inrättningen wid bemälte Pipbruk behörigen besedt, och derwid befunnit, at den samma med de längre och finare Tobakspipor äfwen som de gröfre Sorter är i god gång och derstädes så ansenligen deraf till wärkas, at stora partier ligga oförsälde, så at i anseende dertil, som ock at en Forsbergs warande med Interessent Aspegren sig ifrån det öfrige wärket skilt och ett sådant här wid staden på Kongsholmen för sig sielf inrättadt, hwarigenom tillwärcckningen blifwit förmerad, Collegium säkert kan finna, at deße Pipebruk, jämte Commercie Rådet Alströms på Nollhaga wid Alingsås mera tillwärcckning kunna åstadkomma, än till Consumtionen här i Riket af den wärran betarfwat; Ty finner Collegium sig föranlåt it Eders Kongl. Majjt sådant i underdånighet föredraga, och Eders Kongl. Majjts. Nådigste wälbehag underdånigst hemställa, om icke nu mera ett allmänt förbud emot Tobaks Pipors införsen från utrikes orter må skie, samt om icke någon wiß tid kunde utsättas, på det ingen af okunnogheter om förbudet, må råka i olägenhet, hwilken tid Collegium för deß underdånige dehl skulle tycka kunna taga sin början med näststundande Julii månad.

And: von Drake, Olof von Törne, B: von Hofsten, Hendr. Kalmeter, H. Kolthof, C.G. Bungencrona, Er. Urlander.
Stockholm d. 3 Febr. 1743"

⁶⁸ "[...] detta mål, har Hans Kongl. Majjt. i nåder behagat, uppå sishållen Riksdag remittera, til Riksens Höglofl. Ständer, men för andra Riks wårdande ärender och angelägenheter skull har då warande handels och Manufactur Deputation, icke kommit at företaga samma mål, eller däröfwer deß betänkande till Respective Ständers plena at afgifwa, och således Riksens Hög Lofl. Ständer icke heller då kunnat sig öfwer detta förbud, emot införsel af de längre Tobakspip-Sorterne utlåta [...]."

Til at så meget mera befordra affsättningen af de Tobaks-pipor, hwilcke wid Pipbruket här i Stockholm til anseelig quantite, ärligen tilwärfas, har man wid detta Årets början, inrättat priserne, til långt lindrigare, än de samme varit, under de framflutne Åren, så at man med trygghet kan säija, at de inländska Piporne, nu wärfeligen säljas för bättre tiöp, än de utländska; Man bör ock icke obemålt lemna, at wid förenämde Pipbruk, tilwärfas flere Sorter, än någonsin Utrikes ifrån inkommit, nemligen, efter Engelske och Holländska faconer, ifrån ett til och öfwer fem Quarters längd, några ock trettio Slag, och hwad angår godheten, underkastas den, med all säkerhet, det allmännas ömdöme; I anseende hwartil, så wäl som ock at Ridparena lemnas Credit, på längre eller kortare tid efter öfwerenskommelse, man gör sig det hopp at Wederbörande, som med en sådan Wahra handla, låra wara willige Afnåmare, hållt dem, på allt sätt, skal stie behörigt nöje. De som åstunda förenämde Wahra, utur första hande, kunna wid sielfwa Pipbruket, som är belägit på Södermalm, emellan den så kallade Kroken och Horns-Tull, sig anmäla, och därstedes afhämta hwad sorter de behaga, äfwen som ock de, uti andra Städer och Lands; Orter boende, kunna genom Bref, til Secreteraren wid denna Stadens Borgerstap, Olof Forsberg, ordonnera, hwad de nödigt hafwa, då om-inpackning, och affändning, skal fogas behörig anstalt.

Figure 8. An advertisement for Forsberg's pipes from Posttidningar, June 30, 1743. Translated, it states that: In order to so much more promote the sale of the tobacco pipes, that are made at the pipe factory here in Stockholm at a sizeable quantity each year, the prices have, at the beginning of this year, been arranged to a significantly lower level than during the previous years, so that it is safe to say that the domestic pipes are now really sold as a better purchase, than the foreign; It should not be left unannounced, that the aforementioned pipe factory manufactures more sorts than ever came from abroad, namely after English and Dutch façons, from one to over five quarters [of an ell's] length, some and thirty kinds, and concerning their quality [godhet, literally: goodness], they are subjected to the public opinion; In respect of this, as well as purchasers also being afforded credit, for longer or shorter terms after agreement, the hope is that those concerned, who trade with such goods, would be willing purchasers, as unto them, in any way, will find proper satisfaction. Those who desire the aforementioned goods, can at the first hand, at the pipe factory itself, which is located on Södermalm, between the so-called Kroken and Hornstull, report, and here collect the sorts that they please, also those residing in other cities and towns, may through correspondence with the Secretary of the Burghers of this city, Olof Forsberg, order what they find necessary, after which packaging and delivery will be properly arranged.

Härhos följer et apart Blad utan betalning, angående åtskillige sorter Tobaks-Pipors försäljande, som wid Stockholms Pip-Bruf äro gjorde.

Figure 9. As of 1743, Olof Forsberg's factory began publishing price lists in the national newspaper Posttidningar at the beginning of each year (this one from Posttidningar 1743-01-24). The text states: "Below is a separate sheet free of charge, concerning the sale of various sorts of tobacco pipes, that have been made at the Stockholm Pipe Factory". As these sheets were separate from the newspapers, they may not have been considered as encompassed by the legal deposit act which may be the reason that only three price lists from the Forsberg survive at the Royal Swedish Library and the Swedish National Archive.

6.1.6 The Riksdag of the Estates of 1746–1747

During the Riksdag of 1747, Forsberg and his former master pipe maker, Olof Aspegren, who had started his own pipe factory on Kungsholmen in 1742, and Jonas Alströmer submitted a joint appeal for an embargo that encompassed all foreign tobacco pipes (SE/RA/6122/10/R 2900 1746–1747, fol. 532).⁶⁹ This appeal, signed by Olof Forsberg, Olof Aspegren, and Eric Salander under power of attorney from Alströmer, appears to have included samples of pipes made at the Forsberg factory, states that:

from the included samples, as well as the under [appendix] No. 2 attached price list, it should be graciously seen and be partaken of, both that the domestically made longer and finer sorts of tobacco pipes are usable, as well as that, they are sold at a much lower price, than those made abroad, though the mere fancy for the latter has hitherto been an obstacle, and will continue to hinder the sale of the domestically made pipes, regardless of what fee the previously mentioned foreign [longer and finer pipes] could be burdened with, should they henceforth be allowed to be imported to the kingdom.⁷⁰

As previously stated by the *Handels- och manufakturdeputationen* and the National Board of Trade in 1743, the perception of the pipe factory owners was that the penchant among what can only be interpreted as the affluent segment of eighteenth-century Sweden for longer and finer pipes imported from abroad, most likely the Netherlands, could not be thwarted through increased tariffs. The argument that these consumers would purchase such pipes regardless of their cost suggests that these pipes were considered essential, resembling necessity goods, for the smokeways of the higher estates. As necessity goods employed in the dominant project of maintaining differentiating recognizability through smokeways, increasing the prices of such pipes would likely only have led to an increase in their symbolic value as socially differentiating material culture.

As evident from protocols from all Houses of the Riksdag of the Estates and the proclamation (Anonymous/Kongl. Tryckeriet 1747), the appeal for an embargo against all foreign pipes was approved and enacted as of November 6, 1747. The condition for the full embargo was that prices published that same year were never to be increased.

Prices, as we shall see, with few exceptions, were not drastically altered after 1747. Comparisons of the Forsberg price lists show a slight decrease in prices between 1745 and 1747, which was likely a result of an attempt to appease the Riksdag of the Estates in order to meet expected demands for an enactment of a full embargo. It is noteworthy that the 1747 price list, containing six long types, is shorter than the 1745 price list, which contains nine long types. Most notably, the type called long porcelain is not mentioned in the 1747 price list. Once the embargo had been enacted, the 1753 price list from the Forsberg factory shows a slight increase of prices for the pipes in the long segment; pipes called long porcelain were reintroduced and cost more than they did in 1745. It cannot be excluded that by reintroducing this type, which was likely the most demanding and labor-intensive pipe made

⁶⁹ It is not currently fully understood whether Aspegren's and Forsberg's factories were operating as one company or if they were competitors in the period between 1742 and 1747. See Appendix I.

⁷⁰ "af de härhos med följande prof, samt under No. 2 bifogade Pris Courant, nådgunstigast lärer kunna sees och intagas, både at de inrikes tilwärlade längre och finare sorter Tobaks Pipor äro brukbara, såsom och at de samma sälljas, til ett mycket ringare pris, emot hwad de utrikes gjorde kosta, har dock blåtta tycket, för desse sistnämnda, alt hittills hindrat, och lärer äfwen ännu widare hindra afsättningen af inrikes gjorde Piporne, oaktadt med hwad afgift, de omförmälta, utrikes kunde blifwa belastade, därest de samma hädanefter tillåtas i Riket få införas".

at his factory, at a higher price, Forsberg outmaneuvered the condition of the 1747 embargo stating that prices stated in that year could not be increased.

6.1.7 Concluding discussion

Similarly to the abovementioned embargo on cheap tobacco enacted in 1739, the tobacco pipes first targeted by an embargo were the cheapest pipes used by the broader masses. There can be no question that there was a distinction between the more expensive longer and finer pipes and cheaper short pipes and which social group was expected to use the longer pipes, and which group was expected to use the shorter pipes during the eighteenth century. Without descriptions elaborating specifications further than “longer and finer pipes”, it is apparent that there was a well-established understanding of the types of pipes referred to among all those involved in the policy-making process – from the makers and factory owners to the House of the Peasantry and Commons. Concerns for a lack in the supply of longer and finer pipes, while raised in the *Handels- och manufakturdeputationen*, and assured by the National Board of Trade, as the highest authority monitoring production and availability of domestic production, were not raised in the House of the Peasantry and Commons. The supply of such pipes was primarily the concern of members of the higher estates, the people whose smokeways depended on such pipes as material culture reflecting status.

This explicit conception of the longer and finer pipes as being essential for those who could afford them is highly reminiscent of Style’s observation that differentiation required objects that were considered “indispensable props in the genteel performances” (Styles 2001, p. 184, quoted in Berg 2005, p. 6). As tobacco smoking was also widespread among lower estates, longer and finer pipes required contrasts – the shorter and less fine pipes. Moreover, the fact that concerns about lacking supplies of long and fine pipes were raised can also be interpreted as a perceived threat to the need for permanency and of unaltered recognizability. From a perspective that considers differentiating smokeways, the reason that imports of such pipes could not be banned until domestic makers were able to replace them should be understood as these types of pipes, foreign or domestic, were considered by their consumers as essential material elements in differentiating smokeways.

It is noteworthy that both Forsberg and Alströmer explicitly stated that their factories manufactured pipes imitating both English and Dutch types. The impression given by the pleas, debates and advertisements presented above, is that the domestic pipes needed to be as close to identical in terms of morphology, stem length and production quality to those imported from England and the Netherlands as possible to be accepted by the National Board of Trade, the Riksdag of the Estates and consumers alike, in order to bring about an embargo. To overcome this obstacle, pipe factory owners attempted to guarantee the quality of their products by importing pipe makers or by training masters abroad. While Carl Aspegren had hired a Dutch pipe maker as early as 1710, in the case of Alströmer’s factory, a German pipe maker was hired to make Dutch-style pipes, and an English pipe maker was hired to make English pipes. One of Forsberg’s appeals (SE/RA/6122/8/R 2766, 1740–1741, 17D) states that Olof Aspegren had been trained in the art of pipe making in the Netherlands (Holland) and other unspecified locations, suggesting that he had the ability to make different types of pipes.

6.2 Imported pipes, ca. 1690–1747

The following two sections briefly present the pipes that were imported to Sweden in a period between roughly the late seventeenth century and the year 1747, when the abovementioned embargo against all foreign clay tobacco pipes was enacted. As evidenced by a comparison of morphologies of Swedish pipes to those made in England and the Netherlands, the latter acted as models for pipes manufactured in Sweden during the eighteenth century. As made apparent by discussions held in the *Handels- och manufakturdeputationen* and letters of charter, the domestic pipe manufactories were, at least initially, obliged to maintain a supply of pipes which corresponded in terms of appearance, stem lengths, and quality to those previously imported from abroad. To justify charters for pipe manufacturing which often included duty-free imports of raw materials, the domestic pipes were also expected to be less costly than their foreign counterparts.

Exactly how Dutch and English clay pipes came to Sweden has not been the subject of extensive previous research, and neither is it a primary topic of this study. However, it seems very likely that pipes were at least partially imported alongside tobacco from the Netherlands and England during the first half of the eighteenth century. Ruud Stam mentions Amsterdam tobacco merchants as central to the trade in pipes and that these traders also had clients in the Baltic region (2019, p. 133). Bert van der Lingen similarly mentions that “in the seventeenth century there was a large demand in Sweden for cheap Dutch spun tobacco” and, in the eighteenth century, when the Swedish tobacco industry was regulated to benefit domestic manufacturers, Dutch tobacco leaves (2007, p. 1920).⁷¹ Volumes of *Stockholms Stads Pris-Courant* stating prices for goods does not mention imported tobacco pipes, yet shows that tobacco was imported from the Netherlands and England.⁷²

There are obvious and strong connections between the Swedish pipe industry of the early eighteenth century and the trade with Dutch and English tobacco and pipes. The tobacco merchant Carl Aspegren, who received charters for pipe making in 1708, and his partner Zachris Andersin leased a tobacco manufactory from Daniel Hermanni who succeeded the Dutchman Peter Mynder as one of the most significant tobacco merchants in Stockholm in the late seventeenth century. According to his estate inventory, Mynder imported tobacco from England and Germany (SE/SSA/0145A/F 1/F 1 A/56 1699, p. 322). When Mynder died, Daniel Hermanni married his widow and took over the factory (Loewe 1990, p. 72). Sometime between 1698 and 1702, Hermanni went into partnership with Carl Aspegren (*ibid.*, p. 72). Aspegren, in turn, worked with Andersin. According to Erik Angelin (1950, pp. 287–288), they employed Jacob Crom, who would go on to become a tobacco manufacturer, merchant, and purveyor of pipes from both England, Sweden, and likely the Netherlands as well. As evidenced by estate inventories, some tobacco manufacturers in Stockholm were also stakeholders in, or owners of, ships, and it is likely that these ships carried both tobacco and pipes directly from Amsterdam, London, and other places to be sold in Sweden.⁷³

⁷¹ The embargo, in order to promote domestic tobacco manufacturers, encompassed spun, pressed and carved tobacco, unprocessed tobacco leaves, provided that they were not from Northern Germany, could still be imported.

⁷² Not all tobacco types being imported were mentioned and there are irregularities in the publication of prices. The most commonly mentioned tobacco types are Virginia tobacco, likely from London and/or Liverpool, Amersfoorter and Boveland from the Netherlands, Nieuwkerke from Belgium and a type called *ardgoed*, referring to milder leaf (see for example *Stockholms Stads Pris-Courant* 04-07-1740, p. 2).

⁷³ Mynder's estate inventory shows that he was a stakeholder in five ships (Loewe 1990, p. 72), Carl Aspegren owned one ship (SE/SSA/0138/F 6 b/10 1736).

When Carl Aspegren received charters for pipe making in Stockholm in 1708, he had no domestic competitors except for some potential minor-scale household production. Prior to Aspegren's factory, all or nearly all tobacco pipes used in Sweden had to be imported from abroad. Pipes recovered from the Swedish archaeological record, unless Swedish, can in the stark majority of cases be attributed to two countries: England and the Netherlands. Arne Åkerhagen's estimates of imports to Sweden are that apart from domestic pipes, 70 percent of the clay tobacco pipes recovered have been manufactured in the Netherlands (Åkerhagen 2012a, p. 26), while close to 30 percent have been manufactured in England.⁷⁴

According to a study of the Swedish toll records carried out by Puktörne (1968, p. 69), the majority of pipes imported between the years 1738 and 1745 came from England. The year 1738 also appears to be the first year in which the countries of origin of imported pipes were recorded by Swedish customs officials.⁷⁵ Of 6 615.5 gross, or 952 632 pipes, imported to Sweden in 1738, 4565.5 gross, or 657 432 pipes came from England, while 1652.5 gross, or 237 960 pipes, were imported from the Netherlands. Where the remaining 397.5 gross came from is unknown, though it is possible that they came from pipe producing cities in Germany.

Table 1. Pipes imported to Sweden based on Puktörne (1968, p. 69).

Year	Pipes imported in gross	Pipes from the Netherlands in gross	Pipes from England in gross
1685	5621		
1718–1719	6131		
1720	14858		
1721	8778		
1724	8953.5		
1725	8103.5		
1726–1727	9669		
1738	6615.5	1652.5	4565.5
1739	7792.5	1919	5788
1740	5327.25	1499.75	3202
1741	6095	2090.75	3653
1742	525.33	183.33	293
1743	2097.5	1264	807
1744	1567.5	1145.16	394
1745	1332	960	351.5
1746	1133	1004.5	108.5
1747	1253.5	1036	209.5
1748	2	2	0

Based on these toll records, the majority of pipes used in Sweden during the first four decades of the eighteenth century came from England. There is also strong evidence that Dutch pipe makers copied

⁷⁴ It is important to note that this estimate is based on pipes from both the seventeenth and the eighteenth centuries. Even though van der Lingen has noticed some misidentified pipes in Åkerhagen's catalogs, his estimate is likely to be relatively accurate.

⁷⁵ Puktörne's table does not distinguish between imports from England and the Netherlands prior to the year 1738. It therefore seems as if that the origin of the pipes was not recorded prior to this year.

English pipes specifically for export to the Nordic region beginning in the late seventeenth century (van der Lingen 2022). As it would seem, the majority of Swedish smokers of the late seventeenth and early eighteenth centuries either preferred or were obliged to use English-style rather than Dutch-style pipes.

The Öresund toll records, which have only been briefly consulted here, may provide potentially more detailed accounts of origins of pipes as the ports of origin and the destinations of ships are often specified, it becomes apparent that pipes were brought to Sweden from Amsterdam and several English cities – primarily London, Newcastle upon Tyne, and Hull.⁷⁶

6.2.1 Imported English eighteenth-century pipes

Åkerhagen's catalogs suggest that the majority of English clay tobacco pipes in the Swedish archaeological record have been manufactured in, and imported from, London (Åkerhagen 2012b & 2012c). London may well have been the main source of English pipes that were imported to Sweden, yet as mentioned above there is evidence in the form of both pipes and archival sources that suggests imports on a relatively large scale from other English production centers as well.

For example, sometime between the 1660s and the 1680s, Swedes appear to have had a penchant for pipes from Yorkshire, as evidenced by the many so-called Yorkshire bulbous type bowls that have been recovered in Sweden (White 2004, p. 41). Yorkshire's "coastal ports, such as Hull had been exporting products to the Baltic, Norway, and Iceland since the fourteenth century" (Davey 1978, p. 4 quoted in White 2004, p. 41), which may explain well-established trade links in the seventeenth century. Swedish newspapers from the late seventeenth century indicate continued strong trade links between Hull and Stockholm and Gävle in particular. Newspapers state that ships leaving Sweden for Hull carried iron, tar, hemp, flax, pitch, copper, timber and brass, yet rarely specify what the incoming ships from Hull were carrying as they are commonly referred to as carrying "ballast" and "breakbulk cargo" (see for example *Posttidningar* 10-01-1722, p. 3). Both breakbulk cargo and ballast, similarly to unspecified merchants' wares mentioned in the Öresund toll records, likely included tobacco pipes.

Jonas Alströmer wrote in his journal while visiting Hull in 1719 (Alströmer 1719, n.p.), that exports of pipes made in this city were mostly to Sweden and Norway, and that these pipes were coarse/rough and poorly made. Apart from acting as evidence that pipes from the Yorkshire area continued to be exported to Sweden into the eighteenth century, this also indicates that there is a possibility that workshops in Yorkshire in general and Hull in particular adapted their production to the demand for inexpensive coarse pipes in the Nordic countries.⁷⁷ Only occasionally are tobacco pipes mentioned as part of the cargo on ships from Hull (see for example *Posttidningar* 09-17-1739, p. 3). The last known shipment of tobacco pipes from Hull in the archival record is from *Posttidningar* April 16, 1747. Considering the embargo of 1741, this suggests that pipes longer than 18 inches were also imported from Hull.

⁷⁶ It is important to note that Swedish ships were exempted from Öresund tolls levied by Denmark between the years 1660 and 1712 and are not mentioned in these years. Ships with home ports registered both in Sweden and abroad, in order to avoid the toll, also may have sailed for Gothenburg or other ports along the Swedish west coast. Furthermore, pipes may not always have been explicitly listed in the Öresund tolls as they may have been included under categories such as *cramerie* or *kiøbmandskaber* – merchants' wares. This grouping of pipes with other goods has also been noted by Puktörne who states that pipes were among goods that are referred to as "*Kramwahrer*", "*Rüselske kramwahrer*" or "*Krüddkrämare wahrer*" in Swedish toll records of the seventeenth and eighteenth centuries (Puktörne 1968, p. 68).

⁷⁷ A further testament to the popularity of the Yorkshire bulbous pipes in Sweden is that pipe makers in Gouda began making copies of them to meet the demand/gain market shares (van der Lingen 2022).



Figure 10. A mended late seventeenth-century or early eighteenth-century English-style pipe recovered from a supposed Swedish Army mass grave in Handöl, Jämtland from 1719. The pipe would, based on its style, likely have been considered outdated at the time of its supposed deposition. Image by Armémuseum; AM.029668. CC BY 4.0

Although clay tobacco pipes from other English production centers are encountered in Swedish archaeological assemblages, London makers appear to have been the most significant suppliers or pipes to Sweden during the eighteenth century. Of the English pipe types of the eighteenth century that commonly occur in the Swedish archaeological record are of what is known as Atkinson's and Oswald's London type 25 (henceforth London type 25), which have been made in a so-called gin press (see, for example, figs. 11, 15, and 30). Marked and unmarked bowls of the London type 25 are the most encountered eighteenth-century English bowl type in Sweden. Among the marked bowls, pipes manufactured by the family of makers named William Manby from London are among the most common and most easily identifiable through the mark W/M with or without crowns in molded relief on the sides of heels or spurs.

Manby-family pipes appear to have been widely available in the southern half of Sweden as they appear in archaeological contexts from Malmö (see Åkerhagen 2012a, p. 95 & p. 106), Karlskrona (Stibeu & Bergman Carter 2025, p. 147) to Falun (Åkerhagen 2012b, p. 203), and very likely further north. The Manby family also manufactured pipes that were specifically made for the Swedish market; bowls with three crowns, the minor coat of arms of Sweden, and the initials of King Frederick I, FR for Fredericus Rex, stamped on the fronts of bowls are relatively common in Swedish archaeological contexts from the first half of the eighteenth century (Pearce 2013, p. 77). Variants of this decoration was also used by a currently unknown number of Swedish makers (see also the section on pipes referred to as three crown pipes in Chapter 7 and Appendix II).

A general problem in the identification of English pipes in Swedish contexts from the late seventeenth century and the eighteenth century is that unless they have marks or region-specific decorations, they may be difficult to trace to specific workshops and even regions or cities. This has resulted in nearly all unmarked English bowls of London types 18, 20, 21, 22 and 25, as they were copied by makers across England, being difficult to distinguish from pipes from other production centers. A comparison between Atkinson's and Oswald's general London typology (1969, pp. 177–180) and regional typologies shows how the output of English pipe makers became increasingly homogenous beginning

in the late seventeenth century. For example, Gareth Watkins' Hull types IIIa–b, IV a–d, V, VI, VII a–e (Watkins 1979, pp. 85–90) are very similar to Atkinson's and Oswald's London types 18, 19, 20, 21, 22, and 25. The similarity of pipes manufactured outside of London and pipes made in London is believed to have been the result of pipe makers copying London styles to an increasing extent beginning in the late seventeenth century.⁷⁸ As we shall see, this relative homogenization of bowl styles (and ensuing challenges for determining the origin and narrow production dates of pipes) is also reminiscent of identifying the output of Swedish pipe factories and workshops.

6.2.1.1 *Stem lengths and production qualities of English pipes in Swedish eighteenth-century contexts*

The understanding of stem lengths of English eighteenth-century clay tobacco pipes appears to be less established by previous research than what is the case for their Dutch counterparts. David Higgins (1987, p. 26) notes that:

Since it is easier to move clay in bulk rather than finished pipes, the majority of pipes are only found in a small area around their place of manufacture. High quality pipes, however, were generally made at fewer centres and traded over wider areas.

While bowl-forms became increasingly standardized across eighteenth-century Britain as a result of the introduction of the gin press, variations in regional traditions may have resulted in less standardized stem-lengths. There are exceptions to this; Bristol pipe makers, as presented by Jackson and Price (1974) were regulated by guild codes that specified lengths of pipes for export to different regions of the world. Jackson and Price refer to this as the “mould-size agreement” of 1710, signed by the members of the Company of Tobacco Pipe Makers of Bristol (*ibid.* p. 16). The agreement, which regulated the lengths of pipe molds specifies that: “Long pipes of sixteen inches from the Heel to the direction of the Point”, that “Dutch Pipes” should be fourteen inches, “Jamayca Pipes” thirteen inches, “Penned Heeles and Gauntlets” eleven inches, and “Virginia Pipes” should be eight and a half inches (*ibid.* pp. 83–84). As such, it seems as if Bristol pipe makers were not manufacturing pipes longer than 16 inches in the early eighteenth century. Although Bristol pipes are uncommon in Sweden, this account provides insight to the variety of stem lengths of some English pipes in the early eighteenth century.

Concerning styles and stem lengths, Adrian Oswald, in the seminal *Clay Pipes for the Archaeologist* (1975, p. 42) writes that:

Differentiation in pipe styles seems to have occurred almost from the start of manufacture, since groups of pipes from deposits with a narrow time bracket often show varieties of form and, when complete, of stem length bearing out the scanty illustrative material. Early varieties are shown [...] by 1688 Randle Home [...] can describe varieties of severall molds for several fasions:

Lark Heele pipes (presumably spurred pipes)

Flat Heel Pipes

Round Bolls or head

Long Bolls

Long, middle and short shanks [stems]

⁷⁸ It is therefore believed that Åkerhagen may have attributed many eighteenth-century pipes which were manufactured in, for example, Yorkshire to London.

Pipes were brought to Sweden from England, beginning on a small scale in the late sixteenth century (Åkerhagen 2012a, p. 25), to increase throughout the seventeenth century and culminate in the first five decades of the eighteenth century. It seems likely that there was an availability of English pipes of different styles and lengths in Sweden throughout the period as well. It is noteworthy that the relative stem length is referred to as “Long, middle and short shanks” (Oswald 1975, p. 42), a pattern that, as we shall see, was replicated in Sweden.

Regarding late seventeenth-century pipes for example, there are intact so-called Yorkshire bulbous pipes available for estimations of available stem lengths; one Yorkshire bulbous pipe recovered in Linköping (Åkerhagen 2012b, p. 183) is refittable with a stem and mouthpiece with the stem measuring about 25.5 centimeters, or roughly ten inches. Intact Yorkshire bulbous pipes recovered from the man-of-war *Kronan* that sank in 1678 have similar stem lengths.

From the archival record there is one account from the aforementioned Swedish merchant and tobacco manufacturer Jacob Crom in the form of a estate inventory from 1746 that explicitly states the lengths of English pipes; ranging from long to short, the inventory contains 18-inch pipes, 15-inch pipes, 13-inch pipes, 11-inch pipes, and 9-inch pipes (SE/SSA/0145A/F 1/F 1 A/140 1746). The amounts of pipes listed in the inventory imply that these were standardized lengths rather than pipes with broken stems, often referred to as stumps in contemporaneous sources. It does however seem highly likely that pipes that had broken during transport and were still in working order would have also been sold, most probably at discounted prices.⁷⁹

Eric Ayto writes about the longest English eighteenth-century pipes, referred to as “alderman” or “straws” which were between 18 and 24 inches long (1979, p. 6). These long pipes, according to Ayto, were “fashionable with the gentry” (ibid. p. 6). Duco’s account of English pipe names from the nineteenth century somewhat corroborates the eighteenth-century stem lengths mentioned in the estate inventory after Crom. According to Duco, “yards of clay” were the longest pipes although no length is specified by Duco it is possible that these were indeed as long as their name suggests (1979a, p. 4). Pipes referred to in the nineteenth century as “smoke room”, were 45 centimeters long, the “club pipe” was 42 centimeters, the “common long” was 38 centimeters, the “13 inch” was 33 centimeters, the “10 inch” or “parlour pipe” was between 24 and 25 centimeters, the “8 inch” or “Dandy” measured 19 to 20 centimeters, and the “dudeen” was “probably only 8 centimeters” (Duco 1979a, p.4). When the measurements stated by Duco in centimeters are converted to imperial inches, the pipes referred to as smoke room and common long correspond to the 18-inch and the 15-inch pipes respectively mentioned in the Crom estate inventory (see Appendix II). Thus, there appears to have been continuity in the stem-lengths of the English pipe making industry spanning from the eighteenth into the nineteenth and early twentieth century.

⁷⁹ There are examples from archaeological excavations of plots belonging to merchants where unsmoked English pipes with broken bowls with relatively intact stems have been recovered. Excavations of the plot belonging to merchant Sven Svedman in Jönköping, for example, yielded stem fragments and unsmoked bowls most likely manufactured by the London maker Francis Stray around 1730 (Stibéus 2014, p. 180). The aforementioned excavation of a plot in Norrköping belonging to merchants also led to the recovery of unsmoked broken bowls made by George Straw (Carlsson et al. 2014, p. 162). The bowls in these examples were severely chipped or broken or had stems that had broken only a few centimeters from the bowl, indicating that these broken pipes most likely entered the archaeological record because they were too broken to be sold. Judging from their absence in these examples, pipes with intact bowls but relatively long stems were likely sold at a discount.

Table 2. English eighteenth-century stem lengths according to (Ayto 1979, p. 6), Duco (Duco 1979a, p.4), and the estate inventory of Jacob Crom (SE/SSA/0145A/F 1/F 1 A/140 1746). Pipes affected by the 1741 embargo in italic.

**Lengths of English pipes available
in eighteenth century Sweden**

24-inch
<i>18-inch</i>
15-inch
<i>13-inch</i>
11-inch
<i>9-inch</i>

Production quality of English pipes, as previously mentioned, is commonly quantified and estimated based on the lack or presence of attributes related to polishing, bottering and milling. Higgins (2017, p. 19–20) states that for English pipes

the presence/absence of burnishing and the quality of it can be used as a guide to the contemporary value of the pipe. It can also be used as a means for assessing the social status of a pipe or assemblage and in comparing one such group with another [...] [b]urnishing on the stem is usually less well applied than that on the bowl and so is less reliable as an indicator of quality.

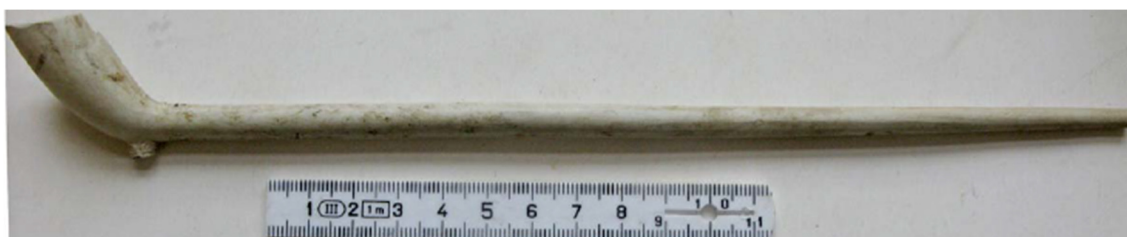


Figure 11. Recovered from Kv. Ansaret in Jönköping, Sweden, this comparatively coarse unsmoked pipe (fnr. 920) of a London type 25, marked with crowned initials F/S in molded relief on the sides of the heel, was likely made by Francis Stray in London c. 1730s. Its unsmoked bowl is broken, which is likely why it was discarded. The intact stem measures 23 centimeters, or 9 inches. The pipe is part of an assemblage of fragments from over 100 unsmoked pipes from the same maker recovered from the site. Photo by Arne Åkerhagen (Åkerhagen 2012c, p. 258).

Although underrepresented in comparison to contemporaneous polished Dutch pipes, polished eighteenth-century English pipes do exist in Swedish archaeological contexts. For example, some of the Manby-family pipes, particularly those with the royal initials FR and three crowns stamped on the front of the bowls, occasionally show signs of polishing (see for example 1856. K105c in Åkerhagen 2012b, p. 273).

Oswald states that “polished pipes occur at all periods and the feature has no dating value” (1975, p. 19). Generally, however, English pipes recovered from the Swedish archaeological record, similarly to Swedish pipes, are of a comparatively coarse and poor quality when compared to contemporaneous Dutch pipes. In England, as opposed to Gouda and pipe makers in other production centers mimicking the production there, polishing, glossing, or burnishing does not appear to have been as closely regulated by guild standards. Most eighteenth-century English pipes recovered in Sweden have not been bottered or polished,⁸⁰ and most show only signs of having mold flashes and seams removed more or less carefully.

⁸⁰ A lack of bottering and milling is believed to be due to the introduction of the gin press which increased the efficiency at pipe factories, see Oswald 1975.

Occasionally, bowls and stems with signs of having been smoothed turn up, and there are also known examples of while stems which may have been smoothed with a shanking tool.

6.2.2 Imported Dutch eighteenth-century pipes

While pipes from Amsterdam are common in early Swedish seventeenth-century contexts, pipes from Gouda and, to a much lesser extent, other production centers, become increasingly common from about 1650 onwards. The stark majority of Dutch pipes dating to the eighteenth century that are recovered from the Swedish archaeological record, unsurprisingly, have been manufactured in Gouda. An example of the significance of exports to Sweden, Ruud Stam, in his study of the Gouda pipe industry, states that the Swedish pipe production began to have a negative impact on exports from the city as early as the 1720s (2019, p. 433). Although trade links between the pipe makers in Gouda and Sweden are not explored in this study, it is likely that pipes were not imported directly to Sweden from Gouda. Rather, Gouda pipes are more likely to have been imported to Sweden via Amsterdam, Rotterdam, and possibly through middlemen in northern German ports.

Pipes from other Dutch production centers also occur in Swedish archaeological deposits. For example, Åkerhagen identified pipes from Alphen aan den Rijn (see for example Åkerhagen 2012c, p. 369) and Schoonhoven (Åkerhagen 2012b, p. 280). It is also likely that pipes from Utrecht and other production centers were imported to Sweden. However, as Dutch and German pipe workshops outside of Gouda regularly copied styles and marks of Gouda pipe makers, including the guild-enforced Gouda coat of arms on heels or spurs, there is a strong possibility that pipes from production centers outside of Gouda may have been misidentified by Åkerhagen and others as Gouda products.



Figure 12. Dutch kromkop bowls from Gouda, and Alphen aan den Rijn, dating to the late 1730s and early 1740s recovered during dredging at Skeppsbron in Stockholm. At the top center is also a likely Swedish bowl with three crowns and FR stamped on its front. Not to scale. Photo by Kenneth Svensson, Arkeologikonsult.

It is possible that pipe types considered archaic and unfashionable in their countries of manufacture may have remained in style in Sweden, possibly for up to a few decades after their original heydays. The elongated double-conical bowl style of the late seventeenth century may have remained in use in Sweden at the beginning of the eighteenth century similarly to older English bowl shapes. Dutch pipe-styles from the first half of the eighteenth century encountered in Sweden include the funnel-shaped type, the oval bowl shape, and the *kromkop*. Bert van der Lingen, however, also presents pipe types from Gouda which were specifically manufactured for export to Germany and the Baltic region (2022). Apart from copies of the style known as Yorkshire bulbous made in the late seventeenth century, Gouda pipe makers targeted the Scandinavian and German markets by manufacturing pipes that mimicked English spurred types of the late seventeenth and early eighteenth centuries. van der Lingen refers to these as “*slurfvormig*” – trunk shaped, and dates them to the last decade of the seventeenth century to the first quarter of the eighteenth century and perhaps slightly later. These pipes are similar to Atkinson’s and Oswald’s London types 19 and 23, and due to the fact that they are spurred, the traditional manner in Gouda of marking pipes on the bottom of their heels was not possible. Makers’ marks on these pipes are instead found on the side of the bowls facing the smoker, also referred to in the Netherlands and in Sweden as the fronts of the bowls. This placement of makers’ marks, in Dutch contexts, regardless of bowl shape, is commonly held to be a defining attribute of pipes intended for export.

It is noteworthy that the *kromkop* style may also have been a Dutch attempt at copying English-style pipes. Many of the *kromkop* bowls illustrated by Duco (1987, p. 48) are similar to contemporaneous pipes of the style now known as Atkinson’s and Oswald’s London type 25. Duco states that many of these were “exported to Great Britain, Ireland and Scandinavia” (ibid. p. 28; see also van der Lingen 2007) in the eighteenth century.⁸¹ The significant differences between the London type 25 made in England and the Dutch *kromkop*-pipes are, apart from the Dutch pipes bearing makers’ marks associated to Dutch makers, that the Dutch bowls are more commonly polished, they also have bottered rims with milling, and often have a wider angle between the bowl-fronts and stems than the English bowls.

6.2.2.1 *Stem lengths and production qualities of Dutch pipes in Swedish eighteenth-century contexts*

As this study was being written, Don Duco of the Amsterdam Pipe Museum is preparing a publication that will contain new information on stem lengths and production qualities of Gouda pipes (personal communication 07-04-2024). The information included below is a synthesis of older publications that were available in 2024. Works consulted are primarily two of Duco’s articles in *Pijpelijntjes* (1979a; 1979b), Duco’s chapters on Dutch pipes in general, and Gouda pipes in particular in two volumes of BAR (Duco 1980, pp. 179–217; Duco 1981), and Hans van der Meulen’s presentation of pipes in *Steden in Scherven*, which also lists types from Alphen aan den Rijn alongside pipes from Gouda (1999, pp. 311–316).

Dutch stem lengths were based on the *Rijnlandse duim*, the Rhenish inch, roughly corresponding to an imperial inch (van der Meulen 1999, p. 312).⁸² Dutch pipes were categorized according to both stem length and production quality in the seventeenth and eighteenth centuries (Duco 1979a, p. 3; van der Meulen 1999, pp. 311–312). In the first half of the seventeenth century, a short pipe was “about 17

⁸¹ “In de achttiende eeuw worden veel kromkoppen naar Groot-Brittannië, Ierland en Scandinavië geëxporteerd” (Duco 1987, p. 28).

⁸² It seems likely that the Rhenish inch, the English imperial inch and the Swedish inch were used interchangeably and as corresponding to one another in eighteenth-century Sweden.

centimeters” and a long pipe had “a stem length of about 23 to 25 centimeters” (Duco 1979a, p. 3). In the second half of the seventeenth century, Gouda pipe makers began making pipes with stems measuring “between 40 and 50 centimeters” (ibid. p. 3). The original long pipe, as it was superseded by an even longer pipe, thus became referred to as “the *half-lange pijp*” or “*halvelange*” (ibid. p. 3).

Duco (1979a; 1979b) states that there was significantly more variation to stem lengths in the eighteenth century than during the seventeenth century, with the “*korte pijpen*” or “*kortjes*” – short pipes, “*halfflange pijpen*” or “*middeleinden*” – half-long or middle pipes, and “*lange pijpen*” – long pipes as general categories. In the latter half of the eighteenth century, pipes known as “*29 duijms pijpen*” – 29-inch pipes, with stems measuring up to 75 centimeters are known. These were made in the higher quality groups *fijne* and *porceleijne*. Similarly, *25 duijms pijpen* – 25-inch pipes with stems of circa 60 centimeters were also made in these two quality groups. The *maatpijpen* – with stems measuring between 45 and 50 centimeters were also only manufactured in *fijne* and *porceleijne* qualities. Pipes known as *collegie pijpen* – collegiate pipes, had stems of about 25 centimeters, *pijpen onder maets* had stem lengths of about 18 centimeters, and *korte pijpen* – short pipes of 12 centimeters. Dutch sources are not specific regarding the availability of the *groffe* or *slegte* pipes, yet it seems as if the longer types were only manufactured in the quality segments *fijne* and *porceleijne*.

Regarding production quality standards of the Gouda pipe makers’ guild, generally there were two categories in the seventeenth century, and three categories in the eighteenth century. Duco explains that in the seventeenth century, there were *groffe* and *fijne* pipes, and that the category *porceleijne* was added in the eighteenth century. *Groffe* pipes, also known in the eighteenth century as *slegte* pipes, are the lowest quality category. These pipes were made “with simple finishing” (Duco 1980, p. 193), which is construed to mean that a minimum of effort was put into making them, this includes the use of inferior clay, less well-fitting molds, and lesser surface treatment than the finer qualities. These pipes were not polished with agate and only occasionally have makers’ marks (ibid. p. 193). Milling, if at all present, that does not extend the full circumference of the rim, is another attribute associated to this quality category, as are pipes “decorated [with relief patterns or marks] on the side of the bowl” (ibid. p. 193), referring to bowls with dots referred to in Sweden as *tudorrosdekor* – Tudor rose decorations, and other bowls with molded relief decorations on their sides (see for example Olsson 2004, p. 184).

Pipes that belong to the *fijne* and *porceleijne* categories were manufactured with significantly more care than the *groffeslegte* pipes. They were polished with agate and marked on the bottom of their heels, or in the case of export types with or without spurs, on the fronts of their bowls. As of 1739, they were also marked with the shield with the coat of arms of the city of Gouda on the side of the heels or spurs in molded relief. On types lacking heels or spurs, the mark is placed near the bottom of the bowls. As of 1740, all pipes made in Gouda were marked with this coat of arms, with pipes of a lesser quality also marked with an S for *slegte* above the shield.

The main distinction between *fijne* and *porceleijne* pipes was that the *porceleijne* pipes were polished with wax to give them a higher shine, their appearance thus imitating porcelain. Duco states that “unfortunately, we cannot any longer- distinguish the difference between the last two types of pipes [*fijne* and *porceleijne*]” (ibid. p. 194), since the wax has deteriorated beyond visibility.⁸³

Hans van der Meulen’s list (1999, p. 312), which compares prices of pipes made in Alphen aan den Rijn and pipes made in Gouda around 1760 includes names for specific types and states that there were:

⁸³ It is possible that thermally assisted hydrolysis and methylation gas chromatography–mass spectrometry (THM–GC/MS) analyses may detect residues of such wax on pipe fragments. I am unaware of any such attempts having hitherto been made.

Keizerkabaals also known as *Hele kabaals* with stem lengths of 29 *duims*, *Koningspijpen* also known as *Halve kabaals* with stems measuring 25 *duims*, *Lange pijpen* with stems measuring 19 *duims*. van der Meulen goes on to list shorter pipes with unspecified stem lengths that are known from Alphen aan den Rijn (in descending order): *Maatschulpen*, *Korte fijne*, *Kleine kromkop*, and *groffe*. Worthy of note is that Gouda pipes are listed as having been consistently more expensive than those manufactured in Alphen aan den Rijn.

Comparing van der Meulen's list with information gathered from Duco, it is possible to conclude that stem lengths of Dutch pipes increased in 4-inch increments. Production quality segments are, unfortunately, less easily interpreted.

Table 2. Names, stem lengths, and quality categories of Dutch pipes circa 1700 - 1750 according to Duco 1979a.

Name of pipe	Approximate stem length in centimeters	Available quality categories according to Duco (1979a)
<i>Korte pijpen</i>	12 centimeters [~4.6 <i>duim</i>] to 25 centimeters [~9.5 <i>duim</i>] ⁸⁴	<i>Groffe, fijne, porceleijne</i> [?]
<i>Ordinaire onder maet</i>	18 centimeters [~7 <i>duim</i>]	<i>Fijne</i> and <i>porceleijne</i> . Unknown if available as <i>groffe</i>
<i>Collegiepijpen</i>	25 centimeters [~9.5 <i>duim</i>]	<i>Fijne</i> and <i>porceleijne</i> . Unknown if available as <i>groffe</i>
<i>Maatpijpen</i>	45 centimeters [~17 <i>duim</i>] to 50 centimeters [~19 <i>duim</i>]	<i>Fijne</i> and <i>porceleijne</i>
25 <i>duijms</i>	60 centimeters [~23 <i>duim</i>]	<i>Fijne</i> and <i>porceleijne</i>
29 <i>duijms</i> or <i>Keizerspijp</i>	75 centimeters [~29 <i>duim</i>]	<i>Fijne</i> and <i>porceleijne</i>

As both polished and unpolished Dutch bowl and stem fragments from the eighteenth century have been recovered from archaeological deposits in Sweden, it is safe to assume that both cheap and more expensive Dutch pipes were imported to Sweden during the first five decades of the eighteenth century. While the longest types of *fijne* and *porceleijne* qualities, those referred to as *maatpijpen*, *koningspijpen* and *keizerspijpen* could be imported until 1747, shorter pipes, regardless of their production quality, were encompassed by the embargo of 1741.

6.2.3 Concluding discussion

Archival evidence in the form of estate inventories from Swedish merchants and import records from the first decades of the eighteenth century show that English pipes were more widely imported to Sweden than Dutch pipes. While English pipes are referred to as English or simply as pipes, Dutch pipes are often referred to as *postlin*, *postelin*, or *porcellin* (and several spelling variations) – porcelain, in the first half of the eighteenth century (see figs. 13 and 14 below).⁸⁵ The fact that Dutch pipe makers manufactured copies of English styles intended for export to the Baltic region may be explained by a penchant for English style pipes among what was seemingly a majority of Swedish smokers.

⁸⁴ Regarding the stem-lengths of the English style pipes made in the Netherlands for export to the Baltic region, Van der Lingen estimates that the stem lengths of these were between 20 and 25 centimeters, which means that they most likely belong in the category of short pipes.

⁸⁵ Pipes made from genuine porcelain were introduced in the early eighteenth century and were expensive luxury items. By comparing price information in inventories, it is possible to conclude that the pipes referred to as *postlin*, *postelin*, *porcellin* etc. are indeed clay tobacco pipes. Fragments of genuine porcelain pipes are exceedingly rare in the archaeological record prior to contexts deposited in the nineteenth and early twentieth centuries.

English pipes, and what could arguably be called Dutch copies of an English style, as we shall see, were also the types on which Swedish pipe factories and workshops modelled a majority of their productions, beginning around 1710. It is notable that Carl Aspegren employed a Dutch pipe maker to work and train staff at his pipe factory. Many pipe makers in the Netherlands must have been aware of English pipe making methods, as evidenced by abovementioned copies of specific English pipe styles as well as the *kromkop*-style being made in the Netherlands. It therefore seems reasonable to assume that Aspegren's first master pipe maker, Jan Joosten Vertin, was capable of manufacturing both Dutch and English styles – possibly even using the contraption known as the gin press introduced in English pipe making around the end of the seventeenth century.

Regarding the names used in Sweden for pipes from England and the Netherlands, distinction is made in archival sources between English pipes and porcelain pipes (see figs. 13 and 14). Only rarely are pipes specified in Swedish written sources as Dutch pipes during the first half of the eighteenth century. The preferred term for both pipes imported from the Netherlands and for domestic pipes mimicking them appears to have been *postlin*, *postelin*, *porcellin*, alluding to the highest quality standard of Gouda pipes – *porceleijne*. This archival evidence suggests that all Dutch pipes, regardless of their original designations in the Netherlands, which were based on production quality and stem length, were referred to as porcelain pipes once they reached Sweden. One explanation for this may be that *fijne* pipes were fraudulently labelled as *porceleijne*. Duco states that unscrupulous pipe merchants would sometimes cover “their baskets of *fijne* pipes with a layer of *porceleijne pijpen* to be sold fraudulently at a high profit” (1980, p. 194). As even coarser quality Dutch pipes of the period are superior to most pipes made in England in terms of surface finish, it is also possible that pipes referred to in the Netherlands as *groffe* or *slegte* were considered comparatively better than English (and Swedish) pipes in terms of the quality of their finish.



Figure 13. Extract from the 1729 estate inventory of merchant Erich Ram differentiating between English and porcelain pipes (SE/SSA/0145A/F 1/F 1 A/98 1729, p. 271).

This distinction between Dutch and English style pipes along with the naming conventions appears to have remained in use after the embargoes of the 1740s. The Forsberg price list from 1745 (see fig. 45) for example contains two types of armorial pipes: one referred to as English and the other as porcelain. The same price list contains a “long porcelain” and an “ordinary porcelain”, where porcelain most likely refers to pipes mimicking the Dutch *kromkop* or oval styles, while “ordinary” refers either to stem length or a lesser surface finish, or both (see Chapter 6).

It is important to bear in mind that it was primarily imported pipes that were employed in smokeways in Sweden during the first four decades of the eighteenth century. Looking to customs records as presented by Puktörne (tab. 1 above), the stark majority of pipes imported before the embargo of 1741 came from England. These pipes, often coarse and shorter than 18 inches, were also the first to be widely replaced by domestically manufactured pipes. Meanwhile, imports of long pipes, i.e. pipes with stems measuring over 18 Swedish inches, continued until 1747. As evident from the same customs records, these pipes primarily came from the Netherlands and were most likely manufactured in Gouda. As the longer pipes made in the Netherlands were only made in the higher quality segments *fijne* and *porceleijne*, the conclusion can only be that that these pipes were generally both longer and

more polished (finer) than contemporaneous English pipes. These were most likely the pipes referred to by the *Handels- och manufakturdeputationen* and the National Board of Trade as the longer and finer pipes, considered so essential for the smokeways of those who were wealthy enough that increases of toll tariffs would have no effect on their purchasing propensities.

Estate Inventory of Johan Zachris Andersin, 1742	
4 1/2 grupp pinnen the Ounpipos	290
2. grupp 2 stupsin Ounpipos Engal the	260
5. grupp 1 stupsin Engal the pinnellvade	250
17 1/2 grupp bondellvade	250
18 grupp pinn paffpipos	260
4 1/2 grupp Engal the	240
1 grupp Ounpipos	20
4 stund pinn Engal the fulns 2 1/2 grupp	20
6 stupsin pinn paffpipos	20

Figure 14. The list of pipes in the estate inventory of Johan Zachris Andersin from 1742 lists Swedish, English, and porcelain pipes (SE/SSA/0145A/F 1/F 1 A/129 1742, p. 749).

As English and Dutch pipes were the pipes already employed in differentiating smokeways prior to the embargoes, they were the pipes that needed to be replaced in order to maintain both recognizability and permanency of an already established order. As evident from comparisons of imported and domestically manufactured pipes, this may be interpreted as a demand for what is known in archaeological terms as geographic and chronological morphological covariance (fig. 15). The three chapters following immediately below focus on the production of the Swedish pipe industry and how its industry standards, largely transferred from England and the Netherlands, came to be applied to achieve a continuous recognizability through material elements of smokeways.



Figure 15. Geographic and chronological morphological covariance. The upper left shows a typical Dutch kromkop bowl, most likely made in Gouda by Anthonie Soufree, and the upper right is Olof Forsberg's Ordinair Porcellin. The lower left shows a typical London type 25 bowl by an unknown maker, and the lower right shows what is likely Olof Forsberg's Bred Klackar Medel. The pipes are not to scale. Photos by Robert Bergman Carter.

7 Industry standards - pipe making in Sweden, c. 1710–1830

Next time a clay pipe fragment turns up on an excavation, consider the skill and tradition which went into its manufacture. No one is a fully-qualified archaeologist until he [sic] has some knowledge of the making of the artefacts he finds.

-Iain C. Walker, 1971, p. 14.

To apply strictly formal classificatory methods to this material and ignore the historical data is like trying to reinvent the incandescent lamp by candlelight while ignoring the light switch at one's elbow.

-James Deetz, 1996 [1977], p. 19.

7.1 Introduction

The chapter above provides a brief presentation of imported pipes available for employment in smokeways of early-eighteenth-century Sweden and attributes related to their price differences. Documentary evidence shows how attributes such as stem length and surface finish were conceived of as linked to consumption patterns associated with different socioeconomic groups and were expressly noted by policymakers of the time. Long and polished pipes were intended for the wealthy classes while shorter and coarser pipes were seen as appropriate for the poorer classes. As Swedish pipe factory owners successfully proved to these policymakers that their factories could supply the demand from the domestic population in terms of quantity, quality, and price, pipes, primarily from the Netherlands and England, were banned from import. The enactment of this embargo means that pipes made in Sweden were (technically) the only pipes available for employment in smokeways after the year 1747.⁸⁶

This means that the selection of pipes available for employment in smokeways post-dating 1741 and in particular 1747 was limited to the output of three pipe factories. It is therefore highly relevant for the understanding of differentiating smokeways to outline an understanding of the specificities of the pipes available in Sweden following the embargoes. To address the question of industry standards of the Swedish clay tobacco pipe industry of the eighteenth century, the following three chapters therefore turn to what Duco would define as both “*algemeene kenmerken*” and “*bedrijfsgebonden*”

⁸⁶ The presence in the Swedish archaeological record of foreign pipes made after the embargo of 1747 indicate that some smuggling must have occurred (see, for example Dutch pipes postdating the embargo recovered in kv. Gesällen, Kalmar, in Åkerhagen 2015). Exceptions to the embargo may also have been made for imports of pipes with the monogram of Gustav III in the 1770s or 1780s.

kenmerken” (1987, p. 138) – general characteristics and industry standards of the Swedish pipe making industry of the eighteenth century.

The focus of this chapter is to present what can be learned from archival sources related to the manufacturing of clay pipes in eighteenth-century Sweden. These sources are intended to assist in interpretations of smokeways from archaeological sources through an increased understanding of factors that would have affected the appearances and attributes of pipes and the prices they fetched when sold to consumers. However, feedback between archaeological sources such as production waste and pipes, and manufacturing descriptions presented below is also considered. These sources act as a foundational comparative background for the analysis of Olof Forsberg’s pipes, presented in chapter 8, as well as to subsequent comparisons of price information from other factories presented in chapter 9 and Appendix II.

7.1.1 Source materials and methods

This chapter is centered around a relatively detailed manufacturing description from the pipe factory in Alingsås, most likely written in the late 1730s or early 1740s following the opening of Jonas Alströmer’s pipe factory (held as part of the archive SE/GLA/10003 1618–1799). This description is also compared to other less elaborate descriptions of pipe making from eighteenth-century Sweden, primarily from Linnaeus’ *Iter Vestrogothicum* (1746) and a factory description by the Alingsås manufactory board (in Stråle 1884, p. 278) which describe the manufacturing of pipes at Alingsås a few years later than the main document. The manufacturing descriptions from the annual report from Olof Forsberg’s and Olof Aspegren’s factory to the National board of trade, most likely from 1741 (SE/RA/420132/3/D/D a/Da 1/1 1741–1747), and Abraham Hülpher’s description of pipe making at Nils Matheus Nordsten’s factory in Karlskrona are also considered. Descriptions of factories, factory work, division of labor, and pipes have also been found in pleas to the *Handels- och Manufakturdeputationen* from the 1740s as well as documents in archives of the *Arboga Hallrätt*. These documents have also been of assistance in determinations of variations in production methods and quality, and the output of different factories.

Tobaks Pipebruket	
Disput af Mästaren	1
Gefallen	12
Gåsar	8
Fliskar	5
Tumbindaren	1
Sagbrukar	5
Och är Tillwärdigt	32
Tobaks Pipor af diverse Nummer	19056
Silkes Bandwärdigt	

Figure 16. Most pipe factories did not report the types of pipes that they made. This is an extract from the annual report to the National Board of Trade from the Alingsås pipe factory from 1775 which states the number of employees and the value of that year’s production. SE/RA/420132/3/D/D a/Da 1/29 1775–1775, p. 395.

The focus of the following two chapters is to compare details from both archaeological and archival records pertaining to the craft of pipe making. Some of these are sources emanating from intentions to describe the workings and productions at specific factories, such as price lists and annual reports. Other source materials could be categorized as what Myrdal (2012) and Ginzburg (1980) would call clues. For such sources to contribute to an understanding of production methods, contextualization and specific knowledge about the craft of pipe making is required. I will attempt to present specific details of the craft throughout the following sections, yet at the same time, I wish to refer readers to other relevant literature mentioned above. An understanding of the nomenclature of different parts of pipes is also a requirement. I wish to refer any reader who is unfamiliar with pipe nomenclature to Appendix VI.

The most detailed manufacturing description from the pipe factory in Alingsås outlines the steps in the manufacturing process, from the processing of the clay to the packing of finished pipes into barrels. The account presents differences between the manufacturing of the long expensive pipes and the short cheap pipes; differences which in many cases are detectable as attributes of both bowls and stems on pipes from Alingsås and other factories. In presenting nomenclature related to the craft, the Alingsås account provides insight into where influences on the manufacturing of pipes came from through loanwords for tools and names of some of the steps of the process known from the Netherlands and England. In presenting these steps and tools, the document also enables and reinforces comparative studies of other less detailed manufacturing and factory descriptions and records from eighteenth-century Sweden, to workers' titles in census records and household examination records, as well as surviving estate inventories of other eighteenth century pipe makers that list tools specific for the manufacturing of either relatively inexpensive short pipes or expensive long pipes.

By comparing the Alingsås manufacturing description to these, in terms of the craft of pipe making, less detailed descriptions and records from other factories and workshops, as well as workers' titles from census records and household examination records and estate inventories from pipe manufacturers it is my hope to make salient similarities and differences between workshops across Sweden in order to better understand industry standards and the visible attributes that would have distinguished expensive higher quality pipes from the less expensive lower quality pipes in their contemporaneity. The traces of factory workers' applications of many of these steps and tools, as much as the lack of them, have left traces that remain visible on pipe fragments recovered from the archaeological record and are therefore held as highly relevant to interpretations of differentiating smokeways through the material elements they employed.

Comparisons are also made between these descriptions and tools mentioned in estate inventories of pipe manufacturers and job titles mentioned in census records from pipe factories and workshops. As specific tools were required for specific steps in the manufacturing processes, especially for pipes considered to be of a higher quality, the mentioning of such tools in estate inventories of pipe manufacturers are considered as evidence of the production of higher quality pipes taking place.

Similarly, workers with job titles such as *glarska* – polishtress (or literally glasstress or glosstress) or *polererska* – polishtress, encountered in census records are interpreted as indicative of production of pipes of a higher quality. Some archival records list people as having the job title *tråmare* or *tråmerska* – trimmer or trimstress. It is not known if this title refers merely to the process of trimming pipes from mold flashes or if it also includes smoothing and polishing of pipes.

The Alingsås manufacturing account also warrants comparative studies of factory descriptions and production traditions of the countries from which pipes were imported to Sweden prior to the 1740s. The two embargoes of the 1740s cut supplies of pipes from both England and the Netherlands, leaving smokers in Sweden little choice but to turn to domestically made pipes to maintain and uphold previously established smokeways that depended as much on long Dutch *porceleijne* pipes or English long-stemmed pipes as on coarse pipes from Alphen, Gouda, London or Hull for example. This motivates interpretations of the discussions concerning domestic pipe manufacturing held in the *Handels- och manufakturdeputationen* and the Riksdags of the Estates in the period between 1734 and 1747 as emanating out of a transitional period. This transitional period brought with it a substitution of the material elements of smokeways, where domestic pipe makers were expected to supply the market with not only sufficient amounts of pipes, but also with pipes of corresponding lengths and qualities as those previously obtainable through imports. Protocols from discussions on the topic of an embargo against foreign pipes held in the *Handels- och manufakturdeputationen* from the Riksdags of the Estates of the 1740s show that while supplies of domestic short pipes intended for the commoners was abundant, there were concerns that Swedish makers did not have the required skilled staff to produce the “longer and finer pipes”.⁸⁷

7.2 The introduction and diffusion of the knowledge of pipe making

As previously mentioned, with the exceptions of a brief period during the late 1630s in Gothenburg and possibly during the 1650s in Stockholm (see Appendix I), pipe making was an unknown craft in Sweden. Even if minor production may have occurred in Sweden during the seventeenth century, the craft of pipe making was unknown in Sweden at the beginning of the eighteenth century, as evidenced by the charters issued to Carl Aspegren. Aspegren’s charters included the right to bring in a foreign master, workers, tools, and clay to his pipe factory (SE/SSA/0099/E 3/1 1620–1753). According to Bert van der Lingen (2007, pp. 1920–1927), an Amsterdam merchant named Anthonij Waterman was hired by Aspegren and his business partner [Johan Zachris] Andersin to find a pipe maker to work at their pipe factory. Waterman signed a one-year contract with the pipe maker Jan Joosten Vertin that specified that Vertin was “to make tobacco pipes, which craft Jan Joosten Vertin declared to understand well and in which service he promises to perform loyal” (ibid). According to van der Lingen, Vertin was not a proper master pipe maker as he was not registered in the pipe makers’ guild of Gouda.

Very little is known about Vertin’s time in Sweden. The census records from 1711 list an unnamed pipe maker who paid a journeyman’s fee (SE/SSA/0031/06/G 1 BA/G 1 BA:10/13, 1711, p. 306). Vertin, who likely lived and worked in Kv. Ormen on Södermalm, is not mentioned by name in any

⁸⁷ Beginning in the late 1730s, the Riksdag of the Estates raised concerns about the ongoing at factories funded by governmental institutions such as *Landshjälpen*. Inspection commissions and agents were dispatched to inspect and submit reports on the profitability and quality of productions at some of these factories. The Alingsås Manufakturverk was visited by several such inspections from the 1730s onwards, extracts of which several are referenced below (Hamrén 1742; Linnaeus 1746; Friesendorf 1758).

Swedish archival records I have yet encountered.⁸⁸ Census records and household examination records from the 1710s and 1720s are also unclear as to the staff working at Aspegren's factory. As Aspegren's prolonged charters from 1729 state that his pipe factory had remained operational during the Great Northern War, Vertin appears to have trained Swedish workers during his residency in Stockholm. Carl Aspegren's oldest son, Olof Aspegren, is referred to as the master pipe maker at the factory in Carl Aspegren's estate inventory. As mentioned above, Carl's son Olof Aspegren had been trained as a pipe maker in "Holland and other places" (SE/RA/6122/8/R 2766, 1740–1741: 17D), suggesting that he had knowledge of both contemporaneous Dutch and English manufacturing techniques.⁸⁹

As no pipes have yet been attributed to Carl Aspegren's factory with certainty, it is not possible to determine the impact of Vertin's background in the Dutch manufacturing tradition on Swedish pipes. The prolongation of Carl Aspegren's letter of charter contains price information that can be linked to variations in stem length, while his estate and bankruptcy inventories (SE/SSA/0138/F 6 b/10 1736) contain names and prices of pipes suggesting that both Dutch and English-style pipes were manufactured at his factory during the 1720s and 1730s. This varied product catalog may just as well be a result of Carl's son Olof Aspegren's role as master pipe maker, having learned different manufacturing techniques during his time as a journeyman, as being the result of Vertin's seemingly brief tenure in the 1710s.

Before opening a second pipe factory in Stockholm in 1742, Olof Aspegren remained for three years as the master pipe maker at the factory after it had been purchased by Olof Forsberg. It is not currently known if there was a master pipe maker who replaced Aspegren at the Forsberg factory at that time, as the annual reports to the National Board of Trade do not specify the titles of its staff during the late 1740s. Throughout the eighteenth century, census records state that several factories employed journeymen in lieu of masters proper, occasionally referred to as *verkgesäller* – factory journeymen rather than *mästare* – masters, or *verkmästare* – factory masters.⁹⁰ It is therefore possible that a Peter Trosselius, who later became the master pipe maker at the Norrköping factory *Stiernan*, was Aspegren's temporary successor at the Forsberg factory.

According to van der Lingen, Forsberg hired a new Dutch master pipe maker from Alphen aan den Rijn named Jacob van Kleeff in 1749. van Kleeff's contract was for four years and stated that he was "to learn [teach] and educate the labourers everything concerning pipe making, to supervise the burning or baking of the pipes, to make the required models for the pipe moulds, and to do his uttermost best what is necessary in the pipe factory" (van der Lingen 2007). This strongly indicates that the staff, most likely the journeymen, present at the Forsberg factory at the time were trained in all the steps of pipe making, from mold making to firing kilns.

⁸⁸ The location of Aspegren's pipe factory has not been determined. Bonds (1980) claims that it was located on Kungsholmen, yet I have found no archival evidence of this. Census records mention pipe factory workers residing on Södermalm in the 1730s. It is possible that Aspegren moved the factory at least once between ca. 1710 and 1735. In his estate inventory, the pipe factory is listed as situated on Södermalm by Skinnarviken, possibly the same location in which his son Olof Aspegren and his business partner Olof Forsberg's factory was located.

⁸⁹ Where Aspegren worked as a journeyman is not known, though it was not likely to have been Gouda as the guild codes forbade outsiders from learning the craft there. Other Dutch cities with pipe makers are therefore more likely to have accepted him as a journeyman. It is also possible that by other places, Forsberg meant any German city with pipe workshops. It is also possible that Aspegren had travelled to England as a journeyman.

⁹⁰ A likely reason for this is that qualified journeymen who had not passed a masters' examination were more plentiful and less expensive to hire.

died before beginning production.⁹¹ The first acting master pipe maker known from the household examination records was a journeyman named only “Wiegr”, who is listed as absent (SE/GLA/13005/A I/1. 1732–1745 [1738]). Nothing is currently known about where he came from, yet the surname is most likely German. By 1742 the master pipe maker is named Johan Christian Wiegrebe. It is highly likely that Wiegr and Wiegrebe are the same person and that the scribe had difficulties spelling his name and therefore abbreviated it. Wiegrebe is not present in the 1745 household examination records. Rather, the names of the people listed as working at the Dutch workshop in 1745 are generally Swedish sounding, which indicates that Wiegrebe’s contract may have been filled and/or that domestic workers had been sufficiently trained.

The previously mentioned account of the factory from 1742 by Olof Hamrén mentions a “German” and an English workshop, referring to what is known as the Dutch and the English workshops in census and household examination records. Based on archival records, the English workshop is first mentioned by Alströmer himself in 1741 (SE/RA/6122/8/R 2766, 1740–1741). Census and household examination records list the Englishman S. Bortong (SE/GLA/13005/A I/1 1732–1745) or Solomon Bourton (SE/RA/55203/55203.15/75 1744, p. 182) as the master pipe maker at the English workshop.⁹² This Burtong, also spelled Burton, is most likely the same person as the Solomon Burton who was apprenticed in London under the pipe maker John Wood, here he was an apprentice between the years 1729 and 1737 (Hammond n.d., n.p.).⁹³ The last year in which Burton is mentioned in Swedish archival records is the household examination records from the factory of 1745 (SE/GLA/13005/A I/1 1732–1745).

It seems likely that it was Burton who introduced the gin press and the English manufacturing techniques to Alingsås. The stark majority of pipes tied to Alströmer’s factory have been manufactured using this method and have been modelled after contemporaneous English pipes, primarily London type 25, without milling, polishing, or bottering.⁹⁴ The factory, while likely maintaining more than one kiln, appears to have merged the two workshops and focused on making English style pipes sometime during the late 1740s as archival references to two separate workshops end after the year 1745.

Similarly to the Alingsås factory, Daniel Almqvist’s and Anders Örnbeck’s factories in Stockholm, and Johan Hök’s factory in Varberg hired foreign masters or journeymen to start production and teach the craft of pipe making to Swedish workers. The master at Almqvist’s factory, Carl Friedrich Düring apparently introduced both Dutch and English manufacturing techniques as evidenced by

⁹¹ The first appearance of pipe factory staff in the household examination records is from 1738 (SE/GLA/13005/A I/1 1732–1745, p. 15), which is also confirmed by production volume accounts held at the National Archives in Gothenburg (SE/GLA/10003/-/1 1618–1799).

⁹² This Solomon Burton is almost certainly the same Solomon also known as Samuel Burton (the Francophile spelling “Boudan” is also known according to Bardenfleth 2002, p. 114) who along with Peter Appleby received exclusive charters for pipe making in Copenhagen and began manufacturing pipes there in 1747 (Bardenfleth 2002, pp. 114–115). In Sweden, his wife is listed as Rachel Bourton, while in Denmark, she is recorded as Judith Rachel Burton (Møller 1985, p. 27). If this is the case, a surviving price list from Denmark shows that Samuel Burton’s Copenhagen factory manufactured seven types of pipes ranging from half an ell to one and a quarter ell (ibid. p. 28). This corresponds well to stem lengths of Alingsås pipes described in later archival sources.

⁹³ Peter Hammond has compiled an excel sheet of Tobacco Pipe Maker Apprentices of Greater London in which Solomon Burton is listed in the Freedom Admissions (see *Tobacco Pipe Maker Apprentices of Greater London* available via the Society for Clay Pipe Research).

⁹⁴ Examples of polished London type 25 style pipes made in Alingsås are known, these likely represent the more expensive types in the factory production referred to as Nos. 5, 6, or 7 in the annual reports.

Dutch-style oval bowls with relief decorations, milling, and bottered rims with a copy of the Gouda guild mark as a side mark on the heels, as well as less elaborate English style pipes with stamped marks having previously been tied to the factory. These traditions were carried on by Mathias Nyberg and Carl Wettervik, who worked as a journeyman and apprentice respectively under Düring before Düring's move to Arboga in the latter half of the 1750s.

The first recorded acting master pipe maker, the factory journeyman, at Örnbeck's factory also had a foreign name, Paul Richter (SE/SSA/0031/06/G 1 BA/G 1 BA:20/9 1755, fol. 456). According to the census records, Richter was succeeded by a master pipe maker named Joachim Ophoff (SE/SSA/0031/06/G 1 BA/G 1 BA:21/10 1760, fol. 603), another name that is either Dutch or German. Joachim Ophoff, in turn, was most likely succeeded by Johan Hindrich Riesell (several spellings exist) who had been trained as an apprentice under the first master pipe maker at the Varberg pipe factory named Johan Christian Bockler (SE/RA/55203/55203.13/60 1757, p. 1326). Riesel left Varberg for Stockholm on August 19, 1760 (SE/LLA/13443/C I/1 1690–1734 [sic], fol. 338), and his daughter by his wife Johanna was baptized on November 14th the same year in the church Maria Magdalena in Stockholm (SE/SSA/0012/C I a/8 1756–1777). It is therefore possible that Riesel became the acting master pipe maker at what was to become Carl Abraham Schrickel's pipe factory at Grindsbruk in Stockholm at that point in time.

Paul Richter appears to have moved from Stockholm for employment as a master pipe maker at Nils Matheus Nordsten's newly opened factory in Karlskrona, possibly as early as 1756 or 1757. Richter and his wife are listed as "*borta*" – missing in the household examination records from the late 1750s (SE/SSA/0009/A I/7 1754–1760, p. 820). In the records listing births and baptisms from the German congregation of Karlskrona from 1757, Paul Richter is listed as "*mäster*" – master and the father of a girl named Regina (SE/LLA/13202/C I/2 1725–1797, p. 203). This indicates that Richter was likely the first master pipe maker at both Örnbeck's pipe factory at Grindsbruk in Stockholm and at Nordsten's pipe factory in Karlskrona. It is currently not known if Richter later shared this position with Hans Georg Gren, who is referred to as the master pipe maker at the Karlskrona factory in 1764 (SE/LLA/10127/A I/21 1764), if Richter was succeeded by him. One possibility is that the Karlskrona factory aimed to emulate the Alingsås factory by having one Dutch and one English workshop.

Johan Christian Bockler, as mentioned above, was succeeded as the master pipe maker at the Varberg pipe factory by Johan Hindrich Riesel. Riesel, in turn, was succeeded by Anders Norin (also spelled Norén), who had previously worked as an apprentice at the Aspegren factory in Stockholm (see for example SE/RA/420132/3/D/D a/Da 1/16 1760–1761, n.p. [fig. 18 below] and SE/SSA/0031/06/G 1 BA/G 1 BA:20/5 1755, fol. 22v [fig. 19 below]).

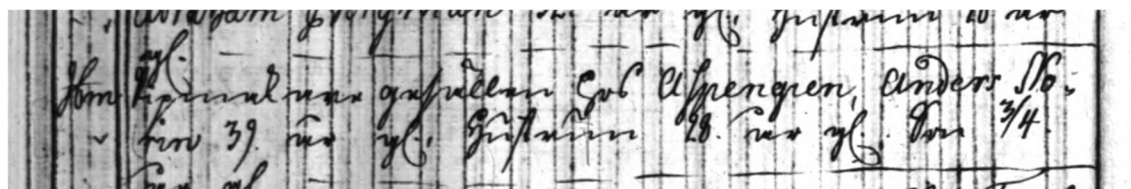


Figure 18. Anders Norin is listed as a journeyman at the Aspegren factory on Kungsholmen in Stockholm in 1755. Norin became the master pipe maker at the Varberg factory in 1760. Detail from the census records of 1755 (SE/SSA/0031/06/G 1 BA/G 1 BA:20/5 1755, fol. 22v).

similarly to Peter Wallmo, most likely familiar with methods used by van Kleeff during his residency at the Forsberg factory.

The pipe factory *Kronan*, also in Norrköping, employed a master named Hans Jungengren (SE/VALA/01979/E III a/15 1759, p. 1010), which may be the same Hans Georg Gren from Alingsås who later became the master pipe maker in Karlskrona.⁹⁵ A Johan Gren, who may be the same Johan Gren who was an apprentice at the Alingsås factory in 1745 (SE/GLA/13005/A I/1 1732–1745) is listed as a journeyman at the *Kronan* factory in 1760 (SE/VALA/01979/E III a/16 1760, p. 948).

Although journeymen with German-sounding names continue to appear at a few Stockholm factories, there are hardly any master pipe makers with foreign-sounding names in archival records relating to pipe factories around 1760. This is likely the result of a combination of Swedish workers being sufficiently familiar with the craft and the expiration of the contracts of foreign master pipe makers. Some of the German pipe makers who remained in Sweden, such as Carl Friederich Düring and Johan Hindrich Riesel, went on to set up factories or workshops of their own (see Appendix I).

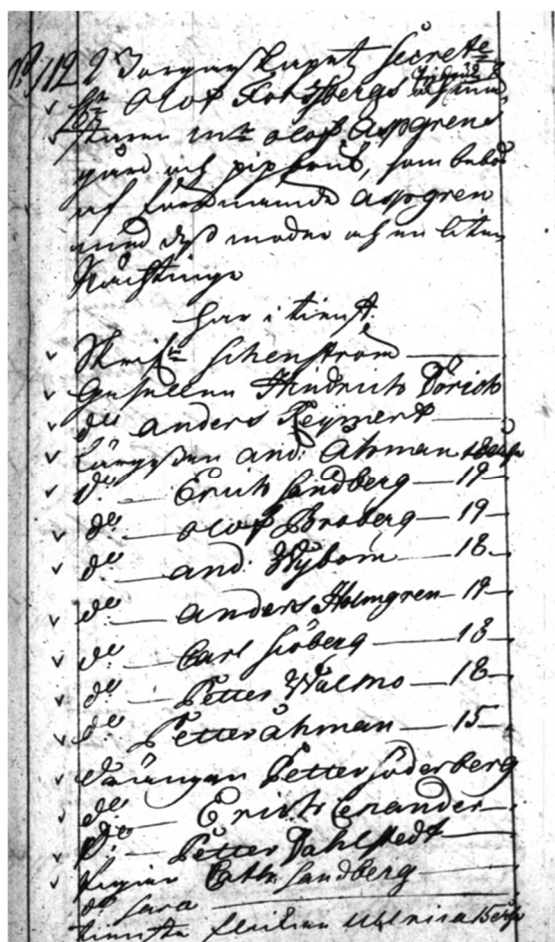


Figure 20. Some of the staff at Olof Forsberg's and Olof Aspegren's pipe factory in Stockholm from the census records of 1740 (SE/SSA/0031/06/G 1 BA/G 1 BA:17/6 1740, p. 356). Aspegren is listed as the master pipe maker working with two journeymen and eight apprentices. One of the apprentices, Petter Walmo (with spelling variations), became the master pipe maker at the pipe factory in Falun in 1757 or 1758.

⁹⁵ It seems likely that the scribe misunderstood Hans Georg Gren's name as Hans Jungengren. It is noteworthy that there are no other archival records indicating Hans Georg Gren's whereabouts in the early 1760s.

The master at the Falun factory, Peter/Petter Wallmo/Walmo, was an apprentice at the Forsberg factory in Stockholm since at least the year 1740 (fig. 20 above). The names of the pipes manufactured at the Falun factory appear to reflect the influence of Wallmo's time at the Forsberg factory; types called crown pipes, *porcellin*, *ordinarie*, medium, No. 3 and No. 2 are known from archival records relating to both factories (for Falun, see for example SE/RA/420132/3/D/D a/Da 1/13 1758–1758, n.p.; for Forsberg, see price lists below [figs. 45, 46, and 47]). As Wallmo worked at the Forsberg factory under both Olof Aspegren and the Dutch master Jacob van Kleeff (see van der Lingen 2007) it is highly likely that he was familiar with both Dutch and English manufacturing techniques.

Similarly, workers from the Alingsås factory appear in the census records and household examination records at the Varberg factory (fig. 19 above), court records mentioning the Karlskrona factory, and census and household examination records from the Aspegren factory in Stockholm (fig. 20 and Stibéus & Bergman Carter 2025, p. 16). Lars Ask (also spelled Asch and Asken), who started his career in pipe making as an apprentice in Alingsås, was employed as a journeyman in Varberg and in Karlskrona and subsequently moved to Stockholm where he became the master pipe maker at the Aspegren/Wallström factory (ibid.). Ask later moved back to Alingsås where he became the master pipe maker at the pipe factory. Ask held this position until his death.

Lijst Knäppl. 1738						
ad. Gussellau Wiegert	e	12	12	12	12	16 m.
Curado. Ad. Tengbeck	e	12	12	12	12	28 m.
item Ahmnd.	e	12	12	12	12	39 m.
Peter Wapetrom	o	12	12	12	12	54 m.
Gust. Ahmnd.	e	12	12	12	12	45 m.
Ad. Ahmnd.	e	12	12	12	12	54 m.
Gust. Edberg.	e	12	12	12	12	82 m.
Gust. Gertrud.	o	12	12	12	12	54 o.
Gust. Gussellau	n	12	12	12	12	54 o.
Gust. Gussellau	n	12	12	12	12	8.
Gust. Gussellau	e	12	12	12	12	16.
Gust. Gussellau	e	12	12	12	12	14.
Gust. Gussellau	e	12	12	12	12	12.
Gust. Gussellau	e	12	12	12	12	12.
Gust. Gussellau	e	12	12	12	12	12.

Figure 21. The household examination records from the Alingsås pipe factory from 1738 shows that the factory did not have a master proper during its first year (SE/GLA/13005/A I/1 1732–1745). The journeyman known only as “Wiegert” appears to have been in charge of the factory.

<i>Pijabr. N. G. Gren</i>	x	x	x	x	x	x	x	
<i>G. J. Gren</i>	x	x	x	x	x	x	x	
<i>G. J. Gren</i>	1	1	1	-	-	-	-	
<i>Hollensjö Gren</i>								
<i>Jon Norman</i>	x	x	x	x	x	x	1	24
<i>Jon Norring</i>	x	x	x	x	x	x	x	30
<i>L. Karin</i>	x	x	x	1	1	1	1	22
<i>Johan Norring</i>	x	1	1	1	1	1	1	27
<i>L. Margareta</i>	alt	-	-	-	-	-	-	30
<i>H. V. Gren</i>	uzt	borgat	-	-	-	-	-	11
<i>Lars B. B.</i>	x	x	1	1	1	1	1	24
<i>L. B. B.</i>	x	x	x	1	1	1	-	24
<i>Anders B.</i>	x	x	x	x	x	x	1	24
<i>Jacob Klein</i>	1	1	1	-	-	-	-	19
<i>Lars Marbeck</i>	x	x	1	1	1	1	-	19
<i>N. S. S.</i>	x	x	x	x	1	1	1	17
<i>Carl P.</i>	1	1	1	1	1	-	-	17
<i>G. J. Gren</i>	1	1	1	-	-	-	-	15
<i>O. J. G.</i>	x	1	1	1	1	1	-	21
<i>And. B.</i>	uzt	borgat	-	-	-	-	-	11
<i>G. J. Gren</i>	alt	-	-	-	-	-	-	35
<i>Th. S.</i>	x	1	1	1	1	1	1	40
<i>And. L.</i>	x	x	x	x	1	1	1	17
<i>And. H.</i>	1	x	x	1	1	1	-	16
<i>Johan G.</i>	borgat	-	-	-	-	-	-	14
<i>Hans G.</i>	borgat	-	-	-	-	-	-	9
<i>Catharina M.</i>	x	x	1	1	1	x	1	21

Figure 22. The household examination records from the Dutch workshop at the Alingsås factory from 1745 does not contain any foreign names. The German master pipe maker appears to have left. Worthy of note is also that Hans Georg Gren went on to become the master pipe maker at Nils Matteus Nordsten's factory in Karlskrona, while Johan Gren became the master pipe maker at the Norrköping factory Kronan.

7.3 Labor organization

There was never a guild for clay pipe making in Sweden. During the eighteenth century, chartered pipe factory owners and their staff were instead organized under the *Hall- och manufaktur rätt* or *Hallrätter*, or magistrates, which in turn were organized under *Kommerskollegium*, the National Board of Trade, similarly to other manufactories and factories that were not regulated by guild codes. Each town or city with a factory of any sort was expected to have a *Hallrätt*. The *Hallrätt* was its own jurisdiction that regulated both the quality of the goods produced and all workers at factories and workshops under its organization. The quality of the produced goods was supposed to be controlled at the local *Hallrätt* via a system known as *Hallstämpling*, a stamp or mark of approval applied to approved goods at the local *Hallrätt*, where a quarter percent of the value of the goods was to be paid

as a stamp fee. Exceptions from this stamping, however, were made for all goods that for any reason could not be stamped, yet the stamp fee of a quarter percent was still to be paid based on the retail value of the goods (*Kongl Maj:ts Utfärdade Hall-Ordning* [etc.] 1739, 8 Art. 5§; 1 Art. 9§).^{96 97}

As there is no currently known evidence from either the archaeological or archival records to indicate this, individual pipes were most likely not inspected at a *Hallrätt* or stamped on a regular basis. It is possible that barrels and crates containing pipes in some instances were stamped, branded, labelled or provided with a seal. There are strong indications that pipes were considered among those goods that could not be stamped. For example, Olof Forsberg's pipes were likely not brought to the *Hall- och manufaktur rätt* of Stockholm as pipes were sold both via wholesalers and individually or in small amounts directly from a factory booth, the so-called *minutbod*, a system which many other factories also appear to have employed. The fact that representatives from the *Handels- och manufakturdeputationen* and the National Board of Trade visited the Forsberg factory, commenting in a protocol from the 1742–1743 Riksdag of the Estates that that the pipes made there were of an “appropriate quality” (SE/RA/6122/9/R 2836 1742–1743, pp. 870–872) indicates that pipes were not subject to the immediate scrutiny of the *Hall- och manufaktur rätt* in Stockholm. Had the pipes been inspected by the Stockholm *Hall- och manufaktur rätt*, an examination from *Handels- och manufakturdeputationen* and the National Board of Trade would not have been necessary as documents stating the approved quality would have sufficed as evidence of the quality of the goods produced.⁹⁸

The tradition of selling pipes from factories appears to have been established by Carl Aspegren. The prolongation of his charters from 1729 state that pipes were sold at a discount at his factory (SE/SSA/0099/E 3/1 1620–1753, p. 25). A 1787 newspaper advertisement from the Alingsås factory (*Götheborgs tidningar* 04-19-1787, p. 4) states that pipes purchased directly from the factory were sold at a discount compared to prices of those sold via a wholesaler. It therefore seems that in the case of clay pipes, the quarter percent stamp fee was based on the annual reports to the *Hallrätt* rather than on pipes being brought to a local *Hallrätt* for quality controls and stamping. This would also explain why many pipe factories opted to merely report their annual production value rather than production volumes of individual types.

All factories and corporations organized under the *Hallrätt* or *Hall- och manufaktur rätt* were regulated by a code known as the *Hallordning*. The eighteenth century saw three iterations of the *Hallordning*,

⁹⁶ “I Stämpel penningar betales, innen Godset föres af Hallen, en fjerdedels proCent af warans rätta salu-wärde. Men the Fabriquer, hwars tillwärcningar icke låta sig stämpla, betala sin andel i stämpel-afgiften, efter wärdet af waran, som förbemäلت är” (*Kongl Maj:ts Utfärdade Hall-Ordning* [etc.] 1739, 8 Art. 5§).

⁹⁷ “Hall-Rätten bör ej allenast hafwa noga kundskap och förteckning på alla Manufacturier, Fabriquer och wärck i staden, samt theras tilstånd och tilwärcningz Sorter; utan ock öfwer alla theras idkare, Betiente, handtwärkare och arbetsfolck. Jämwäl bör wid Rätten noga uptecknas alla the Sorter och waror som ärligen til Qvantitet och Qvalitet wid thesse inrättningar och Handtwärken Fabriceras; hwilket wid stämplingen beqwämligast låter sig göra. Doch blifwa the wärck och Manufacturister, hwars tilwärcningar icke låta sig stämpla, icke thesmindre wid förelagt wite skyldige att Rätten hwart haft år upgifwa sin tillwärckning, så at wid årets slut för hwarje wärck ett Generalt förslag af Hall-Rätten giöres och till Wärt Commerce Collegium insändes, wid wite om thet af wederbörande eftersätjes” (*Kongl Maj:ts Utfärdade Hall-Ordning* [etc.] 1739, 1 Art. 9§).

⁹⁸ Throughout what is known as the Age of Liberty, *Manufakturkontoret*, *Landshjälpen*, *Manufakturfonden* and the National Board of Trade and other government agencies appear to have carried out similar inspections at factories across Sweden via agents. The archive of *Manufakturkontoret* for example contains the travel journals of Olof Hamrén and Friederich Friesendorf, who both visited the Alingsås factory in 1742 and 1758 respectively (SE/RA/4113/1/D/D 5/176 1742–1760). The factory accounts in travel journals of Carl Linnaeus and Abraham Hülphers should likely also be considered as reports to government agencies.

the first from 1722, the second from 1739, and the third from 1770. The primary focus of the 1722 *Hallordning* was the textile industry yet applied for all factories and workshops not organized under the *skråordningar*, the guild regulations. The *Hallordning*, similarly to guild regulations, regulated the schooling periods of apprentices, journeymen, and masters. In regard to the pipe making industry in Sweden, very little is known about the requirements of advancement from apprentice to journeyman and from journeyman to master beyond what is stipulated in the *Hallordning*. The *Hallordning* of 1739 stipulated the basic conditions of advancement from apprentice to journeyman and from journeyman to master, yet as mentioned above, encompassed all factories and workshops and as such does not go into detail of specific crafts.⁹⁹

During the eighteenth century, titles such as *mästare*, master, *gesäll*, journeyman, *lärling* or *lärodräng*, apprentice, *lärgosse*, boy apprentice, *arbetskarl*, laborer, *dagkarlar*, male day laborers, *piga*, maid, *flicka*, girl, *gosse*, boy regularly appear in documentary records pertaining to workforces at pipe factories, showing a hierarchical labor division resembling those employed by artisanal guilds in Sweden at the time. Olof Forsberg for example, as part of his plea for an embargo on foreign pipes, presented daily production volumes of specific pipes that states that the manufacture of long pipes was reserved for journeymen, while both journeymen and apprentices were expected to make medium and short pipes (see Appendix V).

Other examples of titles associated to the craft of pipe making in the archival records are *rullare/rullerska*, roller/rollstress, *trämerska*, trimstress, *kastare*, molder, and *lertrampare*, clay trampler. These titles reflect the primary tasks of specific employees at factories and workshops that were most likely also coupled to salary levels. A salary statement sent from the Stockholm *Hall- och manufakturrätt* which has “heard the pipe factory masters” in Stockholm, sent to the *Hall- och manufakturrätt* in Arboga, explicitly states wage differences between *kastare*, casters/molders, *trämare*, trimmers, and “*daglönare*”, day laborers (fig. 23 below). Similarly to what is known from the pipe factory in Alingsås, wages were paid by the gross and varied depending on the lengths of the pipes being made, as well as the task being performed. Not only does this document clearly show differences in salaries for different stages of the production of pipes, but the document also corroborates the labor division mentioned in archival records relating to other pipe factories such as Alingsås and Stockholm (see Appendix V and below).

⁹⁹ The only source explicitly mentioning advancement from journeyman to master pipe maker encountered during this study is a protocol notice from the Stockholm *Hall- och manufakturrätt* from 1769 (SE/SSA/0099/A 1/10 1769). This particular entry states that Carl Wettervik had passed his master’s examination and was eligible for individual charters. The specific requirements for advancement therefore remain unknown.

Detta är en förteckning över lönen för de som
 i Stockholm och skänkt arbetat i denna
 fabriks verkstad, och som nu är på 25.
 till 27. för en, och 24. i Rasken lön 27. och
 24. lön 27. och 24. lön 27. och 24.
 i Rasken lön 24. och 24. lön 24.
 9. och 24. i Rasken lön 20. och 24.
 lön 6. No. 2. Rasken lön 18. och 24.
 lön 6. Rasken. Och som, som
 vid denna tiden utbetalades, att
 det skall vara ändigt, utan, i Rasken
 arbetar, som skänkt lön 24. och 24.
 som de skulle ha för en, som
 skulle ha 24. lön 24. och 24.
 och 24. och 24. och 24.
 som arbetar lön 24. och 24.

Figure 23. An extract of a letter specifying wages of pipe factory workers in Stockholm in 1766. Workers were paid by the gross, and wages varied depending on the length and quality of the pipes they made. Molding 25-inch pipes paid 2 dalers copper per gross, trimming them paid 27 öre per gross. Molding medium pipes paid 24 öre, trimming them paid 9 öre. Molding the shorter No. 3 paid 20 öre per gross, trimming paid 6 öre. Molding the shortest No. 2, paid 18 öre per gross, trimming them paid 6 öre (SE/ULA/10018/3 1750–1821, n.p.). See full transcription in Appendix V. Photo by Robert Bergman Carter.



Figure 24. The staff at Lorentz Lindahl's pipe factory Stiernan in the census records of 1760. Apart from one master, two journeymen, and seven apprentices, there is also a clay trampler, four trimstresses, and a polishstress. (SE/VALA/01979/E III a/16 1760, p. 949 [detail])

At smaller workshops with only one master or factory journeyman or a few employees, all steps in the process were likely carried out as necessary by the workers available. In a report to the Stockholm *Hall- och manufakturriätt* from 1773, Peter Sundell for example states that he was working alone (fig. 25 below).

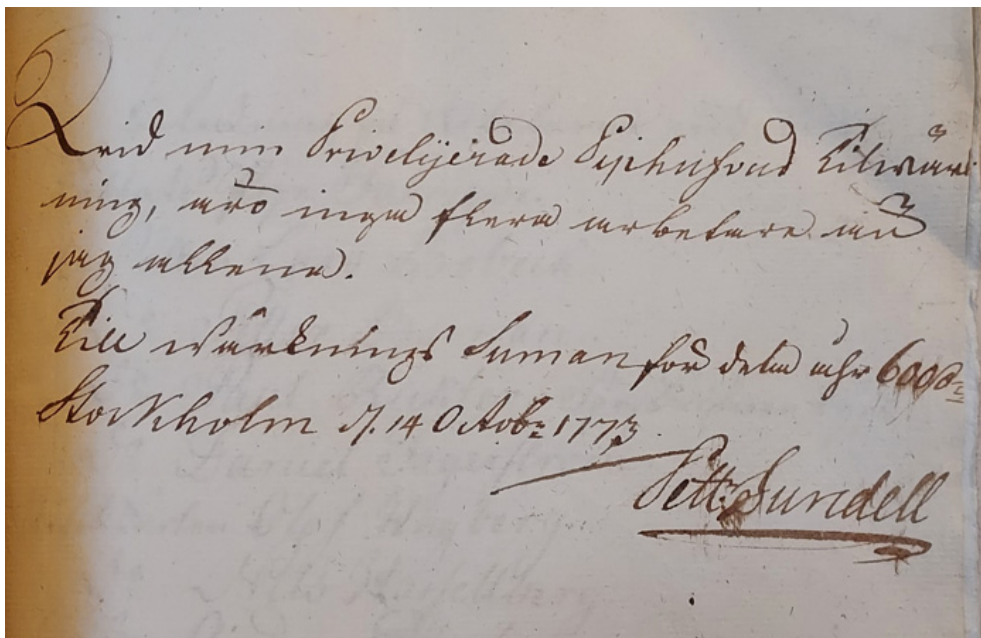


Figure 25. Petter Sundell's report to the Stockholm Hall- och manufakturträtt from 1773 where he states that he made pipe bowls and was working alone (SE/SSA/0099/E 4/1 1773, n.p.).

In lieu of a master proper, some factories and workshops instead used the title *verkgesäll*, which roughly translates to factory journeyman, for the foreman. Occasionally, the titles *verkgesäll* and *mästare* – master, appear to have been used interchangeably, which is clearly the case at the Schrickel pipe factory at Grindsbruk in Stockholm. In 1773, Thure Ljunggren (several spellings exist) is listed as the master pipe maker, while in 1794 (fig. 26 below), he is referred to as the factory journeyman. This may mean that Ljunggren never submitted a master exam at the *Hallrätt* or paid the fee to become a master proper.

*Förteckning
öfver arbetarena hvidt mitt
nu för tiden Warande Pipebruk*

*Härnåfällan Thure Ljunggren
Gefällen Joh: Hendrich Runkel
Läringen Johan Eric Wiiberg
Pipebrukets arbetaren Eric Söderin
Jensen Gustaf Breusler
Hv: Thure Ljunggren
änkan Sara Wiiberg
arbetaren Catharina Ljunggren
Hv: Catharina Wiiberg
Hv: Emma Catharina Söderin*

*Utskrifning för detta år förvärdade Lärare handrade
Pipebruket hvidt Skans Till d. 14 oktober 1794
Emma Catharina Schrickel*

Figure 26. The staff at the Grindsbruk pipe factory in 1794 in the report to the Hall- och manufakturätten in Stockholm (SE/SSA/0099/E 4/13 1795, n.p.). Thure Ljunggren is listed as *verkgesäll* rather than master pipe maker. In the 1773 report (SE/SSA/0099/E 4/1. 1773, n.p.), he is listed as the master pipe maker. Photo by Robert Bergman Carter.

Herr Carl Friedrich Wining bekant
 Guds nåde och den allsmäktige
 Konungens Guds nåde, följande
 Guds nåde, som har varit för
 oss i den Contracten som har varit
 för oss.

1. Lön för att göra 1000 Stk. i den Lön — 6/1
 2. Lön för att göra 1000 Stk. i den Lön — 4/1
 3. Lön för att göra 1000 Stk. i den Lön — 3/1
 4. Lön för att göra 1000 Stk. i den Lön — 2/1
 5. Lön för att göra 1000 Stk. i den Lön — 1/1
 6. Lön för att göra 1000 Stk. i den Lön — 1/1
 7. Lön för att göra 1000 Stk. i den Lön — 1/1
 8. Lön för att göra 1000 Stk. i den Lön — 1/1
 9. Lön för att göra 1000 Stk. i den Lön — 1/1
 10. Lön för att göra 1000 Stk. i den Lön — 1/1

Figure 27. 1767 wages at the Arboga pipe factory. Wages are specified according to the task, lengths and production quality of each pipe type, with the longest pipes paying more per gross, and the shortest pipes, No. 2 and No. 3, the least. (SE/ULA/10018/3, 1750–1821).

7.4 Clay pipe making in Alingsås

The manufacturing description from the pipe factory in Alingsås (see Appendix V) provides detailed insight to the pipe making process that enables comparisons to similar descriptions from other pipe factories, domestic and abroad, as well as to specific tools mentioned in estate inventories from other pipe manufacturers (see Appendix IV). The document is not signed or dated, yet marginalia mentioning Chamberlain Adlerstedt serves to place the document in a temporal and political context. According to *Svenskt Biografiskt Lexikon*, Lorens Jacob Adlerstedt, in the role of a commissioner and attaché in a delegation from the National Board of Trade and *Landshjälpdeputationen*, inspected the Alingsås manufactory in 1737. In his account to the National Board of Trade and *Landshjälpdeputationen*, Adlerstedt claimed that there were severe financial irregularities at the factories in Alingsås, that subsidies from *Landshjälpdeputationen* intended to edify and promote the factories had been withheld by factory directors, and that the factory products were of a poor quality. As production at the pipe factory did not commence until 1738, it does not seem likely that Adlerstedt visited an operational pipe factory during his visit to Alingsås.

Adlerstedt's claims were contested by the directorate of the *Alingsås manufakturverk* to *Handels- och manufakturdeputationen* during the Riksdag of the Estates of 1738–1739 and the pipe factory description may have been written as part of a rebuttal from the factory directorate. Bearing this in mind, it is noteworthy that the manufacturing description appears to focus solely on what was known as the Dutch workshop and primarily describes the production of the most expensive “long and porcelain pipes”, with more anecdotal references to “shorter pipes”. The result is the impression that the primary production at the factory was expensive long pipes, polished, and with bottered rims with milling, when in fact, both archival and archaeological evidence shows that unpolished pipes manufactured using the English method constituted the stark majority of the factory's output (see also the section on production volumes in Chapter 6).

Archival evidence shows that the Alingsås pipe factory initially consisted of one workshop and that a second workshop was opened between the years 1738 or 1739 and 1741. The first workshop most likely manufactured pipes imitating Dutch pipes, while the second workshop manufactured pipes imitating English pipes. In a Pro Memoria submitted to the *Handels- och manufakturdeputationen* (SE/RA/6122/8/R 2766, 1740–1741), Alströmer wrote that:

“The tobacco Pipe factory at Alingsås consists of 2 separate workshops after both the English and the Dutch method. The Dutch workshop under a German master, is operated with 6 presses or screws. The English is run by an English Master with 4 screws which together makes 10 screws or presses.”¹⁰⁰

Another noteworthy aspect of the production description to consider from a perspective of the directory of the Alingsås factory attempting to appease the National Board of Trade, *Handels- och manufakturdeputationen*, and *Landshjälpen* is that the Maastricht clay, which is mentioned in calculations from the factory as more expensive than the Colognian, and being used for the long and porcelain pipes, is not mentioned. This information may have been intentionally withheld to achieve an appearance of economic frugality with investor funds by claiming that the cheaper clay from Cologne could be used to make long pipes. Another possibility is that use of the Maastricht clay was completely abandoned in favor of the less expensive Colognian clay.

7.5 Clays – origins, and processing

The Alingsås description begins with describing how the Colognian clay was dirty when it arrived at the factory and therefore needed cleaning. After being cleaned, the clay was beaten in preparation for soaking, referred to as “*inwekning*” – a loanword possibly from Dutch “*weken*” to soak or soften, or German “*einweichen*”, meaning to submerge or soak. The estate inventory of Olof Aspegren lists “*inwicknings baljor*”, showing similar influences in Stockholm (see Appendix IV). Three barrels of beaten clay were emptied into a vat with taps at the bottom. The clay in the vat was then covered with water to soak.

No clays suitable for the manufacturing of white clay tobacco pipes appear to have been known from domestic sources in Sweden at the beginning of the eighteenth century. Carl Aspegren's charters from

¹⁰⁰ “Tobaks Pipmakeriet wid Alingsåhs består utaf 2ne särskilta wärkes Inrättningar efter både den Engelska och Holländska Methoden. Den Holländska Inrättningen under en Tysk Mästare, drifwes med 6 prässar eller skrufwar. Den Engelska bestyres af en Engelsk Mästare med 4 skrufwar som gör tillsammans 10 skrufwar eller Prässar.”

1708 state that he was allowed to import raw materials free of any customs tariffs,¹⁰¹ thus suggesting that clay for pipe making had to be imported from abroad. References to imported clays occur in several documents relating to the manufacture of pipes from the Swedish archival record. A 1741 account of the manufacturing process at Olof Forsberg's Stockholm pipe factory describes how "the clay is fetched from Holland and several other foreign places" (SE/RA/420132/3/D/D a/Da 1/1, 1741–1747), suggesting that clays similar to those used in the Dutch pipe making industry were also used in Sweden. In a plea submitted to the *Handels- och Manufakturdeputationen* during the Riksdag of the Estates of 1740–1741 (SE/RA/6122/8/R 2766, 1740–1741 17D, [see below]), Forsberg explicitly states that the clays used for making white pipes were from Cologne and Maastricht.

During his visit to the Alströmer pipe factory in Alingsås, Carl Linnaeus (1746, pp. 132–133) noted in his travel journal that:

the pipe clay, which was fetched here from Holland, was white, and did not turn red during firing; when she was scraped with a fingernail or a knife, she shone, like a white talcum, and between the fingers, the powder was fat, slippery, sticky, almost as tallow or talcum powder.

A more detailed description of the raw materials planned for use at the Alingsås pipe factory is outlined in a calculation that appears to have been made in advance of building the factory (See Appendix V, SE/GLA/10003/-/1 1618–1799). The calculation states that Maastricht clay, also referred to as "the finer [clay]" was used for "porcelain pipes", and that "Dutch clay also called Cognian" was to be used for the other pipes.¹⁰²

Abraham Hülphers, while visiting the Nordsten pipe factory in Karlskrona in 1759, wrote in his travel journal that "clay for the pipes is imported from Holland", adding that it seemed "odd that no serviceable Swedish clay has been found" (Hülphers 1759 in Walde 1953, p. 44).¹⁰³ Similarly, Johan Hök, the owner of the pipe factory in Varberg, reported to the Varberg Hallrätt that the clay used at his factory was imported from Amsterdam (SE/RA/420132/3/D/D a/Da 1/25 1771–1771).¹⁰⁴

English clay may also have been used, but it is not until the late eighteenth century and early nineteenth century that such clay is explicitly mentioned. The production at Grindsbruk in 1826, for

¹⁰¹ "[...] som ock at han den därtill nödige Rudimaterien må få Tullfritt in komma låta" (SE/SSA/0099/E 3/1 1620–1753).

¹⁰² "Holländskt Leer el:r Cölnskt kallat Uppgård ungefärl: för 3:ne kastare om året 80 T:r à 7 daler [...]"

Mastrichs leran el:r den finare brukas til Porcelaine pypor behöfwas om året ungefärl: 10 oxhöft el:r 18 T:r à 8 daler [...]"

¹⁰³ "Bränugnen var nu 3de gången upsatt, rund så att den stod mitt i rummet, leer till piporna förskrifves alt från Holland, undligt at ingen tjenlig svänsk leera kunat uppfinnas, dene arbetas först i lärar, sedan delas den i ämnen och formas till pipor, med ståltrå göres hol genom skafftet, ämnet kastas eller tilltryckes i en metall skruf och hål med en machin göres i hufvudet, sedan trämas de eller göra jämnda, torkas i lådor, staplas sedan, de korta i krukor och långa i kistor, som göres af sämre leer, öfvertäckas med carduus papper som öfverstryks med lera, som blir sedan efter bränningen som tunt glas, ugnen muras till, och piporna brännes färdige på 3 till 4 dagar. 6 sorter göres vid detta väcket" (Hülphers 1759 in Walde 1953, p. 44).

¹⁰⁴ Arbets underrättelse om mitt privilegierade tobakspipe bruk härstädes. Åhr 1756 är detta bruk med egit förlag uprättat, hwarå befinnes 1. bränugn 4. Skrufvar 12 stl. Större och mindre formar med alt tilbehör. Lehran förskrifves från Amsterdam, och piporne brännes med torf. Tillwärdningen inrättas efter afsättningen och arbetarne proportioneras derefter; Förl: år har 3ne skrufvar warit i gång, hwarwid 1. wärk mästare och 2ne gesäller utom sex andra arbetare warit sysslosatta, hwilka af större och mindre sorter pipor tilwärdkat 1800. Gross, som blifwit debiterade dels inom dels utom Riket. Warberg 4. Janua[ri] 1772. Johan Hök".

example, supposedly used clays from both Holland and England (Reenstierna 1953 [1826], p. 33). Under the ownership of Eric Brunnerus, the Karlskrona factory also appears to have used English clay (Stibéus & Bergman Carter 2025, p. 17).

Debts to the owner of the Rörstrand faience factory in Stockholm found in estate inventories of Stockholm pipe factory owner Carl Wettervik (SE/SSA/0145A/F 1/F 1 A/330 1798, fol. 38r) may indicate that clay was purchased from there. It is not currently known if the Rörstrand factory acted as a wholesaler of clays.

Red-firing clays were used for pipe making in Sweden as early as the first half of the seventeenth century. ICP-AES analyses of pipe fragments ranging in color from reddish brown to red recovered in Gothenburg and Bohuslän (Brorsson 2022, unpublished), with the heel mark crowned PM and a morphology modelled on the contemporaneous Dutch tradition show that clays from the Gothenburg area were used by a skilled and seemingly well-equipped pipe maker. Based on white pipes with the same mark, this pipe maker also used white-firing clays (see also Appendix I).

References to red pipes in the documentary records occur from the eighteenth century, where Carl Aspegren's estate inventory from 1735 is the earliest. These pipes are referred to as long red, and short red, indicating that these were not the stub-stemmed bowls made from red-firing clay by subsequent pipe makers in Stockholm. Olof Forsberg, who purchased the Aspegren factory inventories and charters carried on the use of red clays. In a plea submitted to the *Handels- och Manufakturdeputationen*, the trade and manufacturing deputation, during the 1740–1741 Riksdag of the Estates (SE/RA/6122/8/R 2766 1741, 17D), Forsberg states that:

Regarding the raw material, which is Colognian and Maastricht clay, it must be fetched from Holland, whereas although I, during the last years, in all conceivable manners, attempted to obtain information regarding if such clay is to be found here in Sweden, which for pipes would be serviceable, and for that purpose have sent to cities and provinces, printed notifications, with an offered recompence for the discoverers, I have not at the present moment, found any Swedish clay that can be of service; I can merely, in servile humbleness, say that on one and another place in the country is clay which fully allows itself to be worked quite well, yet during firing it becomes completely red, and I have of this made pipes for the commoners, which have also found buyers, whereas they are in color stronger than those made from Colognian clay, I also believe that if in the future some plentitude of such Swedish clay is given and found, which without much cost could be transported, here to Stockholm, that the nation would appreciate quite well, both red and white tobacco pipes, and I also would not have to fetch clay from abroad.¹⁰⁵

Domestic, or even local, clays were highly likely also used to manufacture the so-called *turkhufwud* (or *turkhuvud* or *Turkpipa/Turkpipor*), the stub-stemmed bowls made from red-firing clay that, according to the archival records were primarily manufactured in pipe factories and workshops in

¹⁰⁵ "Rudimaterien angående, som är Cölniskt ock Mastrichts [sic] ler, måste den samma hämtas ifrån Holland, emedan ehuru jag under de framflutne åhren på all uptränkeligit sätt sökt, att göra mig underrättad, om någon sådan lera här i Swerie skulle gifwas som till Pipor tienlig wore, samt till den ändan kring sändt till städer ock Provincierne, tryckta notificationer, med utfäst Recomenil för upfinnarne, iag dock ei till närwarande stund, icke funnit något Swänskt leer, hwaraf iag mig betiena kan; det allenast kan iag underdån ödmiukast berätta, att på en och annan Orth här inrikes, finnas leer, som fuller låter arbeta sig tämeligen wäl, men i bränningen blifwer det aldeles rödt, och har jag deraf låtit göra Pipor för Allmogen som ock funnit afnämare, emedan de äro så till färj[?] starkare än de som göras af Cölniskt leer, ock tror iag, att om framdeles någon myckenhet af sådant swänskt leer gifwes och påfinns, som utan mycken bekostnad kunde Transporteras, hit till Stockholm, att Nationen skulle finna tycke, rätt så wäl för röda som hwita Tobaks Pipor ock iag äfwen icke behöfwa, att hämta ler utrikes ifrån."

Stockholm such as Petter Sundell's workshop at Grindsbruk, the Wettervik and Nyberg workshops, and Eric Lindström's workshop (see Appendix I).¹⁰⁶ As previously mentioned, archival records from Olof Forsberg's factory also mention *turkhufvuden*, although no such bowls, white or red, have hitherto been tied to the production at his factory. Grindsbruk had its own clay pits for its brickworks, and it is highly likely that red-firing clay from these pits was also used for pipe making.

Locally sourced clays were most certainly used by pipe makers who did not have charters. The brickworks owned by the mayor of Lund, who did not have charters for pipe making, produced both red and white pipes (Blomquist 1978, p. 232). Similarly, the Helsinki pipe maker known from Abraham Hülphers' travel journal as "Hr. Grönberg" made "red pipes for the commoners, made from a coarse clay found at the city"¹⁰⁷ (Hülphers 1886 [1760], p. 52). The *Hushållnings Journal* from November 1777 also mentions that the "court secretary Bergnehr" had found "a fine clay" at his estate Brygga Gård on Ekerö, where aside from bricks, were also made "various pottery vessels and tobacco pipes" (*Hushållnings Journalen*, 11-? -1777).¹⁰⁸

Beginning in 1768, the annual reports to the Falun Hallrätt from the factory belonging to Daniel Fredrik Theel in Falun mention the use of a locally sourced clay (SE/RA/420132/3/D/D a/Da 1/22 1768–1768, p. 810).¹⁰⁹ 1780 is the last year in which the use of a domestic clay is mentioned in the annual reports from the Falun factory (SE/RA/420132/3/D/D a/Da 1/34, 1780–1780), continually reporting the "addition" of either local, "Swedish" (SE/RA/420132/3/D/D a/Da 1/46, 1792–1792, fol. 281v.), or "miscellaneous" clay (SE/RA/420132/3/D/D a/Da 2/1, 1816–1816) until 1820 after which amounts or types of clay used are not mentioned. It is currently not known if this clay was red-firing or white, or whether this local clay was used for particular types of pipes, or if it was mixed with imported clay to make all sorts of pipes.

Höganäs and Ruuthska bruket almost certainly used both imported and local clays for making pipe bowls. Similarly, the cottage style workshops in Värmland and Dalsland also appear to have used both imported and local clays to make both white and red pipes during the nineteenth and early twentieth centuries (Åkerhagen 1994).

As opposed to the tradition of mixing clays of different properties, qualities and origins applied in Gouda, archival records indicate that at least some Swedish pipe factories used specific clays for specific types of pipes. The calculations from the Alingsås factory for example state that the Maastricht clay was reserved for the longer and fancier pipes, while Cologne clay was used for short and most likely medium length pipes (see Appendix V).

¹⁰⁶ If the clay used by these makers has not been mixed with imported clays, ICP-AES analyses have the potential to show the origin of the clay.

¹⁰⁷ "Röda ler pipor för allmogen af en vid staden befunden grof lera har Hr Grönberg förfärdigat, dock icke sökt privilegier".

¹⁰⁸ "Han inrättade dock ett litet tegelbruk för att göra tegel till uppbyggnaden. Han har på ägorna här funnit fin lera och tillverkat allehanda lerkärl och tobakspipor."

¹⁰⁹ "Åt hwilken tilwerkning upgådt sju hundrade Klimpar Kölnisk ler, och til öfriga behofwet anwändt en slagz Berg Lera, som här i orten finnes"



Figure 28. Depiction of the tools used during processing of the clay and the beating of the clay from Duhamel du Monceau (1771).

Once the clay had soaked, the vat was emptied of water and the clay transported to a trampling board. In Alingsås, the soaked clay was mixed with either two or three barrels of “*skrubsel*” – likely a loanword from the Dutch word “*schrobbeles*”, meaning scraps, or one barrel or 20 lumps of dry, beaten clay.¹¹⁰ This was then trampled and beaten to remove impurities and dry lumps and to achieve a homogenous mixture of the clay. No horse drawn clay mills similar to those described by Duhamel du Monceau (1771) or known from Gouda or England are currently known to have been employed by eighteenth-century pipe makers in Sweden. If any factories would have used such contraptions, it would have been the largest ones, such as Alingsås or Forsberg’s factory in Stockholm, yet no written records or archaeological evidence of clay mills exist. Rather, the staff inventory from Gustaf Herpel, who owned the factory opened by Forsberg and Aspegren, employed a “*lertrampare*”, a clay trampler

¹¹⁰ *Skrubsel* is most likely a loanword from Dutch word *schrobbeles*, which Duco believes is a loanword from the English “scraps”. These scraps, which contained trimmings from molded unfired pipes and unfired pipes broken at any time during the manufacturing process, were added to the fresh clay not only for economic reasons but also for giving the clay a better texture. “*Skrubbselbyttor*” – scrap tubs are found in the estate inventory of Daniel Almqvist and in the estate inventories of Carl Wettervik, while in the estate inventory of Catharina Spak née Wettervik, they are known as “*Skruffelbyttor*” (see Appendices IV and V)

¹¹¹ In Gouda, unfired scraps were not added to the clay as it was “contaminated by oil” from the molds and the wire (Duco 1980, p. 190).

(SE/SSA/0099/E 4/2 1778), indicating that there were no clay mills even at the larger Stockholm factories. The 1755 census records list “*lerslagaren*”, the clay beater, Anders Lindberg, as employed Örnbeck’s factory (SE/SSA/0031/06/G 1 BA/G 1 BA:20/9 1755). According to Hülphers’ 1759 account of the Nordsten factory in Karlskrona, the clay was “worked in crates”,¹¹² likely referring to clay trampling in vats done by workers.

According to the Alingsås account, the clay was then divided into blocks that were stored in a damp and cold cellar so that they would not dry out. The description does not specify how long the clay lumps were stored, yet according to Duco’s description of the pipe making process in Gouda (1981), this step was referred to as “*besterven*”, letting the clay die. Larger factories such as the Alingsås factory, the Stockholm factories belonging to Forsberg, Aspegren, and Almqvist likely had cellars for clay storage, while this may not have been the case for smaller factories and workshops.¹¹³ It is likely that smaller factories and workshops, such as in Arboga and smaller Stockholm manufacturers used sheds or outbuildings for storing both raw and prepared clay.

7.6 Rolling and molding

The account from Alingsås then states that in the next step, “*gossarne*”, the boys, likely referring to “*lärgossar*” – apprentices or junior apprentices,¹¹⁴ fetched these lumps and rolled them out into smaller units the size of the intended pipe mold. These units were placed in groups of between 20 and 30 units each. An apprentice, according to the document, could make 40 to 50 such groups of smaller pipe rolls, and between 18 and 20 batches of longer and porcelain pipe rolls per day. This means that a junior apprentice rolled between 360 and 1500 pipe rolls per day. Estate inventories of pipe makers in Stockholm often list “*rullbrädor*”, rolling boards (see Appendix IV). Some household examination records, census records and reports to the Stockholm *Hallrätt* occasionally mention *rullerskor*, literally translated to rollstresses, showing that some factories employed professional female rollers.

These groups of rolled clay were then brought to the “*kastare*”, literally caster, another loanword from Dutch or possibly the German pipe industry, meaning caster or molder. “*Kastare*” as a job title also appears in household examination records, census records and reports to the Stockholm *Hallrätt*. At the Forsberg factory, the account mentioning production volumes states that molding was carried out by journeymen and experienced apprentices (SE/RA/6122/8/R 2766 1740–1741, 17E).

According to surviving documentary evidence, the molds used in Swedish pipe factories and workshops were made from brass. The 1743 inspection of the new Forsberg factory in Stockholm (SE/RA/6122/9/R 2836 1742–1743, pp. 870–872) implies that new tools, presses and molds had been procured in order to meet prerequisites for an embargo. It is not currently known if these were made in Sweden or if they were imported.

In 1746, the Alingsås factory employed its own mold maker. Linnaeus, in his travel journal, refers to “*formgöraren*” (1746, p. 132), the mold maker, who also had his own workshop. Estate inventories

¹¹² See Appendix V.

¹¹³ A plan drawing of a pipe factory drawn in preparation of the pipe factory in Alingsås held in the same archive as the manufacturing description (SE/GLA/10003. 1618–1799) specifies a cellar for storing clay.

¹¹⁴ Linnaeus’ description of pipe manufacturing following his visit to the Alingsås pipe factory in 1746 states that “small boys were here used for the same service as the big” corroborates this.

from Stockholm pipe makers occasionally include tools associated with both mold making and mold upkeep, such as engraving tools. The estate inventory after Daniel Almqvist for example includes vises, whetstones for molds, and engraving tools (see Appendix IV). There are examples of armorial pipes that have been made in molds that must have been expertly engraved, yet there are also many examples of poor-quality pipes made in visibly poorly fitting mold halves with mirrored letters in molded relief that are poorly engraved. It seems likely that some Swedish master pipe makers knew how to do basic engravings and maintain molds through hammering and filing, and that master pipe makers and factory journeymen at some factories also made molds.

The *kastare* – literally the caster, took one pipe roll at a time and pierced it along the part that would become the stem with a “stiff steel wire which is smeared in flaxseed oil”. The clay roll was then placed in one of the two parts of a mold that had also been smeared with oil, and the molder then bent the thicker part of the roll which was to be pressed into the bowl of the pipe to fit the mold. The mold was then closed and placed in “*skrufwen*”, another loanword likely from the Dutch “*schroef*”, a loanword from the English word “screw”, a vise-like contraption that held the mold halves completely shut, pressing the clay into the shape of a pipe. According to the Alingsås account, the screw was closed by the molder’s knee, which held the mold while “*stoppen*”, another loanword from either Dutch, German or English for the stopper, was inserted into the opening of the mold, forming the tobacco chamber of the bowl. Once the molder removed the knee, the screw was unscrewed and released the mold and allowed the molder to remove the pipe.

Linnaeus’ Västgöta travel journal *Iter Vestrogothicum* from 1746 contains a drawing of one of the molds used in Alingsås (fig. 29). The drawing is of a mold half with a hatch for cutting off excess clay above the bowl rim, which is instantly recognizable as a mold used in the English tradition rather than the Dutch. Similarly, Hülphers account of the pipe making process in Karlskrona describes how “holes in the head [the bowl] are made with a machine”, rather than with a stopper (see Appendix V). Archaeological and archival evidence show that both English and Dutch traditions were employed at several Swedish factories. The majority of archaeologically recovered pipes that can be tied not only to the Alingsås factory, but to Swedish production in general show clear signs of having been made using the English molding method with a stopper on a lever. The estate inventory of Daniel Almqvist (see Appendix IV) shows that this factory also employed both the Dutch and the English manufacturing techniques, listing “*kranskrufwar*”, literally translated to crane screws, which most likely refers to gin presses, and “*jernskrufwar*”, iron screws, more likely referring to iron screws of the vise-type used in the Dutch tradition. Pipes identified through markings as having been made at the Almqvist factory also show that both manufacturing techniques were used at his factory.

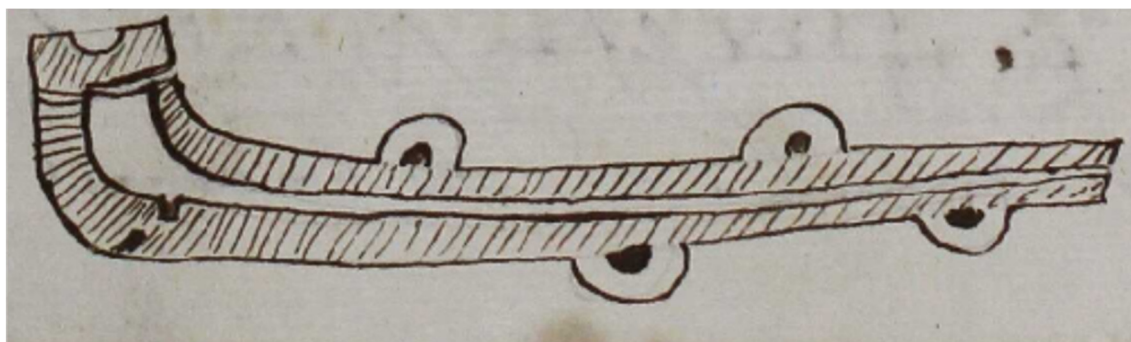


Figure 29. The depiction of a mold half used at the Alingsås factory in Linnaeus’ *Iter Vestrogothicum* (1746, p. 132). This mold type with a slot above the bowl is typically associated with the use of a gin press. With kind permission from The Linnean Society of London.

Reinhold Rücker Angerstein (2001, p. 311, [1753–1755, p. 340.]) writes about pipe making in England in his travel journal that:

As far as the shaping of the pipes is concerned, nothing special was noted, except that the mould was split into two parts and when these were screwed together the bowl was also pressed. It should, however be noted that the outlet hole at the bottom of the bowl was made by hand.

The figure included shows a so-called gin press, with a stopper attached to a lever which is depicted as plunged into the mold held in the vise, or screw (fig. 30). It is notable that Angerstein states that “nothing special was noted”, implying that he and his intended readers may have been familiar with the manufacturing method. This could be interpreted as a general familiarity with the so-called English manufacturing method and the pipes it produced in mid-eighteenth-century Sweden.

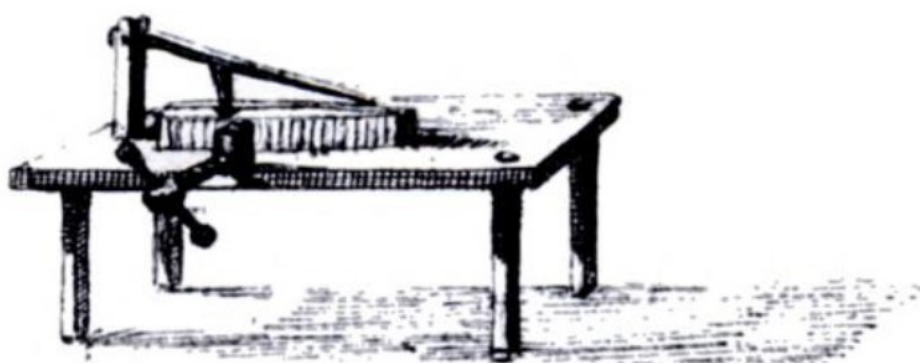


Figure 30. Angerstein’s depiction of a gin press in use at an unnamed Liverpool pipe factory in the 1750s (fig. 287 in original).

Returning to the Alingsås account; once the pipe was out of the mold, with the steel wire still inserted in the stem, the end of the stem was cut, forming a mouthpiece of sorts. The description also mentions that flashes were removed during this step, though it is uncertain if it refers to mold flashes or flashes above the rim of the bowl or both. This is further indicative of it being the Dutch manufacturing technique being described as in the English technique, the flashes above the bowls would have been removed by running a knife through a slot in the mold before removing the pipe which is also shown on the drawing in Linnaeus *Iter Vestrogothicum* (fig. 29 above).

According to the Alingsås account, a molder could make three to five gross of the longer or porcelain pipes in a day, and six to seven gross of the shorter pipes. The weekly salary of the molders was based on how many gross of pipes they had finished, and the document states that a molder could earn between 18 and 20 dalers silver per week. A production calculation from the Forsberg and Aspegren factory (SE/RA/6122/8/R 2766. 1740–1741, 17E) states that a journeyman could be expected to mold between six and seven gross of short pipes per day, four gross of the medium pipes and three gross of the long pipes, while an apprentice could be expected to mold between two and five gross of the short pipes.

7.7 Trimming, marking, polishing and drying

The molded pipes were then allowed to dry prior to trimming and smoothing. Once sufficiently dry, the document states that for porcelain or the longer pipes, a metal wire was again inserted into the bore of the stem to keep them from bending or breaking during handling. These types were trimmed around the heel and bowl with a special knife, then bottered “with a turned button” (fig. 31). The back of the special knife was then used to apply milling around the rims (fig. 32). After this, the document states that the pipes were stamped on the bowl, most likely referring to the stamped marks found on pipes that have been attributed to the Alingsås factory (see also Bergman Carter 2024).¹¹⁵ Stamps on the front of bowls are a common marking tradition employed at nearly all pipe factories in eighteenth-century Sweden. Though far from all Swedish pipes were stamped, nearly all eighteenth-century factories appear to have made some types that were stamped on the fronts of bowls.

Stems, generally, do not appear to have been stamped or decorated to a great extent at the Alingsås factory. A decorated stem with milling bands, zigzag lines and the text ALINGSÅS, recovered at the excavations at Slussen in Stockholm (Åkerhagen 2021, p. 347) is the currently only known decorated stem that that can possibly be tied to the Alingsås factory.¹¹⁶ Stem decorations do occur on Swedish pipes and, although exceptions exist, they are most commonly found on pipes mimicking Dutch types and armorial pipes.¹¹⁷

Hülphers’ description of the Karlskrona factory also mentions that the pipes “*trämas*” – are trimmed, without mentioning polishing, yet based on visibly polished fragments recovered during the excavation of the factory site, the factory did produce polished pipes (see Stibéus & Bergman Carter 2025). Similarly, the description of the manufacturing process at the Forsberg and Aspegren factory from 1741 only mentions trimming. Pipes from Forsberg’s and Aspegren’s factories that show signs of polishing are known from the archaeological record, which shows that pipes were polished in Stockholm as well. As such, it is highly possible that distinction was not always made between trimming mold seams and polishing pipes in eighteenth-century archival sources.

Indeed, the above-mentioned wage specification from the Arboga factory (fig. 27) indicates that agate polishing may occasionally have been included as a step in trimming, as the trimming wages for the longest type, “the Eagle” is 16 öre per gross, and for the shortest types, “No. 2 and No. 3” is 3 öre. It is reasonable to assume that No. 2 and No. 3 pipes, as no pipes with such markings have yet been found that show signs of polishing, were not polished, and as such the wages reflect only trimming.

¹¹⁵ Pipes tied to the Alingsås factory have the letters J or I and A, crowned or with one or more stars replacing the crown, in molded relief on the sides of heels or spurs, and either ALINGSÅS over three crowns and the initials I:A below the crowns, or three crowns with FR or AFR below the three crowns, incusely stamped on the front of the bowls. The armorial pipes tied to the Alingsås factory have no stamped decorations, instead they have the molded relief decoration a crowned shield with a version of the greater coat of arms of Sweden flanked by crowned lions rampant facing the shield with a ribbon below with the text ALINGSÅS. Armorial pipes with lions regardant have hitherto not been attributed to the Alingsås factory.

¹¹⁶ There is also a possibility that this stem was part of a pipe manufactured by Mathias Nyberg in Stockholm. His estate inventory lists Alingsås pipes, showing that copies of Alingsås pipes were manufactured in Stockholm in the late eighteenth century (see Appendix II). The fact that the stem was recovered from a mixed infill-layer deposited between 1850 and 1930 (Carlsson, Lindblom & Låås 2021, p. 303) means that it is not possible to confidently date it based on context either.

¹¹⁷ Stems stamped with T. LIUNGREN manufactured at Grindsbruk in the late eighteenth century and possibly early nineteenth century is one such exception. Such stamped stems are known from pipes with lobed bowls with tendrils and dots morphologically drawing on English late eighteenth-century pipes.

Meanwhile as rates for trimming “the Eagle” were more than five times more per gross. The higher piece rate for work on these pipes likely reflects stem-length as well as trimming and polishing.

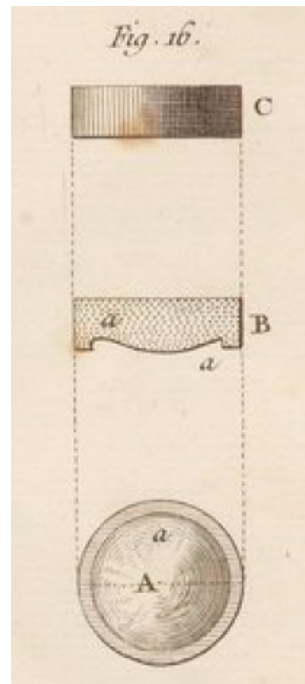


Figure 31. A button used for bottering cut rims of bowls depicted in Duhamel du Monceau’s *L’Art de Faire Les Pipes A Fumer Le Tabac* (1771). These buttons remove sharp edges that are the result of cutting off mold flashes above the rims of bowls. Bottering leaves a smooth, rounded bowl- rim. Bottering is almost exclusively seen on Swedish pipes mimicking Dutch-style pipes.

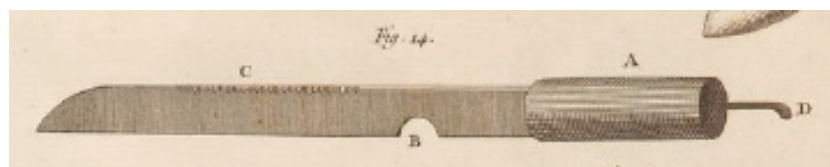


Figure 32. A trimming knife from Duhamel du Monceau’s *L’Art de Faire Les Pipes A Fumer Le Tabac* (1771). Note the serrated edge at the back of the knife used to apply milling around the rims of the bowls, and the crescent-shaped gap in the knife blade used to remove mold flashes on stems. The protrusion at the handle could be used to remove excess clay inside the bowl.

The Alingsås account describes how the pipes were then allowed to dry further prior to being glossed and polished with specially made stones, likely referring to agate stones used for polishing pipes in Gouda or flint stones. The estate inventory of Daniel Almqvist lists flint stones for polishing and Lorentz Lindahl’s factory *Stiernan* employed a “*glarska*” (SE/VALA/01979/E III a/16 1760, p. 949), which translates to “glasstress” or “glosstress” very likely referring to the task of polishing pipes. Although rare in comparison to coarse and unpolished stem fragments, fragments with traces of polishing are known from many Swedish eighteenth-century pipe factories, and it is likely that a majority of them manufactured at least one longer and fancier polished type.

According to the manufacturing description from Alingsås, the porcelain and long pipes were then placed on specially made grooved trays made from oak, with grooves for each individual stem to prevent warping during drying. The Alingsås account states that 40 pipes were placed on each such

tray. The document also specifies that an amount of clay was placed on top of the pipes placed in the boards. This practice is known from Gouda where this was done to further prevent warping of stems and to allow the pipes to dry evenly. Estate inventories from Carl Wettervik, and Olof Aspegren, list “*reffelbrädor*” – grooved trays and “*torkbrädor*” – drying trays separately, indicating that the same distinction in the workflow between long and short pipes was also made in these factories.¹¹⁸

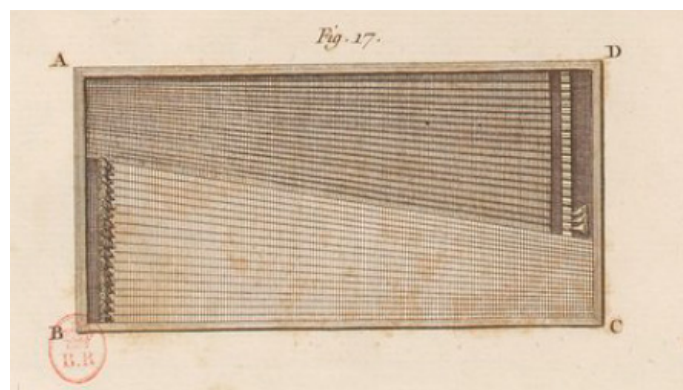


Figure 33. The grooved drying tray depicted in Duhamel du Monceau’s *L’Art de Faire Les Pipes A Fumer Le Tabac* (1771). Long pipes were dried in such boards, with stems resting in the grooves to prevent warping during drying. These trays were referred to in Swedish pipe factories as “*reffelbrädor*”.

The document explicitly states that polishing and drying in grooved trays was reserved for long pipes and porcelain pipes. Indeed, it states that shorter pipes were not glossed or polished and were not placed in grooved trays to dry. Shorter pipes were instead placed on flat trays and weighted with a board to prevent severe warping. As mentioned above, estate inventories of pipe makers occasionally differentiate between grooved drying trays and flat drying trays. According to the Alingsås account, these trays, when filled, were placed in outdoor racks in the summer and indoor racks in the winter to dry. As no estate inventories mention so-called drying pins or needles used to keep lower-quality pipes straight during drying, known in the Netherlands as “*naald*” (see Walker 1971, p. 13), there are no indications in archival sources that such drying pins were used in Swedish pipe factories during the eighteenth century. An example of a wire that was stuck in a stem was tentatively identified in the assemblage from the Karlskrona factory (Stibeus & Bergman Carter 2025, p. 122). However, it is not known, based on stratigraphy or type, which iteration of the Karlskrona factory produced this fragment. It is also possible that the metal rod is either a pipe cleaner or the remains of the wire used to support the stem while polishing the pipe.

Based on observations of Alingsås pipes recovered from the archaeological record, the shorter pipes were most likely not bottered or decorated with milling either. In fact, as the majority of archaeologically recovered pipes tied to the Alingsås factory are modelled after English pipes, bottered rims or milling is not found even on the polished pipes from this factory. The impression is that the Alingsås workshops adhered closely to the separate Dutch and English traditions of finishing pipes during its first years, and that the Dutch workshop ceased to function completely sometime during the late 1740s, most likely around late 1745 or early 1746 (see also Bergman Carter 2024).¹¹⁹

¹¹⁸ See also Appendix IV where grooved trays become increasingly common in inventories in the late eighteenth century.

¹¹⁹ It is possible that pipes mimicking Dutch models were still produced throughout the eighteenth century, albeit on a small scale. A likely explanation for the near or full abandonment of the Dutch method at Alingsås is that the English method is more efficient.

7.8 Saggars, kilns, and firing

When the pipes were completely dry, they were filled into “*pottor*”, pots, or saggars. According to the Alingsås account, the pots for porcelain or longer pipes were fitted with a so-called trumpet of 16 to 18 inches, a cylinder with conical ends made from fired pipe clay to support the long stems so that they would not bend or warp during firing in the pots. Fragments of such trumpets have been tentatively identified among wasters from the Alingsås factory recovered in 2024 (Bergman Carter 2025, p. 28f).¹²⁰ A ring made from an unfired roll of pipe clay was placed around the stems of the pipes standing in the saggar to ensure that they were stable. Although no remains of trumpets were recovered in Karlskrona or Varberg, fragments of fired clay rings, some with impressions from pipe stems, were recovered during excavations of the kv. Gulin kiln site in Karlskrona (Stibéus & Bergman Carter 2025, p. 121), a pit with wasters in Varberg, as well as during excavations near the pipe factory site in Alingsås. The saggars were then sealed by covering them with paper smothered in a slurry of pipe clay and water. When this had been done, the saggars were placed in the kiln. According to the document, a kiln could hold between 100 and 200 saggars. This was likely depending on the lengths of the pipes being fired.

In the Alingsås account, a pot could hold between 3 and 4 gross of porcelain or long pipes. The document does not specify how the saggars for short pipes were filled or how many such pipes a saggar contained. The production of pots and trumpets is described in detail and includes the proportions of clay and sand used in the manufacture of these. This suggests that saggars were made by the pipe factories, rather than at potters or specialized saggar makers.

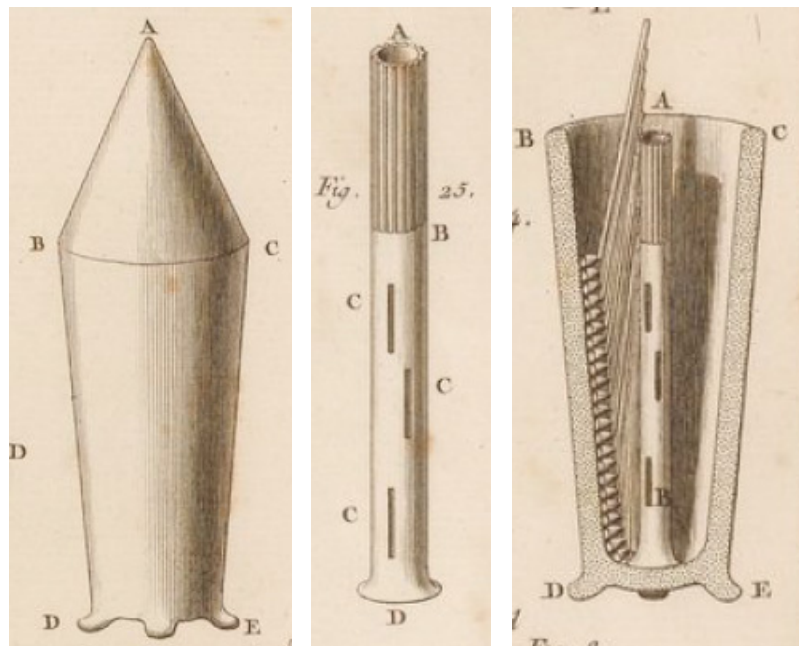


Figure 34. Saggar and trumpet depicted in Duhamel du Monceau's *L'Art de Faire Les Pipes A Fumer Le Tabac* (1771). The trumpet was placed at the center of saggars, and the longer pipes were stacked against it, bowls downwards, to prevent warping of the stems.

¹²⁰ Local residents of Alingsås who have been scavenging the factory site also report finding cylindrical fragments made from white-firing clay.

There were many saggar fragments in the assemblage from the kiln site in Kv. Gulin in Karlskrona. The majority had a circular conical profile with exterior impressions from barrel staves, indicating that clay sheets had been folded into and pressed against the inside of a conical wooden mold resembling a barrel rather than having been built or thrown. Such a manufacturing technique is known from Westerwald (Simons 1974) and is also referenced in the Alingsås account. At least two fragments of a box-shaped saggar were also recovered (Stibéus & Bergman Carter 2025, p. 117ff), which is most likely the same type of saggar referred to by Hülphers 1759 account of the factory which states that the “longer pipes were fired in chests” (in Walde 1953, p. 44). Rectangular or box-shaped saggars are, as far as I know, not known from the Dutch eighteenth-century manufacturing traditions. Thus far, no box-shaped saggar fragments have been recovered from the Alingsås factory site either.



Figure 35. Refittable fragments of a box-shaped saggar recovered from the Karlskrona pipe factory-site. According to Hülphers, this type of saggar was used to fire the longest types. Photo by Robert Bergman Carter.



Figure 36. Box-shaped saggar at a currently unknown museum in Germany. Photo by Arne Åkerhagen, part of the Åkerhagen collection.

The Alingsås kiln, which was fired for 14 to 15 hours, used pinewood. The document specifies that 1 and 1/3 of a fathom (*famn*) of pinewood was required for a firing. The kiln needed between one and two days to cool before being emptied. Smaller workshops do not appear to have fired their kilns as often – according to Hülphers’ 1759 description of the Karlskrona factory, the kiln there had only been fired three times since the factory had opened in 1756 (Walde 1953, p. 44).

The fuel used at factories appears to have varied depending on local conditions. Estate inventories from pipe makers in Stockholm occasionally contain firewood. In Varberg, written accounts state that peat was used to fire the kiln (Hermelin 1773, p. 91). Charters for a second pipe factory, which was never built, in Karlskrona specified that no wood was to be used as fuel, and that coal was to be used instead. Coal or coke was observed but unfortunately not collected during the excavation of the Karlskrona factory-plot, so it is likely that coal was occasionally used as fuel there as well, perhaps during its last iteration in the late eighteenth and early nineteenth centuries.

7.9 Finishing and packing

Once the pipes had been taken out of the saggars, the Alingsås account states that the boys dipped them in a mixture of wax, gum Arabic and Venetian soap, a practice called “*snorlade*” or a loanword most likely from the Dutch “*gesnollen*”, which refers to this practice. According to Duco “*gesnollen*” translates roughly to “polish”, and “the women employed to do this were called snolsters” (1980, p. 193). A 1740 description of the manufacturing process at the Forsberg and Aspegren factory refer to this practice as “*snollas*” (SE/RA/420132/3/D/D a/Da 1/1 1740–1747; see also Appendix V), while Lorens Wolter Rothof in his description of pipe making states that pipes “*snårlas*” (1762, p. 292). It is not known if all Swedish factories practiced this finishing step, although the itineracy of factory workers certainly suggests that this was the case. Peter Wallmo, who worked at Forsberg’s factory where “snolling” was practiced, became the master pipe maker at Theel’s factory in Falun. It is therefore possible that this was also done in Falun. Similarly, workers from Alingsås may have introduced “snolling” to Varberg and Karlskrona. Olof Aspegren likely acquired this knowledge either as a result of Vertin’s presence at his father’s factory or during his period as a journeyman. It is therefore likely that “snolling” was practiced at most Swedish factories operating in the 1760s. A notice in *Inrikes Tidningar* from 1774 shows that knowledge of du Monceau’s book with an extensive account of the mixture used for the practice had reached Sweden (fig. 37).¹²¹

Du Monceau (1771, p. 32) presents two recipes, one more detailed than the other:

After the oven has cooled, open the door and remove the pots. The pipes they contain, however, do not yet have the enamel or shine which makes them beautiful, and which the pipes of Holland have above all others.

With regard to common pipes, so that they do not stick to the lips, when they are almost cool, we take them out of the pot and dip them in a kind of milk that we make with fine earth soaked in lots of water. This earth, which is not cooked and allowed to dry by itself, increases their whiteness, and forms a kind of varnish, when they are polished with a piece of slightly rough cloth; but there is a more beautiful varnish than that, of which Mr. Rigault wrote to me that the Manufacturers kept a secret.

¹²¹ The practice is also known from Jacob Boys pipe factory in Bragernes, Norway (Pettersen 1943, p. 33).

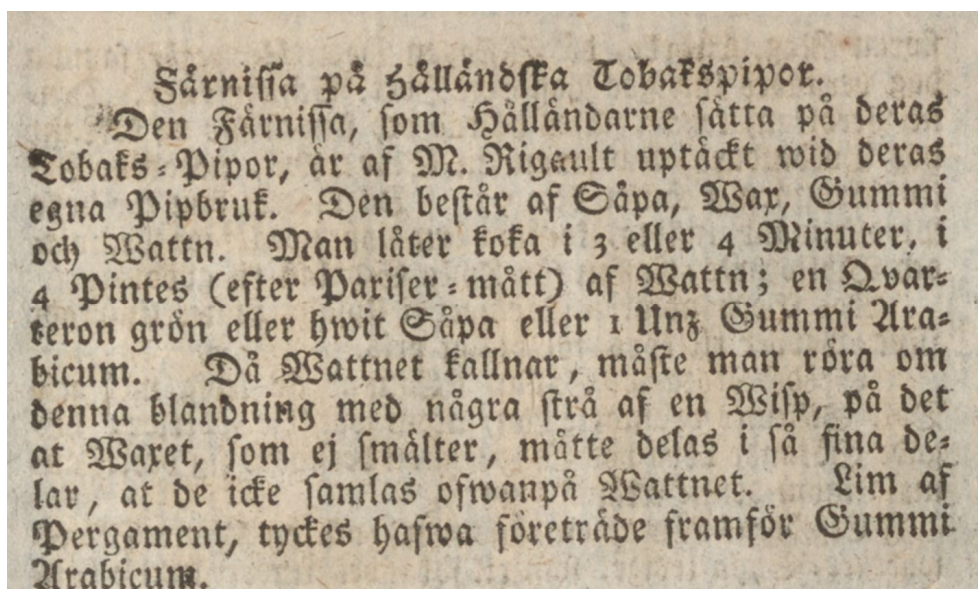


Figure 37. Varnish on Dutch pipes. The varnish, which the Dutch put on their tobacco pipes, has been discovered by M. Rigault at their own pipe factories. It consists of soap, wax, gum and water. For 3 or 4 minutes, let 4 parisian pints of water, one quarter green or white soap or one ounce Gum Arabic boil. When the water has cooled, this mixture must be stirred with strands of a whisk, so that the wax, which does not melt, is divided into fine parts that do not gather on top of the water. Glue from parchment, appears to have precedence over Gum Arabic (Inrikes Tidningar, 11-14-1774, p. 3).

In the various experiments that he took the trouble to do on this occasion, the manufacturers, instead of telling him how they made their varnish, sought to confuse him, by assuring him that it was composed of a decoction of gall nuts, in which they put a little white chalk. Mr. Rigault pretended to believe this; but having taken a little of their varnish, he recognized that it was composed of a little soap, wax, gum, and water: from there, this is how it seemed to him that this varnish could be made. A quart of black [dark/green] or white soap, two ounces of white wax, an ounce of gum Arabic; boil everything together, for three or four minutes, in four pints of water, Paris measures, taking care, while the water cools, to agitate the mixture, so that it is divided into parts so fine that it does not gather on the surface of the water; but parchment glue seemed to him to deserve preference over gum Arabic.

Mr. Rigault also noticed, while carrying out his experiments, that pipes soaked in oil, soap water, or some mucilage taken either from plants or animals, no longer stuck to the mouth, but that they were not as shiny as when wax was added.¹²²

¹²² "Après que le four est refroidi, on ouvre la porte & on en ôte les pots. Les Pipes qu'ils renferment n'ont cependant pas encore cet émail ou ce brillant qui en fait la beauté, & que les Pipes de Hollande ont par dessus tout les autres.

A l'égard des Pipes communes, pour qu'elles ne s'attachent pas aux lèvres, quand elles sont presque refroidies, on les tire du pot & on les trempe dans une espece de lait qu'on fait avec une terre fine détrempée dans beaucoup d'eau. Cette terre qu'on ne fait avec pas cuire & qu'on laisse se sécher d'elle-même, augmente leur blancheur, & forme une espece de vernis, quand on les polit avec un morceau d'étoffe un peu rude; mais il y a un plus beau vernis, que celui-là, dont M. Rigault m'a écrit que les Fabricants faisoient un secret.

Dans les différentes recherches qu'il s'est donné la peine de faire à cette occasion, les Manufacturiers, au lieu de lui dire comment ils faisoient leur vernis, cherchoient à le dérouter, en l'assurant qu'il étoit composé d'une decoction de noix de galle, dans un laquelle on mettoit un peu de blanc de craie. M. Rigault feignit de le croire; mais ayant pris un peu de leur vernis, il reconnut qu'il étoit composé d'un peu de savon, de cire, de gomme & d'eau : partant de-là, voici comme il lui a paru qu'on pouvoit faire ce vernis. Un quarteron de savon noir ou blanc, deux onces de cire blanche,

The second recipe calls for similar ingredients yet omits the gum Arabic or glue:

To give the Pipes this enamel or varnish, they are cold dipped in prepared water; & then they are rubbed with a piece of flannel. I do not dare to assure that I know the composition of the water used for this; the Master Makers are secretive. One of them told me that it is prepared in the following way. A certain quantity of Spanish soap and white wax are thrown into boiling water; we leave this mixture to cook for half an hour, and when it has cooled we pour it into a vat, to use it cold, as I have just said.¹²³

Based on the accounts from Alingsås and Stockholm, a knowledge of a similar process existed in Sweden at least as early as the late 1730s. Alströmer is said to have visited pipe workshops in Gouda (Swederus 2013 [1887], p. 37) and Olof Aspegren may have picked up this secret of Dutch pipe making either while working as a journeyman or from Vertin. According to Duco, Gouda pipe makers also polished the “*porcelaine*” pipes, the very finest and most expensive pipes with a “waxed woolen patch” to give the pipes an extra sheen (1980, p. 193f). It is not known if this was also done at any Swedish pipe factories or workshops.¹²⁴

After this, the Alingsås account states that the pipes were packed in barrels, “21 to 22 gross of No. 1 or No. 2 could be packed with the longer pipes “or 10 to 11 gross” of “No. 3. 4. 5. & 6”. This may point to all sorts of pipes being packed in barrels at this point in time. The excavation of a warehouse containing Olof Forsberg’s pipes confirms barrels, also known as *fastager*, as the container for pipes intended for wholesale or transportation. The charred bottoms of 30 such staved barrels were uncovered beneath bundles of pipes and are depicted in the excavation report from a warehouse in Stockholm containing Forsberg’s pipes (Brynja 1985). Based on the Alingsås description, it is most likely that the Forsberg pipes in the warehouse were kept in the same barrels that they had been packed in at the factory. Out of 30 barrels encountered, the number of pipes contained in one barrel is mentioned in the report.¹²⁵ Barrel 8 contained 1831 pipes identified as type 5, short coarse pipes marked with N/2 on the sides of their heels. This roughly corresponds to 13 gross of the same type in one barrel.

une once de gomme arabique; on fait boullir ensemble le tout, pendant trois ou quatre minutes, dans quatre pintes d'eau, mesure Paris, ayant soin, tandis que l'eau se refroidir, d'agiter le mélange, soit divisée en parties si fines, qu'elle ne se rassemble pas à la surface d l'eau; mais la colle de parchemin lui a paru mériter la préférence fur la gomme arabique.

M. Rigault encore remarqué, en faisant ses expériences, que les Pipes imbibées d'huile, d'eau de savon, ou de quelque mucilage tiré soit de végétaux, soit des animaux, ne se colloient plus à la bouche, mais qu'elles n'etoient pas aussi brillantes que lorsqu'on y joint de la cire”.

¹²³ “Pour donner aux Pipes cet émail ou ce vernis, on les trempe à froid dans une eau préparée; & ensuite on les frotte avec un morceau de flanelle. Je n'ose pas assurer que je connoissé la composition de l'eau dont on se sert pour cela; les Maîtres Fabricants en sont secret. Un d'entr'eux m'a dit qu'elle se préparoit de la maniere suivante. On jette dans de l'eau bouillante une certain quantité de savon Espagne & de cire blanche; on laisse cuire ce mélange pendant un demi-heure, & quand il est refroidi on le verse dans une cuve, pour s'en servir à froid, comme je viens de le dire” (du Monceau 1771 p. 33).

¹²⁴ Traces of such wax may be identifiable via chemical analyses. To my knowledge, no such analyses have been carried out.

¹²⁵ The report states that the contents of eight barrels were counted (Brynja 1985, n.p.), yet the contents of only one, barrel 8, is accounted for.

The report also states that sacks and crates may have been used, as bundles of pipes were also found stacked or neatly placed on surfaces that did not have any indications of barrel bottoms. That pipes were placed in baskets, though not mentioned in the report, seems a more likely explanation for these bundles of pipes. Stacking pipes in baskets was a common way of packing pipes in the Netherlands, and pipe baskets are known from estate inventories of Swedish merchants. For example, the estate inventory of Falun merchant Erich Uppling Erichsson (SE/ULA/10239/F 2/15 14a 1748–1749, n.p.) mentions “*pipkorgar*” – pipe baskets.¹²⁶ As Forsberg’s warehouse belonged to the factory, which also had a shop-booth on nearby Södermalmstorg, it is likely that pipes were fetched from the warehouse to be sold individually, by the dozen, by the gross or by the barrel or crate.¹²⁷

A 1787 advertisement for pipes manufactured at the Alingsås factory (fig. 48) describes how only the longest pipes, 24 inches long, called No. 7, were sold in crates of 1 gross which cost 1 rixdollar 4 shilling, while all other pipes were sold by the barrel. One barrel of No. 1, the shortest type with 8.5-inch stems, contained 21 gross and cost 3 rixdollars and 32 shilling, while a barrel containing 10.5 gross of the 20.5 inch-stemmed pipes called No. 6 cost 6 rixdollars. These prices were for pipes delivered to Gothenburg. Pipes purchased at the factory were discounted 16 shilling per barrel and 2 shilling per crate.

Several estate inventories of pipe makers in Stockholm also indicate that long pipes were packed in boxes and shorter pipes in barrels. The pipes were likely packed with sawdust, paper, straw or chaff to keep them from breaking during transport. However, and as we shall see, there are strong indications from both the archaeological and archival records that pipes were broken during transport.

7.10 Transports of pipes

At least part of the transports from the Alingsås factory had to be done by road. The problem of the combination of the fragility of the pipes and the poor conditions of the roads from Alingsås are commented on by Friesendorf (1758, see Appendix V below) and the mayor of Varberg (Puktörne 1968, p. 77). Pipes from the Alingsås factory being broken due to problems during transports from the factory are also mentioned in the charters for pipe making issued to Anders Örnbeck in Stockholm in 1752 (SE/SSA/0099/E 3/1 1620–1753).

Forsberg’s factory, located by the water at Påsundet and Skinnarviken on northern Södermalm in Stockholm, likely had its own pier for loading its wares for transport on small boats towards the different harbors of Stockholm. As mentioned above, the advertisements from Forsberg’s factory recurringly state that pipes could be ordered from his factory to anywhere in the kingdom of Sweden. Subsequent owners of the factory (see Appendix I) most likely also took advantage of the factory’s location.

Similarly, Olof Almqvist’s as well as Daniel Aspegren’s factories on Kungsholmen had access to nearby piers for transporting their wares between the islands of Stockholm and further. The Nordsten factory

¹²⁶ The fact that these pipe baskets are listed below “10 dozen fine tobacco pipes, 4 ¼ gross small pipes, 6 gross Dito” strongly indicates that these baskets were for tobacco pipes. However, as the inventory is from the time of the embargo of 1747, it is possible that the baskets held imported, possibly Dutch pipes.

¹²⁷ The possibility that pipes were placed in baskets, similarly to Dutch pipes, has however been overlooked and neither is it mentioned in any archival references to the Swedish pipe making industry.

in Karlskrona had its own pier in the so-called *Kofferdihamnen*, the merchants' harbor, which was likely used to unload raw materials and to load finished pipes onto boats for transport (Stibéus & Bergman Carter 2025, p. 30f).

Archival information related to Johan Hök's pipe factory in Varberg is slightly more perplexing. An advertisement from the factory in Varberg published in *Götheborgs Weckolista* (11-29-1756, p. 2) suggests that the factory competed primarily with the Alingsås factory for market shares along the Swedish west coast. A decade later, annual reports from the factory state that its production could be increased if there were more customers (see for example SE/RA/420132/3/D/D a/Da 1/20 1765–1766, p. 573), suggesting market satiation and/or logistical problems. In 1771, however, the annual report from the factory to the National Board of Trade states that pipes had been sold “partly within, partly outside the kingdom” (SE/RA/420132/3/D/D a/Da 1/25 1771, p. 535).¹²⁸ Samuel Gustaf Hermelin's *Tal, om näringarnes förhållande uti rikets särskilde lands-orter [...]* states that pipes from the Varberg factory were exported to Denmark (1774, p. 91).¹²⁹

The Varberg factory, located on what was then the outskirts of the city, was situated very close to the coastline. This would have facilitated transportation of its wares and may explain the export of pipes. The export of pipes appears to have been short-lived; several subsequent annual reports state that there was a lack of sales that impeded production (see for example SE/RA/420132/3/D/D a/Da 1/33 1779–1779, fol. 449–450). The last annual report that mentions production at the factory states that its pipes were sold to “the city and its surroundings” (SE/RA/420132/3/D/D a/Da 1/37 1783–1783, fol. 347r–348v).

While Hülphers states in his travel journal that pipes were exported from Helsinki to Russian Viborg (1886 [1760], p. 50), most Swedish pipe manufacturers appear to have mainly focused on the domestic market. Indeed, exports to foreign countries are only rarely mentioned. There are examples of Swedish pipes that have been recovered in Tallinn, Estonia, yet it is not known if these were the “result of a targeted long distance trade” (Pallo & Russow 2008, p. 29).¹³⁰ A notice in *Stockholmsposten* (01-23-1786) stating that clay pipes valued at 715 rixdollars had been exported to Livonia indicates that pipe makers in Stockholm may have also targeted foreign markets.

¹²⁸ “[...] af större och mindre sorter pipor tillwärfkat 1800 Gros, som blifwit debiterade dels inom dels utom Riket” (SE/RA/420132/3/D/D a/Da 1/25 1771, p. 535).

¹²⁹ This is one of few known archival references to exports of pipes; other known examples state that pipes were exported to Livonia (*Stockholmsposten* 01-23-1786, n.p.) and that 79 dozen wooden pipe stems, 300 gross of clay pipes and 6.5 dozen meerscham pipes were exported to Finland (*Handels Tidning* 04-17-1818) nine years after the country had been ceded to the Russian Empire. Hülphers (Hülphers 1886 [1760], p. 50) also mentions exports of pipes to Hamina and Viborg in the Russian Empire.

¹³⁰ The pipes pictured by Pallo and Russow (2008, p. 29) are Swedish copies of the London type 25. They have outlines of a heart in molded relief on the left side of their heels, indicating that they were most likely made at the Forsberg factory in Stockholm.

7.11 Retailers of pipes

According to advertisements from pipe factories, pipes could be bought by the barrel, by the gross, by the dozen, or as single pieces. Pipe cases once owned by private individuals held by the Nordic Museum with a capacity of six or four pipes (NM.0035606; NM.0017924; NM.0005720), indicate that pipes could also be purchased by the half dozen or less. Advertisements from Forsberg's factory in Stockholm show that pipes, likely in bulk, could be ordered not only to staple towns, but to the entire kingdom. Similarly, advertisements published in *Stockholms Weckoblad* (04-01-1758, p. 2) and *Posttidningar* (04-13-1758), which was a nationwide newspaper, from Erik Westén and Carl Friedrich Düring's pipe factory in Arboga, state that pipes could be ordered from the factory.

Pipes appear to have been sold through various channels; apart from sales from factories and booth-like shops operated through the factories, estate inventories of eighteenth-century merchants across Sweden show that clay pipes were among the goods they carried. The ledger annotation for one of the abovementioned pipe cases, with a provenance from rural Uppland (NM.0017924), states that cases like these were used by peasants to keep pipes safe during transport from the town. This indicates that people in rural locations may have had to travel to markets or towns to obtain their pipes. Due to their significantly more portable nature, it is also likely that shorter types of pipes and stumps were parts of the stocks of itinerant peddlers known as *gårdfarihandlare*.

As indications of differentiating smokeways and consumer choice, many merchants' estate inventories list at least two types of pipes. Unfortunately, the majority of merchant estate inventories that mention pipes do not specify pipes by their factory name. Rather, relative stem length, and occasionally if the pipes are English or porcelain, is stated alongside quantity and price. In cases where only a price for pipes listed in an inventory is stated, comparisons to prices of types known from factories or workshops may shed light on their relative stem length and production quality.

Although exceptions exist, urban retailers, such as the previously mentioned inventory of Jacob Crom, generally list more types than merchants in smaller towns and cities. Occasionally, the quality of pipes and their intended consumers are implied by the ways in which pipes are referred to in the estate inventories of merchants. The estate inventory of Olof Lindholm, a merchant in Söderköping who died in 1739 lists "peasant pipes" at 12 öre copper per dozen while longer pipes cost 20 öre copper per dozen (SE/VALA/01710/F I/2 1712–1750, fol. 212v.). The prices imply that these were domestically made short and medium pipes. The inventory of Stockholm tobacco merchant Olof Holmgren who died in 1772 lists "miscellaneous long pipes" at 15 dalers copper per gross, while "smaller and inferior [pipes]" cost 9 daler copper per gross (SE/SSA/0145A/F 1/F 1 A/223 1772, fol. 816r [translation by author]). As we shall see, the pipes in the last example refer either to different grades of long pipes or long and medium pipes, which raises questions about what the very shortest pipes in regular production would have been referred to had they been listed in the same inventory.

Not only do pipes listed in estate inventories of merchants attest to a general availability of pipes that contrasted in price and appearance, the wording in many of the inventories also infer connections between specific pipes and idealized consumer groups. As an example, there can be no question about the socioeconomic status of the idealized consumers of pipes referred to as peasant pipes. These documents show that the pipes themselves carried socioeconomically differentiating connotations that would have been recognizable to consumers and non-consumers of pipes alike in their contemporaneity. Peasants were expected to purchase and use the shorter, coarser, and less expensive pipes. Merchants, tavern keepers, proprietors of coffee houses, and stallholders across the country most likely kept shorter pipes in supply alongside both medium and longer and fancier pipes intended for wealthier smokers.

7.12 Concluding discussion

From a perspective that considers the prices of pipes and the role that prices may have played in socially differentiating smokeways, the Alingsås account presents aspects of production that are highly relevant to consider when analyzing archaeologically recovered domestic pipes. The description of the manufacturing process explicitly states that there were differences between the manners in which expensive long and porcelain pipes, and less expensive shorter pipes were made. The production methods described are very similar to variations known from the Netherlands and England to have affected both the appearances and the cost of pipes. Briefly stated: the more operations or steps, and skilled labor required to make a pipe, the more it cost.

Tools associated with specific steps in the processes are mentioned, and many of these specific steps are confirmed to be directly linked to costs and appearances of pipes. Several of these attributes, which are direct results of these specific steps and tools are, under the right conditions of preservation, observable on pipe fragments to this day. Polishing lines on bowls and stems, which were placed there by factory staff using agate, flint or glass pins are one such example. According to the Alingsås account, such lines will only be found on fragments from the most expensive pipes made there.

The manner in which the pipes were dried prior to firing is another example of discrepancies in production methods that may be visible on archaeologically recovered pipe fragments. Only the longer and more expensive pipes were placed in special grooved trays made from oak, and then covered in clay shavings to ensure the straightness of their stems. According to the Alingsås description, little care was afforded the shorter, implicitly less expensive pipes which were equally implicitly intended for the smokeways of commoners and peasants. These pipes were not polished, which means that mold flashes or mold lines and scars from knives and shanking tools will remain relatively more visible on bowl and stem surfaces. Moreover, these pipes were placed on flat drying trays which would result in stems that were not as straight as those of their longer and more expensive counterparts.

The combination of this comparatively detailed account with less detailed relatively contemporaneous descriptions of clay pipe making, staff records from census and household examination records, and tools mentioned in estate inventories of pipe factory owners show that the Alingsås factory was not alone in its attempts at catering to idealized smokers from different socioeconomic segments of eighteenth-century Sweden. Several estate inventories for example contain both grooved drying trays used to keep the stems of the more expensive pipes straight while drying, and what is assumedly flat drying boards used for less expensive pipes (see also Appendix IV).

Census records, household interrogation records, and staff inventories have shown the introduction and diffusion of the knowledge of pipe making to nearly all known production centers in Sweden during the first six decades of the eighteenth century. This information shows that clay pipe manufacturing methods were introduced to the first clay pipe factories by master pipe makers or journeymen who were brought to Sweden primarily from Germany, but also the Netherlands and, in the case of Alingsås, London, England. Factories and workshops that began manufacturing pipes in the 1750s relied either on foreign masters, such as Johan Hök's factory in Varberg, Daniel Almqvist's and Anders Örnbecks factories in Stockholm and Nordsten's factory in Karlskrona. Other factories, such as Daniel Friederich Theel's factory in Falun and Lorentz Lindahl's factory in Norrköping employed Swedish pipe makers who had been trained as journeymen working under foreign master pipe makers at previously existing factories.

It seems highly likely that the itineracy of master pipe makers and so-called factory journeymen had an impact on the manufacturing methods applied, and the types of pipes produced at several different pipe factories. One such example is the master pipe maker in Falun, Peter Wallmo. Wallmo had been trained at the Forsberg factory, where he is listed in 1740 as an apprentice working under the master Olof Aspegren and the journeymen Hindrich Dörich and Anders Reymert (SE/SSA/0031/06/G 1 BA/G 1 BA:17/6 1740). Wallmo also worked at the Forsberg factory under the master Jacob van Kleeff and can therefore be assumed to have been familiar with all steps in the manufacturing of clay tobacco pipes.

Occasionally census and household examination records show that some factories and workshops had employees that performed designated tasks associated directly with the production quality of their output. For example, while several factories employed trimmers to remove mold flashes and likely polish the more expensive pipes, the Norrköping factory *Stiernan* had an employee with the specific task of polishing pipes. Similarly, Johan Hinrich Riesell employed a *polererska* – a polishtress.

The raw materials used to make clay pipes also appear to have had socioeconomic connotations among consumers. Two documents (SE/RA/6122/8/R 2766, 1740–1741, 17D; Hülphers 1886 [1760], p. 52) explicitly state that pipes made from red clay were intended for, and used by, *allmogen* – commoners.¹³¹ Calculations from the Alingsås factory predating its opening in 1738 states that the more expensive clay from Maastricht was necessary for making the porcelain pipes and slightly less expensive clay from Cologne was to be used for all other pipes (see Appendix V). The pipe factory in Falun also states in several annual reports that local clay was used at the factory. Similarly, Anders Örnbeck's charters state that local or domestic clays were to be used at this factory. Apart from these, very few accounts specifying origins of clays other than Dutch, often referred to as Colognian, however, are known to exist.

Bearing in mind the documents from both the *Handels- och manufakturdeputationen* and the National Board of Trade, which state that pipes referred to as longer and finer were used by smokers who were expected to be able to pay a premium for their pipes; these smokers, as it is expressed implicitly as self-evident, would not let increased customs tariffs on imported pipes affect their smokeways. The Alingsås account explicitly states that only the longer pipes and pipes referred to as porcelain were polished and dried in grooved trays. These were also afforded more care during firing as they were stacked around a trumpet in saggars, or, in the case of Nordsten's Karlskrona factory, placed in box-shaped saggars. Based on these statements, it is apparent that Swedish factories attempted to emulate the products that were previously imported.

This also suggests that shorter and less expensive pipes would have displayed significantly coarser surfaces, and the statement that they were dried on flat trays prior to firing indicates that their stems may not have been perfectly straight. It is therefore through comparisons of industry standards for the manufacturing of different quality segments that a better understanding of what different pipes may have looked like, as based on production steps applied, can be gained.

From a perspective that considers recognizability through differentiating smokeways, the Alingsås manufacturing description expresses intentionality behind both attention and indolence to details. There can be little question that clay pipes made at the Alingsås factory were deliberately manufactured to reflect the socioeconomic status of its intended consumers. Those who could pay a

¹³¹ In eighteenth century-Denmark, one of the cheapest domestic types of clay pipes is even officially referred to as peasant pipes (see Bardenfleth 2002, p. 117).

premium for their pipes expected to be able to obtain pipes that were visibly distinctly different from cheaper pipes intended for and used by commoners. This is also reflected in estate inventories of merchants who often kept a minimum of two types of pipes in stock – often referred to as longer and shorter. As such, short and coarse pipes produced by the hundreds of thousands each year, intended for use by commoners, would have acted as a general backdrop against which the longer polished pipes, produced in limited amounts for use by the wealthier demographic segments of eighteenth-century Sweden, could stand out.

8 General characteristics of industry standards – Olof Forsberg's pipes in 1759

8.1 Introduction

As we have already seen, Swedish archival sources along with archaeologically recovered pipes from the Netherlands and England show that attributes of pipes that correlate to their price were intimately related to the smokeways of specific socioeconomic demographic segments of eighteenth-century Sweden. This chapter presents a study of intact pipes made at the factory owned by Olof Forsberg in Stockholm, which are subsequently compared to the manufacturing description from Alingsås presented above.

In order to obtain an estimate of the validity of the observations presented above, the study turns to pipes recovered from the archaeological record. One objective of this section of the study is to obtain a better understanding of recognizable attributes of domestically manufactured pipes available throughout the eighteenth century. Attributes that can be linked to relative price, such as stem length and variations to production quality have been of particular interest. The hypothesis is that as in the Netherlands and England, price differences for Swedish pipes as found in archival sources reflect not only variations in stem lengths but also production quality. As made evident by documents from the National Board of Trade and the *Handels- och manufakturdeputationen* presented above, there were idealized consumers of certain types of pipes – the coarse and short pipes, occasionally manufactured using domestic red-firing clays, were intended for the peasantry and commoners while the longer and finer pipes were intended to replace fancy pipes primarily imported from the Netherlands, which were used by smokers on the upper end of the socioeconomic scale – most likely burghers, members of the priesthood, and aristocrats.

The manufacturing methods outlined in the Alingsås account above, when combined with what can be learned from other less detailed manufacturing descriptions, staff records and estate inventories, largely corroborate manufacturing descriptions from the countries from which pipes were previously imported. Traces of steps and tools known from these accounts known to have left particular marks and traces on pipes can as such be more reliably applied in interpretations of relative production quality and prices of clay tobacco pipes made in Sweden.

8.2 Source material and method

The primary source material for this section is a selection of intact pipes held by the Stockholm City Museum. The pipes have been identified through markings and archival information as manufactured no later than 1759 in the factory that belonged to Olof Forsberg. There is a consensus that the pipes entered the archaeological record as a result of the so-called Maria fire, also known as the Great Stockholm fire of 1759. Both price lists and advertising materials show that the Forsberg factory and

pipe merchants Dufwenberg and Nordström had a warehouse in the vicinity of Södermalms Torg, which was housed in the cellar of the so-called de la Gardie-palace which burned during the fire (Ljung & Nelson 1985). The assemblage was recovered from what was once this warehouse.

The assemblage recovered during archaeological excavations in 1984 and is so vast that attempts at quantifying the total amount of pipes have been limited to estimations based on weight. Although estimates vary, Jan-Åke Ljung and Per Nelson state that six metric tons of pipes were recovered (1985, p. 96). Due to the vast scale of the assemblage, the selection of the pipes in the analysis below has been based on earlier attempts at categorizing the pipes in the assemblage which were carried out with the aim to identify the number of molds applied in the manufacturing of the pipes (Brynja 1985; Brynja, Loewe, Duco & Frankow 1987; Åkerhagen 1992). These analyses tentatively identified between 23 and 31 individual molds which had been used to manufacture 14–15 types which were in turn connected to types listed in Forsberg's price lists from 1745 and 1747.

A later price list, from 1753, held by the Swedish National Library, which was unknown at the time of the abovementioned analyses was discovered during work with this study. As decorations and marks on pipes in the assemblage more closely match the names of the pipes in this later list, the pipe types in this price list are believed to correspond more closely to the pipes in the assemblage than those in the price lists previously applied. For example, the 1753 price list contains a type referred to as "*Hiärtpipor*" – "Heart pipes", identified in previous studies as "*Engelsk stämpel*" – English stamp. While the name English stamp implies an impressed decoration, the heart pipes have a crowned heart in molded relief on the fronts of the bowls and it therefore seems more likely that these pipes were referred to as heart pipes.

The first step of the analysis was to identify and couple intact pipes from the assemblage to corresponding names in the most recent available price list, i.e. the 1753 price list. As it was found that many of the recovered pipes have chipped rims, the definition of an intact pipe had to be expanded to include pipes with relatively intact bowls with intact heels or spurs, intact stems and visibly finished mouthpieces. Pipes with stems showing fracture surfaces were not included as these would have been considered as broken in the 1750s. For this study, the pipes were grouped according to the type they represent in the price list rather than according to traces of the molds they were made in. The reason for this is that it is believed that smokers in the 1750s were more concerned with the type of pipe they paid for rather than with the amounts of molds used to make specific pipe types. For example, Brynja's types 15, 17, and 18 have been consolidated in this analysis as "*Bred Klackar N:O 3*" – heeled No. 3, based on stem lengths and similar markings, as they were marketed and sold as the same type in the eighteenth century.

The second step of the analysis was to observe and record visible attributes of the pipes which could be linked to different stages of the manufacturing process with particular focus on those stages known from manufacturing descriptions as relevant for considerations of production quality and price. Particular consideration was made to the detailed manufacturing description from the Alingsås factory (SE/GLA/10003/-/1 1618–1799) which is presented above (and in its entirety in both Swedish and English in Appendix V). These attributes included stem length, traces of finish and surface treatment of rims of bowls, bowl surfaces, and stem surfaces, as well as relative stem-straightness for each type of pipe.

Relative bowl sizes have also been considered based on estimations of relative bowl sizes included in Brynja's report (1985, n.p.), in Brynja, Loewe, Duco, and Frankow's 1987 analysis, and measurements included in Åkerhagen's report (1992, pp. 10–34). While Brynja's estimates appear to

be based on ocular comparisons of relative volume of the bowls, Åkerhagen's measurements follow Friederich's previously mentioned HxBxO-formula. As shown by Åkerhagen's study, measurements can vary up to several millimeters between pipes of the same type, even if they have been made in the same mold. If nothing else, this should suffice as evidence of the unreliability of dating methods based on measurements.

A comparison between relative estimates (Brynja 1985; Brynja, Loewe, Duco & Frankow 1987) that divide the bowls into segments large, medium and small and Åkerhagen's mean measurements (1992) shows that:

- Large bowls measure between 49.5 and 53.6 millimeters in height, between 20.9 and 22 millimeters in width, and diameters of insides of bowls at rims measuring between 15.8 and 17 millimeters.
- Medium bowls measure between 44 and 48.5 millimeters in height, between 20.6 and 22.9 millimeters in width, and diameters of insides of bowls at rims between 15 and 17 millimeters.
- Small bowls measure between 40.8 and 44.5 millimeters in height, between 18 and 20.7 millimeters in width and diameters of insides of bowls at rims between 14 and 16.2 millimeters.

The third step, which is presented in chapter 9 below, was to compare the results of the analysis of the Forsberg assemblage to price information from other factories and workshops. In order to facilitate comparisons to price information for clay pipes from archival information from other manufacturers, the measurements of the pipes in the Forsberg assemblage have also been converted into the archaic measurement *verktum*. A *verktum* (henceforth Swedish inch) corresponds to 2.47 centimeters and is as such roughly equivalent to the Rhenish *duim* and the imperial inch used to specify stem lengths in contemporaneous sources in the Netherlands and England respectively. Another measurement occasionally used to describe stem lengths is the *quarter* or *quarter* – literally quarter, which refers to a quarter of the *aln* – the Swedish ell. One quarter of an ell is six Swedish inches – 14.82 centimeters.

8.3 Results – types, stem lengths, and production quality in the Forsberg assemblage

8.3.1 Identified types and their attributes

The 1753 price list contains price information for 20 types of pipes, of which two are stumps, which are interpreted as referring to factory seconds – pipes broken during handling at the factory or during transport. Without attempts to refit each pipe in the assemblage, stumps are indistinguishable from pipes broken as a result of the collapsing superstructure that led to the entry of the assemblage in the archaeological record.

Of the 18 types in regular production, twelve types were positively identified and another two were tentatively identified. The type “*Turckhufwuden*” – literally Turk's heads, believed to be a stub-stemmed bowl imitating pipe styles used in the Ottoman empire intended for use with a separate stem, is not represented in the assemblage. “*Lång Porcellin*” – long porcelain, which likely refers to long-stemmed Dutch-style bowls, and “*Långa Krusige*” – long pipes with fluted bowls are also not

represented in the assemblage. “*Långa Kron-Pipor*” – long crown-pipes, may be represented in the assemblage, previously identified as type 20 by Brynja, Loewe & Duco (1987, p. 4). Pipes of this type share the morphology and stamp as those identified as “*Smal Klackar tre Kronor*”, yet have a stem length of 53 centimeters, which is more than ten centimeters longer than the “*Smal Klackar Medel*”. Similarly, “*Små Medel*” have only tentatively been identified and may be a variant of the “*Smal Klackar Medel*”. It cannot be determined if the name and price of this particular pipe imply a slightly smaller bowl or a slightly shorter stem. The type referred to as “*Smal Klackar N:O 2*” can possibly be represented by the unmarked spurred pipes with stem lengths of circa 19 centimeters identified as type 7 by Brynja (1985).

8.3.1.1 Long pipes represented in the assemblage



Figure 38. Bowl, stem juncture and stem of a “*Sweriges Wapen*” - the arms of Sweden. Note the parallel striations on the stem left by the polishing. Pipe not to scale. Photo by Robert Bergman Carter.

“*Sweriges Wapen*” – literally “the arms of Sweden”, an armorial pipe morphologically based on London type 26. Stem length: 45–46 centimeters. Cut rims. Polished and relatively straight stems. Large bowls.

“*Bred Klackar tre Kronor*” – literally “wide heeled three crowns”, a pipe which is morphologically similar to a London type 25 with STOCKH:, three crowns, and O:F incusely stamped on the fronts of bowls. Stem length: 42 centimeters. Cut rims with internal knife cuts. Moderately polished and relatively straight stems. Large bowls.

“*Smal Klackar tre Kronor*” – literally “narrow heels three crowns”, a spurred pipe with the same stamp as above. Morphologically similar to the London type 26. Stem length: 42–53 centimeters. Cut rims. Polished and relatively straight stems. Medium and large bowls.



Figure 39. “*Ordinair Porcelain*”. Copies of the Dutch kromkop style, with bottered rims with milling. Not to scale. Photo by Robert Bergman Carter.

“*Ordinair Porcelin*” – literally “ordinary porcelain”, an imitation of a Dutch *kromkop* style pipe, stamped with a stamped heel mark resembling flower petals or a wheel, and a name band stamped on the stem which is an apparent attempt at mimicking name and pearl-bands on contemporaneous Dutch style pipes and the text STOCKHOLM OF. Some have a heart in molded relief on the left side of the heel indicating that several molds were used to make this type. Stem length: 45–46 centimeters. Milling around full circumference of a bottered rim. Stems not polished. Lightly smoothed stems that are relatively straight. Medium bowls.

8.3.1.2 *Medium pipes represented in the assemblage*

“*Medel krushufvud*” – literally “medium ribbed heads [bowls]”, a fluted bowl with a spur marked with N/2 in molded relief. The bowls are morphologically most similar to a London type 26 albeit with a shorter spur. Only one mold identified based on markings. Stem length: 30 centimeters. Cut rims. Stems slightly warped. Trimmed surfaces, possibly smoothed with shanking tool. Medium bowls.



Figure 40. The assumed factory mark of the Forsberg factory: STOCK over a crown flanked by O and F above a shield with a caduceus crossed with a quill in an inkwell. Not to scale. Photo by Robert Bergman Carter.

“*Bred Klackar Medel*” – literally “wide heels medium”, an imitation of a London type 25, stamped with what may have been Forsberg’s factory mark – STOCK over a crown flanked by the initials O and F over a shield with a caduceus crossed with a quill. Stem length: 32–33 centimeters. Cut rims, some with internal knife cuts. Some have a heart in molded relief on the left sides of the heels while others have completely unmarked heels, indicating that at least two molds were used to make this type. Stems slightly warped. Trimmed, possibly smoothed with shanking tool. Medium bowls.

“*Smal Klackar Medel*” – literally “narrow heels medium”, a spurred pipe morphologically similar to London type 26, with the factory stamp described above. Some have a heart in molded relief on the left sides of the spurs, others have a #-mark in molded relief indicating that at least two molds were

used to make this type.¹³² Stem length: 32 centimeters. Cut rims. Stems slightly warped. Trimmed, possibly smoothed with shanking tool. Medium bowls.



Figure 41. "Hiärtpipa". Not to scale. Photo by Robert Bergman Carter.

"*Hiärtpipor*" – literally "heart pipes", a spurred pipe with a crowned heart in molded relief on the fronts of the bowls, which are morphologically similar to London types 23 or 26.¹³³ Stem length: 24 centimeters. Cut rims. Stems ranging from straight to warped. Trimmed, possibly smoothed or wiped. Medium bowls.

8.3.1.3 *Short pipes represented in the assemblage*

"*Bred Klackar Krushufwuden*" – literally "wide heels ribbed heads [bowls]", a shorter version of the medium pipe above, marked with a crown on the left side of the heel and 43 on the right side of the heel. Stem length: 21 centimeters. Cut rims. Small bowls.



Figure 42. "Bred Klackar N:O 3". Not to scale. Photo by Robert Bergman Carter.

"*Bred Klackar N:O 3*" – literally "wide heels No. 3", morphologically similar to London type 25, marked with variations of N/3, 3/N, N3 on left side, or 3 in molded relief on the sides of the heels. Stem length: 20–21.5 centimeters. Cut rims, some with internal knife cuts. Many with warped stems. Trimmed. Small bowls.

¹³² The #-mark, when incusely stamped on the fronts of bowls, has also been attributed to the Falun pipe factory owned by Daniel Friederich Theel (see for example Åkerhagen 2012a, p. 235).

¹³³ This type has previously been erroneously categorized both as *Engelsk stämpel* from the 1747 price list, and as belonging in the segment of short pipes (Brynja, Loewe & Duco 1987, p. 7).

“*Smal Klackar N:O 3*” – literally “narrow heels No. 3”, morphologically similar to a London type 25 with a short spur in place of the heel, marked with N/3 on the sides. Stem length: 21.5 centimeters. Cut rims. Many with warped stems. Trimmed. Small bowls.

“*Bred Klackar N:O 2*” – literally “wide heels No. 2”, morphologically similar to a London type 25 with a heel marked on the sides with N/2 or 2 in molded relief. Stem length: 19.5 centimeters. Cut rims. Many with warped stems. Trimmed. Small bowls.

8.3.1.4 *Pipe types in the assemblage not represented in the 1753 price list*

A medium length pipe with a spur with a heart in molded relief on the left side of the spur is similar to London type 26. The front of the medium-sized bowl has been incusely stamped with STOCKH over three crowns and the initials O.F. This is Brynja’s type 14 and cannot be linked to any of the types in the 1753 price list. The decoration is the same as on the long pipes most likely referred to as “*tre Kronor*” – three crowns, with heels or spurs. It is therefore possible that the type is a later addition to the production catalog that may have been referred to as “*Medel Tre Kronor Smal Klackar*” – medium three crowns with spurs. Another possibility is that this is the pipe type referred to as “*Små Medel*” alongside the heart pipes for 4 dalers and 16 öre per gross in the 1753 price list. However, the 32-centimeter stems of these pipes contradict this, as the stems of the similarly priced heart pipes are eight centimeters shorter.

Another spurred pipe type with a small bowl, and a short stem measuring around 19.5 centimeters or 8 Swedish inches and no markings whatsoever, Brynja’s type 7, is not possible to connect to any of the pipes known from the price lists. The stem length and overall appearances of these pipes suggest that they may have been known as “*Smal Klackar N:O 2*” – literally narrow heels No. 2. A reason that they are not marked may be that engravings were worn down by the abrasive clay and would as such indicate a lacking upkeep of the mold(s) used to make these pipes.

8.3.2 **Price ranges for long, medium and short pipes from the Forsberg factory**

- Pipes marketed by the Forsberg factory as long had stems between 17 and 21.5 Swedish inches. Such pipes cost between 8 and 15 dalers copper per gross in the 1753 price list.
- Medium pipes manufactured at the same factory, with stem lengths between 10 and 13 Swedish inches, cost between 4 dalers and 16 öre copper per gross and 6 dalers copper per gross.
- Short pipes, measuring between 8 and 9 Swedish inches in length, cost between 2 dalers and 24 öre copper per gross and 3 dalers copper per gross.

Comparisons of the available price lists from the Forsberg factory show only minor price variations between the 1740–1741 inventory and the 1753 price list. Long pipes cost between 8 and 15 dalers copper per gross throughout the period, medium pipes cost between 4 dalers 16 öre copper per gross and 7 dalers copper at the most. Short pipes and so-called stumps cost between 2 dalers copper per gross and 3 dalers 8 öre per gross.

The three surviving price lists also state that slightly broken specimens of the longer types were sold at a discount. The 1740–1741 inventory (fig. 44) further suggests that there may have been a gradation of stumps according to stem lengths as it mentions “*Alleh[anda] St[umpar]*” – miscellaneous stumps, costing 2 dalers and 18 öre less than “*St[ora] St[umpar]*” – large or long stumps. Following these, the inventory lists pipes referred to as “*B K*”, which assumedly stands for *Breda Klackar* – wide heels, in the descending order C, D, and E which are likely stumps sorted according to the lengths of their remaining stems.

Table 3. Overview of stem lengths, production quality, and price ranges for long, medium and short pipes represented in the Forsberg assemblage and the 1753 price list.

Types identified in assemblage	Approx. stem lengths in Swedish inches	Surface treatment/ Production quality	1753 cost (dalers & öre copper) per gross
"Long" pipes: Armorial pipes, "Porcelain" pipes, Three Crown pipes	17 to 21.5	Several polished (notably on stems)/Good	8 to 15 dalers
"Medium" pipes: fluted bowls, Heart Pipes, Medium Pipes	10 to 13	Some with traces of smoothing (possible polishing)/Good – poor	4 dalers 16 öre to 6 dalers
"Short" pipes: fluted bowls, No. 2, No. 3 (No. 1)	8 to 9	None polished/Poor	2 dalers 24 öre to 3 dalers 8 öre

8.4 General observations

Of the fourteen types identified, four types had stems measuring between 18.5–21.5 Swedish inches and were interpreted as belonging to the segment referred to in price lists as long pipes. Pipes belonging in the medium segment of the surviving price lists had stems measuring between 12 and 13 inches. Finally, five types with stems measuring between 8 and 9 inches were identified as belonging to the segment short pipes in the price lists.

The pipes in the long segment generally show signs of having been manufactured with more care than pipes in the medium and short segment. Some of the pipes in the long segment do however have cracks in the surface just above the bowl-stem juncture, resulting from the use of clay that was dry and a lack of polishing. As such cracks would have been smoothed out through the application of a polishing pin, this indicates that not all bowls of the long types have been extensively polished. As the armorial pipes have molded relief on their bowls, these would be impossible to polish without affecting the molded design. However, parallel striations on the stems of these pipes show that stems on these pipes were relatively thoroughly polished. Meanwhile, pipes identified as *Ordinair Porcellin* showed no signs of polishing. The *Ordinair Porcellin*, on the other hand, are the only pipes in the assemblage with bottered rims with milling and stem decorations in the form of a band stamp. Along with the likelihood that these pipes were made using a handheld stopper, these are all manufacturing steps that took longer time than English-style pipes and would have increased the price of this type.

Tool scars on bowls and stems as well as warped stems appear to be more of a rule than an exception for pipes in the medium and short segments. Bowls with molded relief decoration, the heart pipes and, the fluted pipes, show only signs of removal of mold flashes, possibly for the same reason as the armorial pipes mentioned above. Some pipes in the medium and short length and price segments show signs of having been smoothed with a shanking tool that has compressed ridges formed during the removal of mold seams. Some pipes show signs of only having had mold flashes scraped off with a knife, with no signs of smoothing, polishing or any similar attempts at masking tool scars or mold imperfections. Apart from the short pipes with fluted bowls, the stems of the short pipes are also warped to a higher degree than their long counterparts. Warping was observed going from left to right or right to left, with many also protruding up or down. This confirms the drying of shorter pipes on flat drying trays known from the Alingsås manufacturing description rather than being placed on trays with grooves which would have allowed them to dry in fixed positions.

Although not entirely straight, the stems of the long pipes are generally significantly less warped than their shorter counterparts. Most likely this shows that grooved trays mentioned as used for the drying of long pipes in the Alingsås description were also in use at the Forsberg factory. Some of the long-

stemmed three crown pipes have stems that were slightly bent upwards, possibly due to slumping in the drying board prior to firing.

The most significant gap in terms of stem length was found to be between long and medium pipes, with the shortest types in the long segment measuring 42 centimeters or about 17 Swedish inches, and the longest type in the medium segment measuring 33 centimeters or about 13 Swedish inches. The differences in length between the short pipes, 19.5 to 21.5 centimeters, or 8 to 9 Swedish inches, and the shortest medium pipe, the heart pipe measuring 24 centimeters or just below 10 Swedish inches, is almost negligible. The other pipes in the medium segment, with stems measuring between 30 and 33 centimeters or 12 to 13 Swedish inches, are noticeably longer than the short pipes.

Analyses of relative sizes of bowls show that pipes in both the long and medium segments were made with medium sized bowls, while only long pipes have bowls categorized as large. All medium-length pipes have medium-sized bowls. The bowls of the short pipes can all be categorized as small. This indicates that relative bowl sizes, along with potential variations in markings, may function as indications of original stem lengths for broken pipes. However, while it is likely that shorter pipes often had smaller bowls than longer pipes, it is not currently known if this general pattern can be observed on pipes made at other Swedish factories at the time. Moreover, as these size variations are relative to known bowl sizes of a group from the same maker, it is likely that relative size variations vary between the product lines of different factories. This means that relative bowl sizes can only be obtained if several types from the same maker and point in time can be identified.

It is important to note that while relatively well-made in comparison to contemporary short and medium length pipes, the long Forsberg pipes appear poorly made when contrasted to contemporaneous pipes from Gouda and other Dutch production centers. The polishing is not as even, and traces of mold flashes are generally visible even on the pipes in the most expensive segment. The analysis of production quality of pipes in the Forsberg assemblage therefore strongly suggests that estimations of attributes related to levels of production quality of domestic pipes must be carried out in relation to other contemporaneously available domestic pipes.

Moreover, even the longest pipe in the Forsberg assemblage, measuring 21.5 Swedish inches, is shorter than the longest pipes of five quarters of an ell – 30 Swedish inches, that advertisements from Forsberg's factory and Forsberg's own statements from the early 1740s claim – even if the lengths of the bowls of another inch are included in measurements. Although it is likely that the type "*Lång Porcelin*" – long porcelain, which does not appear to be represented in the assemblage, was the very longest pipe produced at the factory. Based on the extra cost of one daler for this type, however, it is difficult to determine if the price reflects a longer stem, a higher production quality or both.

8.4.1 Alterations in the production of Forsberg's factory c. 1740–1753.

Comparing the price information from Forsberg's factory from the years 1740–41, 1745, 1747, and 1753 shows that its output varied slightly between the years. Production of some types, such as *Stockholms Wapen* – literally the arms of Stockholm, was discontinued at some point between 1747 and 1753, and *Mercuri Staf* – Mercury's Staff, was discontinued between 1740–1741 and 1745.¹³⁴ Meanwhile, other types appear to have been added to the output of the factory; the 1740–1741 list for example makes no reference to fluted bowls of any kind, referred to as *Krushufwuden* or

¹³⁴ See more about the arms of Stockholm under Olof Aspegren in Appendix I. Incidentally, Mercury's staff, the caduceus along with a crossed quill was used as part of the iconography of one of the factory's marks.

Krusige/Krusiga in the published price lists of later dates. These types may have been added to the production in 1742 or 1743 to convince the *Handels- och manufakturdeputationen* and the National Board of Trade that pipes from the factory could indeed replace fluted pipes imported from England. One possible piece of evidence that suggests that this was the case is the mark 43 on the side of the heels of the short, fluted pipes.¹³⁵ The number 43 may refer to the year 1743, when Forsberg again lobbied for a full embargo against foreign pipes. Similarly, two refittable fragments of a Dutch-style armorial bowl with the text STOCKHOLM FABRI[?] on the front and the number 42 on the left side of the heel held by Åland's museum (catalog number 674-262 [sic.] in Åkerhagen 2009). These fragments are likely from a pipe known as *Swärjes Wapen Porcellin* in the 1745 price list.



Figure 43. Two refittable fragments from what is most likely Olof Forsberg's "*Swärjes Wapen Porcellin*" – Arms of Sweden Porcelain known from the 1745 price list. Ålands museum, catalog number 674-262 in Åkerhagen 2009, p.15. Photo by Arne Åkerhagen.

¹³⁵ A fragmented fluted bowl with a shield with a caduceus and a quill crossed, although unidentified by Åkerhagen (2009, p. 54 [find number 636-809]) has most likely been manufactured at the Forsberg factory.

Figure 44. Forsberg's (and Olof Aspegren's) inventory of pipes available at his warehouse presented to the Handels- och manufakturdeputationen during the Riksdag of the Estates 1740–1741 (SE/RA/6122/8/R 2767 1740–1741[transcription in Appendix II). The list is the oldest price list from the Forsberg factory.

Med Stockholms Pipbruket, som är beläget, på Södermalm
vid Hornsgatan, emellan den så kallade Krossen, och Horns Dalk,
Sjersälljas, de härstädes tillverkade Tobaks, Pipor,
Fästags, tals, till följande Priser.

Långa Sorter.	Boppms Dal. kr.	Medel slåta, N:o 1., breda och smala flackar	Boppms Dal. kr.
Storres Wapen Por- cellin i Gros	13 16	Korta Sorter.	
Storres Wapen Engelsk	13 16	Korta N:o 4., breda och smala flackar	3 8
Långa Krossiga	13 16	Storresufvouden	3 8
Långa frusufvouden	13	Korta N:o 3., frusufvou- den	3 8
Lång Porcellin	12 16	Korta N:o 3., slåta, breda och smala flackar	3
Stockholms Wapen	11 16	Korta N:o 2., slåta, breda och smala flackar	2 24
De Eranoe breda och smala flackar	10 8	Korta N:o 1., slåta, breda och smala flackar	4 24
Ordinair Porcellin	8	Stora Stumpar	3 8
Medel Sorter.		Ålshanda Stumpar	2
Engelsk Stämpel	7		
Medel frusufvouden, breda och smala flackar	6		
Medel slåta, N:o 1., bre- da och smala flackar	5 24		
Medel slåta, N:o 2., bre- da och smala flackar	5 16		

NB. N:o de långa Sorterne, finnes of-
te, som på ämbarne äro afbrunne, och
Alltså, till billigt pris.

Om vederbörande Afståndares efterrättelse, har man, utom
hvad under de förra Åren, uti Gazetterne blifvit kundgjordt, af
wen för denna gången, velat lämna, att de, ifrån Städer och
Landsorterna i Riket, som skunda, större eller mindre Partier, af
de, här i Stockholm, tillverkade Tobaks, Pipor, och icke hafva
härstädes, egna Commissionärer, kunna, genom Bref, till Se-
cretären, vid denna Stadsens Borgerskap, Olof Forsberg,
såsom Ägare af Pipbruket, ordoonera, hvad de, nödigt finna,
da där, Rätt icke behöfvt nöje, så i anseende till afståndet, af
hvad som blifvit ordooneradt, som och, Credits ämmande,
på längre eller kortare tid, efter omständigheterna.
Stockholm den 2. Januarii 1745.

Figure 45. The 1745 price list from Olof Forsberg's factory (Åkerhagen 2012a, p. 19).

N^o 2

Wid Stockholms Pip-Brut, som är belägit, på Södermalm, wid Horns-Gatan, emellan den så kallade Kroken, och Horns-Tull, tillwärfas, för innevarande År, följande Sorter Tobaks-Pipor, och försäljas, Fastage-tals, til nedanstående Pris.

Långa Sorter.		Kopp:mt.	Korta Sorter.		Kopp:mt.
	Dal. öre.			Dal. öre.	
Eweriges Wapen i Gros	13:		Bred Klackar krushufvuden	3:	8
Långa Krusige	13:		Bred Klackar N:o 3.	3:	3:
Stockholms Wapen	11:		Smal Klackar N:o 3.	3:	3:
Bred Klackar tre Kroner	10:		Bred Klackar N:o 2.	2:	24
Smal Klackar tre Kroner	10:		Smal Klackar N:o 2.	2:	24
Ordinair Porcellin	8:		Bred Klackar N:o 1.	2:	24
Medel Sorter.			Stora Stumpar	3:	8
Engelsk Ståmel	7:		Alahanda Stumpar	2:	2:
Medel krushufvuden	6:				
Bred Klackar Medel	5:	24			
Smal Klackar Medel	5:	16			
Små Medel	4:	16			

NB. Af de långa Sorterne, finnas också de, som på ånderne äro något of-brutne, och säljas til billigt pris.

Til vederbörande Åfsnåmarnes efterwittelse, har man, utom hwad under de förra Åren, uti Gazetterne, så wäl som de utgiffne Pris Couranter, jemte, til samtelige Stådernes Respective Magistrater, afåene Estrifweller, blifwit kundgjordt, äfwen för denna gången welat lömna, at de ifrån Städer och Lands-Örtene i Riket, som åfsnåda, större eller mindre Partier, af de här i Stockholm, wid förenämde Pip-Brut, tillwärfade Tobaks-Pipor, och icke hafwa härstädes, egna Commisionairer, funna, genom bref, til Secretären wid denna Stådens Borgerskap Olof Forsberg, som är Ågare af Pip-Brutet, ordonnera, hwad de nödigt finna, dock, at sådant stier Fastage-tals; I lika måtto, funna och de, som åfsnåda, af desse om förmlste Riedler, så wäl Fastage-såsom och Gros-tals, adressera sig, til Handelsmännen härstädes, Dufwenberg & Nordström, som hålla öppna Bodar, upå Södermalms Torg, och härstädes, i Minut, efter Minut-pris, försälja, af denna tillwärfning, samt äfwen hafwa, nära wid bemänte Torg, til Åfsnåmarnas tiens och beqvämhet, et tillwärfeligt Magazin, med hela Fastager, af alla de Sorter, som wid Brutet tillwärfas. Man försäkrar för öfrigt, at hwat-jon och enom, skal stie, behörligt nöje, så i anseende til åfsnåbandet, af hwad, som blifwer ordonneradt, som och Credits äminutande, på längre eller kortare tid, allt efter Partiernes storlek, samt eljest warande omständigheter. Stockholm den 2 Januarii 1747.

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Figure 46. The 1747 price list from Olof Forsberg's factory (this example from SE/RA/6122/10/R 2900 1746-1747).

Wid Stockholms Tobaks-Pip-Brut, som är belägit, på Södermalm, wid Horns-Gatan, emellan den så kallade Kroken, och Horns-Tull, tillwärfas, för innevarande År, följande Sorter Tobaks-Pipor, och försäljas Fastage-tals til nedanstående Pris.

Långa Sorter.		Kopp:mt.	Korta Sorter.		Kopp:mt.
	Dal. öre.			Dal. öre.	
Lång Porcellin i. Gros	15:		Bred Klackar krushufvuden	3:	8
Långa Kron-Pipor	14:		Krushufvuden	3:	8
Långa Krusiga	13:		Bred Klackar N:o 3.	3:	3:
Eweriges Wapen	13:		Smal Klackar N:o 3.	3:	3:
Bred Klackar tre Kronor	10:		Bred Klackar N:o 2.	2:	24
Smal Klackar tre Kronor	10:		Smal Klackar N:o 2.	2:	24
Ordinair Porcellin	8:		Stora Stumpar	3:	8
Medel Sorter.			Alahanda Stumpar	2:	2:
Medel Krushufvud	6:				
Bred Klackar Medel	5:	24			
Smal Klackar Medel	5:	24			
Små Medel el. Hidetpipor	4:	16			

NB. Af de långa Sorterne, finnas också de, som på ånderne äro något of-brutne, och säljas til billigt pris.

Försäljningen af alla förenämde Sorter, stier, så wäl wid Brutet, som uti Pip-Brutets Magaziner och Bodar wid Södermalms Torg, til lika och enahanda pris; kunnandes de, ifrån Städer och Landsorterne i Riket, som åfsnåda större eller mindre Partier, af merförmlste tillwärfning, och icke hafwa härstädes egna Commisionairer, genom bref, til Handelsmännen Dufwenberg & Nordström, ordonnera, hwad de nödigt finna, då hwat-jon och enom, i anseende til åfsnåbandet, af hwad som ordonnerat blifwer, samt eljest, därwid förefallande omständigheter skal stie behörligt nöje. Stockholm den 4. Jan. 1753.

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Figure 47. The 1753 price list from Forsberg's factory (Anonymous 1753).

9 Some common eighteenth-century Swedish pipe types

9.1 Introduction

In order to obtain a better understanding of the pipes available to smokers in eighteenth-century Sweden and how they were applied in differentiating smokeways, this chapter compares the results of the analyses above to type and price information from other makers, and to Swedish pipes recovered from the archaeological record. The prices of Olof Forsberg's pipes, having been found to reflect stem length and relative production quality, is first compared to archival information relating both stem lengths and prices of pipes made at the Alingsås factory. Since no intact pipes from the Alingsås factory are known to exist, the lengths of the stems of pipes made at this factory have been gathered from an advertisement for pipes from the factory from 1787 (*Göteborgs tidningar* 04-19-1787, p. 4 [fig. 48]) which states the lengths of individual pipe types in Swedish inches.

The names of the pipes and prices in this advertisement correspond well to the names of pipes and prices in annual reports from the factory between its first decade of operation until its closing in 1827 or 1828, when however, only the names of pipe molds are listed (see Bergman Carter 2024). Only minor alterations to the product catalog appear to have been made over the factory's nearly 90 years of operation.¹³⁶ Types referred to as 1, 3, 4, $\frac{1}{2}$ 5, 5, 6, 7, and armorial pipes appear to have remained in production until the end. For one year, 1758, the armorial pipes are referred to as No. 7 with arms (SE/RA/420132/3/D/D a/Da 1/13 1758–1758), making it seem plausible that these pipes had similar stem lengths. When juxtaposed to the manufacturing description at the Alingsås factory outlined above and presented in its entirety in Appendix V, it is evident that prices at this factory clearly reflect both stem lengths and production quality. As the names used in the 1787 advertisement are the same as in earlier lists from the factory it can be assumed that stem lengths also remained relatively unchanged during the 49 years that had passed since the factory opened until it closed in 1827.¹³⁷

¹³⁶ A type called No. 2 disappears from the annual reports after 1748 and types known as $\frac{1}{2}$ 8 and 8 are mentioned in the annual report from 1749. $\frac{1}{2}$ 8 appears to have been discontinued almost immediately while type 8 was made yet another year. The No. 2 pipes were likely, based on their name and price, short, while pipes called No. $\frac{1}{2}$ 8 and No. 8 were, based on their names and prices, even longer than the No. 7. An explanation for the brevity of the period of manufacture of the longest pipes may be that these were merely manufactured in order to appease the National Board of Trade and the Riksdag of the Estates to meet conditions for the full embargo against foreign pipes and to ensure prolongations of the exclusive privileges for pipe manufacturing. While this does not explain why the No. 2 was discontinued, the discontinuation of types $\frac{1}{2}$ 8 and 8 may be explained by the fact that prolongations of exclusive rights for pipe making were not issued in 1749.

¹³⁷ The price list however does not mention the types $\frac{1}{2}$ 8, 8 and Arms of Sweden from earlier accounts. The armorial pipes cost the same as No. 7 (10 dalers and 16 öre) in earlier records, while $\frac{1}{2}$ 8 with arms and 8 with arms (both 18 dalers copper per gross) were more expensive (SE/RA/420132/3/D/D a/Da 1/4 1749–1749, p 10). These appear to

The section following immediately thereafter compares production volumes of different types of pipes manufactured at the factories in Alingsås and Falun. As these are the only two factories from which production volumes for individual types are reported for more than a couple of years, these documents function as valuable sources and as proxies for interpretations of potentially regulated production and consumer group-targeting for the Swedish clay pipe industry as a whole.

Following this section is a presentation of some of the most common Swedish pipe types of the eighteenth and early nineteenth century. This section is based on a combination of archaeologically recovered pipes as presented in Åkerhagen's catalogs and reports and various archival sources ranging from annual production reports to the National Board of Trade and estate inventories to published price lists and advertisements (see also tab. 7, the more in-depth presentation of source materials, and Appendices II and IV below).

9.2 Types, stem lengths and prices at the Alingsås factory

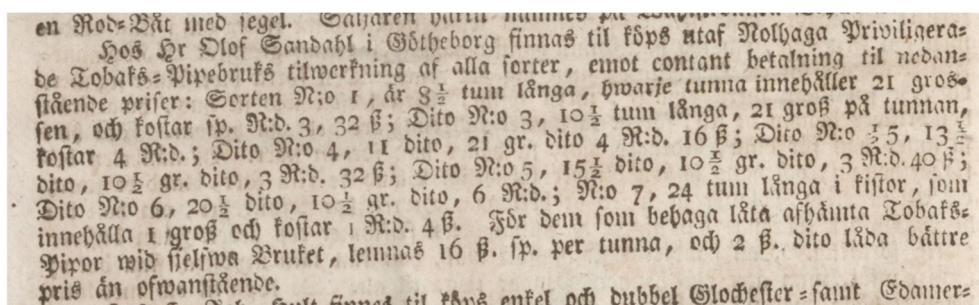


Figure 48. An advertisement for pipes from the Alingsås factory specifying stem lengths and prices of individual types as well as packaging. Only the longest pipes, No. 7, were packed in crates, the rest were packed in barrels. Göteborgs Tidningar 04-19-1787, p. 4.

When the coinage of the prices in the 1787 advertisement is converted to dalers copper per gross and compared to prices before the currency reform of 1776 it is apparent that prices have increased only marginally. The short types, measuring between 8.5 and 11 Swedish inches, cost around 3 dalers copper per gross, which corresponds well to prices in older statements. Pipes measuring between 10.5 and 13 Swedish inches, likely considered to be medium length pipes in the eighteenth century, cost around 6 dalers copper per gross. The price increase was slightly higher for these two types – the No. ½ 5 cost 4 dalers 16 öre in 1754, and the No. 5 cost 5 dalers. The 20.5-inch No. 6 pipes cost 9 dalers in 1754 and about 10 dalers 9 öre in 1787. The longest type, No. 7, measuring 24 Swedish inches, cost 18 dalers in 1754 and 19 dalers 16 öre in 1787. The minimal increases in prices, considering the condition of the 1747 embargo stating that prices could not be increased, strongly suggest that the stem lengths mentioned in 1787 reflect the stems of pipes produced at the factory at earlier dates as well.

It is not known if the specified measurements refer to the full lengths of the pipes with bowls included or if it is the length of the stems that is stated. Subtracting a Swedish inch, 2.47 centimeters, for the bowls in the measurements in the 1787 advertisement results in measurements that are very similar

have been discontinued at an earlier date. An auction notice for the sale of the factory from 1827 *Göteborgsposten* (10-16-1827, p. 4) lists the molds used at the factory. The names of the molds are identical to those mentioned in earlier sources.

to the lengths of stems of Forsberg's pipes. Similarly to Forsberg's pipes, the Alingsås pipes were priced according to length, and if the above-mentioned manufacturing description is true, variations in surface finish and care during the manufacturing process. Comparing the Alingsås pipes in the 1787 advertisement to Forsberg's pipes from the late 1750s, the pipes from Alingsås referred to as No. 1 and No. 3 would have been considered as short pipes, No. 4, No. ½ 5 and No. 5 as medium pipes, and No. 6 and No. 7 as long pipes.

Tobitz Firematerial. Was sind im Jahr folgende aus besten af. 1. Kieselsteinen. 1. Sorterare des Jungs. 1. Sorterare des Jungs. 10. Sorterare des Jungs. 10. Sorterare des Jungs. 15. Sorterare des Jungs. 4. Sorterare des Jungs.		1000
Tillwarthungen für 21. Jahr.		
2307. G. und P. von Sort N: 1. 5 1/2 p. 2307.		
859. Dito Dito N: 2. 5 1/2 p. 859.		
1118. Dito Dito N: 3. 5 1/2 p. 1118.		
2030. Dito Dito N: 4. 5 1/2 p. 2030.		
1122. Dito Dito N: 5. 5 1/2 p. 1122.		
1276. Dito Dito N: 6. 5 1/2 p. 1276.		
1525. Dito Dito N: 7. 5 1/2 p. 1525.		
15 G. und P. von Sort N: 8. 5 1/2 p. 15.		
14981.		

Figure 49. The oldest currently known specification of production volumes and prices of individual pipe types from Jonas Alströmer's pipe factory in Alingsås is from 1747 (SE/RA/420132/3/D/D a/Da 1/1 1740–1747). Prices are stated in dalers silver.

Table 4. Names and stem lengths in 1787, and prices per gross in 1754 of pipes from the Alingsås factory.

Alingsås pipe types	Stated stem length Swedish inches in 1787 (metric)	Cost per gross in 1754, dalers and öre copper
No.1	8.5 (~21 centimeters)	3 dalers
No. 3	10.5 (~25 centimeters)	3 dalers
No. 4	11 (~27 centimeters)	3 dalers
No. ½ 5	13.5 (~33 centimeters)	4 dalers 16 öre
No. 5	15.5 (~38 centimeters)	5 dalers
No. 6	20.5 (~50 centimeters)	9 dalers
No. 7	24 (~60 centimeters)	18 dalers
With Arms (armorial pipes)	N/A [likely 24 (~60 centimeters)]	18 dalers

Not only does this provide a better understanding of the pipes manufactured at the Alingsås factory, the comparison of stem lengths and prices from the Forsberg factory suggest a validity to comparisons

of prices from other pipe manufacturers to obtain a better understanding of the ranges of pipes manufactured at all Swedish pipe factories of the eighteenth century. As prices and names infer stem lengths and production quality at both Forsberg's and Alströmer's factories, this comparison can be further expanded to include price information from other Swedish pipe manufacturers from the eighteenth and early nineteenth century. The validity of such a comparison is also strengthened by a letter from the Stockholm *Hall- och manufaktur rätt* to the Arboga *Hall rätt* (see Appendix V) from 1766 which indicates a standardization of types manufactured at the Stockholm pipe factories at the time. Incidentally, this letter also bridges a chronological gap that exists between the archival records pertaining to prices and types from the 1740s and 1750s, and the late eighteenth century.

9.3 Production volumes at the factories in Alingsås and Falun

This section presents production volumes at the factories in Alingsås and Falun as reported to the National Board of Trade. These are the only two factories which more or less consistently report production volumes and prices for individual types.¹³⁸ Unfortunately, reports are missing for certain years. At the Alingsås factory, types referred to as 1, 3, and 4 are commonly consolidated in the annual reports as they all cost the same during these years. At the Falun factory, types referred to as 3 and 4 are consolidated for the same reason.

It is worth noting that neither factories report sales of stumps – pipes that were broken during manufacturing – in their annual production reports.

Table 5. Production volumes in gross per annum at the Alingsås pipe factory between 1758 and 1773.

Year	No.1–4	No. 1/2 5	No. 5	No. 6	No. 7	Armorial Pipes
1758	7906,5	3800	1044,75	2052,75	14	16
1759	4515	2163	388,5	1522,5	14	0
1766	4 735,5	3569,5	778	166,5	42	23
1767	4862	4238,25	820,25	1421,5	18	10,5
1768	4762	4238,5	820,25	1421,5	31,5	10,5
1773	4399	4160,25	805,25	1231	32	3

The production volumes reported show that the stark majority of pipes made at the Alingsås factory were short and medium pipes (tab. 5). Production of the longest types was limited to between 14 gross (2016 pipes) and 65 gross (9 360 pipes) per annum. This can be contrasted to the between 4399 gross (633456) to 7906.5 gross (1138536) of the least expensive types produced per annum.

According to production reports from Alingsås, the longest and fanciest pipes were produced in small quantities when compared to the number of the shortest types produced. It is possible that the very longest pipes were made to order rather than as part of the factory's regular production. Based on production volumes, the most manufactured long type made at the Alingsås factory would instead have been the 20.5-inch No. 6 pipe at 9 daler per gross. As types made at the Alingsås factory have yet to be firmly identified, it is not currently possible to say if this type was polished or not.

¹³⁸ The Norrköping factories *Stiernan* and *Kronan*, only report production volumes and prices of specific types for one year, 1758.

Table 6. Production volumes in gross per annum at the Falun pipe factory between 1758 and 1775.

Year	Longest Three Crowns	Three Crowns and Porcelain (from 1774)	Ordinarie/Ordinaire	Medium	No. 4 & 3	No. 2
1758	123		175	394	195	343
1759	106,75		243,75	287,25	328,25	305,75
1762	90		240	320	450	363
1766	80,75		222,75	200	345,75	221,25
1767	101,75		280	239	363	224,25
1768	77		206	101	317,25	156,25
1769	94,75		283,25	216,75	365,25	316,75
1770	89,75		173,25	267,5	219	319,5
1771	94,25		255	193	380,5	198,75
1772	78,5		266,75	204	323,75	141
1773	64,25		188	185,5	300,25	222,5
1774		102	234,75	234,75	293,75	161,75
1775		86,5	212,75	207,25	440,75	163

Looking to the production volumes reported from the Falun pipe factory, the shorter pipes referred to as No. 4, 3 and 2 were produced in greater quantities than the most expensive types “Longest Three Crowns” and “Ordinarie/Ordinaire” throughout the period. It is also noteworthy that the production volumes of medium pipes exceeded the production volumes of the very shortest No. 2 pipes during some years. Although production at the Falun factory was primarily geared towards smokeways that employed the shortest pipes, the ratios of long pipes to medium and short pipes are higher than at the Alingsås factory.

However, the output of pipes of a medium length at the Alingsås factory, types No. 5 and ½ 5, is significant throughout the period, suggesting that such pipes, similarly to the medium pipes made in Falun, may have been affordable for members of the peasant estate. Though likely not considered exclusive, these pipes were between five and eight inches longer than the cheapest pipes in regular production and would have signaled relative prosperity and differentiation.

Reported production volumes suggest that there were more smokers in Falun and its surroundings, to which the factory most likely primarily catered, that were prepared to pay extra for long pipes than the intended customer base of the Alingsås factory. It also seems less likely, based on reported relative production volumes, that the Falun pipe factory manufactured the very fanciest long pipes to order.

The distribution of production volumes of different types at the Falun factory when compared to the Alingsås factory suggest a comparatively lesser exclusivity of its longest types. This is also confirmed by a comparison of price differences; At the Falun factory, the difference in price between the longest type, at 12 dalers copper per gross, and the shortest at 2 dalers 16 öre copper per gross, is 9 dalers 16 öre, which stands in stark contrast to the price difference of 15 dalers copper between the longest and the shortest pipes made at the factory in Alingsås. The most significant difference in price between the factories is in the longest segment, where the longest pipes at the Alingsås factory cost 6 dalers more per gross than the longest pipes manufactured in Falun.

As *allmogen*, commoners, made up the stark majority of the population of Sweden, it is no surprise that both factories primarily manufactured pipes intended for the smokeways of this demographic. It is also notable that production volumes of pipes in the medium-length segment at both factories infer

a relatively wide customer base for such pipes. It therefore seems more likely that the consumer base for most medium-length pipes may have encompassed smokers from the middle and lower classes.

The section following immediately below presents some general descriptions of pipe types that can be tentatively identified based on the combination of archival and archaeological evidence. Some of these types can be immediately identified, i.e. linked to a factory or workshop, and hence relatively narrowly dated. Other types, such as otherwise unmarked N-number pipes and various other completely unmarked bowls are more challenging to apply for narrow chronometric purposes. However, as indicated by price information (see Appendix II) and traces of use (see chapter 10), these pipes may yet be applied in interpretations of differentiating smokeways.

9.4 Examples of Swedish pipes

9.4.1 Introduction

I wish to be clear about the fact that this section is by no means intended as an exhaustive catalog of Swedish clay tobacco pipe types. Rather, the lists presented below and in Appendix II are intended to function both as a background for present and future interpretations of socioeconomically differentiating smokeways based on archaeologically recovered pipes and documentary sources, and as indicators of the challenges that remain before many of the listed types can confidently be put to use as narrowly datable artifacts.

As indicated above and as shown in these lists, many types produced by Swedish pipe factories and workshops remained in production for several decades. While this means that these types may be difficult to apply for narrow dating-purposes, it also attests to many types as being successfully and firmly established, and instantly recognizable, as material elements of differentiating smokeways – regardless of when and where they were made. Price information for other pipe types, as we shall see, appear to have undergone a trajectory from acting as functional indicators of high status to becoming more widely available for applications in smokeways of the poorer classes. This strongly indicates a need to contextualize specific types of pipes and smokeways both spatially and temporally if they are to be validly employed in interpretations of socioeconomically differentiating smokeways.

The full list of makers from whom pipes, and many of their prices, are known from the archival record can be found in Appendix II.

9.4.2 Source materials and methods

Examples of many of the pipes listed below have been gathered primarily from the extensive catalog attached to Åkerhagen's *Den svenska kritpipan – pipor tillverkare och fynd* (2012b & 2012c), with some examples from Åkerhagen's reports to archaeological companies, museums, and his private collection of unstratified finds, of which many are unpublished. I wish also to refer any reader in search of names or initials of manufacturers that may be used as marks on some of the pipes not only to these catalogs, but also to the list of makers presented in Appendix I.

Names of pipe types and/or their prices have been gathered from a wide range of archival sources, spanning from estate inventories listing pipe types and molds, to newspaper advertisements, submissions to the *Handels- och manufakturdeputationen*, and documents from the *Hallrätter* (see Appendix II below). The names and price information in these sources, believed to be representative

of relative stem lengths and relative production quality, are compared both to the data from the analysis of the Forsberg assemblage and to one another in order to obtain an overview of types of domestically produced pipes available for smokers to apply in smokeways throughout the eighteenth and early nineteenth century.

Table 7. Pipe factory owners whose pipe types and prices are (partially) known, and the sources they can be found in. See also Appendix II for full lists of pipe types and their prices per gross.

Factory owner(s) and years active	Source for type and/or price information
Carl Aspegren, c. 1710–1733 (1734?)	SE/SSA/0138/F 6 b/10 1736
Olof Forsberg, c. 1738–1759	SE/RA/6122/8/R 2767 1740–1741, Anonymous/Stockholms pipbruk 1745–1747; Anonymous 1753
Jonas Alströmer and subsequent owners of the Alingsås pipe factory, 1738–c. 1827	SE/RA/420132/3/Da 1/1 1741–1747; SE/RA/420132/3/D/Da 1/28 1774–1774; <i>Göteborgs tidningar</i> 04-19-1787, p. 4; <i>Göteborgsposten</i> 10-16-1827, p. 4
Olof Aspegren, c. 1733–1758	SE/SSA/0145A/F 1 A/171 1758
Daniel Friederich Theel, Falun 1758–1784 (factory continued production until 1830)	SE/RA/420132/3/Da 1/13 1758–1758; SE/RA/420132/3/Da 1/36 1782–1782
Lorentz Lindahl, Norrköping, 1758–1767	SE/RA/420132/3/Da 1/13 1758–1758
Olof Lindahl, Norrköping, 1758–1760	SE/RA/420132/3/Da 1/13 1758–1758
Daniel Almqvist, Stockholm, 1754–1760	SE/SSA/0145A/F 1 A/182 1760
Eric Westén, Arboga, 1767	(SE/ULA/10018/3, 1750–1821)
Carl Wettervik, Stockholm, 1768/1769–1798	SE/SSA/0145A/F 1 A/330 1798
Mathias Nyberg, Stockholm, 1768–1799	SE/SSA/0145A/F 1 A/336 1799
Catharina Spak Wettervik, Stockholm, 1802–1827	SE/SSA/0145A/F 1 A/450 1827

While many sources list type names and their price, some sources are less informative. For example, only type names based on names of molds are known from Mathias Nyberg's Stockholm factory, while type names from Düring and Westén's factory in Arboga are only known from a salary dispute at the factory. Similarly, the estate inventory of Daniel Almqvist lists molds, some of which do not match finished pipes listed. This not only shows that certain types were either sold out or discontinued, but it also raises a source critical aspect for estate inventories that do not list specific mold types. It is, in other words, possible that inventory lists of finished pipes cannot be held as necessarily representative of a factory's or workshop's full product range.

In lists where prices are not stated, the order in which pipes or molds are listed, along with the names of the pipes provides indications of relative stem length, production quality, and price, as these documents are similar to documents from other pipe factories in generally listing pipes beginning with the most expensive and ending with the least expensive kinds. Molds used to make longer pipes require more metal to allow for the longer stem to be made. This means that heavier molds, as stated in estate inventories, can be interpreted as being used to manufacture longer pipes.

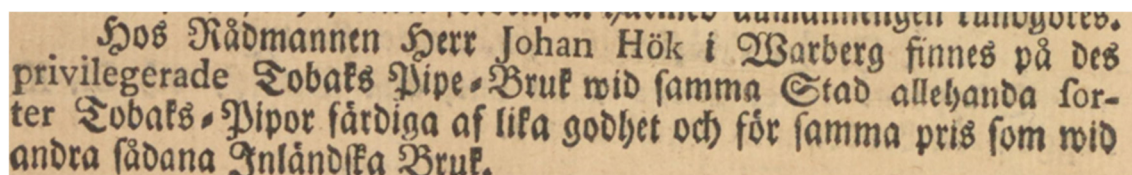


Figure 50. An advertisement for Johan Hök's pipe factory in Varberg stating that "At Councilman Johan Hök in Warberg chartered Tobacco Pipe Factory in the same city are miscellaneous Tobacco Pipes finished of the same quality (lit. goodness) and for the same price as at other Domestic factories (*Göteborgs Weckolista* 11-29-1756, p. 4).

Less is known from archival sources from other factories; Abraham Hülphers' travel journal states that six types of pipes were manufactured at Nils Matteus Nordsten's pipe factory in Karlskrona, while an annual report from Johan Hök's factory in Varberg states that larger and smaller pipes were made there in twelve molds using four screws (SE/RA/420132/3/D/D a/Da 1/26 1772–1772, p. 857).¹³⁹ Although type names and prices from these two factories are not known, analyses of wasters from these factories combined with archival sources mentioning staff shows that production at these factories most likely followed industry standards, most likely established at the factory in Alingsås and other contemporaneous factories. Indeed, source material relating to factories from which prices and types are not known occasionally suggest that their production output was similar to other contemporaneous factories. For example, an advertisement from Johan Hök's pipe factory in Varberg states that the factory manufactured miscellaneous tobacco pipes of the same quality and for the same price as at other such domestic factories (*Götheborgs Weckolista* 11-29-1756, p. 4, see fig. 50 above). Similarly, an advertisement for the sale of Anders Örnbeck's factory (fig. 51 below) states that the factory produced "all sorts of pipes of the best kind", implying a familiarity to the types referred to from other makers. Moreover, the itineracy of factory masters and apprentices recurring mentioned above acts as further evidence of standardized production methods.

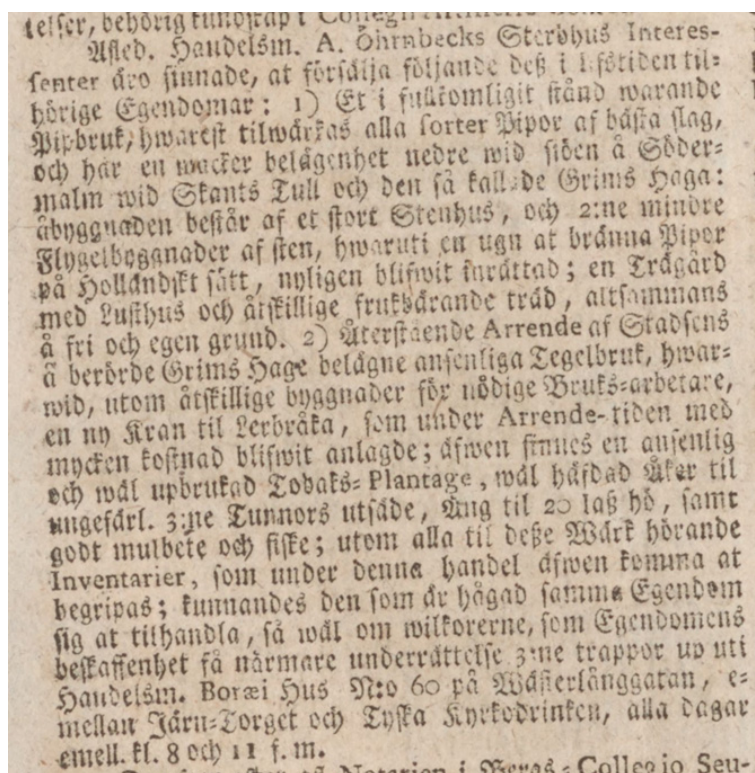


Figure 51. An advertisement for the sale of Anders Örnbeck's pipe factory states that "all sorts of pipes of the best kind" are made at the factory. Excerpt from *Posttidningar*, 01-14-1760.

A comparison of the tables presenting makers, types, and prices in Appendix II to the chronological list of makers presented in Appendix I shows that types and price information is only known from a handful factories and workshops, albeit spread over nearly a century. Meanwhile, over 70 different owners of pipe factories and workshops are known from the archival record. However, as indicated

¹³⁹ "större och smärre sorter [...] fyra skrufwar Tolf formar."

by pipe names and prices in Appendix II, contemporaneous references to standardized production methods that were shared between factories, the itineracy of masters and journeymen, transfers of ownerships of factories and workshops, along with morphologically similar bowls, the output at factories from which no pipe names or prices are currently known in many cases produced pipes that were similar to their predecessors, successors, and contemporaneous competitors.

Moreover, many pipe factories, such as the Forsberg factory, the Alingsås factory, the Almqvist factory, the Aspegren factory, the Örnbeck factory, and the Theel factory also retained workers and factory inventories, likely including pipe molds, when they changed ownership. Though stamps with initials and/or names and surnames may have been replaced, and molds with initials re-engraved or replaced with initials of new factory owners, morphologically identical pipes may have been made under the factory or workshop ownerships of more than one person. At some factories, such as the pipe factory in Alingsås, marking traditions may not have been significantly altered even after the demise of its founder Jonas Alströmer in 1761. A lack of pipes marked with initials of subsequent owners suggests that pipes marked with ALINGSÅS three crowns and the initials I and A may have been manufactured in Alingsås throughout the factory's period of operation (Bergman Carter 2024).

Some factories, such as the smaller pipe factories in Norrköping, Falun, Varberg, Karlskrona, and Arboga, appear to have limited their outputs to between four and seven types.¹⁴⁰ Meanwhile, lists from factories in Stockholm, such as Forsberg's, Olof Aspegren's, and Daniel Almqvist's show that production encompassed 15 to 28 types. It is noteworthy that all or nearly all Stockholm factories appear to have manufactured pipes that were potentially marked with N and 3, 2, and in some cases 1, on the sides of heels or spurs.

Source critical aspects which must be considered is that there are discrepancies between pipe types listed in price lists, estate inventories, reports to the *Hallrätter* and the National Board of Trade and archaeologically recovered pipes. This may be due to the fact that production outputs of pipe factories and workshops varied slightly during their periods of operation. Certain type-names are known only from molds listed in estate inventories, and there are also examples of pipes from the archaeological record with identifiable initials or other marks are not listed in any currently known price lists. For example, the estate inventory of Daniel Almqvist lists two molds known as "*räffelhuvuden*" – literally grooved heads or bowls, yet there are no such pipes among the finished pipes listed in the same inventory. Possible explanations for this discrepancy may range from the type having been discontinued, sold out, or not yet produced.

Similarly, pipes from the archaeological record can sometimes be attributed to a factory from which no price information is currently known to have survived – the factories in Karlskrona and Varberg are two such examples. While the factory, its owner and staff, and its years of operation can be identified by pairing marks on some of the pipes they produced to archival information, obtaining relative price information for individual pipes from these makers is possible only through comparisons to similar bowls made by manufacturers whose prices are known from the archival record.

As shown by Chapters 8 and 9, and Appendices II and IV, the output of the Swedish clay tobacco pipe industry was homogenous in terms of segmentation of stem lengths into long, medium, and short. The same can most likely be said for general variations in production quality and price. A

¹⁴⁰ It is worth noting that Johan Hök, the owner of the Varberg pipe factory, stated in 1772 that twelve molds were used there (SE/RA/420132/3/D/D a/Da 1/26 1772–1772, p. 857). While this may indicate that the factory made twelve different types of pipes, it more likely means that similarly to the Forsberg factory, more than one mold was used to manufacture one type of pipe.

partial explanation for this may be one of the conditions stipulated as part of the embargo against foreign pipes of 1747 – that the embargo would be revoked if prices were ever increased. However, some of the pipe factories that began their production after the embargo of 1747 appear to have added types to the more generic output that was already in place in 1747.¹⁴¹

9.4.3 Three crown pipes

Many manufacturers' production catalogs include a long type referred to as *3 Cronor*, *Tre Cronor*, or *Tre Kronor* – three crowns. These pipes are most likely those that have been marked with the minor coat of arms of Sweden, three crowns, most often stamped and occasionally in molded relief on the front of their bowls. It is possible that some pipes marked with three crowns and versions of royal initials FR – for *Fredericus Rex* (fig. 52) and AR or AFR (see Åkerhagen 2012a, pp. 64–65) for *Adolphus Rex* or *Adolphus Fredericus Rex* stamped, often as monograms, on the front of bowls also belong in this group.¹⁴² Pipes with the three crowns and FR-mark are confirmed as having been imported from London where they were made by at least one maker, William Manby (Pearce 2013, p. 81).¹⁴³ It seems likely that these pipes were imported prior to the embargo of 1747, yet as their original stem length is not known, it is also not known if they were encompassed by the embargo of 1741. Versions of pipes with three crowns FR, and three crowns AFR have also been confirmed as having been made domestically at the Alingsås factory (Åkerhagen 2012a, p. 64; Bergman Carter 2024), and it is highly likely that such pipes were also made at Carl Aspegren's and Olof Aspegren's factories.¹⁴⁴ It is not currently known if pipes with this mark were made at Forsberg's factory.

As with the majority of the pipes made in Sweden throughout the eighteenth century, pipes with three crowns are morphologically similar to contemporaneous English pipes – primarily the London type 25, although spurred versions more similar to the London type 23 are also known.

With some exceptions, bowls recovered from the archaeological record with marks that include three crowns are currently difficult to assess in terms of their original price. This is in part due to the fact that many factories and workshops, such as the factories in Alingsås, Karlskrona, Varberg, the *Cronan* factory in Norrköping and some makers in Stockholm, such as Forsberg, Almqvist, and Carl Wettervik marked long, medium, and perhaps also short pipes with three crowns. Only a few makers, such as the factory in Falun, appear to have reserved the mark for their longest pipes. Both polished

¹⁴¹ Charters for Almqvist's pipe factory indicate that the types made at the factory were stipulated by the National Board of Trade. Moreover, the document indicates that the National Board of Trade was dissatisfied with the types and quantities produced at Forsberg's and Aspegren's factories, which may explain Almqvist's additions to the otherwise generic output that was shared by all factories.

¹⁴² A possibility which needs to be further explored is whether or not pipes with three crowns and royal initials, similarly to pipes bearing the monogram of Gustav III, may initially have been commissioned by the Royal Court and perhaps issued as propaganda.

¹⁴³ Numerous examples of London type 25 bowls stamped on the fronts with Three crowns and FR marked on the sides of heels with the crowned initials W/M have been recovered across Sweden (see for example Åkerhagen 2012a, p. 172, p. 273, p. 287, p. 291, p. 389; Åkerhagen 2012b, p. 125, p. 330, p. 355, p. 359). These have convincingly been attributed to the family of pipe makers in London by the name William Manby who also exported pipes without this stamp (Åkerhagen 2012, p. 61; Pearce 2013, p. 81).

¹⁴⁴ Åkerhagen has most likely misattributed pipes with the three crown FR stamp marked with A/O in molded relief on the sides of heels or spurs to Anders Örnbeck (Åkerhagen 2012, p. 63). The initials A/O are more likely to belong to Olof Aspegren as his factory was operational during Frederick I's reign. Production at Örnbeck's factory did not begin until three years after Frederick I had died. See also Appendix I.

and unpolished versions of bowls marked with three crowns are known from archaeological contexts, and this attribute may be the best indication of a relative price of these pipes.



Figure 52. A fragmented bowl, stamped on the front with three crowns and the initials of King Fredric I – FR for Fredericus Rex. This particular bowl has a spur marked with crowned A/O and was most likely made at a factory belonging to Olof Aspegren no later than 1751. The bowl is from the Åkerhagen collection. Photo by Robert Bergman Carter.

Three crown pipes are the most expensive type in the two inventories of Carl Aspegren. This shows that pipes with this mark were likely considered high status pipes in the 1730s and likely earlier. No archaeologically recovered pipes with this mark, however, have hitherto been convincingly attributed to this factory. Looking at price developments of this type over the course of the eighteenth and early nineteenth century, it is evident that prices for long three crown pipes decreased from 13 to 10 dalers per gross around the mid-eighteenth century, to 6 dalers per gross by the end of the eighteenth century. Meanwhile, prices of other types remain relatively unchanged, and in some cases they increased. Based on archival information, the only factory that appears to have exclusively and consistently applied the three crown mark on its most expensive pipes is the pipe factory owned by Daniel Friederich Theel in Falun.

One possible explanation for the decreased price of the three crown pipes is that the three crown mark, which was originally applied as a stamp, was instead applied as molded relief by using engraved molds at the end of the eighteenth century. This meant that there was no need to stamp these pipes, an operation that took extra time and effort and hence increased costs. Bowls with three crowns in

molded relief which have clearly had mold flashes removed with a serrated tool, possibly the same type of knife used to apply milling. This could indicate that such pipes have been made in factories or workshops that also produced Dutch-style pipes with milling on their rims – such as the factories belonging to Mathias Nyberg or members of the Wettervik family.

Another possible explanation for the decrease in price of three crown pipes is that the mark may have lost its potential value as an indicator of high social status quite early in the 1740s. Forsberg's price lists from 1745 onwards list medium three crown pipes. These were possibly added after the inventory presented during the Riksdag of the Estates of 1740–1741. It is possible that Olof Aspegren began manufacturing medium-length pipes with three crowns after breaking the partnership with Forsberg in 1742, thus diminishing the design's appeal among wealthier smokers.

As noted above, several factories that opened during the 1750s, such as Hök's factory in Varberg (see fig. 107 below), Nordsten's factory in Karlskrona, and Olof Lindahl's factory *Cronan* in Norrköping stamped several types with variations of the three crowns-mark. Moreover, the Alingsås factory appears to have stamped both polished high-quality pipes and unpolished low-quality pipes with three crowns, perhaps beginning as early as 1738. As pipes with three crowns then must have been applied in smokeways of poorer smokers, this may have led to quite a rapid devaluation of these pipes' initial functions as markers of socioeconomic status.

9.4.4 Pipes with the greater coat of arms of Sweden

Archival sources indicate that pipes with the greater coat of arms of Sweden appear to have been exclusively manufactured by makers in Stockholm and at the Alingsås factory, likely beginning in the late 1730s. As there were no armorial pipes among the factory wasters from the Karlskrona factory or the albeit limited amount of fragments recovered from the Varberg factory in 2020, such pipes do not appear to have been made there. Neither is there currently any archival or archaeological evidence to suggest that armorial pipes were made at the pipe factories in Falun, Arboga or Norrköping. While only English style armorial pipes with the greater coat of arms of Sweden are known from the Alingsås factory, Forsberg's price list from 1745 lists both an English and a Dutch version.¹⁴⁵ Price lists from the factory suggest that production of the Dutch-style armorial pipe appears to have been discontinued at the Forsberg factory between 1745 and 1747. Meanwhile, only English style armorial pipes with spurs have hitherto been attributed to the Alingsås factory. An English-style armorial bowl, supposedly identified through an intact name band stamped on a stem, enabled Åkerhagen to attribute production of these to Emanuel Eldh (Åkerhagen 2012a, p. 39). This suggests that this type may also have been made under the ownership of Eldh's predecessor Almqvist and other manufacturers in Stockholm.

Several Dutch-style armorial pipes from the archaeological record have been convincingly attributed to Mathias Nyberg, Carl Wettervik, Mauritz Kirstein and Jonas Betulin (Åkerhagen 2012a pp. 50–57). The fact that such pipes are listed in the estate inventory of Catharina Wettervik from 1827 however brings into question if armorial pipes marked with WETTERVIK STOCKHOLM on the stems may also be attributed to production under her ownership. Another

¹⁴⁵ It is currently not possible to exclude the possibility that Dutch style armorial pipes were also made at the Alingsås factory. Production volumes of armorial pipes at the Alingsås factory are consistently relatively low in comparison to other types in annual reports, which explains their relative rarity in the archaeological record (see production volumes above).

currently rarely encountered bowl type with the arms of Sweden flanked by crowned lions rampant with a banner below the shield with the text SWEDEN. These pipes referred to as “*Norgepipor*” – the Norwegian pipes, as the first example was found in Norway (Karlsson 2006, p.101; Åkerhagen 2012a, p. 57). These pipes have a heel mark that could be read as a monogram of the initials C, W, and perhaps also M, N and B. This interpretation suggests that these pipes were made in Stockholm during a brief period when Carl Wettervik and Mathias Nyberg worked in a jointly owned workshop (see Appendix I).



Figure 53. The left sides of two Dutch-style armorial pipes made in Sweden at currently unidentified factories. Note that the bowl on the left has traces of polishing on its back. The heels of both pipes show attempts to copy the pipe makers' guild mark of Gouda in molded relief. Both bowls are part of the Åkerhagen collection. Photo by Robert Bergman Carter.

As all bowls of the armorial pipes have elaborate decorations in molded relief that would be damaged by polishing, these commonly show signs of having only been trimmed from mold flashes. Occasionally, polishing lines can be observed on the backs of armorial bowls (see fig. 53 above). Armorial bowls with intact stem junctures and stems often show signs of polishing, indicating that these pipes fetched a higher price. Dutch-style armorial pipes attributed by Åkerhagen to Carl Wettervik or Mathias Nyberg often have bottered rims with full-circumference milling. Apart from the abovementioned *Norgepipan* and a few other exceptions, Dutch-style armorial pipes made in Sweden are mostly known as bearing name bands on stems rather than having marks on heels or spurs. Some Dutch-style armorial pipes have imitations of the Gouda pipe makers' guild mark on the left side of their heels (fig. 53 above). This supports the interpretation that the intentions behind these pipes was to mimic some of the most expensive pipes made in Gouda.

Interpreting stem length and price based solely on Dutch-style armorial bowls is complicated by the fact that medium-length versions of these were also produced by both Carl Wettervik, Mathias Nyberg and highly likely by other makers in Stockholm in the latter half of the eighteenth century and most probably into the nineteenth century. Future studies of this type may lead to a better understanding of potential variations between the most expensive and the less expensive types and how to identify them.

9.4.5 Dutch-style Swedish pipes

Pipes imitating Dutch styles, referred to as *porcelin* or *postlin* – literally porcelain or *ordinaire*, with naming conventions and price variations most likely linked to variations in production quality, were very likely produced at Carl Aspegren's factory in Stockholm as early as the 1710s. The inventories of Carl Aspegren list only short porcelain pipes, yet by specifying that these were short, the list infers that there were also longer versions produced here. Unfortunately, no pipes from the archaeological record have hitherto been convincingly attributed to Carl Aspegren.¹⁴⁶

It is not known if such pipes were manufactured by Carl Aspegren's son Olof Aspegren during the period when he was in partnership with Olof Forsberg. While there is no doubt that Forsberg's factory manufactured such pipes after the two parted ways, no such pipes are listed in Forsberg's and Aspegren's inventory presented to the *Handels- och manufakturdeputationen* in 1741 (fig. 44 above). This may, however, also mean that they were sold out at the time of the inventory.

As indicated by the relatively large number of bowls recovered during dredging at Skeppsbron (see fig. 12 above), known to have been a high-status residential area in Stockholm, Dutch *kromkop*-pipes were likely the height of fashion among wealthy smokers in Sweden in the 1730s and the early 1740s. It is therefore possible that continued imports of long polished pipes from the Netherlands made domestic production of these unprofitable, which is another possible explanation as to why no such pipes are mentioned in the abovementioned 1741 inventory. Indeed, production of copies of Dutch pipes may have recommenced on the behest of the *Handels- och manufakturdeputationen* or the National Board of Trade as part of the condition to replace all imported pipes.

As no such pipes, and only the consolidated value of Olof Aspegren's molds, are listed in his estate inventory, it is impossible to say based on archival evidence that Dutch-style pipes were made at his factory. If Forsberg's claim that Aspegren had been trained as an apprentice in the Netherlands is true, there is no doubt that he was familiar with Dutch manufacturing methods and that he had the ability to make such pipes.

According to the abovementioned manufacturing description from the Alingsås factory and the fact that a Dutch workshop in Alingsås is recurrently mentioned in archival sources from the 1740s, Dutch-style pipes were produced there. According to a comparison of two Alingsås pipes in Åkerhagen's catalog (2012b, p. 272), the Dutch-style bowls have a narrower heel, bottered rims and a slightly more oval bowl-form than the English-style bowls. The bowl referred to as Dutch by Åkerhagen is not immediately recognizable as such and is not morphologically similar to Dutch-style bowls from other Swedish makers of the eighteenth century. This bowl type is not commonly

¹⁴⁶ It is highly likely that there are pipes manufactured at Carl Aspegren's factory in the many reports and catalogs produced by Åkerhagen. There are numerous pipe bowls in these that have been identified with variations of "*svensk odekorerad pipa från medio 1700-tal*" – Swedish undecorated pipe from the mid-eighteenth century (see, for example, Åkerhagen's pipe report in Carlsson et al. 2021).

encountered which may be due to the cessation of the Dutch workshop, or its consolidation with the English workshop, which appears to have taken place in the latter half of the 1740s.¹⁴⁷

Based on archaeological evidence, the production of Dutch-style bowls at Swedish factories that began production in the 1750s and later seems to have made versions of *kromkop* pipes and/or pipes with the oval style bowls that were made in the Netherlands during the same period. For example, Daniel Almqvist's factory in Stockholm made both oval and *kromkop* style Dutch bowls (see, for example, Åkerhagen 2012c, p. 342 and 345). Almqvist's factory also made medium-length pipes referred to as porcelain for 16 dalers copper per gross, and a medium type called *kromhuvud* – a literal translation of the Dutch *kromkop* at 8 dalers and 16 öre copper per gross. The difference in price most likely reflects variations in surface treatment. Meanwhile, Nils Matteus Nordsten's factory in Karlskrona most likely made at least one Dutch-style pipe that incorporated morphological elements of both the *kromkop* and the oval style, likely with a name band on the polished stem (Stibéus & Bergman Carter 2025, pp. 107–111).

Archival evidence from Swedish factories and workshops shows that polished versions of Dutch-style pipes were among the most expensive types in regular production throughout the eighteenth century, regardless of if they were long, medium or short. As such, fragments of Dutch-style polished bowls, polished stems with or without name bands, particularly those recovered from contexts with no infiltration of genuine Dutch pipe fragments should, provided that a few other conditions are met, be considered as material remains of the smokeways of people who were prepared to pay a premium for pipes.¹⁴⁸

9.4.6 The arms of Stockholm

Pipes referred to as the arms of Stockholm are listed in Forsberg's inventory presented to the *Hall- och manufakturrätten* during the Riksdag of the Estates in 1740–1741 and in the price lists of 1745 and 1747. The price for this type decreased from 15 dalers copper per gross in the beginning of the 1740s to 11 dalers copper per gross in 1747.

Although the name suggests an armorial pipe with a design in molded relief, no pipes with relief designs reflective of this name have hitherto been recovered from the archaeological record. However, spurred bowls with the initials A/O in molded relief stamped on the front with a griffin rampant in a crowned shield stamped (fig. 54a), or heeled bowls with the same initials in molded relief and a *globus cruciger* (fig. 54b) in a crowned shield stamped, both present in the coat of arms of Stockholm during the eighteenth century, are well known from the archaeological record. As both the griffin rampant and the *globus cruciger* were elements of the coat of arms of Stockholm, both the spurred and the heeled pipes with these stamps were likely known as the Arms of Stockholm.

¹⁴⁷ The last currently known reference to the Dutch pipe workshop in Alingsås is from a description of the Alingsås Manufakturverk signed on January 5, 1747, by Jonas Fröman and Carl Forsell (cited in Strähle 1885, p. 279).

¹⁴⁸ See Appendix III for guidelines for recording pipe fragments.



Figure 54a and 54b. Two versions of pipes most likely called the arms of Stockholm. A spurred bowl stamped with a crowned shield with a griffin rampant. The spur is marked with crowned A/O in molded relief, indicating that it was made at one of Olof Aspegren's factories in Stockholm. 54b. A heeled bowl stamped on its front with a crowned shield with a globus cruciger. The heel is marked with crowned A/O in molded relief, indicating that it was made at one of Olof Aspegren's factories. Both part of the Åkerhagen collection. Photos by Robert Bergman Carter

Similarly to bowls stamped with three crowns and FR and the initials A/O on the sides of heels or spurs, Åkerhagen attributes the majority of these bowls to the Örnbeck factory based on the initials A/O.¹⁴⁹ While it is possible that Örnbeck made pipes with this design, it is more likely that they were made under the ownership or mastership of Olof Aspegren. A bowl, modelled after the London type 25, with one of Olof Aspegren's successors, Carl Fredrik Wallström's initials CF/W in molded relief on the sides of the heel, indicates that pipes known as the arms of Stockholm may have been associated to the Aspegren factory.

According to price lists, the pipe type was discontinued at the Forsberg factory at some point between 1747 and 1753. As molds are consolidated and valued after weight rather than being individually listed in Olof Aspegren's estate inventory, it is not known if such pipes were made at the Aspegren factory in 1758. As mentioned above, however, the Aspegren factory continued to manufacture heeled pipes with the *globus cruciger* and the griffin rampant, likely with the name *Stockholms Vapen* – the arms of Stockholm.

This pipe type cost 15 dalers copper per gross in the early 1740s, suggesting that it was a long pipe that was also polished. By 1747, although still listed among the long pipes, the cost had decreased to 11 dalers copper per gross. This suggests that later versions of this pipe may have had either shorter stems, that production quality standards for this type had been lowered, or both. This decrease in price occurs at the same time that Olof Aspegren and Olof Forsberg parted ways. Although the type remained among the most expensive pipes on the market, it was significantly less expensive than contemporary copies of Dutch styles and armorial pipes. Similarly to three crown pipes, it would appear as if the type's function as a signifier of high status degenerated throughout the 1740s and 1750s.

¹⁴⁹ Åkerhagen refers to the design as "*Biskopsäpple*" – literally Bishop's apple, thus disregarding the fact that it is an element of the coat of arms of Stockholm. Moreover, Åkerhagen seems to have been convinced that this stamped design was exclusive to the Örnbeck factory, thus failing to note the mark CF/W in molded relief on the sides of the heel of for example UM 20126 (Åkerhagen 2012b, p. 198).

9.4.7 Pipes with fluted or lobed bowls

Archaeologically recovered bowls with fluted or lobed designs in molded relief are difficult to classify in terms of production quality, stem length and price. As with any bowl with decorations in molded relief, polishing is difficult to apply without damaging the molded design. Archival sources refer to these pipes as *krusnackar* – literally rippled necks, *krushufwud* – literally rippled heads or bowls, *mussel hufwud* – literally mussel head or bowl, and *reffel hufwud* – literally grooved head or bowl. Archival records and the Forsberg assemblage show that these pipes were made in both long, medium, and short versions.

Although Åkerhagen's catalogs contain numerous variations of lobed and fluted bowls, there are three general types of pipes with these designs known from the archaeological record that can be attributed to Swedish factories or workshops. The first type is modelled after contemporaneous English pipes, such as the fluted type produced at the Forsberg factory (fig. 55). The fluted surfaces of these pipes strongly resemble gadrooning popular in the decorative arts during the period. As the Forsberg factory made long, medium, and short types with fluted designs, it can be difficult to determine stem length and price based on finds of bowls alone. However, the medium type has a spur marked with N/2 in molded relief, and the shortest type in the Forsberg assemblage has a heel with a crown on the left side and the number 43 on the right side. As the long type is not represented in the assemblage, its potentially distinguishing features are not currently known. It is possible, however, that its bowl is slightly larger than the medium or short types. One of Åkerhagen's catalogs with clay pipes recovered on Åland lists a fragmented fluted bowl stamped on the front in the smooth field between the lobes in relief with Forsberg's factory mark, a shield with a quill and a caduceus crossed (2009, p. 54 [find number 636-809]). This could be an example of the longest type of fluted pipes made at the Forsberg factory.¹⁵⁰

The second type is the lobed type most often attributed by Åkerhagen to the Wettervik workshop, and less often to the Nyberg workshop. These are Dutch-style bowls with lobes with dotted- or fleur-de-lis-designs between the arches of the lobes (figs. 57a and 57b). These pipes most often have milling applied with varying precision around the full circumferences of their rims. The rims on many such pipes have been cut with no further finish, and only occasionally do the rims show signs of having been bottered. Bowls of this type normally do not have a maker's mark and have been attributed to the abovementioned makers through finds that have sufficiently intact stems that stamped name bands have survived.

Though the price of 9 dalers copper per gross stated in the estate inventory of Carl Wettervik indicates a long medium length pipe or a shorter long pipe, these pipes are referred to as long.¹⁵¹ This stands in contrast to those referred to as Dutch pipes, arms of Gustav, and those that were long-stemmed pipes with the greater coat of arms of Sweden that cost between 15 and 21 dalers copper per gross. This infers that lobed pipes may have been relatively affordable and therefore more widely obtainable.

¹⁵⁰ There is another example of an English style fluted bowl with a stamped mark on the front which was most likely used by the successors of Daniel Almqvist's factory, Emanuel Eldh and Pehr Georg Fahnehjelm (personal communication, Åkerhagen and Eriksson 1987). It is very likely that these were made in the molds referred to as "*räfflad form*" in the estate inventory of Almqvist (SE/SSA/0145A/F 1/F 1 A/182 1760, fol. 366v). The estate inventory lists two molds referred to as "*räfflad form*". One mold is listed following No.2-pipes and referred to as "*räfflad dito*", suggesting that the Almqvist factory also made fluted pipes with the N/2 mark on the sides of heels or spurs.

¹⁵¹ Åkerhagen is not clear about how many different lobed pipes with marked stems that have been recovered, bringing many of his attributions to Wettervik or Nyberg into question.

The presence of such pipes in assemblages associated with crofters and laborers indicates that any potential differentiating *éclat* that lobed pipes may have had among wealthier smokers when the type was introduced must have faded as the eighteenth century progressed.

The third type is a spurred bowl, morphologically closer to London type 26 pipes than Dutch pipes, with lobes and dotted tendril-like designs in molded relief (fig. 56). The maker of these pipes, similarly to the Wettervik and Nyberg lobed bowls, has been identified through a stamped name band on a relatively intact find. The name band T LIUNGREN shows that they were made at the Grindsbruk factory in Stockholm under the mastership or factory-journeymanship of Thure Ljunggren (with spelling variations).¹⁵² There are some attributes of these pipes which indicate that they may have belonged to the most expensive segment; the molded decorations are generally in relatively sharp relief, indicating that the mold or molds used to make them were subject to regular upkeep, and stems with this name band occasionally show signs of polishing. The application of the name band stamp on the stem also suggests a relatively higher price.

Fluted and/or lobed pipes are mainly known from manufacturers in Stockholm. The only time that they are mentioned as being manufactured in Sweden outside of Stockholm is in the 1759 annual report from the Norrköping factory *Stiernan*, costing 1 $\frac{3}{4}$ dalers silver per gross, or 5 dalers 8 öre copper (SE/RA/420132/3/D/D a/Da 1/14 1759–1759, n.p.), indicating a short or medium length pipe. No such pipes have hitherto been attributed to the *Stiernan* factory. A search in existing clay tobacco pipe reports and catalogs by Åkerhagen shows that there are variations in decorative elements of bowls in this category. It therefore seems likely that lobed bowls may also have been produced by manufacturers in Stockholm other than Carl Wettervik, Mathias Nyberg, and Thure Ljunggren.



Figure 55. Olof Forsberg's fluted pipe bowls are modelled after English pipes. Pictured here is the bowl and a few centimeters of the stem of the Medel Krushufwud from the Forsberg assemblage at the Stockholm City Museum. The shorter version has a heel rather than a spur. Photo by Robert Bergman Carter.

¹⁵² There are also versions of the stub-stemmed *turkhufwud*-bowls with lobed designs known from the archaeological record.



Figure 56. An English-style lobed bowl with dotted tendrils in molded relief most likely made at the Grindsbruk factory in Stockholm under the ownership of Carl Abraham or Anna Schrickel. A similar pipe with a T. Liungren name band stamp on its stem shows that these pipes were made under Thure Ljungren's managership (c. 1773 – 1811). The bowl is part of the Åkerhagen collection. Photo by Robert Bergman Carter.



Figure 57a and b. Two versions of the Swedish Dutch-style lobed pipes most likely manufactured in Stockholm between c. 1768 and 1830. Åkerhagen generally identified these as made by Carl Wettervik's or Mathias Nyberg's factory. Both part of the Åkerhagen collection. Photo by Robert Bergman Carter.

There is also evidence in the archival record that lobed and/or fluted pipes were manufactured by other makers than those commonly mentioned by Åkerhagen. For example, the estate inventory of Catharina Wettervik from 1827 lists *krusnackar* at 32 shilling per gross and *räffelnackspipor* at 36 shilling per gross. The price variation may be indicative of variations in either stem length or surface treatment or both. As it is not known if both Carl and Catharina made use of the name band mark, it is currently not possible to exclude the possibility that pipes and stems attributed by Åkerhagen to Carl Wettervik were made under the ownership of Carl's widow and/or daughter Catharina.

Moreover, two other makers working in Stockholm in the late eighteenth and the early nineteenth centuries, Jonas Betulin and Johan Martinell, worked as apprentices under Carl Wettervik and Mathias Nyberg. As no price lists are known from these two makers, all knowledge about their output comes from the archaeological record. Hitherto, no sufficiently intact pipes with stems long enough to have a bowl and a name band in place have been recovered. However, stems stamped with BETULIN STOCKHOLM are known from the archaeological record, in assemblages containing lobed bowls with milling. It is therefore highly likely that Jonas Betulin also manufactured such pipes.

An attribution of these pipes to a maker with a known period of operation is complicated further by the fact that the Fortuna factory in Åbo, Finland, also manufactured these. According to Seela (1983, p. 63), molds were brought to the Fortuna factory by Johan Petter and [Anna] Margareta Zetterberg as late as July of 1839. According to household examination records from 1837, Johan Petter Zetterberg worked at the pipe factory in Stockholm, which was owned by Catharina Wettervik's successor, Chrisina Elisabeth Westin (SE/SSA/0011/A I a/33 1827, fol. 200v.). The Zetterbergs returned to Stockholm shortly thereafter and may have continued making pipes. This would mean that lobed pipes were made in both Stockholm and in Åbo well into the nineteenth century.

Linking these pipes to differentiating smokeways is currently complicated by the fact that variations in production quality is not fully understood. It is highly likely that more than one style of lobed pipes imitating Dutch styles, similarly to Forsberg's porcelain pipes, were made with either polished or unpolished stems. This may also be reflected in the price variations known from archival records.

Another issue to complicate the task of assessing the social status of smokers of pipes with Dutch style lobed bowls is that one or more factories or workshops appear to have turned pipes of this type into novelty pipes with curled stems. Presented as an unstratified find made by a diver, an unmarked Dutch style lobed bowl with an upward bent stem is shown in one of Åkerhagen's catalogs (2012b, p. 407). A fragment of a seemingly intentionally curled stem occurs alongside lobed bowls in the assemblage from Lappatähta dated to the late eighteenth and/or early nineteenth century. Åkerhagen has generally identified intentionally curled stems as Dutch *krulpijp*, attributing them to pipe makers in Gouda in the Netherlands. This would suggest a production date between the mid-nineteenth century and the early twentieth century (see, for example find 102 in Björk & Blennå 2020, p. 47; find 2564:7494:2 in Carlsson et al. 2021, p. 372). This production date is not always in accordance with contextual chronology and either suggests infiltration, bioturbation, or that these pipes were produced at an earlier date.

There is evidence that these pipes were manufactured in Stockholm, most likely at factories or workshops on Kungsholmen that made similar pipes with lobed bowls with straight stems near the end of the eighteenth century and beginning of the nineteenth century. For example, the estate inventory of Mathias Nyberg lists a pipe type called *carosell* – literally carousel pipes. Prior to the nineteenth century, the word carousel referred primarily to spectacles derived from tournament styled jousts. In such carousels, riders of either horses, or, in the winter – horse-drawn sleds, speared rings that were suspended along a set course in hippodromes on land or on frozen bodies of water.

It is possible that these curled pipes were initially intended for use as such circles at carousel events and that they also entered circulation among smokers of the time. Although no other references to carousel pipes are currently known from the archival record, the estate inventory after Jeremia Moberg, a merchant in Norrköping who died in 1808 (SE/VALA/01697/F I aaa/61 1808, n.p.) lists "*posthornspipor*" – literally post horn pipes, at 4 shilling per dozen or 1 rixdollar per gross. The name suggests that the stems of these pipes were curled to resemble post horns. Other pipes listed in this

inventory, alongside pipes listed in an advertisement for Moberg's shop published in 1795 (*Norrköpings tidningar* 06-20-1795, p. 4) match the names of the molds listed in Mathias Nyberg's estate inventory in particular.¹⁵³

The stems of these pipes must have been relatively long to allow them to be curled into a circular shape. The curling of these stems must have been carried out when the clay was still wet and pliable to avoid cracks or breaking them completely. As polishing curled stems is difficult, this step in their manufacture may explain why such stems from the archaeological record show no signs of polishing. As the piece of stem following immediately after the bowl-stem juncture of these pipes would have been straight, identifying these pipes in the archaeological record based only on bowls is not possible. Only through bowls with enough intact stem, i.e. stems that curl upwards, or curled stem fragments, can the presence of these pipes in the archaeological record be confidently identified. It may, however, be difficult to distinguish intentionally curled stem fragments from stem fragments that have warped in drying trays, especially if only small fragments are present.

Similarly to other pipe types, such as the N-number pipes, heart pipes, and three crown pipes, it is apparent that lobed Dutch-style pipes were made by several different makers over a period of at least 60 years. Moreover, there appears to have been significant variations in prices of these pipes. The fact that these pipes vary in price in estate inventories may suggest both variations in stem length and in surface treatment of stems. The care taken during bottering or milling may perhaps also be an indication of price for individual pipes, yet this cannot currently be confirmed.

As this bowl-type is relatively common in the archaeological record in Sweden, much would be gained from obtaining a better understanding of their chronology and production quality. Future research should focus on identifying variations in the molded relief decorations on bowls, particularly on bowls with sufficiently intact stems with name bands. This has the potential of identifying makers, production dates, relative production quality and price. Focus needs also to be placed on contextual stratigraphic evidence, especially as it seems as if the lobed Dutch style was potentially manufactured in Sweden between the 1760s and well into the 1840s and likely later.

9.4.8 Pipes with King Gustav III's monogram

Prices of what are now commonly referred to as "revolution pipes", Dutch style armorial pipes with the monogram of King Gustav III and the date 19 AUG in an oval flanked by crowned lions regardant in molded relief, indicate that these were long pipes. The presence of milling around bottered rims further adds to the impression of a relatively fancy and expensive pipe. Åkerhagen has identified three makers of these pipes, though only one has been confirmed by a bowl with an intact stem with a name band – Mauritz Kirstein (Åkerhagen 1985, p. 35). Åkerhagen commonly also attributes bowls of this type to Carl Wettervik and Mathias Nyberg (2012, p. 66), assumedly based on the fact that they are mentioned in their estate inventories. Though there are no currently known archival records of the product catalog of Mauritz Kirstein, Carl Wettervik's estate inventory lists pipes called "*Guss Wapen*", and Mathias Nyberg's estate inventory lists a mold referred to as "*Gustafs Pipform*" – literally Gustaf's pipe mold.

¹⁵³ The fact that pipes referred to as "Alingsås" are listed in both inventories is of particular note. All evidence from the Alingsås factory show that the pipes made there were referred to as either numbered or as armorial pipes. Although it is possible that pipes referred to as Alingsås in Moberg's inventory did indeed come from Alingsås, there is a strong possibility that these were counterfeit pipes made in Stockholm.

There are several known versions of this pipe type, and Åkerhagen has defined seven types based on morphology and differences in the molded decorations (Åkerhagen 2012a, pp. 66–68). These pipes have been the subject of speculation since the 1980s; for example, Åkerhagen recurringly states that these pipes were ordered by King Gustav III from pipe makers in Stockholm and handed out to supporters of the king's coup d'état of August 19, 1772 (see, for example, Åkerhagen 1985, p. 34; Åkerhagen 2012, p. 66). There are also claims that some of these pipes of a particularly high production quality were ordered from Gouda and manufactured in advance of the coup.¹⁵⁴ One reason for this may be that there are known bowls with imitations of the Gouda pipe makers' guild mark, the arms of Gouda, on the left side of their heel, of which most are most likely made in Stockholm.



Figure 58. Three types of bowls with Gustav III's monogram. Their shapes are clearly inspired by contemporaneous Dutch pipes. Production quality varies within this type of pipe; some have milling and bottered rims while others have only cut rims. All three bowls are from the Åkerhagen collection. Photo by Robert Bergman Carter.

For obvious reasons, it seems highly unlikely that pipes with the exact date of the coup would have been made in advance of the coup. This suggests a later date of manufacture than has previously been suggested. Among the types identified by Åkerhagen, there is one with different dates on the back and front of the bowl. On the back of the bowl is the date of the coup, August 19, 1772, and the

¹⁵⁴ Åkerhagen's correspondence with Don Duco shows that pipes of a particularly high production quality with Gustav III's monogram and the Gouda guild mark on the left side of the heel in molded relief were not made in Gouda. It is currently not known where these were made.

front is the date November 8, 1778. Although the significance of the latter date is unknown, it shows that molds for these pipes were produced several years after the coup. Moreover, it indicates that these pipes, and the smokeways in which they were employed, may have carried complex connotations in their contemporaneity.

There is also evidence that shows that some of these pipes were not made earlier than the mid-1780s; Mauritz Kirstein's pipe factory on Kungsholmen did not begin manufacturing pipes before the year 1785, and Kirstein was exiled only two years later, in 1787 (see Appendix I). This shows that pipes with the Gustav III monogram with the Kirstein name band may only have been made during this two-year period.¹⁵⁵

Moreover, according to the journal of Axel von Fersen (1860, p. 84), such pipes may have been distributed for free during the Riksdag of the Estates of 1786:

His majesty set up, in two special places in the city, clubs and gathering places where the peasants were given beer, brandy wine, tobacco and pipes, cards and dice; there, beside pastimes, the peasants could talk about their affairs, and there, the peasants' chairman and the secretary always presided; besides this, the King also established three places where the peasants were given food at no cost.

Clubs were also established for the clergy and burghers; but for the nobility, no such establishments were made, which was wise, since it [the nobility] had done more harm than good.¹⁵⁶

It is likely that the pipes given *gratis* to representatives from the peasant-estate, and possibly also to burghers and/or the clergy during the Riksdag of the Estates of 1786, were pipes with the king's monogram. Although no references to similar clubs or gathering places are currently known from the previous Riksdag in 1778–1779, it is possible that pipes with the king's monogram were given out at then as well. While archival records show that these pipes were made by Wettervik and Nyberg, possibly, but not likely, as early as 1772 or 1773, and by Kirstein in the mid-1780s, the number of molds that have been identified by Åkerhagen suggests that there may have been even more manufacturers of pipes referred to as the Arms of Gustav.

Moreover, the fact that Gustav III was assassinated and died on March 29th, 1792, did not mean that production of pipes bearing his monogram ceased. Archival evidence in the form of the previously mentioned estate inventories suggests that this pipe type remained in production for at least seven more years after the king had been assassinated.¹⁵⁷ While the pipes in Wettervik's inventory may perhaps have been unsellable stock, the previously mentioned advertisement from Jeremia Moberg from 1795 lists pipes called "*GIII wapen*" – the arms of Gustav III (*Norrköpings tidningar* 06-20-1795, p. 4).

¹⁵⁵ The possibility that molds used at the Kirstein factory saw continued use at other factories or workshops after Kirstein's exile means that bowls with stems with intact name bands are the most chronometrically reliable.

¹⁵⁶ "H. M. inrättade uppå tvenne särskilda ställen uti staden klubbar och samlingsställen, der bönderne förplägades med öl, brännvin, tobak och pipor, kort och tärning; der, jemte tidsfördrif, bönderne fingo samtala om sina angelägenheter, och der bondetalmannen och sekreteraren alltid presiderade; dessutom inrättade Konungen spisqvarter på trenne ställen, der bönderne fingo mat för intet. Klubbar inrättades äfvenväl för prester och borgare; men för adeln gjordes icke sådan anstalt, som visligen var, ty den hade verkat mer ondt än godt."

¹⁵⁷ The youngest currently known archival reference to these pipes is Mathias Nyberg's estate inventory from 1799.

If these pipes were indeed given away to supporters of King Gustav III, they must also be understood in relation to the pipes that peasants had been, and likely were still technically expected to smoke at the time. Considering the prices of these pipes in surviving archival sources, these Dutch-style pipes likely had stems measuring around 45 to 50 centimeters and would have stood in stark contrast to contemporaneous short and medium pipes with warped stems, and stumps. The effect of this gesture can be interpreted as an intentional disruption of established material recognizability, where commoners, although the attendees of the Riksdags of the Estates were relatively wealthy landed peasants, were endowed with symbols that they were not supposed to possess.

Although it is possible that these pipes were primarily intended and manufactured as gifts to members of the peasant estate at the Riksdags of the Estates who supported the king, it is apparent that they were also sold by merchants, and most likely from the factories and workshops that produced them as well. When purchased, these pipes cost as much as the contemporaneous longest armorial pipes. Expensive pipes given away for free to members of the lowest estate may perhaps be interpreted as belonging to what Cessford (2001) would refer to as populuxe goods. However, as these pipes could also be purchased at a relatively high cost, contextual awareness may be essential to make such assumptions based on archaeologically recovered pipes of this type.

Beyond the fact that these pipes were most likely long, they were emblazoned with the monogram of a king who actively and successfully sought to reduce the power of the aristocracy. As the impacts of the political reforms of King Gustav III were gradually introduced throughout his reign, significances of the smokeways in which these pipes were employed may have shifted throughout the time of his rule. Smokeways that applied these pipes after the assassination in 1792 could perhaps also be seen as expressions of both nostalgia and a continued hostility towards the aristocracy.

Although it is apparent that these pipes were not manufactured prior to 1772, it is equally apparent that they remained in production until at least 1798 or 1799. While it may be tempting to ascribe these pipes with significances related to the legacy of King Gustav III as it is known today, the fact that these were produced both during and after his reign indicates that significances of smokeways that employed these pipes are likely to have shifted over time. Without a high chronological resolution of find contexts, interpretations of this kind remain on a speculative level.

Moreover, interpretations must take into consideration that these pipes likely carried different significances depending on the context and manner of their smokers' acquisition of them. It is reasonable to assume that their meanings varied depending on if they had been obtained as gifts during the Riksdag of the Estates in 1786 or if purchased from a factory or merchant. When purchased from merchants, these pipes were among the most expensive types available, and their designs can thus be seen as strong intentional reflections of their smokers' political sentiments.

9.4.9 Long and medium N-number pipes

As shown by the combination of archaeological and archival evidence, long and medium pipes marked with an N and a number in molded relief on sides of heels were produced by both pipe factories in Norrköping. The factory *Kronan/Cronan* – the crown, marked its longest and most expensive pipes with N/6 in molded relief on the sides of their heels and three crowns and a monogram of the letters OL or LD for the owner Olof Lindahl stamped on the fronts of the bowls. Meanwhile, the factory *Stiernan*, the star, marked its longest pipes with N/6 in molded relief on the sides of heels and a star in molded relief on the fronts of their bowls. These are the only two pipe manufacturers currently known from both archaeological and archival sources to have marked long pipes with an N-number mark.

Pipes referred to as marked with an N and a number on the sides of heels or spurs also occur in the medium segment. According to Forsberg's price lists, medium pipes marked with N/3 and N/2 were produced at his factory for a brief period in the 1740s. The two Norrköping factories, as mentioned above, also marked medium pipes with the N-number mark.

9.4.10 Medium pipes

Looking instead to pipes which based on their price and/or name have been interpreted as belonging in the medium segment, generally costing between 4 and 8 dalers per gross, a comparison of prices and stem lengths suggests that these had stems measuring between 11 and 15 Swedish inches. Some annual reports and estate inventories list pipes referred to simply as *medel* – medium or middle. It is currently not known if pipes referred to as such were marked in a specific manner, yet the estate inventory of Olof Aspegren lists "*medel stämplrar*" – medium stamps (SE/SSA/0145A/F 1 A/171 1758, fol. 638r), making this seem possible.

Some of the price variations in the medium length segment can be interpreted as related to both stem lengths and to production quality; a noteworthy exception from the regular pricing of pipes in the segment of 4 to 6 dalers are Daniel Almqvist's pipes medium porcelain at 16 dalers per gross and heeled and spurred three crown pipes at 11 dalers 16 öre per gross mentioned above. The medium porcelain may very well have been a polished version of the *Medel Kromhuuvud*, which could be translated as medium bent or hooked bowl or as a literal translation of the Dutch *kromkop*. As previously mentioned, the letter of charter issued to Almqvist states that his factory was to produce the longer and finer pipes as well as "the models that the royal Collegium [the National Board of Trade] orders him to" (SE/SSA/0099/E 3/1 1620–1753, fol. 680).¹⁵⁸ Many of Almqvist's pipes in the long and medium segments are consistently more expensive than those of his contemporaneous competitors. There is a strong case to be made for production at the Almqvist factory as having been more geared towards manufacturing polished and high-quality pipes than its competitors. A plausible interpretation is that the more expensive medium pipes in Almqvist's production, unlike the majority of medium pipes of his contemporaneous competitors, were intended for smokers who were prepared to pay more for medium length pipes.

However, as stems of pipes in the medium segment generally were not polished or dried in grooved trays, stem fragments in assemblages are key to interpreting expenditures of eighteenth and early nineteenth century smokers. As mentioned under the section on Dutch-style Swedish pipes, there are exceptions to this. While coarse stem fragments can come from either long, medium or short pipes, polished stem fragments from Swedish pipes should always be considered as evidence of expensive pipes.

9.4.11 Heart pipes

A medium-length pipe that seems only to have been manufactured by factories and workshops in Stockholm are the so-called *Hiert pipor* or *Hjärtpipor* (with spelling variations) – heart pipes. These pipes have a crowned heart in molded relief on the fronts of their bowls and are only occasionally marked with initials that enable them to be linked to owners of factories or workshops.¹⁵⁹ Åkerhagen

¹⁵⁸ "[...] wid detta bruk i synnerhet låta tilwärka de långa Tobaks Pipor af behörig godhet och öfwerens stämmande med de modeller som Kongl. Collegium honom tillställa låter."

¹⁵⁹ It is possible that this design was the model for the pipes with incusely stamped hearts assumed to have been made at the brickworks of Gustaf Sommelius in Lund.

has identified ten different molds based on pipes from the archaeological record, of which two makers have been identified (Åkerhagen 2012, p. 58).¹⁶⁰

Bowls and fragments with intact hearts or crowns are generally instantly recognizable as remains of this type. They are, unless marked with initials or factory specific marks similarly to several other pipe types produced in Sweden, currently challenging to apply for obtaining production dates narrower than circa 1740–1827, and possibly also later. Heart pipes in the Forsberg assemblage were originally categorized as short pipes (Brynja, Loewe & Duco 1987, p. 4). As mentioned above, the 1753 price list lists heart pipes as the least expensive medium pipe. Throughout their period of production, all surviving archival sources stating prices of heart pipes show that they were relatively inexpensive either short or medium length pipes.

9.4.12 Short N-number pipes

Looking to the comparison of available price information from Swedish makers, it is evident that all factories manufactured a type referred to as No.3, and many also made a type called No. 2. Several, but not all, factories appear to have marked their so-called N-number pipes with an N and a number on the sides of heels or spurs. Pipes with numbers 4, 3, 2, or 1, apart from the medium No. 3, No. 2, and No. 1 manufactured at the Forsberg factory around the year 1745, are consistently found among the least expensive types in regular production throughout the studied period. With one exception, the *Stiernan* factory in Norrköping, the short pipes referred to as No. 4, No. 3, No. 2, and No. 1 cost between 2 dalers 24 öre and 3 dalers 24 öre copper per gross. These were among the cheapest pipes in regular production, with stems measuring 10 Swedish inches and less. The fact that such pipes, particularly No. 3, were manufactured at many factories throughout the eighteenth century into the nineteenth century may account for the many bowls marked with N/4, N/3, N/2, and, less commonly, N/1, in molded relief on the sides of heels or spurs recovered from the archaeological record.

There are several examples of low-numbered N-number pipes with factory-specific marks. Most often such marks are stamped on the fronts of bowls yet there are examples with factory marks in molded relief on the bowl-fronts. For example, the Norrköping factory *Stiernan* – the star, marked its pipes with a radiant star in molded relief. Åkerhagen has also attributed pipes with an incusely stamped sun, wheel or flower motif on the front and N/2 in molded relief on the sides of heels to the pipe factory in Falun (see for example Åkerhagen in Björck & Blennå 2020, pp. 45). Åkerhagen refers to this incuse decoration as “a typical Falun-decoration” (2012c, p. 147).

While some factories are known to have marked the least expensive N-number types in their production with factory-specific markings, there are also pipes with the N-number mark with no other markings. To complicate matters further, archival sources from the Alingsås factory refer to its pipes as No. 1 – No. 7 and, during some years, No. 8, yet no pipes marked with numbers have hitherto been convincingly identified as having been made there (Bergman Carter 2024). Many otherwise unmarked pipes with variations of N/2, N/3, N/4 (etc.) markings have been attributed by

¹⁶⁰ The first maker is Olof Forsberg’s factory, identified through the presence of pipes with this design in the Forsberg assemblage recovered in 1984. The second maker, according to Åkerhagen, is Anders Örnbeck, based on the initials A/O in molded relief on the sides of heels and spurs. As previously mentioned, this is a likely misattribution – the initials A/O are more likely those of Olof Aspegren.

Åkerhagen to the Forsberg factory. The results of the archival studies represented in this table suggest that these attributions may need to be revised.

Moreover, pipes marked with N and a number in molded relief, until credibly linked to known manufacturers through factory-specific marks or detailed studies of the traces of the molds used to make them, have little value in terms of chronometry more precise than circa 1710–1830. However, from a perspective that considers pipes as recognizable elements of group-specific smokeways, the continuous production of pipes referred to as No. 1, No. 2, No. 3 etc. can be interpreted as symptomatic of a well-established and long-lived conception of idealized consumers. These pipes, judging from their prices and production quality, were intended for the lowest estate – commoners and peasants. Their characteristically poor production quality, as we shall see, was also depicted in contemporaneous depictions of commoners and peasants. These pipes, along with cheap stumps, also known from archival records and depictions of smokers, when encountered in the archaeological record should most likely be interpreted as material manifestations of smokeways of the poor.

9.4.13 Turk's heads/Turkish bowls

Among the short pipes are also the so-called *turkhufwud* – literally Turk's heads or Turkish bowls also known as *turkpipor* – Turk pipes. These are stub-stemmed bowls commonly made from red-firing clay believed to have been locally sourced. Morphologically, many *turkhufwud* bowls are clearly inspired by Western Asian and Central European pipes of the late seventeenth and eighteenth centuries also known as *chibouks*. These pipes are made up of bowls that require separate stems, commonly made from organic materials such as wood or combinations of wood, horn, antler, amber or metal, to be comfortably smoked.

While Åkerhagen has generally attributed these bowls to the production at Grindsbruk in Stockholm, with production beginning in the mid-1750s (2012a, p. 42) or to factories in Central or Southern Europe (2012c, p. 117), these pipe bowls were obviously manufactured by several makers in Sweden over a period spanning over at least 90 years. It is possible that this pipe type was either introduced or popularized by soldiers returning with Charles XII after his exile in the Ottoman empire as early as the 1710s and subsequently copied by Swedish makers. Evidence to support this is a bowl decorated with what is most likely the monogram of Charles XII which was recovered in kv. Gesällen in Kalmar (find 9959 in Åkerhagen 2015, p. 166).¹⁶¹

Although exceptions exist, these bowls appear to have been manufactured mainly by factories and workshops in Stockholm during the eighteenth century. The oldest currently known documentary evidence of these being made in Sweden is Forsberg's inventory presented to the Riksdag of the Estates of 1740–1741 (fig. 44). As Forsberg had recently assumed ownership of the factory, it is not possible to exclude the possibility that such bowls were made under the previous ownership of Carl or Olof Aspegren. In 1742, exclusive charters were issued to Adam Rickter in Stockholm for the manufacturing of pipe stems made from rattan or bamboo and leather (SE/SSA/0099/E 3/1 1620–1753 fol. 283r–284v), suggesting a relatively well-established demand for such bowls.

Five general styles of bowls referred to as *turkhufwud* are known from the Swedish archaeological record: The first style consists of smooth often polished bowls, occasionally painted white to mimic

¹⁶¹ One of Georg Engelhard Schröder's depictions of Mustapha aga from 1727 shows the aga smoking a long-stemmed chibouk. It is therefore also possible that renewed diplomatic relations between Sweden and the Ottoman Empire in the 1720s resulted in an increased demand for Turkish-style smoking paraphernalia.

meerschau, or black. Glazed versions are also known. The second style are bowls portraying a turban-clad mustachioed man in molded relief. These are thought to be representations of an Ottoman or Turk. The third style consists of bowls with decorations in molded relief such as the great coat of arms in molded relief or Bacchus on a barrel. The fourth style is bowls with decorations in molded relief made to resemble chibouks. They are most commonly made from red-firing clay, yet examples of bowls with traces painted white or black with linseed oil paint are also known.¹⁶² The fifth type is represented by the abovementioned bowl with the cipher of Carolus XII. This bowl has milling and striations that appear to have been applied manually (fig. 59). As evidenced by archival evidence, production of this bowl type at Swedish factories and workshops began at least as early as 1741 and continued, seemingly continuously, well into the nineteenth century (SE/SSA/0145A/F 1/F 1 A/450 1827, fol. 678v; Reenstierna 1949 [1821], p. 340; Reenstierna 1953 [1826], p. 33) with both the style with a turban-clad and mustachioed man and less elaborate versions in production at the stoneware factory Högånäs until at least 1859 (anonymous 1859, pp. 23–24).



Figure 59. Pipe bowl made from red-firing clay bearing the cipher of Carolus XII. The bowl was recovered at Kv. Gesällen in Kalmar in 2012. Photo by Arne Åkerhagen in Åkerhagen 2015, p. 227.

¹⁶² Black, white and brown pipe bowls are mentioned in Märta Helena Reenstierna's journal from 1826 as made at Grindsbruk (Reenstierna 1953 [1826], p. 33). It is not currently known if other makers in Sweden painted their bowls.



Figure 60. Stub-stemmed bowls referred to as *Turkhufwuden* recovered from kv. Ormen in Stockholm. The bowl on the top left has been painted white to mimic meerschaum. The bowl on the to right shows signs of polishing. The two bowls in the middle row draw on eastern European designs. The bowl at the bottom has a mustachioed man with a turban, likely intended to resemble an Ottoman or “Turk”. These bowls have been attributed to Grindsbruk. Not to scale. Photo by Arkeologikonsult.

The roles and functions of the *turkhufwud* bowls are complicated to assess in terms of differentiating smokeways. These bowls usually cost around 3 dalers copper for a gross, which indicates that they cost around one or two öre copper each when sold to consumers. While these bowls are consistently listed among the least expensive pipes in the documentary record, the stems to which they would have been fitted as well as potential additions of other trimmings made from exclusive materials like silver or amber may have filled more significant functions as material markers of socioeconomic status of their smokers.

Evidence for the production of stems for *turkhufwud* bowls is known from both the likely more artisanal workshop of Adam Rickter mentioned above and, from the likely more industrial production at the Wedevåg manufactory (*Stockholms Weckoblad* 03-07-1752, p. 4). These inexpensive bowls may

also have been fitted with relatively inexpensive or homemade stems made from wood or reeds – which are not commonly encountered in the archaeological record due to poor preservation. When encountering these bowls in the archaeological record it is therefore difficult to determine if such bowls were fitted with purchased inexpensive stems or even homemade stems made from reeds or wood, or with fancier expensive stems made from exotic materials and precious metals. On close inspection, it is sometimes possible to see abrasion marks on archaeologically recovered bowls from where such bowls have been fitted with metal fittings such as lids or stem joints. Such marks may suggest that their smokers made relatively costly investments in their pipes. A lack of traces of metal fittings, such as abrasions in the surfaces around the rims and/or the stem sockets may or may not be indicative of a lack of expensive fittings yet is not inconclusive evidence for a poorer smoker.

9.4.14 Red eighteenth-century pipes

Pipes made from red-firing clays, with the exception of the abovementioned pipe bowls referred to as *turkhufvud*, are recurrently mentioned as produced for commoners. The earliest archaeological evidence for red-firing pipes being made in Sweden is from the 1630s (see Appendix I), while both documentary and archaeological evidence shows that red clays were intermittently used to make pipes in the eighteenth, nineteenth and twentieth centuries. Regarding red clay pipes of the eighteenth century, both Hülphers and Forsberg, nearly two decades apart, state that these pipes were made for commoners, explicitly stating that people of a higher status were not the intended consumers of such products.

Red clay pipes that can be dated to the eighteenth century are rare in Swedish archaeological reports, which might suggest that even commoners may have objected to the use of these. There are, however, three significant source critical aspects that may explain the relative scarcity of red clay pipes in Swedish archaeological reports. The first aspect is that little or no attention was paid to postmedieval archaeological remains in Sweden throughout most of the twentieth century. For example, during the wave of urban densification in the period spanning between the late 1940s and the 1970s, postmedieval deposits were generally removed without documentation, which may indeed also account for the relative general lack of documented clay tobacco pipes in Sweden from this period. The second aspect is that fragments of red clay pipes may have been misattributed to pipe makers of the late nineteenth and early twentieth centuries rather than earlier pipe makers (see for example Åkerhagen 2014, p. 93). This means that they may have been thought of as lacking legal protection under the Swedish antiquities acts which in turn may have resulted in culling prior to registration. The third reason may be that only white pipes have been recorded as *kritpipa* – literally chalk pipe. Red pipes may instead have been recorded as *tobakspipa* – literally tobacco pipe, as was the case with red pipe fragments from Gesällen, which were recorded as *pipa* – literally pipe (Tagesson 2015). It is therefore possible that this nomenclature-related issue has resulted in omissions of red clay tobacco pipes in pipe analyses and recordings.

9.4.15 Stumps

Stumps, pipes that had broken during handling at the factory or during transport, are mentioned in some price lists and inventories from manufacturers and merchants. Based on archival sources, stumps were sold at a discount, yet prices appear to have varied depending on the original production quality and intact stem length of individual stumps. For example, all three surviving price lists from the Forsberg factory grade stumps according to length into three categories; long stumps cost 3 dalers

and 8 öre, suggesting that these were longer than the shortest pipes in regular production. Short stumps cost 2 dalers per gross, suggesting that these were shorter than the shortest pipes in regular production. Finally, long pipes with slightly broken stems could be purchased for “a reasonable price”. This suggests that broken higher quality pipes may also have been marketed to smokers at the higher end of the socioeconomic scale.

Most likely, all manufacturers sold broken yet functional pipes to minimize financial losses. As an example of this, not one intact bowl with a stem measuring more than five centimeters from the bowl was found among the wasters recovered during the excavation of the pipe factory plot in kv. Gulin in Karlskrona. Moreover, in the one context, layer 2284, in which pipes were most closely analyzed, 937 mouthpiece fragments were recovered while the same context yielded only 282 bowl and bowl-stem juncture fragments. This indicates that nonfunctional, i.e. unsellable fragments, had been deposited on factory grounds while functional pipes with broken stems had been removed from the factory – most likely sold as stumps.

While bite marks on stems certainly attest to pipes with broken stems being consumed, i.e. used, identifying actual purchases of stumps in the archaeological record poses some challenges. As the stark majority of pipe remains recovered from archaeological deposits are in varying degrees of fragmentation, identifying their state at the time of purchase is problematic. However, by including and quantifying bowls, bowl-stem junctures and mouthpieces during finds registration, it is possible to obtain ratios of mouthpieces to bowls on contextual levels, similarly to what was done in Karlskrona.

A pipe that would have been considered intact consisted of a *bowl*, connected to a *stem* via a *bowl-stem juncture* (known in Swedish as *hals* – neck or throat), and a mouthpiece. By “anatomically” classifying and recording pipe fragments, it is possible to obtain ratios hypothetically indicative of presences of stumps in a contextual assemblage. A high ratio of bowls to mouthpieces in an assemblage may therefore act as an indication of a preference among smokers at a site for stumps rather than intact pipes. If the ratio of mouthpieces is similar to the amount of bowls, this may be an indicator of intact pipes being preferred at a site. In cases where mouthpieces outnumber bowls, especially in cases where pipe fragments show no signs of use, they may act as evidence for sale or production of pipes.

9.5 Concluding discussion

Price information combined with manufacturing descriptions from archival sources related to the Swedish clay tobacco pipe industry show how stem length, related to the complexity of, and care taken during, the manufacturing process affected the final price of pipes. Similarly to England and the Netherlands, long and/or polished pipes are consistently listed as more expensive than short and merely trimmed pipes. The combination of this fact and the morphology of the pipes themselves therefore make it undeniably apparent that the Swedish pipes of the 1740s and 1750s were intended to act as substitutes for pipes imported from these countries. From a perspective that considers material aspects of differentiating smokeways, the Swedish pipes that replaced the English and Dutch pipes needed to fit into the semantics of already established smokeways.

Based on comparisons between archaeologically recovered intact pipes from Forsberg’s factory and archival records specifying manufacturing steps, pipe types, relative stem lengths, and prices from

other makers, it is possible to reach the conclusion that the output of Swedish pipe factories and workshops was relatively standardized. Morphologically, many makers appear to have manufactured at least one Dutch-style pipe referred to as *Porcellin* or *Ordinaire* (with spelling variations) in archival records. The Swedish pipe industry of the period, however, would not have been able to compete with the quality standards of pipe makers in the Netherlands in general and the strict standards of the pipe makers' guild in Gouda in particular.

Generally, with exceptions of the *turkhufwud*, the lobed pipes, the so-called *Ordinair* and *Porcellin*, the output of Swedish pipe factories and workshops was primarily modelled after English pipe types that were also imported on a vast scale prior to the embargoes of the 1740s. Swedish pipe makers of the eighteenth century primarily mimicked English pipe-styles. Such bowl-styles are the most commonly known from both the archaeological and the archival records in Sweden.¹⁶³ Particularly London types 25 and 27 appear to have provided the Swedish pipe factories with primary models for their productions. There are two possible explanations for this; the first is that English pipes made up the majority of pipes imported during the late 1730s as shown by import statistics (Puktörne 1968, p. 69 and tab. 1 above). As demand for such pipes was highest, they were the pipes that were most copied by domestic makers. The second is that English pipes are made in a more mechanized manner and are therefore easier and cheaper to mass-produce. As pipes made in England had cut rims which were rarely bottered, decorated with milling and rarely had any stem decorations, Swedish copies of these did not require bottering, rim finish or applied stem decorations to be convincing substitutes. As such, even relatively unskilled trimmers and apprentices could be hired to finish the molded pipes.

Throughout the eighteenth century, Swedish clay tobacco pipes were primarily divided into categories based on their stem lengths: Long, medium, and short. Forsberg's price lists are divided into these three categories and as mentioned above, the Stockholm *Hall- och manufakturätt* stated in a 1766 letter to the Arboga Hallrätt that workers at the pipe factories were paid different amounts depending on the lengths and types of pipes they finished. This pattern is repeated at all factories from which type and price information is known.

As the prices of the pipes at Forsberg's and Alströmer's factories, similarly to prices for Dutch and English pipes available before the embargoes, varied according to stem length, surface treatment and finish such as polishing, milling, bottering, and stamping, as well as care during drying handling and packing, it is possible to assume that any price information that can be gained from other Swedish makers follow the same pattern; particularly considering naming traditions referring to short, medium, and long pipes. With few exceptions, pipes listed as priced between 2 and 3 dalers and 16 öre per gross were short pipes of between 8 and 10.5 Swedish inches. Pipes costing between 4 and 8 dalers copper per gross were medium pipes of between 11 and 18 inches, and pipes costing 8 dalers or more per gross were long pipes of 20 inches and upwards. Based on price information in the archival record, these stem lengths and the relative pricing appear to have been relatively standardized among all Swedish pipe factories and workshops beginning in the 1740s and onwards. This may also reflect the condition of the embargo of 1747 stating that prices for domestic pipes could not be increased.

Dutch pipes, and possible German copies of these, available in Sweden during the 1730s and 1740s were named based on length and production quality. The 25 *duijms porceleijne* of the *kromkop* type, or 25-inch porcelain pipes in particular, appear to have had a significant influence on the style, length

¹⁶³ See also the output of the Karlskrona factories in Stibéus & Bergman Carter 2025, the pipes manufactured at the Varberg factory in Schager & Klange (in preparation), Åkerhagen's catalogs (2012b & 2012c).

and appearance of the longest Dutch-style pipes manufactured at Forsberg's factory. These copies are most likely those referred to as "*Lång Porcellin*" in the 1745 and 1753 price lists. The pipe "*Ordinair Porcellin*", a shorter type, likely less polished than the *Lång Porcellin*, is known from all three of Forsberg's price lists. Listed under the long category of pipes at 8 dalers copper per gross, the *Ordinair Porcellin* was likely modelled after the Dutch pipes known as *maatpijpen* of 45–50-centimeter stem-length, or shorter types referred to as *pijpen onder maets*.

Price lists from Forsberg in conjunction with Forsberg's pipes not only show that English style pipes were made with varying stem lengths but also with variations in surface finish and decorations, which also affected price. Based on Forsberg's pipes, only some of the long and some of the medium length pipes were polished (bowls without molded relief decorations have better polished bowls and slightly polished stems). This is also reflected in price variations. During a majority of the eighteenth century, all domestic factory owners, their workers, and a majority of their consumers would have been aware of differences between long agate- or flint polished pipes and medium and short merely trimmed pipes. The longest pipes cost more to make, they cost more to buy, and in comparison to the cheapest pipes, they constituted only a small part of the annual production volumes at the Alingsås factory.

As evidence of an awareness of these variations and what they entailed in terms of socially differentiating consumption, advertisements in newspapers issued from pipe factories like Varberg and Grindsbruk do not even state the types of pipes that they made, simply referring to a seemingly standardized product catalog. By 1756, the Varberg factory referred to its products corresponding to "other domestic factories", strongly suggesting a widespread awareness among retailers and consumers of variations in length, types, surface finish and the prices they could expect to charge or pay for them. Wordings like these can also be interpreted as firmly established differentiating smokeways with self-evident rules that dictated material recognizability of social status.

Many of the Swedish long pipes, both those modelled after English and Dutch styles, stand out as having been treated with more care during the manufacturing process than medium and short counterparts. References to grooved trays in manufacturing descriptions and in estate inventories as opposed to flat drying trays account for the differences in stem-straightness apparent on stem fragments recovered from the archaeological record. Customers paying a premium for pipes would have expected their pipes to be visibly different from the less expensive short and medium pipes. Stem length would have been the most immediately recognizable aspect of an expensive pipe, and in the close surrounding of a smoker, stem straightness, the mouthpiece (or lack of one), the surface finish, potential decorations, bottering and milling, would have communicated the price-range of a pipe. These attributes would have been recognizable among both smokers and non-smokers during the eighteenth century and would have played important parts in differentiating recognizable smokeways.

The long and expensive pipes are also those that exhibit a relatively wider variety in terms of decorations and names when compared to the cheaper, short pipes. 25-inch (or more) armorial pipes referred to as the Arms of Sweden or Daniel Almqvist's the Arms of Mercury (which have faux Gouda guild marks on the sides of their heels) and relief designs mimicking the previously imported Gouda pipes certainly would have stood out against a backdrop of 6 or 8-inch No. 3-pipes and "stumps" with crooked stems. These are material elements of smokeways that were essential for recognizability and differentiation, which is easily interpreted as the reason behind the concerns of the National Board of Trade, the House of the Burgher Estate and the *Handels-och manufakturdeputationen* prior to the embargo of 1747 presented above.

The availability of short, cheap pipes for commoners must also be understood as equally essential material elements for recognizability and differentiation. Pipes with decorations in molded relief with the N and a number in molded relief on the sides of heels or spurs have been tied to the Norrköping *Stiernan* factory and to the *Kronan/Cronan* factory. Forsberg's factory also manufactured lobed pipes with the N-number mark. His factory also made medium-length pipes with the N and number marks for a few years during the early 1740s. Based on price information, these were most likely unpolished medium pipes with stems ranging between 24 and 30 centimeters. Aside from these, pipes with the N and number mark, specifically 3, 2, and 1 are consistently coarse pipes with no signs of polishing, bottering or milling. These pipes were never placed in grooved drying boards, which also accounts for the plentitude of warped or slightly crooked stems with coarse surfaces in many late eighteenth-century pipe assemblages in Sweden.

The functions of the N-number marks may be several. For workers at pipe factories, the numbers may have functioned as a salary gauge and a quality standard during inspections by master pipe makers. As a mark of quality for consumers, the conceptions of N-number mark were likely so standardized that it showed buyers whether or not a pipe was intact and what type of surface finish and quality they could expect from these pipes. Identifying the number on the heel or spur and comparing it to the length of the stem and surface treatment would have been a simple matter. The low-numbered (i.e. 1, 2, and 3) pipes, with the exception of Forsberg's medium length types of the 1740s, were short, coarse and inexpensive.

Pipes marked with an N and a 2 or an N and a 3 in molded relief with no other marks to identify a manufacturer are difficult to apply for chronometric purposes beyond generalizations along the lines of "eighteenth-century Sweden". This type made up the bulk of the production at most factories in Stockholm, in Falun and in Norrköping, which is evidenced both by production volumes in annual reports to the National Board of Trade as well as their widespread presence in the archaeological record. As indicated by reported production volumes, the lengths and production quality, these were truly mass produced, yet functional and utilitarian pipes intended for the commoners, *allmogen*, and would have been immediately recognizable as such with their often-warped stems and coarse surfaces.

Bowls marked with the letter N and a number between 1 and 3 in molded relief on the sides of heels or spurs, though difficult to apply for narrow chronometric purposes if otherwise unmarked, can generally be seen as material elements employed in smokeways of the poor. Pipes known as medium No. 3, 2, and 1 were produced at the Forsberg factory, likely only for a few years during the first half of the 1740s before being discontinued. While this may be considered when pipes with these markings occur in assemblages, the seemingly brief period of time during which they were made strongly suggests that such pipes make up a minority of the total amount of pipes marked with N/1, N/2, or N/3 in the Swedish archaeological record. On the other hand, the discontinuation of the production of medium-length N-number pipes marked in a similar manner to short-length pipes may indicate that a connection of such marks to the smokeways of commoners made them unattractive to wealthier smokers. It is also possible that coarse medium-length pipes such as these challenged the immediate recognizability of more expensive pipes in the same length-segment.

This also means that an understanding of the production of clay tobacco pipes is essential for the understanding of the significances they held to their users as well as in the conceived mutual understanding of the same significances. The artifactual evidence of a smoker's self-conception or socioeconomic ambition might be made salient through looking at smokers' choices of pipes. As evident from written sources in the form of price lists and archaeological evidence in the form of the pipes themselves, pipe makers and merchants targeted different social groups with their products, and

both adapted to and at the same time created products that would signal to the smokers' surroundings the social status of individual smokers. These signals, reflected through the material elements, belong to the practice-element of meaning and act twofold by way of reflecting a consumer's ambition, or desire to be perceived, but also levels of acceptance from the smokers' surroundings.

The lack of 30-inch pipes in the Forsberg assemblage from Slussen could indicate either that claims from the factory and Forsberg himself may have been hyperbole, that production of pipes of such lengths had been discontinued at the time, or that such pipes were sold out at the time of the building's collapse. Comparisons of contemporaneous Dutch pipes of the *porcelaine* quality group and the pipes identified as the most expensive in the Forsberg assemblage show significant differences in terms of production quality. Another point to be made is that comparisons between the Forsberg assemblage from 1759 and earlier written accounts from the 1740s, even those from the National Board of Trade, mentioning the high standards of quality at the Forsberg factory are contradictory. Not even the polished long pipes made at Forsberg's factory in the late 1750s correspond to the quality standards of those previously imported.

There is a possibility that quality standards at the Forsberg factory were higher during the period that preceded the embargo and a few years thereafter; in 1748 and 1749, when Forsberg's, Aspegren's and Alströmer's exclusive privileges for pipe making were about to expire. There are indications in archival sources that suggest that attempts were made to show the National Board of Trade and the Riksdag of the Estates that long, high quality pipes could be produced at least at Forsberg's and Alströmer's factories. Research by Bert van der Lingen (2007) shows that in 1749, Forsberg hired a Dutch master pipe maker, Jacob(us) van Kleeff, for a period of four years. van Kleeff had likely been a master pipe maker in both Gouda and Alphen aan den Rijn or nearby Aarlanderveen and would therefore have been well acquainted with manufacturing techniques required to make the highest quality pipes. This recruitment can be interpreted as an attempt to convince the National Board of Trade that pipes of high quality were to be produced at the Forsberg factory. Meanwhile, reports to the National Board of trade show that Alströmer introduced two new types during the period which, based on their stated prices, were longer than any other type previously made at the factory.

The motive of Forsberg and Alströmer could have been to ensure a prolongation of their exclusive rights for pipe making, which had been guaranteed by a royal decree of 1739 yet contested both by other applicants for charters, and by the *Handels- och manufakturdeputationen* since the Riksdag of the Estates of 1740–1741. As prolongations of exclusive rights were not granted to Forsberg, Aspegren, and Alströmer, they became gradually exposed to domestic competition beginning in the 1750s. Initially, charters for new pipe factories were only issued to applicants in Stockholm. On June 29th, 1752, charters for a pipe factory were issued to Anders Örnbeck, and on February 4th, 1753, charters were issued to Daniel Almqvist. The letter of charter issued to Örnbeck (SE/SSA/0099/E 3/1 1620–1753, fol. 680) explicitly states that there was a shortage of high-quality pipes at the time, explicitly mentioning the Stockholm factories' inabilities to supply sufficient amounts of such pipes, and that:

[...] necessity requires a reasonable competition between the stakeholders of the pipe factories, especially considering that the pipe factory in Alingsås, due to the difficult transport, [can] hardly or never, to towns thence distant, sell [its pipes].¹⁶⁴

¹⁶⁴ “[...] nödwändigheten fordrar en billig täflan Pipebrukets Intressenterne emellan, i synnerhet som Pipebruket i Alingsås för den beswärliga transporten föga eller als intet till de derifrån längre aflägsne Orter kan aflåta [...]”.

This quote implies that pipes from the Alingsås pipe factory may have corresponded better to expectations on production quality on behalf of consumers as the issue bemoaned is the difficult transport conditions that led to the pipes being broken on arrival. From a perspective that considers differentiating smokeways, this can be interpreted as a continued demand for longer and finer pipes, supposedly among wealthy smokers, and perhaps particularly in Stockholm. This also suggests that high-quality pipes from the Alingsås factory that had broken during transport may have been sold at reduced rates as stumps, and more likely in locations to which transports were difficult. This may have implications for interpretations of archaeologically recovered Alingsås pipes with signs of polishing since stumps sold at reduced rates may have been used by smokers who did not belong to their intended consumer-group. This, of course, is true for pipes from all factories since as soon as pipes left factories, they were subject to risks of breakage.

A comparison of the extensive list of known makers presented in Appendix I to price and price information gathered from the archival records shows that specific types and prices are only known from a relatively small number of makers. While it is unfortunate that price information is missing from so many makers and pipe factory owners, the results of this part of the study show that the output of Swedish factories was quite homogeneous; some factories even referring to similarities between their pipes and those of their competitors in advertising materials.

Several factors may explain the homogeneity of the Swedish clay tobacco pipe industry that for some pipe types spanned for over a century; first is the fact that factory staff, master pipe makers and acting masters (*verkgesäller*) in particular, were itinerant and the diffusion of the craft can be traced to a few workshops. Secondly, as a result of the 1747 embargo there were hardly any outside influences on domestic pipe makers – particularly after the late 1750s when no foreign masters were hired. Thirdly, the homogeneity may have been appreciated as a form of static recognizability through material elements of smokeways.

One significant challenge posed by the homogeneity of the output of Swedish pipe industry of the eighteenth and early nineteenth centuries is that many bowls that do not have marks that can be attributed to a specific factory are currently not suitable for obtaining narrow production dates. Previous research has often uncritically linked pipe types, such as the Dutch-style lobed bowls, or otherwise unmarked bowls with N-number marks in molded relief on heels or spurs to one or two makers. In the case of the Dutch-style lobed bowls archival sources and archaeological evidence presented above and in Appendices X and X show that such pipes were manufactured by makers active over a period spanning from the late 1760s into the 1830s and very likely later. Similarly, pipes referred to as No. 3, marked with N/3 in molded relief on the sides of heels or spurs, are known from inventories of factory owners that were active in the 1710s as well as pipe factory owners of the late 1820s, and possibly later. While pipes marked with the letter N and a number ranging from between 1 and 4 on the sides of heels or spurs, unless marked with factory or workshop-specific markings, may not be suitable for narrow chronometric purposes, it is safe to assume that they represent the least expensive types in regular production throughout a period likely spanning between the 1710s until the late 1820s and possibly later.

Based on the evidence presented above and in Appendix II, certain bowl types have also been proven difficult to apply in analyses of smokers' expenditures. Armorial bowls with the Swedish coat of arms or the monogram of King Gustav III in molded relief are two examples of such. As Dutch-style bowls with the Swedish coat of arms were produced in both long and medium versions by a currently unknown number of makers, bowls of such pipes cannot currently be held as inconclusive evidence of smokers that paid a premium for their pipes. Meanwhile, pipes with the monogram of King Gustav

III, while available for purchase, may also have been handed out for free during the Riksdag of the Estates. Due to the fact that many pipe factories and workshops also manufactured types referred to as three crowns in long and short versions, bowls with three crowns, stamped or in molded relief on their fronts, unless visibly polished, are also difficult to apply for this purpose.

From a perspective that considers socioeconomically differentiating smokeways, the identification of smokeways that employed medium-length pipes in the archaeological record is another challenge. As shown by production volumes at the Alingsås and Falun factories, medium-length pipes were produced in relatively vast quantities, suggesting that such pipes were employed in smokeways, likely on a wide scale of Swedish society. Though perhaps not originally intended for smokeways of commoners, their price range and production volumes infer that at least unpolished versions of these pipes would have been both obtainable and available to the upper echelons of the peasant estate. As such pipes would have primarily been recognizable in their contemporaneity based on stem-length rather than on surface treatment, fragments of such pipes are, unless identifiable through markings or perfectly refittable, currently difficult to employ in assessments of their smokers' expenditures.

The so-called *turkhufwud* bowls, stub stemmed pipe bowls commonly made from red-firing clay are another challenging type. While these bowls were inexpensive, the stems to which they were attached could differ widely in price. Although there are visible variations in production quality in the type group, polishing or relief decorations do not appear to have had any impact on prices of these bowls. This can possibly be explained by the fact that polishing such bowls would not have required the same skill that long-stemmed pipes did. Moreover, such bowls, when painted to mimic meerschaum, did not require more than a trimming of mold flashes and possibly some smoothing.

In comparing names and prices of pipes there seems to be a devaluation of certain longer pipes throughout the eighteenth century. Pipes referred to as long three crown pipes in the estate inventory of Carl Wettervik for example cost 6 dalers, which is 40 percent less than the three crown pipes produced at the Forsberg factory half a century earlier. The long pipes with lobed bowls and mussel bowls in Wettervik's inventory are, at 9 dalers per gross, also relatively inexpensive when compared to the most expensive long pipes costing the equivalent of 21 dalers copper. This suggests that surface treatment and finish may have been more significant than stem length for the pricing of pipes by the end of the eighteenth century.

Price reductions for many types infer that significances of some pipe types may have shifted throughout the eighteenth century. Decreased prices would have led to an increased obtainability which means that certain types appear to have lost their functions as exclusive signifiers of high social status. Three crown pipes, pipes referred to as the Arms of Stockholm, and lobed bowls are three good examples of decorated pipes that are easily identifiable in the archaeological record, yet whose prices cannot currently be confidently assessed based on otherwise unmarked bowls alone. Assessments of the smokeways that employed such types therefore require a temporal and contextual understanding that cannot always be provided by these pipes themselves. In such cases, other closely dateable artifacts such as coins, pottery or other pipes, or stratigraphical comparisons may be more suitable for obtaining depositional dates.

It is also important to bear in mind that bowls of pipes in the expensive segment were not always polished. While polished bowls should always be considered as evidence of relatively expensive pipes, unpolished bowls are not necessarily an indicator of a less expensive pipe. This is particularly true for Swedish pipes imitating Dutch pipes and bowls with molded relief decorations and, seemingly, pipes with the three crown-stamp. As even pipes described as medium or short may have had polished

surfaces on both bowls and stems, polished stem fragments should also generally be considered as evidence of relatively expensive pipes.

While unpolished bowls from expensive pipe types are difficult to distinguish from bowls from less expensive pipes, polished stem fragments are indicators of expensive pipes, regardless of their original stem-length. As shown by Forsberg's price lists, even broken high quality pipes cost more than low quality pipes in regular production. Therefore, the most reliable indicators of relative prices of Swedish pipe fragments may in fact be stem fragments. Based on these observations, the best information regarding production quality and price of Swedish pipes in archaeological assemblages can be gained from contextual analyses that combine known production dates of identifiable bowl and stem fragments, and production quality assessments of all available fragments – bowls, bowl-stem junctures, stems and mouthpieces. Even shards and chips of unmarked bowls and stems, unless trampled, weathered or water rolled, may show signs of the production steps applied in their manufacture that indicate what the pipes they were originally parts of cost and hence, signaled, to their smokers' surroundings. This suggests that a quantitative approach that, beyond chronometric attributes of pipes, includes the recording of attributes related to production quality and price, that also considers which parts of pipes are represented in assemblages has the potential to make salient aspects related to consumer choice.

As shown by the evidence presented above, industry standards and the manufacturing steps employed in the making of different types of clay pipes should be interpreted as intentionally based on ideals of socioeconomic recognizability. Thus, an understanding of industry standards and their roles in consumer choice and socioeconomic recognizability is foundational for interpreting differentiating smokeways. However, differentiation also occurs through other variations to smokeways, some which have also left traces on fragments preserved in the archaeological record. A means to approach perceptions of such variations is once again to turn to combinations of pipes and historical sources. The next chapter explores how variations to smokeways and the pipes they employed were perceived and employed in their contemporaneity.

10 Smokeways described and depicted

[H]istorical sources have the potential to provide the archaeologist with a much more richly detailed statement of a past lifestyle, and with deeper and more sophisticated understandings of the workings and development of the [...] past.

- James Deetz, 1996 [1977], p. 19

10.1 Introduction

A general conclusion based on evidence presented above is that different pipes produced by Swedish pipe factories and workshops were intentionally made and marketed with the smokeways of different socioeconomic segments of eighteenth-century Swedish society in mind. As shown by discussions held in the *Handels- och manufakturdeputationen* during the Riksdags of the Estates of the 1740s, short coarse pipes, occasionally made from red-firing clays, were intended for the *allmogen*, the commoners. Meanwhile, sentiments were that the longer and finer pipes should be reserved for those who were expected to be able to afford them. These sentiments, transferred to the output of domestic pipe manufacturers, are possible to identify as attributes related to production methods that are often visible on pipe fragments. Some types appear to have been inextricably linked to the smokeways of particular groups. Throughout the studied period, the N/3-pipes were intended for, mass produced for, and, based on production volumes – widely applied in the smokeways of commoners. Meanwhile the long, and most poignantly: polished, and so-called porcelain pipes were made to be applied in the smokeways of wealthy burghers and the nobility. There are strong indications that polished fragments, regardless of which part of a Swedish pipe they represent, can be confidently assessed as coming from relatively expensive pipes.

This provides a foundational outline that can be applied towards an understanding of selection in a consumption language of idealized appropriate smokeways in eighteenth-century Sweden. The linking of attributes related to the prices of individual pipes has an undeniable source value for interpretations of social differentiation or ambitions thereof on the behalf of their consumers. This aspect of smokeways is strongly connected to consumer choice and the availability of different types of pipes. It is, however, important to bear in mind that intended ideal consumer groups of particular pipe types were not necessarily always the same as their actual consumers. Cessford proposes that even the most expensive clay tobacco pipes could be seen as potential early examples of “populuxe goods”, and that “the poorer groups in society [...] were willing to pay extra for better quality versions of such artifacts, as this was one of the areas of consumption in which they could compete (2001, n.p.). On one hand, there is ample evidence to contradict pipes belonging to this group of goods during the first half of the eighteenth century. On the other hand, as the eighteenth century progressed, there are examples that indicate that certain pipe types may indeed be considered as populuxe goods. Decreases in prices for certain types, or the fact that medium or short versions of pipes previously

made exclusively as long versions, such as the three crown-pipes and armorial pipes, indicates that these may have lost their original *éclat* as the century progressed.

However, as noted by Styles (2001) and Berg (2005), merely owning and using the items considered appropriate for ones' social standing was not necessarily sufficient to signal social status – one also had to be “capable of using them in the right way” (Styles 2001, p. 184, quoted in Berg 2005, p. 6). This can also be construed to mean that a poor person's owning and using a relatively expensive pipe would have little or no significance for altering this person's actual social status as long as they were not familiar with the correct ways of using it. On the other end of the socioeconomic scale, as “gentility was judged by whether you owned the right items, whether they were sufficiently genteel in their design [...]” (Styles 2001, p. 184, quoted in Berg 2005, p. 6), it seems unlikely that a wealthy person would opt for a pipe widely held as intended and manufactured for use by commoners.

This also means that an understanding of the right and the wrong ways has the potential to provide further details and expand the source value of pipe fragments. This is especially valid when fragments exhibit traces of use that can be linked to sentiments about the smokeways that created them gathered from contemporaneous sources. This chapter therefore aims to connect some of the more immediate traces of smokeways left by users in the archaeological record to archival sources that relate potential information on how certain smokeways were perceived. These traces include a combination of attributes such as pipe type and stem length, believed to reflect adherence or deviation from idealized smokeways, the presence or lack of bite marks and attributes related to brief or extended use such as seasoning, charcoal residue and mending. Clues to the socioeconomic significances of these smokeways-related attributes are believed to be present and tangible in both archaeological and historical records. The chapter at hand therefore turns to investigate sources that mention or depict pipes and smoking from a perspective that considers and acknowledges potentially differentiating aspects of their uses – the smokeways that employed them.

What is now known about the availability of pipes of different lengths, qualities, and prices in eighteenth-century Sweden and attributes of pipes in the archaeological record can now be juxtaposed to what can be learned from combining inferences about attitudes towards different smokeways from the historical record. In other words, it is possible to make previously unexplored “inferences about the social context[s] of [their] use” (Gojak & Stuart 1999, p. 38). This means that an increased understanding of what would have been considered the right ways and what would have been considered the wrong ways has the potential to make salient aspects of differentiating smokeways beyond the costs and appearances of pipes resulting from manufacturing steps.

To do so, this chapter is aimed towards exploring a combination of descriptions and depictions of pipes and smoking based on historical and pictorial sources in order to reach conclusions that can be applied in analyses of traces left by smokers in the form of archaeologically recovered pipes. This chapter is divided according to aspects of smokeways, as gathered from archival sources, that are believed to be visible on pipes from the archaeological record. Results are therefore presented according to stem length and potential descriptions of production quality ranging from short via medium and long pipes to stumps. Thereafter, aspects related to smokeways that treated pipes either as disposable or reusable are explored through comparisons of archival sources and pipes.

10.2 Source materials and method

Runefelt's observation that "there is a social perception (and hence a perception of people) behind every statement on consumption" (2015, p. 13) suggests that any text written in the eighteenth century mentioning the use of pipes, tobacco, or smoking could be of relevance for interpretations of differentiating smokeways. Similarly, any artistic depiction of smokers and pipes has the potential to relate customs and contemporaneous sentiments surrounding their subjects. Indeed, I concur that sources mentioning or depicting the use of pipes and smokers can contribute to furthering the understanding of smokeways in general and, for the sake of this study, socioeconomically differentiating aspects of smokeways in particular.

As previously mentioned, Edgar Lund's bibliography of Swedish tobacco-themed literature – *Svensk tobakslitteratur – anteckningar till en bibliografi* (1935) which is part of the series *Bibliotheca Nicotiana* has been consulted along with articles obtained using the newspaper archive of the Swedish National Library. Particular focus has been placed on selecting sources pertinent for interpreting smokeways that are believed to be observable on pipes recovered from the archaeological record. For example, beyond attributes related to prices of different pipe types, certain smokeways are more likely to have resulted in marks on pipe fragments recovered from the archaeological record. Pipe fragments may, for example, show signs of relatively intense use in the form of blackened or charred bowls or bite marks on stems (figs. 1 and 2). Others show signs of having been carved or whittled. This may have been done to fit a bowl to a replacement stem or to make a pipe sit more comfortably between the teeth (or indeed toothless gums) of their smokers. Other fragments show signs of mending using molten lead (see fig. 10 above). Meanwhile, other fragments show signs of having only been used a few times before entering the archaeological record (see examples in fig. 12).

Sentiments towards smokeways that included the use of stumps is another aspect that can be approached through a combination of archaeological and archival material. Observations regarding how pipes are held by smokers (i.e. by holding the stem with hands or teeth) are therefore also considered. Whereas in depictions, how pipes are held are based on straightforward observation, determining how pipes are held based on text is not as simple. In some cases, the authors explicitly state how pipes are held by their smokers, while in others this is inferred through settings and actions undertaken by smokers.

The main source for depictions of pipes and smokers applied in the following chapter has been the digitally available catalog of the *Nationalmuseum* in Stockholm. The collections of the Stockholm City Museum, *Nordiska Museet* have also provided source materials for this section of the study.

Searches in the online catalog of *Nationalmuseum* were initially focused on search-phrases related to pipes and smoking. It was quickly found that many works depicting pipes or smoking held by the museum did not appear using such search phrases. Rather, extensive browsing through collected works of Hilleström, Sergel, Martin, Rehn, and other artists generated better results. Other depictions included have been found more or less by happenstance while visiting museums, as recommendations from colleagues and while reading. For example, smoking men in the foreground of several panoramic depictions of Stockholm were encountered while searching for relatively contemporaneous depictions of Stockholm during work with an unrelated project. Among these are smoking men in *Suecia Antiqua et Hodierna* (fig. 87) and smokers depicted by Johan Sevenbom (fig. 69). Another example of a depiction of a smoker found by chance is a mural depicting two men, one who is smoking a pipe while butchering an ox (fig. 90) was encountered by myself during a visit to *Norrköpings stadsmuseum* – the city museum of Norrköping. The cover image to *En wäl förbättrad*

tobaks-brödra- ordning [...] (fig. 73) has also been included as the text itself is one of the sources that most explicitly indicate differentiating smokeways of the early eighteenth century.

Searches in the digitized collection database of the Swedish *Nationalmuseum* have been fundamental for the acquiring of artworks. However, as the artworks are currently only searchable via keywords related to the titles of the works rather than subject keywords related to items or activities depicted, an extensive screening process was conducted in order to potentially include a wider selection of artworks. The selection can be said to be biased in the sense that certain artists' corpora were found to depict smoking and pipes more than others. For example, Per Hilleström and Johan Sevenbom, included pipes and smoking in their works while others, such as Ulrika Pasch or Carl Fredrik von Breda did not depict pipes or smoking. While it may be interesting to analyze why the latter two artists, and many others, did not depict smoking or pipes, including depictions void of pipes to analyze smokeways falls outside the scope of this study.

A fundamental hypothesis of this study is that an analysis that considers socioeconomically differentiating smokeways can theoretically be applied on any depiction of pipes or smokers. In order to delimit the source material, however, three conditions have been applied in the sourcing of the artworks and texts;

1. The artwork or text must depict or describe at least one tobacco pipe or one person smoking.
2. The artwork or text must have been created during the period between circa the year 1700 and the year 1830. Provenance and production dates are generally known and stated in museum catalog entries. Some works, such as the oil painting depicting nine carousing men (fig. 75) or Jean Eric Rehn's ink sketch of two men smoking (fig. 74) lack known production dates and are only known to have been produced during the mid-eighteenth century.
3. The subjects or creator of the painting or the author of a text must be associated to Sweden in some way, or the publication must be in Swedish. Depictions and descriptions of pipes or smokers in Sweden or Finland by foreign or domestic artists are considered as best suited as evidence of sentiments of smokeways in Sweden. Less suitable are, for example, pastiches of foreign artworks. This means that a copy of a Dutch genre painting from the seventeenth century produced by a Swede is not considered as having the same source value as a contemporaneous genre painting depicting Swedish subjects.

Bearing what is now known about different pipe types, variations in price based on lengths and production quality in mind, the first step of an analysis considering socially differentiating smokeways based on depictions of pipes and smoking is to identify the relative price of the pipes depicted. In terms of symbolic interpretations of pipes and smoking, the significances of pipes can be construed as context dependent. Benno Tempel notes that symbolic connotations of pipes and smoking in Dutch Golden Age art shifted from being a symbol of "social deviance" in the early seventeenth century, to becoming "more respectable" from the 1660s (2004, p. 207). Tempel connects the increased acceptance of smoking among the upper echelons of Dutch seventeenth century to the arrival of the long pipes, which were applied as status symbols by the elite, and for a few decades – "smoking became prestigious" (Tempel 2004, p. 207) in the Netherlands. Interpretations of significances of pipes in Dutch genre paintings and still lives must therefore take into consideration a combination of contextual aspects, ranging from when each depiction of pipes and smoking was created, to the inferred socioeconomic status of people and milieu depicted, as well as the attributes of the pipes. As there are currently no such analyses of Swedish artworks depicting smokers, it is not possible to make similar conclusions in this country.

This is one of the first analyses to consider symbolic inferences and socioeconomic significances of pipes (and smokeways) in Swedish eighteenth-century art with an awareness of prices of pipes. Previous attempts at linking pipes and smoking as depicted in Swedish eighteenth-century art to clay tobacco pipes from the archaeological record (Stenbäck Lönnquist & Welinder 2008) have been focused on social prescriptions that regulated tobacco smoking according to biological sex rather than socioeconomic status based on pipes.

A foundational assumption, based on comparisons to contemporaneous depictions of smokers from other countries, is that different types of pipes depicted in Swedish eighteenth-century art were most often intentionally in congruence with the socioeconomic status of the people portrayed. Similarly, the smokeways, much like the pipes and any material culture depicted, needed to be in congruence with contemporaneous sentiments and views of what was considered acceptable for particular social groups. Incongruity between pipes and the social status of their smokers, if and when it exists, is believed to be expressions of humorous satire. Such depictions may also have served the purpose of symbolizing criticism towards the disasters of what would happen when idealized and recognizable consumption patterns were challenged, ruptured or overturned.

As previously mentioned, a purported lack of women depicted smoking in Swedish depictions of smokers from the eighteenth century have previously been applied to make claims that smoking was a uniquely male activity and that eighteenth century pipes should be interpreted as male objects (Stenbäck Lönnquist & Welinder 2008, p. 175f). This claim is based on a failure to consider existing depictions and descriptions of both male and female smokers from eighteenth- and nineteenth-century Sweden (see, for example Broocman 2016 [1736]; Tham 1799, and figs. 82 and 91 below).

Moreover, it can also be argued that a *lacuna* in the understanding of comparative relative stem lengths and their significances in depictions from the period has also led to misunderstandings in interpretations of contemporaneous artworks. For example, a depiction of Uppsala castle by Johan Sevenbom from 1771 shows soldiers drinking and smoking in the foreground. Björn Hallerdt claims that the “watchmen carousing in the foreground with drinking vessels and long clay tobacco pipes” (2010, p. 56 [translation by author]). From a perspective that combines an awareness of stem-lengths and the intentionality of the artist to portray smokeways of the soldiers in a realistic manner, it is apparent that the soldiers have been intentionally depicted as smoking short or possibly medium-length pipes. Claims such as this clearly illustrate a need for a better understanding of variations to characteristics of pipes and what these were intended to signify in their contemporaneity.

As we shall see, there are several depictions of smokers from the Swedish eighteenth century where the pipes are arguably in congruence with the socioeconomic station of their smokers. For example, it is apparent that the intentional depictions of long pipes in Jean Eric Rehn’s portrait of Carl Linnaeus (fig. 72.) or Rehn’s self-portrait (fig. 76) were intended to mean something different than the broken pipes littering the ground on Pehr Hilleström’s depiction of a harvest festival (fig. 70) or a stump clenched between the teeth of a butcher’s apprentice (fig. 90). Beholders of the former depictions would likely have reacted with amusement if Linnaeus or Rehn had been portrayed smoking short pipes or stumps as those types of pipes were not considered appropriate for an Archiater and founder of the Royal Swedish Academy of Sciences or indeed the artist and architect who depicted him smoking. Similarly, contemporaneous beholders of Hilleström’s painting would have likely reacted in disbelief or amusement if the peasants celebrating a harvest feast at Svartsjö castle were wielding 25-inch pipes.

In the Hilleström painting of a harvest festival, in the tradition of Dutch genre paintings from the early seventeenth century, pipes – broken and intact – are easy to interpret as symbols of drunkenness and disorderly behavior – as examples of the wrong ways. Another possibility is that the pipes have also been included as a humorous trope – as a symbol of the rowdy ways of the drunk peasants – also in the vein of depictions of drunk Dutch peasants that “served to entertain a well-to-do class that enjoyed poking fun at the rabble” (Tempel 2004, p. 206). Simultaneously, and as noted by Eskeröd (1962, p. 44f) the painting may also be a relatively realistic depiction of a harvest festival. At such festivities, it is reasonable to assume that people smoked and broke pipes. Perhaps most importantly, and regardless of any allegorical significances – the pipes appear to be of lengths that were considered appropriate for the social status of the subjects of this depiction.

The subjects of many Dutch genre paintings were used for didactic ends – and their “moralizing content was [...] expected to be implicit” (de Vries 1991, p. 227) and understood by those in the know. Thus, a source critical aspect worthy of consideration is that many Swedish artists of the eighteenth century were either trained in or inspired by the pictorial traditions of Dutch painting. Several of Hilleström’s indoor scenes from Swedish peasants’ cottages draw on similar subjects depicted in the previous century by Dutch artists such as Adriaen Brouwer or Jan Steen (see, for example, figs. 3 and 4). One of the most significant differences between Dutch and Swedish genre paintings, apart from the fact that they are created almost a century apart, is that Swedish genre painters of the eighteenth century do not appear to have drawn inspiration from emblem books and puns to the same extent as their Dutch seventeenth-century counterparts.

It is possible that allegorical devices and tropes such as smoking, or broken clay pipes on the ground, employed in Dutch paintings from the seventeenth century to signal “vanities of worldly pleasures, the dangers of vice, the perils of drink and smoke” (Brenner, Ridell & Moore 2007, p. 78), or as allegories for the senses of taste and smell (Tempel 2004, p. 204), carried similar meanings in Swedish eighteenth-century art. The educational backgrounds of Swedish painters may have entailed varying degrees of adherence to the classical concept *docere et delectare* – to educate and entertain. For example, in Dutch still lifes and genre paintings, the inclusions of pipes have been interpreted as potentially carrying several and complex meanings ranging from puns (as in the case of Jan Steen’s *Soo voer gesongen, soo na gepepen*), to the ephemeral nature of pipes and smoke acting as *mementos mori*, as well as allegories for the senses smell and taste (Tempel 2004, p. 204ff).

Broken clay pipes on the ground or floor can also be found in English depictions of taverns and coffee houses from the period, and an influence from English genre paintings can also be seen in some contemporary Swedish depictions of smokers. A good example of this is a painting by an anonymous artist from the 1750s (fig. 75). Although less raucous than the original, it appears to mimic, the painting is likely a Swedish pastiche of William Hogarth’s *A Midnight Modern Conversation* from 1733. It depicts nine men, of which several are apparently inebriated; similarly to Hogarth’s original, the man depicted in the lower right of the painting is attempting to light his pipe on a candle but is instead lighting the cuff and sleeve of his shirt. Immediately below him stands a chamber pot filled with what is likely urine, inferring that high quantities of alcohol have been consumed. Confirming the inebriated state of some of the subjects, the man on the far right also appears to be vomiting uncontrollably.

Considering the intended audiences of depictions of smokers and attempts to contextualize and comprehend if depictions are intended as realistic, edifying or entertaining – or two or all three at once, can lead to new insights into social acceptance of smoking and smokeways. For example, in an attempt to grasp the social settings in which smoking was considered appropriate in nineteenth-

century Norway, Kierulf turns to group portrait paintings of Norwegian families from the late nineteenth century. Based on the fact that middle and upper class men, smoking typical Norwegian long pipes, are depicted as doing so in the vicinity of women – their daughters and wives – in domestic settings, Kierulf concludes that “pipe smoking became a common, everyday event, undertaken in, and belonging to homely pleasure (2009, p. 183), and that men smoking among women was acceptable in Norway at this point in time. The contexts in which these depictions were to be viewed – often the homes of the subjects depicted – reflect notions of appropriate smoking as they are in accordance with practices that would have been considered respectable and acceptable.

For written accounts of pipes and smoking, as previously mentioned, source material has been gathered from three general sources; the first is Edgar Lund’s bibliography of Swedish tobacco-themed literature – *Svensk tobakslitteratur – anteckningar till en bibliografi* (1935) which is part of the series *Bibliotheca Nicotiana*. The chronological scope of this bibliography spans from the early seventeenth century to the early twentieth century. For this study, publications from the late seventeenth century, the entire eighteenth century, and the first decades of the nineteenth century have been included. Several of the titles in this bibliography deal primarily with agricultural aspects of tobacco. While such sources certainly attest to a widespread habit and function as indications of the relevance of tobacco farming for the national finances of Sweden at the time, they provide only scant information to improve any understanding of the effects of differentiating smokeways as visible on archaeologically recovered pipes.¹⁶⁵

The second general source is the Swedish Literature bank, with its online catalog of freely available works. While reading works listed by Lund (1935) which have been digitized and made available through the Literature bank, it became apparent that not all digitized works in the database have been OCR-scanned. This means that text-searches in the platform’s search engine are currently not exhaustive, and as such, I wish to be clear about the fact that this study may not include all potentially relevant works that mention pipes and tobacco that may be available through the platform. Another challenge when accessing works via the Literature bank is that several works containing texts from the eighteenth century were published in the nineteenth and twentieth centuries. This poses a challenge when using the search engine’s chronological search feature as it does not include works authored within the set timeframe yet printed beyond it – often in anthologies or compilations. Compilations of the epistles and songs of Carl Michael Bellman, primarily written and composed in the 1760s and 1770s and compiled in the nineteenth and twentieth centuries is such an example.

It has been found that pipes, tobacco, and smoking feature recurrently throughout Bellman’s works, and a study of smokeways focused entirely on Bellman’s views could very well warrant a study in its own right. As this study aims to include descriptions and depictions of both urban and rural smokeways from covering the eighteenth century and the early nineteenth century, a mere handful of Bellman’s works referencing pipes and smoking have been included. Of particular interest for this study have been lines of verse and stanzas that relay information on the social status of smokers of pipes of particular lengths and types and whether smokers held their pipes by holding the stems with their hands or by clenching stems between their teeth. As with other texts mentioning pipes and smoking, inferences of the socioeconomic status of smokers, stem-lengths of pipes and how pipes are

¹⁶⁵ I do not, however, wish to rule out the possibility that future analyses of trace elements of specific tobacco strains, blends or types preserved in clay tobacco pipe bowls may shed further light on how pipes and tobacco in combination may have been applied in negotiations of social status.

held can be drawn from descriptions that include activities undertaken by the smoker, clothes worn, setting, and familiarity with pipe-nomenclature used at the time.

The third source is the newspaper archive of the National Library of Sweden, which has also provided information on pipe factories presented in previous chapters as well as in Appendix I below. While previous chapters have focused on advertisements and notices of sales and auctions published in newspapers throughout the eighteenth century, this chapter at hand focuses on descriptions of smoking. The causeries and articles referencing and commenting on smoking and statements that can be interpreted as either explicit or implicit comments on pipes as expressions of socioeconomic status via concepts such as taste and appropriateness have been encountered while I attempted to gather sources on pipe factories and workshops (and vice versa). As with mentions of smoking and pipes in the works of Bellman mentioned above, the aim has not been to find and present all sources mentioning tobacco, pipes, and smoking. Rather, the aim is to show how archival sources that mention smoking, pipes, and tobacco can be applied in interpretations that consider differentiating smokeways.

As with interpretations of artworks, an attempt has been made to determine if smokers are described as using short, medium or long pipes. In some cases, such as recommendations on appropriate pipes, relative lengths are stated. In other cases, the lengths of pipes can be interpreted as being inferred by considering descriptions of actions undertaken by their smokers while smoking. For example, if texts describe smokers as working with their hands, it is more likely that the pipes were short pipes as these are more suitable for clenching between the teeth. While likely hyperbolic, descriptions that infer such smokeways occasionally state that smokers *always* had pipes in their mouths (see Angerstein 2001 [1753–1755], p. 146; Lönqvist 1924 [1775], p. 7).

Regarding pipe-nomenclature and inferences, Bellman uses the word “*nubb*” to refer to short clay tobacco pipes in at least three instances (1836, p. 175; 148; Bellman & Steffen 1916, p. 282). As an example of how actions undertaken while smoking can act as a clue to how a pipe is held, in an addendum to Fredman’s 43rd epistle known as *Si fåhlenubben* (Bellman & Steffen 1916, p. 282), a *nubb* is mentioned as being in use while chopping wood. This strongly suggests that the pipe is held between the teeth of the person smoking, and that the smoking is being done while working. Such smokeways can confidently be stated as not associated to the wealthy segments of 1760s or 1770s Sweden. As we shall see, smokeways that include clenching, ironically, appear to have been associated with both wasteful idleness and frugal diligence of commoners.

Another text with relevance for this section of the study; *En wäl förbättrad tobaks-brödraordning, alle älskare af tobaksrökandet til efterrättelse författad, och wid embetets senaste sammankomst framgifwen. Tryckt i åhr* (henceforth the rules of the tobacco brotherhood) is a satirical and slightly bawdy print in a pamphlet-format, generally held to have been published in the 1730s.¹⁶⁶ Its title, which can be translated as either: A Well-Improved Tobacco-Brotherhood Order, Written for Observance for all Lovers of Tobacco Smoking, and Created at the latest Gathering of the Office: Printed this Year, or a Well-Improved Code for the Brotherhood of Tobacco [etc.]. The title alludes to other “*ordningar*” – orders, regulations, rules or codes, such as the the *Skråordning*, which is usually translated to Guild

¹⁶⁶ The publication date is somewhat problematic. Edgar Lund states that the text was published in the early eighteenth century (1935, p. 21), while Krantz and Munthe state that it was published in the 1730s. This conclusion may in part be based on one of the rules which state that no one under 19 years of age was allowed to smoke. An age limit of 21 was enacted in 1741 and would likely have overturned any previous recommendations.

Regulations.¹⁶⁷ The text consists of two introductory poems followed by 27 paragraphs with rules and regulations for tobacco pipe smokers.

According to previous publications by Swedish historians, this brotherhood is fictitious, although Munthe (1940, pp. 90f) speculates that smoking clubs inspired by the so-called *Tabakskollegium* of King Frederic Wilhelm I of Germany may have existed in Sweden at the time.¹⁶⁸ This text was previously believed to be a Swedish original. However, the rules are in fact an altered version of a chapter in Johannes Reimer's (under the pseudonym Michael Kautzsch) 1680 humorous novel *Der Politische und Lustige Tabacksbruder [...]* (1680, pp. 39–43). In the original, a company of smokers argue over 26 rules titled: *Neu erfundene und wohlegegründete Tobaks-Zunfft Ordnung / Allen Liebenhabern des Edlen Krauts/ des Tobacks / zum besten / und ihren Auffnehmen vorgestellt / von der stämptlichen Zunfft Altmännern / Ober-Meistern / und andern Beysitzern* – literally, the newly invented and well-founded Tobacco Guild Order / Presented to all lovers of the noble herb / of tobacco / for the benefit / and their acceptance / by the guild's elders / masters / and other assessors.

Both versions of the text can be seen as satirizing and mocking similar regulations of guilds as well as tobacco smoking and smokers. It is highly likely that the rules were written primarily for the amusement of relatively wealthy male smokers who already had an appreciation of what would have been considered well-mannered smoking. While somewhat sympathetic towards individual choice (if smokers preferred short pipes, this was acceptable), the text condemns smokeways that would have been associated with poor people (smokers should always have a replacement pipe at the ready and smoking previously chewed tobacco is not allowed). Both condemnations and approvals thus act as conjectural statements on their opposites. While the original is neither Swedish, nor originally published in the eighteenth century, the modified Swedish translation has been included as it is believed to reflect contemporaneous perceptions of smokeways; why else would it have been published in the first place?

10.2.1 Two examples: smokeways among commoners in Nora Bergslagen in 1780s, and 1830s France

I wish now to provide two examples of how documentary source material may be applied to interpret smokeways and how these smokeways would be visible in the archaeological material. The first example is from Sweden, and the second combines English and French sources.

The *Bergsråd* – the mining counsellor, of the *Bergskollegium*, the Swedish Board of Mines, Eric Bergenskjöld, who would likely have been well acquainted with smokeways considered appropriate in all echelons of late-eighteenth-century Sweden states that:

On the roads, no Nora *Bergsman* will be seen with a pipe in his mouth. A stranger would nevertheless think that tobacco smoking is commonly used, for on Saturdays when returning from the market square there is commonly a new clay pipe in the hat of men and womenfolk alike (1984 [1784], p. 58).

¹⁶⁷ The word pamphlet in this case refers to the format, not to the definition of the Swedish word *pamflett*, which in Sweden usually refers to a political pamphlet.

¹⁶⁸ See also *Dagligt Allehanda* (07-04-1781 & 07-05-1781). Fictional prospects, or outlines, of six tomes on various aspects of tobacco smoking; Both causeries refer to the coming works as *Tabacologia*. The author of the 1750 version is anonymous, while 1781 volumes are to be produced by the most likely fictional “Canaster division”.

As it is highly unlikely that pipes of 24 Swedish inches – over 50 centimeters – would have been stuck in hats for transportation, this description infers that the pipes presumably purchased at the market square were either medium-length, short pipes, or stumps.

The text also relates several other aspects that are relevant from a perspective that considers socially differentiating smokeways. Bergenskjöld notes that smoking was not something commonly seen in this part of Sweden, thus suggesting that smoking in Nora Bergslagen may have been an activity reserved for the private sphere. Secondly, both men and women transported, and thus likely used pipes to smoke tobacco. This suggests that smoking was practiced by male and female commoners, confirming earlier and later observations presented, for example, by Broocman (Broocman 2016 [1736]) and Tham (1799). Thirdly, we learn that new pipes were purchased with a relative frequency – on market Saturdays – suggesting that new rather than seasoned pipes may have been preferred among the commoners in Nora Bergslagen at this time. Fourthly, we learn that these commoners purchased their pipes in small quantities, likely as singles. This suggests that purchasing behaviors could potentially be linked to the socioeconomic status of the consumers of the pipes, provided that wealthy smokers were more likely to have purchased clay pipes in bulk (as also evidenced by contemporaneous depictions).

From a perspective that considers differentiating smokeways as visible in the archaeological record, this text suggests that fragments dating to the 1780s that exhibit signs of extensive use recovered in the region may be indicative of smokeways deviating from the regional norm of smoking relatively new pipes. Based on the statement that the pipes were transported in or on the hats, it is likely that the pipes referred to in the text are either medium length or more likely the short, low-numbered so-called N-number pipes or stumps. In 1784, pipes were most likely brought to Nora Bergslagen from pipe factories in Stockholm, Falun or Norrköping, and prior to 1776, more likely from the factory in nearby Arboga. This type of consumer behavior will also be visible in the archaeological record; Depending on if merchants at the market were resident or itinerant peddlers and procured pipes from different factories, relatively contemporaneous pipes manufactured at different Swedish factories could be present in assemblages recovered from farmsteads in the area.¹⁶⁹

Lastly, another aspect of the abovementioned quote from Bergenskjöld that considers inferences of smokeways is that the text implies that in other parts of Sweden, commoners were more likely to be seen smoking with pipes in their mouths than in Nora Bergslagen. The quote further implies that both Bergenskjöld himself and the commoners he is describing may have had negative opinions of smoking in public to the degree that their smokeways differed from the smokeways of commoners in other parts of Sweden.

While it is often difficult to estimate the degree of intentionality of deposition of pipe fragments recovered from the archaeological record, the fragments may yet be analyzed from a perspective that considers traces left by users of pipes and the sentiments that were projected towards the smokeways that generated these very traces. By coupling depictions and descriptions of smokeways that would have resulted in such marks both to the marks on the pipes themselves, and to the smokeways of the oftentimes inferred social groups who made these marks, these traces may be given the opportunity to act as readily available and tangible evidence for analyses of applied social differentiation in the past.

The second example shows how a combination of text and image may assist in explaining attributes of pipe fragments. Though somewhat satirically describing different smokeways, William Andrew

¹⁶⁹ A good example of this type of purchasing behavior is apparent in the pipe assemblage from Lappatähta. At this site, pipes from Falun and at least two factories in Stockholm have been identified (see Björk & Blennå 2020).

Chatto presents observations that serve to illustrate how variations to the same practice can be interpreted as expressing taste, nationality, ethnicity, and social class (1839, pp. 139–140):

"In Wales an old seasoned clay pipe is more highly valued than a new one; and with smokers of shag, more especially those of the Sister Isle [Ireland], a dhudeen - a short pipe, so called in Irish from its black colour - is preferred to a fire-new alderman [the longest type].¹⁷⁰ In Holland the more wealthy classes seldom smoke the same common clay-pipe oftener than once; while with the professed smoker of Belgium a pipe of about nine inches long, and black in the stem from frequent use, is highly esteemed. In Belgium and Artois the grand object with amateurs is to blacken the stalk [stem], and to preserve the bowl white. The professed smokers of Paris also prefer a seasoned clay-pipe of about nine inches long; and those who aim at the highest distinction in the art of smoking pride themselves on preserving only the upper part of the head white. This superlative degree of excellence is, however, only to be obtained, and preserved, by the smoker sacrificing his pleasure to his pride; for should he smoke his pipe more than half out, the black colour in the lower part of the head is sure to be driven off. By the most sensible French tobacco-takers this excessive refinement is justly condemned. Since the revolution, the custom of smoking has become much more general in France than formerly. Dukes, marquises, and counts as well of the old as the new régime, frequently indulge in a pipe or a cigar. Old soldiers, from the field-marshal to the vieil moustasche of the line, are in particular much addicted to the custom, and their favourite instrument of inhalation is a short pipe of clay. In Holland and Belgium a small chafing-dish containing burning charcoal is usually placed in smoking rooms, for those who frequent them to light their pipes at; and a similar convenience is provided in most of the estaminets or smoking-rooms of Paris. The French adept in smoking, who wishes to preserve the upper part of the bowl white, is very particular in his manner of lighting his pipe. According to the author of *L'Art de Fumer*, the best mode is to light from the fine white ashes at the bottom of the chaffing-dish. The man who lights his pipe with a piece of paper, or at a candle, he regards as a barbarian, who has not knowledge of the *propreté* of smoking. In England pipe-lighters of cedar are mostly used by smokers of taste.

While this text presents examples of variations in smokeways in the United Kingdom and continental Europe in the late 1830s rather than Sweden during the eighteenth century, it is a good example of how clues from written accounts can be linked to archaeologically recovered pipes. For example, the text specifies pipe types preferred by “the more wealthy classes” in the Netherlands and the “professed smokers” of Belgium and Paris, France. Moreover, it clearly indicates that intentional modifications of the colors of the pipes resulting from variations in smokeways may have played a significant part in signaling of good or poor taste of smokers. Contemporaneous examples of this can be seen in period artwork, such as Gustave Courbet’s *L’homme à la pipe* from 1849 (fig. 61). It is important to note that the seasoning or blackening of clay tobacco pipes is strongly dependent on the absence of heat emanating from the burning tobacco. Similarly to meerschaum, bowls of clay tobacco pipes can be seasoned and colored by residual oils and tar from burned tobacco.

While meerschaum pipes of the time, steeped and impregnated with *spermaceti*, retains its potential seasoning even when subjected to heat, a seasoned clay pipe loses its coloration if the porous clay that has trapped oils is subjected to heat from burning tobacco, which in turn means that a seasoned or blackened bowl is the sign of a smoker who only smoked parts of the fully packed bowl of tobacco. The inference of pipes seasoned in this manner to people “in the know” is that the smoker of such a pipe could afford to not smoke the full bowl of tobacco.

¹⁷⁰ *Dúidín* is the diminutive form of *dúd* – pipe. *Dúidín*, dhudeen, or dudeen means small pipe.



Figure 61. "L'homme à la pipe" by Gustave Courbet (1848). The stem and bottom of the bowl of the depicted pipe have been seasoned by residual oils from the burning tobacco. Smokeways required to achieve this effect require extended use of a pipe and that the tobacco is not smoked to the very bottom of the bowl. Musée Fabre, Montpellier, France.

It is also worth noting that Chatto points out that the French bourgeoisie had taken up smoking as a result of the French revolution. The implication is that snuff, associated in France to the aristocracy of the *ancien régime*, had fallen out of fashion among the wealthy after the revolution. As previously noted, nicotine addiction is a near-constant while the systems employed to deliver the substance or its addicts may vary. In France, snuff-taking had become so symbolically linked to the despised élite

that tobacco smoking through either cigars or pipes became a viable consumption mode for upper-class nicotine-addicts in order to avoid scorn, physical harm, or giving up tobacco.¹⁷¹

The methods applied here could be referred to as part of the deductive method outlined by Duco (1987), by applying external and disparate source material to reach otherwise unobtainable insights into pipe consumption. Moreover, the first example above is a good example of how only two sentences contain what Ginzburg (1980) would call conjectural clues. Arguably, a fundamental requirement for interpretations of these types is an understanding of the attributes of different clay tobacco pipes available at a specific place and point in time and what their appearances would have entailed in their contemporaneity.

In the first case, supplies of imported pipes were severely limited by the embargo against foreign pipes. It is thence possible to assume with a high degree of certainty that the pipes referred to in this text were made in Sweden. As such, attributes of pipes identified in above chapters were most certainly present on the pipes described in the text. Based on an understanding of the attributes and characteristics of the pipes that were available for smokers in Sweden at the time it is then possible to apply conjectures and inferences from a combination of sources that describe or depict them. In turn, this allows texts such as this to be coupled with clay tobacco pipe fragments from the archaeological record, thus providing conclusions based on how smokeways were employed to stage socioeconomic differentiation.

In the second case, a text and an image both attest to significances of similar attributes of socially differentiating smokeways that potentially remain visible on pipe fragments recovered from the archaeological record. In order to make these connections, it is important to take into account the possibility that national or even regional variations to smokeways may have existed. Indeed, regional variations to smokeways in Sweden are also suggested by Bergenskjöld. Although explicit accounts of the significances of smokeways such as this are uncommon in the archival record from eighteenth-century Sweden, there are inferences and clues in texts and images that are believed to assist in interpretations of smokeways based on pipe fragments from the archaeological record.

10.2.2 Source criticism

It has been found that some depictions and descriptions of smokeways applying short and medium-length pipes can be challenging to apply for interpretations of socio-economic status. This is because unless the depictions or descriptions are explicitly depicting or describing short pipes, it is impossible to determine whether the depictions or descriptions are in fact of stumps or broken specimens of long or medium pipes. Based on manufacturing descriptions and surviving pipes outlined in chapters 7, 8, and 9 above, it is possible to identify short stumps, as during the eighteenth century the shortest types in production would not have been shorter than between around six and eight Swedish inches. However, it is not possible to determine the original lengths or production quality of stumps portrayed or described. This challenge is reminiscent of interpretations based on archaeologically recovered fragments of pipes. Unless it is possible to perfectly refit fragments of full-length polished long pipes recovered from the archaeological record, it is not possible to say with absolute certainty

¹⁷¹ Similar tendencies can be observed in Sweden, where the use of nasal snuff appears to have declined in favor of oral snuff, particularly among the laboring classes during the first decades of the nineteenth century (see Stolt 1892; Junhem 2004, p. 42).

that the fragments are evidence of the presence of a smoker who paid a premium for the pipe in question.

Another challenge presented by the works of Pehr Hilleström, and indeed all genre paintings from eighteenth-century Sweden, is the fact that several, if not all genre paintings, are confabulatory to some degree. Eskeröd (1962, p. 44) notes that:

Hilleström did not himself visit more than a few of the landscapes [regions], whose peasant-environs he depicts. The interiors are odd concoctions of bits and bobs, where one has reason to suspect that features from his own studio, certainly also theater-props from Drottningholm, environs from bourgeoisie homes in Stockholm and his own sketches from his travels on the continent and perhaps not least details taken from similar genre paintings or engravings, that the artist had access to. [...] Even though one thus, in the matter of Hilleström must be very critical when it comes to the documentary value of his room-environs and to a certain degree of furniture and household items and their placements, one still dares concur with [Gösta] Selling when he says: 'There is still an infinite amount left, that must have been sourced from the living life around the artist'.¹⁷²

Depictions of pipe smokers, although produced in Sweden by foreign or Swedish artists, may not as such be completely reliable or seen as accurate representations of exact lifeways and material culture of eighteenth-century Sweden as artists often copied or were inspired by foreign originals. However, as the source-pluralist method outlined by Myrdal (2012, p. 157) states that if disparate sources agree – the credibility of the information in these sources is strengthened. Although clothes and furnishings may not be accurately represented in these genre paintings, there is, as we shall see, not much evidence to suggest that characteristics of the pipes included in most depictions are invented or confabulatory. Pipes were near ubiquitous in many milieus throughout eighteenth-century Sweden, and it does not seem likely that shapes or appearances of pipes would have been unfamiliar to artists.

One example that suggests artistic liberty on behalf of Hilleström in regard to clay pipes can be seen in the aforementioned painting of a harvest festival. While, as we shall see in section 8.3.2 below, the stem-lengths can be considered as appropriate to the status of their smokers – a close inspection of the pipes shows that the bowl-form of the pipes do not resemble any known contemporaneous pipes. Rather, the bowls depicted are morphologically reminiscent of pipes depicted in Dutch genre paintings from the seventeenth century.

¹⁷² Hilleström besökte inte heller själv mer än några få av de landskap, vars bondemiljöer han skildrar. Interiörerna är märkliga hopkok på lite av varje, där man har anledning misstänka inslag både från hans egen ateljé, säkerligen också teaterdekorationer på Drottningholm, miljöer från borgerliga hem i Stockholm och egna skisser från hans resa på kontinenten och kanske inte minst detaljer tagna från liknande genremålningar eller stick, som konstnären haft tillgång till. [...] Även om man sålunda i fråga om Hilleström måste vara mycket kritisk, då det gäller det dokumentära värdet i hans rumsmiljöer och i viss mån även av möbler och husgeråd och deras placering, vågar man ändå instämma med Selling då han säger: "Det finnes ändock så oändligt mycket kvar, som måste vara hämtat från det levande livet omkring konstnären".



Figure 62. The bowls of the pipes depicted in Hilleström's painting of a harvest festival more closely resemble Dutch seventeenth-century pipes than Swedish eighteenth-century pipes. Detail of Hilleström's *Ett slotteröhl*. Photo by Mats Landin/Nordiska museet. Nordiska museet, NM.0261301. CC BY PDM 1.0.

Some depictions created by Swedish artists are also believed to be less relevant for interpretations of sentiments of smokeways in Sweden proper. For example, I have found only one depiction in the Swedish National Museum that shows a smoker of what looks like a meerschaum pipe who is described as a peasant (the tapestry-weave *Tre rökande bönder* by Hilleström, N.D.). The depicted men are wearing clothes not normally associated to Swedish peasants of the eighteenth century, which is explained by the fact that Hilleström's tapestry is a copy of an Italian painting by Domenico Maggiotto, supposedly depicting Italian peasants.

Another challenge posed by depictions and descriptions is to determine the nationality of their subjects. One written description (Bellman 1790, p. 200) connects an unnamed sailor, referred to as "*Beckeböxa*" – literally tar trouser or jack tar – to his "*lång Holländska pipa*" – "long Dutch pipe". Swedish sailors, unless they are commanding officers, are generally not portrayed smoking long pipes. This may therefore be a description of a Dutch or foreign sailor; The plot of Epistle 59 takes place at a seamen's tavern called Lokatten, a place to which Dutch pipes are also associated in Epistle 11 (Bellman 1836, p. 23), and where multiple languages are spoken by sailors from foreign countries. While the embargo against foreign pipes was certainly in effect during the time Bellman wrote *Fredmans epistlar*, it is highly likely that individual sailors, Swedish and foreign, occasionally managed to sneak foreign pipes ashore along with other personal belongings.

Among the written sources included below are, as previously mentioned, adaptations of foreign publications. The fictitious German Tobacco Guild Order (Reimer 1680), published in a modified

version in Swedish in the 1730s is one such example. It is also highly likely that satirical causeries published in *Götheborgs Weckolista*, 1750-07-28) and in 1781 (*Dagligt Allehanda*, 07-04-1781-07-04 & 07-05-1781) are translations of texts previously published in other countries. In the case of the Swedish rules of the fictitious tobacco brotherhood, similarly to allusions to and reiterations of pipes as tropes in pictorial art, this can be interpreted as notions of appropriate smokeways of the literate middle and upper classes being shared across northern Europe.¹⁷³

However, the Swedish translation differs from the German original in several ways. This is likely due to the fact that it is not as bound to the plot of the novel to which the original rules relate. Rather, the Swedish version is perhaps best seen as an adaptation intended to fit the frames of reference of its contemporaneous readers in Sweden. For example, the Swedish version includes specified lengths of pipes and also regulates the types of alcohol that is suitable to consume while smoking. Rules in the German version regulating manners of lighting pipes have been omitted in the Swedish version. Likewise, rules concerning pipe cases have also been left out of the Swedish rules.

Yet another challenge is presented by depictions of smokers using stub-stemmed pipes, known as *turkhufwud* (with spelling variations) due to the fact that they are easily mistaken for bowls made from the significantly more expensive pipes made from meerschaum. In some cases, a bowl can be identified as made from meerschaum (see fig. 78) or clay, while in others, the distinction is significantly more difficult (figs. 63 and 82). This is further complicated by the fact that while it may be expected that expensive meerschaum bowls were reserved for use in private spheres, several lost ads in contemporaneous newspapers suggest that expensive meerschaum pipes were also used in public places such as taverns. This adds to the difficulty of interpreting if such pipes depicted in public places are made from clay or meerschaum.

It is possible to reach less certain conclusions regarding the materials of pipe bowls based on the attire of their smokers. However, the fact that early nineteenth-century depictions of bowls seemingly made from meerschaum in use by soldiers (fig. 63) and commoners complicate matters significantly.¹⁷⁴ It is often argued in other European countries that pipes made from meerschaum and other materials such as porcelain and wood, as well as cigars, cigarettes (and in the case of Sweden – oral snus) gradually supplanted pipes made from clay in the nineteenth century (see Duco 2004). Moreover, many depictions from the late eighteenth century and early nineteenth century make it apparent that clay tobacco pipes were used alongside meerschaum pipes – likely by smokers who belonged to the same socioeconomic segment (figs. 78 and 79).

¹⁷³ The German original appears to have been over half a century old when it was adapted for Swedish readers. This may be indicative of similar tendencies observed in a tentative comparative study of portrayals of pipes and smoking in Dutch and Swedish genre paintings. Tempel notes that depictions of members of the elite smoking fell out of fashion in Dutch art in the eighteenth century (2004, p. 209). Based on depictions included below, pipes and smoking did not experience the same depreciation as status-symbols in Sweden. This suggests not only that views on smokeways differed between Sweden, Germany, and the Netherlands, it also indicates that Sweden may have been slow to adopt continental notions of appropriate smokeways.

¹⁷⁴ See also the smokers depicted in Elis Chiewitz 1827 illustration for Bellman's 'Fredmans epistel nr 45': *Huruledes Mollberg lider oskyldigt på krogen Rostock*.



Figure 63. Distinguishing between stub-stemmed bowls and meerschaum pipes in depictions can be difficult. This is further complicated by the fact that at least one factory (Grindsbruk in Stockholm) is known to have painted bowls with white paint to mimic meerschaum. Detail from Pehr Nordquist's "Militärläger på Ladugårdsgårde" – A Military Camp at Ladugårdsgårde in Stockholm, 1790s. Photo by Eric Cornelius/Nationalmuseum. Nationalmuseum NMH 16/2008.CC PDM 1.0.

10.3 Results

10.3.1 Short pipes

As shown by documentary evidence presented above, short pipes made at Swedish pipe factories and workshops were generally and explicitly intended for use by commoners and peasants. There are, however, no depictions of smokers of pipes that can be identified as short produced in early eighteenth-century Sweden in the collections of *Nationalmuseum*, and only a handful have been found in other sources. One observation based on browsing Swedish museum catalogs is that depictions of pipes and smokers in general become more common from the late 1740s and onwards.

An association between the smokeways of commoners and short pipes can be found in Swidde's 1693 depiction of a view over Stockholm from Skeppsholmen, published in *Suecia Antiqua et Hodierna* (fig. 87 below). A tobacco label from the previously mentioned tobacco factory belonging to Hermann and Aspegren from the late seventeenth or early eighteenth century shows a man smoking what would most likely have been considered a stump.

While the rules of the tobacco brotherhood certainly reference pipes that would have been considered short, its title page depicts only pipes that would have been considered long or medium length. Rules 1, 3, 12, 13, and 22 of the tobacco brotherhood concern pipes, their lengths, and how they should be treated and handled by the members of the brotherhood. The first rule (Anonymous 1730s, paragraph 1) states that:

1. Tobacco pipes should at the very shortest/ be two or four [Swedish] inches/ but otherwise of the length that pleases each and every one/ and [smokers] shall next to this have a spill or a stick/ [made] from good wood or a beautiful pipe cleaner of brass straw [wire] or other [material]/ neatly made/ so that/ if the pipe should be plugged [literally: constipated] and not want to burn/

one can therewith help her to air again/ and thereby avoid burning the finger/ the fine [for breaking this rule] is a half roll of good tobacco.¹⁷⁵

The fact that the length of pipes is left to the choosing of the smoker is highly relevant for analyses of smokeways as socially differentiating. This rule suggests that it was up to the smoker himself to decide which length was suitable according to taste or perhaps financial situation. It is noteworthy that while the Swedish version explicitly states the shortest acceptable lengths of pipes, the German original states only that short and long pipes are acceptable.

At the time of the publication of the translation of this text, assuming that the 1730s is correct, there were both shorter and longer pipes of a high production quality available on the market as these were imported and likely also manufactured at the Aspegren factory. This means that those who could afford to pay more for a shorter pipe with a polished surface could do so. Polished short or even medium pipes appear to have become harder to come by after the embargo as very few makers are known to have manufactured these. The estate inventory after Daniel Almqvist is the only written source indicating that there were medium-length polished pipes, and there are no written sources or surviving intact examples of short pipes with a polished surface finish from or made after the embargo.

Although it is possible to smoke pipes with two-inch stems, anyone who has ever smoked a clay pipe knows that such a pipe will not provide a pleasurable smoking experience as the smoke and the pipe would be very hot. This means that it would be difficult to hold such a pipe without burning fingers, or, if held between the teeth, the lips. From the perspective considering differentiating smokeways and, setting and keeping the jovial tone of the rest of the rules of the text, this statement could be interpreted as both mocking and pitying poor smokers who could not afford new, longer pipes. Moreover, pipes with stems of two, or even four inches, were not produced at any pipe factories – the shortest types in regular production in the early 1740s were Forsberg's and Aspegrens's shortest pipes that were six inches long. This suggests that the short pipes described were technically broken pipes. Either they were purchased as cheaper pipes with broken off stems, so-called stumps, or they had been broken during handling or use after being purchased.

In other sources, such as Carl Dahlman's *Swenska red-dejan [...]* (1743) and Broocman's *En fulständig svensk hus-hålds-bok [...]* (2016 [1736]), the types of pipes used in descriptions of smokeways can only be interpreted through inferences. Broocman (pp. 239–240) states that:

Harmful is the untimely smoking of tobacco, because the precious time that one should use for the glory of God, for the service of one's neighbor, for the benefit of oneself and one's own people, is thereby wasted. Harmful and disgraceful is tobacco, whether it be smoked, snuffed, chewed, or stuffed into the nostrils as plugs, when one makes a harmful habit of it. When it is smoked [indoors], the walls become black, and the room stinks like a Livonian flue-house, the

¹⁷⁵ "1. "Tobackspiporna skola uppå det aldrakortaste/ wara två eller fyra tumb långa/ men eljest af den längd som för hwar och en behageligt faller/ och skal der bredewid hafwas en sticka eller pinne/ af godt trä/ eller en wacker Pipräsare af Mässingstrå eller af annat/ nått giord/ på det/ om Pipan skulle blifwa förstoppad och icke wilja brinna/ man dermed kunde hielpa henne til luftt igen/ och dymedelst undwika at förbränna fingret/ wid böte af en half Rulla godt tobak." The corresponding rule, number 6 in the German original, does not mention specific lengths of pipes, although both long and short pipes are mentioned as acceptable.

throat and mouth smell bad, and one cannot but recommend oneself badly to respectable people and women.¹⁷⁶

As such, regardless of socioeconomic status of the smoker, harmful habitual smoking, a high frequency of smoking, and a poor choice of location for tobacco smoking is condemned. Broocman also indicates that smoking is a leisurely activity that does not occur during work. The paragraph following immediately below sheds better light on the demographic segment which is most criticized for smoking (Broocman 2016 [1736], p. 240):

It is also in many ways most regrettable that the abuse of tobacco even here in Sweden is so widespread that the majority, even small boys, have become accustomed to it in all places. The cost and dependence also for the peasants and commoners who smoke is incredible, both fathers and sons, and often the wives too, and everyone in the house smokes.¹⁷⁷

Thus, it is the habitual and recurring tobacco smoking, in all places, regardless of biological sex or age, particularly among the commoners, that Broocman criticizes.

Dahlman, a few years after Broocman, infers that people also smoked while working: “[...] many carry the stinking tobacco pipe in their mouths all day, making their teeth black as coal, and are corrupted by burning and heat [...]” (Dahlman 1743, p. 59),¹⁷⁸ suggesting that there were people who were constantly carrying pipes in their mouths. Such smokeways, when practiced by manual laborers, require pipes that do not get in the way while working. This would hardly be possible with long-stemmed pipes, thus inferring that the smokeways of people who carry pipes in their mouths all day make use of short-stemmed pipes or stumps. As we shall see below, both Broocman and Dahlman present acceptable and ideal smoking behaviors that stand in contrast to those condemned above, indicating that only certain smokeways, using certain types of pipes were considered as being in good taste.

25 years later, guidelines and recommendations for smokers published in *Stockhoms Weckoblad* states that a long pipe is necessary for “a fine tongue” (*Stockhoms Weckoblad* 1768-02-20). The anonymous author of the text recurrently infers that his implied readers are wealthy male smokers. Snuff, the author states, is for ladies. One of the implications made is that short pipes were not suitable for the tongues of the implied readers; “as soon as the smoke comes hot into the mouth, he [the smoke] ruins not only the taste, but harms also the tongue and the palette” (*Stockhoms Weckoblad* 1768-02-20). Among pipes deemed less suitable are also those with wooden stems and bowls – which are described as best suited for plain folk.

Turning to depictions from the latter half of the eighteenth century of smokeways that applied short-stemmed pipes, it becomes apparent that connections between short stems and commoners in earlier documentary sources prevailed throughout the studied period. For example, numerous examples of

¹⁷⁶ Skadligit är thet otidiga myckna Tobaks-rökandet, emedan then ädla tiden, som man borde använda Gudi til ära, sin nästa til tjenst, sig och de sina til nytto, dymedelst oförsvarligen förnötes. Skadeligit och skändeligt är Tobak, thet må rökas, snusas, tuggas eller i näsborarna med welar instoppas, när man ther af gör sig en skadelig wana. Rökes thet, så blifwa wäggarna swarta, och rummet stinker som en Lifländsk tork-ria, halsen och munnen lucktar illa, och kan man ej snarare illa recommendera sig hos honett folck och fruentimber.

¹⁷⁷ Är ock på flere sätt högst beklageligt, at thes missbruk äfwen här i Swerjet så swära sig inritat, at the allermästa, ja ock ända in til små poikar want sig ther wid i alla orter. Hwad för kostnad och depence äfwen för bönderna och allmogen ther wid skier är otrolig, tå både fader och söner, ja offta hustrurna med och alla i huset röka.

¹⁷⁸ [...] många den stinckande tobaks-pipan hela dagen i munnen bära, giöra sig därmed tänderna kol-swarta, blifwa fördärfwade af brånad och hetta [...]

Pehr Hilleström's genre paintings depicting peasants' interiors apply short pipes, seemingly as tropes that highlight the socioeconomic status of his subjects.

One aquarelle-colored stipple engraving by Fredrik Erik Martin after an original by Pehr Hilleström shows three men from the Östra Göinge region of Scania (fig. 64) is particular in its seemingly realistic depiction of short pipes. Two of the depicted men are holding pipes; one is packing his pipe with tobacco, and the other man is seen smoking his pipe. Based on the lengths of pipe stems, the pipes are very likely pipes that belong in the short segment in regular production at the time. On close inspection, the stems of these pipes, similarly to the short pipes in the Forsberg assemblage, are not entirely straight. As there are other straight lines in the image, for example the back rest of the chair and the legs of the table, it seems as if either Hilleström or Martin has intentionally depicted the pipes with slightly warped stems.



Figure 64. Scanians shown with pipes that were among the shortest in regular production at the time. Note that the stems are not entirely straight. Aquarelle-colored stipple engraving by Fredrik Erik Martin after original by Pehr Hilleström 1794. Photo by Jan Eve Olsson. CC PDM 1.0.

In Hilleström's depiction of workers at the anchor forge in Söderfors (figs. 65 and 66), one of the workers are depicted sitting down, holding what appears to be a Dutch-style pipe with a tilted oval bowl and a stem that would have been considered short at the time. The inclusion of the smoking man can be interpreted as a pun of sorts. Considering the title of the painting – *Besök i Söderfors ankarsmedja. Smederna i fullt arbete* – A visit to the anchor forge in Söderfors. The smiths hard at work – Hilleström may have included this seemingly idle worker to entertain his intended audience. He is the only worker depicted as not working. In fact, he seems taken by surprise by the entrance into the forge of a company of high-status visitors guided by its owner, Adolph Ulrik Grill. This may be a humorous allusion to associations between the smokeways of commoners and perceptions of their laziness expressed in period documentary sources.



Figure 65. Besök i Söderfors ankarsmedja. Smederna i fullt arbete – Visit to the anchor forge in Söderfors. The smiths hard at work by Pehr Hilleström, c. 1782.

While the length of the pipe can certainly be said to be in congruity with the social status of its smoker, the type of pipe depicted – seemingly a so-called porcelain pipe – may not be. One possibility is that Hilleström, similarly to his depiction of the harvest festival at Svartsjö castle, has turned to Dutch genre paintings or to pipes with similar bowls in his own studio for reference when painting the scene. Regardless of which, Hilleström's depiction suggests a recognizable concord between the length of the pipe and the socioeconomic status of its user.



Figure 66. Detail of Besök i Söderfors ankarsmedja. Smederna i fullt arbete – Visit to the anchor forge in Söderfors. The smiths hard at work by Pehr Hilleström, c. 1782. One of the workers is depicted while taking a break, smoking a short-stemmed pipe.



Figure 67. Aquarelle-colored stipple engraving by Fredrik Erik Martin after original by Pehr Hilleström. 1790s. Photo by Jan Eve Olsson. CC PDM 1.0.



Figure 68. A crofter about to pick up an ember to light his pipe. Late eighteenth or early nineteenth century. Attributed to the school of Elias Martin. The translation of the text is "Til with a bushy fringe, the crofter on the sly searches for the tobacco-fire." Nationalmuseum, NMH 11/1910. Photo by Nationalmuseum. Public domain.

The final example from the pictographic record that connects short pipes to the smokeways of commoners is a small illustration of a scene from Bellman's Fredman's Epistle 39, which is implied by its subtitles. A crofter is shown searching his stove for an ember to light his pipe. The image, likely produced decades after Bellman wrote the lyrics, suggests that links between idealized smokeways of the lowest classes and the shortest clay pipe type in regular production well into the nineteenth century.

The association between the smokeways of commoners – peasants, laborers and crofters – and short-stemmed pipes seemingly established as early as the seventeenth century thus remained unaltered throughout the period. As we shall see, this also infers that this association was so firmly embedded in notions of idealized smokeways wealthier smokers may have avoided particularly the coarse types of short pipes.

10.3.1.1 *Concluding discussion*

It is notable that a stark majority of depictions of smokers using short pipes from the eighteenth and early nineteenth centuries depict people that belong to the lower classes of eighteenth and early nineteenth century Sweden. No depictions of apparent upper-class smokers of short pipes have been encountered as part of the process of gathering material for this study.

It is important to consider the availability of high quality, polished short pipes during the period predating the embargo against pipes shorter than 18 Swedish inches of 1741. This meant that Dutch pipes known as *korte porcelaine* were still available on the market at the time of the publication of the rules of the brotherhood. Carl Aspegren's factory also appears to have manufactured short, polished pipes – the bankruptcy inventory contains "*Korta postliner*", short porcelains (SE/SSA/0138/F 6 b/10 1736 [1733?], n.p.). Production quality and origin, therefore, may have been attributes of pipes worthy of note when considering differentiating smokeways prior to the 1741 embargo.

Condemnations of peasants and commoners of both biological sexes constantly smoking suggest that tobacco smoking was not something that members of the laboring classes considered solely as a leisure activity. As it seems, pipe smoking was not generally restricted to times when work was not being performed. Short pipes are significantly easier to transport and use during work than longer pipes, and the risk of breaking them is also relatively smaller. As manual labor is difficult to perform while smoking a pipe with a ten- to twenty-five-inch-long stem is both difficult and unpractical, shorter pipes were better suited for smoking while working.

10.3.2 **Medium-length pipes**

Prior to the embargoes of the 1740s, pipes that would have been considered medium length were imported from both the Netherlands and England. As the prolongation of charters for pipe making issued to Aspegren dated to 1729 strongly suggest that medium-length pipes were made at his factory at that time, it is likely that such pipes were being made earlier as well. Price and name variations in both the Netherlands and Sweden indicate that both polished and unpolished medium-length pipes would have been available in the 1720s and early 1730s. This suggests that medium-length pipes were available and obtainable to smokers from several socioeconomic segments in Sweden in the early eighteenth century.

The embargo of 1741 meant that medium and short pipes could no longer be imported to Sweden. Thus, medium length pipes made in either the factories of Olof Forsberg and Olof Aspegren or Jonas Alströmer replaced imported pipes. The only price information for pipes in this segment for this period is from Forsberg's and Aspegren's factory. Based on this list, it is not possible to tell if polished medium pipes were available from their factory. Similarly, the manufacturing description from the Alingsås factory does not explicitly mention polishing of medium-length pipes.

Later sources, such as the estate inventory of Daniel Almqvist from 1760, lists medium porcelain pipes at 16 dalers per gross, showing that polished medium length pipes were made there. This can be viewed from a perspective that considers the phrasing of the charters for pipe making that Almqvist

received a few years earlier, that his factory was to manufacture the types ordered by the National Board of Trade. This suggests that there may have been a shortage of certain types of pipes in 1753, when Almqvist's charters were issued. The phrasing of his charters should likely be interpreted as the National Board of Trade's reaction to a limited selection of pipes manufactured at primarily the factories in Stockholm.

While this implies that there was a demand for higher quality medium length pipes, it is not as easy to determine the intended consumer groups of medium-length pipes as is the case with stumps, short, or long pipes based on depictions and documentary accounts. Apart from inferences based on price information regarding medium-length pipes, no documentary sources encountered during work with this study explicitly mention the use of such pipes. When pipes are mentioned or depicted, it is most often pipes that can be identified as belonging either to the longest or shortest segments.

An exception to this is Johan Sevenbom's *Utsikt från Brunnbacken över Saltsjön* – view from Brunnbacken over Saltsjön from 1772 (detail in fig. 69). This painting shows two men smoking pipes – one man, although obscured by the other smoker seems, based on the whisp of smoke emanating from the obscured bowl, to be smoking a short or more likely a medium-length pipe. The other man, grasping his pipe by the stem quite close to his mouth, smokes a pipe that appears to be slightly longer – a medium-length or long pipe.

While the pipes are not necessarily the best indicators of the social status of the two smoking men, Sevenbom has included more apparent clues to shed light on the matter: the two smoking men are seemingly engaged in a conversation with a man who is wearing a wig and holding a walking stick. Based on differences in attire and gait, the two smoking men appear to be of a lower status than the man wearing the wig. Moreover, behind the two smoking men is stands a horse harnessed to a cart loaded with firewood. Sevenbom thus infers that the two smoking men are carters, implying that the hat-wearing smokers are of a lower status than the man in the wig. The fact that these two carters are depicted smoking comparatively long-stemmed pipes suggests that medium-length pipes were employed in smokeways of urban laborers during the last decades of the eighteenth century. As such, this depiction stands in stark contrast to many of Hilleström's relatively contemporaneous genre paintings depicting peasants smoking short pipes presented above.



Figure 69. Detail from "Utsikt från Brunnbacken över Saltsjön" – View from Brunnbacken over Saltsjön, by Johan Sevenbom, 1772. Courtesy of Stockholms stadsmuseum (SSM 101286).

The previously mentioned painting by Hilleström, known both as *Ett slåtteröl på Svartsjö* – a harvest festival at Svartsjö, and *Folkfest på Svartsjö* – folk festival at Svartsjö from c. 1780 depicts smokeways of peasants that obviously apply medium-length pipes (fig. 70). The subject of this painting is the celebration of a *slåtteröl* – literally the haymaking beer, a harvest festival, at the Royal castle Svartsjö. In the foreground, the painting depicts the merrymaking of peasants in front of the castle. The peasants are seen dancing, conversing and drinking in front of the castle while the Queen Mother Lovisa Ulrika, and Princess Sofia Albertina are arriving at the celebrations from the castle with an entourage, supposedly to visit and take part in the festivities. At least five of the male individuals and several female members of the entourage surrounding the Queen Mother and the Princess are wearing the so-called *Nationella dräkten* – the national costume. Meanwhile, the commoners, both men and women, wear dyed or undyed wadmal clothes. It is apparent that Hilleström has applied dress as one of the most immediately recognizable tropes to distinguish nobles from commoners and vice versa. Posture and gait are other details that act as immediate indicators of social status.

Seven clay tobacco pipes, of which two are broken, can be found in the painting. All pipes depicted can be interpreted as being or having been used by male subjects belonging to the crowd of peasants. One broken pipe is depicted near a man who appears to have fallen and is being assisted by a woman. The other one lies on the ground in front of a man who is seemingly intently emptying a wooden tankard of its contents. A feasible interpretation is that Hilleström wants the beholder to connect these broken pipes to the men standing or lying in their vicinity thus echoing the symbolism commonly employed in Dutch genre paintings of the previous century.

Of the remaining five pipes depicted, three are being held by their stems by seemingly less inebriated men apparently having a conversation. Two of the men are holding their pipes against their mouths, suggesting that they are smoking them, and one man is seen pointing with his pipe. One pipe can be seen on the ground next to a sitting man who seems to have fallen asleep or passed out from overindulging in alcohol. Yet another pipe is seen tucked into the rolled-up brim of a hat worn by a man holding a tankard.

As previously noted, the morphology of the pipe-bowls does not correspond well to any pipes manufactured in Sweden during the second half of the eighteenth century. This may be an allusion to continental or Dutch genre paintings from the previous century. A comparison of relative proportions of the people, objects and pipes gives the impression that the pipes are not the shortest pipes in regular production. Rather, these pipes appear to be what at the time would have been medium-length pipes. As the depicted pipes all appear to be of the same type and length, Hilleström may be suggesting that the pipes were purchased in bulk by the hosts and given, along with food and drink, to the peasants as part of the festivities. Albert Eskeröd states in a chapter about the painting (1962, pp. 33–34):

The Midsummer festival and the harvest festival were the two traditional occasions when the nobles of the castles invited their subordinates to a feast and celebration. Then the people were allowed to drink and enjoy themselves to their hearts' content, and it could even occur that the nobles condescended themselves to participate in the dancing.¹⁷⁹

¹⁷⁹ Midsommarfesten och slåtterölet eller skördefesten har varit de två traditionella tillfällen, då slottens förnåma herrskap bjudit sina underlydande till traktering och fest. Då fick folket dricka och roa sig av hjärtans lust och det kunde till och med förekomma, att herrskapet nedlät sig till att deltaga i dansen.

The implication could very well be that the patroness of the feast, the Queen Mother Lovisa Ulrika, has treated her subjects to food and drink as well as pipes and tobacco. If this is the case, Hilleström may have included the pipes not only to show that peasants smoked or as tropes for disorderly behavior, but also as a sign and symbol of the generosity of the patroness. As previously mentioned, the intended beholders of the painting would most likely have been familiar with the types of pipes available at the time and would therefore have been able to appreciate the details of this symbolic gesture as well as allusions to Dutch genre paintings.

As opposed to the rupture of idealized smokeways caused if the pipes provided to the peasants would have been the longest pipes, the medium-length pipes do not appear as strikingly incongruous with the socioeconomic status of the people smoking them. It is also important to note that in this painting, as opposed to the nine men in the painting from the 1750s, there do not seem to be new pipes available to replace the ones that lie broken on the ground. This may further support the interpretation that the pipes were supplied by the host. Another detail suggests that these pipes may have been coveted by the commoners portrayed; the man seen with a pipe stowed in his hat can be interpreted as an intention to safeguard and keep the pipe beyond the festivities depicted. This detail also reinforces the potential symbolism of any broken pipes as indicative of careless and wasteful drunkenness.



Figure 70. Detail of Pehr Hilleström, "Ett slåtteröhl på Svartsjö", also known as "Folkfest på Svartsjö", c. 1780. Medium - length pipes can be seen in the hands of peasants celebrating the harvest at Svartsjö castle. Similarly to Dutch genre paintings from the seventeenth century, broken pipes could be interpreted as warnings against overindulgence. Courtesy of Nordiska museet, NM.0261301. Photo by Mats Landin. CC PDM 1.0.

Looking to the available price information for medium pipes presented in Appendix II, it is evident that it is within this length-segment that prices were synchronously most varied. The so-called heart pipes are a good example of a medium pipe that would likely have been obtainable for and considered acceptable for commoners to use throughout the second half of the eighteenth and early nineteenth century. Such bowls are known from kv. Gesällen in Kalmar (see Åkerhagen 2015, p. 7 & p. 27), known to have been inhabited by urban laborers in the eighteenth century. Heart pipes are also among

the pipes recovered at Lappatäkta in Järvsö, known to have been inhabited between 1786 and 1812 or 1813 (fig. 71).

Meanwhile, price information, as previously mentioned, also points to the possibility that medium pipes may have been considered as long in regions where actual long pipes were not available. It is therefore possible that perceptions of relative stem length were also related to shared understandings of which pipes were available at any one place and time. Medium pipes, as such, when compared to pipes from the short segment, would therefore have been perceived as fancier and longer than their less expensive short counterparts,

To complicate matters further, documentary sources state that the factories of Mathias Nyberg and Carl Wettervik also made a small armorial pipe. A gross of these pipes made at the Wettervik factory cost 9 dalers, suggesting that armorial pipes with the greater arms of Sweden in relief, and with stems measuring between 11 to 15 inches were made there. As the output of factories and workshops in Stockholm was generally homogeneous, it is highly likely that other contemporaneous makers also made this type.

This means that bowls with the coat of arms of Sweden are not inconclusive evidence of smokeways that employed pipes that belong in the most expensive price segment. Although medium length armorial pipes were not the most expensive pipes at the time, they were also far from the least expensive types available. It therefore seems highly likely that in the medium-length segment of clay pipes, attributes related to production quality would have functioned as significant and recognizable markers of socioeconomic status.



Figure 71. A so-called Hjärtpipa, heart pipe, recovered at Lappatäkta in Järvsö, Sweden. Find number 17a. Photo by Robert Bergman Carter.

10.3.2.1 Concluding discussion

Medium-length pipes were available in Sweden throughout the studied period. There are, however, few depictions and no written descriptions that shed further light on the socioeconomic status of intended users or the smokeways that employed pipes in this segment.

Price information is therefore the most reliable currently known documentary source that reflects idealized consumers of pipes in this segment. It is also noteworthy that prices for pipes in this segment are the most varied. For example, the so-called heart pipes cost between 3 and 5 dalers while pipes known as medium porcelain cost 16 dalers, indicating that both coarse and polished medium-length types were available at least throughout the latter half of the eighteenth century. This means that some medium-length pipes would have been considered affordable and likely appropriate for smokers belonging to the commoner class while others may have been reserved for more affluent smokers.

Price information from the latter half of the eighteenth century shows that bowls with decorations previously reserved for the most expensive pipes were also being made in medium-length versions. One example of this is the armorial pipes made at the Wettervik factory that cost (the equivalent of) 9 dalers per gross in 1799. The price of these pipes, while more expensive than pipes referred to as medium, and heart pipes, is the same as for pipes with lobed bowls. This indicates that pipes in the medium-length segment are more likely than any other lengths of pipes to have been applied in smokeways of different socioeconomic groups of late eighteenth-century Sweden. As socioeconomically differentiating material elements in smokeways therefore, style, decorations and finish appear to have been more significant than relative stem length in this segment. As with all pipes manufactured at Swedish factories and workshops, this means that surface finish, along with other attributes related to production quality, are attributes to consider in analyses of relative prices paid for pipes in an assemblage.

Surviving information relating to types manufactured at Swedish pipe factories and workshops show that all makers (except those that limited their production to stub-stemmed bowls [see Appendix I]) manufactured medium length pipes. While some of Forsberg's medium-length pipes, notably produced at the end of his ownership of the factory, have been identified, the output of the stark majority of Swedish pipe factories and workshops currently remain unidentified. Much research therefore remains to be done to convincingly identify medium-length pipes manufactured in Sweden among pipe fragments recovered from the archaeological record.

10.3.3 Long pipes

As we have already seen, the domestic production of long clay tobacco pipes in eighteenth-century Sweden was primarily geared towards smokers belonging to the upper classes. Especially long and polished pipes, referred to by policymakers as the longer and finer pipes, were meant to appeal to a consumer group whose consumption of imported pipes was undeterred by price hikes stemming from increased tariffs. The association between smokeways that employed such pipes and wealthy, primarily male smokers, as we shall see, is also generally corroborated by depictions and descriptions throughout the studied period. Notably, this study has not encountered a single depiction of a smoker of a short pipe who, through clothing, gait, milieu or name, has been identified as belonging to the upper classes of eighteenth-century Sweden. Rather, based on clothes, milieu, and/or knowledge of the identity of the subjects depicted, all depictions of pipes with stems measuring over 40 centimeters being smoked are of wealthy males.



Figure 72. Jean Eric Rehn's portrait of Carl Linnaeus from 1747 or 1750 shows Linnaeus smoking one of the longest types of pipe available at the time. Courtesy of Uppsala universitetsbibliotek – Uppsala University Library. Alvin-record: 196217. CC PDM 1.0.

As with the smokeways of commoners condemned in household books and recommendations presented above, clues to hegemonic and idealized smokeways of males belonging to wealthier classes can be extrapolated from the very same sources. While relatively frequent or constant smoking is condemned, Broocman for example recommends: “[t]o smoke slowly a pipe of tobacco in the morning, when one has just risen, clears the throat, draws bad fluids from the gums, and clears flux from the body (Broocman 2016 [1736] p. 757).¹⁸⁰

A few years later, Dahlman (1743, p. 58) notes that:

¹⁸⁰ At röka sachteligen en pipo tobak om morgonen, tå man nyligen upstått, gör halsen ren, drager ond wätsko utur tandeköttet, samt rensar ut flussar utur kroppen.

Omne nimium vertitur in vitium, everything that is used in excess, does harm. Wine strengthens and is rather good, yet one who uses it too much, shall soon enough experience the harm thereof. Such is also the matter with tobacco. A pipe per day or occasionally in the company of good friends, when one more than otherwise properly drinks, 2 or at the most 3 or 4 pipes, should, when it does not occur every day or every week, do no particular harm.¹⁸¹

Both of these recommendations present how medicinal aspects of smoking may have provided meaning to smokeways that were considered proper among upper class smokers of the time. Smoking was to be done with a relatively low frequency and in a manner that could not be mistaken for reckless abuse or addiction. Moreover, tobacco smoking, according to Broocman, must be done slowly.

A slower pace or puffing cadence while smoking a pipe generally leads to smoke that is cooler than when puffing frequently. The belief that cool tobacco smoke was more beneficial than hot smoke is also a recurring notion throughout the eighteenth century. This is also explicitly stated among the previously mentioned recommendations and guidelines for smoking published in *Stockholms Weckoblad* in February of 1768. Here, recommendations for pipes for the upper classes are, among other things, that pipe stems “for a fine tongue be very long” for “as soon as the smoke comes hot in the mouth, the taste is ruined and harms the tongue and palate” (*Stockholms Weckoblad* 02-20-1768). Thus, the text implicitly connects smokeways that employ short pipes with people who do not have fine tongues, the implication being that they were low-standing and lacking in taste.

Notably, the anonymous purported physician, before presenting recommendations from a medical perspective also implies that smoking should be carried out “with taste and courtesy” and “as the finest connoisseurs love” (*Stockholms Weckoblad* 02-13-1768).¹⁸² The combined inferences echo Styles’ observation that “gentility was judged by [owning consumer goods] sufficiently genteel in their design, and whether you were capable of using them in the right way (in Berg 2005, p. 6).

Long pipes, according to these sources, smoked by men, who did so occasionally and slowly, for both medicinal and/or recreational reasons, were essential aspects of smokeways that would have been considered correct among the upper classes of eighteenth-century Sweden. Several documentary sources from the first half of the eighteenth century state that it is considered impolite to smoke near ladies. As the implied readers of recommendations such as the rules of the tobacco brotherhood and Broocman’s and Dahlman’s household books are assumedly wealthy males, it can also be assumed that these recommendations are directed at males from the upper classes. The implication is that while medicinal uses of tobacco smoking is permissible, and even encouraged, for upper-class women during outbreaks of the plague, snuff is the appropriate mode of tobacco consumption among ladies. The didactic need to express such rules, however, may also imply both that wealthy men smoked near ladies, and that the very same ladies may have also smoked. This also infers that it may have been acceptable for men to smoke near women, as long as these women were not ladies. There is also evidence suggesting that views on the appropriateness of smoking near ladies changed during the studied period. While condemned throughout the majority of the eighteenth century, a depiction

¹⁸¹ “*omne nimium vertitur in vitium*, alt hwad til öfwerflöd brukas, gör skada. Winet stärcker och är ganska godt, men den som brukar det för mycket, skal snart nog ärfwa skadan deraf. Så går det ock med tobaken. En pipa om dagen eller understundom i lag med goda wänner, då man något mer, än eljest ordenteligen dricker, 2 eller högst 3 a 4 pipor, lära, när det ei skier alla dagar, icke eler alla weckor, ingen särdeles skada göra.”

¹⁸² “Mig åligger ännu at säga sättet och wiset, huru man efter medicinska reglor bör röka tobak. Det är intet lika mycket på hwad sätt man är yppig. Man måste wara det så, som de finaste kiännare älska, med smak och artighet”.

from the last decades of the century shows upper-class men smoking in the vicinity of what is most likely upper-class women (fig. 79).

Aside from being explicitly stated in discussions held in the *Handels- och manufakturdeputationen*, depictions of long pipes and their smokers confirm notions that these pipes were intended for and were widely employed in the smokeways of males belonging to the upper classes. Among the earliest depictions of long pipes in use by assumedly wealthy males is the cover print for the rules of the tobacco brotherhood (fig. 73).



Figure 73. Detail from the cover print of the rules of the brotherhood of tobacco, anonymous artist c. 1730s.

An abundance of tobacco rolls and pre-packaged tobacco along with seven pipes are depicted alongside four men of whom three are smoking pipes. The depicted pipes are of different lengths, yet the pipes that are being used can easily be identified as belonging in the long segment. On the table are four shorter pipes. One of the pipes on the table appears to be broken, perhaps suggesting that it was to see continued use in its broken state. However, there is one detail suggests that the print depicts the untidiness that the rules are intended to amend: the man on the left appears to be tamping the lit tobacco in his pipe with his finger rather than a tamper – a taboo according to the first rule.

A slightly later depiction of two men smoking outside the tavern Ålkistan by Jean Eric Rehn (fig. 74) shows an outdoor scene with two men wearing *justacorps* and tricorne hats who are also smoking pipes that would have been of the longest type available at the time. As in Rehn's other depictions of smokers, there is nothing that suggests satire or mockery. Rather, the impression is that the smokeways of two men represent upper-class ideals of the time: static smoking using long-stemmed pipes with straight stems, outdoors where the smell of the smoke is not disturbing anyone.



Figure 74. Jean Eric Rehn, "Piprökande herrar vid Älkistan", mid-eighteenth century. Courtesy of Nationalmuseum, Stockholm.

A nearly contemporaneous painting by an anonymous artist held by *Nordiska Museet* shows a less tranquil scene (fig. 75). Nine carousing men are gathered around two tables. The clock depicted in this painting situates the scene both temporally and geographically as it shows that the time of day is a quarter to twelve, supposedly a quarter to midnight, and a plaque below the dial has the text "Stockholm". According to the museum's index card:

Painting, oil on canvas, interior. 1750–1770. Unsigned. Stag party*. Interior with two tables around which 9 gentlemen are gathered. On each table sits a punch bowl and some glasses. On the wall in the background hangs 5 paintings. On the floor in the foreground a chess set and some broken bottles. Black frame with gilt inner edge. Literature: G. Berg et al. *Det glada Sverige II* 1947. /Kjell Löfgren 1976

With the addendum published on *digitaltmuseum*:

*Why it has been cataloged as "Stag party" is unknown. There is no information on this in the main ledger. It is depicted in "*Det glada Sverige*" but there only described as a tavern scene. /Leif Wallin 2011-10-06.¹⁸³

¹⁸³ "Tavla, olja på duk, interiör. 1750–1770. Osignerad. Svensxa*. Interiör med två bord kring vilka är samlade 9 herrar. På vardera [sic] bordet står en bålskal och några glas. På väggen i bakgrunden hänger 5 tavlor. På golvet i förgrunden ett schackspel och några krossade flaskor. Svart ram med förgylld inte [sic] list. Litteratur: G. Berg m.fl. *Det glada Sverige II* 1947." /Kjell Löfgren 1976

*Varför den är katalogiserad som "Svensxa" är okänt. Det finns inga uppgifter om detta i Huvudliggaren. Den finns avbildad i "*Det glada Sverige*" men där endast beskriven som krogscen. /Leif Wallin 2011-10-06

The depicted environs, furnishings, wigs and clothing of the men suggest that the men in this painting were high-status; atop the tables sit two punch bowls made from either porcelain or faience, and five of the men are holding glasses filled with the beverage supposedly contained in the bowls. As in Rehn's depiction above, tricorne hats and tailored *justacorps* indicate that the depicted men do not belong to the poorer classes. The walls are adorned with gilt-framed paintings, two of these are landscape paintings and three are of women wearing clothes associated with higher estates. Depicted in this painting are also five pipes of what was the longest type produced in contemporaneous factories in Sweden. The pipes in this depiction, similarly to the rest of the objects depicted in the painting, can be said to be in concord with the social status of the men depicted.¹⁸⁴

Although the subject of the painting is most likely lampoonery, depicting a drunken night with high-status men making fools of themselves, the contextual assemblage of objects conforms to recognizable material expectations of high-status consumption during the period. The unknown artist's use of long and straight-stemmed pipes as props and indicators of the social status of the men portrayed would more than likely have been equally apparent to contemporaneous beholders of the painting as the punch bowls, the clothes, furniture and wigs. The smokeways of the subjects as such, smoking the longest and most expensive clay pipes available in Sweden at the time of the painting's creation, in private rather than in public, holding the pipes by their stems, with some resting their pipe bowls on the tabletops, can be understood as symbols of recognizable refinement that has momentarily degenerated as a result of inebriation.

At the foot of the man in the lower right lies a broken pipe with a relatively long intact stem still attached to the bowl. Rather than picking it up and "reusing" it, the man has opted to smoke from what appears to be a new and fully intact pipe. Although intentionally employed in Dutch art as symbols of careless raucousness or the transience of life, broken pipes littering the floors of genre paintings could also be interpreted as symbols of affluence and material wealth as conspicuous consumption; particularly in depictions where they appear alongside intact pipes in use by the same subject that supposedly dropped them.



Figure 75. Anonymous artist c. 1750–1770. Courtesy of Nordiska museet, NM.0184987. Photo by Ulf Berger. CC BY-NC-ND 4.0.

From a perspective that considers differentiating smokeways, it is impossible to ignore the possibility of intentionality on behalf of the painter who included this detail. A functional, albeit short pipe, has apparently been replaced with an intact long pipe simply because the smoker, or his company, was

¹⁸⁴ The pipes depicted here appear to be even longer than those depicted in Hogarth's original.

able to afford it. Thus, it seems as if smokeways that included the use of short pipes or continued use of broken pipes was considered either unnecessary or unacceptable among the men depicted.

The lengths of the pipes depicted also necessitate a relatively static smoking. Moreover, it would be impossible to smoke such a pipe by holding it merely between the teeth – the weight of the pipe would not only be uncomfortable for the smoker, it would also likely result in the stem snapping due to the stress caused by the weight of the pipe itself.¹⁸⁵ The smokeways portrayed can therefore be interpreted as recreational and leisurely and as such stand in stark contrast to the smokeways of the butcher's apprentice Nikolaus or the horse thief Petter below (figs. 90 and 92).



Figure 76. Jean Eric Rehn's self-portrait. Rehn has depicted himself smoking the longest pipe in regular production at Swedish factories at the time. Unknown date. Courtesy of Nationalmuseum. NMH 455/1995. Photo by Anastasiia Trapeznikova. CC PDM 1.0.

Two or three decades later, Anders Holm's '*Kortspelarna*' – the card players – from the 1780s (fig. 77) depicts a similar, yet less raucous scene. Three men playing a game of cards are seated around a table, while a third man, possibly a footman or servant, is standing up. The fact that the table is only set for three people further suggests that the standing man may be a servant. On the table in front of

¹⁸⁵ Depictions of long pipes being clenched are very rare. John Greenwood's *Sea Captains Carousing in Surinam* (1755), a genre painting depicting a situation similar to Hogarth's *Midnight Modern Conversation* and the painting at hand is one such example. One man is shown clenching a long pipe which, however, is also resting on his arm.

the men are jetons and a deck of cards. The man on the right is smoking a long-stemmed Dutch-style clay pipe with the bowl of the pipe resting against the tabletop and the mouthpiece in his mouth. As the man is not holding the stem with a hand, it is highly likely that he is holding the pipe's mouthpiece with his teeth.¹⁸⁶

On a side table that stands against the wall on the right side of the gaming table lie two long-stemmed Dutch-style clay pipes alongside a paper package of tobacco and a glass bottle. Holm has depicted the pipes with perfectly straight stems and with bowls that closely resemble the oval Dutch style pipes of the period. It is very likely that the pipes depicted were known at the time as *lång porcellin* – long porcelain, and that they would have been among the most expensive clay pipes available at the time. The two pipes on the side table add to the impression that the gaming table is set for three rather than four persons – further supporting the interpretation that the standing man is a servant.



Figure 77. Kortspelarna - The Card Players by Anders Holm, circa 1780s. Nordiska Museet, NM.0061451. Photo by Bertil Wreting. CC BY-NC-ND.

Another example that connects long and, seemingly, medium-length clay pipes to wealthier estates from the late eighteenth century is a still-life by Nils Schillmark (fig. 78). On top of a table sits a glass, a glass bottle, a copper-lined tin-beaker, a tin or silver candle holder with a lit candle, a tobacco

¹⁸⁶ As such, this is the only depiction encountered in Swedish museum catalogs that depicts smokeways of the upper class where a clay pipe is smoked without holding the stem with a hand. See more under the section on stumps, clenching and bite marks.

package with a red X and a wax seal, three clay tobacco pipes of a Dutch style and a seasoned meerschaum pipe.¹⁸⁷ Aside from the meerschaum pipe, the scene is reminiscent of the side table in Holm's depiction of cardplayers above (fig. 77), and the objects depicted are clearly intended to signify affluence and wealth. According to Marja-Liisa Bell (2014, n.p.), the painting is one of two surviving still-lives painted by Schillmark from the governor's residence in Heinola and that it is likely that they all depict scenes from the house where they were originally displayed.

Although we cannot know for certain who the intended smoker or smokers of these pipes were, this painting shows that long and medium Dutch-style clay tobacco pipes would have remained in use in smokeways of the wealthier segments of late eighteenth-century Swedish society. A similar conclusion can be drawn from Johan Fredrik Martin's depiction of a long-stemmed clay pipe being used alongside a meerschaum pipe (fig. 79).



Figure 78. In 'Stilleben med ljusstake' – still life with candle by Nils Schillmark from 1795, a seasoned meerschaum pipe is depicted beside three clay tobacco pipes, a candle, a drinking-glass and a bottle as well as a tobacco package and a copper-lined beaker on a table. Courtesy of the Finnish National Gallery Collection/Ateneum Art Museum. Photo by Hannu Pakarinen. CC PDM 1.0.

The foreground of Johan Fredrik Martin's view of Stockholm from Mosebacke shows several companies of what based on attire are likely urban burghers visiting the garden of the tavern called *Stockholms Vapen*. In the lower left center is a company consisting of two children, four women and two men, both portrayed smoking a pipe. One of the men is smoking a long-stemmed clay pipe while the bowl-form, size, color, and stem of the other man's pipe suggests that it is a meerschaum pipe. On close inspection, the angle of the clay pipe's bowl indicates that it is a Dutch-style pipe.

This painting, along with Schillmark's painting above, indicates that the upper classes did not abandon the use of long clay tobacco pipes as a result of the introduction and diffusion of meerschaum pipes. Looking to contemporaneous available price information for pipes of this type, it also becomes evident that they cost about six times as much as the short pipes in regular production. This indicates that long pipes may have retained their meaning in differentiating smokeways throughout the studied period.

¹⁸⁷ The tobacco package, a cartridge or so-called *kardus*, is of a type referred to as *Röda korset*, the red cross. Tobacco cartridges such as this was among the most expensive types of tobacco available at the time (see Chapter 3 above).

Another noteworthy detail in Martin's depiction is that elements of the smokeways of burghers appear to have altered over time. Similarly to the peasants depicted smoking in Hilleström's depiction of a harvest festival presented above, the two smoking men depicted by Martin appear to have no qualms about smoking in the vicinity of their female companions or children. For example, this stands in contrast to the recommendations of the tobacco brotherhood from the 1730s and the condemnations in Gyllenborg's *Swenska sprätthöken* (1737). Indeed, older depictions of men smoking in the vicinity of women are portrayals of the smokeways of commoners.



Figure 79. A long clay tobacco pipe and what is most likely a meerschaum pipe in use in the garden of the tavern Stockholms Vapen overlooking Stockholm. Detail of Johan Fredrik Martin (1755–1816). Stockholms stadsmuseum, SSM 18305

10.3.3.1 Concluding discussion

Pipes with stems measuring from about 18 Swedish inches and upwards were considered long throughout the studied period. As a result of the embargo of 1747, such pipes, previously imported to Sweden from both the Netherlands and England, were almost exclusively obtainable from domestic factories. Smuggling of foreign pipes did occur, yet pipes from the archaeological record from across Sweden indicate that the embargo was a relative success.

A combination of source material dating from the 1730s until the early nineteenth century strongly suggests that long-stemmed clay pipes, preferably intact, were favored by the upper classes in Sweden throughout the period. Reasons for this can be traced both to medicinal beliefs that cool tobacco smoke was less harmful than hot smoke as well as the fact that the use of long-stemmed pipes requires relatively static smoking. This means that smokeways that employ these pipes require leisure time or time not spent working with both hands.

This is also confirmed by depictions of such pipes being used – long pipes are, with the exception of the cover of the rules of the tobacco brotherhood and Rehn's portrait of Linnaeus, consistently depicted as used by males who are sitting down. The fact that this study has found no depictions of women smoking long-stemmed pipes, adding to the general impression that smoking was not considered proper for high-status women, may also serve as an indication that such pipes were conceived of as belonging to gendered male smokeways.

While there is ample documentary evidence that mention and depict women from the lower classes smoking, there are no currently known depictions of upper-class women smoking pipes from

eighteenth-century Sweden. Broocman attests to an increase in female smokers, inferably in the upper classes, during the plague of 1710. This may suggest that long pipes produced after the plague in general, and in Sweden in particular, are more likely to have been considered gendered male artifacts than pipes in the medium and short segment.

It is important to note that pipes with the arms of Gustav III, which were seemingly given by the king to members of the peasant estate during the Riksdag of the Estates in 1786, may have disrupted notions of long pipes as material elements reserved for smokeways of the upper classes. Chronologically, their introduction also seems to correspond roughly with the introduction of medium-length armorial pipes. It is possible that the wider availability of shorter pipes with bowls bearing decorations previously reserved for the upper classes led to a decline in their popularity and use in wealthier circles.

On close inspection, Holm's and Schillmark's depictions from the late eighteenth century infer that long and medium Dutch-style pipes with polished bowls and stems remained in use by the upper classes. Contemporaneous price information shows that these cost between six and seven times as much as the shortest types and a third more than the second most expensive types.

10.3.4 Turk's heads/bowls

As these bowls are rarely mentioned in documentary sources other than price lists and estate inventories of pipe factory owners, it is difficult to determine any specific intended consumer group for these bowls or pipes. The only explicit reference to stub-stemmed clay bowls encountered in the catalog of *Litteraturbanken* is from the diary of Märta Helena Reenstierna (1953 [1826], p. 33), where she states that her driver, Pehr Boberg, was given "2 black and 2 brown [bowls]" by the widow Rullman at the pipe factory.¹⁸⁸ Reenstierna also points out that the bowls were painted to mimic meerschmum.

The recommendations for smokers published in *Stockholms Weckoblad* in February of 1768 state that pipes with wooden stems (and bowls) are best suited for "slätt folk" – plain or simple folk (*Stockholms Weckoblad* 1768-02-20). Written explicitly from a medical perspective, stating that pipes made from different materials alter the characteristics and effects of the tobacco smoke, these recommendations indicate that smokeways employing stub-stemmed pipes may have been considered as expressions of poor taste at the time. This is somewhat contradicted by pictographic evidence. Period depictions show smokers of stub-stemmed bowls from several socioeconomic segments (see figs. 81 and 82).

Price information from the time around the mid-eighteenth century shows that these bowls cost as much as the shortest types of regular pipes – around 3 dalers per gross, and they remained relatively inexpensive throughout the period. This low price indicates that the bowls themselves may not have been highly significant markers of differentiation. It is, however, not possible to exclude the possibility that different styles and decorations that these bowls display may have had different and differentiating meanings in their contemporaneity.

Another aspect worthy of consideration is that these bowls require separate stems to be comfortably smoked. These bowls can be fitted with a wide variety of stems ranging from stems made from

¹⁸⁸Jag for sedan till Änkefru Rullman vid Pipbruket – fågnades på båda ställen med Caffee – köpte ett Chymiskt Eldon för En RD Banco och fick af fru Rullman present af 2 stänger lack, emedan hon gör både elddon och lack, och förfärdigas där Tobackspipor af Hollendskt eller Engelsk Lera, både hvita, svarta och bruna liknande sjöskum. Boberg fick 2 svarta och 2 bruna.

expensive exotic wood with mouthpieces made from amber or horn to homemade stems made from locally sourced wood. Previously presented documentary sources show that stems were made in at least one artisanal workshop in Stockholm as well as on what was assumedly an industrial scale at the Wedevåg factory. This makes it seem more likely that stems made from different materials used with these bowls would have been significant material elements applied in differentiating smokeways that applied such bowls.



Figure 80. Georg Engelhard Schröder's depiction of the Ottoman emissary to Sweden, Mustapha Aga, from 1727 shows the Aga smoking a socketed Ottoman pipe known as a chibouk. It is possible that the smokeways of the emissary and his entourage influenced smokeways in Sweden at the time and that this spurred the production of similar bowls and stems.

A portrait by Jean Eric Rehn from 1747 shows Professor Samuel Klingenskierna smoking a long-stemmed chibouk-like pipe. Although it is possible that the bowl depicted is made from meerschaum, the fact that it is resting on the floor in a manner that resembles the smokeways of Aga makes it seem more reasonable to assume that it is made from clay. While clay bowls are relatively sturdy, the delicate physical properties of meerschaum mean that such bowls would have been scratched or damaged if dragged or rubbed against a floor.



Figure 81. Portrait of Samuel Klingenstierna by Jean Eric Rehn, 1747. Courtesy of Nationalmuseum, NMH 427/1995. Photo by Anastasiia Trapeznikova. CC PDM 1.0.

About 40 years later, stub-stemmed pipes are also depicted by Carl August Ehrensvärd as part of the smokeways of what appears to be a middle-aged couple drinking coffee, tea or chocolate (fig. 82). Determining the socioeconomic status of the subjects depicted by Ehrensvärd is somewhat problematic. While coffee, tea or chocolate may not have been available to the poorest segments of late eighteenth-century Swedish society, there is nothing in the depiction that suggests that the people depicted belong to the wealthiest demographic segment at the time. The stems of the pipes depicted by Ehrensvärd are comparatively short, which also enables smokeways that include smoking without holding the pipe with a hand. Such smokeways can be interpreted as adding to the impression that the subjects of the painting do not belong to a high-status group. If this is the case, this depiction further adds to the difficulties of applying stub-stemmed bowls for interpretations of socioeconomic status.



Figure 82. Detail of 'Dansom och rökorn' - let us dance and let us smoke, by Carl August Ehrensvärd, late eighteenth century. A man and a woman are depicted smoking stub-stemmed pipes and drinking coffee. It is difficult to determine what material the bowls are made from. However, the stems are shorter than those normally depicted with meerschaut bowls, making it seem more likely that the bowls are made from clay. Wikimedia commons, CC PDM 1.0.

10.3.4.1 Concluding discussion

It is difficult to determine differentiating aspects of smokeways that employed stub-stemmed bowls based on pictographic and documentary evidence. Price information shows that such bowls were inexpensive, which means that interpretations based on this information leads to the conclusion that they would have been uniquely employed in smokeways of poorer segments of eighteenth-century Sweden. This, however, is contradicted by depictions of smokeways that employed them.

Depictions of smokeways that incorporate stub-stemmed pipes, although often difficult to apply for interpretations of differentiation due to difficulties determining the material of bowls, show that stub-stemmed pipes were not exclusive to any social group. This is also confirmed by comparisons to archaeologically recovered bowls of this type from sites known to have been inhabited by poorer segments of eighteenth-century Sweden (see, for example Åkerhagen 2015, p. 227) to depictions of wealthy smokers of pipes of this type.

Rather than the clay bowls used, it seems more likely that stems made from either expensive exotic material such as rattan or bamboo, or from easily available local wood would have acted as signifiers of material differentiation. Based on the depictions included above, stem lengths, similarly to clay tobacco pipes, may also have played a significant part as differentiating markers in smokeways that incorporated such bowls. As the stems were made from perishable organic materials, they are not commonly encountered in the archaeological record. These factors mean that stub-stemmed bowls made at Swedish factories and workshops are currently difficult to apply in analyses of differentiating smokeways.

10.3.5 Pipes as disposable and replaceable objects

Clay tobacco pipe fragments may have entered the archaeological record for a myriad of reasons. We have already seen examples of pipe fragments entering the archaeological record as results of breaking during manufacturing, during transport, and as the results of a burned-down warehouse. Examples of pipes entering the archaeological record as a result of shipwrecks is another example that has also been mentioned. Conclusions regarding the reasons behind the depositions of these pipes and fragments are both contextual and conjectural – the archaeological, often stratigraphical, contexts allow for inferences to be made to reach conclusions regarding why these fragments have been discarded.

The abovementioned examples of interpretations of intentionality behind depositions, or indeed lack of them, are relatively straightforward; Pipe fragments recovered from a known factory site are likely to have been unsellable wasters. Fragments and intact pipes recovered from a cellar known from archival sources to have been a warehouse owned by pipe merchants destroyed by a city fire were abandoned because there would not have been sufficient amounts of saleable pipes to salvage in the debris of the collapsed building. Pipes lost in a shipwreck are likely to have been left by potential salvagers because they were not considered valuable enough to warrant recovery. But what about fragments that are recovered by archaeologists from urban cesspits, privies and infill layers, flower beds, paths, crofters' yards, ditches, pits, fields and so on?

Whenever pipe fragments show signs of having been used – *smoked* – they can also be considered as evidence of more or less intentional acts of abandonment on behalf of the people who smoked them. Considerations of pipe fragments as evidence of differentiating smokeways can therefore also include the possibility of people's varying and differentiating biographical expectations on pipes. While it is generally not possible to determine the exact chain of events or intentions that led to the disposal of used pipes, fragments may display attributes that can act as evidence of the relative amount of time individual pipes have been in use. It is also possible that combinations of provenance and find-context can indicate a pipe's lifespan (see Huggert 2008).

Biographical expectations on the lifespans of pipes as functional objects may of course also be connected to factors beyond socioeconomic status. Distance from a source of new pipes is perhaps the best example of this. Huggert (2008, pp. 23–28), as previously mentioned, shows how pipes may have been in use for a century. Meanwhile, there are archaeologically recovered bowls that show evidence of having been smoked only a few times before entering the archaeological record. These may have been accidentally broken beyond use because of having been dropped; bowls shattered, or stems broken off at points that were too close to the bowl for a comfortable smoking experience (or indeed the appropriate smokeways of the people who dropped them). Pipes may also have become clogged beyond salvation by tobacco oil or small flakes of tobacco, leading to their users disposing them.

Documentary evidence shows how some smokers may have had quite brief biographical expectations of their pipes. For example, court records from Uppsala University in the year 1676 (Sallander 1973, p. 108) show that pipes may have been ostentatiously, conspicuously and purposefully broken by their users. A similar behavior, although not described as publicly displayed, is also presented in *Argus* as a satirical and fictional journal of an urban dandy in Stockholm from 1734 (Dahlin 1914 [1734], p. 368): “At 6 o' clock smoked 3 pipes of the new tobacco package. Broke apart my new pipe, which I would not have had for one ducat.”¹⁸⁹ In the first example, the intentional breaking of a pipe and the subsequent purchase of three new ones is perceived by the court as a sign of wanton carelessness and wastefulness. In the latter example the dandy-*cum*-diarist breaking his pipe serves to add to the impression of a vain and spoiled man idling away his time.

The narrator of *Argus* states that the journal may act as a mirror and a warning directed towards “Messieurs Dandies and day-stealing youths”,¹⁹⁰ and that this journal is representative of the actions of “some thousands” (Dahlin 1734, fol. 1r).¹⁹¹ The many mannerisms and behaviors of the fictional diarist are thus implied to be general descriptions of the lifeways of urban dandies. Although the

¹⁸⁹ ”kl. 6 rökte 3 pipor af den nya Cardusen. Bröt sönder min nya pipa, hwilket jag ei wille haft för 1 Ducat”.

¹⁹⁰ ”Herrar Sprättjunkrar och dagstiälände ynglingar”.

¹⁹¹ ”när du har denna enda Mannens dagebok har du några tusende menniskiors”

diarist, a so-called *sprätthök* – dandy – is somewhat of a stock character in satirical criticisms of young male nobles and urban *nouveau riche* of the time (see Gyllenborg 1740 [1737]), the implication in this text is that intentional destruction of pipes (and other objects) was part of a package of conspicuous consumption-practices associated to the group.

Attitudes towards pipes as disposable may perhaps also be traced in the contemporaneous rules of the tobacco brotherhood, which describe replacement pipes as essential. Rule 13 states that:

Each and every one shall have two pipes in store/ one old and one new/ so that/ when one is broken apart/ or in another way is ruined and becomes unusable/ he may then have the other at hand/ and as such his sustenance shall be done no harm/ at a fine of one good pipe.¹⁹²

This rule not only suggests that implied readers of the rules should prefer intact pipes over broken ones, it also states that spares should be kept for replacing pipes that were no longer considered functional – i.e. too short or clogged. However, this rule also infers that pipes considered “old” may have been consciously preserved.

The previously discussed painting of nine carousing men (fig. 75 above) also indicates that pipes were, perhaps situationally, considered as disposable. This argument is strengthened by the fact that the man who is sitting closest to the broken pipe is lighting what appears to be a fresh pipe, consciously ignoring the opportunity to continue using the broken yet functional pipe on the floor. Although the broken pipe on the floor may be interpreted as a trope borrowed from Dutch and English genre paintings, the depicted man’s attitude towards the broken pipe stands in stark contrast to the peasant in Jernberg’s “The Mishap” or “The Broken Pipe” (NM 1210).

Another depiction of a smoker, Jean Eric Rehn’s *Rökande äldre man vid bord* – smoking older man at a table (fig. 83), shows a periwigged man sitting alone at a candlelit table with a plate, a glass, a bottle, what looks like a small leaflet or pamphlet and what is seemingly a spare pipe. As the table is not set for more than one person, the implication is that the pipe is intended for the man himself. Both depicted pipes are of a long type and, based on their morphology, appear to be of an English type.

¹⁹² “13. Hwar och en skal/ för all ting/ hafwa twenne Pipor i förråd/ en gammal och en ny/ på det/ när den ena förderfwas och blifwer obrukbar/ han då må hafwa den andra wid handen/ och således hans nähring icke ske något förnär”. This mirrors the German version’s rule no.3, for which the penalty is six pipes.

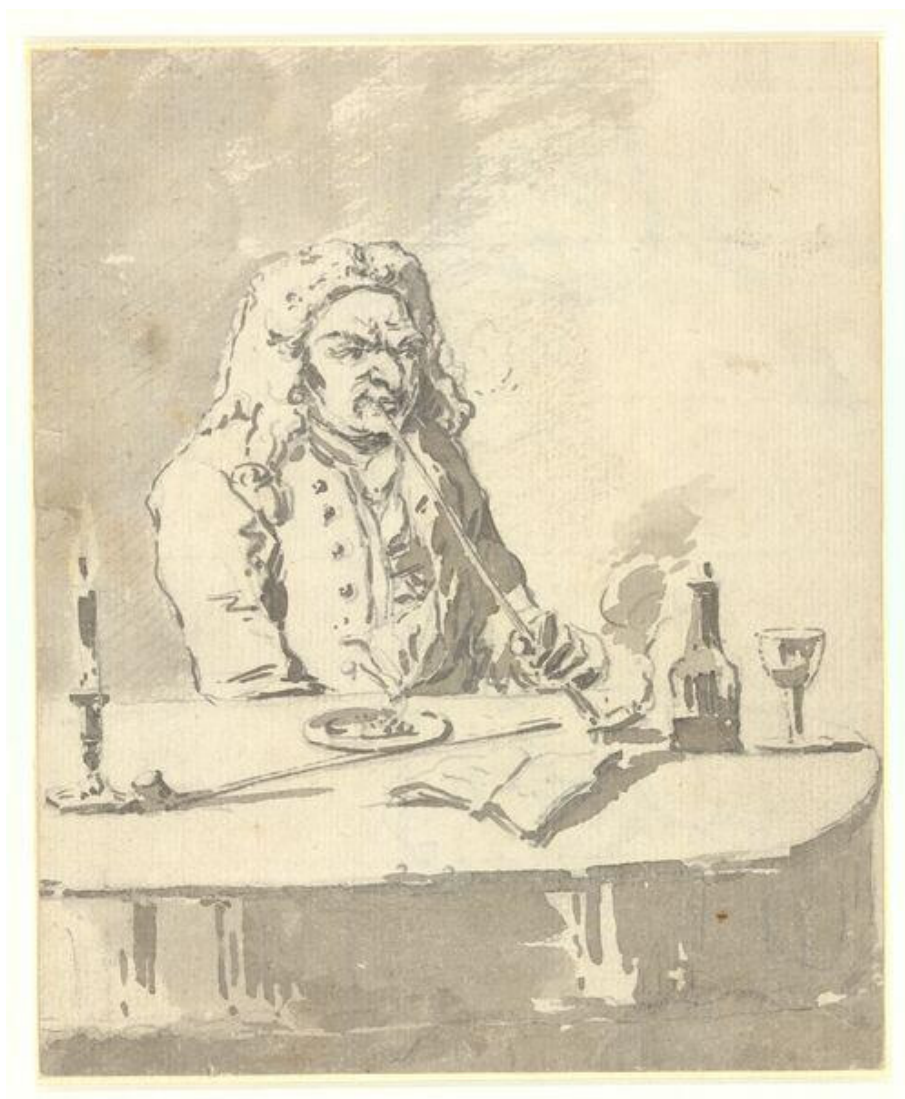


Figure 83. A man smokes a pipe while a second one is placed on the table in front of him. The fact that the table is not set for more people implies that the pipe on the table is also his. “Rökande äldre man vid bord” – Smoking elderly man at a table, Jean Eric Rehn (n.d. [1717–1793]). Courtesy of Nationalmuseum, NMH 447/1995. Photo by Anastasiia Trapeznikova. CC PDM 1.0.

A diary entry from June 28, 1769, by Johan Gabriel Oxenstierna suggests that pipes, at least in some settings, were considered disposable in circles that included “the people who govern our kingdom” (Stjernström 1881 [Oxenstierna 1769–1771], p. 34):

This evening I visited the club, a place I had not seen before, but which deserves to be seen in order to judge the people who govern our kingdom. Here one sees around many tables, a crowd of people occupied in gambling and swearing. In the eyes of one are painted harm and rage, and in the eyes of another the joy of a lucky win. From these circles rise thick puffs of black tobacco smoke, as if from the top of a fire-breathing mountain. Here streams of drink flow from a knocked-over bottle among fragments of broken tobacco pipes. Now glass is smashed against the walls, now one sees the floor strewn with torn cards, innocent victims of an angry gambler. Farther away one hears half a word of politics and parliamentary quarrels. In this place dwell all vain propositions, unstable laws, bribes, false rumors, and poets who write slander for the highest

bidder. Proposals are defended and contested with equal ignorance and equal obstinacy. Folly and drunkenness embrace each other, and what little sense a nobleman has he drowns here in rivers of punch. He thinks he has defended liberty when no one can prevent him from drinking as many glasses as he pleases. Another pledges his honor and his faith with his right hand, and takes bribes behind his back for the next referendum with his left.¹⁹³

Oxenstierna associates broken pipes, spilled drink, broken glass and torn playing cards to the wanton wastefulness and carelessness of members of the governing class at the club. Again, the implication is that smokeways that include views on pipes as disposable and replaceable are linked to the upper classes and those who could afford them.

However, it is also possible that ideas of pipes being disposable were more common in places where replacement pipes could easily be obtained. This would most certainly have been the case in Stockholm during the 1770s. Carl Michael Bellman's poem *På Mummens en Morgonstund* – at Mummens in the Morning (1925, p. 25), written during the summer of 1772, mentions what can be interpreted as a plenitude of broken pipes on the ground near a tavern with a bowling-alley on Norrmalm in Stockholm.¹⁹⁴

By the paling deep in the ground
A toppled skittle [bowling pin] lies
And the bowl full of dirt
From yesterday's patrol
In the mud fallen down,
On the board, throws are recorded:
And pipes broken
In every corner one looks¹⁹⁵

The implication is that the broken pipes are the result of the smokeways of the visitors to Mummens tavern. As the poem is set during morning hours, it is possible that this plenitude of broken pipes was

¹⁹³ I afton var jag på klubben, ett ställe som jag förr ej sedt, men som förtjenar att betraktas för att kunna dömma om det folk som styr vårt rike. Här ser man kring om många bord, en hop folk syslosatta att spela och svärja. I den enas ögon målas harm och raseri och i den andras glädjen öfver en lycklig vinst. Utur dessa kretsar uppstiga tjocka dustar af en svart tobaksrök, likasom ifrån spetsen af ett eldsprutande berg. Här rinna strömmar af dricka från en kullslagen bouteille bland skärfvor af sönderslagna tobakspipor. Än krossas glas mot väggarne, än ser man golfvet öfverströs med sönderslitna kort, oskyldiga offer för en förargad spelare. Längre bort hör man halfva ord af Politique och Riksdagsgräl. På detta ställe bo alla fåfänga förslager, ostadiga lagar, bestickningar falska rykten och skalder som göra smådeskrifter åt den mästbjudande. Satser försvaras och bestridas med lika okunnighet och lika envishet. Därskap och fylleri taga hvarannan i famn och det lilla förstånd en adelsman har dränker han här i floder af pounsche. Han tycker sig hafva försvarat friheten, när ingen kan hindra honom att dricka så många glas han behagar. En annan lofvar med högtra handen sin ära ock sin tro, och tager bak om ryggen mutor för nästa votering med den vänstra.

¹⁹⁴ Gustaf Upmark locates the tavern Mummens källare to Drottninggatan (1923, p. 290).

¹⁹⁵ Vid Plancket diupt i mullen,
en kägla ligger kull
och klotet fullt med mull
från förra dags-Patroullen
i gyttjan trillat ner,
På taflan, kast stå tagna:
och Pipor sönderslagna
man i hwar winckel ser

discarded the previous night and that the tavern grounds have not yet been tidied up. If this is the case, Bellman suggests that the patrons of Mummens practiced smokeways that considered pipes as disposable objects on what can be understood as a vast scale.

The socioeconomic status of the patrons of the tavern is therefore an issue that must be considered. Judging from the smokeways implied by Bellman, they seem likely to have belonged to the upper classes. This is confirmed by Eler's descriptions of Norrmalm throughout the eighteenth century where Drottninggatan is described as one of the finest streets in the area (see Eler 1800, pp. 97–98, pp. 106–107). While it remains unknown if Mummens supplied its patrons with pipes and tobacco, the location of the tavern on Norrmalm, close to the pipe makers on Kungsholmen and shops that sold pipes, means that a source of new pipes was likely not far away.¹⁹⁶

The only sources inferring that pipes may have been considered disposable related to peasants or commoners encountered during this study are the comments by Bergenskjöld, and the painting of the harvest festival by Hilleström presented above. As we shall see below, there are

10.3.5.1 Concluding discussion

Conspicuously destroying clay pipes is documented as far back as 1676 and recurs in written sources that generally mention such behaviors as a sign of wastefulness that appear to have been restricted to a relatively wealthy demographic segment – university students, dandies, and patrons of high-end taverns and clubs. The rules of the tobacco brotherhood from the 1730s state that a replacement pipe is mandatory for its members, acting both as a testament to notions or expectations of the relatively ephemeral lifespans of pipes, and as an indication that keeping and bringing spare pipes may have served as a recognizable signal of taste linked to social status. Representations of such smokeways can also be seen in a depiction of a smoking man by Rehn (fig. 82) and in the painting of carousing men (fig. 75). These examples stand in stark contrast to the examples of century-old pipes remaining in use for extended periods presented by Huggert (2008).

While smokeways that include considerations of pipes as disposable appear generally to be attributable to the upper classes, it is important to keep in mind that Bergenskjöld, as mentioned above, noted in 1784 that commoners in Nora Bergslagen purchased new pipes during market Saturdays. Although it is not currently known how often Saturday markets were held in Nora Bergslagen in the late eighteenth century, this indicates that biographical expectations of clay pipes may have been relatively brief in smokeways among commoners as well.

These descriptions may yet allow for the identification of implications for interpretations of differentiating smokeways based on archaeologically recovered pipe fragments; Differences between the smokeways of visitors to the club described by Oxenstierna or depicted in the painting of nine carousing men and the smokeways of commoners in Nora Bergslagen are still likely to be observable through the attributes of the pipes they have left behind in the archaeological record. Bergenskjöld, in stating that pipes were transported in hats, infers that the pipes would most likely have been relatively coarse short or medium-length types, or possibly stumps of fancier pipes. Meanwhile, the pipes described by Oxenstierna as used by the ruling class at the club are more likely to have been more expensive long-stemmed and possibly polished types.

¹⁹⁶ The estate inventory after the Jacob Christian Mum[m] (SE/SSA/0145A/F 1/F 1 A/231 1774, p. 291) makes no mention of pipes or tobacco, indicating that patrons may have brought their own pipes and tobacco.

This highlights the need to acknowledge and combine an understanding of the types of pipes available at any one time to variations in traces of use when applying clay tobacco pipes for analyses of differentiating smokeways. Moreover, the relative frequency of smoking from one and the same pipe will most likely also result in varying degrees of discoloration of the clay and accumulation of residue in the tobacco chambers of bowls. In other words: a bowl of a pipe that has been smoked one or two times will not be as discolored or have a significant amount of charred residue on the inside of its bowl as would a pipe that has been smoked recurrently over the course of a week or month.

Bellman's poem also infers that tavern grounds would have been cleaned, perhaps on a daily basis. Based on Oxenstierna's description, it also seems unlikely that a club frequented by members of the ruling class would have its guests wallowing in waste from previous nights. Both of these examples suggest that pipe fragments resulting from the smokeways practiced at these sites would be removed along with other waste accrued throughout their hours of operation to be deposited elsewhere.

This has further implications for interpretations of smokeways based on pipe fragments from such sites (and indeed landfills and infill layers). Firstly, this means that fragments that survive *in situ* in the archaeological record on such sites are likely to represent a mere fraction of the pipes once used there. Regular contemporaneous cleaning of such spaces may therefore lead to quantifications of archaeologically recovered assemblages being unreliable representatives of site-specific smokeways. This means that a potential relative absence of pipes at sites is therefore not necessarily an indication of the people who once inhabited them abstaining from smoking. Rather, this means that pipe fragments generated by the smokeways practiced at such sites are more likely to be encountered in tertiarily deposited contexts such as communal waste deposits in the form of landfills and infill layers. This poem therefore highlights potential pitfalls of interpretations of smokeways based on what can only be assumed to represent a fraction of the pipes consumed at sites such as taverns and inns.

Another aspect to consider are potential effects of depositional conditions as well as events to which fragments have been subjected when considering the appearances of pipe fragments in general and bowls in particular. Fragments removed from a site in close temporal proximity to their disposal by their final user are, provided that they have not been scavenged or significantly tumbled during their removal, less likely to show signs of trampling or mending.

Documentary evidence primarily points to the smokeways of segments of the upper classes as resulting in depositions of relatively lightly smoked pipes in the archaeological record. However, as we shall see, there is also evidence from the documentary record that suggests that biographical expectations on pipes may have varied and shifted among wealthier smokers throughout the eighteenth century.

10.3.6 Cleaning, mending and reusing pipes

The study now turns to what can be learned from documentary sources regarding smokeways that included continuous use of pipes. There are no known archival sources from the Swedish eighteenth century that state an expected lifespan of clay pipes. As presented above there are sources that suggest that pipes may have been considered as disposable, near single-use items in some circles, for example among the *nouveau riche* and so-called *sprättthökar* – dandies – of the time.

There is no mention in the guidelines of the tobacco brotherhood of attempts at repairing broken pipes or views on mended pipes. The first rule, confusingly, states that the shortest acceptable length of pipes in the fictitious brotherhood, is between two or four inches. As no such pipes are known from regular production in any country at the time, the implication is that the use of pipes with

snapped off or broken stems – stumps – may have been acceptable. This rule can be interpreted both as an acceptance of smokeways that included intentional purchase and use of stumps as well as the continued use of a pipe broken during handling by its user.

The guidelines also imply that pipes were considered as individual objects that once used by one person, were not suitable for use by another. This suggests that sharing pipes and scavenging of pipes may have been frowned upon. Two rules which deal with cleanliness when handling and preparing tobacco suggest that such notions may have applied to the sharing of used pipes as well. According to the rules, tobacco should not be cut and prepared on unclean surfaces (paragraph 7) and strictly forbid the smoking of tobacco that had already been chewed (paragraph 8).

The rules of the tobacco brotherhood also mention pipe cleaners, indicating that pipes were not considered single-use items. While it may be expected that fresh, unused pipes would have been preferred by wealthy smokers, there are sources published throughout the studied period which imply an acceptance of an extended use of pipes, even in the upper echelons of eighteenth-century Sweden. A column published in weekly installments in *Stockholms Weckoblad* between February 6 and February 20 of 1768 under the section *Lärda saker och rön* – literally translated to learned things and findings, a writer known only as “the physician” presents the best and least harmful ways to smoke tobacco.¹⁹⁷ The text recurringly implies that the intended readers are men from the upper classes. For example, after praising high-quality Spanish tobacco used by the intended readers, the text states that “the working man smokes his tobacco with the same appetite [as us] and is unaware of the stench that bothers our noses” (1768-02-13, p. 2). Notably, seasoned pipes, or pipes that had already been broken in, are referenced as ideally preferred by wealthy smokers of taste and courtesy (*Stockholms Weckoblad*, 02-20-1768):

In regard to the instrument used for smoking, it should be noted that it should be as clean as possible, so that no foreign parts may mix with the tobacco smoke and thereby spoil its taste or aroma. Therefore, pipe stems and pipe bowls made of wood are only for simple [rustic or common] people, who, as with [choosing?] their wives, are not very careful, and even the clay or so-called porcelain pipes are not the best. It often happens to the strongest smoker that he is harmed when he smokes a new pipe, and this also proves that it is not very polite to present new pipes to guests, although many again have reservations about smoking pipes that someone else has already had in their mouths. Anyone who has rotten and unclean teeth should not lightly be denied the right to light his own pipe, which is generally a strange and too far-fetched courtesy. Sometimes you come into a company where the servants light the pipes, yet out of a kind of courtesy, so as not to share their spit to anyone, they first wipe the pipe under their arm. Since they do this so many hundred times, they gradually get a large dirty stain on the arm of their coat from so much spit, which makes this courtesy even more disgusting and ugly. Away with all this unsightly foolishness! Just as we would not let someone else chew our roast for us, so we also

¹⁹⁷ The fact that references to wooden pipe bowls are rare in Swedish eighteenth-century archival sources and they are rarely encountered in the archaeological record, may be explained by the likelihood that the text is a translation of a German or possibly French original.

want to light our tobacco ourselves. All that we may ask for, is a wax candle, no tallow-smoke, no coal-smoke!^{198 199}

Although unlikely, it is possible that the last sentences refer to meerschaum pipes, thus suggesting that companies where servants are employed to light pipes may have been hosted by people with collections of meerschaum pipes sizeable enough to accommodate a crowd.

These recommendations carry implications for interpretations of socially differentiating smokeways based on archaeologically recovered clay tobacco pipes. Firstly, the recommendations state that wooden bowls and stems are for “*slätt folk*” – simple, rustic, or common people. This suggests that both stub-stemmed clay pipe bowls and bowls with stems that show signs of having been mended with replacement stems made from wood or other organic materials may have been associated with smokeways of commoners at this point in time.

Secondly, not even clay pipes of the finest type, the porcelain pipes, are considered the best. Rather, on the following page the physician recommends “a pipe made from glass” since it is the only material that “in the slightest manner changes the taste of the tobacco”. However, any pipe, presumably clay or possibly metal or meerschaum, is described as acceptable but must “for a fine tongue be very long” for “as soon as the smoke comes hot in the mouth, the taste is ruined and harms the tongue and palate” (*Stockholms Weckoblad*, 02-20-1768).²⁰⁰ Thus, the text explicitly connect smokeways that employed short pipes with people who did not have fine tongues, the implication being that they were low-standing and lacking in taste.

Thirdly, the smoking of pipes that had been lit by servants is presented as something that could be expected in some companies. While such smokeways are presented as abhorrent, the text shows that this may have been considered appropriate in some circles at the time. While this section of the text can be interpreted as a condemnation of smokeways that included the sharing or reusing of pipes overall, it can also be interpreted as a shift in smokeways among affluent smokers – rather than smoking from new pipes, a pipe that was seasoned or broken in, as long as it was clean, was preferred. While this suggests that in wealthier households, pipes could potentially have been seasoned or broken in by servants, it does not seem plausible that wealthy smokers would have scavenged or reused broken pipes.

¹⁹⁸ I anseende till Instrumentet, af hwilket man betjänar sig wid rökningen, bör märkas, at det så mycket som möjligt är, bör wara rent, på det inga främmande delar må blanda sig med tobaksröken, och derigenom fördärfwa dess smak eller luckt. Derföre äro pipskaft och piphufwuden af träd, allenast för slätt folk, hwilka tillika med sina hustrur, ej äro så nogräknade, och sielfwa ler- eller så kallade porcellainspiporna äro ej de bäste. Det händer ofta de starkaste rökare, at han får ondt då han röker med en ny pipa, och detta bewiser, at det äfwen icke är någon stor höflighet, at för sina gäster framlägga nya pipor, ehuru många åter igen hafwa betänkande wid a röka med sådana, som redan någon haft i munnen. Den som hafwer ruttna och orena tänder, borde billigt ingen betaga den rättigheten, att själv få antända sin pipa, hwilket i allmänhet är en underlig och för långt twingad höflighet. Man kommer understundom i sällskaper, hwarest drängarna antända piporna, men utaf en slags höflighet, för at intet meddela sin spott åt någon, först aftorka pipan under armen. Emedan de nu göra detta så många hundrade gånger, få de, efter hand, under armen på racken en stor oren fläck, utaf så mycken spott hwarigenom denna höfligheten ännu blifwer wederwärdigare och otäckare. Bort med alla dessa osnygga dårsaker! Som wi intet låta steken tuggas af någon annan åt oss, så wilja wi ock sielfwa antända vår tobak. Allt hwad wi kunna utbedja oss, är ett waxlius, intet talg-os, intet kål-os!

¹⁹⁹ Note also that a wax candle is the preferred method for lighting pipes. This implies that the other options mentioned – tallow candles and coal embers – may have been associated to smokeways of people who lacked in taste and refinement.

²⁰⁰ This may be the oldest currently known reference to pipes made from glass in Sweden. Fragments of glass pipes have yet to be identified in the Swedish archaeological record.

Regarding the use of seasoned pipes with browned or blackened bowls, there is more evidence from historical sources that such bowls, in some contexts, could be interpreted as evidence of the smokeways of connoisseurs. Two satirical causeries, the latter a version of the earlier text, presented as a fictional forthcoming book in 1750 (*Götheborgs Weckolista*, 1750-07-28) and in 1781 (*Dagligt Allehanda*, 07-04-1781-07-04 & 07-05-1781). Fictional prospects, or outlines, of six tomes on various aspects of tobacco smoking; Both causeries refer to the coming works as *Tabacologia*. The author of the 1750 version is anonymous, while 1781 volumes are to be produced by the most likely fictional “Canaster division” of the Society *Pro Vino & Cervisia*. The 1750 version states that “the tastes of those who make a fuss about brown or black-smoked pipes” will be evaluated, and the 1781 version jokingly intends to compare the properties of “browned and saturated” pipe bowls to “unsmoked” ones. Although meerschaum pipes are mentioned in the older version, the wording “pipes” rather than “bowls” indicates that it is most likely clay pipes that are referred to.²⁰¹ In the 1781 version it is less clear if the text refers to seasoned pipes made from clay or if it refers to meerschaum bowls. Both versions imply that views on well-seasoned, even black pipes or bowls may not have been completely negative. Although the 1750 version infers criticism of the tastes of smokers of browned or blackened pipes, the 1781 version implies a less condemnatory attitude. Once again, a shift in sentiments towards smokeways that employed seasoned pipes may be the explanation.

In other contemporaneous circles, seasoned pipes may have been a symbol of untidiness, poverty or both. According to a short notice in *Carlstads Weckotidningar* (May 15, 1784, n.p.), “old, dirty and oily pipes” could be “renewed” by covering them with embers and glowing coal for fifteen minutes and then placing them in fire. Refiring pipes is known from England (see Dunhill 1977, p. 174; Fairholt 1876, p. 179), yet no earlier or later archival sources mentioning refiring pipes are currently known from Sweden. Angerstein, while visiting a pipe factory outside of London, notes that “old pipes from the tavern were heated [in the pipe kiln] to burn out the dirt in them so that they can be used again as new” (Angerstein 2001 [1754], p. 28), suggesting that this might have been unknown in Sweden at the time.

There is a possibility that seasoned pipes became acceptable, even desirable, in smokeways of the wealthy at different places and at certain points in time during the latter half of the eighteenth century. Indeed, a browned exterior of a bowl and shank of a long-stemmed pipe may have signaled both connoisseurship and the proper comportment required for maintaining and keeping such a pipe intact for the number of bowlfuls of tobacco required to achieve this appearance. This shift could perhaps be linked to the increased diffusion of bowls made from meerschaum – a mineral that is gradually colored by oils created by burning tobacco.²⁰² However, none of the long pipes in the depictions of wealthy smokers presented above appear to be seasoned.

Regarding the cleaning and maintenance of clay pipes, the archival record from the first half of the eighteenth century states that pipes were maintained and cleaned in other ways than refiring. The above-mentioned brotherhood rules (Anonymous 1730s, paragraph 1 & 14) stipulate that:

²⁰¹ This may be one of the oldest references to meerschaum pipes in the Swedish archival record.

²⁰² The seasoning process of meerschaum bowls is possible due to a combination of the porous nature of the mineral, the tar that is released from combusted tobacco, and the fact that meerschaum bowls were dipped in whale oil and beeswax. The whale oil “melts and mixes with the tar which it draws toward the exterior of the bowl’s wall. As it cools, the wax on the on the pipe retains the tar, while the whale oil returns inside the meerschaum. Thus, the tar mixes with the [bees]wax and the result is a fine patina” (Liebaert & Maya 1994, p. 94).

Tobacco pipes should at the very shortest/ be two or four [Swedish] inches/ but otherwise of the length that pleases each and every one/ and [smokers] shall next to this have a spill or a stick/ [made] from good wood or a beautiful pipe cleaner of brass straw [wire] or other [material]/ neatly made/ so that/ if the pipe should be plugged [literally: constipated] and not want to burn/ one can therewith help her to air again/ and thereby avoid burning the finger/ the fine [for breaking this rule] is a half roll of good tobacco.²⁰³

A thin thread [wire]/ about the length of a pipe/ as stipulated in the first paragraph/ must be carried by one and all/ so that he can give his pipe air/ when he has constipated her/ the person who does not have one/ will pay a fine/ and a complete thread [wire] [...] given.

While those who could afford them used brass wires to clean the stems of their pipes, smokers of lesser means may also have made use of pipe cleaners made from organic materials like wood or grass; according to Linnaeus *Flora Oeconomica* [...] the grass known in Sweden as *pip-hwen* or *pipven* (*Calamagrostis arundinacea*) – literally pipe grass. According to Linnaeus, this grass “*purgat fistulas tabacinas*” – cleans tobacco pipes (1748, p. 3). The Swedish version states that the grass is “a capable pipe cleaner” (Linnaeus 1749, p. 10).²⁰⁴ Thus, it seems probable that smokeways that employed clay pipes that were subjected to upkeep and maintenance, were prevalent several in socioeconomic segments in eighteenth-century Sweden. In the case of the brotherhood rules, this may be an indication of frugality with tobacco rather than with pipes. The last resort, according to paragraph 13, was to replace the pipe with a new one. Maintenance and cleaning of pipes, therefore, cannot conclusively be linked to poorer demographic segments of eighteenth-century Sweden.

Artifacts that suggest upkeep and maintenance of pipes, such as stoppers and tampers, while uncommon in the archaeological record, are known from museums in Sweden. While wooden pipe cleaners or even metal nails may have been used as pipe tools, there are examples of purpose-made pipe tools made from bone, horn, antler, and metal in Swedish museum collections. A search for “*piprensare*” – pipe cleaner, in an online catalog of Swedish museums *DigitaltMuseum* shows that museums across Sweden have identified pipe scrapers and tools intended for use as pipe cleaners in their collections. An advertisement for the Wedevåg manufactory booth in Stockholm from 1752 (*Stockholms Weckoblad* 03-07-1752, p. 4) mentions “*pipräsare*” – pipe cleaners, indicating that these were also manufactured domestically. As the Wedevåg manufactory primarily made metal objects, this likely refers either to brass wires as mentioned in the brotherhood rules, or to pipe tools as known from museum collections (figs. 84 and 85). These objects beg the question: Why would anyone scrape out a bowl of a pipe or clean the stem-bore of a pipe they intended to discard?

²⁰³ “1. Tobackspiporna skola uppå det aldrakortaste/ wara två eller fyra tumb långa/ men eljest af den längd som för hwar och en behageligt faller/ och skal der bredewid hafwas en sticka eller pinne/ af godt trä/ eller en wacker Pipräsare af Mässingstrå eller af annat/ nätt giord/ på det/ om Pipan skulle blifwa förstoppad och icke wilja brinna/ man dermed kunde hielpa henne til lufft igen/ och dymedelst undwika at förbränna fingret/ wid böte af en half Rulla godt tobak.”

²⁰⁴ “*Agrostis, Pip-hwen. Är en artig pipe-räsare*”.



Figure 84. Tobacco plate and stopper made from copper, made by Peter Nystrand in Vadstena in 1774 (NM.0021007A-P [sic]). The flat end of the tamper is for tamping the glowing tobacco in the bowls of the lit pipes and the needle is for scraping out ashes and dottle from the bowls. According to the museum, the piece belonged to the copper-journeymen's association (Koppargesällskapet) of Norrköping. Photo by Ulf Berger. Courtesy of Nordiska Museet CC BY-NC-ND 4.0.



Figure 85. A leather tobacco pouch with a brass pipe scraper/pipe cleaner held by Läns museet Gävleborg (XLM.01811). Not to scale. Photo by Läns museet Gävleborg. CC BY-SA 4.0.

Pipe tools are either rare or rarely identified in the archaeological record in Sweden. Insides of recovered bowls, however, occasionally show signs of scrape marks from some sort of implement used to remove charred remains of tobacco. Metal wire and other objects made from copper alloys, antler,

bone or horn that could have served as pipe cleaners or stoppers are known from postmedieval deposits, yet, unless they are recognized as pipe tools during registration or stuck in pipe stems, their original functions are difficult to interpret. The possibility that makeshift pipe tools and cleaners were made either from iron nails or from organic materials that have not survived is also a factor to consider. The historical record shows that wooden pipe cleaners and ecofacts – especially straws of *Calamagrostis arundinacea* were also used to clean pipe stems. As such implements have normally decomposed after hundreds of years in the ground, they may not be represented in the archaeological record.

10.3.6.1 Concluding discussion

As shown in the previous section, clay pipes are more likely to have been treated as disposable and replaceable objects by wealthier smokers, and especially in areas where shortages of pipes were less likely to have occurred. However, documentary sources also indicate that upkeep of pipes in the form of cleaning with pipe cleaners made from different materials, does not appear to have been restricted to poorer social groups. Pipe tools with a known provenance held by Swedish museums also indicate that pipes were not necessarily considered as single-use items, even in wealthier circles in places where pipes were easily obtainable.

Pipe cleaners, supposedly made from metal, are mentioned in an advertisement from the Wedevåg manufactory in 1752. In 1748, Linnaeus mentions makeshift pipe cleaners made from a grass known in Swedish as pip-ven, assumedly used primarily by commoners. Both these sources suggest that smokeways that employed pipes for more than one bowlful of tobacco were employed across the social spectrum of eighteenth-century Sweden. This suggests that any artifact from the archaeological record that can be identified as a pipe tool – a tamper, scraper or pipe cleaner of any sort, acts as positive evidence that clay pipes may have been considered not as single-use items, but perhaps more along the lines of disposable items in the sense of Bic lighters, as suggested by de Vries in 2008 (p. 157), or similarly to a disposable electronic cigarette in 2026.

Refurbishing of used pipes through refiring, known from documentary and artifactual sources in England, does not appear to have been widely applied in Sweden prior to the mid-eighteenth century. This interpretation is based on a combination of Angerstein's note of the practice while visiting a pipe kiln in London and a notice in Carlstads Weckotidningar from 1784. While this practice is difficult to observe in the archaeological record, these documentary sources clearly show that clay pipes were not generally single-use items.

Further evidence to suggest that biographical expectations on pipes may have shifted and varied in the upper echelons of eighteenth-century Sweden are documentary sources recommending their implied readers to use seasoned but clean pipes. Visually, pipes with browned or blackened bowls or stems may have been applied to signal connoisseurship and the genteel comportment required to keep a long-stemmed clay pipe intact among wealthy smokers in the know. It is possible that such smokeways were a result of the introduction and diffusion of meerschaum bowls, for which one objective is to season the bowls. This is supported by the fact that the rules of the brotherhood of tobacco, from the 1730s, do not mention seasoned pipes at all. Coincidentally, one of the oldest Swedish documentary sources to mention meerschaum pipes (*Götheborgs Weckolista*, 1750-07-28) also mentions seasoned pipes.

This potential shift in views on smokeways that employed seasoned clay pipes has implications for interpretations based on pipes recovered from the archaeological record. For one, as sentiments appear to have shifted over time, it requires that fragments are firmly dated so that traces of such smokeways

can be linked to contemporaneous documentary and pictorial sources. Seasoned fragments from the 1730s may not have carried the same implications as seasoned fragments dated to the 1780s. Secondly, such interpretations require that fragments are firmly identified in terms of type, i.e. relative price, production quality and original stem length. Smokeways that applied seasoned short and coarse pipes were most likely not as highly regarded as smokeways that employed seasoned long and polished pipes.

10.3.7 Stumps, clenching, and bite marks

Functional clay tobacco pipes with stems that have accidentally broken during manufacturing, transport, or use, or intentionally broken by users were known in eighteenth-century Sweden as *stumpar* – stumps, or *nubb* – nubs. As previously mentioned, price lists from the Olof Forsberg factory and estate inventories of pipe factory owners consistently list such pipes as less expensive than intact pipes. However, it is important to note that not all pipes with broken stems are believed to have been referred to as stumps or nubs – Forsberg’s price lists make a distinction between stumps and pipes with slightly broken stems (anonymous 1743; 1747; 1753). A reasonable assumption is therefore that a stump or nub was a pipe that was shorter than any of the pipes in regular production, i.e. shorter than about 8 Swedish inches.

Such pipes are ideal for smokeways where smokers hold their pipes with nothing but their teeth – so-called pipe-clenching or clenching. As shown by personal experience and period pictorial evidence, longer pipes require support in some way if they are to be comfortably smoked while leaving a smoker’s hands free (fig. 77). This suitability of shorter pipes for such smokeways is due to two factors; Firstly, shorter pipes are comparatively lightweight, which means that they pose a minimal strain on the jaw muscles while being held between the teeth as compared heavier to longer pipes. Secondly, the point of gravity of such pipes is close to the smoker, which means that the risk of their stems breaking from their own weight is decreased significantly compared to longer pipes. The fact that such pipes can be smoked without occupying the hands of the smoker also means that it is possible to perform tasks that require the use of both the smoker’s hands while smoking them.

Smokeways that involved clenching pipes between teeth are visible on osteo-archaeological remains (see Arcini 2006, pp. 90–93; Kvaal & Derry 1996, pp. 28–30; Barrett-Davies & Inskip 2024, p. 144), in contemporaneous depictions of smokers (see figs. 90, 91, and 92). Written sources mention clenching both explicitly (Rothof 1762, p. 157) and implicitly (for example, anonymous 1730s, Dahlman 1743; Tham 1799) and as already mentioned – on pipe fragments from the archaeological record. As previously mentioned, such smokeways are commonly associated with poor, commonly male smokers.

Smokeways that employed broken pipes are depicted and described beginning in the seventeenth century. One of the earliest depictions of use of what would have been considered a broken pipe, referred to in the eighteenth century as a stump or a nub, is the previously mentioned David Klöcker Ehrenstrahl’s portrait of the court jester Hindrich Hasenberg from 1652 (fig. 86). The depicted pipe, as it is placed next to a roll of tobacco and a lit match, suggests that the pipe was intended for continuous use.

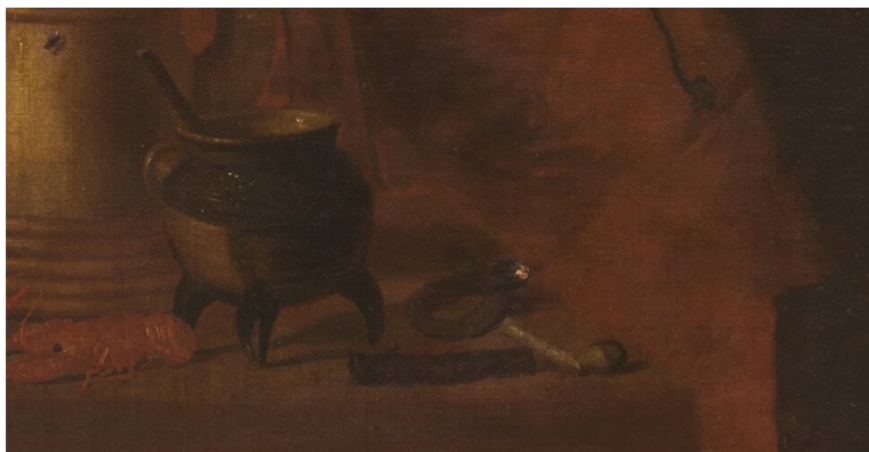


Figure 86. Detail from David Klöcker Ehrenstrahl's portrait of the court jester Hindrich Hasenberg from 1652. On the table lies a pipe with an apparently broken stem alongside a match and a length of rolled tobacco. Courtesy of Nationalmuseum, Stockholm.

An early example of smokeways involving clenching can be seen at the bottom right corner of Willem Swidde's panoramic depiction of Stockholm from Skeppsholmen, two, possibly three, men are seen smoking their pipes (Dahlberg 1975, pp. 26–27). This is the only currently known depiction showing pipes being smoked while clenched between smokers' teeth from late seventeenth century Sweden. Although stems with bite marks are plentiful from the archaeological record of the period (see, for example, Åkerhagen 1998), one explanation that such smokeways were not commonly depicted during the seventeenth century may be that this was considered *faux pas*. One written account from 1663 for example states that people smoking tobacco without holding onto the pipe with a hand would be damned (Gyllenius 1882 [1663], p. 268).²⁰⁵



Figure 87. In the lower right corner of the view of Stockholm from Skeppsholmen in the *Suecia Antiqua et Hodierna* (Willem Swidde, 1693), two, perhaps three male workers are seen smoking pipes. Two of them are seen clenching short pipes.

²⁰⁵ "intet släppa pijpan medh handen när man dricker rök tobaak. The som thetta göra skulle alle bliffva fördömde; men the som dricka toobak och hålla j pijpan medh handen, skulle intet skada".

A depiction of a smoker clenching a pipe between the teeth from late seventeenth or early eighteenth-century Sweden comes from a tobacco label that has been traced by Walter Loewe (1990, p. 71) to the tobacco factory in Stockholm of Petter Mynder belonging to Herman Daniel Hermanni and Carl Aspegren.²⁰⁶ Loewe dates the label to between 1699 and 1702 as the depiction is thought to be the brand used by Petter Mynder and his successors. It shows a turban-clad mustachioed man holding a short pipe between his teeth while exhaling a whisp of smoke. The man is flanked by the letters P and M, supposedly for Petter Mynder. On the other side of the label is the Dutch text: *Diesen opreckten Versiegelden Verginis Tobak is de koop in de Stads Gard teegenooer de Rus gard in Stocholm Buj Peeter Mijnders H & A.* – This genuine sealed Virginia tobacco can be purchased at Stadsgården across from Ryssgården in Stockholm at Petter Mynder. H & A.

The label is possibly alluding to notions of smokeways in the Ottoman empire as the smoking man is wearing turban and other attire that can be interpreted as an expression of contemporaneous exoticism. While the label alludes to smokeways that could be perceived of as foreign and exotic, thus complicating interpretations of smokeways that include clenching of pipes in Sweden, it is still possible to argue that labels with this print were likely circulated in circles that could afford to purchase Mynder, Hermanni and Aspegren's Virginia tobacco. As we have seen in Chapter 2, the intended consumers of imported Virginia tobacco did not belong to the poorer segments of Swedish eighteenth-century society. This may imply a contemporaneous understanding of the smokeways depicted as exotic and perhaps acceptable as a form of differentiating othering; clenching of pipes was to be expected from Ottomans.

Condemnations of a high frequency of smoking that by inference must have applied short pipes or stumps from the 1730s and 1740s have already been presented above. Condemnations of such smokeways can also be found in sources from the latter half of the eighteenth century. For example, Scanian Parson Niclas Olof Lönqvist, who in 1775 writes about his parishioners in Bara, Skåne, that “a youth who does not smoke tobacco, is considered unmanly and is mocked by others. Most of them never let the pipe leave their mouths [...]” (Lönqvist 1924, p. 7). The statement that the smoking youths did not let the pipes leave their mouths strongly suggests that the pipes referred to were held between their teeth. Lönqvist is condemnatory in this remark, linking the constant smoking of tobacco to wasteful vanity that include attempts at appearing manly.

While we have seen evidence of a widespread tobacco smoking among commoners of both biological sexes, this remark suggests that smokeways that include a near constant clenching of pipes may have been considered particularly manly in this socioeconomic segment. However, there are pictographic sources indicating that pipe-clenching was not uniquely associated to men (figs. 82 and 91). It thus seems more likely that the frequency of smoking or frequently holding a lit or unlit pipe between one's teeth that is associated with perceptions of manliness in this statement.

Nearly 20 years later, Jonas Carl Linnerhielm infers a connection between pipe-clenching and laziness while traveling through Kungälv. Bemoaningly, Linnerhielm notes that the population is idle and remarks that “healthy men with tobacco pipes in their mouths, watched us with bewilderment from the windows, and idle womenfolk in slipshod clothes, were all that we saw” (1797, p. 53).²⁰⁷

²⁰⁶ Not reprinted here due to copyright reasons.

²⁰⁷ ”Raska karlar med tobaks-pipan i munnen begapade oss ur fönstren, och sysslolösa qvinfolk i vårdslös klädnad, voro alla dem vi sågo”.

While Linnerhielm connects smoking and clenching to idleness, Pehr Tham, as part of his brief treatise against coffee, brandy, and tobacco (1799, n.p.), states that:

tobacco smoking in general is an obstruction from and during all sorts of labor, which no honest man can deny with sincerity: – also that many are compelled to do something, solely to not anguish to death, if they were without the tobacco pipe.²⁰⁸

As such, the inference is that smoking, while obstructing labor, *was* done while labor was performed. As in previously mentioned examples and as seen in pictographic sources (figs. 90 and 221) such smokeways employ short pipes and stumps that are held between the teeth of their smokers. Perhaps most importantly for the sake of this study, the stark majority of these descriptions and depictions concern the smokeways of the lower classes.

There are, however, indications from the documentary records that suggest that clenching, or at least occasionally biting stems, may have been tolerated and part of the smokeways of high-status smokers as early as the 1730s. For example, rule 3 of the tobacco brotherhood states that it was not allowed to pull a pipe from anyone's mouth as this risked pulling out their teeth (Anonymous 1730s, paragraph 3). Similarly, Rule 22 states that if anyone should accidentally pull a pipe from anyone's mouth and thereby breaking it, the pipe should be replaced with another and a fine of five rolls of "select tobacco" be paid to the brotherhood (ibid. paragraph 22). Rule 12, on the other hand, states that smokers under the age of 19 *should* have their pipes pulled from their mouths and broken (ibid. paragraph 12). These rules all suggest that smokeways involving clenching of pipes, or at the very least holding pipes between the teeth while smoking them, were not necessarily considered offensive and may seemingly even have been acceptable at the time.

The works of Bellman also connects stumps – referred to as *nubb* – to workers and poorer smokers. The previously mentioned addendum to Fredman's 43rd epistle known as *Si fäblenubben* (Bellman & Steffen 1916, p. 282), a *nubb* is mentioned as being in use while chopping wood. As this is an activity that normally requires the use of both hands, it is safe to assume that the nub or stump is held between the teeth of its smoker.

It is, however, important to note that long pipes can also be lodged between the teeth while being supported by a hand or by a tabletop, as shown in Holm's depiction of men playing cards. As documentary evidence indicates that intact pipes were preferred by the wealthier classes, this suggests that any potential bite marks resulting from these particular smokeways would be located on or near to finished mouthpiece-ends rather than on broken-off stem fragments.

There is also archaeological and documentary evidence that indicate that preemptive measures would have been taken by some smokers to avoid damaging teeth, lips, and/or pipes while clenching stems or mouthpieces between the teeth; Goosequills, Rothof states, "are placed by tobacco smokers on the ends of pipes so that the teeth are not harmed" (1762, p. 157). Another way to protect teeth and lips while clenching a pipe is by wrapping the mouthpiece or the part of the stem intended for clenching with textile thread. While currently unknown from the archaeological record in Sweden, stem or mouthpiece fragments with surviving pieces of quill as well as wrapped in thread have been recovered in Copenhagen, Denmark (figs. 88a and b). Based on Rothof's description, there is reason to believe

²⁰⁸ [...] tobaksrökande i allmänhet är en hinderlighet ifrån och under alt slags arbete, det kan ingen ärlig man neka med upriktighet: – äfwensom at flera skulle blifwa nödsakade at göra något, endast för at icke leds ihjäl, om de woro utan tobakspipa (Tham 1799, n.p.).

that such measures were taken in Sweden as well.²⁰⁹ These examples show that a lack of bite marks on stems and mouthpieces may not be held as convincingly indicative of a lack of smokeways that included clenching.



Figure 88. Stems or mouthpieces fitted with quills recovered from the archaeological record in Copenhagen. Not to scale. Photo by the Københavns Museum/ The Museum of Copenhagen.



Figure 89. A stem/mouthpiece wrapped in thread or yarn to protect the teeth of the smoker from the abrasive clay surface of the stem. Not to scale. Photo by the Københavns Museum/ The Museum of Copenhagen.

An example of what could be termed folk art, a mural from a butcher's home in Norrköping, shows two workers butchering an ox. The description of the mural provided by the Norrköping city museum states that:

²⁰⁹ Glazing and waxing of stems and mouthpieces is another modification of pipes known from the archaeological record. This is more likely to have been done to protect the lips of smokers from sticking to the porous clay than to protect the teeth of the smoker.

The picture is from a preserved wall from a burgher's home in Norrköping. The house was inhabited by the butcher and burgher Ertman Wulf from the 1720s. The painting shows the butchering of an ox which was a commonplace scene from the life of a butcher. The hands [workers], Johan and Nikolaus are carrying out the work, their names are written on their caps. They worked for Wulf between the years 1738 to 1743. This is how we know approximately when the painting was created.

One of the workers, wielding an axe with both of his hands to strike at the ox, is also clenching a pipe between his teeth. Apart from the task being performed, the grey clothes of the subjects indicate that the two men in the painting are to be perceived as workers – commoners. Smoke is billowing out from Nikolaus' mouth, indicating that the depicted pipe is lit, and thus that he is smoking while working. Although it is apparent that the workers are depicted as dressed in accordance with their social status, there is nothing in the depiction of them to suggest mockery or satire. They appear to merely be two men at work, butchering an ox.



Figure 90. Detail of a mural from a wall in the house of Norrköping butcher Ertman Wulf. The worker Nikolaus is clenching a short pipe while butchering an ox. The mural is dated to ca. 1738–1743. Photo by Robert Bergman Carter.

On close inspection, Nikolaus' pipe appears to be a London type 25 and would most likely have been made in either England or Sweden, provided that the mural was created between the years 1738 and 1743. In the latter case it is more likely that Nikolaus' pipe was made in Stockholm than in Alingsås. The stem of the pipe being used is obviously shorter than any pipe known to have been in regular production in any known Swedish or English workshop or factory at the time and would therefore have been considered a stump – a pipe either broken during manufacturing or handling, or by the man himself after purchasing the pipe. This type of smokeways also requires short pipes, as smoking

a longer pipe while wielding an axe would have been unpractical or, in the case of the longest types, most likely impossible.

It is also important to note that Nikolaus' use of a short pipe could be the result of him subscribing to smokeways that included the continued use of pipes that may have been intact when purchased. As discussed above, it is often difficult to determine how and when a pipe was broken. It is noteworthy that this painting was created within a timeframe when archival sources indicate that there may have been a shortage of pipes in Norrköping.²¹⁰

A later example of a pipe that is shorter than any pipe in regular production clenched between the teeth of its smoker is an aquarelle by Johan Fredrik Martin that shows an elderly woman smoking while sewing. The woman's dress implies that she does not belong to the upper classes and the smokeways depicted are likely to have been included to reinforce this impression. The connection between tobacco smoking, clenching, and labor is once again linked to smokers at the lower end of the socioeconomic scale.



Figure 91. Äldre dam som sitter och broderar med pipa i mun – Elderly lady sitting and embroidering with a pipe in her mouth by Johan Fredrik Martin (1755–1816). Photo by Erik Cornelius. Nationalmuseum. NMH 162/2000. CC PDM 1.0.

²¹⁰ See Olof Forsberg's criticism of charters for pipe making issued to the merchant Lindahl presented in several sources in 1741.

A print from a tobacco package made between 1786 and 1801 with the brand-name *Den idoge Tobaks Planteuren* – the industrious tobacco planter, shows a peasant or farmer tilling a tobacco field while smoking a pipe that he is holding between his teeth. First of all, the imagery infers a continuous and chronologically unbroken link between smokeways that involve clenching short pipes and manual labor that spans throughout the studied period. Secondly, as such pre-packaged tobacco was primarily used by relatively wealthy smokers, the label suggests that such smokeways, although evidently linked to and representative of the laboring classes, appear to have been a marker of lower socioeconomic status accepted and acknowledged among upper class smokers at the time. This in turn may have led to avoidance of such smokeways in wealthier circles.

Another depiction of smokeways that involve pipe-clenching is Pehr Nordquist's depiction of *Peder Hästtjuf* – Peder the horse-thief, from the late eighteenth or early nineteenth century (fig. 92). Here, the link between pipe-clenching and undesirables is made explicitly clear.



Figure 92. Peder, the horse thief, is shown clenching a short pipe. *Peder hästtjuf som stulit en häst* by Pehr Nordquist late eighteenth century or early nineteenth century. Courtesy of Nationalmuseum (NMH 581/1924).

10.3.7.1 Concluding discussion

There can be no question about the general link between smokeways that involve clenching of short pipes and stumps, and relatively poor smokers on the lower end of the socioeconomic scale of eighteenth-century Sweden. Depictions of smokeways that involve pipe-clenching and stumps link them to laborers, a butcher's apprentice, peasants and a horse thief. Written descriptions condemning smokeways of the commoners mention smokeways that included a near-incessant smoking, which could only have been possible using short pipes or so-called stumps. Moreover, as observed by authors and depicted by artists presented above, the smokeways portrayed or described must have been performed in both public and private spaces.

Frequency, location and time spent smoking are recurring themes in sources criticizing smokeways that by inference must generally have applied relatively short pipes. These condemnations can be understood as what Stedman Jones (1977, p. 163) refers to as “flashpoints of class conflict” where behaviors and “material situations” contrast starkly to the authors’ perceptions of appropriateness.

However, depictions of smokers clenching pipes between their teeth become increasingly common in Sweden as the eighteenth century progresses, perhaps acting as evidence of an increased general tolerance of such smokeways among the members of upper classes that describe and depict them. There are many possible explanations for an increased tolerance of smokeways that involved pipe-clenching, perhaps reaching as far back as the early eighteenth century. One possible explanation is the plague epidemic of the 1710s during which tobacco smoking was widely encouraged as it was thought that it had preventive effects (Tomson 1711; Döbelius 1711). While I have seen no depictions of the plague of the 1710s from Sweden, a copper plate by Samuel Donnett showing the plague outbreak in Danzig in 1709 (reprinted in Arcini et al. 2006, p. 52) show people from all walks of life smoking without holding their pipes with their hands. Based on medical recommendations from the time, it is possible that similar scenes were played out in Sweden as well.

Another possible reason for an increased acceptance of smokeways which involved clenching in general and smoking broken short pipes in particular, is a lacking supply of pipes described in appeals of the early 1740s that may also have begun earlier. It is also possible that the increased tariffs on imported pipes emanating from the Riksdag of the Estates of 1734 had an impact on the smokeways of the very poorest smokers. As pipes became more expensive or scarce, some people may have been forced to use them for longer periods of time compared to times when pipes were available and/or more affordable. In turn, this may have led to smokeways that employed both short and broken pipes becoming more widespread. This may also have implications for interpretations of differentiating smokeways based on pipe fragments recovered at sites that are remote from sources of new pipes.

There is both documentary and archaeological evidence that show that a specific form of clenching to some degree was also part of the smokeways of people higher up on the socioeconomic scale. Long pipes can be held between the teeth as long as they have support from either hands or a surface on which the stem or bowl can rest. As this does not require that the pipe is held with much force, it is questionable if such smokeways will have resulted in significant bite marks on stems or mouthpieces or in pipe notches in teeth visible on human remains. The fact that measures may also have been taken by some smokers to protect their teeth is also an aspect worthy of consideration. While teeth with pipe notches may have been acceptable for some smokers to have, the lack of such notches should therefore not be taken as evidence of non-smokers. Similarly, a lack of bite marks on stems does not exclude the possibility that the stems were covered in perishable materials such as twine or quills that protected the teeth of their smokers. Bite marks and pipe notches do, however, suggest that the smokeways that created them were acceptable in the socioeconomic segment that the smoker who created them or wore them belonged to. However, the sources presented above suggest that shallow bite marks on a mouthpiece of a polished pipe and deep grooves on unpolished broken pipes are markers of different and differentiating smokeways.

While pipe-clenching was condemned in the seventeenth century, it is notable that clenching appears to have become fully acceptable during the nineteenth century. Beginning around 1840, pipe makers in England started molding mouthpieces with nipples or buttons on short pipes, most likely to facilitate clenching (Higgins 2017), and Swedish pipe makers followed suit (fig. 93). From a perspective that considers differentiating aspects of smokeways, the intentional alteration of this material element also indicates a shift in meaning and perception of pipe-clenching.



Figure 93. The price list of Andreas Gulbrandson's pipe workshop in Torpsfors from the 1890s (Åkerhagen 2012a, p.46). Note the nipple or button mouthpieces on each pipe intended to facilitate so-called pipe clenching.

Smokeways that employed cheap, coarse, utilitarian pipes for extended periods by their intended users and in public places would have functioned as visible and recognizable expressions of frugality and thrift. While condemned, they would also have acted as indicators of both the appropriateness of the ideals of the time as well as the perceived success of mercantilist and protectionist policies, both which underpinned the embargoes against foreign pipes. It is also important to note that smokeways of commoners applied at least part of the medium-length segment and short pipes, stumps, and clenching, while contrasting in taste and refinement, would also have provided a useful and recognizable backdrop for more genteel smokeways. It is therefore possible that smokeways that made use of stumps and clenching may have been tolerated and even encouraged by smokers belonging to the higher classes.

It is possible that concepts of partitioning of time may have affected how smokeways were perceived by the upper classes during the eighteenth century. Smokers on the upper end of the socioeconomic scale are consistently shown smoking while at leisure. Meanwhile, many depictions of commoners and laborers show them smoking while performing chores of different sorts. Contradictorily,

criticisms directed towards the smokeways of commoners and laborers often state that smoking kept them away from work. While it is true that carving tobacco, packing and lighting pipes would have momentarily distracted people from working, one possible interpretation of this is that the authors of these often-condemnatory remarks represent the upper classes, whose ideal smokeways were either justified via medicinal use or performed at leisure in recreational settings. Smoking, perhaps primarily as a symbol of leisure time for many of the authors of these recommendations and condemnations, when observed as being carried out by laborers and peasants in situations where labor was simultaneously performed, would therefore have contrasted with their notions of appropriateness.

It is questionable if peasants in eighteenth-century Sweden even had a concept of leisure time. Chores ranging from fetching water and firewood, cooking, fieldwork, tending livestock, sowing and harvesting, to maintenance of clothes, tools, furniture and buildings meant that labor was almost never ending. Holidays mandated by the liturgical year and harvest festivals may have provided some respite, yet with the exception of Hilleström's depiction of a harvest feast – peasants are also seen and described as smoking nearly constantly.

Condemnations of smokeways that included near-incessant smoking, and the use of stumps and short coarse pipes can at first glance be understood as criticism against a lack of taste among those who practiced them. However, stumps and stems with bite marks can also be seen as material expressions of institutionalized disenfranchisement, poverty and frugality of smokers whose perceptions of pipes were primarily as utilitarian objects. The evidence presented above also indicates that such traces can be held as material evidence of smokeways of people whose concepts of the partitioning of time were almost inconceivable to the people who described or depicted them.

11 Concluding discussion

11.1 A brief summary and concluding discussion

Clay tobacco pipes are nearly ubiquitous in the Swedish archaeological record from the time around the 1630s and onward. While there are Swedish publications that suggest that clay pipes may have carried socioeconomic connotations, archaeologists in Sweden have primarily seized upon dating methods offered by typologies and lists of known makers to apply pipe fragments for chronometric purposes. The bulk of the pipe research and analyses published between the late 1980s and the early 2020s has been produced by Arne Åkerhagen, *pro bono* and on the behest of the contract archaeology firms that made use of his knowledge, and through the Tobacco and Match Museum, now the Snus and Match Museum in Stockholm.

Pipe studies in countries such as England and the Netherlands have recurrently noted both diachronic and synchronic variations in attributes of archaeologically recovered pipes. In these countries, variations in style and production quality have, among other topics, been linked to socially differentiating consumption patterns. As such, attributes of pipe fragments related to socioeconomic status via relative price as based on an understanding of industry standards are recorded and considered as parts of archaeological field reports. However, as noted by Craig Cessford, “clay pipe studies remain under theorised” (2001, n.p.) and clay tobacco pipes are perceived of as “treated in a vacuum” (ibid. p. 86).

In order to remedy this under-theorization, this study suggests that fragments of clay tobacco pipes should be understood and interpreted along the same lines as material remains of food and drink. Drawing heavily from James Deetz’s use of the term *foodways*, a heuristic term applied to conceptualize differentiating aspects of the consumption of food based on archaeological and documentary evidence, this study sets out to examine interpretative potentials of pipe fragments from a perspective that considers the existence of differentiating smokeways.

Drawing also on social practice theory as presented by Shove, Pantzar and Watson (2012), tobacco pipe smoking is defined as a practice with socially differentiating variations. Variations in a practice can be traced by observing the elements, with variations, that they consist of – knowledge, meaning and material – and how links between these elements are formed. Clay tobacco pipes for one, it is argued, are material elements with internal variations. Moreover, differences in their use would have meant different things to both practitioners and beholders in the know, and as such would have signaled recognizable classifying levels of knowledge and taste.

As shown by both documentary and archaeological evidence, tobacco smoking was a ubiquitous practice in Sweden in the eighteenth century. This means that it was a consumption practice performed contemporaneously by carriers from all socioeconomic segments in eighteenth-century Sweden. Eighteenth-century Sweden was a highly hierarchical society where people belonged to social classes referred to as *stånd*, roughly translated to social estates. This socioeconomic differentiation was enforced through practices intended to signal differentiating social recognizability. In the words of

Leif Runefelt “belonging to a social estate was not immediately visible, but had to be constantly staged through clothes, objects, rites, gesticulations, speech, rooms, places, and so on” (2015, p. 43 [translation by author]).

In turn, this infers that a practice that is socially ubiquitous is likely to have and have had differentiating and recognizable variations in order to uphold this social order. Drawing on Alan Warde’s statement that “it is because practices are internally differentiated that they are able to generate disputes about taste” (Warde 2005, p. 139), this study argues that the practice of tobacco smoking, due to the fact that it was practiced by members of all socioeconomic segments of eighteenth-century Sweden, was differentiated and differentiating.

In order to approach and visualize potential differentiation within the practice of clay tobacco pipe smoking, this study proposes that there were (and still are) different and differentiating ways to smoke tobacco. Fragments of pipes, when considered as remains of material elements of smokeways, and combined with documentary sources describing these smokeways, can thus be allowed to act as evidence for and means of interpretations approaching practice elements of meaning and knowledge.

The first aim of this study has been to address the research questions *what pipes were available to smokers in eighteenth-century Sweden? and which characteristics still visible on pipe fragments recovered from the archaeological record are associated to inexpensive and expensive pipes respectively?*

Documentary sources emanating from policymaking committees and governmental sources explicitly state that material elements employed by smokers – clay tobacco pipes – had socioeconomically differentiating attributes. Long polished pipes were appropriate for wealthy smokers while short and coarse pipes were appropriate for smokers of lesser means. Prior to the introduction of two consecutive embargoes against foreign clay tobacco pipes, policymaking institutions, which also regulated the domestic pipe making industry by granting charters for pipe making, highlight the need for domestic pipe factories to maintain and uphold the availability of these differentiating and recognizable material elements imported from England and the Netherlands. This closely mirrors concurrent notions of socioeconomic recognizability through things previously observed by Leif Runefelt (2015).

As a response to these demands, Swedish pipe factories and workshops attempted to emulate and mimic industry standards of clay pipe production from England and the Netherlands. These are the countries from which pipes, i.e. differentiating material elements of smokeways, had traditionally been imported. In the initial phases of the Swedish pipe making industry of the eighteenth century, this was done by employing master pipe makers from the Netherlands, Germany, and England at factories located in Stockholm and Alingsås. By using production methods applied in these countries, Swedish pipe factories responded to demands placed on them by policymakers to ensure continuations of both charters and embargoes, they also attempted to ensure an unbroken tradition of recognizable and differentiating smokeways.

This resulted in a geographic and chronological morphological covariance that can be observed through comparisons of contemporaneous English, Dutch, and Swedish clay tobacco pipes from the 1740s onwards. However, not only bowl-forms and relative stem lengths were copied by Swedish pipe factories – variations in operations related to perceptions of production quality and price were also mimicked. However, it is noteworthy that production quality standards at Swedish pipe factories and workshops rarely if ever seem to have been able to match the quality standards of Gouda pipes. A comparison of descriptions related to manufacturing steps from several pipe factories, tools for pipe making mentioned in estate inventories of pipe factory owners, and job titles of pipe factory workers gathered from census-, tax- and household examination records to intact pipes made at Olof

Forsberg's pipe factory in Stockholm in 1759 show variations to the operations applied in the making of different pipe types. The combination of these sources shows that the more expensive long types, intended for the smokers of the wealthier classes, were afforded more care during manufacturing than the less expensive short pipes.

The different operations applied in the manufacturing of different pipe types resulted in variations in attributes that often remain visible on fragments of pipes recovered from the archaeological record. In other words: it is possible to distinguish fragments of relatively expensive pipes from fragments of relatively inexpensive pipes based on attributes that are the result of different steps taken during their manufacture. As shown by documentary sources, these variations were considered as essential for upholding socioeconomic differentiation.

Throughout the Swedish pipe industry of the eighteenth century, clay pipes were divided into segments and priced primarily based on stem length ranging from short, to medium, and long, and secondarily on whether a type was polished or decorated or not. This is supported by comparative studies of price information for different pipe types made at different factories and workshops. This comparison also shows that their output was relatively standardized in terms of relative stem length, applications of polishing and other aspects related to production quality, types, and, as such, prices. Price information also shows that polished pipes, regardless of stem length, were consistently more expensive than unpolished pipes.

There are also documentary sources indicating that polished short and medium-length pipes were manufactured at pipe factories in Stockholm. Examples of such are Carl Aspegren's factory and the factory that belonged to Daniel Almqvist (see Appendix I and Appendix II). However, documentary evidence suggests that it was primarily pipe types in the long segment that were polished. Based on comparisons of documentary sources, including manufacturing descriptions, it is therefore possible to conclude that fragments of expensive pipes are more likely to exhibit parallel striations which are the result of these pipes having been polished with tools tipped with an agate, flint or glass tip.

The comparison of manufacturing descriptions to pipes from Olof Forsberg's factory indicates that polishing of stems may have been particularly relevant as a differentiating attribute for eighteenth-century smokers. One example of this is the long-stemmed armorial pipes with the greater coat of arms of Sweden, which are consistently listed among the most expensive types made at factories in Stockholm and at the Alingsås factory beginning in the 1740s and into the nineteenth century.²¹¹ Bowls of pipes that have decorations in molded relief are not possible to polish without smearing the motif. Therefore, polishing is only possible on the surfaces of the stems and, in rare cases, surfaces of bowls that lack decoration. It is currently not known if medium-length pipes with bowls with this design, known to have been produced by several makers in Stockholm beginning in the last decades of the eighteenth century, were polished or not.

As shown by the study of the Forsberg assemblage, far from all expensive pipes were polished, and some of the most expensive pipes show signs of only having been polished on their stems. This strongly suggests that any fragment of a pipe manufactured in a pipe factory or workshop in eighteenth- and early nineteenth-century Sweden with signs of polishing should be seen as evidence of a more expensive pipe. As such, this finding suggests that previously overlooked undecorated stem

²¹¹ Armorial pipes were most likely never manufactured at the pipe factories in Falun, Norrköping, Arboga or Karlskrona. There have been no fragments of such pipes recovered among the wasters from Karlskrona or Varberg. Meanwhile, armorial pipes are not among pipes listed in documentary sources related to the factories in Falun, Norrköping and Arboga.

fragments possess a significant source value for interpretations of socioeconomically differentiating smokeways. Credible results of variations in production quality can only be obtained by including as many pipe fragments as possible in analyses of surface finish.

Aside from a lack of polishing, pipes in the least expensive short segment, primarily intended for and manufactured for use by peasants and commoners, also show distinctive attributes that would have been immediately recognizable in their contemporaneity. As a result of having been handled more indiscriminately than their longer counterparts, which is also confirmed by contemporaneous manufacturing descriptions, pipes from the Forsberg assemblage in this segment display coarser surfaces and warped stems. As types and prices of other pipe makers, earlier and later, are in general accord with types and prices known from Olof Forsberg's factory, it can be assumed that these attributes were also relatively standardized across the pipe making industry throughout eighteenth-century Sweden and into the first decades of the nineteenth century.

A relative standardization of types, particularly in the short segment, is confirmed by several documentary sources as well as examples of pipes listed in Åkerhagen's catalogs (2012b and 2012c). For example, a letter from the *Hallrätt* in Stockholm from 1766 (SE/ULA/10018/3 1750–1821, n.p.) compiles wages for manufacturing different types of pipes from the factories in the city. Not only do stem lengths and type names match pipes known from other Swedish factories, variations in piece rate wages also infer variations to care taken during manufacturing of different types of pipes as shown in manufacturing descriptions and by different pipes. This aspect of standardization of the Swedish pipe industry can be explained as expressions of notions of social recognizability through smokeways: regardless of which factory or workshop pipes came from, variations in stem lengths, bowl forms and surface finish were generally expected to be, and produced to be, as close to identical as possible.

While stem lengths, general bowl morphology, and surface finish appear to have been relatively standardized, archaeologically recovered pipes and naming variations show that details such as decorations on bowls and marking traditions varied between factories. For example, a wider range of types within different length-segments, named after decorations and surface finish, were available from factories in Stockholm than from other factories in Sweden. This shows that there is classificatory congruence between pipes and the documentary record that can be explored further.

Many of these pipes can be more or less tentatively identified and paired with price information from archival sources. For example, bowls with a crowned heart in relief, known from archival sources as heart pipes, were among the least expensive pipes in the medium-length segment of several factories in Stockholm. Although coarse and relatively inexpensive, such pipes would have been contrasted with other contemporaneously available less and more expensive types. One pipe-type named after a bowl-decoration, the three crowns, appears to have lost its function as a marker of high-status as the eighteenth century progressed. This conclusion is partially based on the fact that pipes referred to as three crowns undergo a significant decrease in price throughout the eighteenth century. Another explanation may be that the type's depreciation of *éclat* can be traced to the fact that three crowns were used as parts of marks on shorter and lower quality pipes made at several factories.

These aspects demonstrate the necessity of a detailed understanding of contemporaneously available factory-specific types, their decorations and surface finish in order for pipe fragments to be used both for chronometric applications and for estimations of prices paid for pipes. This standardization also has consequences for applications of many Swedish clay pipes for narrow chronometric purposes. The homogeneity of the output of the Swedish clay pipe industry resulting from this standardization may

for example explain why there are so many workshops and factories from which no archaeologically recovered pipes have yet been identified (see Appendix I).

Indeed, unless fragments show factory-specific marks or decorations that allow them to be coupled to a known factory or workshop, they are currently difficult to apply for narrow dating-purposes. This highlights the need for further research systematically aimed at identifying specificities of different pipe factories and workshops across Sweden. However, as industry standards remained relatively unaltered throughout the period, the attributes of marked and unmarked pipe fragments may still be applied to obtain an understanding of relative costs of pipes in assemblages. As such, it is therefore hoped that this study has successfully identified characteristics and attributes relevant for identifying and distinguishing inexpensive from expensive pipes in future analyses.

Styles (quoted in Berg 2005, p. 6) notes that several of the consumer goods that were introduced during the early-modern period became:

indispensable props in the genteel performances that constituted politeness, whether in the dining room or the assembly room. Your gentility was judged by whether you owned the right items, whether they were sufficiently genteel in their design, and whether you were capable of using them in the right way.

As, material elements proper for different smokeways have been tentatively identified, the study turns to address matters related to the right and wrong ways of using them - *what were the rules of appropriate smoking in eighteenth-century Sweden* and *which group practiced what type of smokeways and when*. Dennis Gojak and Iain Stuart note that clay tobacco pipes, as they can often be narrowly dated, are ideal artifacts to couple with historical sources “to enable inferences about the social context of [their] use” (1999, p. 38). This means that the pipes themselves, how, where, why, and around whom they were used and discarded are aspects that are explored based on depictions and written descriptions of smokeways. Beyond identifying industry standards, an aim of the study is to identify if traces left by smokers can be tied to group-specific smokeways that are also depicted or described in documentary sources. Moreover, sentiments of these smokeways depicted in pictorial sources or expressed in written sources are believed to infer degrees of appropriateness.

Documentary and pictorial sources generally confirm that smokeways of different social classes differed significantly throughout the studied period. Unsurprisingly, short pipes and so-called stumps are continuously associated with smokeways of lower classes – commoners, peasants, and laborers of both biological sexes throughout the period. Depictions of smokeways that made use of such pipes show them in use during manual labor and in the hands and mouths of smokers at the lower end of the socioeconomic scale. Simultaneously, condemnations of smoking frequencies and locations for smoking infer that infringements and violations of appropriate smokeways of the wealthier classes were primarily conceived of as carried out by smokers of lesser means. The smokeways condemned by the upper classes are also interpreted as necessitating the use of shorter pipes, as long-stemmed pipes are not possible to apply in smokeways performed during manual labor.

However, documentary evidence shows that smokeways that employed short-stemmed pipes may not have been exclusively associated with smokers of lesser means. References to relatively expensive short pipes with a better finish, both imported and domestically manufactured, exist from the first half of the eighteenth century. While not conclusively proven by this study, it is possible that the embargoes of 1741 and 1747 resulted in clearer distinctions of intended consumer groups for different lengths and types of pipes and their associated smokeways.

A wider selection of pipes, which included long, medium and short pipes with polished surfaces as well as coarser short pipes meant that recognizability of social differentiation of wealthier smokers could potentially also be upheld by the shorter segments of pipes available on the market prior to the embargo of 1741. For example, it is important to note that the rules of the brotherhood of tobacco most likely predate the embargoes of the 1740s. Regarding stem lengths it appears as if the availability of long and short pipes of lower and higher qualities may have led to the use of long and short pipes among wealthier smokers. This is more likely to be true for urban areas in which retailers would more likely carry a wider selection of pipes than retailers in more rural locations.

The combination of rules 1 and 13 of the tobacco brotherhood indicates that pipes were considered as individual possessions that were not intended for sharing. As opposed to tobacco which, according to several rules, was to be generously shared, one person was expected to have his own pipe, preferably two. Moreover, rule 1 left the selection of stem lengths and, supposedly, type, to the choosing of smokers. As such, the implication is that there was a strong association between a smoker and his pipes. By allowing for individual expression through display of different lengths of pipe, the rules allow for pipes to function as markers of social status. Indeed, source material from throughout the studied period indicates that ideally, pipes were individual instruments. According to the rules of the tobacco brotherhood, pipes were to be used, cleaned with brass wire, and looked after until they broke beyond a length shorter than what was considered appropriate to the smoker – provided that pipes were not shorter than two or four inches.

Based on both archival and archaeological evidence, the embargoes of 1741 and 1747 appears to have had a particularly negative effect on the availability of polished pipes of 18 inches and shorter – except for a pipe referred to as short porcelain from Carl Aspegren's bankruptcy inventory from the mid-1730s, a medium porcelain from Daniel Almqvist's estate inventory, and the medium length armorial pipes of the late eighteenth century, short pipes with names referencing polishing or prices corresponding to a higher production quality are not known from archival sources, and no such intact pipes have been recovered from the archaeological record.²¹²

Depictions and descriptions of smokeways of commoners commonly include pipe-clenching. This particular aspect of smokeways may result in attributes visible on both pipe stems in the form of bite marks and human remains in the form of pipe notches in the teeth that held the pipes. However, an increase in the number of depictions showing pipe-clenching peasants and commoners indicate that such smokeways may periodically have experienced increased acceptance among the upper classes during the studied period.

Smokeways of the upper classes that included biting of mouthpieces of long pipes is also found to be an aspect worthy of consideration when analyzing differentiating smokeways based on archaeologically recovered pipe fragments and human remains. Both documentary and archaeological evidence show that measures may also have been taken to protect teeth and pipes. Goose quills and thread can be placed on stems and mouthpieces to act as barriers between the abrasive clay and the teeth of the smoker. This suggests that a lack of bite marks on stems and mouthpieces is not conclusive evidence of a lack of smokeways that included pipe-clenching. Similarly, this suggests that a lack of pipe-notches in osteoarchaeological remains is not conclusive evidence for non-smoking.

²¹² It is possible that such pipes were indeed manufactured at any of the factories and workshops from which no archival sources stating names or prices of pipes survive. However, the relative homogenization of the Swedish pipe industry apparent in the mentioned archival sources from the period suggest that this was not likely the case.

Equally unsurprising is the association between long-stemmed pipes and smokeways of the upper classes, particularly following the embargoes of the 1740s. The ideal smokeways of high-status smokers applied long pipes, which through their fragility require more or less static smoking to avoid breaking the pipes. These pipes also require that pipes are either held by their stems or rested on a tabletop rather than held solely between their smokers' teeth. This means that smokeways that applied these pipes were also strongly associated to leisure time of the wealthy or time spent not performing manual labor.

Medicinal aspects are also presented as arguments justifying the use of long-stemmed pipes among the upper classes and shorter-stemmed pipes among the lower classes. For example, the cooler smoke achieved by the use of pipes with long stems and a slow puffing-cadence is a recurring theme in household books when presenting acceptable smokeways. A controlled, low frequency of smoking is also among recommendations that can be interpreted as expressions of acceptable smokeways. This stands in contrast to the less controlled, highly frequent smokeways displayed by commoners smoking short pipes, found lacking in taste and genteel refinement.

It is also important to note that production volumes of the longest and most expensive types made at the factory in Alingås, No. 7 and armorial pipes, indicate that the availability of these pipes may have been intentionally restricted. This means that the fanciest pipes, although possibly technically affordable for smokers of lesser means, may not have been available on the market. As reports from the stark majority of pipe factories and workshops are not as detailed as reports from Alingsås, it is not possible to say if this pattern was repeated elsewhere.

This can also be construed as both long and short pipes, and the smokeways that employed them, successfully filling their intended recognizably differentiating purposes. However, there is also evidence that suggests that these ideals were both in place and intentionally ruptured in the 1780s; according to the diary of Axel von Fersen (1860, p. 84), King Gustav III provided members of the peasant estate with pipes during the Riksdag of the Estates of 1786. It is highly likely that the pipes provided were the long-stemmed armorial pipes known from archival sources as *Gustavs Vapen* (or variations thereof) – the arms of Gustav. Price information for this type suggests that their stems were long and that they had a finish that was superior to pipes intended for representatives of the House of the Peasantry and commoners, and therefore not appropriate for the smokeways of commoners.

Conceptions of smokeways that applied medium-length pipes and stub-stemmed bowls, so-called Turk's bowls, are more difficult to determine based on the sources consulted. For example, while the use of wooden stems used for stub-stemmed bowls of both clay and meerschaum are condemned (from a medical perspective), pictorial and documentary evidence indicates that the use of stub-stemmed pipes was near-ubiquitous. It is therefore believed that stems made from perishable materials were the more significant signifier of status in smokeways that employed stub-stemmed pipes.

Moreover, alongside the gradual diffusion of meerschaum bowls, makers of stub-stemmed clay bowls began mimicking meerschaum by painting them white or as seasoned, possibly as early as the late eighteenth century. As any juxtapositioning of a faux meerschaum bowl made from clay to a genuine meerschaum bowl would most likely have laid bare this mimicry, it is likely safe to assume that such bowls were intended for use among smokers of lesser means.

Regarding medium-length pipes, recommendations in household books and depictions are not as clear as with long and short pipes. Hilleström's depiction of a harvest festival at Svartsjö castle from the 1780s (fig. 70) show medium-length pipes in use by rural peasants. A relatively contemporaneous depiction of a view over Stockholm by Sevenbom (fig. 69) shows carters smoking medium or possibly

long pipes. In the case of Hilleström's painting, however, it is possible that the smokeways depicted are the results of the generosity of the hostess – the Queen Mother rather than individual choices of the subjects portrayed.

Price information and production volumes show that this is the most likely length-segment in which smokers of lesser means would have been able to compete with wealthier smokers. Relatively affordable medium-length versions of pipes with names alluding to decoration-based names previously reserved for longer pipes begin to appear in price information from makers active in the 1740s and 1750s. One example of this is pipes referred to as three crowns, most likely referring to medium-length versions of pipes decorated with three crowns either stamped or in molded relief on the front of their bowls. Another example is the introduction of medium-length armorial pipes by pipe makers in Stockholm some time in the latter half of the eighteenth century.

Price information also shows that other pipes in the medium-length segment are more likely to have been intended for specific consumer groups and smokeways. It is most likely that polished "*medel porcellin*" at 16 dalers per gross would have stood out when compared to the relatively short and coarse so-called heart pipes at between 3 and 5 dalers per gross which existed contemporaneously. This clearly shows the need for further identification of medium-length pipes in the archaeological record if they are to be applied in analyses of differentiating smokeways.

Documentary evidence also sheds light on aspects related to variations in biographical expectations on pipes based on socioeconomic status. Smokeways that required a supply of fresh pipes appear as primarily associated with upper classes, particularly in the first half of the eighteenth century. Documentary evidence shows that the intentional destruction of pipes after having been used only once or a few times were strongly associated with smokeways of the upper classes throughout the studied period. Similarly, keeping a replacement pipe on hand is both dictated by the rules of the brotherhood of tobacco and portrayed in period artwork (figs. 73 and 83). Both Johan Gabriel Oxenstierna and Carl Michael Bellman refer to broken pipes as present in tavern-settings frequented by assumedly wealthy smokers. This suggests a validity of observing traces of use, particularly residual remains of charred tobacco in archaeologically recovered bowls, and particularly bowls known to represent relatively expensive pipes.

There are also sources mentioning pipe cleaners that indicate that extended use and maintenance of pipes may have been ubiquitously practiced. Pipe cleaners made from brass wires were considered essential as parts of the rules of the brotherhood of tobacco in the 1730s and advertised to assumedly wealthy smokers as manufactured at the Wedevåg manufactory in the 1750s. A few years earlier, Linnaeus notes that grass, referred to as *pip-hwen* – pipe grass (*Calamagrostis arundinacea*) is "a capable pipe cleaner" (1749, p. 10), that was more likely used by smokers of lesser means. Examples of pipe tools intended for scraping out tobacco from pipe bowls held by Swedish museums also show that pipes were generally not considered single-use items.

Moreover, recommendations directed at wealthy smokers from the 1750s, 1760s, and 1780s indicate that seasoned long clay pipes may have become fashionable among wealthy smokers at the time. It is possible that such pipes became fashionable as a result of the introduction of meerschaum pipes, which become colored as a result of extensive use. In other contemporaneous circles, seasoned pipes may have been a symbol of untidiness, poverty or both. According to a short notice in *Carlstads Weckotidningar* (05-15-1784, n.p.), "old, dirty and oily pipes" could be "renewed" by covering them with embers and glowing coal for fifteen minutes and then placing them in fire. This can be interpreted as seasoned long clay pipes would display both the expenditures for the pipes themselves

and that their smokers were cautious, whose gait and gentility ensured an extended survival of the pipes.

These sources also imply that views on seasoned clay pipes may have shifted diachronically and varied synchronically and were likely also dependent on the types of pipes employed. In other words, views on seasoned inexpensive pipes used by smokers of lesser means would not likely have been perceived in the same manner as seasoned relatively expensive pipes in use by upper-class smokers. Identifying such smokeways in the archaeological record therefore relies on a complex set of factors ranging from find context to production date-span and signs of use.

The fourth research question addressed by this study is *which of these smokeways remain visible on the pipes and fragments themselves*. As shown by manufacturing descriptions and pipes recovered from the archaeological record, Swedish clay pipe manufacturers adapted their production methods according to idealized smokeways of their intended consumer groups. While it may seem tautological to link short coarse pipes to smokeways of lower classes and long and polished pipes to smokeways of the upper classes, this study indicates that a better understanding of contemporaneously available types and industry standards can be a primary step in analyses aimed at identifying conformations and deviations, alterations and ruptures of notions of appropriateness of the smokeways that created them.

With a relatively high certainty, this study has shown that certain pipe types made at Swedish pipe factories and workshops throughout the eighteenth century and into the nineteenth century seem to have been continuously and inextricably linked to smokeways of specific socioeconomic segments. A prime example is the short and coarse pipes marked on spurs or heels with an N and a number ranging from 1 to 3 or 4. These were unquestionably manufactured with smokeways of people of lesser means in mind. Similarly, people who used coarse pipes in the medium-length segment, such as the so-called heart pipes with a crowned heart in molded relief on the fronts of their bowls would have been instantly recognizable as belonging to a low-status group. Eighteenth-century pipes, not stub-stemmed bowls, made from red clay generally also fall into this category. On the other end of the scale are the longest polished pipes. Price information, manufacturing descriptions, production volumes, depictions, and written recommendations unequivocally state that these pipes were exclusively intended for the smokeways of the upper classes.

This means that an increased understanding of industry standards and the traces that variations to production have left on pipe fragments enables further questions to be addressed. One such question is whether or not specific pipe types deposited at particular sites should be understood as their smokers conforming to idealized group-specific smokeways. Potential classificatory congruence may for example be applied to gain a better understanding of individual fragments potential roles as populuxe goods – as obtainable luxury items intended for smokeways of the upper classes yet applied by smokers of lesser means as material elements potentially applied in negotiations of socioeconomic status that challenged these ideals.

However, the study also shows that a plurality of factors may have played intersecting roles in both the creations of and views on differentiating smokeways that have left traces in the archaeological record. For one, documentary evidence infers that sentiments of smokeways that are likely to have left particular traces in the archaeological record shifted diachronically and varied both synchronically and geographically. Examples of this presented above are smokeways that applied seasoned pipes and smokeways that resulted in bite marks on stems. This suggests that chronometric attributes of pipes must be linked to relative price via identification of type and surface finish, to signs of use ranging in form from bite marks to potential seasoning and/or residual charring on the insides of bowls.

These shifting and varied sentiments on particular smokeways can occasionally and with varying degrees of likelihood be traced to larger events, potentially showing the interconnectedness of upheavals of social order through consumption behaviors to factors ranging from policymaking to pandemics. For example, medicinal use of tobacco smoking is another factor that may have affected views on smokeways that must also be considered. A hypothesis is that views on aspects of different smokeways may have been altered as a result of the plague outbreak of 1710. As tobacco smoking was considered a prophylactic for the disease, women of all social classes were encouraged to smoke. It is also likely that this belief also resulted in a potentially temporary increased tolerance for smoking in public and while performing manual labor. It is also possible that beliefs in the prophylactic abilities of smoking led to an increased demand for pipes that may also have resulted in shortages of pipes. In turn, as smokers were forced to make do with the pipes they had, this may have resulted in less negative views on both extended use of pipes and an increased use of pipes with broken stems among groups who would previously have considered such smokeways unthinkable.

It seems likely that several of these altered views were temporary and chronologically linked to the plague outbreak. However, several rules of the brotherhood of tobacco from the 1730s indicate that pipe-clenching, the use of short pipes, and continuous use of pipes may have remained as relatively acceptable elements in smokeways of the upper classes. Views of such smokeways may once again have been altered as indicated by links between longer and finer pipes and the smokeways of the upper classes are explicitly stated by policymakers in the 1740s and continuously repeated throughout the studied period.

Another example worthy of consideration is the possibility that King Gustav III endowed members of the peasant estate with fancy long pipes during the Riksdag of the Estates of 1786. This gesture infers confirmations of a contemporaneous and prevailing social order upheld in part through material expectations on socioeconomically differentiating and appropriate material elements of smokeways. Simultaneously, and impossibly without these aforementioned connotations, this gesture appears to have been an intentional attempt on behalf of the king at rupturing these material expectations among the nobility.

This may have consequences for interpretations of the socioeconomic significances of smokeways that employed the pipe-type known as the arms of Gustav as well as of all long-stemmed and fancy pipes deposited in the archaeological record after the year 1786 and perhaps a few years earlier. As long-stemmed pipes (and more affordable medium-length pipes with armorial motifs) were all of a sudden obtainable for groups previously excluded from partaking of such pipes, it is likely that the meaning element of such pipes degraded in the eyes of the nobility. Smokeways that applied expensive meerschaum bowls and polished long-stemmed Dutch pipes, as indicated by pictorial and documentary sources, appear to have maintained a differentiating function for another few decades. Thus, many traces of smokeways ranging from type and relative cost to signs of use in the form of seasoning and bite marks must be chronologically contextualized if they are to be applied in analyses of socioeconomically differentiating consumption behaviors.

As shown by this study, there are pipe types made at Swedish pipe factories and workshops throughout the majority of the eighteenth century that contradict the claim that pipes must be firmly dated to have significances in interpretations of socioeconomic status. Indeed, some Swedish pipes were, and remained, inextricably linked to social status throughout the studied period. However, the credibility of pipe fragments, including traces of their use, as socioeconomic evidence can be significantly increased when they can be firmly dated. Moreover, this study, as well as Huggert's (2008) has shown that there may be interrelational reciprocity and feedback between smokeways and chronometric

attributes of pipes; the formation of the archaeological record resulting from smokeways in which unusually extensive biographical expectations on pipes will not be the same as the archaeological record resulting from smokeways that considered pipes as disposable. Conclusions such as these, however, require that both pipe fragments and their find-contexts can be securely dated.

A general observation based on criticism directed towards the smokeways of the poor as well as recommendations for proper smoking among the wealthy is that they are often based on differing notions of partitioning of time. Tasteful smoking required fancy long pipes as well as time and places dedicated to smoking. Meanwhile, among commoners and peasants, pipes could seemingly be smoked anywhere and at any time, leading to condemnations and bewilderment among witnesses from the upper echelons of society. The pipes used by commoners, however, are hardly ever remarked upon, making it seem as if the active selections of pipes among commoners conformed to notions of idealized and recognizable smokeways.

This study has shown that a plurality of potential factors needs to be considered in analyses of smokeways. General patterns and deviations from these, resulting from a relatively homogenized output of Swedish pipe factories and workshops are possible to observe on pipes from the archaeological record. Meanwhile, potentially differentiating traces of use-wear, or indeed, a lack of them, require levels of contextualization if they are to be convincingly applied as socioeconomic evidence beyond indications of differentiating smokeways.

As shown by the list of pipe factories and workshops in Appendix I below, there are many pipe factories and workshops with a known production to which no pipes have been identified. An explanation for this may be that the homogeneity resulting from the general standardization of the industry as a whole makes it difficult to distinguish the products of one factory from another. It is hoped that detailed comparative and deductive studies of contextually excavated pipe fragments combined with this list will shed further light on both the chronometric and socioeconomically differentiating interpretative potentials of the output of the Swedish pipe industry and the smokeways in which its pipes were employed.

Any detailed study aimed at exploring synchronic and/or diachronic aspects of smokeways based on clay tobacco pipe fragments, be they unaltered, disrupted, or dynamic, will be facilitated by a recording system that considers attributes resulting from practices presented above. It is therefore my hope that an implementation of the recording system presented in Appendix III may be of use for future analyses of smokeways. By considering and recording attributes of pipes – traces left by their makers and users – the heuristic concept of smokeways can be applied to gain a better understanding of socioeconomic differentiation as well as the living conditions of the people whose actions resulted in these traces left in the archaeological record.

11.2 Future research

This study has shown how a combination of source materials, ranging from archival sources emanating from governmental policy making committees, to archaeologically recovered pipe stems, via death indexes, census records, poems, sketches and surviving manufacturing descriptions can increase our understanding of an everyday practice. All these pieces have been of importance to reach conclusions of production dates of specific types and inferences about sentiments of aspects of smokeways.

Far from all archival materials that I have encountered during my work with this text have been included among the sources consulted, and far from all archives that may potentially be informative have been thoroughly studied. For example, the archives of the Stockholm *Hall- och manufaktur rätt* (SE/SSA/0099) has proven to be a rich source of information that has assisted in specifying production dates of certain makers and the whereabouts of journeymen, apprentices and masters. However, not all protocols and sub-archives of this department have been studied during work with this text. As shown by the archive of the Arboga *Hall rätt* (SE/ULA/10018), information on pipe types, prices, factory staff and other valuable details pertaining to pipe making may have been inadvertently preserved in pleas, submissions and protocols of court hearings. This may also be true for the *Hall rätter* of other cities with pipe factories. As such, there may be remaining archival sources that warrant further studies for a better understanding of the pipe industry and smokeways of eighteenth-century Sweden.

Regarding pictorial sources, the catalog mainly consulted for this study, the online catalog of *Nationalmuseum*, is primarily focused on the preservation of works of art considered high culture. As such, there are several collections held by museums and private collectors that may yet provide further detail to results presented above. For example, folk art in the form of murals, stone carvings, tapestries, and decorations on pottery have only been briefly addressed above.

Regarding chronometric attributes of Swedish pipe types and pipe fragments, this study has shown that much remains to be done if particular types are to be credibly employed for narrow dating purposes. As shown in this study, the output of the Swedish clay tobacco pipe industry was rather standardized. This means that many pipe fragments remain difficult to date narrowly. Detailed studies of marks, decorations, morphology and recurring mold flaws alongside the above suggested contextual approach to identify pipes are some suggestions to employ in order to obtain a higher chronological resolution for Swedish clay tobacco pipes. Identifications of one or a few pipes with specific marks recovered from secure contexts will surely contribute to well defined chronologies of the output of particular factories. Particular attention should be paid to pipes recovered from contexts with a known provenance – shipwrecks and deposits under, or resulting from, well-dated city fires for example.

Future studies of pipes recovered from contexts with secure provenances such as shipwrecks, production sites, and waste deposits with narrow depositional dates will surely shed new light on production-date-spans of many pipes that are currently not possible to date with a high precision. The fact that Åkerhagen was rarely afforded contextual information from his clients is very likely a significant reason why pipes have been misidentified and erroneously dated. Had he known that stems stamped with T. LIUNGREN or marked with A/O on the sides of heels or spurs had been recovered from contexts that were older than he assumed, there can be no doubt that he would have reconsidered his previously stated production dates for these pipes. In other words, it is high time to allow Swedish pipe fragments to be dated synergistically and deductively based on find-contexts, archival sources, and alongside pipes with known production dates and other dateable artifacts and objects ranging from coins to ceramics and results of dendrochronological analyses.

Tentative results of comparisons of bowl-sizes in the Forsberg assemblage presented by Brynja and Åkerhagen show that bowls of long-stemmed pipes are generally larger than bowls of short-stemmed pipes. However, there are also medium sized bowls on long-stemmed pipes. The consistently smaller bowls of all short-stemmed types in the Forsberg assemblage, however, points to a standardization of bowl sizes in this segment. This indicates that contemporaneous relative variations to bowl-sizes may be somewhat indicative of relative original stem length. This finding disproves any claims of reliable

formulae-based dating methods based on bowl measurements. It is, however, worth noting that Dutch pipe research (Duco 1980, p. 194) has also shown that relative bowl size does not correlate to stem length. Any future efforts to link the output of a specific Swedish factory to types known from archival records will likely be able to identify if this was a recurring pattern at other factories.

While this study has focused on outlining what may be perceived as basic and immediate socioeconomic significances of pipes and smokeways related to smokers' *ståndstillhörighet* – their social class, potential correlations between social gender, ethnicity, age, sex, sexuality and smokeways have only briefly been addressed above. Tobacco smoking appears to have been widespread across all social segments of eighteenth-century Sweden, and this study has resulted in tentative indications of certain complexities to perceptions of smokeways that warrant further research. For example, this study has found that some pipe types are more likely to have been considered gendered. With the exception of the plague outbreak in the 1710s, tobacco smoking was considered unsuitable for women from the upper classes. This indicates that pipes made for the upper classes – the longest and most expensive types of pipes – may have primarily been associated with the smokeways of upper-class males. Similarly, pipe-clenching appears to have been strongly associated with lower-class smokers. If these observations are true, smokeways of upper-class males may be visible in the osteoarchaeological record as male crania lacking so-called pipe notches but with lingual staining resulting from tobacco smoking. However, there are many exceptions to consider in such interpretations. Any crania lacking pipe notches but showing signs of lingual staining may indicate that clenching was not considered appropriate in a certain group, or that measures were taken to protect the teeth.

It is my hope that smokeways as a concept can be applied in future studies to highlight further differentiating facets of the near-ubiquitous social practice of smoking. Detailed studies of the geographic and sociodemographic occurrences of particular pipe types is one such example. From a perspective that considers smokeways, the combination of find-contexts, chronometric attributes of the pipes themselves, and an understanding of production quality and the relative prices of pipes has the potential to allow the many pipe fragments that are recovered each year to speak of the society that created them and the experiences and living conditions of the people who made, transported, sold, used, reused and deposited them.

12 Bibliography

12.1 Printed sources

- Agbe-Davies, A. S. 2004. The Production and Consumption of Smoking Pipes along the Tobacco Coast. In: Rafferty, S. & Mann, R (eds). *Smoking and Culture*. Knoxville: University of Tennessee Press. Pp. 273-304.
- Agbe-Davies, A. S. 2016. *Tobacco, Pipes, and Race in Colonial Virginia: Little Tubes of Mighty Power*. New York: Routledge.
- Ahlberger, C. 1996. *Konsumtionsrevolutionen*. Göteborg: Humanistiska fakulteten, Univ.
- Ahlefeldt-Laurvig, J. 1980. Clay pipes from Denmark. In: Davey, P. (ed.), *The archaeology of the clay tobacco pipe. IV Europe 1*; BAR International Series 92. pp. 219–252.
- Andrén, A. 1997. *Mellan ting och text: en introduktion till de historiska arkeologierna*. Eslöv: B. Östlings bokförl. Symposion.
- Angelin, E. 1950. *Hantverkare och fabriker inom svensk tobakshantering 1686–1915*. Stockholm: Nordisk Rotogravyr.
- Angerstein, R.R. 2001. *R.R. Angerstein's illustrated travel diary, 1753–1755: industry in England and Wales from a Swedish perspective*. London: Science Museum.
- Anonymous/Stockholms pipbruk. 1745–1747. *Stockholms pipbruk - samling av trycksaker*.
- Anonymous. 1753. *Wid Stockholms tobaks-pip-bruk, som är belägit, på Södermalm, wid Horns-gatan, emellan den så kallade Kroken, och Horns-tull, tilwärlas, för innewarande år, följande sorter Tobaks pipor, och försäljas fastage-tals til nedanstående pris*.
- Appleby, J. 1993. Consumption in early modern social thought. In: Brewer, J. & Porter, R (eds.) *Consumption and the World of Goods*. London: Routledge. pp. 162–176.
- Atkinson, D.R. 1958. Sussex Clay Tobacco Pipes. *Archaeological News Letter* 6:5. pp. 117–122.
- Atkinson, D.R. 1962. Makers' Marks on Clay Tobacco Pipes Found in London. *Archaeological News Letter* 7:8. pp. 182–188.
- Atkinson, D.R. 1965. Makers' marks on clay tobacco pipes found in London. Part 2. *Archaeological News Letter* 7:11. pp. 249–256.
- Atkinson, D., & Oswald, A. 1969. London clay tobacco pipes. *Journal of British Archaeological Association* 3rd series 32. pp. 171–227.
- Atkinson, D. & Oswald, A. 1972. A Brief Guide for the Identification of Dutch Clay Tobacco Pipes Found in England. *Post-Medieval Archaeology*, 6:1. pp. 175–182.
- Ayto, E. 1979. *Clay Tobacco Pipes*. Shire Publications.
- Bardenfleth, N.G. 2002. *Kridtpiber og kridtpiberygning*. Sesam.
- Bardenfleth, N.G. 2009. Denmark. *Journal of the Academie Internationale de la Pipe*. Vol. 2. Liverpool. pp. 37–44.
- Baughar, S., Venables, R.W. 1987. Ceramics as Indicators of Status and Class in Eighteenth-Century New York. In: Spencer-Wood, S.M. (ed.). *Consumer Choice in Historical Archaeology*. New York: Plenum. pp. 31–53.

- Beaman, T. E. 2005. Het Regent Pijpestelen at Brunswick Town: A Quantitative Analysis of White Clay Tobacco Pipes and Smoking Behaviors in Colonial North Carolina. *North Carolina Archaeology* 54, 2005. pp. 49–99.
- Beaudry, M. C. 1989. *Documentary Archaeology in the New World*. Cambridge: Cambridge Univ. Press. pp. 51–67.
- Bellman, C. M. 1790. *Fredmans Epistlar*. Stockholm: Anders Zetterberg.
- Bellman, C. M. & Steffen, R. 1916. *Dikter D. 1 Fredmans epistlar: text*. Stockholm: Svenska vitterhetssamfundet & Albert Bonniers förlag.
- Benowitz, N.L. 2008. Neurobiology of Nicotine Addiction: Implications for Smoking Cessation Treatment. *The American Journal of Medicine* 121:4A. pp. 3–10.
- Benowitz, N.L. 2010. Nicotine addiction. *The New England Journal of Medicine* 362. pp. 2295–2303.
- Bergelin, S.-E. S. (ed.). 1951–1955. *Nordisk familjebok: encyklopedi och konversationslexikon*. 4. Malmö: Förlagshuset Norden
- Binford, L. R. 1961. A New Method of Calculating Dates from Kaolin Pipe Stem Samples. *Southeastern Archaeological Conference Newsletter* 9(1). pp.19–21.
- Björk, M. & Blennå, I. 2020. *Lappatäkten – ett sockenlappboställe i Järvsö. Rapport Länsmuseet Gävleborg 2020:08, RAÄ 1109, Järvsö socken, Ljusdals kommun, Hälsingland, 2018 och 2019*. Gävle: Länsmuseet Gävleborg.
- Blomqvist, R. 1978. *Lunds historia. 2: nyare tiden*. Lund.
- Blondé, B. & de Mulder, A. 2023. Languages of Consumption in the eighteenth and nineteenth centuries. *History of Retailing and Consumption*, 9:2. pp. 85–94.
- Blondel, S. 1891. *Le Tabac. Le Livre des Fumeurs et des Priseurs*. Paris: Henri Laurens.
- Bonds, G. 1977. Kritpipor från Ryssviken. In: Rosander, G. (ed.). *Fataburen: Nordiska museets och Skansens årsbok*. Stockholm: Nordiska museets förlag. pp. 33–56.
- Bonds, G. 1980. Clay Pipes from Ryssviken. In: Davey, P. (ed.) *The Archaeology of the Clay Tobacco pipe. 4, Europe 1*. Oxford: British archaeological reports. International series. pp. 273–298.
- Bourdieu, P. 1984. *Distinction: a social critique of the judgement of taste*. Cambridge, Mass.: Harvard University Press.
- Broocman, R. 2016 [1736]. *En fullständig svensk hus-hålds-bok: en handbok i gårds- och hushållsskötsel i vid mening från 1700-talets första hälft samt Broocmans värld och hushållsbok belyst i åtta artiklar av nutida forskare*. Stockholm: Kungliga Skogs- och lantbruksakademien.
- Brownstein, K. J., Tushingham S, Damitio, W. J., Nguyen, T. & Gang, D. R. 2020. An Ancient Residue Metabolomics-Based Method to Distinguish Use of Closely Related Plant Species in Ancient Pipes. *Frontiers in Molecular Biosciences* 7:133.
- Brynja, E. 1988. The Excavation of Pipes Made by Olof Forsberg of Stockholm. In: Jackson, R. & Jackson, P. (eds.). *Clay Pipe Research Volume One*.
- Campbell, C. 1995. The Sociology of Consumption. In: Miller, D. (ed.) *Acknowledging consumption: a review of new studies*. London: Routledge. pp. 96–126.
- Carlsson, M. & Bergman, A. 2014. *På de rikas bord: en arkeologisk undersökning av lämningar från 1600- och 1700-talet i kvarteret Gubben i Norrköping: arkeologisk undersökning*. RAÄ S:t Johannes 96, kvarteret Gubben 8, Norrköpings stad och kommun, Östergötlands län. Upplands Väsby: Arkeologikonsult.
- Carmiggelt, A. 1988. Leeuwarden. In Tymstra, F. & Meulen, J van der. (eds.). *De Kleipijp als Bodemvondst – Jubileumuitgave van de Pijpelogische Kring Nederland*. Leiden: Stichting PKN.
- Cederlund, C. O. 1966. ”Att suppa tobak” En översikt över tobaksbrukets äldsta historia i Sverige. In: Berg, G., Hansson, H., Owen Jansson, S. & Nilsson, S.T. (eds.). *Fataburen – Nordiska Museets och Skansens årsbok*. pp. 41–54.

- Chatto, W. A. 1839. *A paper--of tobacco; treating of the rise, progress, pleasures, and advantages of smoking. With anecdotes of distinguished smokers, mems. on pipes and tobacco-boxes, and a tritical essay on snuff / By Joseph Fume.*
- Conradsson, B. 1987. Vår förpackade historia. In: Mårtensson, A. W., Wahlöö, C. & Nilsson, N. (eds.). *Kulturen 1987 – Årsboken till medlemmarna*. Lund: Kulturen. pp. 13–39.
- Cook, L. 1989. Tobacco-Related Material Culture and the Construction of Working Class Culture. In: Beaudry, M.C. & A. Mrozowski, S.A. (eds.). *Interdisciplinary Investigations of the Boott Mills Lowell, Massachusetts, Volume III: The Boarding House System as a Way of Life*. Boston: Center for Archaeological Studies.
- Dahlbergh, E. 1975. *Suecia antiqua & hodierna: Bearbetad och kompletterad upplaga försedd med kommentarer huvudsakligen hämtade ur äldre källor*. Stockholm: Stureförlaget.
- Dahlin, O. von. 1914 [1734]. *Then swänska Argus D. 2*. Stockholm: Bonnier.
- Davies-Barrett, A. M. and Inskip, S. A. 2024. Who smokes anymore? Documentary, archaeological and osteological evidence for tobacco consumption and its relationship to social identity in industrial England, 1700–1850. In: Craig-Atkins & Harvey, K. (eds.). *The material body: Embodiment, history and archaeology in industrialising England, 1700-1850*. Manchester: Manchester University Press. pp. 133–169.
- Davey, P. (ed). 1979. *The Archaeology of the Clay Tobacco Pipe I*. Britain: the Midlands and Eastern England. Oxford: British Archaeological Reports British Series 63.
- Davey, P. 1980. (ed). *The Archaeology of the Clay Tobacco Pipe III*. Britain: The North and West. Oxford: British Archaeological Reports British Series 78.
- Davey, P. 1981. (ed). *The Archaeology of the Clay Tobacco Pipe VI*. Pipes and Kilns in the London Region. Oxford: British Archaeological Reports British Series 97.
- Davey, P. 1982. (ed). *The Archaeology of the Clay Tobacco Pipe VII*. More Pipes and Kilns from England. Oxford: British Archaeological Reports British Series 100.
- Davey, P. 1987. (ed). *The Archaeology of the Clay Tobacco Pipe X*. Scotland. Oxford: British Archaeological Reports British Series 178.
- Deetz, J. 1996 [1977]. *In small things forgotten: an archaeology of early American life*. Rev. and expanded ed. New York: Doubleday.
- Dixon, Kelly, J. 2006. Saloons in the Wild West and Taverns in Mesopotamia: Explorations Along the Timeline of Public Drinking. In: Archer, S. N. & Bartoy, K. M. (eds.) *Between Dirt and Discussion. Methods, Methodology and Interpretation in Historical Archaeology*. New York: Springer Science + Business Media. pp. 61–79.
- Duco, D. 1979a. *Pijpelijntjes – informatief blad over kleipijpen*.
- Duco, D. 1979b. *Pijpelijntjes – informatief blad over kleipijpen*.
- Duco, D. 1980. Clay Pipe Manufacturing Processes in Gouda, Holland: A Technical and Historical Review. In: Davey, P. (red.). *The Archaeology of the Clay Tobacco Pipe IV. Europe I*. Oxford.
- Duco, D. 1982. *Merken van Goudse pijpenmakers 1660–1940*. Lochem: De Tijdstroom.
- Duco, D. 1984. Alphen als concurrent van de Goudse pijpmakers. *Pijpelijntjes – informatief blad over kleipijpen*. 10:4, October/December 1984. Leiden: Pijpenkabinet. pp. 1–14.
- Duco, D. 1987. *De nederlandse kleijpijp. Handboek voor dateren en determineren*. Leiden: Stichting Pijpenkabinet.
- Duco, D. 2003. *Merken en merkenrecht van de pijpenmakers in Gouda*. Amsterdam: Pijpenkabinet
- Duco, D. 2004. *A Century of Change: the European Clay Pipe, Its Final Flourish and Ultimate Fall*. Amsterdam: Pijpenkabinet.
- Dunhill, A. 1924. *The pipe book*. London: A & C Black.

- Döbelius [Döbeln, von] J. J. 1711. *Tree inwärtet och ett vthwärtet pest-medel, ibland många läkedomar uthwalde och efter hans höggrefl. excellenc felt-marskalckens och gouverneurens nådige befallning, til allmänna [!] bästa genom trycket til deras bruk beskrefne af Joh:: Jacob Döbelius*. Lund: Abrah. Habereger, gub. och ac. car [.] booktr.
- Earle Hill, B. 1840. *A Pinch of Snuff: Composed of Curious Particulars and Original Anecdotes of Snuff Taking; as well as a Review of Snuff, Snuff-Boxes, Snuff-Shops, Snuff-takers, and Snuff-Papers; with the Moral and Physical effects of Snuff*. By Dean SNift, of Brazen-Nose. London: Robert Tyas.
- Edgell, S., Hetherington, K. & Warde, A. (eds.). 1996. *Consumption matters: the production and experience of consumption*. Oxford: Blackwell.
- Eriksdotter, G. & Nordin, J. M. 2011. Being on the inside, forgetting to look out. *Current Swedish Archaeology* 19. pp. 143–165.
- Eskeröd, A. 1962. Ett slätteröl på Svartsjö. In: Lagerquist, M. (ed.). *Fataburen*. pp. 33–50.
- Fairholt, F.W. 1859. *Tobacco: Its History and Associations: Including an Account of the Plant and its Manufacture; With its Modes of Use in all Ages and Countries*. London: Chapman and Hall.
- Fersen, von. A. Riksrådet och fältmarskalken m.m. grefve Fredrik Axel von Fersens historiska skrifter D. 6: Större och mindre tilldragelser under konung Gustaf III:s regering. Afd. 4. Stockholm: Norstedt.
- Finsson, H. 1935 [1772]. *Stockholmsrella*. Stockholm: Hökerberg.
- Forsius, H & Kalm, P. 1757. *Historisk och oeconomisk beskrifning öfwer stapel-staden Helsingfors uti Nyland, sednare delen, med wederbörandes samtycke, under ... hr. Pehr Kalms inseende, för lager-krantsen utgifwen och til almänt ompröfwande framstält i Åbo acad. öfre lärosal på wanlig tid f. m. den 21. maji 1757 Af Henric Forsius, nyländninge D. 2*. Diss. Åbo: Åbo akademi, 1757.
- Fox, G. L. 2015. *The archaeology of smoking and tobacco*. Gainesville: University Press of Florida.
- Franck, J. 1931 [1633]. *De præclaris herbæ Nicotinæ sive Tabaci virtutibus*. Faks. uppl. Stockholm: Edgar Lund.
- Franzén, B. 2009. *Emancipation och urbanisering i medeltidens Sverige – Trender mot ett mer fritt och rörligt feodalt samhälle cirka 1200–1527*. Stockholm: Acta Universitatis Stockholmiensis.
- Friederich, F.H.W. 1975. *Pijpelogie. Vorm, versiering en datering van de Hollandse kleipijp*. A.W.N.-monografie 2.
- Fryxell, A. 1882. *Bidrag till Sveriges historia efter 1772: uppsatser, berättelser och minnen*. Stockholm: Hierta.
- Gaskell, I. 1997. Tobacco, Social Deviance, and Dutch Art in the Seventeenth Century. In: Franits, W.(ed.). *Looking at Seventeenth-Century Dutch Art: Realism Reconsidered*. Cambridge: Cambridge University Press. pp. 68–77.
- Ginzburg, C. 1980. Morelli, Freud and Sherlock Holmes: Clues and Scientific Method. *History Workshop*, No. 9. Oxford University Press. pp. 5–36.
- Ginzburg, C. 1992[1980]. *The cheese and the worms: the cosmos of a sixteenth-century miller*. Baltimore: Johns Hopkins University Press.
- Gjöding, O. J. 1754. *Kongsholms-minne, eller Beskrifning om Kongsholmen, den wästra förstaden af kongl. residence- staden Stockholm, desz forna, och nu warande tilstånd, fördelt i trenne böcker. Til allmän tienst, i oskyldigt nöje sammanskrefwen, af O.J.: Gjöding*. Stockholm: Peter Jöransson Nyström.
- Goedewaagen, D.A. & Helbers, G. C. 1942. *Goudscher pijpen = Goudaer Pfeifen = Pipes de Gouda*. Amsterdam: N.V. Uitgevers-MIJ Atlantic.
- Goes, B. 1993. *The Intriguing Design of Tobacco Pipes*. Leiden: Pijpenkabinet.
- Gojak, D. & Stuart, I. 1999. The Potential for the Archaeological Study of Clay Tobacco Pipes from Australian Sites. *Australasian Historical Archaeology*, 17. Sydney: Australasian Society for Historical Archaeology.
- Goodman, J. (2004 [1993]). *Tobacco in history: cultures of dependence*. London: Routledge.

- Gyllenborg, C. 1740 [1737]. *Swenska sprätthöken, comédie, uti 5. acter. Är den första som blifwit sammansatt på svenska, och förestäld på kongl. theatren i Stockholm. In oct. 1737. =Anon=. Stockholm, tryckt uti thet kongl. tryckeriet, hos directuren Pet. Momma.: 1740.* Stockholm: (kungl. tryckeriet: Momma.
- Gyllenius, P. 1882. *Diarium Gyllenianum eller Petrus Magni Gyllenii dagbok 1622–1667.* Helsingfors:
- Haan, R. de. 2013. De verspreiding van steel- en manchetpijpen in Europa (16e–19e eeuw). Een overzicht van de ontwikkeling. In: Haan, A. de & Lingen, B. van der. (eds). *PKN Stichting voor onderzoek historische tabakspijpen Jaarboek 2013.* Leiden: Stichting PKN. pp. 115–123.
- Hanson, L. Jr. 1971. Kaolin Pipe Stems: Boring in On a Fallacy In: South, S. (ed). *The Conference on Historic Site Archaeology Papers 1969 - Volume 4*. Columbia: The South Carolina Institute of Archaeology and Anthropology--University of South Carolina. pp. 2–15.
- Harrington, J.C. 1954. "Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes." *Quarterly Bulletin of the Archaeological Society of Virginia.* 9/1. pp. 10–14.
- Heighton, R. F. & Deagan, K.A. 1971. A New Formula for Dating Kaolin Clay Pipestems. *The Conference on Historic Site Archaeology Papers.* 6. pp. 220–229.
- Heimdahl, J. 2005. Archaeobotanical Evidence of Early Tobacco Cultivation in Norrköping, Sweden. Appendix. In: Heimdahl, J. *Urbanised Nature in the Past: Site formation and Environmental Development in Two Swedish Towns AD 1200–1800.* Stockholm: Stockholms universitet.
- Hermelin, S. G. 1774. *Tal, om näringarnes förhållande uti rikets särskilde lands-orter; hållet för kongl. vetenskaps akademien, vid presidii nedläggande, den 4. augusti, 1773. Af friherre Samuel Hermelin ... Stockholm, tryckt i framl. dir. Lars Salvii tryckeri.* Stockholm: Lars Salvius.
- Hernæs, P. & Ludvigsen, B. 1982–1983. *Christopher Bocklum's Krittpipefabrikk, Larkollen.*
- Hill, B. E. [under pseudonym Dean Snift] 1840. *A Pinch-Of Snuff: Composed of Curious Particulars and Original Anecdotes of Snuff Taking.* London: Robert Tyas.
- Hilton Price, F. G. 1900. Notes upon Some Early Clay Tobacco Pipes, from the Sixteenth to the Eighteenth Centuries, Found in the City of London, in the Possession of the Author. *Archaeological Journal.* 57:1, pp. 224–240.
- Hilton Price F. G. 1901. Notes upon Clay Tobacco Pipes of the Seventeenth Century Found in Bristol, *Archaeological Journal,* 58:1. pp. 342–349.
- Huggert, A. 2008. Hundråriga krittpor i bruk bland samer i 1890-talets Lappmark. *Fornvännen* 103. pp. 23–28.
- Hülphers, A. 1886 [1760]. *Dagbok och samlingar uppå en resa om sommaren 1760, ifrån Westerås till Petersburg och Ryssland fram och åter sjöledes emellan Stockholm och Åbo, men sedan landsvägen igenom Finland, Nyland, Tawastlan. Jväsckylä.*
- Jackson, R.G., & Price, R.H. 1974. *Bristol Clay Pipes: a study of makers and their marks.*
- Johannessen, J. 2011. Tobakk, kritt Piper og sosiale kontekster 1600–1800. *Nicolay – Arkeologisk Tidsskrift.* 115. 2011. Pp. 40–50.
- Johnson, M. 1996. *An Archaeology of Capitalism.* Oxford: Blackwell Publishers.
- Jones, G. S. 1977. Class Expression versus Social Control? A Critique of Recent Trends in the Social History of "Leisure." *History Workshop,* 4. pp. 162–170.
- Jung, S. Paul (ed.). 2003.. *The archaeology of the clay tobacco pipe. 17, Pollocks of Manchester: three generations of clay tobacco pipemakers.* Oxford: Archaeopress.
- Junhem, I. 2003. *Prisad planta: om tobaksodling i Sverige 1724–1964.* Stockholm: Tobaks- och Tändsticksmuseum
- Karlsson, M. 2006. Sju berättelser. In: Karlsson, M (ed.). *Den dolda staden: arkeologiska undersökningar i kvarteret Druvan, Karlstad.* Karlstad: Värmlands museum. pp. 99–105.

- Keyland, N. 1919. *Svensk allmogekost: bidrag till den svenska folkhushållningens historia. 2 Animalisk allmogekost, brygd, brännvinsbränning och hemtobaksodling i nordvästra Värmland*. Stockholm: Sv. Teknologföreningen.
- Kierulf, H. 2009. The Norwegian *Langpipe* Tradition. *Journal of the Academie Internationale de la Pipe*. Vol. 2. Liverpool. pp. 177–183.
- King, J. A. 2007. Still Life with Tobacco: The Archaeological Uses of Dutch Art. *Historical Archaeology*, 41: 1. pp. 6–22.
- Kjærnes, U., Harvey, M. & Warde, A. 2007. *Trust in food: a comparative and institutional analysis*. Basingstoke: Palgrave Macmillan.
- Kongl. Maj:ts Hall-Ordning, Hwarefter Klädemakare samt flere wederbörande sig hafwa at rätta. Gifwen Stockholm i Råd-Cammaren den 17. Aprilis 1722. Stockholm, uti det Kongl. Tryckeriet uplagd, hos Johan Henrich Werner, directeur öfwer alla tryckerier i Riket, Åhr 1722. 1722. Stockholm: Johan Henrich Werner.
- Kongl. Maj:ts Utfärdade Hall-Ordning, Och Allmänne Factorie-Rätt, För alla Manufacturister uti Silke, Ull- och Linne, samt Handtwärkare och flere, som icke egenteligen under Skrå-Ordningen böra begripas. Gifwen Stockholm i Råd-Cammaren then 21. Maji 1739. 1739. Stockholm: Directeuren af Kongl. Tryckeriet Pet. Momma.
- Kongl. Maj:ts i nåder Förnyade Hall-Ordning, Gifwen Stockholm i Råd-Kammaren then 2 aprilis 1770. 1770. Stockholm: Kongl. tryckeriet.
- Kopytoff, I. 1986. The cultural biography of things: commoditization as process. In: Appadurai, A (ed.). *The social life of things: commodities in cultural perspective*. Cambridge: Cambridge Univ. Press. pp. 64–91.
- Krantz, C. 1946. *Den svenska pipboken*. Uddevalla: Hallmans tryckeri.
- Kritpipor: historien kring ett fynd vid Södermalmstorg. 1985. Exhibition catalog. Stockholm: Stockholms stadsmuseum & Svenska tobaks AB.
- Kvaal, S.I. & Derry, T.K. 1996. Tell-tale teeth: abrasion from the traditional clay pipe. *Endeavour* 20:1 1996. pp. 28–30.
- Landahl, S. (ed.). 1890. *Sveriges ridderskaps och adels riksdagsprotokoll från och med år 1719 D. 12 1740-1741*. Stockholm: P. A. Norstedt & söner: Riksdagens tryckeriexp.
- Landahl, S. (ed.). 1973. *Bondeståndets riksdagsprotokoll 10 1765-1766*. Stockholm: Norstedt.
- Liebaert, A. & Maya, A. 1994. *The illustrated history of the pipe*. London: Harold Starke.
- Linde, P., 1956. Kridtpiber. *Politikens Jeg er Samler Bd. II*. København. pp. 15–26.
- Linde, P., 1958. Christianhavnske Kridtpiber, *Historiske Meddelelser om København* 4. Rk., 5. Bd. pp. 375–384.
- Lingen, B. van der. 2007. Pijpmakers uit Gouda en Aarlanderveen mete en contract bij Zweedse fabrikanten in de eerste helft van de 18de eeuw. *Pijplogische Kring Nederland*. 30:118, 2007. Pp. 1920–1927.
- Lingen, B. van der. 2022. Afwijkende exportpijpen uit Gouda: Het spoortype en de bolvormige Yorkshire pijp. *Jaarboek PKN, Stichting voor Onderzoek Historische Tabakspijpen* 2022. PKN, Stichting voor Onderzoek Historische Tabakspijpen, Leiden.
- Linnaeus, C. von. 1778 (1746). *Carl Linnæi västgöta-resa: på riksens höglövlige ständers befallning förrättad år 1746 med anmärkningar uti ekonomien, naturkunmogheten, antikviteter, invånarnes seder och levnadssätt, med tillhörige figurer*. Stockholm: Wahlström & Widstrand.
- Linné, C. von. 1748. *Flora oeconomica, quam, ex consensu ampliss. Facult. Medicæ ... præside ... Carolo Linnæo ... specimenis academici loco, placide disquisitioni modeste submittit ... Elias Aspelin, Smolandus. In audit. Carol. Maj. die XXV. Junii anni MDCCXLIX. Horis, ante meridiem, consuetis*. Diss. Uppsala : Uppsala universitet.
- Linné, C. von. 1749. *Flora oeconomica*.

- Ljung, J. A. & Nelson, P. 1985. Kritpipelagret hos "Dufwenberg & Nordström, som hålla öppna Bodar uppå Södermalms torg". Ett stadarkeologiskt fynd. *Stadsvandringar* 8. pp. 85–96.
- Ljung, J. A. 1986. Kritpipehandlarens magasin. *Populär Arkeologi* 4:1. Lund.
- Loktu, L. 2012. Clay pipes and the habitus of tobacco consumption. An archaeological study of tobacco consumption, with special reference to seventeenth century Trondheim. In: Berge, R., Jasinski, M. E. & Sognnes, K. (eds). *N-TAG TEN: Proceedings of the 10th Nordic TAG Conference at Stiklestad*. Oxford: Archaeopres. pp. 157–170.
- Ludvigsen, B. 2009. Norway. *Journal of the Academie Internationale de la Pipe*. Vol. 2. Liverpool. pp.109–118.
- Lund, E. 1935. *Svensk tobakslitteratur: anteckningar till en bibliografi*. Stockholm: Edgar Lund.
- Lundhem, S. (ed.). 1994. *Prästeståndets riksdagsprotokoll: på Riksdagens uppdrag ... 10 1740-1741*. Stockholm: Tryckeriexp. Sveriges riksdag.
- Lönqvist, N. O. 1924 [1775]. *Berättelse om Bara härad 1775*. Lund: Bara härads hembygdsförenings förlag.
- Menander, H. 2003. "Ingen bonde ähr och nu snart som icke skall dricka tobach" – En studie av kritpipors dateringsmöjligheter. In: Karlsson, P. & Tagesson, G. (eds.). *Tyskebacken – Hus, människor och industri i stormaktstidens Norrköping*. Riksantikvarieämbetet, Arkeologiska undersökningar, Skrifter 47. Stockholm: Riksantikvarieämbetet. pp. 74–83.
- Meskeel, L. & Preucel, R. W. (eds.) 2004. Identities. In: *A Companion to Social Archaeology*. Malden, MA.: Blackwell.
- Meulen, H. van der. 1999a. Tabakspijpen. In: Bartels, M. (ed.). *Steden in Scherven 1 – Vondsten uit beerputten in Deventer, Dordrecht, Nijmegen en Tiel (1250–1900)*. Zwolle: Stichting Promotie Archeologie.
- Meulen, H. van der. 1999b. Tabakspijpen. In: Bartels, M. (ed.). *Steden in Scherven 2 – Catalogus. Vondsten uit beerputten in Deventer, Dordrecht, Nijmegen en Tiel (1250–1900)*. Zwolle: Stichting Promotie Archeologie.
- Meulen, J. van der, & Tupan, H. 1980. *De Leidse Tabakspijpmakers in de 17e en 18e eeuw*. Stubbeg.
- Meulen, J. van der. 1986. *De "Gouwenaars" van Alphen aan den Rijn – Een onderzoek naar tabakspijpmakers en hun produkten*.
- Meulen, J. van der, 2003. *Goudse pijpenmakers en hun merken*. Leiden: Pijpeologische Kring Nederland.
- Meulen, J. van der, Brinkerink, J. P. & Hout, P. von. 1992. *Tabakspijpenijverheid in Gorinchem*. Leiden: Pijpeologische Kring Nederland.
- Miller, D. 1994[1987]. *Material culture and mass consumption*. Repr. with new epilogue Oxford: Blackwell.
- Miranda, F. de. 1950. *Miranda i Sverige och Norge 1787: General Francisco de Mirandas dagbok från hans resa september-december 1787*. Stockholm: Nordiska Museet.
- Modée, R. G. 1746. *Utdrag utur alle ifrån 1729. års slut utkomne publique handlingar, placater, förordningar, resolutioner och publicationer, som riksens styrsel samt inwärtas hushållning ock författningar i gemen, jämwäl och Stockholms stad i synnerhet, angå; med nödige citationer af alle paralel-ställen, som utwisa, hwad ändringar tid efter annan i ett eller annat mål kunnat wara giorde. Hwarförutan de uti desze handlingar åberopade äldre acters innehåll korteligen anföres, så ofta nödigt warit. Följandes efterst wid hwar del ett fullkomligt orda-register öfwer des innehåll. Andra delen til år 1740. Med hans kongl. maj:ts allernådigste privilegio. Stockholm tryckt hos Lorentz Ludwig Grefing, 1746*. Stockholm: Lorentz Ludwig Grefing.

- Modée, R. G. 1749. *Utdrag utur alle ifrån 1739. års slut utkomne publique handlingar, placater, förordningar, resolutioner och publicationer, som riksens styrsel samt inwärtas hushållning och författningar i gemen, jämwäl ock Stockholms stad i synnerhet angå med nödige citationer af alle parallel-ställen, som utwisa, hwad ändringar tid efter annan i ett eller annat mål kunnat wara giorde. Hwarförutan de uti desze handlingar åberopade äldre acters innehåll korteligen anføres, så ofta nödigt warit. Följandes efterst wid hwar del ett fullkomligt orda-register öfwer des innehåll. Tredie delen til 1747. års slut som är tillökt med en efter åretalen inrättad förteckning på alle de publique handlingar, som de hitintills utkomne delar af detta wärket innehålla. Med hans kongl. maj:ts allernådigste privilegio. Stockholm, tryckt hos Lorentz Ludwig Grefing, på des egen bekostnad, år 1749.* Stockholm: Lorentz Ludwig Grefing.
- Modée, R. G. 1761. *Utdrag utur alla ifrån 1754 års slut utkomne publique handlingar, placater, förordningar, resolutioner och publicationer, som riksens styrsel samt inwärtas hushållning och författningar i gemen, jämwäl ock Stockholms stad i synnerhet angå: med et fullkomligt orda-register öfwer desz innehåll; jämte förteckning, efter åretalen, på alla de publique handlingar och acter, som i denna sjette delen innehållas. Sjette delen, til 1758 års slut. Med hans kongl. maj:ts allernådigste privilegio. Stockholm, tryckt hos Lorents Ludvig Grefing, på desz egen bekostnad, år 1761.* Stockholm: Lorentz Ludwig Grefing.
- Monceau, Duhamel du, H. L. 1771. *L'art de faire les pipes à fumer le tabac. Par m. Duhamel du Monceau, de l'Académie royale des sciences. Paris M. DCC. LXXI.* De l'imprimerie de L. F. Delatour.
- Motte, de la, T. 1955. Tobaken. Dess första framträdande i Sverige. Olika uppfattningar om tobaksbruket. Tobak och sockenstyrelse. Stockholm: P.A. Norstedt & Söner.
- Mouer, L. D. 1993. Chesapeake Creoles: The Creation of Folk Culture in Colonial Virginia. In: Reinhart, T. R. & Pogue, D. J. (eds). *The Archaeology of 17th-Century Virginia*. Richmond: Dietz Press. pp. 101–166.
- Munthe, Arne. 1940. *Tobakens och tobakshandlingens historia i Sverige*. Stockholm: Ivar Hæggströms Boktryckeri A.B.
- Myrdal, J. 2012. Source Pluralism as a Method of Historical Research. In: Fellmann, S. & Rahikainen, M. (eds.) *Historical Knowledge: In Quest of Theory, Method and Evidence*. pp. 155–187.
- Møller, A. M. 1985. *Pibemagerne i Stubbekøbing – et mikrostudie i dansk 1700tals historie*. Stubbekøbing.
- Nordin, J. M. 2021. *Mellan medeltid och modernitet : en introduktion till historisk arkeologi från högmedeltiden till idag*. Lund: Studentlitteratur.
- Nyström, B. (ed.). 2015. *Keramik & porslin i Sverige genom 7000 år: från trattbägare till fri keramik*. Stockholm: Carlsson.
- Ohlsson, K. (ed.). 2006. *Krukmakare och kakelugnsmakare i Helsingborg: från freden i Roskilde till tiden kring första världskriget*. Helsingborg: Kulturmagasinet.
- Olsson, L. 2004. Kritpipor från nordbohuslänska gårdar. In: Lindman, Gundela (ed.). *Gårdar från förr: nordbohuslänsk bebyggelsehistoria utifrån arkeologiska undersökningar av tre medeltida gårdar*. Stockholm: Riksantikvarieämbetets förlag.
- Oostveen-Bonnema, J. van. & Oostveen-Bonnema, A. van. 2001. Kleipijpen – een statistische analyse. *Westerheem – tijdschrift voor de Nederlandse archaeologie*. 50:1. pp. 13–27.
- Oostveen, J. van. 2009. *Tabakspijpenijverheid in Schoonhoven*. Delft.
- Oostveen, J. van & Stam, R. 2011. *Productiecentra van Nederlandse kleipijpen; een overzicht van de stand van zaken*. Pijpelogische Kring Nederland.
- Oswald, A. 1961. Evolution and Chronology of English Pipes. *Archaeological News Letter* 7:3. pp. 55–62.
- Oswald, A., 1975. *Clay Pipes for the Archaeologist*. British Archaeological Reports 14. Oxford.
- Pallo, S. & Russow, E. 2008. *Piiburaamat – Book of Pipes*. Tallinn.

- Palmcron/Sparrman, A. 1642. *Sundhetzens speghel, vthi hwilken man beskodhar sundhetzens natur, förnämste orsakerne til alla siukdomar, som sundheten förstöra plägha, såsom ock the medels rätta bruk, hwarigenom hon för them befriat, til thet bestämde målet kan underhållen warda, på vårt tungomål stält och i liuset gifwin aff Andrea Sparman*. Stockholm: Ignatium Meurer.
- Peacey, A. 1996. The Development of the Clay Tobacco Pipe Kiln in the British Isles. *The Archaeology of the Clay Tobacco Pipe XIV* (ed P. Davey) Oxford: British Archaeological Reports British Series 246.
- Pearce, J. 2013. Clay tobacco pipes made by the Manby family of London. *Journal of the Académie Internationale de la Pipe*. Vol. 6. Liverpool: Académie Internationale de la Pipe. pp. 71–82.
- Pettersen, A. & Alsvik, H. 1943. *Pipefabrikken på Bragernes og des grunnlegger Jacob Boy, Pipene fra Bragernes-fabrikken*. Drammen: Drammens museum.
- Picciotto, M.R., Kenny, P.J. 2021. Mechanisms of Nicotine Addiction. *Cold Spring Harbor Perspectives in Medicine* 11a. pp. 1–15.
- Pinto, E. H. 1961. *Wooden bygonen of smoking and snuff taking*. London: Hutchinson.
- Paulli, S. 1648. *Flora Danica, det er: Dansk urtebog*. Kiøbenhafn:
- Pred, A. 1981. Social reproduction and the time-geography of everyday life. *Geografiska Annaler. Series B. Human Geography*, 63(1). pp. 5–22.
- Prieme, O. 1893–94. *Adressebog for Danmark, Sverige, Norge og Finland almindelig Haandbog i daglige Forretningsliv. Fabrikanter og Fabriker*. Copenhagen: Vald. Carlsens Bogtrykkeri.
- Pritchett, R.T. 1890. *Smokiana: Historical, Ethnographical*.
- Puktörne, T. 1968. Tobakspipor från Gouda och Varberg. *Varbergs Museum, årsbok 1968*. Varberg. pp. 61–82.
- Stolerman, I.P. & Jarvis, M.J. 1994. The scientific case that nicotine is addictive. *Psychopharmacology* 117:2. pp. 2–10.
- Rafferty, S. M., Lednev, I. Virkler, K. & Chovanec, Z. 2012. Current research on smoking pipe residues. *Journal of Archaeological Science*. 39: 7. pp. 1951–1959.
- Reckner, P. 2001. Negotiating Patriotism at the Five Points: Clay Tobacco Pipes and Patriotic Imagery among Trade Unionists and Nativists in a Nineteenth-Century New York Neighborhood. *Historical Archaeology: Journal of the Society for Historical Archaeology*. 35: 3. Pleasant Hill, California: The Society. pp. 103–114.
- Reckner, P. 2004. Home Rulers, Red Hands, and Radical Journalists: Clay Pipes and the Negotiation of Working-Class Irish/Irish American Identity in Late-Nineteenth-Century Paterson, New Jersey. In: Rafferty, S. & Mann, R. *Smoking and Culture*. Knoxville: University of Tennessee Press. pp. 241–272.
- Reckwitz, A. 2002. Toward a Theory of Social Practices – A Development in Culturalist Theorizing. *European Journal of Social Theory* 5(2). pp. 243–263
- Reenstierna, M. H. 1949 [1821]. *Årstadagboken: journaler från åren 1793–1839. 2 1813–1825*. Stockholm: Generalstaben.
- Reenstierna, M. H. 1953 [1826]. *Årstadagboken: journaler från åren 1793–1839. 3 1826–1839*. Stockholm: Generalstaben.
- Runefelt, L. 2015. *Att hasta mot undergången: anspråk, flyktighet, förställning i debatten om konsumtion i Sverige 1730–1830*. Lund: Nordic Academic Press.
- Sahlberg, J. 1809. *Historiska underrättelser om Tobak och Tobaks-handel i Stockholm, från äldsta till närvarande tider: meddelade till upplysning, i anseende till en uppkommen Twist emellan Kryddkram-Handels och Tobaks-Handlare-Societeterne I Stockholm*. Stockholm: Carl Delén.
- Schablitsky, J. M., Witt, K. E., Ramos Madrigal, J., Ellegaard, M. R., Malhi, R. S. and Schroeder, H. 2019. Ancient DNA analysis of a nineteenth century tobacco pipe from a Maryland slave quarter. *Journal of Archaeological Science* 105. pp. 11–18.

- Schivelbusch, W. 1982. *Paradiset, smaken och förnuftet: njutningsmedlens historia*. Stockholm: Alba.
- Schmidt, J. W. 1992. *Resa genom Hälsingland och Härjedalen år 1799: en del av Johann Wilhelm Schmidts berättelse om sin resa genom några svenska landskap för att besöka samerna*. Trondheim: Luejie.
- Seela, J. 1983. Skärgårdspipor av lera. *Nordenskiöldsamfundets tidskrift* 43. Helsinki. pp. 56–81.
- Shove, E., Pantzar, M. & Watson, M. 2012. *The dynamics of social practice: everyday life and how it changes*. Thousand Oaks, CA: Sage Publications.
- Skibo, J. M. & Schiffer, M. B. 2008. *People and things: a behavioral approach to material culture*. New York: Springer.
- Smith, W. D. 2002. *Consumption and the Making of Respectability*. New York: Routledge.
- Snelders, S. 2023. Normalisation and Ambivalence: Tobacco in the Seventeenth-Century Dutch Republic. *Cultural and Social History* 20:1. pp. 11–26.
- Sousa M. M. de & Casimiro, T. M. 2024. Smoking in Portuguese Historical Archaeology. Clay Pipes, Social Habits and Long-Distance Relations. In: Barros Viana Hissa, S. de (ed.). *Archaeologies of smoking, pipes and transatlantic connections*. Cham: Springer.
- South, S. 1977. *Method and Theory in Historical Archaeology*. Academic Press, New York.
- Staf, N. (ed.). 1965. *Borgarståndets riksdagsprotokoll från frihetstidens början 5 1734*. Stockholm: A & W.
- Staf, N. (ed.). 1975. *Borgarståndets riksdagsprotokoll från frihetstidens början 7 1740-1741, 1 Protokoll*. Stockholm: A & W.
- Stam, R. 2019a. *De pijpennijverheid in België*. Leiden: Stichting PKN.
- Stam, R. 2019b. *Vergeten Glorie: De economische ontwikkeling van de Nederlandse kleipijpennijverheid in de 17e en 18e eeuw met speciale aandacht voor de export*. Enschede: Gildeprint.
- Stenbäck-Lönnquist, U & Welinder, S. 2007. Genus och materialitet: Kvinnor, kor, kasa och kritpipor. I: Fahlgren, Siv & Thurén, Britt-Marie (ed.). *Genusmaraton 2007 – Mittsveriges genusforskare på frammarsch*. Östersund: Mittuniversitetet.
- Stenbäck-Lönnquist, U. & Welinder, S. 2008. Cattle, Dung and Clay Tobacco Pipes. In: Chilidis, K., Lund, J. & Prescott, C. (eds.). *Facets of Archaeology: Essays in Honour of Lotte Hedaeger on her 60th Birthday*. Oslo: Unipub.
- Stibéus, M & Bergman Carter, R. 2025. *Handelsgård och kritpipsfabrik – kvarteret Gulin i Karlskrona*. Blekinge Museum Rapport 2025:12, Arkeologisk undersökning 2020. Blekinge län, Blekinge, Karlskrona kommun, Karlskrona socken, fastighet Gulin 1, fornlämning L1979:2019. Karlskrona: Blekinge museum.
- Stolt, J. 1892. *Byskomakaren Jonas Stolts minnen från 1820-talet: anteckningar från Högsby socken i Småland*. Stockholm.
- Stråle, G.H. 1884. *Alingsås manufakturverk: ett bidrag till den svenska industriens historia under frihetstiden*. Stockholm: Ivar Häggströms Boktryckeri.
- Sumner, W. G. 1940 [1906]. *Folkways: a study of the sociological importance of usages, manners, customs, mores, and morals*. Boston: Ginn and company.
- Tagesson, G. 2019. Stolt men inte nöjd – historisk arkeologi mellan generalister, specialister och soloartister. *Meta H: historiskarkeologisk tidskrift*. 2019. Uppsala: Historiskarkeologiska föreningen. pp. 25–42.
- Tatman, C. (1985) 'Stamps and Mouldings on Clay Pipes Found in London' in P. Davey (ed) *The Archaeology of the Clay Tobacco Pipe. IX. More Pipes from the Midlands and Southern England*. BAR British Series 146. pp. 363–388.
- Tempel, B. 2004. Symbol and Image: Smoking in Art Since the Seventeenth Century. In: Gilman, Sander L. & Xun, Zhou (eds.). *Smoke: A Global History of Smoking*. London: Reaktion Books.

- Thursfield, R. 1862. On Old Broseleys. *The Reliquary, Quarterly Journal and Review; A Depository for Precious Relics – Legendary, Biographical, and Historical, Illustrative of the Habits, Customs, and Pursuits of Our Forefathers*. Vol. III. London: John Russell Smith. pp. 79–81.
- Timmins, S. 1870. *The Pipes of all Peoples - An Account by Samuel Timmins of an Exhibition of Tobacco Pipes Collected by William Bragge, Held at Birmingham, December, 1870*.
- Tomson, J. 1711. *Oförgripeliget Förslag Huru Den nu mycket giängse og gruwelige Far=Soten Må Genom Guds Nåd / märkeligen hemmas / Til allas behageliga Tienst / Demödigst Upsatt og framställdt*. Lund: Abr. Habereger / G. og A. C. Bøkt.
- Tymstra, F. & Meulen, J. van der. 1888. *De Kleipijp als Bodemvondst – Jubileumuitgave van de Pijpelogische Kring Nederland*. Leiden: Stichting PKN.
- Umberger, E. 1996. *Tobacco and its use: a bibliography of periodical literature, essays, short stories, poems, theses and dissertations, chapters in books, book reviews, quotations, and comparable sources, with an extensive table of contents and finding aid and an index to topical categories*. Second edition. Rochester: Eugene Umberger.
- Veblen, T. 1953. *The theory of the leisure class: an economic study of institutions*. New York: New American Library.
- Vries, de, J. 2008. *The industrious revolution – consumer behavior and the household economy, 1650 to the present*. Cambridge: Cambridge University Press.
- Wachenfeldt, P. von & Nyberg, K. (eds.). 2015. *Det svenska begäret: sekler av lyxkonsumtion*. Stockholm: Carlssons.
- Walde, O. 1953. Abraham Hülphers resa genom Blekinge 1759. In: *Blekingeboken*. Karlskrona: Föreningen Varvsmuseets Vänner.
- Walker, I. C. 1971. The Manufacture of Dutch Clay Tobacco-Pipes. *Northeast Historical Archaeology* 1:1.
- Wallin, L. 1983. Datering med hjälp av kritpipor. *Fornvännen* 78. Stockholm.
- Warde, A. 1997. *Consumption, food, and taste: culinary antinomies and commodity culture*. London: Sage.
- Warde, A. 2005. Consumption and Theories of Practice. *Journal of Consumer Culture* 5:2. pp. 131–153.
- Warde, A. 2016. *The practice of eating*. Cambridge, UK: Polity Press.
- Warde, A. 2017. *Consumption: a sociological analysis*. London: Palgrave Macmillan.
- Warde, A. & Martens, L. 2000. *Eating out: social differentiation, consumption, and pleasure*. Cambridge: Cambridge University Press.
- Watkins, G. 1979. Hull Pipes: A Typology. In Davey, P. (ed.) *The Archaeology of the Clay Tobacco Pipe*, I, British Archaeological Reports (British Series 63). Oxford. pp. 85–121.
- Welinder, Stig. 1992. *Människor och artefaktmönster*. Uppsala: Societas archaeologica Upsaliensis.
- Westerhoff, R. 1860. *Oudheidkundige verhandeling en aanteekeningen betrekkelijk de kleine rookpijpjes, waaruit, naar't volk hier en daar geloofd, de reuzen, alven, feeën en aardmannetjes oudtijds gerookt zouden hebben: Eene bijdrage tot de geschiedenis van het pijpenmaken en rooken. (Mit zwei Tafeln)*. Erven C. M. van Bolhuis Hoitsema: Groningen.
- Westrin, T. (ed.). 1917. *Svenska riksdagsakter jämte andra handlingar som höra till statsförfattningens historia Ser. 2 Tidehvarfet 1719–1800, D. 3. Afd. 1 1731–1734*. Stockholm: Norstedt.
- White, S. D., Davey, P. & Higgins, D. A. 2004. *The archaeology of the clay tobacco pipe. 18, The dynamics of regionalisation and trade: Yorkshire clay tobacco pipes c1600-1800*. Oxford: Archaeopress.
- Åkerhagen, A. 1985. *Kritpipor*. Stockholm, Svenska tobaks AB.
- Åkerhagen, A. 1993. Tobakens och kritpipans historia. *Marinarkeologisk tidskrift* 4 1993, 16:4. p. 9.
- Åkerhagen, A. 1994a. Tobakens och kritpipans historia, del II. *Marinarkeologisk tidskrift* 1 1994, 17:1. pp. 4–5.

- Åkerhagen, A. 1994b. Tobakens och kritpipans historia, del III. *Marinarkeologisk tidskrift* 2 1994, 17:2. pp. 4–5.
- Åkerhagen, A. 1994c. Tobakens och kritpipans historia, del IV. *Marinarkeologisk tidskrift* 4 1994, 17:4. pp. 14–16.
- Åkerhagen, A. 1994d. *Pipmakare i Värmlandsskogarna: de sista kritpipsmakarna i Sverige*.
- Åkerhagen, A. 1995a. Tobakens och kritpipans historia, del V. *Marinarkeologisk tidskrift* 1 1995, 18:1. pp. 22–23.
- Åkerhagen, A. 1995b. Tobakens och kritpipans historia, del VI. *Marinarkeologisk tidskrift* 2 1995, 18:2. pp. 10–14.
- Åkerhagen, A. 1996. *Kritpipor: historia och datering: Del I. Allmänt*.
- Åkerhagen, A. 1999. Kritpiporna på Kronan. *Marinarkeologisk tidskrift*, 1999:1.
- Åkerhagen, Arne. 1997. *Svenska kritpipstillverkare och deras pipor*.
- Åkerhagen, A. 2004. *Svenska kritpipstillverkare och deras pipor*.
- Åkerhagen, A. 2006. *Datera en kritpipa: kortfattad beskrivning*. Stockholm, Tobaks- och tändsticksmuseum.
- Åkerhagen, A. 2008. *Kritpipor funna i Sverige*.
- Åkerhagen, A. 2012a. *Den svenska kritpipan: pipor, tillverkare och fynd*. Stockholm, Tobaks- och tändsticksmuseum

Digital sources

- Ainasoja, M. 2001. *Liitupiiput Turussa 1600-1800 -luvuilla*. Master's thesis. University of Turku: Department of Archaeology. Available online: https://www.academia.edu/11666211/Liitupiiput_Turussa_1600_1800_luvuilla. Last accessed: 11-26-2025.
- Anonymous. 1730s. *En wäl förbättrad tobaks-brödra-ordning, alle älskare af tobaksrökandet til efterrättelse författad, och wid embetets senaste sammankomst framgifwen. Tryckt i åhr*. Available online: https://weburn.kb.se/metadata/659/EOD_2405659.htm. Last accessed on 04-20-2026.
- Adlerstedt, Lorens Jacob. In: *Svenskt biografiskt lexikon*. Stockholm: *Svenskt biografiskt lexikon*. Available online: <https://sok.riksarkivet.se/sbl/Presentation.aspx?id=5568>. Last accessed on: 06-05-2024.
- Anonymous. 1859. *Pris-Courant å Lerkärl m: m:af Höganäs Tillverkning*. Available online: <https://www.stawford.se/pdf/1859.pdf>. Last accessed on 02-10-2026.
- Arkeologerna. 2017. *Tobak och kritpipor i Renströmmen*. Blog article, available online: <https://arkeologerna.com/bloggar/1700-talskvarteret-renstrommen/tobak-och-kritpipor-i-renstrommen/>
- Arkeologerna. 2021. *Kritpipor och rökning*. Blog article. Available online: <https://arkeologerna.com/bloggar/arkeologi-i-goteborg/kritpipor-och-rokning/>. Last accessed on 11-12-2025.
- Bell, M-L. 2014. Schillmark, Nils. In: *Biografiskt lexikon för Finland, vol 1. Svenska tiden*. Available online: URN:NBN:fi:sls-4530-1416928957136. Last accessed on 04-20-2026.
- Bergman Carter, R. 2013. *Vem rökte alla dessa pipor?* BA-thesis. Lund University. Available online: <https://www.lu.se/lup/publication/4227606>. Last accessed 01-23-2024.
- Bergman Carter, R. 2025. Bilaga 1. Kritpipsrelaterat fyndmaterial. In: Nordström, E. (ed.). *Alingsås kritpipsbruk - nya fynd i Nollhaga park. Rapport 2025:53, Arkeologisk förundersökning, Västra Götalands län, Västergötland, Alingsås kommun, Alingsås stad, fastighet Alingsås Sörhaga 2:1, fornlämning L1960:6947*. Arkeologerna. Available online: <https://pub.raa.se/visa/dokumentation/c515f0e1-5c08-44e9-84f4-896a7a425e0e>. Last accessed on 02-16-2026.

- Brenner, C., Ridell, J. & Moore, B. 2007. *Painting in the Dutch Golden Age: A Profile of the Seventeenth Century*. Washington: National Gallery of Art. Available online: https://www.nga.gov/sites/default/files/migrate_images/content/dam/ngaweb/education/learning-resources/teaching-packets/pdfs/dutch_painting.pdf. Last accessed on 04-07-2026.
- Carlsson, M., Lindblom, C. & Låås, J. (eds.). 2021. ... *En uttrampad nedkippad sko, min gud, en fruntimmers-sula hon vandrat i Gröna gången: arkeologisk dokumentation av försvarsverk och saluhandeln vid Södra Slussplan på Södermalm: lämningar från mitten av 1500-talet fram till 1935: Stockholm 103:1, L2015:7789, Stockholms stad och kommun, Stockholms län*. Upplands Väsby: Arkeologikonsult. Available online: <https://www.arkeologikonsult.se/rapportarkiv/2021/undersokningar/326-2021-3068-en-uttrampad-nedkippad-sko-min-gud-en-fruntimmers-sula-hon-vandrat-i-groena-gangen-arkeologisk-dokumentation-av-foersvarsverk-och-saluhandeln-vid-soedra-slussplan-pa-soedermalm>. Last accessed on 02-10-2026.
- Cessford, C. 2001. The Archaeology of the Clay Tobacco Pipe and the Study of Smoking. *Assemblage – The Sheffield Graduate Journal of Archaeology*, 6. Sheffield: University of Sheffield. Available online: https://archaeologydataservice.ac.uk/archives/view/assemblage/html/6/Cessford_text_web.html. Last accessed on 04-28-2026.
- Brolin, J. 1769. *Karta över sjö- och stapelstaden Norrköping år 1769*. Available online: <https://norrkoping.se/se-och-gora/bibliotek-och-arkiv/stadsarkiv/historiska-kartor>. Last accessed on 01-15-2026.
- Falk, S. 2020. *Ingen må röka tobak - Illegal tobaksrökning i Stockholm från 1740 till 1794*. BA-thesis, Stockholm University. Available online: <https://www.intoxicatingspaces.org/wp-content/uploads/sites/24/2020/07/Ingen-ma-CC%8A-ro-CC%88ka-tobak-Illegal-tobaksro-CC%88kning-i-Stockholm-fra-CC%8An-1740-till-1794.pdf>. Last accessed: 12-18-2025.
- Hammond, P. N.D. *Tobacco Pipe Maker Apprentices of Greater London*. Excel file. Available online: <https://sepr.co/apprentices.html>. Last accessed 01-16-2026.
- Hermelin, S. G. 1797. *Charta öfver Sverige med tilgränsande länder / Kongl. Maj:t Konung Gustaf IV Adolf i underdånighet tilegnat af S. G. Hermelin*. Available online: https://www.alvin-portal.org/alvin/view.jsf?aq=%5B%5B%5D%5D&c=31&aqe=%5B%5D&af=%5B%22ARCHIVE_ORG_ID_facet%3A8%22%2C%22RES_facet%3Acartographic%22%2C%22COUalpha2_facet%3ASE%22%2C%22CRP_facet%3A1700%22%5D&searchType=CARTOGRAPHIC&pid=alvin-record%3A471430&dsid=-3504#alvin-record%3A471430. Last accessed on 02-10-2026.
- Higgins, D.A. 1987. *The Interpretation and Regional Study of Clay Tobacco Pipes: A Case Study of the Broseley District*. PhD Thesis, University of Liverpool. Available online: <http://www.pipearchive.co.uk/pdfs/Clay/Higgins/Higgins%201987%20-%20Broseley%20Pipe%20Thesis.pdf>. Last accessed: 01-11-2026.
- Higgins, D. A. 1995. Clay tobacco pipes: a valuable commodity. *International Journal of Nautical Archaeology*, 24(1), 47–52. Available online: <https://doi.org/10.1111/j.1095-9270.1995.tb00710.x>. Last accessed: 11-27-2025.
- Higgins, D. 2013. *D. R. Atkinson – Bibliography*. Society for Clay Pipe Research Website. Available online: <https://sepr.co/PDFs/Resources/Bibliographies/Atkinson%20Bibliography%20revised%209%20Apr%202013.pdf>. Last accessed 11-18-2025.
- Higgins, D. 2017. *Guidelines for the Recovery and Processing of Clay Tobacco Pipes from Archaeological Projects, Version 1.2 (3 September 2017)*. National Pipe Archive, University of Liverpool. Available online: http://www.pipearchive.co.uk/pdfs/howto/Guidelines%20Ver%201_2%20030917.pdf. Last accessed 06-05-2024.
- Hushållnings Journalen*, 1777. 11-?-1777. Available online: https://www.ukforsk.se/Hushallning_2/hushCDtext.pdf. Last accessed on 04-28-2026.
- Hushållnings Journalen* 1786. 09-?-1786. Available online: https://www.ukforsk.se/Hushallning_2/hushCDtext.pdf. Last accessed on 04-28-2026

- Linné, C. von. 1746. *Ither Vestrogothicum*. Manuscript held by The Linnean Society of London (ref. LM/LP/TRV/5/2). Available online: https://linnean.access.preservica.com/uncategorized/IO_0632cf15-4980-43c2-a8a6-439c5161221a/. Last accessed 01-16-2026.
- Magnussen, B. & Lindblad, S. N.D. Digel- og krittpipefabrikken på Husvik. Available online: <https://verneforeningen.no/historie/digel-og-krittpipefabrikken-pa-husvik/>. Last accessed 01-23-2024.
- Monroe, J.C., Mallios, S. & Emmett, Q. 2004. A Dating Formula for Colono Tobacco Pipes in the Chesapeake. *The Journal of the Jamestown Rediscovery Center*, vol. 2. Available online: https://historicjamestowne.org/wp-content/uploads/Dating_Formula_for_Colono_Tobacco_Pipes.pdf Last accessed: 11-18-2025.
- Reimer, J (under pseudonym: Kautzsch, M). 1680. *Der Politische und Lustige Tobacks-Bruder: Das ist: Eine sonderliche Beschreibung des Edelen Krautes Toback : Darbey allerhand lustige Begebenheiten und lächerliche Historien/ so sich öftters bey dem Tobacksschmauchen ereignen*. Tobacks-Stade [sic]. Available online: https://dhhb.thulb.uni-jena.de/rsc/viewer/ufb_derivate_00010088/Math-8-1143b-08_0000.tif?logicalDiv=log_9ec155fd-f65e-4c81-b83b-b55b8cba7799. Last accessed on 04-29-2026.
- Runefelt, L. 2005. *Dygden som välståndets grund: Dygd, nytta och egennytta i frihetstidens ekonomiska tänkande*. Stockholm: Stockholms universitet. Available online: <http://urn.kb.se/resolve?urn=urn:nbn:se:su:diva-14689>. Last accessed 03-23-2026.
- Simons, G. 1974. *Die Tonpfeifenbäckerei. Teil 3: Herstellen eines Backbehälters für den Pfeifenofen*. (video). Available online: <https://www.youtube.com/watch?v=KpfxH-CK7IM&t=99s>. Last accessed on 02-16-2026.
- Swederus, M. B. 2013 [1887]. *Blad ur tobakens historia*. Originally published in *Svenska Trädgårdsföreningens tidskrift*. Available online: <https://www.ksla.se/wp-content/uploads/2021/06/Blad-ur-tobakens-historia.pdf>. Last accessed on 02-20-2026.
- Tagesson, G. 2015. Bilaga 6: Fyndtabell. Appendix to report: *Kvarteret Gesällen 4 och 25 samt del av Kvarnholmen 2:2, Småland, Kalmar län, Kalmar stad och kommun, Kalmar domkyrkoförsamling, RAÄ 93*. Available online: <https://pub.raa.se/dokumentation/b56f99ba-9efe-450f-bf7b-1633d3260d12/original>. Last accessed on 04-04-2026.
- Werming, N. G. 1812. Belägenheten af Warberg utgifven af N.G Werming 1812. Available online: https://rsob.se/fotosida/halland/varberg_kartor.html. Last accessed on 01-14-2026.
- Åkerhagen, A. 2010. *Kritpipsrapport för Kv. Spinnrocken, Norrköping*. Available online: <https://docplayer.se/23694862-Kritpipsrapport-for-kv-spinnrocken-norrkoping.html> . Last accessed on 07-21-2023.
- Åkerhagen, A. 2012b. Kritpipor funna i Sverige, del 1. CD-ROM .pdf-catalog, appendix to Åkerhagen, A. 2012. *Den svenska kritpipan: pipor, tillverkare och fynd*. Stockholm: Tobaks- och tändsticksmuseum.
- Åkerhagen, A. 2012c. Kritpipor funna i Sverige, del 2. CD-ROM .pdf-catalog, appendix to Åkerhagen, A. 2012. *Den svenska kritpipan: pipor, tillverkare och fynd*. Stockholm: Tobaks- och tändsticksmuseum.
- Åkerhagen, A. 2012d [2010]. Bilaga 7: *Kritpipsrapport för Kv. Spinnrocken, Norrköping. UV Öst Linköping, Utgrävning 2, 2010*. Digitally available appendix to Lindberg, S., Konsmar, A. & Lindeblad, K (eds.). 2012. *Från stadsjordar till stadsgårdar – 1600- och 1700-tal i Norrköpings södra utkant*. Särskild arkeologisk undersökning inom kvarteret Spinnrocken 18 och antikvarisk kontroll inom kvarteret Tulpanen 2. Östergötland, Norrköpings stad och kommun, kv Spinnrocken 18 och kv Tulpanen 2. Linköping: Riksantikvarieämbetet. Available online: <https://pub.raa.se/visa/dokumentation/b7f2f5cb-562f-46ed-99d0-1db2ee812941>. Last accessed on 01-30-2026.

- Åkerhagen, A. 2015. *Bilaga 5. Kritpipor*. Digitally available appendix to Tagesson, G. (ed.). *Kvarteret Gesällen 4 och 25 samt del av Kvarnholmen 2:2: Småland, Kalmar län, Kalmar stad och kommun, Kalmar domkyrkoförsamling, RAÄ 93 : särskild arkeologisk undersökning*. Linköping: Arkeologiska uppdragsverksamheten (UV Öst), Riksantikvarieämbetet. Available online: <https://pub.raa.se/dokumentation/07b24fe5-3ca2-4eed-b83f-35b8a75a5ea2/original>. Last accessed on 04-04-2026.
- Åkerhagen, A. 2021. Bilaga 7: Analys av Kritpipor - Kritpipsrapport för Södra Slussplan, Slussen, Stockholm. In: Carlsson, M., Lindblom, C. & Låås, J. (eds.). ... *En uttrampad nedkippad sko, min gud, en fruntimmers-sula hon vandrat i Gröna gången: arkeologisk dokumentation av försvarsverk och saluhandeln vid Södra Slussplan på Södermalm : lämningar från mitten av 1500-talet fram till 1935 : Stockholm 103:1, L2015:7789, Stockholms stad och kommun, Stockholms län*. Upplands Väsby: Arkeologikonsult. Available online: <https://www.arkeologikonsult.se/rapportarkiv/2021/undersokningar/326-2021-3068-en-uttrampad-nedkippad-sko-min-gud-en-fruntimmers-sula-hon-vandrat-i-groena-gangen-arkeologisk-dokumentation-av-foersvarsverk-och-saluhandeln-vid-soedra-slussplan-pa-soedermalm>. Last accessed on 02-10-2026.
- Åkerhagen, A. 2024. Bilaga 6: Analys av Kritpipor. In: Bertheau, M. & Tonemar, P. (eds.). ... *ena tomt vppa Sudra Malm belegna vidh Stadz garden: Arkeologisk dokumentation av en hamnmiljö med hantverk och handel samt delar av försvarsverk vid Stadsgården på Södermalm : lämningar från tidigt 1300-tal fram till 1933 : Stockholm 103:1, L2015:7789, Stockholms stad och kommun, Stockholms län*. Upplands Väsby: Arkeologikonsult. Available online: <https://www.arkeologikonsult.se/rapportarkiv/2024/undersokningar/459-2024-3085-ena-tompt-vppa-sudra-malm-belegna-vidh-stadz-garden-arkeologisk-dokumentation-av-en-hammiljoe-med-hantverk-och-handel-samt-delar-av-foersvarsverk-vid-stadsgarden-pa-soedermalm>. Last accessed on 02-10-2026.

12.1.1 Kungliga biblioteket

12.1.1.1 Svenska dagstidningar

- Carlsronas Wekoblade*. 1774. 08-27-1774. Available online : <https://tidningar.kb.se/dxq55qfq2nlxpdv/part/1/page/1>. Last accessed on 04-27-2026.
- Dagligt Allehanda*. 1776. 08-20-1776. Available online : <https://tidningar.kb.se/bvn0lgbn39wg9jv/part/1/page/1>. Last accessed on 04-27-2026.
- Dagligt Allehanda*. 1776.10-29-1776. Available online: <https://tidningar.kb.se/fzr3pkfr06ptzf2/part/1/page/1>. Last accessed on 04-27-2026.
- Dagligt Allehanda*. 1781. 07-04-1781. Available online: <https://tidningar.kb.se/fzr3pkfr06ptzf2/part/1/page/1>. Last accessed on 04-27-2026.
- Dagligt Allehanda*. 1781. 07-05-1781. Available online : <https://tidningar.kb.se/0jbn87sb4lf5rlb/part/1/page/1>. Last accessed on 04-27-2026.
- Göteborgs Tidningar*. 1787. 04-19-1787. Available online : <https://tidningar.kb.se/t36p5rq1r445cvfm/part/1/page/1>. Last accessed on 04-27-2026.
- Göteborgs Tidningar*. 1799. 05-09-1799. Available online : <https://tidningar.kb.se/pz2f76mzmc7w505q/part/1/page/1>. Last accessed on 04-27-2026.
- Göteborgs Weckolista*. 1750. 07-28-1750. Available online : <https://tidningar.kb.se/n60c90l03mw1z2t/part/1/page/1>. Last accessed on 04-27-2026.
- Göteborgs Weckolista*. 1756. 11-29-1756. Available online : <https://tidningar.kb.se/te5jgbs50gzw063/part/1/page/1>. Last accessed on 04-27-2026.
- Handels Tidning*. 1818. 04-17-1818. Available online : <https://tidningar.kb.se/bnfrgl1g86qqwj8f/part/1/page/3>. Last accessed on 04-27-2026.

Härnösandsposten. 1871. 04-29-1871. Available online :
<https://tidningar.kb.se/1kcqd9lc2sq6v0m/part/1/page/4>. Last accessed on 04-27-2026.

Inrikes Tidningar. 1819. 05-12-1819. Available online :
<http://tidningar.kb.se/wf7mn3z703rlvxxw/part/1/page/6>. Last accessed on 04-27-2026.

Norrköpings tidningar. 1795. 06-20-1795. Available online:
<https://tidningar.kb.se/dxq5hrcq4dx2blb/part/1/page/4>. Last accessed on 05-31-2026.

Norrköpings Weckotidningar. 1759. 12-22-1759. Available online :
<https://tidningar.kb.se/sb4kx73423vx6r3/part/1/page/1>. Last accessed on 04-27-2026.

Norrköpings Weckotidningar. 1760. 05-24-1760. Available online :
<https://tidningar.kb.se/zh9q3p990k12218/part/1/page/1>. Last accessed on 04-27-2026. .

Posttidningar. 1722. 10-01-1722. Available online : <https://tidningar.kb.se/6qjzq0j5mlzprp/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1739. 09-17-1739. Available online : <https://tidningar.kb.se/g0s7qg8s3z2551l/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1741. 04-30-1741. Available online :
<https://tidningar.kb.se/9tm2kb1m1l6wxxp5/part/1/page/4>. Last accessed on 04-28-2026.

Posttidningar. 1741. 10-08-1741. Available online : <https://tidningar.kb.se/r93j1sq33phb251/part/1/page/1>.
 Last accessed on 04-28-2026.

Posttidningar. 1743. 01-24-1743. Available online : <https://tidningar.kb.se/k3wbtdw3qz7907/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1743. 06-30-1743. Available online : <https://tidningar.kb.se/p7lgzqj12rh7ph6/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1747. 04-16-1747. Available online : <https://tidningar.kb.se/2ldtcf5d0pss7tc/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1760. 01-14-1760. Available online : <https://tidningar.kb.se/1kcs98bc2v652qx/part/1/page/1>.
 Last accessed on 04-27-2026.

Posttidningar. 1764. 06-28-1764. <https://tidningar.kb.se/bvn3mnrn2kc3zp2/part/1/page/1>. Last accessed on 04-27-2026.

Stockholmsposten. 1786. 01-23-1786. Available online :
<https://tidningar.kb.se/dxq37bnq3251c12/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Stads Pris-Courant. 1740. 04-07-1740. Available online :
<https://tidningar.kb.se/mlqslgz6kbb2287z/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Weckoblad. 1752. 03-07-1752. Available online :
<https://tidningar.kb.se/8nbksc656r4qdp7f/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Weckoblad. 1758. 04-01-1758. Available online :
<https://tidningar.kb.se/m0vt6tb5kpgg4m6g/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Weckoblad. 1759. 05-26-1759. Available online :
<https://tidningar.kb.se/q3zxbnfwn0zhps09/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Weckoblad. 1768. 02-13-1768. Available online :
<https://tidningar.kb.se/n2qrdd5wl5vh3032/part/1/page/1>. Last accessed on 04-27-2026.

Stockholms Weckoblad. 1768. 02-20-1768. Available online :
<https://tidningar.kb.se/jxlm8bg7g6762qss/part/1/page/1>. Last accessed on 04-27-2026.

12.2 Unpublished sources

- Alströmer, J. 1719. *Resa i England*. Manuscript. Uppsala Universitetsbibliotek.
- Bergman Carter, R. 2016. *Smoke Signals from the Past*. Unpublished Master's thesis. Lund University.
- Brorsson, T. 2022. *ICP-analys av kritpipor från Göteborg, Uddevalla, Karlskrona, Karlstad samt Stockholm*. Unpublished report.
- Brynja, E. 1985. *Kritpipslagret i rum P5 i östra flygeln till de la Gardies Palats*. Arkeologisk rapport, Stockholms stadsmuseum.
- Brynja, E., Loewe, W., Duco, D. 1987. *Några resultat av arbetet med kritpipsfyndet från kv Mälaren*.
- Hägg, J. 2001. *När röken har lagt sig: kritpipor från två marknadsplatser i Pite lappmark*. CD-uppsats i arkeologi. Umeå University.
- Loktu, L. 2009. *Kritpiper som habitus: en historisk-arkeologisk studie med speciellt hensyn til 1600-tallets Trondheim*. Master's thesis. Trondheim: Institutt for arkeologi og religionsvitenskap, Vitenskapsmuseet & Norges Teknisk-naturvetenskaplige universitet.
- Pedersen, M. 2016. *Byens folk vs. Søens folk – en komparativ analyse af brug og forbrug af kridtpiber fra et urbant miljø og et maritimt miljø*. Master's thesis. Copenhagen: Saxo Instituttet, Copenhagen University.
- Wacke, A. 2014. *The clay tobacco pipe collection from Hölar, Iceland*. Master's thesis. University of Iceland.
- Wallin, L. 1982. *Kritpipor som dateringshjälpmedel i historisk arkeologi*. Institutionen för medeltidsarkeologi. Stencil. Lund: Lund University.
- Åkerhagen, A. No date [2009?]. *Kritpipor funna vid Hamnö kyrka*. Unpublished report. Available on request.
- Åkerhagen, A. 1992. *Kritpiporna vid Slussen Stockholm 1984*. Unpublished report.

12.2.1 Personal communication

- Duco, D. 2024. E-mail correspondence on the topic of stem lengths and production qualities of Dutch pipes: 07-03-2024–07-04-2024.
- Wulf, P. 2020. E-mail correspondence on the topic of the pipe factory in Karlskrona: 04-30-2020–11-22-2020.

12.3 Archival sources

12.3.1 Riksarkivet [Landsarkivet] Göteborg

12.3.1.1 *Handlingar rörande Alingsås och Nollhaga gård 1618–1799*

SE/GLA/10003. 1618–1799. Handlingar rörande Alingsås och Nollhaga gård. 1618–1799 & odat.

12.3.1.2 *Alingsås landsförsamlings kyrkoarkiv*

SE/GLA/13005/A I/1. 1732–1745. Alingsås landsförsamlings kyrkoarkiv, Husförhörlängder, vol. 1, 1732–1745.

12.3.1.3 *Göteborgs Mantalskontors arkiv 1713–1949*

SE/GLA/12296/F I aa/1. 1637–1655. Göteborgs Mantalskontors arkiv, Mantalslängder, vol. 1: 1637–1655.

12.3.1.4 Göteborgs rådhusrätt och magistrat före år 1900

SE/GLA/12098/EIIIA/51. 1815. Göteborgs rådhusrätt och magistrat före år 1900, Bouppteckningar och arvskiten, vol. 51: 1815.

12.3.1.5 Uddevalla rådhusrätts och magistrats arkiv

SE/GLA/11954/F II a/3 1748–1756. Uddevalla rådhusrätts och magistrats arkiv, Bouppteckningar och arvskiten 1730–1970: vol. 3. 1748–1756.

12.3.1.6 Vänersborgs kyrkoarkiv

SE/GLA/13632/C I/2. 1776–1819. Vänersborgs kyrkoarkiv, Födelse- och dopböcker, vol. 2: 1776–1819.

12.3.2 Riksarkivet i Lund

12.3.2.1 Karlskrona rådhusrätt och magistrat

SE/LLA/10122/F II a/26. 1814. Karlskrona rådhusrätt och magistrat, FIIA: Bouppteckningar huvudserie, vol. 26, 1814.

12.3.2.2 Karlskrona stadsarkiv: Hall- och manufakturrättens arkiv

SE/LLA/10130/B/1. 1778–1820. Karlskrona stadsarkiv: Hall- och manufakturrättens arkiv: Fabriksrelationer m.m., vol. 1: 1787–1820.

SE/LLA/10127/A I/21. 1764. Karlskrona stadsarkiv, Kämnrättsarkivet, Domböcker, vol. 21 1764

12.3.2.3 Karlskrona tyska församlings kyrkoarkiv

SE/LLA/13202/C I/2 1725–1797. Karlskrona tyska församlings kyrkoarkiv, Födelse- och dopböcker. Huvudserie, vol. 2, 1725–1797.

12.3.2.4 Landskrona rådhusrätt och magistrat

SE/SVAR/LLA-132120021/FIIB/FIIB: 7. 1752–1810. Landskrona rådhusrätt och magistrat, Bouppteckningar och arvskiten supplementserie, vol. 7: 1752–1810.

12.3.2.5 Sövde Kyrkoarkiv

SE/LLA/13400/C I/2. 1738–1775. Sövde kyrkoarkiv, Födelse- och dopböcker, vol. 2: 1738–1775.

12.3.2.6 Varbergs stadsförsamlings kyrkoarkiv

SE/LLA/13443/C I/1 1690–1730. Varbergs stadsförsamlings kyrkoarkiv, Födelse- och dopböcker, vol. 1, 1690–1730.

12.3.3 Riksarkivet Marieberg

12.3.3.1 Kommerskollegiums arkiv

Huvudarkivet

SE/RA/420132/1/D VIII a/2. 1723–1781. Riksarkivet, Kommerskollegium, 1: Huvudarkivet, DVIII a: Förteckningar över utfärdade fabriksprivilegier, Vol. 2: 1723–1781.

SE/RA/420132/1/D VIII a/3. 1755–1790. Riksarkivet, Kommerskollegium, 1: Huvudarkivet, DVIII a: Förteckningar över utfärdade fabriksprivilegier, Vol. 3: 1755–1790

Kammarkontoret, inkomna årsberättelser, första serien

- SE/RA/420132/3/D/D a/Da 1/1. 1740–1747. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 1: 1740–1747.
- SE/RA/420132/3/D/D a/Da 1/3. 1745–1749: Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 3: 1745–1749.
- SE/RA/420132/3/D/D a/Da 1/4 1749–1749. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 4: 1749–1749.
- SE/RA/420132/3/D/D a/Da 1/10. 1752–1756. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 10: 1752–1756.
- SE/RA/420132/3/D/D a/Da 1/12. 1757. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 12: 1757.
- SE/RA/420132/3/D/D a/Da 1/13 1758–1758. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 13 1758–1758.
- SE/RA/420132/3/D/D a/Da 1/15. 1759–1761. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 15: 1759–1761.
- SE/RA/420132/3/D/D a/Da 1/16 1760–1761. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 16: 1760–1761.
- SE/RA/420132/3/D/D a/Da 1/17. 1765–1765. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 17: 1765–1765.
- SE/RA/420132/3/D/D a/Da 1/19. 1762–1764. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 19: 1762–1764.
- SE/RA/420132/3/D/D a/Da 1/20. 1765–1766. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 20: 1765–1766.
- SE/RA/420132/3/D/D a/Da 1/21. 1767. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 21: 1767.
- SE/RA/420132/3/D/D a/Da 1/22. 1768–1768. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 22: 1768–1768.
- SE/RA/420132/3/D/D a/Da 1/23. 1769–1769. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 23: 1769.
- SE/RA/420132/3/D/D a/Da 1/24. 1770–1770. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 24: 1770–1770.
- SE/RA/420132/3/D/D a/Da 1/25. 1771–1771. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 25: 1771–1771.
- SE/RA/420132/3/D/D a/Da 1/26. 1772. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 26: 1772.
- SE/RA/420132/3/D/D a/Da 1/27. 1773. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 27: 1773.
- SE/RA/420132/3/D/D a/Da 1/29 1775–1775. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 29: 1775–1775.
- SE/RA/420132/3/D/D a/Da 1/30. 1776–1776. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 30: 1776.
- SE/RA/420132/3/D/D a/Da 1/31. 1777–1777. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 31: 1777–1777.
- SE/RA/420132/3/D/D a/Da 1/33. 1779–1779. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 33: 1779–1779.

SE/RA/420132/3/D/D a/Da 1/34. 1780–1780. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 34: 1780–1780.

SE/RA/420132/3/D/D a/Da 1/37. 1783–1783. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 37: 1783–1783.

SE/RA/420132/3/D/D a/Da 1/38. 1784–1784. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 38: 1784–1784.

SE/RA/420132/3/D/D a/Da 1/39. 1785. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 39: 1785.

SE/RA/420132/3/D/D a/Da 1/40. 1786. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 40: 1786.

SE/RA/420132/3/D/D a/Da 1/41. 1787. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 41: 1787.

SE/RA/420132/3/D/D a/Da 1/42. 1788. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 42: 1788.

SE/RA/420132/3/D/D a/Da 1/43. 1789. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 43: 1789.

SE/RA/420132/3/D/D a/Da 1/44. 1790. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 44: 1790.

SE/RA/420132/3/D/D a/Da 1/45. 1791. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 45: 1791.

SE/RA/420132/3/D/D a/Da 1/47. 1793–1793. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 47: 1793–1793.

SE/RA/420132/3/D/D a/Da 1/48. 1794–1794. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 48: 1794–1794.

SE/RA/420132/3/D/D a/Da 1/50. 1796–1796. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 50: 1796–1796.

SE/RA/420132/3/D/D a/Da 1/52. 1798–1798. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 52: 1798–1798.

SE/RA/420132/3/D/D a/Da 1/53. 1799–1799. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 53: 1799–1799.

SE/RA/420132/3/D/D a/Da 1/54. 1800–1800. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 54: 1800–1800.

SE/RA/420132/3/D/D a/Da 1/55. 1801–1801. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 55: 1801–1801.

SE/RA/420132/3/D/D a/Da 1/56. 1802–1802. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 56: 1802–1802.

SE/RA/420132/3/D/D a/Da 1/57. 1803–1803. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 57: 1803–1803.

SE/RA/420132/3/D/D a/Da 1/60. 1806–1806. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 57: 1806–1806.

SE/RA/420132/3/D/D a/Da 1/61. 1807–1807. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 61: 1807–1807.

SE/RA/420132/3/D/D a/Da 1/62. 1808–1808. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 62: 1808–1808.

SE/RA/420132/3/D/D a/Da 1/63. 1809–1809. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 63: 1809–1809.

SE/RA/420132/3/D/D a/Da 1/64. 1810–1810. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 64: 1810–1810.

SE/RA/420132/3/D/D a/Da 1/65. 1811–1811. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 65: 1811–1811.

SE/RA/420132/3/D/D a/Da 1/66. 1812–1812. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 67: 1812–1812.

SE/RA/420132/3/D/D a/Da 1/67. 1813–1813. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 67: 1813–1813.

SE/RA/420132/3/D/D a/Da 1/69. 1815–1815. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Första serien, vol. 69: 1815–1815.

Kammarkontoret, inkomna årsberättelser, andra serien

SE/RA/420132/3/D/D a/Da 2/3. 1817–1817. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 3: 1817–1817.

SE/RA/420132/3/D/D a/Da 2/5. 1818–1818. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 5: 1818–1818.

SE/RA/420132/3/D/D a/Da 2/9. 1820–1820. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 9: 1820–1820.

SE/RA/420132/3/D/D a/Da 2/21. 1826–1826. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 21: 1826–1826.

SE/RA/420132/3/D/D a/Da 2/29. 1829–1829. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 29: 1829–1829.

SE/RA/420132/3/D/D a/Da 2/31. 1830–1830. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 31: 1830–1830.

SE/RA/420132/3/D/D a/Da 2/33. 1831–1831. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Andra serien, vol. 33: 1831–1831.

Kammarkontoret, inkomna årsberättelser, tredje serien

SE/RA/420132/3/D/D a/Da 3/1. 1847–1847. Riksarkivet, Kommerskollegium, 3, Kammarkontoret, Inkomna årsberättelser, Fabriks- och industrierättelser, Tredje serien, vol. 1: 1847–1847

12.3.3.2 Mantalslängder

SE/RA/55203/55203.13/60. 1757. Mantalslängder 1642–1820, Hallands län, vol. 60: 1757.

SE/RA/55203/55203.13/61. 1758. Mantalslängder 1642–1820, Hallands län, vol. 61: 1758.

SE/RA/55203/55203.13/62. 1759. Mantalslängder 1642–1820, Hallands län, vol. 62: 1759

SE/RA/55203/55203.13/64, 1761. Mantalslängder 1642–1820, Hallands län, vol. 64: 1761.

SE/RA/55203/55203.13/65. 1762. Mantalslängder 1642–1820, Hallands län, vol. 65: 1762.

SE/RA/55203/55203.15/75. 1744. Mantalslängder 1642–1820, Älvsborgs län, vol. 75: 1744.

SE/RA/55203/55203.15/83, 1757. Mantalslängder 1642–1820, Älvsborgs län, vol. 83: 1757.

SE/RA/55203/55203.15/85, 1759. Mantalslängder 1642–1820, Älvsborgs län, vol. 85: 1759.

12.3.3.3 Manufakturkontoret

SE/RA/41113/1/D/D 5/176, Manufakturkontoret, Huvudarkivet, reseberättelser och åtskilliga skrivelser 1742–1760.

12.3.3.4 Frihetstidens utskottshandlingar

- SE/RA/6122/8/R 2763. 1740–1741. Frihetstidens utskottshandlingar, Riksdagen 1740–1741, Handels- och manufakturdeputationen, Protokoll.
- SE/RA/6122/8/R 2766. 1740–1741. Frihetstidens utskottshandlingar, Riksdagen 1740–1741, Handels- och manufakturdeputationen, Handlingar, see 17–17H.
- SE/RA/6122/9/R 2836. 1742–1743. Frihetstidens utskottshandlingar, Riksdagen 1742–1743, Protokoll och koncept.
- SE/RA/6122/10/R 2898. 1746–1747. Frihetstidens utskottshandlingar, Riksdagen 1746–1747, Handels- och manufakturdeputationen, Koncept.
- SE/RA/6122/10/R 2900. 1746–1747. Frihetstidens utskottshandlingar, Riksdagen 1746–1747, Handels- och manufakturdeputationen, Handlingar.

12.3.4 Riksarkivet [Landsarkivet] Uppsala

12.3.4.1 Aspeboda kyrkoarkiv

- SE/ULA/10033/F/1. 1775–1823. Aspeboda kyrkoarkiv, Dalarnas län, Död- och begravningsböcker, 1775–1823.

12.3.4.2 Arboga stadsförsamlings kyrkoarkiv

- SE/ULA/10022/A I a/3. 1775–1785. Arboga stadsförsamlings kyrkoarkiv, Husförhörlängder: 1775–1785.

12.3.4.3 Falu Kristine kyrkoarkiv

- SE/ULA/11441/F I/2. 1793–1809. Falu Kristine kyrkoarkiv, Död- och begravningsböcker, huvudserie, vol. 2. 1793–1809.
- SE/ULA/11441/F I/3. 1810–1855. Falu Kristine kyrkoarkiv, Död- och begravningsböcker, huvudserie, vol. 3: 1810–1855.

12.3.4.4 Falu rådhusrätt och magistrat

- SE/ULA/10239/F 2/15 14a. 1748–1749. Falu rådhusrätt och magistrat, Bouppteckningar och arvskiften, vol. 15: 1748–1749.

12.3.4.5 Hallrätten i Arboga

- SE/ULA/10018/2. 1751–1824. Hallrätten i Arboga, vol. 2.
- SE/ULA/10018/3. 1750–1821. Hallrätten i Arboga, vol. 3.

12.3.5 Stockholms Stadsarkiv

12.3.5.1 Byggnadsnämndens expedition och stadsarkitektkontor

- SE/SSA/0174/ F 1 AA/NS 37. 1713–1874. Byggnadsnämndens expedition och stadsarkitektkontor, Stockholms bygglövsritningar åren 1713–1874. Available online:
<https://sok.stadsarkivet.stockholm.se/databas/bygglov1713-1874/Visa/ns037-bn1753-493/7552?sidindex=0&fritext=%25c3%25b6rnbeck>. Last accessed on 02-20-2026.

12.3.5.2 Hall- och manufakturrättens arkiv

- SE/SSA/0099/A 1/10. 1769. Hall- och Manufakturrätten, Protokoll, vol. 10: 1769.

SE/SSA/0099/D 1/1. 1739–1841. Hall- och Manufakturrätten, Matriklar över ledamöter och fabriksidkare, vol.1, 1739–1841.

SE/SSA/0099/E 3/1. 1620–1753. Hall- och manufakturrätten, Previlegieböcker, vol. 1: 1620–1753.

SE/SSA/0099/E 3/3. 1757–1767. Hall- och manufakturrätten, Previlegieböcker, vol. 3: 1757–1767.

SE/SSA/0099/E 4/1. 1773. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 1: 1773.

SE/SSA/0099/E 4/2. 1778. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 2: 1778.

SE/SSA/0099/E 4/3. 1779. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 3: 1779.

SE/SSA/0099/E 4/13. 1794. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 13: 1794.

SE/SSA/0099/E 4/14. 1795. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 14: 1795.

SE/SSA/0099/E 4/61. 1847. Hall- och Manufakturrätten, Förteckningar över arbetare, vol. 61: 1847.

12.3.5.3 Hedvig Eleonora kyrkoarkiv

SE/SSA/0006/F I/4. 1766–1785. Hedvig Eleonora kyrkoarkiv, Död- och begravningsböcker, 1766–1785.

12.3.5.4 Jakob och Johannes kyrkoarkiv

SE/SSA/0008/F I a/1. 1721–1772. Jakob och Johannes kyrkoarkiv, Död- och begravningsböcker för Jakob, vol. 1: 1721–1772.

12.3.5.5 Justitiekollegium, Förmyndarkammaren 1667–1924

SE/SSA/0145A/F 1/F 1 A/98 1729. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 98, 1729.

SE/SSA/0145A/F 1/F 1 A/129. 1742. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 129, 1742.

SE/SSA/0145A/F 1/F 1 A/171. 1758. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 171, 1758.

SE/SSA/0145A/F 1/F 1 A/182. 1760. Justitiekollegium 1637–1856, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar 1598–1924, vol. 182: 1760.

SE/SSA/0145A/F 1/F 1 A/223. 1772. Justitiekollegium 1637–1856, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar 1598–1924, vol. 223: 1772.

SE/SSA/0145A/F 1/F 1 A/255. 1779. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 255: 1779.

SE/SSA/0145A/F 1/F 1 A/283. 1785. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 283: 1785.

SE/SSA/0145A/F 1/F 1 A/330. 1798. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 330: 1798.

SE/SSA/0145A/F 1/F 1 A/336. 1799. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 336: 1799.

SE/SSA/0145A/F 1/F 1 A/368. 1807. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 368: 1807.

SE/SSA/0145A/F 1/F 1 A/383. 1811. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 383: 1811.

SE/SSA/0145A/F 1/F 1 A/450. 1827. Justitiekollegium, Förmyndarkammaren 1667–1924, Rådhusrättens 1:a avdelning 1850–1924, Bouppteckningar, Bouppteckningar 1598–1924, vol. 450. 1827.

12.3.5.6 Katarina kyrkoarkiv

SE/SSA/0009/A I/7 1754–1760. Katarina kyrkoarkiv, Husförhörlängder, vol. 7 1754–1760.

12.3.5.7 Kungsholms kyrkoarkiv

SE/SSA/0011/A I a/2 1761–1778. Kungsholms kyrkoarkiv, Husförhörlängder, vol. 2: 1761–1778.
SE/SSA/0011/A I a/3. 1761–1777. Kungsholms kyrkoarkiv, Husförhörlängder, vol. 3: 1761–1777.
SE/SSA/0011/A I a/4. 1778–1784. Kungsholms kyrkoarkiv, Husförhörlängder, vol. 4: 1778–1784.
SE/SSA/0011/A I a/8. 1800–1809. Kungsholms kyrkoarkiv, Husförhörlängder, vol. 8: 1800–1809.
SE/SSA/0011/E II/1. 1688–1772. Kungsholms kyrkoarkiv, Vigselsböcker, vol. 1: 1688–1772.
SE/SSA/0011/F I/1 1688–1778. Kungsholms kyrkoarkiv, Död- och begravningsböcker, vol. 1: 1688–1778.

12.3.5.8 Maria Magdalena kyrkoarkiv

SE/SSA/0012/C I a/8, Maria Magdalena kyrkoarkiv, Födelse- och dopböcker 1591–1999, huvudserie, vol. 8, 1756–1777.
SE/SSA/0012/F I/3. 1766–1788. Maria Magdalena kyrkoarkiv, Död- och begravningsböcker, huvudserie, vol. 3: 1766–1788.

12.3.5.9 Stockholms Magistrat och Rådhusrätt

SE/SSA/0138/F 6 b/10. 1736. Stockholms Magistrat och Rådhusrätt, Konkursakter, obestämda, vol. 10: bunt 50. 1736.

12.3.5.10 Stockholms stadsarkivs kartsamling

SE/SSA/0234/J 2 A:16. 1733. Tillaeus, P. *General Charta öfwer Stockholm med Malmarne Åhr 1733. Med Kongl. Maj:ts alldrånadigste Privilegio Upsatt af Petrus Tillaeus Stads Ingenieur*. Available online: <https://stockholmskallan.stockholm.se/post/8560>. Last accessed on 02-10-2026.

12.3.5.11 Storkyrkoförsamlingens kyrkoarkiv

SE/SSA/0016/F I a/2. 1754–1783. Storkyrkoförsamlingens kyrkoarkiv, Död- och begravningsböcker, huvudserie, vol. 2: 1754–1783.

12.3.5.12 Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder

SE/SSA/0031/06/G 1 BA/G 1 BA:4/1. 1652. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1652, vol. 1: Staden södra, östra, västra och inre. Norra förstaden västra och östra kvarteren. Ladugårdslandet. Södra förstaden.
SE/SSA/0031/06/G 1 BA/G 1 BA:10/13 1711. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1711, vol. 13: Katarina östra.
SE/SSA/0031/06/G 1 BA/G 1 BA:14/1 1731. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder 1731, vol. 1: Maria västra.
SE/SSA/0031/06/G 1 BA/G 1 BA:17/6 1740. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder 1740, vol. 6: Maria inre och västra.
SE/SSA/0031/06/G 1 BA/G 1 BA:20/5. 1755. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1755, vol. 5: Kungsholmen.
SE/SSA/0031/06/G 1 BA/G 1 BA:20/10. 1755. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1755, vol. 10: Maria inre.
SE/SSA/0031/06/G 1 BA/G 1 BA:20/9. 1755. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1755, vol. 9: Katarina södra.
SE/SSA/0031/06/G 1 BA/G 1 BA:21/3. 1760. Överståthållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1760, vol. 3: Klara västra övre och yttre och Kungsholmen.

SE/SSA/0031/06/G 1 BA/G 1 BA:21/10. 1760. Överståhållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1760, vol. 10: Katarina södra del 2.

SE/SSA/0031/06/G 1 BA/G 1 BA:21/13. 1760. Överståhållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1760, vol. 13: Maria västra.

SE/SSA/0031/06/G 1 BA/G 1 BA:23/6. 1770. Överståhållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1770, vol. 6: Katarina södra del 2.

SE/SSA/0031/06/G 1 BA/G 1 BA:24/3. 1780. Överståhållaren för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1780, vol. 3: Katarina södra del 2.

SE/SSA/0031/06/G 1 BA/G 1 BA:27/5. 1810. Överståhållarämbetet för uppbördsärenden, Kamrerarexpeditionen 1582–1973, Mantalslängder, 1810, vol. 5: Kungsholmen.

12.3.5.13 Överståhållaren för uppbördsärenden, Kronotaxeringslängder

SE/SSA/0031/06/G 1 AA/27. 1725. Överståhållarämbetet för uppbördsärenden, Kronotaxeringslängder, vol. 27: 1725.

SE/SSA/0031/06/G 1 AA/63. 1762. Överståhållarämbetet för uppbördsärenden, Kronotaxeringslängder, vol. 63: 1762.

SE/SSA/0031/06/G 1 AA/94. 1775. Överståhållarämbetet för uppbördsärenden, Kronotaxeringslängder, vol. 94: 1775.

12.3.6 Riksarkivet i Vadstena

12.3.6.1 Söderköpings rådhusrätts och magistrats arkiv, 1561–1964

SE/VALA/01710/F I/2. 1712–1750. Söderköpings rådhusrätts och magistrats arkiv, 1561–1964, Bouppteckningar, vol. 2: 1712–1750.

12.3.6.2 Länsstyrelsen i Östergötlands län. Landskontorets arkiv, Mantalslängder 1630–1861

SE/VALA/01979/E III a/14. 1758. Länsstyrelsen i Östergötlands län. Landskontorets arkiv, Mantalslängder 1630–1861, vol. 14. 1758.

SE/VALA/01979/E III a/15. 1759. Länsstyrelsen i Östergötlands län. Landskontorets arkiv, Mantalslängder 1630–1861, vol. 15. 1759.

SE/VALA/01979/E III a/16. 1760. Länsstyrelsen i Östergötlands län. Landskontorets arkiv, Mantalslängder 1630–1861, vol. 16. 1760.

SE/VALA/01979/E III a/18. 1762. Länsstyrelsen i Östergötlands län. Landskontorets arkiv, Mantalslängder 1630–1861, vol. 18. 1760.

12.3.6.3 Norrköpings rådhusrätts och magistrats arkiv

Bouppteckningar, huvudserie

SE/VALA/01697/F I aaa/32. 1779. Norrköpings rådhusrätts och magistrats arkiv, Bouppteckningar, huvudserie, vol. 32: 1779.

SE/VALA/01697/F I aaa/62. 1809. Norrköpings rådhusrätts och magistrats arkiv, Bouppteckningar, huvudserie, vol. 62: 1809.

12.3.7 Värmlandsarkiv

12.3.7.1 Karlstads stadsförsamlings kyrkoarkiv 1697–1995

SE/VA/13275/F I/1. 1758–1797. Karlstads stadsförsamlings kyrkoarkiv, Död- och begravningsböcker, vol. 1: 1758–1797.

Appendix I: A chronology of Swedish clay tobacco pipe manufacturers

Introduction

The list below is primarily focused on the years of operation of Swedish eighteenth- and early nineteenth-century pipe factories and less on the pipes that they made than I originally desired. Some makers or factory owners are followed by a brief presentation of pipes from the archaeological record that have, or in some cases should previously have been, connected to the production of a specific factory. These have primarily been sourced via comparisons of names and initials known from the archival record to pipes with names and initial marks in Åkerhagen's catalogs (2012b & 2012c) as well as to other pipe reports available as appendices to excavation reports and as part of the partially unpublished database he accumulated over the last decades of his life.

The following chronology of pipe makers and pipe factories in Sweden is intended primarily to answer the question *when* certain pipe factories were operational. As shown by archival information presented throughout the chapters above, the Swedish pipe industry of the eighteenth century was relatively standardized. This standardization means that unless pipes are marked with factory-specific markings or decorations that can be connected via initials, names or other designs or attributes to makers or factory owners known from the archival record, they are currently very difficult to apply for narrow dating-purposes.

With the exception of pipes with factory-specific marks or decorations and pipes marked with names or initials, the output of the Swedish pipe making industry was relatively standardized in terms of morphology, stem lengths, production quality, and decorations throughout the period. For example, many pipe factories are now known to have made pipes referred to as "three crowns" (with spelling variations). Without factory-specific markings or decorations, such pipes are difficult to attribute to specific manufacturers with absolute certainty. Similarly, pipes referred to as No. 3 are now known from makers operating in the 1710s throughout the studied period into the late 1830s (and likely later). Pipes marked with N and a number in molded relief on the sides of heels or spurs were manufactured at many Swedish factories. While some factories such as the Falun factory, Daniel Almqvist's factory (see Åkerhagen 2012a, p. 361) and the *Stiernan* and *Kronan* factories in Norrköping (see Åkerhagen 2013, p. 8 & p. 52) are known to have marked their N-number pipes with both factory-specific decorations and the letter N and a number in molded relief on the sides of heels or spurs, other factories did not.

While these findings may have problematic implications for chronometric applications of Swedish clay tobacco pipes without factory-specific markings, this standardization attests to long-lived idealizations and conceptions of the functions that clay tobacco pipes were intended to fill in socially differentiating smokeways. This therefore suggests a validity of recording attributes related to production quality and relative cost of pipes. For example, contrary to modern western numbering

conventions where the number 1 is generally held to signify the best quality, the lower the number a Swedish pipe had, the shorter its stem, the lesser its quality and the lower its price. In other words, this means that pipes marked with N/3 cost significantly less than pipes marked with N/6.

I feel it important to mention that currently unidentifiable, seemingly homogeneous marked and unmarked, bowls may be possible to connect to specific factories or workshops in the future. What is needed to do this is a complex comparative and deductive effort that considers, among other things, morphology, stratigraphy, and distinct impressions on pipes left by molds, stamps, and other tools. ICP-AES analyses of clay composition and provenance, particularly in cases where local or domestic clays can be expected to have been used, may also be of assistance in determining origins and production dates of such pipe fragments. I have no doubt that deep learning artificial intelligence can be applied to achieve these ends in the not-too-distant future.

Source materials

The source material applied below has been varied. In terms of archival material, the starting point has been a combination of the volumes of annual reports from the *Hallrätter and Hall- och Manufakturätter* to the *Kommerskollegium* (National Board of Trade) in which the production of all chartered pipe factories or workshops were supposed to be included. As these reports generally contain a date, my impression is that they have also previously been employed to determine production dates for Swedish pipe factories.²¹³ The format of the annual reports vary between years and factories. Some factories, such as the Alingsås and Falun factories, reported the names, prices and production volumes of individual pipe types for each year for many years. Other factories, such as the Varberg factory and the Karlskrona factory, only specify the number of pipes manufactured in gross and the total value of the production. Occasionally, other information relating to the factories is mentioned. The Varberg factory, for example, stated that some of its production had been exported during one year, and another year the annual report provides a slightly more detailed account of factory inventories and the type of fuel used. Other factories, such as the Stockholm factories, with few exceptions specified only their production value rather than the amount or types of pipes.

Estate inventories, as they commonly contain the date of death of their subjects, have also been of use in determining production dates for individual factories, based on the assumption that stamp-marks and molds with owner-specific markings were discontinued and, in cases where ownership changed, replaced as new persons assumed ownership of factories and workshops. However, some factories, such as the Alingsås factory, likely did not alter its decorations and markings as a result of its founder's death. For example, Jonas Alströmer's successor Johan Alströmer's initials were identical to his father's

²¹³ It is beyond my comprehension where Åkerhagen obtained some of the production dates that are presented in *Den svenska kritpipan – pipor, tillverkare och fynd* (2012). Many if not most of the production dates presented by Åkerhagen have, based on archival sources consulted below, been found to be erroneous. Some production date spans presented by Åkerhagen and applied in archaeological reports are in need of stark revisions; for example pipe fragments with marks T LIUNGREN or TLG, which Åkerhagen have claimed to have been manufactured between 1785 and 1786 (2012, p. 49) are now known to have been made by a Thure Ljunggren (several spellings) who was the acting master pipe maker at Grindsbruk between the year 1773 and 1811 (see Carl Abraham Schrickel below). Another example is bowls incusely stamped with three crowns and FR (referring to King Frederick I) and marked with crowned A/O, that have been attributed by Åkerhagen to Anders Örnbeck (see for example 2012b, p. 457). As Örnbeck's production did not start until 1754, three years after King Frederick I had died, it is more likely that these pipes were made at a factory that was operational during this king's reign and owned and operated by a master pipe maker with matching initials – Olof Aspegren.

and pipes manufactured under Johan were likely marked with the same initials (see also Bergman Carter 2024).

Occasionally, advertisements from pipe factories or pipe merchants have also been consulted. These advertisements may be for pipes as well as for the sale of entire factories, as in the case of the pipe factories in Arboga, Karlskrona and Alingsås and can as such serve to mark the end of production at individual factories or by individual factory owners or master pipe makers.

For pipe makers in Stockholm, the local *Hall- och Manufakturrätt* archives, the *Fastighetsregistret* as well as *Bygglövsregistret* have also been consulted. The *Hall- och Manufakturrätt* archives contain some issued letters of charter for pipe making and, from 1773 onwards – inventories of workers at factories. The *Hall- och Manufakturrätt* archive at the Stockholm City Archives also hold compilations of issued charters, yet several letters of charter are missing, and inconsistencies have been discovered; so-called transportations – transfers – of charters were not always noted, and the passings of inherited charters to surviving kin are almost never included in these records.

When plots of pipe factories or workshops in Stockholm have changed ownership, transactions can, in most cases, be found in the *Fastighetsregistret*, the real estate ownership registry catalog of the Stockholm City Archives. This catalog refers to proclamations of land purchases, which I have not referenced below.

One of the most rewarding sources have been census, tax, and household examination records that list residents and occasionally titles of inhabitants at factories. This has enabled inferences about production dates and locations of factories to be made and has also enabled the identification of workers and the tracing of workers' movements between factories. Household examination records, tax records, census records, death records and burial books have as such been consulted to track factory staff, journeymen and masters in particular. This has been done to determine where the knowledge of pipe making at different factories came from, and when.

As mentioned in Chapter 7, in the cases of the first pipe factories, such as those owned by Carl Aspegren, Jonas Alströmer, Daniel Almqvist, Anders Örnbeck, or Johan Hök, the first pipe masters appear to have been brought in from abroad. German sounding names like Bockler, Richter, Riesel, Ophoff and Düring indicate that the first master pipe makers at many factories may have come from Germany. Others, such as Jan Joosten Vertin and Jacob van Kleeff have Dutch sounding names and have been traced by van der Lingen (2007) to Gouda or Alphen aan den Rijn or Aarlanderveen via Amsterdam. Although Alströmer appears to have been the only factory owner to hire an English master pipe maker, and only for a brief period, the most common types of pipes manufactured in most Swedish factories have been modelled after English types. It is therefore believed that German pipe makers were well-acquainted with both the English pipe making methods, including the use of the so-called gin-press, as well as Dutch manufacturing methods.

Revisions to production dates and new makers

During the process of locating information on pipe types and prices, it became apparent that previously stated production dates for a number of factories have been incorrect. In many cases, previously published production dates appear to be based on the years when charters were issued, rather than when production began (see, for example Bonds 1977; Loewe 1990; Åkerhagen 2012a). An intention with the list below has been to limit the use of secondary sources, as it was discovered early on that previously published lists of makers and production dates had often confused ownership

of factories with actual manufacturing of pipes and vice versa. The fact that a factory was owned by a merchant or a merchant widow for example does not necessarily entail that the name or initials of the merchant or widow is present on the pipes produced at his or her factory, and the fact that a master pipe maker reported production to the *Hallrätt* did not necessarily mean that his or her name or initials is to be found on the pipes. A comparison of the information from the archival sources that has been compiled below to what has previously been published about the production date ranges of several factories and workshops and the pipes that have traditionally been attributed to them should make it clear that this work has been necessary.

Date-ranges for the factories and workshops are in part the dates when charters were issued, and in part based on other evidence from archival material that act as explicit indications of whether a factory was operational. At many factories, production did not begin until several years after charters had been issued, and many factories are mentioned in annual reports as non-operational. For example, Anders Örnbeck, whose factory was located at Grindsbruk on Södermalm, received charters for pipe making in 1752, yet the building permit drawing for the workshop and kiln is dated November 12, 1753. This means that production likely did not start until 1754 at the earliest. Similarly, Daniel Friedrich Theel's Falun factory received charters for pipe making in 1754, yet production did not begin until 1757 or 1758 due to a lack of skilled workers. Another such example is Jonas Alströmer's Alingsås factory. Alströmer received charters for a pipe factory in 1729, yet archival sources state that the pipe factory was not operational prior to 1738.

Some of the makers listed below are not listed by Åkerhagen (2012a) or any other relatively recent clay pipe researchers. Comparisons of initials of these newly discovered makers and markings on pipes have already enabled the identification of a number of pipes and put into question previous identifications. It is my hope that the list below will be of assistance in identifying and obtaining production dates for pipe fragments, and act as a starting point for future endeavors to connect pipes to smokeways of the past.

Moreover, there are several indications in archival sources that suggest that manufacturing of clay tobacco pipes became a less regulated industry in the nineteenth century and that production of pipes may have occurred in both stove-tile factories, potters' workshops and other settings. For example, some sources from the latter half of the nineteenth century imply that clay tobacco pipe making may have continued in Stockholm despite the fact that no such workshops or factories are mentioned in documents held by archives of the National Board of Trade. Other such examples are the purported pipe making operations in Österökna and Norrtälje (see below). As these manufacturers' years of operation fall beyond the chronological scope of this study, their productions have not been the subject of further study during work with this text. However, when recording clay pipes, it is important to bear in mind that the products of these makers are more than likely to be present in the Swedish archaeological record. Further studies of archival sources that focus on names known to have been associated with pipe making may shed further light on such manufacturing operations.

Disposition of the list

The list begins with pipe makers with confirmed production who are not known to have received charters for pipe making. Some of the factories and workshops in this first section, such as Norrtälje Kakelfabrik, Johan Giertz in Sövde, and the clay pipe factory in Österökna are only known from archival sources, while examples of pipe bowls from Höganäs Lerkärlsfabrik and Ruuthska bruket in Skåne are mainly known from private collections. This list does not include the pipe workshops in

Värmland and Dalsland active in the late nineteenth and early twentieth century, of which Arne Åkerhagen has written and published (see Åkerhagen 1994 and 2012a).

The second section of the list presents pipe makers and/or factory owners who received charters as stated in archival sources that, as no pipes that can be inconclusively tied to their production or records of the same exist, appear to have never commenced productions of pipes. Archival sources suggest that these factories and workshops never began making pipes. It is however possible that pipes recovered during future archaeological projects may yield pipes that may have been manufactured at these potential factories or workshops.

The third section presents pipe makers with charters whose production is confirmed in archival documents and/or archaeologically. These are listed based on location and relative chronology. Pipe factories in Stockholm are presented based on chronology and location, beginning with pipe makers on Södermalm, then on Kungsholmen, and then St. Jakob. After Johan Hindric Riesell in St. Jakob follows a brief presentation of three small-scale pipe makers whose workshops I have not been able to locate within the city.

Nota bene, the section on pipe makers Mathias Nyberg and Carl Wettervik deviates from the rest of the list due to the fact that these makers moved between different locations on Kungsholmen. Their names and years of operation at particular addresses can be found under each address, yet a detailed description of the two makers can be found under the headline Mathias Nyberg & Carl Wettervik.

After Stockholm come the ownership chronologies of the factories in Alingsås, Norrköping, Varberg, Karlskrona, Arboga, Falun, and Helsinki, with brief presentations on pipes from the archaeological record that can be attributed to these factories. As it is highly likely that pipes manufactured in Finland during the nineteenth century may also be represented in the archaeological record in Sweden, I wish to refer the reader to Seela's article on clay pipes made in Finland (1983, pp. 56–81). Similarly, Åkerhagen's presentation of pipe makers active in the late nineteenth into the early twentieth century in Värmland and Dalsland (1994 & 2012a) must also be considered.

Swedish pipe makers without known charters

Peter Pipemakare/Pipenbacker, Gothenburg, ca 1636–?

The Gothenburg census records mention a Peter Pipenbacker – Peter Pipe-baker residing in the fourth *rote* (SE/GLA/12296/F I aa/1 1637–1655). 1639 is the last year in which he is mentioned in the census records, then as Peter Pipemakare – literally Peter Pipemaker (*ibid.*).

Pipes manufactured by Peter Pipemakare

Red and white pipes Dutch-style pipes from the 1630s and 1640s with the heel mark Crowned PM and red stems with lilies in rhombi/diamonds and undecorated red stems have been recovered in Gothenburg, Uddevalla, Marstrand and Karlstad. The mark is unknown in the Netherlands and in England, and the use of red clay for pipe making was not common in these countries in the seventeenth or eighteenth centuries. ICP-AES-analyses of red stems and bowls from Uddevalla and Gothenburg (Brorsson 2022) show that the clay used to make red pipes was sourced from the Gothenburg area, and it is highly likely that these were made by Peter Pipemakare known from the census records mentioned above.

Johan Giertz, Hyllerslöv, Sövde, ca 1750s

According to the nuptial register of Sövde, a pipe maker named Johan Giertz was married to the maid Elena Andersdotter on November 22, 1754 (SE/LLA/13400/C I/2 1738–1775, p. 103). The following year, Johan Giertz is once again listed as a pipe maker when his newborn son Hindrich was baptized (ibid., p. 116), and again when the son died, three weeks later (ibid., p. 119).

Pipes manufactured by Johan Giertz

No pipes have hitherto been connected to Giertz's production.

Gustaf Sommelius, Lund, c. 1748–?

According to Ragnar Blomquist (1978, p. 232) Lund's mayor Gustaf Sommelius manufactured red and white tobacco pipes at a brick factory in the town around the year 1748. Red and white bowls with variations of a crowned heart stamped on the front are held by Kulturen in Lund.

Pipes manufactured at Sommelius' brick factory

English-style pipes made from red and white clay, with incusely stamped hearts, occasionally with additional marks such as the initials EB or what appears to be a crown, are known from the museum depot of Kulturen in Lund (see Åkerhagen 2012c, pp. 281–383). As these pipes are relatively uncommon outside of Lund, it is highly likely that these have been made at Sommelius' brickworks.

Hr. Grönberg, Helsinki, c. 1755–?

Apart from Peter Sunn's Helsinki factory, Abraham Hülphers also mentions a "Hr. Grönberg", who made "red clay pipes for the peasantry/commoners from a coarse clay found at the city" (Hülphers 1886 [1760], p. 52). Henric Forsius and Pehr Kalm (1757, p. 63) state that "a pipe factory was built here [in Helsinki] a couple of years ago", that the pipes were made from a local "rather coarse" brown clay. This most likely refers to the same factory mentioned by Hülphers, as Forsius and Kalm also mention that Pehr Sunn had received charters for making white pipes, but that production had not yet begun (ibid. p. 63).

Pipes manufactured by Hr. Grönberg

I am not aware of any pipes attributed to Hr. Grönberg's workshop.

Ruuthska Bruket, Helsingborg, 1798–1922

The Ruuthska bruket in Helsingborg, was founded in 1798 and primarily manufactured stoneware (Nyström 2015, p. 355). Very little is known about its pipe production.

Pipes manufactured at Ruuthska bruket

Stub-stemmed pipe bowls were manufactured at the Ruuthska bruket in Helsingborg. It is currently not known when production commenced or ceased. At least one bowl made at the factory is held by *Helsingborgs Museer* (Ohlsson 2006). It is not known when Ruuthska bruket began or ceased making tobacco pipe bowls.

Höganäs Lerkärlsfabrik, nineteenth century

Höganäs Lerkärlsfabrik manufactured stub-stemmed pipe bowls during the nineteenth century.

Pipes manufactured at Höganäs Lerkärlsfabrik

The 1859 price list from Höganäs contains 10 stub-stemmed pipe bowls and one so-called stummel (anonymous 1859, pp. 23–24).

Norrtelje Kakelfabrik, 1850–1894 [?]

According to an advertisement in *Härnösandsposten* (04-29-1871), the tile stove factory Norrtelje Kakelfabrik owned by Matts Gustaf Edenström manufactured clay tobacco pipes. Four styles of Dutch pipes of a Persian model with 5-inch stems and two types of Turkish pipe bowls made from “fine foreign clay”, likely referring to stub-stemmed pipe bowls.

Pipes manufactured at Norrtelje Kakelfabrik

No pipes recovered from the archaeological record have hitherto been tied to the production at Norrtelje Kakelfabrik.

Qvills Pipfabrik, Österökna, c. 1893–?

An address book from 1893 (Prieme 1893-94, p. 143) mentions a pipe factory in Österökna in Småland called Qvills Pipfabrik under the headline “Kridtpibefabriker” – clay tobacco pipe factories. The same address book lists N. Andersson in Boda and Emanuel Stolpe, both in Skillingsfors (see also Åkerhagen 1994).

Pipes manufactured at Qvills Pipfabrik

No pipes have hitherto been attributed to the production at Qvills Pipfabrik.

Swedish pipe makers with charters, production unknown

Johan Focke/Focken and Johan Visbeck/Wiessbeck, Stockholm, 1651

The first charters for pipe making issued in Sweden were granted to merchants Johan Fock and Johan Visbeck in Stockholm in 1651. Fock and Visbeck were tobacco merchants who had also received rights to import tobacco to Sweden in the same year (Loewe 1990, p. 28). In the 1652 Stockholm census records, “Johan Wiessbeck and Johan Focken” are listed as residing in “Bengdt Schyttz’s house” under the “Tobacco Company”, their staff “Hindrich Heikens, Hindrich Dawidss, Abraham Möller, Hans Köpswen” along with unnamed workers “Cardmaker, Match maker, Tobacco Pipe maker, Tobacco cutter” and the “Maid Saara” (SE/SSA/0031/06/G 1 BA/G 1 BA:4/1 1652, p. 4).²¹⁴

²¹⁴ ”Toobakz Comp. Johan Wiessbeck, Johan Focken, Hindrich Heikens, Hindrich Dawidss, Abraham Möller, Hans Köpswen, Kortmaker, Luntmakerm Toobak Pypmaker, Toobakz Schnider, Pÿga Saara” (SSA/0031/06/G 1 BA/G 1 BA:4/1 1652, p. 4)

Pipes manufactured by Focke and Visbeck

To date, no pipes recovered in Sweden or anywhere else have been attributed to Fock and Visbeck, and it has generally been assumed that production never started.

Daniel Lönberg and Carl Malander, Karlskrona, 1756

According to annual reports from the Karlskrona *Hallrätt* (see for example SE/RA/420132/3/D/D a/Da 1/12 1757–1757), charters for pipe making were issued to Daniel Lönberg and Carl Malander on July 21, 1756. Several consecutive annual reports state that their production had not begun (see SE/RA/420132/3/D/D a/Da 1/19 1762–1764).

A.S. Almqvist, Vänersborg, 1789

Charters for pipe making were issued through a resolution in the National Board of Trade to the assessor A.S. Almqvist for opening a pipe factory in Vänersborg in 1789 (SE/RA/420132/1/D VIII a/3 1755–1790). The A.S. Almqvist referred to is most likely Anders Svensson Almqvist, who died on May 9th, 1791, and is listed as an assessor and *Landssekreterare* in the death index of Vänersborg (SE/GLA/13632/C I/2 1776–1819, p. 503). There are no reports to the National Board of Trade mentioning pipe manufacturing in Vänersborg.

Hans Jacob Beckman, Gothenburg, 1785

Hans Jacob Beckman in Gothenburg received charters for a pipe making factory in Gothenburg through a resolution in the National Board of Trade on April 4th, 1785 (SE/RA/420132/1/D VIII a/3. 1755–1790). There are no reports of pipe making in Gothenburg in the annual reports of the Gothenburg *Hallrätt* to the National Board of Trade, and the estate inventory of wholesaler Hans Jakob Beckman who died in Gothenburg on June 8th, 1815 (SE/GLA/12098/EIIIa/51 1815, p. 673) makes no mention of a pipe making operation.

Niclas Winberg, Landskrona, 1754

According to the protocols of issued charters, Niclas Winberg received charters for pipe making in Landskrona through a resolution from the National Board of Trade dated to March 9th, 1754 (SE/RA/420132/1/D VIII a/2. 1723–1781). There are no reports of pipe making in Landskrona among the annual reports to the National Board of Trade, and the liquidation records of the estate of merchant Niclas Winberg (SE/SVAR/LLA-132120021/FIIB/FIIB: 7 1752–1810, p. 35ff) makes no mention of a pipe factory.

Swedish (and Finnish) pipe makers with confirmed production

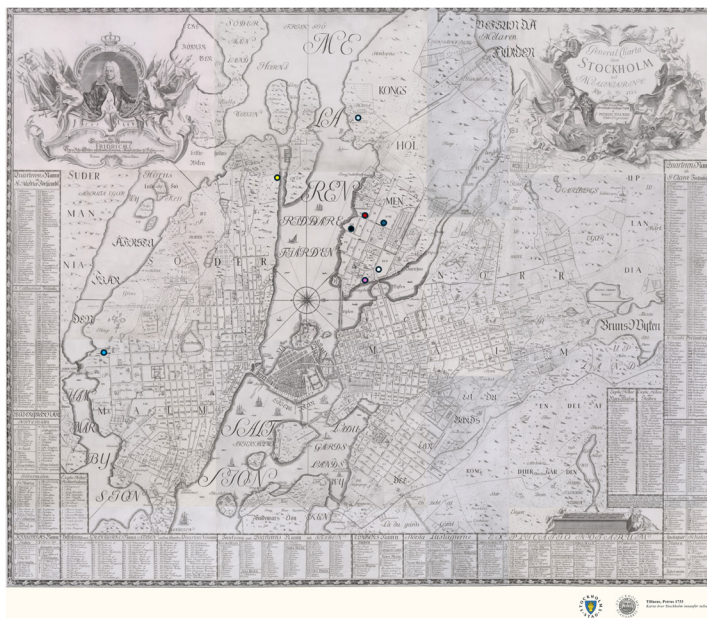
The following section presents pipe makers known to have manufactured pipes. Primary evidence of production comes from archival records in the form of production statements to the *Hallrätter* and the National Board of trade.



- Stockholm, c. 1710–1850s
- Alingsås, 1738 – 1827
- Arboga, 1757–1776(?)
- Falun, 1756–1830
- Varberg, 1756–1783
- Karlskrona, 1756–1764/1765, 1787–1814(?)
- Norrköping, 1758–1796
- Helsinki, 1757–1788

Figure 94. The locations of pipe manufacturing operations with charters and their dates of operation. Detail of original map by Hermelin (1797). CC PDM 1.0.

Pipe factories and workshops in Stockholm



- Kv. Grindvaktaren (unknown if production occurred here)
- The Aspegren Forsberg factory (later Heleneborg)
- Marieberg
- Grindsbruk
- Kv. Bergsklippan mindre
- Kv. Pärönträdet
- Kv. Traktören
- Kv. Asplund

Figure 95. Known locations of clay tobacco pipe factories in Stockholm, c. 1710s–1850s. Petrus Tillaeus' map of Stockholm, courtesy of the Stockholm City Archives, NS 442 (SE/SSA/0234/J 2 A:16 1733 [cropped]).

Södermalm

The following section presents chartered pipe makers on Södermalm in Stockholm in relative chronology based on charters and factory or workshop sites. Following presentations of each factory owner is a brief presentation of what is known about their output from both archaeological and archival sources.

Carl Aspegren, charters from 1708, production between 1711 and 1733

The second charters for pipe making were issued on November 19, 1708, to the merchant Carl Aspegren (SE/SSA/0099/E 3/1 1620–1753, fol. 18). Not only did these charters specify that Aspegren was allowed to import molds, clay and employees from abroad, they stipulated that no one else was allowed to produce pipes in Sweden for the duration of 20 years. Gunvor Bonds writes that Aspegren's pipe factory was located in Kvarteret Grindvaktaren on Kungsholmen (1977, p. 39), while Walter Loewe claims that Aspegren had two factories. One was situated on Södermalm, "below Skinnarviksberget overlooking the water" (Loewe 1990, p. 47), and the other on the corner of "Stora Kongsholmsgatan and Stadshagen" (ibid. p. 80).

Merchants Aspegren and Andersin, both investors in the pipe factory, are listed as residing in Kv. Lappskon on Södermalm in the 1721 census records (SE/SSA/0031/06/G 1 BA/G 1 BA:12/11 1721, fol. 89f). While the 1721 census of Kungsholmen makes no mention of employees at a pipe workshop or factory, the 1725 tax records for Södermalm contains several references to people employed in pipe making. People with a likely connection to a pipe factory residing in northern Södermalm are among others "*Pipdrängen* Hans Kling" (SE/SSA/0031/06/G 1 AA/27 1725, fol. 298) and "*Pipdrängen* Petter Sill" (ibid. fol. 299), while "the pipe maker journeyman Zachris Alm has travelled to Germany" (ibid.),²¹⁵ which indicates that there was a pipe workshop or factory in the vicinity.

If there was a pipe factory on Kungsholmen owned by Aspegren (and Andersin), operations did likely not start before 1721 and must have ceased before the death of Carl Aspegren in 1733 as such a factory is not mentioned in the estate inventory or the bankruptcy inventory. Census records do not cover Kv. Grindvaktaren, the area where the Kungsholmen factory is claimed to have been located. There is a possibility that the factory location was kv. Grindvaktaren on Södermalm, which has been confused with kv. Grindvaktaren on Kungsholmen.

According to Bert van der Lingen (2007), a service contract dated September 10, 1710, in the Amsterdam City Archives shows that Carl Aspegren and a fellow Stockholm merchant named Andersin hired a pipe maker named Jan Joosten Vertin, likely from Gouda, to work at the factory for one year. Vertin is not listed as a master in the guild records of Gouda, yet according to van der Lingen, he claimed to be a professional pipe maker. An unnamed pipe maker is listed as belonging to the household of Aspegren and Andersin in the 1711 census of Katarina on Södermalm (SE/SSA/0031/06/G 1 BA/G 1 BA:10/13 1711, p. 306).

Pipes manufactured at Carl Aspegren's factory

Very little is known about the output of Carl Aspegren's factories from archaeological sources, and to this date, no archaeologically recovered pipes have, with absolute certainty, been tied to the production there. There is no doubt that production occurred, as the prolongation of Aspegren's charters for pipe making from 1729 refer to his factory as operational even during "the most difficult

²¹⁵ "Pipmakarges. Zachris Ahlm har rest till Tyskland".

war times”²¹⁶, likely referring to the Great Northern War that ended in 1721 (SE/SSA/0099/E 3/1 1620–1753, fol. 24–26). The renewed charters also contain price suggestions for pipes manufactured at the Aspegren factory specifying the prices of individual pipes.

According to the bankruptcy inventory accounts of the Aspegren estate from 1735 (Loewe 1990, p. 81; SE/SSA/0138/F 6 b/10 1736), the wholesale prices of the pipes in store at the Aspegren factory differ somewhat from those stated in the renewed charters. The most expensive pipe type, 3 Crowns, is listed as costing 10 dalers per gross, while the cheapest, the stumps, cost 1 daler and 16 öre per gross.

As there was no competition from other domestic manufacturers, it is possible that Aspegren’s factory did not mark any of its pipes with identificatory initials. As pipes marked on heels or spurs with the letter N and a number are not known to have been manufactured in other countries, this mark would likely have sufficed to show that pipes with such marks had been manufactured in Sweden. The name 3 Crowns may refer to pipes with three crowns and the initials of King Frederick I, FR stamped on the front of their bowls. This decoration was also applied to pipes imported from London, manufactured by the William Manby family, yet the Manby pipes are marked with crowned W/M in molded relief on the sides of the heels. The possibility that this decoration on pipes manufactured in London was an attempt at copying the most expensive pipe in Aspegren’s production cannot currently be excluded.

Both the estate inventory and the bankruptcy inventory state that red pipes, most likely made from locally or domestically sourced clay, were manufactured at the Aspegren factory. Red pipes are known from the archaeological record and Åkerhagen has recurrently attributed these to nineteenth- and twentieth-century pipe makers from Värmland or Dalsland who are known to have used red firing clays to make pipes.

Olof Aspegren at Carl Aspegren’s factory after his death, 1733–1736

Åkerhagen claims that Carl Aspegren was active until 1739, the same year as his charters for pipe making were transported to his son Olof Aspegren and Olof Forsberg (Åkerhagen 2012, p. 31). According to a Memorial from Olof Forsberg to Handels- och manufakturdeputationen from January 1741, Carl Aspegren died in 1732 (SE/RA/6122/8/R 2766, 1740–1741: 17D), yet Aspegren’s estate inventory states that he died on July 3, 1733. In protocols from the 1734 Riksdag, Maria Aspgren is referred to as the “widow of the merchant Karl Aspgren” [sic] in an appeal for increased customs tariffs on foreign tobacco pipes (Westrin 1917, pp. 614–615). The discussions following this appeal mention that their son had assumed management of the factory at the time.

In the previously mentioned estate inventory, Carl’s son Olof Aspegren, is mentioned as being 23 years old and that he was the “Manufacturer at the pipe factory of the estate”.²¹⁷ According to the above-mentioned memorial, Forsberg purchased the factory inventories in 1737 from Aspegren’s creditors.²¹⁸ Apart from purchasing the inventories, Forsberg also made an agreement with Maria

²¹⁶ “[...] de swåraste Krig tider [...]” (SE/SSA/0099/E 3/1 1620–1753 fol. 25).

²¹⁷ ”Sonen Manufacturisten wid sterbhusets Pipbruk hr. Olof Aspegren på 23 åhret” (SE/SSA/0138/F 6 b/10 1736)

²¹⁸ “[...] Aspegrens änka hafwer åhr 1736 nödgats til sin Afl. mans Creditorer cederat och afstå all sin lösa och fasta ägendom, hwarefter creditorerne skola, dels igenom, dels utom Auction, låtit försälja ei allenast sielfwa fastigheten, hwaräst Pipebruket i början blifwit inrättadt, utan ock alla til bemälda Manufacturie hörande wärktyg och redskap [...]” (SE/RA/6122/10/R 2900 1746–1747).

Aspegren that she would receive 700 dalers copper each year, a respectable funeral, that her children and heirs would receive an honorary of 1000 dalers copper, and that one of her sons, who was a trained master pipe maker, would receive partial coownership of the pipe factory as well as employment as master at the factory (SE/RA/6122/8/R 2766, 1740–1741: 17D).²¹⁹ The son who is referred to as a trained master pipe maker is most likely Olof Aspegren as his other brothers were merchants.

Based on the above-mentioned sources, pipe making at the Aspegren factory did likely not cease as an immediate result of Carl Aspegren's death. Rather it appears as if Olof Aspegren, who had been trained as a master pipe maker, continued making pipes between 1733 and 1736, when the factory and inventories were sold at auction.

Pipes manufactured at Aspegren's factory after his death

As with the pipes of Carl Aspegren, there are currently no archaeologically recovered pipes that can conclusively be determined as having been manufactured at the Aspegren factory after Carl Aspegren's death. As Forsberg mentions that he purchased the factory along with its inventories, molds and tools were not likely immediately replaced after Carl Aspegren's death, and the types of pipes produced at the factory at this time were likely the same as those manufactured under Carl Aspegren's ownership. Some of the names of the Aspegren pipes suggest that certain pipes may have had decorated bowls – such as three crowns and the so-called pilot pipes. It is also highly likely that pipes referred to as No. 1 – No. 4 were marked with N and a number on the sides of heels or spurs.

The Olof Forsberg and Olof Aspegren factory on Södermalm, 1737–1742

In an appendix to Forsberg's appeal for an embargo on foreign pipes during the 1740–1741 Riksdag of the Estates, Forsberg referred to his pipe factory as being operational in 1737, and as having produced 4210 ½ gross pipes (SE/RA/6122/8/R 2766, 1740–1741). As it would seem, production at the former Aspegren factory on Södermalm may have either commenced shortly after it was purchased by Forsberg or not ceased at all. The factory was moved in 1739, as it is described as recently moved to Långholmssundet in the annual report to the Hallrätt and National Board of Trade in 1740 or 1741 (see Appendix V). In both the census records of 1740 (SE/SSA/0031/06/G 1 BA/G 1 BA:17/6 1740), and in the previously mentioned annual report from the factory to the Stockholm *Hall- och manufaktur rätt*/National Board of Trade from the same year, the Olof Aspegren and Olof Forsberg factory is described as being located on Södermalm in Kv. Canin, and as being operational in the year 1740. Olof Aspegren is also listed as the master pipe maker. This is in part explained by the previously mentioned memorial from Olof Forsberg from the Riksdag of the Estates of 1740–1741 in which Forsberg describes how one of Carl Aspegren's sons had been trained as a pipe maker

²¹⁹ “[...]när han år 1732 med döden afled, befants dess hus i så slätt tillstånd, att dess efterkämmande änckia nödsakades till sterbhusets creditorer, efter ärhållit proclama, upgifwa och afstå all sterbhusets lösa och fasta ägendom, ock således söka Beneficium Cessionis bonorum, då iag år 1737 utaf Creditorerne mig mig tillhandlade, alla wärktyg och redskap, hörandes till Pipbruket, samt ingick med änckjan ock dess arfwingar ett wist Accord, såssom förlags- och Bolagsman, derigenom och detta wärck till Publici bästa blef ifrån undergång befriadt:- någon tid derefter, författades oss emellan en annan Transaction, i kraft hwaraf dåwarande mina med interensenter, deras låtter ock andelar emot undfångne betalning af stodo, ock jag tillade Asprens änckia, ett lifs tids gratiale af 700 D:r kp:mt åhrl: förutan det iag äfwen utlåfwat, låta henne när hon dör anständigt begrafwa, samt att gifwa dess Barn ock Arfwingar, en ihågkommelse eller Åhreskiänck af 1000 D:r dito mynt, antagandes derjemte den ena af Asprens söner, som denne handtering i Holland och andra Orter lärde, till mästare wid Wärcket, emot wiss betingad Löhn, samt utom dess, på wist sätt, till med interesent uti den wid Fabriquen skeende tillwärckningen[...].”

in “Holland” and “other locations” (SE/RA/6122/8/R 2766, 1740–1741: 17D). In 1742, Olof Aspegren opened a new factory on Kungsholmen in Marieberg, and Forsberg’s factory on Södermalm remained operational.

Pipes produced at the Forsberg and Aspegren factory 1739–1742

As Maria Aspegren had done at the 1734 Riksdag of the Estates, Forsberg lobbied for an embargo against foreign pipes during the 1740–1741 Riksdag of the Estates, claiming that production at his factory was sufficient to meet the national demand for pipes. This appeal includes a list of pipe types manufactured and held in the warehouse at the Forsberg and Aspegren factory in 1740 or 1741 (Appendix II below; SE/RA/6122/8/R 2767 1740–1741). Several of these pipes have names that can also be found in the abovementioned estate inventory and bankruptcy inventory of Carl Aspegren. The cheapest pipes named in regular production, Nos. 1, 2, 3, and 4, remained as part of the product range. Similarly, a type named “3 Crowns” can also be found in both lists and belongs to the most expensive price segment. Additionally, Forsberg states in the abovementioned memorial that his factory also manufactured red pipes for the peasantry (SE/RA/6122/8/R 2766, 1740–1741: 17D), although these are not specified in the list of pipes.²²⁰ The list does mention a type called “*Turck hufwuden*” – literally translated to Turk’s heads, which may either refer to figural pipes of a bearded man with a turban, or a socketed bowl inspired by the Turkish chibouk style of pipe that requires a separate stem. Socketed bowls made from red firing clay are a known from archaeological excavations across Sweden, and this reference indicates that it is possible that the Forsberg and Aspegren factory was the first Swedish factory to produce such bowls.

In the same memorial, Forsberg states that the stem lengths of the pipes made at his factory range between one quarter of an ell, or 6 Swedish inches, to an ell, or 24 Swedish inches.²²¹ It is possible that increased competition between domestic factories led Forsberg and Aspegren to begin marking their pipes separately. It is not currently known if any marks associated with Forsberg or Aspegren were applied at this point in time.

The Olof Forsberg factory on Södermalm (1739) 1740 (1742)-1759

As mentioned above, Forsberg and Olof Aspegren received a transfer of Carl Aspegren’s charters for pipe making in 1739. Together with Olof Aspegren, who was employed as the master pipe maker, Forsberg purchased a house in Kv. Canin on Södermalm in Stockholm where the factory was either constructed or rebuilt. In an annual report from 1740, along with a brief factory description, the factory is described as operational and having already produced 7300 gross of pipes (SE/RA/420132/3/D/D a/Da 1/1. 1740–1747).

Production at Forsberg’s factory is well documented. See the above chapter on Forsberg’s factory and production. It has previously been claimed that Forsberg sold the pipe factory in 1759 in the aftermath of the Maria fire. An advertisement for the sale of the factory placed in *Stockholms Weckoblad* (05-26-1759), nearly two months prior to the fire, shows that this is not the case. The *Bergsråd* Adolph Christiernin purchased the factory and continued production at the factory.

²²⁰ “[...] på en och annan Orth här inrikes, finnas leer, som fuller låter arbeta sig tämeligen wäl, men i bränningen blifwer det aldeles rödt, och har jag deraf låtit göra Pipor för Allmogen som ock funnit afnämare [...]”.

²²¹ långa och korta ifrån 1 kvarter till och med 1 alns längd af 16 diverse Pip sorter säljas för diverse priser ifrån 2 D:r 24 öre till 15 D:r K:mt grossen, hwar gross till 12 dussin räknat.

Pipes produced at the factory belonging to Olof Forsberg

The names and prices of the pipes produced at Forsberg's factory are known from four archival accounts, the first from the Riksdag of the Estates of 1740–1741, the second from 1745 the third from 1747, and the fourth from 1753 (see Chapter 8 above and Appendix II below) many of which have also been identified from the archaeological record.

Adolph Christiernin, 1759-1767

Olof Forsberg sold his pipe factory to Adolph Christiernin in 1759. The annual report from the factory states that four journeymen, one apprentice, one rollstress and five workers were employed, and that 1222 gross of 18 molded pipes valued at 2042 dalers silver had been produced in 1759 (SE/RA/420132/3/D/D a/Da 1/15 1759–1759).

One of the journeymen employed at the factory in 1760, according to the census records, was Eric Sandberg, whose wife and daughter also worked at the factory (SE/SSA/0031/06/G 1 BA/G 1 BA:21/13). Sandberg is also listed as working at the factory in 1740 under Forsberg and Aspegren, and remained under the employ of Christiernin.

The factory did not report its production in 1766 (SE/RA/420132/3/D/D a/Da 1/20 1766), and it is possible that there was no production the following year either. The annual report to the National Board of Trade from 1767 only specifies production values for the factory belonging to Emanuel Eldh and the factory belonging to Carl Schrickel. The other pipe factories had not submitted reports (SE/RA/420132/3/D/D a/Da 1/21 1767).

It is noteworthy that the factory was named Heleneborg under the ownership of Adolph Christiernin. Christiernin named the factory after his wife, Helena Katarina Malmin Christiernin. Hence, the factory is referred to as Heleneborg in several later annual reports.

Pipes manufactured under the ownership of Adolph Christiernin

At least some of the factory staff employed by Forsberg remained at the factory under Christiernin's ownership, suggests a continuity of the appearance of pipes made at the factory. It is not likely that the factory continued to mark its pipes with Olof Forsberg's initials or the shield with a crossed caduceus and a quill as this symbol can most likely be connected to Forsberg's role as the Secretary of the Burghers of Stockholm (see Loewe 1990 & *Kritpipor* 1985).

No pipes have hitherto been convincingly tied to the production at the factory under the ownership of Adolph Christiernin.

Hans Detlof Heijkenskiöld, 1767?–1775?

The factory was purchased by Detlof Heijkenskiöld, likely in 1767. The annual report from 1769 states that the factory employed one master, two journeymen, two apprentices and ten miscellaneous workers and that pipes valued at 666 dalers 24 1/3 öre silver had been produced (SE/RA/420132/3/D/D a/Da 1/23 1769–1769).

Pipes manufactured under the ownership of Hans Detlof Heijkenskiöld

No pipes have hitherto been attributed to the production of the factory under the ownership of Hans Detlof Heijkenskiöld.

Jean Hultman 1775–1777

Jean Hultman owned the pipe factory and reported production during two years (SE/RA/420132/3/D/D a/Da 1/29 1775; SE/RA/420132/3/D/D a/Da 1/30 1776–1776). The stated value of the production for 1775 is 1333 dalers.

Pipes manufactured under the ownership of Jean Hultman

No pipes have hitherto been attributed to the production of the factory under the ownership of Jean Hultman.

Carl Gustaf Herpel, 1777–1780

The first year that the factory was under the ownership of Carl Gustaf Herpel, the factory employed one master, two journeymen, one apprentice, and six miscellaneous workers. The production value reported is 372 rixdollars (SE/RA/420132/3/D/D a/Da 1/31 1777–1777). The last year that Heleneborg is recorded as a pipe factory is 1780, with a production valued at 160 rixdollars (SE/RA/420132/3/D/D a/Da 1/34 1780). This is the last year in which any production is reported from the factory.

Pipes manufactured under the ownership of Carl Gustaf Herpel

A currently unknown number of pipes have been attributed to the factory under the ownership of Herpel. Åkerhagen includes images of two Dutch style *kromkop* bowls with molded relief decoration depicting three crowns in a shield with a text band with the text STOCKHOLM HELENEBORG, the rims have been bottered and also show milling (2012a, p. 43). Åkerhagen also includes a picture of a stem decoration incusely stamped with pearl or eye decoration and text supposedly traceable to Herpel (ibid., p. 43). I have not been able to confirm these claims and it is not currently known if the factory name (Heleneborg) was used to mark pipes under previous owners.

Grindsbruk

Anders Örnbeck in Grindsbruk (1752) 1754–1759

Similarly to Daniel Almqvist, Anders Örnbeck received charters for pipe making in 1752. Örnbeck's charters state that he had obtained the proper knowledge for manufacturing porcelain and clay pipes, and that the already existing factories had not been able to produce such pipes. Other arguments for granting Örnbeck charters for pipe making are that he had discovered suitable clay for pipe making, that an increased competition between pipe factory owners should be encouraged, and that transportation of pipes manufactured in Alingsås to "distant locales" was difficult or impossible (SE/SSA/0099/E 3/1 1620–1753).

The annual reports from the Hall- och Manufakturätten in Stockholm to the National Board of Trade for 1752 state that production had not started as the factory was still under construction (SE/RA/420132/3/D/D a/Da 1/10 1752–1756). The building permit drawing for the building to house both the workshop and kiln (fig. 96), dated to November 15, 1753, indicates that production may not have begun before 1754. The annual reports from Stockholm factories for the year 1753 and 1754 are unfortunately missing from the archives of the National Board of Trade. The annual report

from 1755 erroneously states that Örnbeck received charters in 1754 yet shows that production had begun as pipes valued to 2147 dalers and 16 öre silver are reported to have been produced (SE/RA/420132/3/D/D a/Da 1/10, 1752–1756).

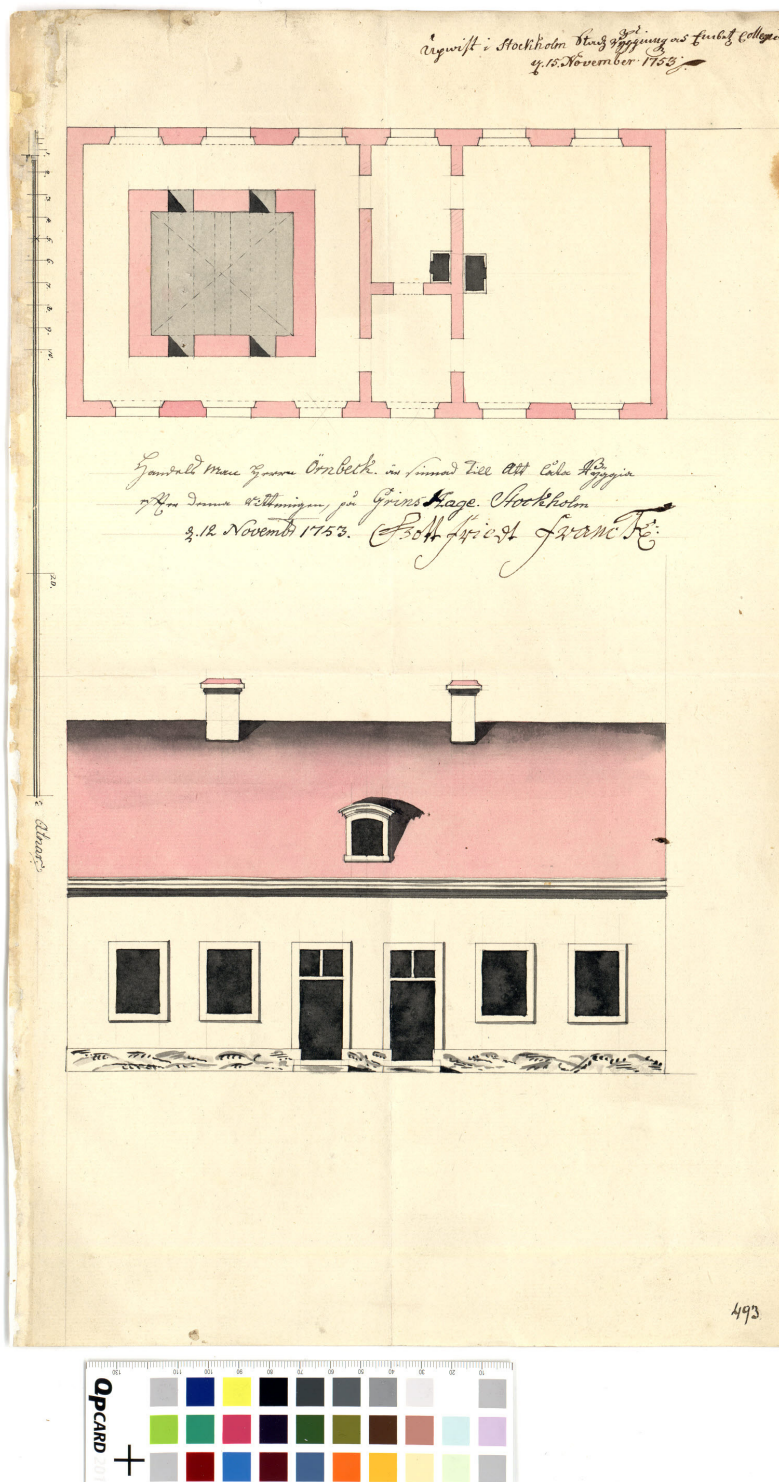


Figure 96. Gottfried Franck's plan drawing for the workshop and kiln of Anders Örnbeck's pipe manufactory dated November 12, 1753. Unknown photographer, courtesy of Stockolms stadsarkiv (SE/SSA SE/SSA/0174/F 1 AA/NS 37, 1753, p. 493)

The 1760 census (SE/SSA/0031/06/G 1 BA/G 1 BA:21/10) shows that the master pipe maker at Grindsbruk was a German named Joachim Ophoff. There was also a German journeyman named Johan Beisheim. The rest of the workers listed appear to be Swedes.

According to Örnbeck's estate inventory, he died on November 15, 1759 (SE/SSA/0145A/F 1/F 1 A/182 1760, pp. 170ff). The annual report from 1760 states that no pipes were manufactured during that year (SE/RA/420132/3/D/D a/Da 1/15 1759–1761).

Pipes manufactured at Anders Örnbeck's factory

Aside from total production volumes and production value, nothing is currently known about the pipes made at Örnbeck's factory from the archival record. Unfortunately, the estate inventory of Anders Örnbeck contains no pipes or tools for pipe making. Rather, the estate inventory lists "a stone house building with a furnished pipe factory situated on Södermalm at Grinds hage", which is valued at 50 000 dalers (SE/SSA/0145A/F 1/F 1 A/182 1760, p. 171). This means that there are currently no known names or prices to provide clues to the appearances or potential decorations of pipes manufactured during Örnbeck's ownership of the factory.

The available information comes from the archaeological record, and the matter of Örnbeck's pipes is complicated by a number of contradictory claims made by Åkerhagen. In *Den Svenska kritpipan – pipor, tillverkare och fynd* (2012a, p. 33), Åkerhagen correctly states that "production [at Örnbeck's factory] did not start until 1754", yet in catalogs and pipe reports Åkerhagen often states that Örnbeck's production began in 1751, and that pipes with the stamped decoration "three crowns FR" with crowned A/O on the sides of heels or spurs have been made at Örnbeck's factory. Moreover, all examples of bowls with the arms of Vasa in molded relief on the front of bowls and A/O in molded relief on the side of spurs have hitherto been attributed to Örnbeck. The only pipe maker currently known to have produced a type called *Vasa Vapen* – the arms of Vasa – is Olof Aspegren, whose initials are also A/O or O/A.²²²

Bowls that have been stamped with three crowns and AOB are known from archaeological excavations which are more likely to have been manufactured under the ownership of Anders Örnbeck.

²²² As mentioned above, Åkerhagen has repeatedly claimed that pipes with any combination of the crowned initials A and O in molded relief on the side of heels or spurs have been manufactured at Örnbeck's factory, generally disregarding the possibility that some, or indeed all of these, may have been made by Olof Aspegren. In particular, it is highly unlikely that pipes with crowned A/O on the side of their heels or spurs with three crowns and the initials FR for Fredericus Rex, the Swedish King Frederick I who died in 1751, were manufactured by Örnbeck, whose production does not seem to have begun earlier than 1754. Moreover, many pipes with crowned A/O in molded relief on the sides of heels or spurs also have other types of stamped decoration on the front of their bowls. Pipes bearing the stamped decoration "griffin rampant" on the front of their bowls, with crowned A/O on in molded relief the side of their heels or spurs, may have been produced at Örnbeck's factory. There is, however, a possibility that these pipes were made either during Olof Aspegren's period as master at his deceased father's factory or during his three-year presence at the Forsberg and Aspegren factory on Södermalm. Yet another possibility is that this was a standard decoration that Olof Aspegren used during his entire career, used interchangeably with the *globus cruciger* representing pipes referred to as "The Arms of Stockholm". Indeed, Carl Fredrik Wallström, who owned the Aspegren factory in the late 1760s used the *globus cruciger* in a crowned shield stamped on pipes, which may indicate that this mark had become factory-specific and connected to the Aspegren factories on Kungsholmen in the 1750s and 1760s.

Ainasoja's solution to this problem is to tentatively attribute bowls marked with the initials A/O to both Olof Aspegren and Anders Örnbeck (2001). Future recoveries of bowls with these marks from secure contexts may assist in determining the owner of the mark.

A decorated stem with the name band A. OHRNBECK was recovered during the Slussen excavations (f.no, 4455:1749; f.no. 4838:19781:24, Åkerhagen 2024, p. 314 & 339) and can with certainty be tied to the production under the ownership of Örnbeck.

A decorated bowl-stem juncture reminiscent of lobed pipes likely to have been referred to as *krusnackar* or *krushuvud* with the name band A OHRNBECK (2591:11006:10, Åkerhagen 2021, p. 375) shows that lobed pipes were also manufactured at Örnbeck's factory.

Carl Abraham Schrickel at Grindsbruk, 1761–1791

Carl Abraham Schrickel, a son from a previous marriage of Anders Örnbeck's widow Christina Groth Örnbeck, took over the factory at Grindsbruk in 1761. The first annual report states that 2000 dalers worth of pipes were produced by one master, one journeyman and three trimstresses (SE/RA/420132/3/D/D a/Da 1/15 1759–1761).

The 1770 census records show that Jan [Johan] Hindrich Ri[e]sel was the master pipe maker at the Schrickel factory in 1770 (SE/SSA/0031/06/G 1 BA/G 1 BA:23/6 1770, p. 746), and it is possible that he came there from Varberg as early as 1761. Riesel appears to have moved briefly to Kv. Bergsklippan mindre in 1771 and moved on to obtain his own charters for pipe making in 1773 (see Kv. Bergsklippan, Johan Hindrich Riesel, and Varberg below).

In 1773, Thure/Thore/Tore Ljunggren/Liunggren/Ljunggren had assumed the position as master pipe maker at Grinds bruk. Among decorated stem fragments that can be attributed to Swedish pipe factories, stems stamped with T LIUNGREN STOCKHOLM is one of the most commonly encountered identifiable Swedish marks in Swedish archaeological contexts.²²³

Pipes manufactured at Grindsbruk under Carl Abraham Schrickel

Beyond annual production value, similarly to the production under Anders Örnbeck, little is known about the pipes manufactured at Grindsbruk from archival sources. There are no pipes known from the archaeological record that have marks that can be attributed to the factory owner Carl Abraham Schrickel.

As mentioned above, stems fragments with the incusely stamped text T LIUNGREN STOCKHOLM are known from the archaeological record. Bowls marked with a crowned TL or three crowns and TLG, are also common finds at archaeological excavations across Sweden. The initials and the name can be tied to the master pipe maker at the Schrickel factory between 1773 and 1811, Thure or Tore Ljunggren (died on March 23, 1811, [SE/SSA/0145A/F 1/F 1 A/383 1811, fol. 187]). Another bowl-type known as having been manufactured under the mastership of Thure Ljunggren is a lobed bowl with dotted tendrils.

²²³ Åkerhagen has consistently dated fragments with Liunggren-marks as having been made between 1785 and 1786 (see, for example Åkerhagen 2012a, p. 49).



Figure 97. Thure Ljungren's characteristic name-band stamped on a stem. Photo by Arne Åkerhagen.

Anna Schickel, née Herbst 1791–1810 (1817?)

Anna Schickel assumed ownership of the pipe workshop at Grinds bruk when her husband Carl Abraham Schrickel died. The last year in which any production is reported under the ownership of Anna Schrickel is 1810 (SE/RA/420132/3/D/D a/Da 1/64 1810–1810, fol. 301v).

Pipes manufactured at Grinds bruk under Anna Schickel née Herbst

See Carl Abraham Schrickel above and Anna Brita Ljunggren Below.

Petter Sundell, Grindshage, 1780s (died in 1785)

Petter Sundell is described as “the pipe bowl manufacturer” and residing next to the Schrickel factory at Grindshage/Grindsbruk in the 1780 census records (SE/SSA/0031/06/G 1 BA/G 1 BA:24/3 1780). Sundell’s production was likely entirely focused on producing socketed bowls, most likely made from a local, red-firing clay that was also used at the brickworks adjacent. 1784 is the last year in which production is reported from Sundell in the annual reports to the National Board of Trade (SE/RA/420132/3/D/D a/Da 1/38 1784–1784). According to his estate inventory, Sundell died in 1785 (SE/SSA/0145A/F 1/F 1 A/283 1785). The estate inventory does not list any tools associated with pipe manufacturing which may indicate that his workshop was a part of the operations at Grindsbruk.

The estate inventory lists debts of several people, supposedly retailers of his pipe bowls, to Sundell. Among the debtors are several merchants, such as Eric Wilhelm Berger in Borås and Johan Säterberg in Arboga.

Pipes attributed to Petter Sundell

Although Åkerhagen has attributed a large number of red socketed pipe bowls to the production at Grindsbruk. An advertisement in *Posttidningar* (06-28-1764) mentions the bookkeeper P. Sundell at the Pipe factory in Grindshage. According to the advertisement, several sorts were for sale either at the shop which had been moved to Lokatten, or at the factory. It is therefore possible that Sundell manufactured both pipes and pipe bowls for a period. No pipes or bowls have hitherto been linked to Sundell.

Anna Britta Ljunggren, 1815–1829

Anna Britta Ljunggren, the widow of the above mentioned Thure Ljunggren, is listed among the pipe makers in the 1815 annual reports to the National Board of Trade as making pipes valued at 300 rixdollars (SE/RA/420132/3/D/D a/Da 1/69 1815–1815). In the 1820 census records, Anna Br:[itta] Ljunggren is recorded as “operating an insignificant pipe making operation” in Grinds bruk on Södermalm (SE/SSA/0031/06/G 1 BA/G 1 BA:28/16, 1820, p. 553). The last year that Anna Brita Ljunggren is recorded in the annual reports to the National Board of Trade is 1830, with a production value of 600 rixdollars (SE/RA/420132/3/D/D a/Da 2/31 1830–1830, fol. 575r). According to her estate inventory, she died on October 26, 1829 (SE/SSA/0145A/F 1/F 1 A/459 1830, fol. 64ff). This document also lists the inventories of the pipe factory (see Appendix IV).

Samuel Ljunggren, 1831–1832?

Anna Britta Ljunggren’s and Thure Ljunggren’s son Samuel Ljunggren continued making pipes between 1831 and 1832 (SE/RA/420132/3/D/D a/Da 2/33 1831; SE/RA/420132/3/D/D a/Da 2/35 1832). The annual reports from the Stockholm *Hallrätt* from 1833 do not mention pipe factories.

Pipes made by Anna Britta and Samuel Ljunggren

No pipes have hitherto been explicitly attributed to Anna Britta or Samuel Ljunggren. However, Åkerhagen commonly attributes so-called Turk-bowls, stub-stemmed or socketed bowls to the Grindsbruk factory. As Anna Britta’s probate inventory list 21 molds (see Appendix IV), it is highly likely that not only socketed bowls were manufactured here.

Kungsholmen



Figure 98. Olof Gjödning's Map of Kungsholmen (1754 [detail]) shows the pipe factories of Daniel Almqvist (XII, kv. Pärnträdet) and Olof Aspegren (XXVII, kv. Bergsklippan mindre). Olof Aspegren's first factory was located in Marieberg. Pipe factories/workshops were also located in kv. Traktören (XXII), kv. Asplund (VIII), and very likely kv. Göken (XIV). According to Bonds (1977), Carl Aspegren had a pipe factory in kv. Grindvaktaren (XVII).

Kv. Grindvaktaren?

Carl Aspegren

Both Gunvor Bonds (1977) and Walter Loewe (1990) claim that Carl Aspegren had a pipe factory on Kungsholmen. I have not been able to verify these claims. See Carl Aspegren under pipe makers on Södermalm above.

Marieberg

The Olof Aspegren Marieberg factory, ca 1742–1752

Olof Aspegren opened a separate factory in Marieberg on Kungsholmen in 1742. According to the registers of the Stockholm Hall- och Manufakturrätt, Olof Aspegren received charters for pipe making that were separate from Forsberg's in 1742 (SE/SSA/0099/D 1/1 1739–1841). However, the annual report from 1743 to the Stockholm Hallrätt states that "Olof Forsberg's and Merchant Carl Aspegren's pipe factory founded in the city in 1708 consisted at the end of June 1742 as well as now of two workshops, one on Södermalm and the second on Mariaeberg" (SE/RA/4113/3/B/B 1/199. 1742–1743).²²⁴ Gjöding states that, "For the sake of better space these two gentlemen parted ways, and Manufacturer Olof Aspegren moved with his factory to Mariae-Berg, where he continued production for ten years, until now that he has moved it to the old Kungsholm bridge" (1754, p. 154f).²²⁵

Although there are indications that Aspegren obtained his own charters for pipe making in 1742 (SE/SSA/0099/D 1/1), Forsberg's and Aspegren's separate factories may have operated under the same charters as the annual reports to the Stockholm Hallrätt of 1744 or 1745 do not differentiate between the two. The 1745 annual report, which does not contain a separate report from Aspegren, states that 39 people were employed and that 8557 gross of pipes worth 12835 dalers silver had been manufactured. A lack of discrepancies in the amount of workers between the years may, on the other hand, indicate that the Aspegren factory on Marieberg was not included in the aforementioned reports, possibly because Aspegren had funded his factory through a loan from the Riksbanken and operated it independently. A 1746 summary states that Forsberg employed 69 workers who had manufactured pipes worth 20648 dalers and 28 4/9 öre silver, while the Aspegren factory is listed as only reporting for the last half of 1746, having a workforce of 34 who produced pipes for the amount of 4444 dalers 28 1/3 öre silver (SE/RA/4113/3/B/B 1/202 1746). The annual reports from 1748 (SE/RA/420132/3/D/D a/Da 1/3 1745–1749) contains separate accounts from the two factories, Forsberg's as employing 36 people having produced pipes worth 10010 dalers silver, and Aspegren's as employing 20, having produced pipes worth 6070 dalers silver.

As such, it seems likely that the two factories operated independently at this point in time. Variations in the appearance or markings of pipes manufactured at these two factories have not yet been established. At this point it is not possible to state if the two factories marked their pipes with different marks or initials or if both of them for example, used Forsberg's factory mark, a shield consisting of a caduceus and a quill crossed along with the text STOCK and the initials O:F.

Pipes manufactured at the Aspegren factory in Marieberg

It is highly likely that the new Aspegren factory produced pipes similar to those manufactured at the Forsberg and Aspegren factory. It is possible that Aspegren began marking his pipes with his initials, crowned in molded relief, on the sides of heels and spurs at this time to distinguish his pipes from

²²⁴ "Herr Secreteraren Olof Forsbergs och Handelsmannens Carl Aspegrens Pipbruk här i staden är inrättat år 1708. Bestod wid Junii månads utgång 1742 äfwen som nu för tiden af 2ne wärkstäder 1 på Södermalm och den andra wid Mariaeberg".

²²⁵ "För bättre utrymme skull skilde sig desse två Herrar sig åt, och Fabriqverer Herr Olof Aspgreen flyttade med sitt Wärick på Mariae-Berg, hwaräst han det i tjo års tid fortsatt, til des han nu flyttadt dermed hit wid gamla Kungsholms bron.

Forsberg's pipes. Although there are numerous examples of archaeologically recovered bowls marked with crowned OA stamped on the front of bowls, and variations of crowned O/A and crowned A/O on the sides of heels or spurs, which have likely been manufactured at either factory belonging to Olof Aspegren, no archaeologically recovered pipes can conclusively be connected to the specific factories of Aspegren's.

Kv. Bergsklippan mindre

Olof Aspegren at the Bergsklippan Factory, 1752–1757

Based on Gjöding's description, Olof Aspegren's factory was moved to Kv. Bergsklippan mindre on Kungsholmen in 1752 (Gjöding 1754, p. 155). Olof Aspegren was likely both the owner and the master pipe maker at the factory. He is listed as a pipe maker in Kv. Bergsklippan mindre in the 1755 census (SE/SSA/0031/06/G 1 BA/G 1 BA:20/5). According to his probate inventory (SE/SSA/0145A/F 1/F 1 A/171 1758), Olof Aspegren died on November 14, 1757.

Pipes manufactured at the Aspegren factory in Kv. Bergsklippan mindre

As mentioned above, pipes with his crowned initials, O and A stamped on the front of bowls are known from several sites across Sweden (See for example Hägg 2001, Pl. 10, K. 133, Pl. 12, K. 163C). Many pipes with the letters OA or AO in relief on the sides of heels or spurs have also been recovered from sites across Sweden. Åkerhagen has nearly exclusively attributed these pipes to the factory of another pipe maker, Anders Örnbeck, whose latinized initials would have been AO (see Anders Örnbeck above).

Some pipes with crowned A/O or O/A are stamped with what is known as *Landskapsvapen* in Swedish, the arms of landscapes. While Åkerhagen has generally stated that pipes with these marks have been made at Grindsbruk under the ownership of Anders Örnbeck (see Örnbeck above), there are several indications that these pipes were made at under the mastership and/or ownership of Olof Aspegren. Pipes with the arms of the landscape of Uppland, the *globus cruciger* stamped into the front of their bowls and marked with crowned A/O in relief on the sides of heels were likely manufactured at either of Olof Aspegren's factories, both having been located in the landscape of Uppland. Pipes with the arms of Södermanland, a griffin rampant, on the front of bowls marked with crowned A/O on the sides of heels or spurs, on the other hand, can possibly, but not likely, be attributed to Anders Örnbeck's factory, which was located on Södermalm, in the landscape of Södermanland.

The coat of arms of the län – county of Stockholm was, prior to the 1960s, a combination of the arms of Uppland and Södermanland – a griffin rampant holding a *globus cruciger* in its paws. Both arms, as it were, are therefore also technically the arms of Stockholm. Looking to the estate inventory of Aspegren, under “3 Crown stamps” there are four other stamps mentioned among the pipe factory inventories referred to as “*Medel stämplor*” or middle stamps – this implies that pipes referred to as “*Medel*” or middle in the same inventory were stamped on the front of their bowls. It is possible that these are the pipes which were stamped with the arms of the landscapes Södermanland and Uppland.

Pipes referred to as 3 Crowns were most likely stamped with the 3 Crown stamps, and these may be the pipes with three crowns and royal initials on the front of their bowls and crowned A/O in molded relief on the side of their heels or spurs.

There are many known examples of bowls with the arms of Vasa, a sheaf in molded relief on the front of bowls and crowned A/O on the sides of heels or spurs. These are very likely the pipes that are referred to as the Arms of Vasa in Aspegren's estate inventory.

Pipes with a crowned heart in molded relief on the front of bowls and a crowned A/O in molded relief on the sides of heels or spurs are likely the pipes referred to as Heart pipes in Aspegren's estate inventory. The crowned heart pipe, like the three crowns and pipes marked with an N and a number, was a standard in several Swedish pipe factories and can be found as late as 1827 in the estate inventory of Catharina Wettervik (SE/SSA/0145A/F 1/F 1 A/450 1827, p. 673).

The "Star Pipe" in Aspegren's estate inventory has not yet been identified. Pipes with star-like patterns stamped on the fronts of bowls are known from other factories, Catharina Wettervik's is one example. Stars in molded relief are also known from the Norrköping factory *Stiernan* – the star, and is described in an advertisement from the 1760s as a factory-specific mark.

Margareta Helena Bonge/Bånge and Johan Friedrich Bonge/Bånge, Maria Elisabet Kyronia Aspegren late 1757–1762 (?)

The annual reports between 1759 and 1761 state that the factory was run by "the widow" (SE/RA/420132/3/D/D a/Da 1/15. 1759–1761). Bonds claims that it was Carl Aspegren's widow Maria who took over operations after her son's death (1977, p. 40), while Åkerhagen states that it was Olof's widow "Maria Elisabeth" who took over operations (2012a, p. 31). Maria Aspegren, aged 73, was buried in Jakob och Johannes on December 7, 1758 (SE/SSA/0008/F I a/1 1721–1772, p. 93). The 1758 death of Maria Aspegren is also confirmed by Angelin (1950, p. 278). Therefore, it is not possible that Maria Aspegren was the owner of the Bergsklippan factory.

Olof's widow was named Margareta Helena Bonge, while his brother Hindric's widow was named Maria Elisabet Kyronia. Based on the annual reports from the factory to the Hallrätt, production continued throughout this period. The owner of the factory is specified as "the widow", a title which both Olof Aspegren's wife Margareta Helena Bånge, or his brother Hindric's widow, Maria Elisabet Kyronia Aspegren would have been able to claim. When Olof Aspegren died on November 14, 1757, the brother of his widow, Johan Friedrich Bonge, briefly assumed the position of manager for the factory. In an appendix to Aspegren's estate inventory (SE/SSA/0145A/F 1/F 1 A/171 1758), Johan Friederich Bonge makes a claim to the estate for 262 daler and 16 öre as salary and compensation for managing the factory between mid-November 1757 and February 28, 1758. After this, it is difficult to determine the ownership of the factory.

According to the estate inventory of Olof Aspegren (SE/SSA/0145A/F 1/F 1 A/171 1758), the estate distribution was complicated by a purported agreement between Olof Aspegren and his recently deceased brother Hindric Aspegren that stipulated a shared ownership of the factory, its inventories, and the charters for pipe making. In accordance with this agreement, Hindric Aspegren's widow, Maria Elisabet Kyronia Aspegren, had legitimate claims on the factory. This agreement is also referenced in the estate inventory of Hindric Aspegren (SE/SSA/0145A/F 1/F 1 A/171 1758, fol. 44ff). I have not been able to locate the details as to how this dispute was resolved, yet archival sources from the years 1760 to 1762 show that both Margareta Helena Bånge and Maria Elisabet Kyronia were residents at the address (SE/SSA/0011/A I a/3. 1761–1777). In the census records from 1760, Margareta Helena Bonge is listed as residing in Bergsklippan mindre, and her brother Johan Friederich Bonge is listed as the bookkeeper at the factory, along with Anders Lindström, the factory journeyman who was likely also the master pipe maker at the factory (SE/SSA/0031/06/G 1 BA/G 1

BA:21/3 1760, fol. 262f). The tax records from 1762 state that Kyronia and Bänge each owned half of the property (SE/SSA/0031/06/G 1 AA/63 1762, fol. 283), indicating that the matter of ownership had been resolved. According to the Kungsholmen death index, the bookkeeper “Johan Fredrik Bång” died on January 14, 1761 (SE/SSA/0011/F I/1 1688–1778, p. 553).

Pipes manufactured under the ownership of Bänge, Bänge & Kyronia Aspegren

It is likely that pipes manufactured during this period corresponded closely to those manufactured under the ownership of Olof Aspegren. No pipes with combinations of initials corresponding to Margareta Helena Bänge or her brother Johan Friederich Bänge have yet been identified. Pipes with initials that can be tied to Maria Elisabet Kyronia Aspegren, however, are known from the archaeological record (see below).

Maria Elisabet Kyronia Aspegren, ca 1763 to 1768

According to the real estate ownership registry catalog of the Stockholm City Archives, the factory was foreclosed by *Riksbanken*, the central bank of Sweden, in 1762 for Olof Aspegren’s unpaid loans, and subsequently sold to the merchant Johan Magnus Edberg and his wife Christina Margareta Litz. Edberg and Litz in turn sold the property to merchant Johan Lagerman in 1765.

Looking to the household examination records from Kv. Bergsklippan mindre where the factory was located, both Hindric’s widow Maria Elisabet Kyronia and Olof’s widow Margareta Helena Bonge resided at the factory address in 1761. It therefore seems more likely that it is either Maria Elisabet Kyronia or Margareta Helena Bonge who is referred to as “the widow” in the annual reports. The annual report from 1762 mentions “Madame Aspegren” as the owner of the factory, while the annual report from 1763 mentions M.E. Aspegren, the 1765 report refers to Fru Aspegren. M.E. Aspegren most likely refers to Maria Elisabet (Kyronia) Aspegren, and it therefore seems likely that she is also behind the moniker Madame Aspegren. As shown by annual reports to the Stockholm Hallrätt, production at the factory appears to have continued during these years, and while the annual reports between 1758 and 1762 refer to “the widow” or “Madame Aspegren”, the reports between 1763 and 1766 state that M.E. Aspegren was the head of the factory. The only name recorded at the address at that time which correspond to these initials is Maria Elisabet Kyronia Aspegren. Charters for pipe making were officially transported to Maria Elisabet Kyronia on May 8, 1767 (SE/RA/420132/1/D VIII a/2. 1723–1781), yet she had resided at the factory address as a widow since 1758.

Pipes manufactured at the factory in Kv. Bergsklippan mindre 10 under the ownership of Maria Elisabet Kyronia Aspegren

Two stem fragments decorated with the name band with the text ME Aspegren are known from the archaeological record. One is held by Ålands museum (471:138 in Åkerhagen n.d. [fig. 99]), and another, unfortunately with an unknown provenance, is shown in Åkerhagen’s final book (2012a, p. 27).²²⁶ A bowl with the stamped decoration “STOCKHOLM”, three crowns, and “MK” is also held by Ålands museum (636:709). MK may stand for Maria Kyronia, however, it may also refer to a later owner of the factory, Mauritz Kirstein (see below). Morphologically, this bowl resembles contemporaneous Swedish spurred pipes bearing a resemblance to London types 26.

²²⁶ Åkerhagen has, for unknown reasons, attributed the stem fragments from to Carl Aspegren (Åkerhagen, n.d. p. 25).



Figure 99. Stem fragment with ME Aspegren, Maria Elisabet [Kyronia] Aspegren's name. Provenance: Hamnö church. Held by Ålands museum, catalog no. 471: 138). Photo by Arne Åkerhagen (n.d., p. 25 [2]). Not to scale.

Carl Fredrik Wallström, 1768–1771

On October 4, 1767, Carl Fredrik Wallström, who is listed as the factory bookkeeper at the address from circa 1765, married Maria Elisabet Kyronia (SE/SSA/0011/E II/1 1688–1772), and assumed the position of factory owner shortly thereafter. The annual reports to the Hallrätt from 1768 state that “Madam Aspegren’s Pipe factory [...] is now owned by the merchant Carl Fred: Wallström [...]” (SE/RA/420132/3/D/D a/Da 1/22. 1768–1768, p. 249).²²⁷ 1770 is the last year in the annual reports to the Hallrätt in which production under the ownership of Carl Fredrik Wallström is mentioned, with a production worth 5520 daler silver (SE/RA/420132/3/D/D a/Da 1/24. 1770–1770). Wallström filed for bankruptcy in 1771, and he and Maria Elisabet moved to the pipe factory in Kv. Pärönträdet, which at that time was owned by Anders Forsner and Carl Johan von Essen.²²⁸

Pipes manufactured at the factory in Kv. Bergsklippan mindre 10 under the ownership of Carl Fredrik Wallström

Unfortunately, according to the register of bankruptcy inventories held at the Stockholm city archives, the Wallström bankruptcy inventory has not survived. No other documentation of the types of pipes manufactured during his ownership is currently known to exist. There are, however, known examples of recovered bowls with the initials CF/W and FC/W in molded relief on the sides of heels and spurs that have most likely been manufactured at the factory at Kv. Bergsklippan mindre under the ownership of Carl Fredrik Wallström. He is the only possible chartered maker whose initials match these markings. One such example is held at *Upplandsmuseet* – the county museum for Uppsala County (UM20128, see also Åkerhagen 2012b, p. 198), which also has an incusely stamped decoration, a “*globus cruciger*”, a stamp which was most likely also used by Olof Aspegren on pipes referred to as the Arms of Stockholm (see Aspegren above). This bowl is morphologically similar to an English London type 25. Wallström’s initials have also been found on the sides of heels of pipes

²²⁷ “Fru Aspegrens Pip bruk, som nu innehafwas af handelsmannen Carl Fred: Wallström”.

²²⁸ See Anders Forsner and Carl Johan von Essen, 1769-1773 below.

imitating Dutch “kromkop” pipes, as well as bowls with a morphological similarity to a London type 23 or 27 (see Åkerhagen 2012b, p. 147, and p. 422).

Johan Hindric Risell/Riesel and Peter Boman, 1771–1771

The building that housed the pipe factory in Kv. Bergsklippan mindre remained under the ownership of merchant Johan Lagerman. Pipe makers Johan Hindrich Riesel and Peter Boman are listed as residing in the building in December of 1771 (SE/SSA/0011/A I a/3. 1761–1777). Johan Hindric Riesel is the same master pipe maker who was employed at the pipe factory in Varberg between 1758 and 1760, and at Grindsbruk thereafter. This is the only year in which Riesel and Boman are listed as residing at the Bergsklippan factory together. Riesel worked as master pipe maker at the Schrickel pipe factory on Södermalm in 1770, and it is possible that he was still employed there in 1771. The long distance between their Kungsholmen address and Grindsbruk indicates that it is not likely that either of these pipe makers were working at the latter factory. Neither Riesel nor Boman had charters for pipe making at this point in time. Although they may have manufactured pipes at the Bergsklippan address, no archaeological evidence is currently known to exist as certain proof of this. Riesel received his own charters for pipe making in 1773. See more under the section on Johan Hindrich Riesel below.

Pipes manufactured by Johan Hindric Riesel and Peter Boman

See Johan Hindric Riesel below.

Carl Wettervik and Mathias Nyberg, 1773–1777

See Mathias Nyberg and Carl Wettervik below.

Mathias Nyberg at Bergsklippan mindre, 1777–1783

See Mathias Nyberg and Carl Wettervik below.

Johan Korseman, 1784–1784?

According to the real estate ownership registry catalog of the Stockholm City Archives, Johan Korseman, having purchased the pipe factory in Kv. Bergsklippan mindre, received charters for pipe making on May 19, 1784.

Pipes manufactured under the ownership of Johan Korseman

According to the household examination records dated October 20, 1784, pipe maker journeyman Peter Boman and his wife Brita Regina Nyberg (SE/SSA/0011/A I a/4 1778–1784, fol. 7 [see also Johan Hindric Riesel and Peter Boman above]) resided at the address. It is not known if production occurred under Korseman’s ownership as no pipes with initials or markings that can be tied to Korseman have hitherto been identified.

Mauritz Kirstein, 1785–1787(?)

According to the real estate ownership registry catalog of the Stockholm City Archives, Mauritz Kirstein purchased the property in Kv. Bergsklippan from Korseman. He received a transportation of Korseman's charters for pipe making on April 11, 1785 (SE/RA/420132/1/D VIII a/3. 1755–1790). Kirstein leased part of the factory to two pipe makers known in the annual reports to the National Board of Trade of 1785 as Sven Kindgren and Lundgren, working with two journeymen, one apprentice and four miscellaneous workers, reporting a production value of 100 rixdollars. This is the only year that production from these pipe makers is reported. According to the report in the archive of the *Hall- och Manufakturrätt* (SE/SSA/0099/E 4/5 1785), the journeymen were "Swän Sundblad" and "Johan Runlöf", the apprentice's name was "Karl Forsman", while the miscellaneous workers names were "Brita Sundblad, Katrina Winge, Lowisa Dägerman and Rebäka Nybärg". The journeyman called Swän Sundblad is likely the same person as the journeyman Sven Sundblad who worked for Carl Wettervik in 1778 (see SE/SSA/0099/E 4/2 1778).

The household examination records from 1785 list the master "Abraham Lundgren", his wife and daughter along with the apprentice "Carl Forsman" as residing on the address under the ownership of Mauritz Kirstein (SE/SSA/0011/A I a/5 1785–1789, p. 7). Abraham Lundgren is likely the same person as the apprentice named Abraham Lundgren who worked at the factory in Kv. Pärönträdet under the ownership of Emanuel Eldh, Anders Forsner and Carl Johan von Essen (SE/SSA/0011/A I a/2 1761–1778).

The last date in which Kirstein is listed at the property in the household examination records is October 23, 1787. Mauritz Kirstein was found guilty of embezzlement from the House of Nobility on May 21, 1788 (Fryxell 1882, p. 109). Indeed, the property appears to have been foreclosed by the directorate of the House of Nobility around that time. According to the real estate ownership registry catalog of the Stockholm City Archives, a letter of sale from the House of Nobility to the Major Berndt Gustaf Ingelotz dated October 10, 1789, indicates this foreclosure.

Pipes manufactured under the ownership of Mauritz Kirstein

Åkerhagen has identified a highly decorated so-called revolution pipe, with King Gustav III's monogram in molded relief with Kirstein's name band on the stem (Åkerhagen 2012a, p. 41).²²⁹ Among Åkerhagen's collections of documents are also photographs of a highly decorated stem fragment with Kirstein's name band stamp (fig. 100).



Figure 100. A stem fragment with molded relief decorations and a name band stamp from Mauritz Kirstein's factory. Photo by Arne Åkerhagen. Not to scale. Unknown date, unknown provenance.

²²⁹ The pipe is decorated with the date August 19, 1772. This has led to the erroneous conclusion that Kirstein's production began in 1770 rather than in 1785, based on the belief that Kirstein was an active pipe factory owner at the time of Gustav III's coup.

Jonas Betulin in Kv. Bergsklippan, 1790–1803

Pipe production at Kv. Bergsklippan appears to have momentarily ceased for two or three years in the wake of the abovementioned foreclosure; between the years 1787 and 1789, the household examination records for the property lists the crucible maker Jonas Heerman/Herman as residing on the address (SE/SSA/0011/A I a/5 1785–1789, p. 1949). It has previously been claimed that Heerman was a pipe maker (Åkerhagen 2012a, p. 49). However, his production, along with other manufacturers of crucibles, is occasionally listed alongside pipe factories in the annual reports to the National Board of Trade (see, for example SE/RA/420132/3/D/D a/Da 1/55 1801–1801).

In the household examination records of 1790, the pipe maker Jonas Betulin is listed as residing in Bergsklippan mindre 10 (SE/SSA/0011/A I a/6 1790–1794, p. 9). The first year in which Betulin reports production is 1790 at a production value of 167 rixdollars (SE/RA/420132/3/D/D a/Da 1/44 1790–1790). The last year that Jonas Betulin is recorded as residing in Kv. Bergsklippan mindre 10 is 1801 (SE/SSA/0011/A I a/8 1800–1809, p. 57). Betulin moved to Kv. Traktören 64 (SE/SSA/0011/A I a/8 1800–1809, p. 108), where Mathias Nyberg had constructed a kiln and workshop in 1784.

Pipes manufactured by Jonas Betulin

See below under Jonas Betulin in Kv. Traktören.

Johan Petter Zetterberg, c. 1850?

It is currently not known if any pipes were manufactured at the address after Jonas Betulin left the address. However, a person associated with pipe making, Johan Petter Zetterberg is listed at the address during the 1850s (SE/SSA/0011/A I a/47 1851). Zetterberg had previously employed by both Elisabeth Westin (see, for example SE/SSA/0011/A I a/33 1837, p. 200), and the Fortuna faience factory in Finland (Seela 1983). No sources specifying if Zetterberg made pipes at the address have been encountered.

Kv. Pärönträdet 83

Daniel Almqvist (1752) 1754–1760

Daniel Almqvist received charters for soap and pipe making on June 30, 1752 (SE/SSA/0099/E 3/1. 1620–1753). Åkerhagen claims that production started the same year, yet the annual reports from 1752 state that the factory was under construction (SE/RA/420132/3/D/D a/Da 1/10. 1752–1756). Similarly to Örnbeck's factory, the building permit drawing for the factory, with a plan drawing including a kiln, is dated 1753. This means that production is more likely to have started during 1754. The household examination book from 1755 states that the pipe factory was operational, while production at the soap factory had not yet started (SE/SSA/0031/06/G 1 BA/G 1 BA:20/5. 1755, p. 59). The same household examination records state that the master pipe maker, "Carl Fred:[ric] Dýrring [sic] was brought in from abroad". It is likely that Dýrring and his wife had come from Germany.

According to the estate inventory (SE/SSA/0145A/F 1/F 1 A/182 1760), Almqvist died on February 4, 1760, yet production appears to have increased; the annual report from 1759 (SE/RA/420132/3/D/D a/Da 1/15 1759–1761) shows a production worth 5500 dalers silver, while the annual report for 1760 (ibid.) states that 3280 gross worth 7933 dalers and 10 öre silver had been produced.

Pipes manufactured under the ownership of Daniel Almqvist

Almqvist's 1752 charters specify that his factory was to focus particularly on manufacturing "long tobacco pipes of appropriate quality and in accordance with the models that the Royal National Board of Trade have ordered him to [...]" (SE/SSA/0099/E 3/1 1620–1753).²³⁰ This may be interpreted as the National Board of Trade not being satisfied with the production quality at Forsberg's or Aspegren's factories at the time, and that there was a lack of long polished pipes. Based on pipes recovered from the archaeological record that can be tied to Almqvist's factory, the production catalog was slightly different than those of his contemporaries. For example, no lobed English style bowls, similar to those manufactured by Forsberg, have been attributed to Almqvist's factory.

There are many types of pipes from the archaeological record with markings that can be tied to Daniel Almqvist's factory. Among these are pipes with three crowns and the royal initials AFR.

One known mark is Almqvist's crowned initials, D/A in molded relief on the sides of heels or spurs. Another mark is Almqvist's initials DA, a lion, and the letter Sth in an octagon stamped on the front of bowls. Similarly, the initials DA atop a bird, an eagle, as has been suggested, with the letters Sth in an octagon stamped on the front of bowls are known from archaeologically recovered pipes.

Another bowl resembling an oval Dutch bowl type has the molded relief decoration of Mercury standing, surrounded by branches, atop a scroll that reads STOCKHOLM. On the right side of Mercury's head are the initials DA, and on the left side of the heel is a copy of the arms of Gouda in molded relief. The rim has been bottered and has milling around its full circumference. This pipe may have been made in the pipe mold referred to in Almqvist's inventory as the Arms of Mercury (see Appendix II). The pipe is an apparent attempt at copying contemporaneous Dutch pipes, which could no longer be imported due to the embargo of 1747.

Another bowl with 12 centimeters of intact stem has stem decoration "ALMQVIST, milling and eye bands, STOCKHOLM". The bowl is of a Dutch kromkop style, indicating that this pipe was likely referred to as a porcelain pipe.

See the estate inventory after Almqvist, which contains named pipes and their prices as well as a detailed inventory of the pipe factory and the tools used there (Appendix II and IV).

Emanuel Eldh and Pehr Georg Fahnehjelm. 1761–1768 (leased from E. Fougelberg 1768)

According to the real estate ownership registry catalog of the Stockholm City Archives, Emanuel Eldh purchased the property that housed Almqvist's pipe factory on September 13, 1760. Charters for pipe making were issued to Eldh and Pehr Georg Fahnehjelm on August 26, 1761 (SE/SSA/0099/E 3/3 1757–1767). These charters imply that production had not ceased as a result of Almqvist's death,

²³⁰ "[...] i synnerhet låta tilwårka långa Tobaks Pipor af behörig godhet, och öfwerens stämmande med de Modeller som Kongl. Collegium honom tillstålla låter [...]"

which is confirmed by the fact that the staff remained relatively unchanged during the transition, with Mathias Nyberg as the master pipe maker, likely replacing Carl Friedrich Düring, who instead received charters for pipe making in Arboga in 1756 (see Westén and Düring below). According to the annual reports to the National Board of Trade, Eric Fougelberg leased and operated the pipe factory in 1768 (SE/RA/420132/3/D/D a/Da 1/22 1768–1768, p. 248). This is the last year in which Eldh is mentioned in the annual reports.

Pipes manufactured under the ownership of Eldh and Fahnehielm

Based on archaeologically recovered pipes, Eldh and Fahnehielm continued the use of Almqvist's iconography to some extent. Bowls stamped on the front with a lion, the initials "EE" and the text "Sth" in an octagon, for example, are known from the archaeological record. Åkerhagen has also identified an armorial bowl manufactured under the ownership of Eldh and Fahnehielm. Decorated stem fragments with the names Eldh and Fahnehielm are also known from the archaeological record. Polished bowls with the initials of Fahnehielm, "PF" crossed in a crowned shield are also known from the archaeological record.

Anders Forsner and Carl Johan von Essen 1769–1773

Anders Forsner purchased the Almqvist pipe factory in April 1769 and received charters for pipe making on October 16, 1769 (SE/RA/420132/1/D VIII a/3 1755–1790). According to the annual report of 1770, the factory was operated by one factory journeyman acting as master pipe maker and two day laborers (SE/RA/420132/3/D/D a/Da 1/24 1770, p. 230). The 1770 census records (SE/SSA/0031/06/G 1 BA/G 1 BA:23/8 1770) show that a majority of the 1764 staff had moved out and that a Jöns Malmgren and a Nils Forsling had assumed the positions as acting masters and/or factory journeymen. Forsner's charters appear to have been shared with Carl Johan von Essen as his name is also on the annual reports between 1771 and 1773 (SE/RA/420132/3/D/D a/Da 1/25 1771–1771, p. 227; SE/RA/420132/3/D/D a/Da 1/27 1773–1773). In the household examination records from 1772 (SE/SSA/0011/A I a/3. 1761–1777), Carl Fredrik Wallström and Maria Elisabet Kyronia (Aspegren) Wallström are listed as residing at the address, yet it is unlikely that they were involved in pipe making at this time as Jöns Malmgren is listed as the factory journeyman or acting master. This is confirmed by the report from von Essen's factory to the *Hall- och Manufakturvärd* from 1773 (SE/SSA/0099/E 4/1, 1773), which specifies the workers at the factory, where Malmgren is listed as the factory journeyman.

Pipes manufactured under the ownership of Forsner and von Essen

The abovementioned report states that "the annual production amounts to 850 gross mostly of the smaller sorts amounting to a value of 3200 dalers copper". Åkerhagen (2012a, p. 41) has identified one bowl as having been made under the ownership of von Essen, yet the stamp on the front of the bowl, crowned initials "JE" or "IE" may also be the result of a weathered "JB" or "IB", the initials of pipe maker Jonas Betulin. Otherwise, no pipes have hitherto been identified as made at the factory in kv. Päröträdet 83 under the ownership of Forsner and von Essen.

Carl Wettervik, 1769–1798, at kv. Päröträdet 83, 1777–1798

See Mathias Nyberg and Carl Wettervik below

Catharina Grå/Gran Wettervik 1798–1802

Carl Wettervik's widow Catharina inherited the pipe factory and continued production between the years 1798 and 1802, when she sold the factory to her daughter Catharina Spaak née Wettervik. The first year in which production under the ownership of Catharina Wettervik is reported is 1799, when the production value is stated to 700 rixdollars (SE/RA/420132/3/D/D a/Da 1/53 1799). According to her estate inventory, Catharina Gran Wettervik died on March 8, 1806 ().

Catharina Spak/Spaak née Wettervik, 1802–1827

According to the Real estate registry of Stockholm, Carl and Catharina's daughter Catharina Spaak née Wettervik purchased the property in Kv. Pärönträdet in 1802. Except for the year 1808, when the annual reports make no mention of the Wettervik factory, the factory reported a production value of between 400 and (SE/RA/420132/3/D/D a/Da 2/1 1816) and 800 rixdollars (SE/RA/420132/3/D/D a/Da 2/17 1824) per annum. Catharina Spak Wettervik died in 1827 (SE/SSA/0145A/F 1/F 1 A/450 1827). According to her will, the pipe factory was inherited by Elisabet Westin (see below).

Pipes manufactured under the ownerships of Catharina Gran and Catharina Spak Wettervik

No pipes from the archaeological record have hitherto been exclusively attributed to either Catharina Gran or Catharina Spak Wettervik. It is not possible to distinguish between them in the annual reports as they both appear as Catharina Wettervik, C. Wettervik or Fru Wettervik until 1810, when the annual report states that the factory was owned by "*Spaak C: född Wettervik*" – Spaak C: born Wettervik (SE/RA/420132/3/D/D a/Da 1/64 1810–1810).

Catharina Wettervik's probate inventory (SE/SSA/0145A/F 1/F 1 A/450 1827) lists several pipe types (see Appendix II below).

Elisabet Westin 1827–1840

Elisabeth Westin inherited the Wettervik factory from Catharina Spaak Wettervik in 1827. Production continued under Westin's ownership until 1840 as evidenced by annual reports to the National Board of Trade (for example, SE/RA/420132/3/D/D a/Da 2/29 1829–1829, p. 623)

Pipes manufactured Elisabet Westin

No pipes have hitherto been identified as manufactured under the ownership of Elisabet Westin.

Olof Hjalmar Åkerlind 1840–1847 (1850s?)

Olof Hjalmar Åkerlind purchased Kv. Pärönträdet 83 from Elisabeth Westin in 1840. Åkerlind is registered as a pharmacist/apothecary, a manufacturer of stove tiles and clay tobacco pipes. According to Åkerlind's annual report to the Stockholm *Hall- och manufakturvärd* (SE/SSA/0099/E4/61 1847, n.p.), the factory ceased production of pipes in 1847. As of 1848, Åkerlind's name is only listed under tiled stove manufacturers (SE/RA/420132/3/D/D a/Da 3/4 1848), and no reports from pipe factories are included after this year. Pipe production may have continued at Åkerlind's factory and elsewhere around Sweden after this. A plan drawing of the Åkerlind factory dated to 1850 held by the building permit register at the Stockholm City Archives specifies that a pipe workshop was located next to the

kiln in the same wing where Daniel Almqvist's original kiln was located. Judging from the aforementioned annual report from 1847 however, production appears to have ceased during this year.

Pipes manufactured under the ownership of Olof Hjalmar Åkerlind

No pipes have hitherto been identified as manufactured under the ownership of Åkerlind.

Mathias Nyberg and Carl Wettervik, 1768–1776 (1768–1798 and 1799)

Carl Wettervik and Mathias Nyberg both worked as apprentices under Carl Fredric Düring at Daniel Almqvist's factory in Kv. Pärönträdet on Kungsholmen in 1755 (SE/SSA/0031/06/G 1 BA/G 1 BA:20/5 1755). Nyberg is listed as the master pipe maker when the factory was owned by Eldh and Fahnehjelm. Both Nyberg and Wettervik remained at the Almqvist factory until 1768 when Emanuel Eldh sold the factory.

Among the annual reports to the National Board of Trade from the year 1768 is one stating that Mathias Nyberg was working at his pipe workshop that had been established "this year", listing his staff as one journeyman and one day laborer (SE/RA/420132/3/D/D a/Da 1/22 1768–1768).²³¹ It is highly likely that the journeyman referenced is Carl Wettervik.

Individual charters for pipe making were issued to Nyberg on June 22, 1768, and for Wettervik on November 29, 1769 (SE/SSA/0099/D 1/1 1739–1841). According to the household examination records, Nyberg and Wettervik resided in Kv. Asplund between 1768 and 1773, after which they both moved to the former Aspegren factory in Kv. Bergsklippan. Annual reports from between 1770 and 1776 state that Nyberg and Wettervik were both master pipe makers working at the same workshop and filing joint reports to the *Hall och Manufakturvärd* (SE/RA/420132/3/D/D a/Da 1/24 1770; SE/RA/420132/3/D/D a/Da 1/30 1776–1776). 1776 is the last year in which Nyberg and Wettervik file a joint annual report (SE/RA/420132/3/D/D a/Da 1/30 1776–1776).

Mathias Nyberg, listed as master pipe maker, and his wife Regina Rubert/Rupert remained at the Bergsklippan factory when Carl Wettervik moved to the workshop in Kv. Pärönträdet in 1777. At the Bergsklippan address are also pipe maker journeyman Peter Boman and his wife (Mathias Nyberg's daughter) Brita Regina Nyberg (SE/SSA/0011/A I a/4 1778–1784). Mathias Nyberg remained at Kv. Bergsklippan until 1783, when he purchased a building in Kv. Traktören and moved there (see kv. Traktören below).

After having worked alongside, and as a partner to, Mathias Nyberg for several years, Carl Wettervik moved to the pipe factory in Kv. Pärönträdet in 1777. It was initially leased, and subsequently purchased from the estate of Anders Forsner, in 1784.²³² Carl Wettervik remained at the address until his death in 1798 when his wife Catharina Grå/Gran Wettervik assumed ownership of the factory.

According to the estate inventory of Carl Wettervik's daughter (SE/SSA/0145A/F 1/F 1 A/450 1827), the letter of sale for the property in Kv. Pärönträdet between Kinnimundt and Carl Wettervik is dated

²³¹ Mathias Nyberg hade wid dess i År anlagde Pipe werckstad, jemte sig i Arbete 1 Gesäll, 1 Diverse arbetare".

²³² Both Bonds and Åkerhagen have erroneously claimed that the trustees of Forsner's relation Hedvig Charlotta Forsner and, in particular, her husband Johan Bernhard Kinnimundt manufactured pipes. There is no evidence of this in either the archival or archaeological records.

July 2, 1784, and the charters under which Wettervik operated at kv. Päröträdet originally belonged to Anders Forsner and were dated October 16, 1769. Wettervik purchased the factory from Forsner's estate in 1784.

Pipes manufactured by Mathias Nyberg and Carl Wettervik in company

No pipes that can confidently be attributed to the joint venture of Nyberg and Wettervik have been identified from the archaeological record. Pipes marked with Mathias Nyberg's initials "MNB" or "MN" with a variety of symbols ranging from a caduceus to one or three crowns are known from the archaeological record. Åkerhagen has also identified a Dutch style armorial pipe with the name NYBERG as a name band on the stem.

Similarly, stem fragments with the name band decoration WETTERVIK STOCKHOLM belong to the most commonly encountered domestically manufactured decorated stems. Although they were filing joint reports, it is possible that Nyberg and Wettervik began marking their pipes individually beginning in 1769 when Wettervik received individual charters for pipe making, and that Nyberg's name and initials were used beginning in 1768.

Pipes manufactured by Mathias Nyberg

It is most likely that Mathias Nyberg used his initials MNB and MN to mark at least some of the pipes produced at his factory. Looking to the molds and pipe types listed in his probate inventory (see Appendices II and IV), Nyberg's factory produced several types that can also be found in the probate inventory of Carl Wettervik's estate. Åkerhagen identified two types of armorial bowls as having been made at the Nyberg factory (2012a, p. 56). As mentioned above, it is not known if Nyberg and Wettervik marked their pipes individually

Pipes manufactured by Carl Wettervik

Åkerhagen has attributed vast numbers unmarked oval Dutch-styled lobed bowls to the production of Carl Wettervik (see, for example, Åkerhagen 2012b and 2012c). This identification is based on a pipe fragment with a relatively intact stem with a preserved name band stamp with the text WETTERVIK STOCKHOLM. Although it is highly likely that this style of pipe was manufactured by Carl Wettervik, it is also possible that this name band was manufactured under the factory ownerships of his widow and daughter. Moreover, Mathias Nyberg and other makers associated with both the Wettervik and Nyberg factories likely produced similar bowl-styles. According to Seela (1983), molds for this style of pipe were also brought from Stockholm, and most likely the factory in kv. Päröträdet, to Fortuna fajans in Finland in the 1830s. This indicates that such pipes were most likely also manufactured at the factory in kv. Päröträdet under the ownership of Elisabet Westin, and possibly also Olof Hjalmar Åkerlind – possibly up to five decades after Carl Wettervik died. As neither Westin's, Åkerlind's or Fortuna fajans's products have currently been identified, it is difficult to ascertain production dates for this style.

Similarly to the lobed pipe with a preserved name band, Åkerhagen has also identified an armorial pipe with the Wettervik name band. Åkerhagen has consistently dated these bowls as having been made between the year 1755 and 1798. This corresponds to the first year in which Carl Wettervik appears in the archival record as working at Daniel Almquist's factory, and the year of his death. This date range is highly likely incorrect as Carl Wettervik was 14 years old and an apprentice in 1755. It is more probable that Wettervik began placing his name band on pipes either in 1768 when he and Mathias Nyberg were working in the same workshop, or in 1769 when Wettervik obtained his own charters.

Kv. Traktören, 1783–1811(?)

Mathias Nyberg, 1783–1799

Mathias Nyberg purchased the property on the address Kv. Traktören 64 in 1783. A building permit drawing dated May 6, 1784, suggests that Nyberg was the first pipe maker on the address (fig. 101).

Pipes manufactured by Mathias Nyberg

See above and Nyberg's estate inventory below in Appendix II and Appendix IV.

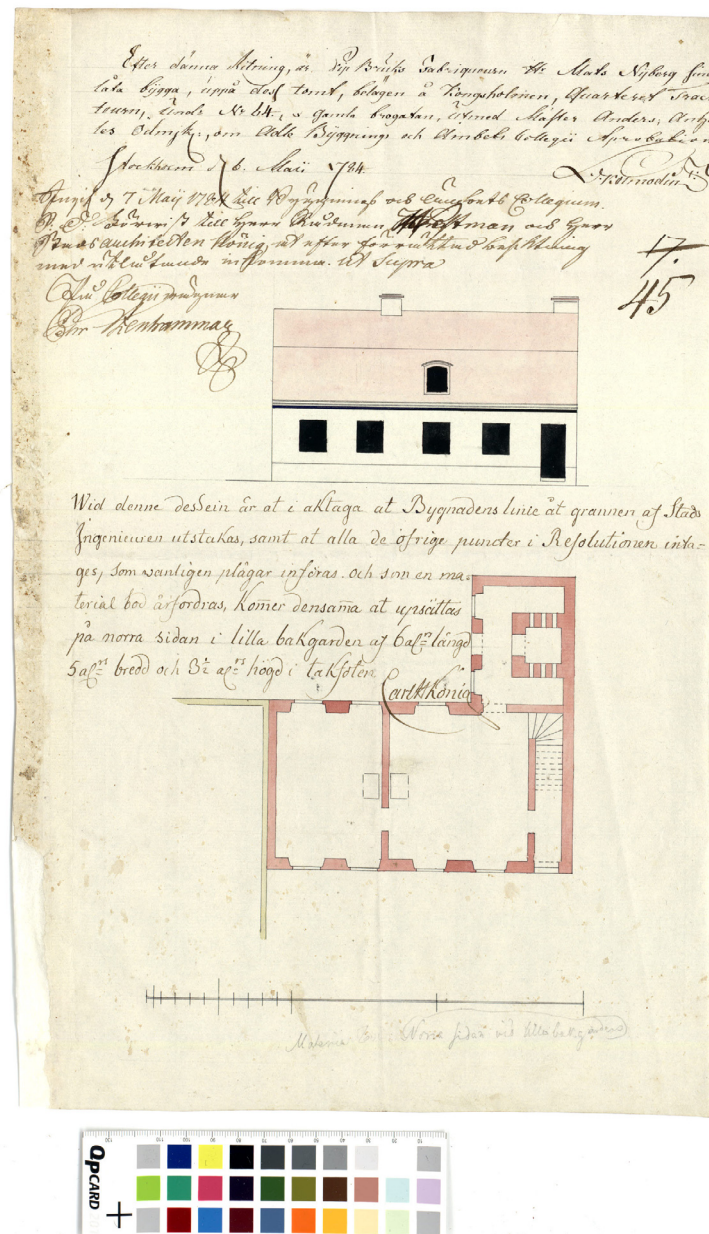


Figure 101. Plan-drawing of Mathias Nyberg's pipe workshop in Kv. Traktören on Kungsholmen dated to 1784. Note the kiln in the back room. Stockholms stadsarkiv: NS 37:1784:45.

Regina Nyberg née Ruberth 1799–1800

When Mathias Nyberg died in 1799, his widow Regina Nyberg appears to have inherited the charters for pipe making. Production is only reported to the *Hallrätt* under Regina Nyberg's name for one year (SE/RA/420132/3/D/D a/Da 1/53, 1799–1799). It is possible that Johan Martinell, who was a journeyman under Mathias Nyberg, was acting master under Regina Nyberg and subsequently took over operations (see Johan Martinell below).

Jonas Betulin, 1803–1807

As mentioned above, Jonas Betulin moved to Mathias Nyberg's factory in Kv. Traktören 64 in 1803 at the latest.²³³ According to the annual reports, production may have been affected by the move, with a reported production value of 200 rixdollars in 1802 (SE/RA/420132/3/D/D a/Da 1/56 1802–1802), and 130 rixdollars in 1803 (SE/RA/420132/3/D/D a/Da 1/57 1803–1803). The last year in which production is reported is 1806, at a value of 100 rixdollars (SE/RA/420132/3/D/D a/Da 1/60 1806–1806). The annual report from 1807 states that no production was reported from Betulin's workshop (SE/RA/420132/3/D/D a/Da 1/61 1807–1807).

According to his probate inventory, Jonas Betulin died on September 12, 1807 (SE/SSA/0145A/F 1/F 1 A/368, 1807, p. 557). His widow, Margaretha Christina Betulin, née Myra, remained at the address and continued the production of pipes for another four years (see below).

Pipes manufactured by Jonas Betulin

Several archaeologically recovered pipes can be linked to Betulin's factory. Among these is an armorial pipe with the name Betulin stamped on its stem. Bowls with the stamped mark "STOCKHOLM" over three crowns and the initials I : B on their fronts, which have been connected to Betulin's production have also been recovered.

Margareta Christina Betulin née Myra, 1808–1811

Margareta Christina Myra is registered at the address in Kv. Traktören 64 between 1808 and 1810 and referred to as "pipe maker's widow" in the census records (/SSA/0031/06/G 1 BA/G 1 BA:27/5 1810). Residing on the same address is also Brita Regina Martinell. According to the annual reports to the *Hall- och Manufakturrätt* and National Board of Trade, Margareta Christina (Betulin) Myra annually produced pipes at a production value of between 70 and 50 rixdollars. The last year with a reported production from the Betulin Myra workshop in Kv. Traktören 64 is 1811 (SE/RA/420132/3/D/D a/Da 1/65 1811). Margareta Christina Betulin Myra is the last pipe maker at the address.

Pipes manufactured by Margareta Christina Betulin Myra

There are currently no pipes recovered from the archaeological record that have been attributed to Margareta Christina Betulin Myra. It is possible that the molds and tools used during Jonas Betulin's lifetime remained in use after his death.

²³³ It is possible that Betulin rented the workshop when Johan Martinell left för Kv. Göken in 1802 or 1803 (see below).

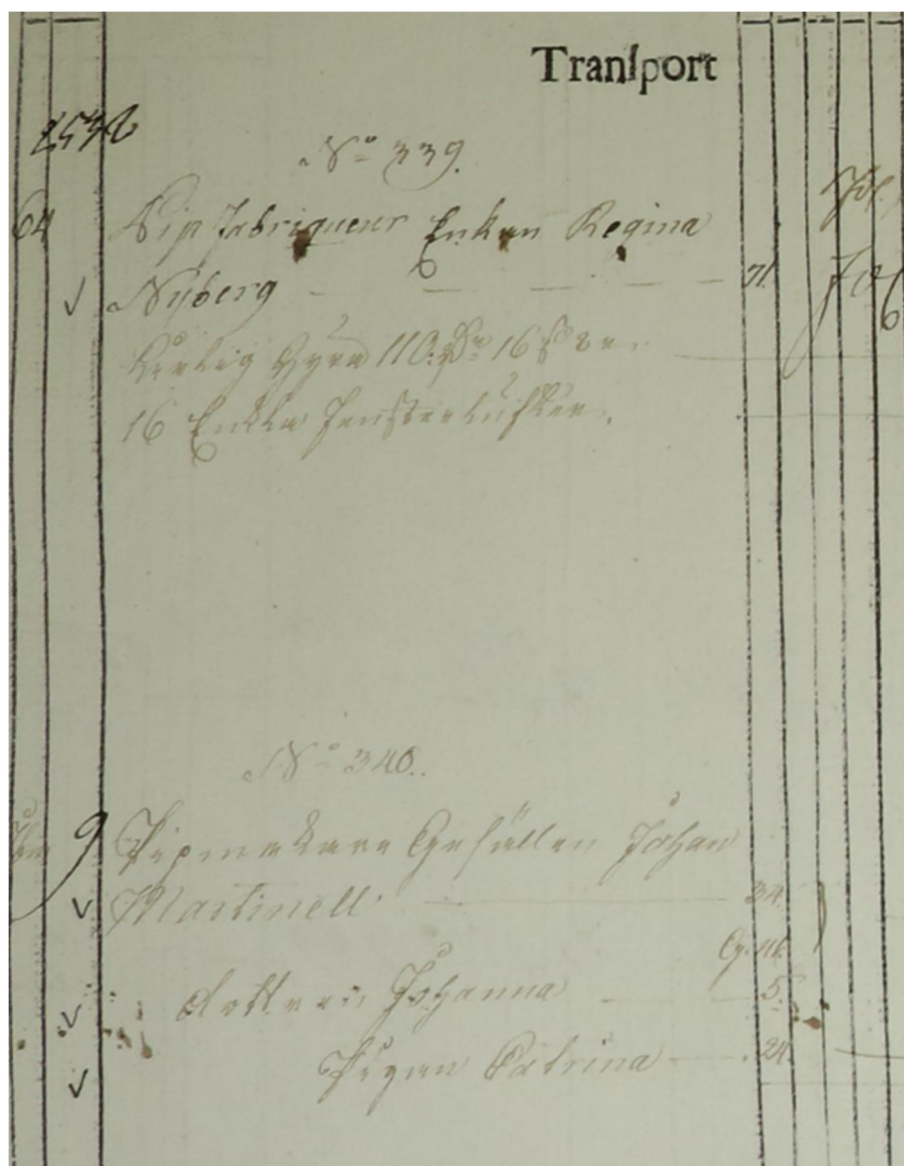


Figure 102. Pipe factory owner, widow Regina Nyberg and pipe maker-journeyman Johan Martinell residing at Kv. Traktören 64 in the census/taxation records from 1800. Martinell was married to the daughter of Mathias and Regina Nyberg in 1791. (SE/SSA/0031/06/G 1 BA/G 1 BA:26/16, p. 104).

St. Jakob, 1773–1779(?)

Johan Hindrich Riesel/Risell 1773–1779(?)

The former master pipe maker at the Varberg factory and at Schrickel's pipe factory on Södermalm, Johan Hindric Riesel/Risell/Risel, reported that his own workshop had manufactured pipes in 1773 (SE/RA/420132/3/D/D a/Da 1/27 1773–1773, p. 152).

Johan Hindric Risell is listed in tax records from 1775 (SE/SSA/0031/06/G 1 AA/94 1775, fol. 16r) as residing in St. Jakob at house 61. It appears as if his workshop was also located there as his unnamed

wife and a “*polererska*”, or polishtress, named Anna is listed at the same address. According to his estate inventory, Riesel died on February 7, 1779 (SE/SSA/0145A/F 1/F 1 A/255 1779, fol. 672r). It is not known if Riesel continued making pipes until his death or where he worked. The estate inventory of his estate states that he was a journeyman (*ibid.*).

Pipes manufactured by Johan Hindrich Riesel/Risell

The only pipe fragment that I have seen that can confidently be attributed to Johan Hindrich Riesel is a lightly polished stem fragment with a stamped name band. As the style of the decoration is most closely inspired by Dutch name band stamps, this suggests that Riesel, likely along with other types, made Dutch-style pipes. It is, however, not known when Riesel marked pipes with his name. It is possible that pipes with Riesel's name were made at Grindsbruk, where it seems likely that he worked for 12 years. However, the current scarcity of fragments with this mark indicates a limited production. This suggests that this mark may only have been used at Riesel's own workshop between 1773 and 1779.



Figure 103. A pipe stem with Riesel's name band stamped. The stamp reads I : H : RISE[L] [milling bands] STOCKHOLM. Unknown provenance. Detail of photo by Arne Åkerhagen. Not to scale.

Currently unknown locations in Stockholm

The following pipe makers have reported production in the annual reports to the Hall och Manufakturätt in Stockholm and are included in the annual reports to the National Board of Trade. As there are many unidentified pipes in the Swedish archaeological record, I have felt it necessary to include these workshops in order to potentially facilitate future identification of previously undeterminable pipes and pipe fragments.

The locations of these workshops within the city have not currently been firmly established. However, death- and burial indexes may act as indicators of which parish a certain pipe maker lived and worked in.

Erich/Eric Lindström 1771–1773

The annual reports to the National Board of Trade, under the headline Tobacco Pipe Factories, mention an Eric Lindström working alone, producing pipes (and crucibles) valued at 100 dalers silver (SE/RA/420132/3/D/D a/Da 1/25 1771–1771, p. 228). Similarly, Lindström reported a production value of 100 dalers silver in 1772 and 1773 (SE/RA/420132/3/D/D a/Da 1/26 1772–1772; SE/RA/420132/3/D/D a/Da 1/27 1773–1773). Lindström's own report to the *Hall- och Manufakturrätt* from 1773 states that he manufactured “crucibles and pipe bowls” (SE/SSA/0099/E 4/1 1773, n.p.). Based on the fact that he states that it is pipe bowls rather than pipes, it is likely that Lindström refers to stub-stemmed bowls, commonly referred to in Sweden as “*turkhufwuden*” made either from white-firing imported pipe clay or red-firing domestic (or local) clay. As Lindström does not differentiate between the production value of his production of crucibles and pipes, it is not possible to determine production volumes or value. The fact that the master pipe maker at the Heleneborg factory under Hans Detlof Heijkenskiöld was also named Eric Lindström further complicates matters.

Pipes manufactured by Erich/Eric Lindström

No pipes from the archaeological record have hitherto been connected to this workshop. As Lindström states in his report to the *Hall- och Manufakturrätt* that his workshop produced pipe bowls, it is highly likely that bowls previously attributed to Grindsbruk have been made by Lindström.

Peter Wiberg 1773–1778?

The annual reports to the National Board of Trade from 1773, 1775, and 1776 record a Peter Wiberg as a pipe maker with a production value of between 169 dalers silver and 200 dalers silver (SE/RA/420132/3/D/D a/Da 1/27 1773–1773; SE/RA/420132/3/D/D a/Da 1/29 1775–1775; SE/RA/420132/3/D/D a/Da 1/30 1776–1776). According to the death and burial index of Maria Magdalena parish, the “Pipe factory master Peter Wiberg” died on March 7, 1778 (SE/SSA/0012/F I/3 1766–1788), indicating that his workshop may have been located on Södermalm. According to a combined staff inventory and annual report submitted to the Stockholm Hall och Manufakturrätt in 1773, Wiberg employed “the wife Anna Greta Edberg and her son Gabriell”, not specifying what types of pipes were manufactured at his workshop (SE/SSA/0099/E 4/1 1773, n.p.).

Pipes manufactured by Peter Wiberg

No pipes from the archaeological record have hitherto been connected to this workshop.

Hellena/Helena M. Wiberg, 1779–1779

Helena Wiberg, the widow of Peter Wiberg, continued production for a year after her husband had died. Among the annual reports to the National Board of Trade of 1779 there is a report from Helena Wiberg, who reported a production valued at 33 rixdollars (SE/RA/420132/3/D/D a/Da 1/33 1779–1779). According to Wiberg's report to the Hallrätt, Wiberg employed an apprentice named Gabriel Engman (SE/SSA/0099/E 4/3 1779).

Pipes manufactured by Helena Wiberg

No pipes from the archaeological record have hitherto been connected to this workshop.

Johan Martinell/Martenell, 1800–1802

Johan Martinell's name is known from several archival sources as connected to the pipe makers on Kungsholmen. For example, according to Mathias Nyberg's estate inventory, Johan Martinell was married to Mathias Nyberg's daughter Brita Regina Nyberg (SE/SSA/0145A/F 1/F 1 A/336 1799, fol. 59r).

Household examination records list Martinell and several other people with job titles related to pipe making as residing in Kv. Göken on Kungsholmen in 1806 (SE/SSA/0011/A I a/8 1800–1809, fol. 218–219). However, production at the Martinell workshop is only reported between the years 1800 and 1802 (SE/RA/420132/3/D/D a/Da 1/54 1800–1800, p. 144). The annual report from 1803 states that production had ceased (SE/RA/420132/3/D/D a/Da 1/57 1803–1803). This suggests that Martinell may have been employed as a master pipe maker at another pipe factory at this point in time.

Pipes manufactured by Johan Martinell

No pipes have hitherto been convincingly attributed to the workshop of Johan Martinell.

P.J. Handen (also spelled Hånden) 184[?]-184[?]

Åkerhagen (2012a, p. 49) lists P.J. Handen as active between the years 1845 and 1846. Annual reports show that this maker may have been active one or a few years longer. Some of these reports also state the name as Hånden. Very little is known about the production of P.J. Handen, whose production is only listed among annual reports to the National Board of Trade for a few years during the 1840s (see, for example SE/RA/420132/3/D/D a/Da 3/1 1847–1847, fol. 507).

Pipes made by P.J. Handen

No pipes have hitherto been attributed to P.J. Handen.

The Alingsås factory (1729) 1738–1830

Jonas Alströmer 1738–1761

Jonas Alström, knighted Alströmer in 1751, received charters for pipe making in 1729 simultaneously to the prolongation of Carl Aspegren's charters (SE/SSA/0099/E 3/1 1620–1753). These charters were exclusive charters and granted Aspegren and Alströmer 20 years free from competition from other domestic makers. It has previously been claimed that Alströmer's production began either in 1729 (Åkerhagen 2012a, p. 28), or in 1746 (Puktörne 1968, p. 75).²³⁴

Neither of these years, however, are supported by archival records, which rather point to production beginning in 1738 (SE/GLA/10003 1618–1799). 1738 is also the first year in which the pipe factory and staff is mentioned in household examination records (SE/GLA/13005/A I/1 1732–1745), and a

²³⁴ Charters were also renewed or reissued in 1740 (SE/RA/420132/1/D VIII a/2 1723–1781)

document titled “Compilation of the production of the tobacco pipe factory from the factory’s start in 1738 until 1775” clearly states that the factory opened in 1738 (SE/GLA/10003 1618–1799).²³⁵

Documentary sources from the first half of the 1740s state that the pipe factory had two workshops. What was most likely the original workshop manufactured Dutch-style pipes under a master pipe maker from Germany. The second workshop, which opened a few years later, made English-style pipes under an English master. The workshops appear to have become consolidated sometime during the 1740s, as there is no mentioning of separate Dutch and English workshops in the later years of that decade (see Chapters 7, 9 and Appendix V).

Jonas Alströmer died in 1761, and the pipe factory was inherited by stakeholders of the Alingsås factories (see below). It is highly likely that one of Jonas Alströmer’s sons, either Patrick or Johan assumed ownership of the factory as it belonged to the Nollhaga estate.

Pipes manufactured under the ownership of Jonas Alströmer

See subsequent owners below, Chapters 7 and 9 above, Appendices II and V below, and Bergman Carter (2024).

Pipes marked with factory-specific marks such as Alströmer’s crowned initials J/A or I/A in molded relief and stamped on bowl-fronts with ALINGSÅS over three crowns and initials I:A: are commonly attributed to Alströmer’s ownership. Some pipes also have five-pointed star(s) in molded relief on the sides of their heels or spurs.

English-style bowls with three crowns and royal initials FR or AFR stamped on bowl-fronts, with crowned I/A or J/A are known from the archaeological record.

English-style armorial bowls with the greater coat of arms of Sweden with ALINGSÅS in a scroll beneath it are also known. These bowls are marked in molded relief on the sides of narrow heels with a standing man on the left side and a stylized castle on the right side.

As there is currently no evidence that suggests that later factory owners replaced the Alströmer initials or made significant alterations to markings on the pipes made at the factory, it is, with a few exceptions, currently difficult to identify precisely which pipes have been made under specific periods at the factory.

The stakeholders of the Alingsås factories (Johan Alströmer?), 1762–1787

It is currently unknown if there was a single person who owned the factory immediately after Jonas Alströmer’s death in 1761. The annual reports to the National Board of Trade are unclear as to whether the factory was part of the Alingsås Manufakturverk under ownership of its stakeholders as in 1765, for example is listed under “*Enskilta wärcken*” – the independent factories (SE/RA/420132/3/D/D a/Da 1/17 1765–1765).

Ludvig von Norrman and Jöran Wingenblxt 1787–1788

The annual report from 1787 states that the factory was leased by Lieutenant Ludvig von Norrman and the *kassör*, treasurer, Jöran Wingenblxt (SE/RA/420132/3/D/D a/Da 1/41 1787–1787).

²³⁵ “*Sammandrag öfver Tobaks Pip Brukets Tilwärkningar från Wärbets början 1738 til och med 1775*”.

Pipes manufactured under von Norrman and Wingenblix

The above-mentioned annual report states that “all sorts of pipes” valued at 2782 rixdollars and 16 shilling had been manufactured, likely referring to a continued production of pipes referred to as No. 1, No. 3, No. 4, No ½ 5, No. 6, No. 7, and armorial pipes. An advertisement for pipes made at the Alingsås factory from this year mention all types but the armorial pipes (*Göteborgs Tidningar*, 04-19-1787, p.4).

No pipes have hitherto been attributed to the factory under the lease of von Norrman and Wingenblix.

Nils Ollonberg, 1789-1793

In 1789, the annual report to the National Board of Trade states that the factory belonged to Major and Baron Nils Ollonberg (SE/RA/420132/3/D/D a/Da 1/43 1789). According to the annual reports, Nils Ollonberg’s last year as the owner of the pipe factory was 1793 (SE/RA/420132/3/D/D a/Da 1/47 1793–1793).

Pipes manufactured under the ownership of Nils von Ollonberg

The above-mentioned annual reports state that “all sorts of pipes” had been manufactured, likely referring to a continued production of pipes referred to as No. 1, No. 3, No. 4, No ½ 5, No. 6, No. 7, and armorial pipes. The production value for 1789 is stated at 1293 rixdollars and 32 shilling, and the 1793 report states a production value of 1600 rixdollars (SE/RA/420132/3/D/D a/Da 1/43 1789–1789; SE/RA/420132/3/D/D a/Da 1/47 1793–1793).

No pipes have hitherto been attributed to the Alingsås factory under the ownership of Nils Ollonberg.

Ludvig von Norrman 1794–1798

Ludvig von Norrman once again leased the factory from 1794 (SE/RA/420132/3/D/D a/Da 1/48 1794–1794) until 1798 (SE/RA/420132/3/D/D a/Da 1/52 1798–1798).

Pipes manufactured under von Norrman

The annual report to the National Board of Trade from 1794 states that “all sorts of pipes” had been manufactured that year, likely referring to the continued production of pipes referred to as No. 1, No. 3, No. 4, No ½ 5, No. 6, No. 7, and armorial pipes (SE/RA/420132/3/D/D a/Da 1/48 1794–1794). The 1798 report to the National Board of Trade states that various sorts of pipes were manufactured (SE/RA/420132/3/D/D a/Da 1/52 1798–1798). It is unknown if the product catalog was altered during this period, and no pipes have hitherto been attributed to the Alingsås factory under the lease of Ludvig von Norrman.

Volrath Tham, 1799-(1808) 1812

The annual reports from 1799 to 1801 states that the factory was leased by the Major Volrath Tham, and as owned by Volrath Tham between 1802 and 1812 (SE/RA/420132/3/D/D a/Da 1/53 1799–1799; SE/RA/420132/3/D/D a/Da 1/55 1801–1801; SE/RA/420132/3/D/D a/Da 1/56 1802–1802; SE/RA/420132/3/D/D a/Da 1/66 1812–1812).

Pipes manufactured under the lease and ownership of Volrath Tham

According to the annual reports to the National Board of Trade, various sorts of clay pipes were manufactured between the years 1799 and 1808 (SE/RA/420132/3/D/D a/Da 1/53 1799; SE/RA/420132/3/D/D a/Da 1/62 1808–1808).²³⁶ The annual reports to the National Board of Trade the years 1809 to 1812 states that there was no production at the factory due to a lack of clay (SE/RA/420132/3/D/D a/Da 1/63 1809–1809; SE/RA/420132/3/D/D a/Da 1/66 1812–1812).²³⁷

No pipes have hitherto been attributed to the Alingsås factory under lease or ownership of Volrath Tham.

Jean Anders Adelsköld (Adelschiöld, Adelskjöld), 1813–1817

According to the annual report to the National Board of Trade from 1813 the factory had changed ownership and was now owned by Jean Anders Adelsköld (SE/RA/420132/3/D/D a/Da 1/67 1813). The last annual report stating that Jean Anders Adelsköld owned the factory is from 1817 (SE/RA/420132/3/D/D a/Da 2/3 1817).

Pipes manufactured under the ownership of Jean Anders Adelsköld

Similarly to previous six owners, the annual reports fail to specify types manufactured at the Alingsås factory during Adelsköld's ownership. The 1817 annual report, for example, states that 140 barrels of various pipes of clay had been manufactured (SE/RA/420132/3/D/D a/Da 2/3 1817–1817).²³⁸ The fact that crates are not mentioned may indicate that production of the longest types had ceased.

Jean Anders Adelsköld's creditors, 1818–1821

According to the 1818 annual report to the National Board of Trade, the factory belonged to the creditors of Adelsköld's estate. Production was maintained during this period with annual reports of a production value ranging from 1000 rixdollars in 1818 (SE/RA/420132/3/D/D a/Da 2/5 1818–1818) to 600 rixdollars banco in 1820 (SE/RA/420132/3/D/D a/Da 2/9 1820). The last annual report to state Adelsköld's creditors as owners of the factory is from 1821 (SE/RA/420132/3/D/D a/Da 2/11 1821–1821).

Pipes manufactured under the ownership of Jean Andes Adelsköld's creditors

The 1820 annual report specifies the value of a barrel of pipes to 6 rixdollars Banco (SE/RA/420132/3/D/D a/Da 2/9 1820–1820). As there is no information as to how many pipes were contained in a barrel at this point in time it is not possible to compare the prices to previous figures.

²³⁶ "Diverse sorter Krit Pipor".

²³⁷ "I brist af Piplera har ej någon tillwätkning kunnat skje detta År, dock äro förestående arbetare (1 Mästare, 7 Gesäller, 6 Lär Gossar, 6 Trämerskor, 2 Dagkarlar, 1 Tunnbindare) bibehållne.

²³⁸ "Tillwätkning vid Pipe Fabriqven har under loppet af Året bestådt af 140 Tunnor Diverse Sorter pipor af Lera, till ett värde af 1500 [riksdaler]".

[Claes Adam?] Wachtmeister, 1822–1826

Annual reports do not mention the first name of the Wachtmeister who owned the factory in 1822, yet they likely refer to the count Claes Adam Wachtmeister. The last year in which production at the factory is mentioned is 1826 (SE/RA/420132/3/Da 2/21 1826). An auction notice from *Göteborgsposten* (10-16-1827, p. 4) states that the factory and all its inventories were for sale.

Pipes manufactured at the Alingsås factory

Despite being referred to as No. 1–7, no pipes marked with number on the sides of their heels or spurs have hitherto been convincingly attributed to the Alingsås factory. Marking traditions at the Alingsås factory that can be identified on archaeologically recovered pipes have so far been found to be:

Armorial bowls

In molded relief: the Swedish greater coat of arms supported by crowned lions rampant. Below the shield is a banner with the text ALINGSÅS.

Bowls with incusely stamped marks:

ALINGSÅS, three crowns and initials I:A:

Three crowns and initials I:A:

Three crowns and FR with marks in molded relief mentioned below.

Three crowns and AFR with marks in molded relief mentioned below.

AFR in a dotted circle with marks in molded relief mentioned below.

Markings on the sides of heels in molded relief:

Crowned J/A

Crowned I/A or crowned A/I

I/A with one or more stars

One or more five-pointed stars

Armorial pipes have a man holding a stick, possibly Mercury with a caduceus or Pan with a shepherd's rod on the left side, and a castle in molded relief on the right side of the heel.

The matter of identifying Alingsås pipes is complicated by the estate inventory of Mathias Nyberg, which states that a pipe type named Alingsås pipes was manufactured in his Stockholm workshop (see Appendix IV). This indicates that there may also be copies of Alingsås pipes made in Stockholm sometime between 1768 and the late eighteenth century.

Considering that the pipe factory in Alingsås was the biggest and most successful Swedish factory in terms of production volumes and its relatively long period of operation, there is a deplorable paucity of research on the factory and its production. Not one archaeologically recovered pipe has to this date been successfully attributed to any other owner than Jonas Alströmer. It is possible that subsequent owners continuously used molds and marks associated to Jonas Alströmer's time as owner of the factory, and that this had become somewhat of a "brand" for the pipes from Alingsås.

Pipes likely made at the Alingsås factory

On display at the Alingsås museum are a number of bowl fragments with a molded floral relief decoration that have purportedly been recovered from the factory site. Åkerhagen does not mention these bowls in any of his publications, and I have not seen them in any pipe reports.



Figure 104 (top). Two bowl fragments with a molded floral relief decoration on display at the Alingsås museum. Their spurs are unmarked. Photo by Robert Bergman Carter.

Norrköping, (1740?) 1758–1796

A part of Olof Forsberg's appeal for an embargo on foreign pipes is also a complaint against the Hallrätt in the city of Norrköping issuing charters for a pipe factory to one "burgher named Lindahl" who Forsberg perceived had encroached on Forsberg's, Aspegren's, and Alströmer's exclusive charters for pipe making (SE/RA/6122/8/R 2766. 1740–1741, 17D). This Norrköping factory is also mentioned in the annual report from Forsberg's and Aspegren's factory in 1740. The matter was resolved when the *Handels- och manufakturdeputationen* ordered the Norrköping factory to cease and desist. It is not known if production started at the Lindahl factory in 1740.

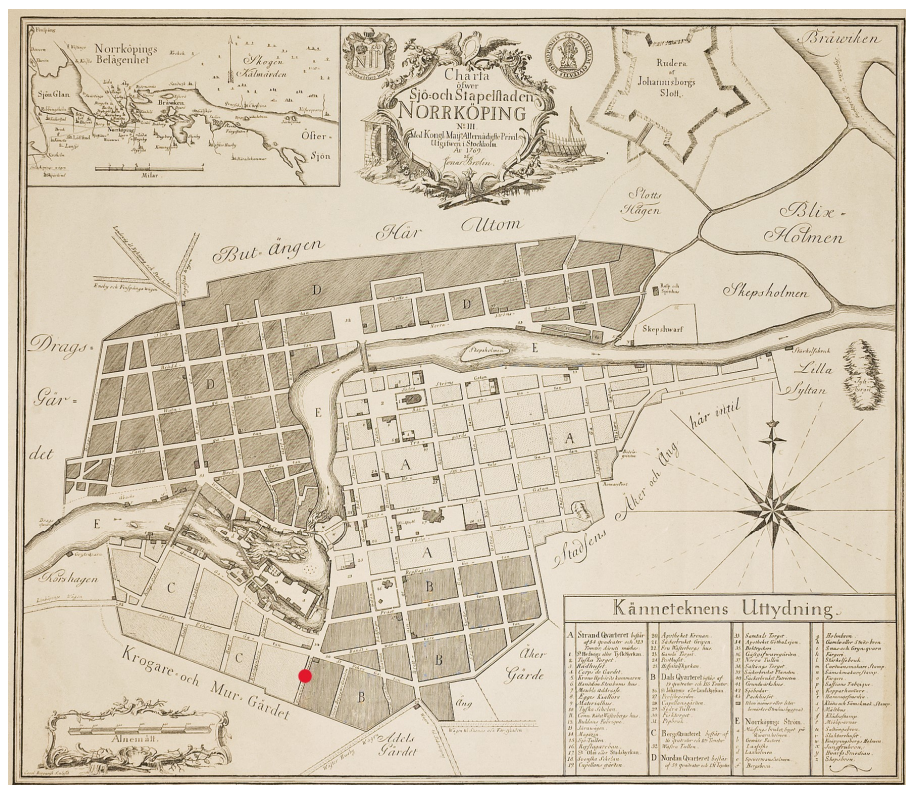


Figure 105. Jonas Brolin's map of Norrköping (1769). The location of the Stiernan pipe factory is marked by a red dot. The location of the Cronan/Kronan factory remains unknown.

Kronan, Olof Lindahl (charters 1756) 1758–1760

Charters for pipe making were issued to Olof Lindahl in 1756. It is likely that he is the same Lindahl who attempted to open a pipe factory in Norrköping 16 years earlier. The annual report states that the factory was under construction in 1757 (SE/RA/420132/3/D/D a/Da 1/12). The first year in which production is reported from *Kronan* is 1758 (SE/RA/420132/3/D/D a/Da 1/13). Olof Lindahl died in Stockholm on March 30, 1760 (SE/SSA/0016/F I a/2 1754–1783, p. 73).

According to an advertisement in *Norrköpings Weckotidningar* (05-24-1760, p. 2), Lindahl's widow wished to sublet and lease the pipe factory, yet it is not known if production was resumed thereafter.

Pipes manufactured at the Kronan factory

The factory marked its pipes with three crowns and the initials OL, presumably for Olof Lindahl, stamped either with or without a circle. They are occasionally marked with N and a number in relief on the sides of their heels denoting length, production quality and price.

Kronan, Gustaf Ulflou 1762

According to Arne Åkerhagen, a Gustaf Ulflou assumed ownership of the Kronan factory in 1762 (2012a, p. 40). The annual report from 1762 only lists Lorentz Lindahl's factory as operational and makes no mention of the Kronan factory (SE/RA/420132/3/D/D a/Da 1/19 1762). I am unaware of where Åkerhagen found information stating that Ulflou owned the factory or manufactured pipes. It appears as if the factory was closed as a result of Olof Lindahl's death in 1760.

Stiernan, Lorens Lindahl & Otto Möller, 1758–1767

Merchant Lorentz Lindahl and Fortification Captain Otto Möller received charters for pipe making from the National Board of Trade on April 28, 1757 (SE/RA/420132/1/D VIII a/2 1723–1781), and the first year with a reported production is 1758 (SE/RA/420132/3/D/D a/Da 1/13 1758–1758). The census records of 1758 state that the master at the factory was Peter Troselius (SE/VALA/01979/E III a/14 1758). Troselius came from Stockholm where he had worked under Carl Aspegren in the 1720s and 1730s (SE/SSA/0031/06/G 1 BA/G 1 BA:14/1 1731, p. 198) and most likely under Olof Forsberg or Olof Aspegren in the 1740s and 1750s.

Lorentz Lindahl died in Karlstad in 1767 (SE/SVAR/VA-133170039/F/F: 1 1758–1797, fol. 27r), and the factory was inherited by his son, Herman.

Pipes manufactured at Stiernan/Stjernan

Pipes manufactured at the Stiernan factory were marked with a radiant star in molded relief on the fronts of their bowls and marked with N and a number on the sides of their heels that corresponded to their stem length and production quality. The star-decoration is also advertised in *Norrköpings Weckotidning* (12-22-1759, p.2).²³⁹ These pipes are among the most easily recognizable among all Swedish eighteenth-century pipes, and numerous examples are known from the archaeological record. There are also examples of pipes manufactured at the factory that have six-pointed stars in molded relief on the sides of their heels (see Carlsson et al. 2014, p. X)

Herman Lindahl and Strandberg, 1767–1782

Lorentz Lindahl's son, Herman Lindahl, is mentioned as owning the pipe factory with a merchant named only as Strandberg in 1767. According to *Dagligt Allehanda* (10-29-1776), the master at the *Stiernan* was named Eric Warrberg, likely referring to Erich Qwarnberg. Qwarnberg, listed as master pipe maker in his probate inventory, died in 1779 (SE/VALA/01697/F I aaa/32 1779, p. 423). It is currently not known who replaced him as master at Stiernan.

Pipes manufactured at Stiernan under the ownership of Herman Lindahl

Åkerhagen has never explicitly attributed any archaeologically recovered pipes to Herman Lindahl's ownership. It is possible and likely that the molds used, and types produced under the ownership of Herman Lindahl were the same as under Lorentz Lindahl.

Jöns Brunbeck, 1782–1796

Jöns Brunbeck assumed ownership of the factory when Herman Lindahl died. In the annual reports from most of the 1780s, the factory did not report its production, which may indicate that it was not operational during these years. The 1786 annual report states that 546 gross of pipes worth 133 rixdollars 16 shilling had been produced (SE/RA/420132/3/D/D a/Da 1/40 1786), while the 1787

²³⁹ "Wid Capitainen Otto Gustaf Möllers samt Handelsman Lorentz Lindahls uti Norrköping anlagde Pipebruk, Stjernan kallat, finnes til köps allehanda wäl beskaffade Tobakspipor, hwilkas skiljemärke från andra Inrikes tillwärdningar af samma art, bestås uti en främst på hwarje Piphufwud utsatt stjerna, hwilket Allmänheten til tjenst härmedelst tilkänna gifwes" (*Norrköpings Weckotidningar* 12-22-1759, p. 2).

annual report states that “400 gross small clay pipes” valued at 66 rixdollars and 32 shilling had been produced (SE/RA/420132/3/D/D a/Da 1/41 1787).

Pipes manufactured under the ownership of Jöns Brunbeck

Based on the fact that the factory was still called *Stjernan*, the star, it is possible that the factory maintained its signature decoration, a radiant star stamped or in molded relief, on the bowl-fronts of its pipes. The 1787 reference to small clay pipes being manufactured may be interpreted as there being a limited market for longer pipes. Brunbeck’s estate inventory lists stamps among the pipe factory inventories, which suggest that the star decoration on the front of bowls may have been stamped on the bowls rather than in molded relief. Among the pipes recovered during excavations in Kv. Spinnrocken in Norrköping in 2010, a pipe with a star stamped on the front and an N in relief on the left side of its heel was recovered (fnr. 139; Åkerhagen 2012d [2010], p. 2).

The Varberg Factory, 1756–1783



Figure 106. Werning's map of Varberg (1812) shows the pipe factory even though production had not been reported since 1783.

Charters for pipe making were issued to the mayor of Varberg, Pihlson, and councilman Emanuel Bagge on October 14, 1755 (SE/RA/420132/1/D VIII a/2. 1723–1781). According to Puktörne, Emmanuel Bagge died before production could start and his charters were transported to a councilman named Johan Hök (Puktörne 1968, p. 77). Production appears to have begun in 1756, as an advertisement in *Göteborgs Weckolista* (11-29-1756, p. 4) proclaims that “At Councilman Johan Hök in Warberg, is at his chartered Tobacco Pipe Factory in the same city various sorts of

Tobacco Pipes made of similar quality and for the same price as at other such Domestic Factories”.²⁴⁰ The first master pipe maker known from the archival sources is a man named Johan Christian Bockler (SE/RA/55203/55203.13/60 1757). A journeyman named Johan is listed as working at the factory in 1757, who may be the Johan Hindrich Riesell [also spelled Riesel, Risel, Risell, Reisel] who assumed the position as master pipe maker the following year (SE/RA/55203/55203.13/61 1758, see also Johan Hindrich Riesel above).

A journeyman named Anders is listed as working at the factory in 1758, and the following year the journeyman is listed as Norin (SE/RA/55203/55203.13/62 1759). It is highly likely that this journeyman is Anders Norin (also spelled Norén), who succeeded Riesel as master pipe maker at the Varberg factory in August of 1761 (SE/RA/55203/55203.13/65 1762).²⁴¹ Norin was previously a journeyman employed at Olof Aspegren's factory in Kv. Bergsklippan on Kungsholmen in Stockholm in 1755 (SE/SSA/0031/06/G 1 BA/G 1 BA:20/5 1755). Norin remained the master pipe maker at the Varberg factory until 1783, which is also the last year in which production is reported to have taken place according to the annual report to the *Hallrätt* (SE/RA/420132/3/D/D a/Da 1/37 1783–1783). According to the annual report from the following year, production had ceased because of the demise of the master pipe maker (SE/RA/420132/3/D/D a/Da 1/38 1784–1784).

An advertisement published in *Göteborgs Tidningar* (05-09-1799, p. 4), states that the factory and its inventories was for sale. The annual reports from the Hallrätt in Varberg to the National Board of Trade refer to the pipe factory as belonging to the estate of Johan Hök as late as 1809 (SE/RA/420132/3/D/D a/Da 1/63 1809) indicate that the factory was not sold in 1799. Although the factory is repeatedly mentioned in annual reports from 1784 onwards, it is consistently described as non-operational due to a lack of workers (ibid.).

Pipes manufactured at the Varberg factory

According to the 1760 annual report from the factory to the Hallrätt, the factory used four screws and nine molds and made larger and smaller sorts (SE/RA/420132/3/D/D a/Da 1/16 1760–1761), yet does not specify the names or prices of specific types.²⁴² The annual report from 1768 states that “[...]several sorts, larger and smaller pipes, at the same price and quality as at any other factory in the kingdom, are made from Dutch clay and fired with peat [...]” (SE/RA/420132/3/D/D a/Da 1/22 1768–1768).²⁴³ The 1769 annual report states that “[...] Twelve larger and smaller molds” were used (SE/RA/420132/3/D/D a/Da 1/23 1769–1769),²⁴⁴ which is also repeated in the annual report from 1772 (SE/RA/420132/3/D/D a/Da 1/26 1772).

In 2020, during excavations in Varberg in preparation for a railway tunnel, archaeologists from Hallands Kultur och Miljö and Arkeologerna encountered a pit containing pipes from the Varberg pipe factory. Only one of the recovered bowls showed signs of having been smoked, while at least two

²⁴⁰ ”Hos Rådmannen Herr Johan Hök i Warberg finnes på des privilegerade Tobaks-Pipe Bruk wid samma Stad allehanda sorter Tobaks-Pipor färdiga af lika godhet och samma pris som wid andra sådana Inländska Bruk”.

²⁴¹ Riesel left Varberg for Stockholm on August 19, 1760 (SE/LLA/13443/C I/1 1690–1734 [sic]), where he would later start a workshop of his own after working at the pipe factory at Grindsbruk.

²⁴² “[...] dessutom befinnas Nio formar och fyra skrufwar, af hwilka sistnemnde trenne warit i gång; warandes förl. Åhr med större och smärre sorter inalles brände Ett tiosende Tre hundrade Trettio åtta Gross”.

²⁴³ “[...] flere sorter större och mindre pipor til samma pris och godhet, som på något annat Bruk i Riket, af hollands lehra gjorde och med torf brände blifwit [...]”

²⁴⁴ “[...]Tolf St. större och mindre former [...]”

bowls were deemed to have likely been discarded due to production flaws.²⁴⁵ The same pit also contained production waste in the form of fragmented bands made from pipe clay that were used to wrap bundles of pipe stems in saggars prior to firing. The Varberg pipes have a stamped decoration on the fronts of their bowls exhibiting some variation, while heels and spurs have no markings. None of these pipes that have been linked to the Varberg factory have the letter N and a number in molded relief on the sides of heels or spurs.

Morphologically, the pipes all appear to have been manufactured using the English method with a gin press. None of the bowls with surviving rims show signs of milling or bottering. Decorated bowls from the factory either have incusely stamped marks “three crowns” and WB”, or the letters “IH” or “JH” and “WB” in wreaths in stamped relief on the fronts (fig. 107). The bowls are further varied in that some have heels while others have spurs. This may account for the number of molds stated to have been used at the factory, with types likely being separated into short, medium and long, with either heels or spurs. Provided that the Varberg factory did indeed make pipes that were similar to those made at other Swedish factories, the pipes made in Varberg were thus short pipes with heels or spurs, medium pipes with heels or spurs, and long pipes with heels or spurs.



Figure 107. Three types of bowl-front marks on pipes made at the pipe factory in Varberg. Not to scale. Photo by Hallands kulturhistoriska museum.

Unfortunately, the recovered bowls from the Varberg factory show signs of having been water rolled and weathered to an extent where it is impossible to determine if they have been polished or merely trimmed. As none of the workers are titled “polererska” or “polerare”, the written record provides no clue as to whether the highest quality segment of polished pipes was produced here or not. It is, however, very likely that similarly to other contemporaneous Swedish factories, the Varberg factory produced a minimum of one polished pipe type.

²⁴⁵ The back of one bowl is pierced by the wire while another has no connection between the bore and the tobacco chamber. Another is deformed, likely prior to or during firing.

The Karlskrona factory, 1756–1764/1765, 1787–1814(?)



Figure 108. Map of Karlskrona from 1804 (SE/KrA/0424/063/327b 1804). The red dot marks the location of the pipe factory.

Nils Matteus Nordsten and the Karlskrona factory (charters 1755) 1756/57–1762 (1764)

Charters for pipe making in Karlskrona were issued to the “compass maker Wahlberg and merchant Nordsten” through a resolution by the National Board of Trade on January 11, 1755 (SE/RA/420132/1/D VIII a/3). Production may have begun in 1756, yet the oldest currently known surviving annual report from the Karlskrona Hallrätt to the National Board of Trade is dated 1757, and reports that Nordsten had taken over sole proprietorship, and that the factory had a production of 946 gross “of tobacco pipes of different sorts” worth 1726 dalers and 24 öre (SE/RA/420132/3/D/D a/Da 1/12 1757–1757).²⁴⁶

According to the 1762 annual report from the Karlskrona Hallrätt to the National Board of Trade, Nordsten had died (SE/RA/420132/3/D/D a/Da 1/19 1762–1764), yet production appears to have continued until 1764 or 1765 at the latest. The annual report from the Hallrätt to the National Board

²⁴⁶ [...]och låtit tillwårka Niohundrade fyratio sex gross åtskilliga slags Tobaks pipor till wårde 1727:24”.

of Trade from 1766 states that there had been no production that year (SE/RA/420132/3/D/D a/Da 1/20. 1765–1766).

According to court records dated August 9th, 1764, from the Karlskrona Bailiff's Court (SE/LLA/10127/A I/21), the master pipe maker at the Karlskrona factory in 1764, named Hans Georg Gren was on trial for breaking and entering at the merchant Wernberg's shop (Peter Wulf, personal communication). The same court records mention a Journeyman named Lars Asck (also spelled Ask and Asch – henceforth Ask), who accused Gren of stealing as early as 1760 or 1761. Lars Asck appears to have moved to Stockholm to work at the Aspegren factory in Kv. Bergsklippan mindre, as he is listed as a Journeyman there in January of 1764 (SE/SSA/0011/A I a/3 1761–1777, p. 43), and as the master pipe maker at the Aspegren factory in November of 1764 (SE/SSA/0011/A I a/3, 1761–1777, p. 60). This indicates that production at the Karlskrona factory likely ceased some time during 1764.

At the age of 9, Hans Georg Gren was employed at the Dutch workshop at Alströmer's pipe factory in Alingsås, and he appears to have remained in Alingsås until 1757, which is the last year in which his name appears in the census records of Alingsås landsförsamling (SE/RA/55203/55203.15/83, 1757). This may indicate that production at Nordsten's factory did not begin until 1757 as there may have been no master pipe maker in Karlskrona before that time.

Lars Ask was, similarly to Gren, employed at the pipe factory in Alingsås before coming to Karlskrona. The census records of Alingsås landsförsamling from 1759 is the last year in which Lars Ask was listed as residing there (SE/RA/55203/55203.15/85 1759, p. 284). In 1760, Lars Ask was listed as a Journeyman at the pipe factory in Varberg, which is also the only year in which he is listed there (SE/RA/55203/55203.13/64 1761, p. 1420).

An advertisement for a pipe auction at “the deceased merchant Nordsten's Pipe Factory” in *Carlschronas Wekoblade* (08-27-1774, p. 2) indicates that even though production may have ceased, pipes manufactured as late as 1764 may have circulated well into the 1770s.

Pipes manufactured at the Karlskrona factory 1756/57–1764

There is no currently known surviving price list from the Karlskrona factory, nor are the types of pipes produced here referenced in the annual reports from the Hallrätt to the National Board of Trade. There is, however, a reference to the number of types of pipes manufactured at the factory in the travel journal of Abraham Hülphers, who visited the factory in 1759. Hülphers mentions that six types were made at the factory, and that short pipes were fired in pots while long pipes were fired in boxes (in Walde 1953, p. 44).²⁴⁷ Two perfectly refittable pipes manufactured at the factory were donated to Blekinge museum in 1910, measuring 47 centimeters. These are likely the longest types manufactured and have CARLSKRONA and N:M:N as stamped decoration on the front of their bowls.

The excavations of the factory plot resulted in the recovery of bowl-types, 13 with heels and six types with spurs. Of these types, nine have the initials of Nils Matteus Nordsten, NMN in molded relief on the sides of their heels or spurs, while five types have the NMN initials in stamped decoration on

²⁴⁷ “Bränuget var nu 3de gången uppsatt, rund så att den stod mitt i rummet, leer till piporna förskrifves alt från Holland, undligt at ingen tjenlig svänsk leera kunat uppfinnas, dene arbetas först i lärar, sedan delas den i ämnen och formas till pipor, med ståltrå göres hol genom skafftet, ämnet kastas eller tilltryckes i en metall skruf och hål med en machin göres i hufvudet, sedan trämas de eller göra jämda, torkas i lådor, staplas sedan, de korta i krukor och långa i kistor, som göres af sämre leer, öfvertäckas med carduus papper som öfverstryks med lera, som blir sedan efter bränningen som tunt glas, ugnen muras till, och piporna brännes färdige på 3 till 4 dagar. 6 sorter göres vid detta värket” (see Appendix V).

the front of the bowls with no relief markings on heels or spurs. Another four types, of which one is a copy of a Dutch style, have no heel markings (see Stibéus & Bergman Carter 2025).

Based on Hülphers' accounts and these observations, it is likely that Nordsten's factory, like its contemporaneous Alingsås factory produced six types of pipes of varying stem lengths, with either heels or spurs. The majority of pipe types identified in the assemblage from the 2020 excavation are morphologically similar to London types 23 and 25 (see Stibéus & Bergman Carter 2025, pp. 94–114), which corresponds well to Hülphers' description of the manufacturing process that mentions a machine that makes the holes in the bowls. One type is clearly an attempt to mimic contemporaneous Dutch pipes with an oval bowl, a rim with milling that has also been bottered. Two refittable bowl-fragments from a Dutch-style bowl with a bottered rim with milling and Nordsten's factory-mark were recovered in 2020. Unfortunately, these fragments have not been reencountered during finds recording (see fig. 110). The long pipes with a stem length of circa 20–25 Swedish inches, medium pipes of circa 10–12 Swedish inches, and short pipes of circa 8–9 Swedish inches.²⁴⁸

Paul Richter (see chapter 6) from Grindsbruk appears to have been the first master pipe maker in Karlskrona. It is not currently fully understood if he was succeeded by or worked alongside Hans Georg Gren from the Alingsås factory, who is also referred to as the master pipe maker at the factory. It is possible that Nordsten, similarly to Alströmer in Alingsås, intended to have both a Dutch and an English workshop with separate master pipe makers for each workshop. If this was the case, Richter is more likely to have been the master of the Dutch workshop while Gren is more likely to have been the master at the English workshop.

Nordsten's factory employed marking traditions that were common at both the Grindsbruk factory and the Alingsås factory. Hülphers' mentioning of the long pipes being fired in boxes rather than pots may point to an influence from the German pipe making traditions, possibly introduced by Richter.

A currently unknown number of stem fragments with stem decorations were also recovered. Two types of stem-decoration have been identified: one type has writing in stamped relief and circles and milling in imitation of the contemporaneous Dutch eye-band decoration (fig. 109a), and the other is more likely to be an attempt to mimic English name-band stamps (fig. 109b).

²⁴⁸ The long pipes among those recovered from the warehouse containing Forsberg's pipes from 1759 measure between circa 42 centimeters or 17 Swedish inches and 53 centimeters or 21 Swedish inches, medium pipes measure between 24 centimeters or 10 Swedish inches and 33 centimeters or 13 Swedish inches, and the short pipes measure between 19.5 centimeters or 8 Swedish inches, and 21.5 centimeters or 9 Swedish inches.



Figure 109a & b. Name-band stamps from Nils Matteus Nordsten's factory in Karlskrona. The stem on the left is an obvious attempt at copying a contemporaneous Dutch style of stamped name bands while the left stem mark is more likely an attempt at copying an English style. Not to scale. Photo by Henrik Pihl, Arkeologerna, Statens historiska museer, with kind permission.



Figure 110. Refittable fragments of a Dutch-style bowl with the incuse factory-stamp of Nils Matteus Nordsten on the front recovered among the factory wasters during the summer of 2020. The rim has milling and has been bottered. Photo by Robert Bergman Carter.

Petter Göran Lind and a conglomeration of merchants, 1787–179?

According to a resolution in the National Board of Trade dated August 20th, 1787, Petter Jöran Lind received charters for pipe making in Karlskrona (SE/RA/420132/1/D VIII a/3 1755–1790). In 1774, the merchant Göran Petter Lind took over the charters for a tobacco manufactory in Karlskrona together with merchants Eric Brunnerus, Lars Möldener, and Theodor Thormark (Angelin 1950, p. 179). This fellowship of merchants is likely the same as those referred to in the 1788 annual report from the Karlskrona Hallrätt to the National Board of Trade that state that there was “a pipe factory which is owned by several stakeholders here in the city” (SE/RA/420132/3/D/D a/Da 1/42 1788).²⁴⁹

The location of the factory, which is the same as the Nordsten factory, is based on the estate inventory of Eric Brunnerus (SE/LLA/10122/F II a/26 1814), who later assumed sole proprietorship of the factory.

Brunnerus and the Karlskrona factory, 1797–18?? (died in 1814)

Production appears to have been irregular during the 1790s; in the year 1797, the annual report in the Karlskrona *Hallrätt* archives states that the factory had resumed operations after having been closed for “several years” (SE/LLA/10130/B/1 1787–1820 [1797], n.p.).²⁵⁰ The annual report from 1799 states that production did not occur because the clay from England had not arrived due to an accident (SE/LLA/10130/B/1 1787–1820 [1797], n.p. [1799]).²⁵¹ In the annual report of 1802, the factory is reported as operational only during the first six months of the year (SE/LLA/10130/B/1 1787–1820 [1802], n.p.).²⁵²

It is not currently known exactly when production ceased at the Karlskrona factory under the ownership of Eric Brunnerus. The annual report from 1811 states that there had been no production at the factory for several years (SE/RA/420132/3/D/D a/Da 1/65 1811–1811, fol. 33v&r).²⁵³ Eric Brunnerus died on June 2, 1814, and according to his estate inventory, he owned the warehouse[s?] and pipe factory at “Arfvid Nilssons gränden” in Karlskrona (SE/LLA/10122/F II a/26 1814, p. 931).

²⁴⁹ ”Ett Pipebruk som innehas af flere här i staden warande Interessenter är till wärkningen i full godt stånd och fortsätts med behörig drift; och ehuru tillräckelig afsättning ännu saknas, har detta års tillverkning likwäl bestigit sig i wärde till Fem Hundrade Rd:r Specie. Detta werk drifwes af Mästaren, 2:ne Gesäller, en Lärodräng, 2:ne Gossar, en lertrampare, 2:ne Trämare och Polerare.”.

²⁵⁰ Ett pipe bruk i Carls Crona belägit, ägas af herr Råd- och handelsmannen Erick Brunerus, är i anseende till inrättningen i god ordning, har i flere åhr warit utan all drift; men åhr 1797 har någon till warkning [sic] blifwit på begynt. Arbetet drifwes af en Mästare 2:ne gässar 2ne trämerskor och en ler trampare”.

²⁵¹ ”Ett här i Carlsrona belägit Pipe bruk, tilhörigt herr Råd och handelsmannen Erick Brunerus, [?] till inrättningen i god ordning. Wid detta werk är en antagen mästare, en gässe 2:ne trämerskor och en lertrampare. Men i anseende till brist på lera, som under wägen från Engeland hit till Carlsrona [sic] förolyckats har Åhr 1799 ej någon tillwarkning [sic] wid detta bruk blifwit förrättad”.

²⁵² ”Ett pipe bruk, till hörigt herr Råd och handelsman E. Brunnerus, är till inrättningen á god ordning. Wid detta werk, som endast de första 6ene månaderna af detta åhr warit under drift, har till werkningen i wärde blifwit angifwen till 700 Rd:r, men senare hälften af detta åhret har detta werk warit utan all drift”.

²⁵³ ”Sedan flera År tillbaka hafwer [...] Råd- och handelsmannen Eric Brunneri anläggning för krit Pipe tillwarkning [...] warit nedlag[d] och utan all drift”.

Pipes manufactured at the Karlskrona factory between 1787 and 18??

Among the pipe wasters recovered during the 2020 excavation of the plot, there are several types that have no markings in molded relief on the sides of their heels or spurs which do not correspond to the marking practices most strongly associated with the production of the factory under the ownership of Nils Matteus Nordsten. Types 6, 17, 18 and 19 in Stibéus and Bergman Carter (2025) all lack Nordsten's initials in either relief on heels or spurs, or as stamped decoration on the front of their bowls. It is possible that these types were manufactured during the second or third phases of the pipe factory in Karlskrona.

It is also possible that old molds with NMN engraved on the sides of heels and spurs remained in use during the latter two phases of production, yet it seems unlikely that Nordsten's stamped decoration would have remained in use. The three crown stamp with no initials is known from pipes with and without NMN on the sides of heels or spurs.²⁵⁴

It is currently not known who the master pipe maker at the Karlskrona factory was during the late 1780s and early 1790s. It is possible that a master pipe maker was brought in either from another pipe factory or from abroad. Considering the claims that production had begun again in 1797 after being shut down for "several years", it appears as if production at the factory ceased for an undeterminable number of years during this period.

Associated to the third phase of the factory, from 1797 until the first years of the nineteenth century, is a Johan Eric Wiberg, who is listed as the master pipe maker at the factory. Moreover, a journeyman named Johan Stenberg, whose estate inventory states that he died in 1799, is also associated to the factory during the late 1790s (Peter Wulf, personal communication). Johan Eric Wiberg worked as a journeyman at the Schrickel pipe factory at Grindsbruk in Stockholm under the master pipe maker Thure/Thore Ljungren as late as 1794 (SE/SSA/0099/E 4/13 1794). Johan Stenberg, on the other hand, worked at Mathias Nyberg's pipe factory on Kungsholmen in Stockholm (SE/SSA/0099/E 4/14 1795).

The Arboga factory (1756) 1757–1776(?)

Carl Friederich Düring and Eric Westén the elder, 1757– (Westén the elder died in 1764) 1767

Charters for pipe making in Arboga were issued to Carl Friedrich Düring on August 27, 1756. Düring had previously been employed as the master pipe maker at Daniel Almqvist's factory in Kv. Pärönträdet on Kungsholmen in Stockholm.²⁵⁵ According to the first annual report from the Arboga factory, it was founded in 1757 and co-owned by the merchant Eric Westén (SE/RA/420132/3/D/D a/Da 1/13, 1758–1758). The annual reports from Düring's factory do not specify types of pipes or their prices. A newspaper advertisement from *Stockholms Weckoblad* (04-01-1758, p. 4) states that

²⁵⁴ The tradition of marking pipes with three crowns can be traced to nearly every known pipe factory in Sweden during the eighteenth century, yet many factories that applied a three crown stamp commonly also included either the name of the city and the initials of the factory owner or master pipe maker, or the initials of the king (FR or AFR [GIII only currently known in molded relief]).

²⁵⁵ It appears as if Düring, who likely came from Germany, decided to remain in Sweden after his initial contract with Almqvist expired.

“[...] all sorts of finer and coarser well-made tobacco pipes for a fair price” were for sale at Eric Westén Erichsson’s and Carl Fried. Düring’s pipe factory in Arboga.

According to both concepts for annual reports and submitted annual reports dated between 1764 and 1767 from Düring’s factory, production was hampered by the fact that the factory workers absconded and “caused no small damage” (SE/ULA/10018/2 1751–1824 [1764]; SE/RA/420132/3/D/D a/Da 1/21 1767–1767).²⁵⁶ After a series of complaints from Westén (the younger, see below) about the lacking production at the factory, Düring appears to have been let go from the factory in 1768.

Carl Friedrich Düring died and was buried in Stockholm in 1784. According to the burial book, his title was *Pipfabriqueur* – pipe manufacturer (SE/SSA/0006/F I/4 1766–1785, p. 413). I have, however, not found any archival evidence that Düring was involved in pipe manufacturing after the year 1768.

Eric Westén the younger, 1768–1776

After a conflict with Carl Friedrich Düring, Eric Westén the younger applied for and received individual charters for pipe making in Arboga in 1768 (SE/RA/420132/1/D VIII a/3. 1755–1790). The charters are dated June 13th, 1768, and state that Westén was to assume full ownership of the already existing factory. The last known annual report from the Arboga factory is dated 1776 (SE/RA/420132/3/D/D a/Da 1/30 1776–1776, p. 700). This was also the year in which the master pipe maker Mårten or Martin Hulström (sometimes spelled Hultström) died (SE/ULA/10022/A I a/3. 1775–1785, p. 91). An advertisement published in 1776 shows that the pipe factory was for sale, including “12 engraved brass molds” (*Dagligt Allehanda*, 08-20-1776, p. 3). There is currently no known archival evidence from later dates that suggests continued production in Arboga.

Pipes manufactured at the Arboga factory

The only currently known document that specifies the types of pipes manufactured in Arboga is an employment contract between Carl Friederich Düring and a journeyman named Mårten Hulström dated June 4, 1767 (SE/ULA/10018/3 1750–1821). The contract specifies the salary for rolling, molding, and trimming four types of pipes. The differences in salary for the different pipes reflect differences in stem length and the skill required to make each type.

Table 8. The types of pipes and salaries for molding a gross of each at the Arboga factory in 1767 (SE/ULA/10018/3 1750–1821, n.p.).

Name of pipe in Swedish	Name of pipe in English	Salary for molding one gross
Öhrn	Eagle	1 daler 4 öre
Medel	Medium/Middle	21 öre
No. 3	No. 3	18 öre
No. 2	No. 2	16 öre

²⁵⁶ Tobaks Pip Bruket anlades år 1757 af Fabriqv: Carl Fr: Dyring [sic] i Bolag med Rådman Eric Westeen; men för 2ne år sedan, efter som bemålte Rådman afsagt sig, har Fabriqv: Dyring [sic] ensam och för enskilt räkning drifvit werket med 1 gesäll 1 lärlinge [sic] och som således varit brist på arbetare, hwilka eljest genom afvikande tillfogat bruket icke ringa skada, har derföre ej upgifvit tillwårkningen mer än för 600 [Daler s:mt] (SE/ULA/10018/2, 1764, n.p.).

Åkerhagen has published a sketch of a bowl with the text ARBOGA, an eagle and the initials EW stamped on its front (2012a, p. 39). Below this bowl is a sketch of a bowl stamped with a flower surrounded by the text ARBOGA and E W (ibid.). The initials E and W most likely refer to Eric Westén, the owner of the factory between 1768 and 1776. Another bowl with an eagle in molded relief is merely listed under the headline Arboga in Åkerhagen's 2012 catalog (2012b, p. 73). The pipes with eagles are likely the pipes referred to as "*Öhrn*" – literally eagle, and the pipe with the flower may be the pipe referred to as "*Medel*" – medium or middle.



Figure 111. A pipe identified by Åkerhagen as having been made at the Arboga factory. The relief decoration of an eagle, the arms of Arboga, makes it reasonable to assume that this pipe was known as *Öhrn* - eagle. Västmanlands läns museum, Vlm-28937. Not to scale. Photo by Västmanlands läns museum. CC BY-SA.

According to Åkerhagen, divers in lake Mälaren have also recovered bowls decorated with the eagle and the initials DA (Åkerhagen 2012a, p. 37), yet no publications depicting such bowls exist. It is also possible that these initials stand for Daniel Almqvist (see above).

A stem fragment with an incuse decoration and the text ARBOGA WESTEN in stamped relief has also been recovered by a private person. As stems with marks manufactured in eighteenth-century Sweden are most commonly found on pipes mimicking Dutch-style pipes, it is therefore possible that such pipes were also made at the Arboga factory.

Apart from bowls decorated with eagles, archival information mentioned above also shows that the Arboga factory produced pipes that may have the letter N and one of the numbers 2 or 3 on the side of the heels or spurs. No such pipes have hitherto been attributed to the factory in Arboga.

The Falun factory, 1758–1830

Daniel Fredrik Theel (1754) 1758–1784

Charters for pipe manufacturing were issued to the Falun merchant Daniel Friedrich/Fredrik Theel in 1754 (SE/RA/420132/1/D VIII a/2 1723–1781). According to the annual reports, Theel had difficulties in obtaining skilled laborers, and it was not until February of 1758 that production began. At that time, the pipe maker Petter Wallmo (also Peter Walmo) arrived from Stockholm to work at the factory in Falun. This Petter Wallmo is most likely the same Peter Walmo who worked as an apprentice at Olof Forsberg's factory in 1740. As Wallmo remained at the Forsberg factory during the period when the Dutch master pipe maker van Kleef was present, it is highly likely that Wallmo was familiar with both English and Dutch manufacturing techniques.

Pipes manufactured under the ownership of Daniel Fredrik Theel

Many pipes from the archaeological record have been identified as having been made at the Falun Factory under Theel's ownership. For the pipe type referred to as either crown pipes or three crowns, the factory copied traditions applied in Alingsås and Stockholm, with the text FALUN over three crowns, with the initials DFT below. Another mark applied is a crested version of Dalarna's coat of arms, with the initials DFT around crossed crossbow bolts. A mark that Åkerhagen has commonly attributed to Theel's factory is a # on the front of bowls.

Reports to the Falun *Hallrätt* and the National Board of Trade between the years 1758 and 1783 specify the types and values of the pipes manufactured at the factory (see Chapter 9). According to Åkerhagen (2012b, pp. 143–147), the museum deposit of Dalarnas Museum holds an unknown number of bowls from an excavation supposedly carried out at the site of the factory in 1935. Despite this, there have been no efforts to couple names of pipes known from archival sources to pipes from the archaeological record.

Åkerhagen (2012b, pp. 143–147) identified the following marks as associated to the Falun factory:

- Bowls with the stamped mark FALUN over three crowns on the front. These are most likely the pipes referred to as longest three crowns in the annual reports.
- Bowls with an F in a circle stamped on the front. Possibly the pipes referred to as *ordinaire*, *ordinaire*, or *porcellin* in the annual reports.
- Bowls with Dalarna's coat of arms and the initials DFT for Daniel Fredrik Theel stamped on the front. Possibly the pipes referred to as *ordinaire*, *ordinaire*, or *porcellin* in the annual reports.
- Bowls with a star or wheellike symbol stamped on the front. It is possible that these were the pipes referred to as No. 2 (see fig. 112 below).
- Bowls with the #-mark stamped incusely on the front. It is possible that these pipes were referred to as No. 3.²⁵⁷

²⁵⁷ This mark can also be found on the side of heels of pipes manufactured at Forsberg's Stockholm factory. There are three possible explanations behind the use of this mark at Theel's factory. The first is that it is a factory mark for Falun, a theory often proposed by Åkerhagen is that this is a *Bergslagsmärke* – a region-specific mark, though he has never specified the origin of this. The second is that Peter Wallmo copied the mark from his previous employer Olof Forsberg. The third possibility is that the symbol is a monogram or cipher of the letters DFT.

The latter two may be the pipes referred to as No. 2 and No. 3 in the annual reports. Neither of the pipes in Åkerhagen's database have intact heels or spurs, which is where the N-number mark is found, so it is impossible to tell from these bowls if this is the case.

Stem fragments with stamped decorations with the text DFT FALUN are also known from the archaeological record.

Johan Gottlieb Gahn and Gustaf Bergström, 1785–1796

The factory changed ownership in 1785, when Johan Gottlieb Gahn and Gustaf Bergström received charters for the factory through a resolution in the National Board of Trade (SE/RA/420132/1/D VIII a/3. 1755–1790). The master pipe maker Petter/Peter Wallmo died in 1796 at the age of 74 (SE/ULA/11441/F I/2 1793–1809, n.p. [no. 146 1796]). It therefore seems likely that Wallmo remained at the factory under the ownership of Gahn and Bergström.

Gabriel Magnus Holmquist, 1796–1817

The factory came under new ownership once again in 1796 when Gabriel Magnus Holmquist assumed ownership of the factory (SE/RA/420132/3/D/D a/Da 1/50 1796–1796, fol.365–366). The master pipe maker who succeeded Wallmo was Johan Iverström, who is recorded as a master pipe maker in 1798 (SE/ULA/10033/F/1 1775–1823, p. 226). Iverström had worked as a journeyman under Wallmo. Iverström is listed as deceased on August 21, 1817 (SE/ULA/11441/F I/3 1810–1855, n.p. [no. 67 in 1817]).

Carl Christian Berg, 1817–1830

The factory's last known owner was Carl Christian Berg, who took over the factory in 1817 (SE/RA/420132/3/D/D a/Da 2/3 1817–1817, fol. 70r). The Falun pipe factory is listed as closed in 1831 (SE/RA/420132/3/D/D a/Da 2/33 1831–1831, fol. 117r). It is currently not known who the master pipe maker(s) who succeeded Iverström at the Falun factory was/were.

Pipes manufactured at the Falun factory, 1785–1830

Based on decorations that are similar to those found on pipes associated to Daniel Friederich Theel, several pipes from the excavations of Lappatähta have been attributed to the Falun pipe factory after Theel's ownership of the factory (see, for example, fig. 111 and Björk & Blennå 2020). It is possible that only minor or no alterations to the factory's output were made as a result of the transitions of ownership. However, it is unlikely that marks with Theel's initials were used after the year 1784 or 1785.



Figure 112. Fragment of a pipe stamped with a sun/star/wheel known from the Falun factory. This pipe is also marked with N/2 in molded relief on the sides of its heel. Photo by Robert Bergman Carter.

Helsinki, 1757–1788

Clay pipes manufactured in Finland have been completely overlooked by Åkerhagen. Pipes manufactured in Finland are either rarely recovered or rarely identified in Swedish archaeological contexts. Finland was part of Sweden throughout the eighteenth century, and trade continued throughout the nineteenth and twentieth centuries. It is therefore highly likely that pipes made in Finland have also entered the Swedish archaeological record. Unfortunately, the source material pertaining to pipe manufacturing in Finland during the Swedish period held at Swedish archives is scant, and more research may shed further light on the production in Helsinki. The *Hallrätt* in Helsinki's annual reports are rarely included in the volumes sent to the National Board of Trade, and those that are mostly concern the textile factory. I am currently unaware of other existing records held in Swedish archives that may shed further light on the production in Finland during the eighteenth century.

Information on Peter Sunn, Bengt G. von Spången, Friederich Mattens, Johan Sederholm & Nathanael Heidenstrauch has primarily been gathered from archival records in Sweden. Information on nineteenth-century pipe factory Fortuna Fajans has been gathered from Jacob Seela's article 'Skärgårdspipor av lera' from *Nordenskiöldssamfundets tidskrift* (1983, pp. 56–81). Seela's article lists several other makers in Finland active in the latter half of the nineteenth century. I also wish to refer the reader to Hr. Grönberg who is mentioned by Hülphers (1886 [1760], p. 52 [see above]).

Peter Sunn, (charters in 1755) 1757–1761?

Peter Sunn received charters for pipe making in Helsinki on November 11, 1755, through a resolution in the National Board of Trade (SE/RA/420132/1/D VIII a/2 1723–1781). According to Hülphers' travel journal, production did not begin until two years later, in 1757. Hülphers also mentions that the factory "makes various sorts of pipes" and that it had eight workers (1886 [1760], p. 52). According to Jacob Seela, the factory was destroyed by a fire in 1761 (1983, p. 60).

Bengt G. von Spången, 1762–1776

According to the records of issued charters (SE/RA/420132/1/D VIII a/2 1723–1781), Sunn's charters were transferred to Bengt von Spången on June 10, 1762. I am currently unaware of any pipes attributed to von Spången's factory.

Friedrich Mattens, Johan Sederholm & Nathanael Heidenstrauch, 1776–1788

Bengt von Spången's charters were transferred to merchants Mattens, Sederholm and Heidenstrauch on October 15, 1775. Production reports from the factory survive from some years of the 1780s. The 1785 report states that the factory had manufactured "larger and smaller tobacco pipes" with a production value of 241 rixdollars (SE/RA/420132/3/D/D a/Da 1/39 1785). The last year with a reported production is 1788, when 370 gross were made by one master and one apprentice (SE/RA/420132/3/D/D a/Da 1/42 1788–1788). The report from the following two years state that the factory was housing troops and that it was not operational (SE/RA/420132/3/D/D a/Da 1/43 1789; SE/RA/420132/3/D/D a/Da 1/44 1790), and in 1791, the factory report states that the factory was in disrepair and lacked workers (SE/RA/420132/3/D/D a/Da 1/45 1791–1791).²⁵⁸

Pipes manufactured at the Helsinki factory/factories

A bowl stamped with the text HELSINGF over three crowns and the royal initials AF depicted in Seela (1983, p. 61) is the only bowl that I know of that has been attributed to Sunn's factory. The bowl is morphologically similar to contemporaneous pipes from Alingsås and Stockholm imitating Atkinson's and Oswald's London type 25. The design of the stamp is also similar to those applied on contemporaneous pipes manufactured in Stockholm and Alingsås, with the initials AF likely referring to King Adolf Fredrick.

As with pipes manufactured in Helsinki under von Spången's charters, no archaeologically recovered pipes that I am aware of have been attributed to the Mattens, Sederholm and Heidenstrauch factory.

Fortuna fajans, Nagu, Finland 1832–?

Although Finland was not part of Sweden at this point in time, I feel it important to include this factory due to the fact that many of the pipes produced here have decorations that bear a strong resemblance to pipes commonly attributed by Åkerhagen to the Wettervik and Nyberg factories in Stockholm. The reason behind this similarity is likely due to the fact that pipe makers Johan Petter Zetterberg and his sister Margareta, previously employed at Catharina Spak Wettervik's factory, were employed at Fortuna. According to Seela (1983, p. 79), they also brought molds from Sweden. Bowls that have been attributed to this factory by Seela (ibid.) are strikingly similar to lobed bowls attributed by Åkerhagen to the Wettervik factory.

²⁵⁸ Att wid det här i staden warande Pip Bruket i förledit år, ingen tillwärcckning blifwit giord i anseende til Brukets förfallna belägenhet och brist på arbetare: det warder härmed, likasom 1790 tillkänna gifwit".

Appendix II

Types and prices of pipes in eighteenth-century Sweden

The following is a summary of price information gathered from archival material. The four tables following immediately below presents price and type information from pipe factory owners arranged according to chronology, type, stem length and price. The first table presents long pipes, the second and third tables present medium pipes, the third presents short pipes, and the fourth and final table presents stumps.

Regarding the source material, the prices of the pipes are usually listed by the gross or by the barrel, crate or box depending on the source type. I have attempted to include gross prices for all types, both in the separate tables as well as in the first four tables listing makers, types and prices. It is important to keep in mind that these prices are wholesale prices and do not include potential tolls – the *landstull* tariffs added for wares brought to market outside of their towns of manufacture.²⁵⁹ Moreover, as estate inventories of both factory owners and merchants appear to most commonly list wholesale prices, any potential markups for pipes by merchants are currently unknown. It is also important to bear in mind that several advertisements and other documentary evidence related to pipe factories state that prices were lower when pipes were purchased directly from the factory.

In the documentary record, prices are occasionally listed in mark rather than dalers and öre, and after the coinage reform of 1776, prices are listed in rixdollars and shilling. When prices are presented in mark, I have converted them to dalers and öre, and for prices stated in rixdollars, I have presented the stated price alongside prices according to the conversion rates given in 1776. This has been done in order to gain a better understanding of potential continuation in the relative prices for pipes over time. Prices in Catharina Wettervik's estate inventory from 1827 have also been converted to dalers and öre copper.

Conversions to dalers and öre copper have been done accordingly:

1 rixdollar = 48 shilling = 6 dalers silver = 192 öre silver

1 daler silver = 4 mark = 32 öre silver = 3 dalers copper = 96 öre copper

1 daler copper = 32 öre copper

The estate inventory of Mathias Nyberg, while listing both pipes and pipe molds, does not specify prices due to the fact that the inventories were to be auctioned. However, as the names of most pipes and molds correspond well to pipes listed in Carl Wettervik's inventory, it is highly likely that the prices were similar or identical. Similarly, prices of the types known to have been made at the factory in Arboga remain unknown. These have instead been categorized according to relative stem length based on piece rate wages specified in 1767 (SE/ULA/10018/3, 1750–1821).

²⁵⁹ According to Modée (1761, p. 4385), the 1756 *landstull* for fine pipes was 2 2/3 öre silver per gross, and for *gemena* – common pipes, it was 1 1/3 öre silver.

Makers, pipe types, and estimated stem-lengths based on prices

The following four tables compiles name and price information from 15 pipe makers. In some cases, types have been consolidated into one post. Examples of this are the N-number pipes with spurs or heels and types known as Three crowns with spurs or heels or large or small bowls. Some types have also been omitted from these tables as they are believed to have been one-offs produced for a very limited amount of time. Examples of this are pipes made at the Norrköping factory *Stjerman* in 1759. These can instead be found below under the headline Norrköping.

Long pipes

Table 9. Long types, based on price information. For sources, see tab. 7 above.

Factory owner, year	Car Aspegren, 1733	Olof Forsberg, 1741	Olof Forsberg, 1745	Olof Forsberg, 1747	Olof Forsberg, 1753	Jonas Alströmer, 1747	Alingsås, 1768	Olof Lindahl, 1758	Lorentz Lindahl, 1758	Olof Aspegren, 1758	Daniel Almqvist, 1760	Eric Westén, 1767	Daniel F. Theel, 1758	Daniel F. Theel, 1777	Daniel F. Theel, 1783	Carl Wettervik, 1798	Mathias Nyberg, 1799	Catharina Wettervik, 1827
Pipe name																		
Long Red	4d																	
Long white	4 d 16ö																	
Long Armorial		13d 16ö	13d	13d	13d	18d	18d 24ö			12d	20d					15d	X	45d
Fluted/Lobed			13– 13d 16ö	13d 16ö	13d												X	27
Long Porcelain/Dutch-style			12d 16ö		15d						21d 16ö			13d 16ö	13d 16ö	21d	X	
Arms of Stockholm		15d	11d 16ö	11d														
Three Crowns	10d	11d 8ö	10d 8ö	10d	10d								12d	13d 16ö	13d 16ö			18d
Ordinair (Dutch-style?)			8d	8d	8d								9d	9d	9d			
No. 6						9d	9d	6d	13d 16ö									
No. 7							12d											
Arms of Vasa										10d								
Eagle												X						
Arms of Gustav																15d	X	

Medium pipes

Table 10. Medium types based on price information. For sources, see tab. 7 above.

Factory owner Year																		
Pipe name	Car Aspegren 1733/1735	Olof Forsberg 1740– 1741	Olof Forsberg 1745	Olof Forsberg 1747	Olof Forsberg 1753	Jonas Alströmer 1747	Alingsås 1768	Olof Lindahl 1758	Lorentz Lindahl 1758	Olof Aspegren 1758	Daniel Almqvist 1760	Eric Westén 1761	Daniel F. Theel 1758	Daniel F. Theel 1777	Daniel F. Theel 1783	Carl Wettervik 1789	Mathias Nyberg 1799	Cath. Wettervik 1827
No. 4	3d								6d									
English Stamp			7d	7d														
Medium fluted/lobed			6d	6d	6d											9d		12– 13d 16ö
No. 5						5d 8ö	6d	4d 16ö	9d 16ö									
No ½ 5						4d 16ö	5d 8ö											
Medium No. 3			5d 24ö															
Medium No. 2			5d 16ö															
Medium No. 1			5d 8ö															
Small medium			4d 16ö															
Three Crowns									6d	8d 16ö								
Medium heels				5d 24ö	5d 24ö													
Medium spurs				5d 16ö	5d 16ö						5d 8ö							
Heart pipes				4d 16ö						3d	4d 8ö– 4d 16ö					c. 5d	X	10d
Medium										4d		X	5d	6d	6d	5d 8ö 9d	X	
Medium arms of Sweden																	X	
The crown											11d 16ö							
Medium porcelain											16d							
Medium bent bowl											8d 16ö							
“Alingsås”																	X	

Short pipes

Table 11. Short types based on price information. For sources, see tab. 7 above.

Factory owner, year	Car Aspegren, 1733	Olof Forsberg, 1741	Olof Forsberg, 1745	Olof Forsberg, 1747	Olof Forsberg, 1753	Jonas Alströmer, 1747	Alingsås, 1768	Olof Lindahl, 1758	Lorentz Lindahl, 1758	Olof Aspegren, 1758	Daniel Almqvist, 1760	Eric Westén, 1767	Daniel F. Theel, 1758	Daniel F. Theel, 1777	Daniel F. Theel, 1783	Carl Wettervik, 1798	Mathias Nyberg, 1799	Catharina Wettervik, 1827
Pipe name																		
Short	2d 24ö																	
English	2 d																	
Pilot pipes	3d																	
Short porcelain	3d 24ö																	
Short fluted			3d 8ö	3d 8ö	3d 8ö													
No. 4		3d 16ö	3d 8ö			3d	3d	3d						3d 24ö	3d 24ö			
No.3	2d 16ö	3d 8ö	3d	3d	3d	3d	3d	2d	4d 16ö	2d	3d	X	3d	3d 24ö	3d 24ö	c. 3d 24ö	X	7d 16ö
No. 2		3d	2d 24ö	2d 24ö					3d	2d	2d 24ö	X	2d 16ö	3d	3d		X	7d 16ö
No. 1	2d 8ö	3d	2d 24ö	2d 24ö		3d	3d		3d									
Turk bowls/heads		3d 16ö	3d 16ö		3d 16ö											4d 16ö	X	7d 16ö

Stumps

Table 12. Stumps, or factory seconds based on price information. It is very likely that most if not all factories sold broken yet functional pipes. Why such pipes are only listed for six factory owners is not known. For sources, see tab. 7 above.

Factory owner, year	Car Aspegren, 1733	Olof Forsberg, 1741	Olof Forsberg, 1745	Olof Forsberg, 1747	Olof Forsberg, 1753	Jonas Alströmer, 1747	Alingsås, 1768	Olof Lindahl, 1758	Lorentz Lindahl, 1758	Olof Aspegren, 1758	Daniel Almqvist, 1760	Eric Westén, 1767	Daniel F. Theel, 1758	Daniel F. Theel, 1777	Daniel F. Theel, 1783	Carl Wettervik, 1798	Mathias Nyberg, 1799	Catharina Wettervik, 1827
Pipe name																		
Large stumps			3d 8ö	3d 8ö	3d 8ö													9d
Misc. stumps	1d 16ö		2d	2d	2d						2d					2d 8ö		
Broken Arms of Vasa & Star pipes										4d								
Broken Arms of Sweden										5d								
Broken Three crowns		7d 24öre								4d								
Broken Arms of Stockholm		8 dalers																

Stockholm

Carl Aspegren 1729 and 1735 [1733?]

Table 13. Carl Aspegren's price information from the prolongation of his charters for pipe making 1729 (SE/SSA/0099/E 3/1. 1620–1753, fol. 24-26)

Name of pipe in Swedish	Name of pipe in English	Price per pipe in öre copper	Price per gross in dalers and öre copper
-Unknown	Unknown	½ öre	2 dalers 8 öre
-Unknown	Unknown	1 öre	4 dalers 16 öre
-Unknown	Unknown	1 ½ öre	6 dalers and 24 öre

Table 14. Pipes and prices listed in the 1735 bankruptcy inventory of Carl Aspegren (SE/SSA/0138/F 6 b/10 1736).

Name of pipe in Swedish	Name of pipe in English	Price per gross in daler, mark or öre copper, as stated in the document	Price per gross in dalers and öre copper
3 Kronor	3 Crowns	10 dalers	10 dalers
Långa röda pipor	Long red pipes	4 dalers	4 dalers
Långa wita pipor	Long white pipes	4 ½ dalers	4 dalers 16 öre
Diverse sorter små röda	Miscellaneous sorts of small red	2 dalers	2 dalers
Lotspipor	Pilot pipes	3 dalers	3 dalers
Korta Postliner	Short Porcelains	3 ¾ dalers	3 dalers 24 öre
No. 2 & 3	No. 2 and 3	10 mark	2 dalers 16 öre
Stumpar	Stumps	1 ½ daler	1 daler 16 öre

Table 15. Pipes and prices listed in the 1735 estate inventory of Carl Aspegren (SE/SSA/0138/F 6 b/10 1736).

Name of pipe in Swedish	Name of Pipe in English	Price per gross in daler, mark or öre copper, as stated in the document	Price per gross in dalers and öre copper
Märckta med 3 Kronor	Marked with 3 Crowns	10 dalers	10 dalers
No. 4	No. 4	3 dalers	3 dalers
No. 3	No. 3	2 ½ dalers	2 dalers 16 öre
No. 1	No. 1	2 ¼ dalers	2 dalers 8 öre
Långa röda pipor	Long red pipes	4 dalers	4 dalers
Dito korta	Ditto short	2 dalers	2 dalers
Långa vita pipor	Long white pipes	4 ½ dalers	4 dalers 16 öre
Lotz pipor	Pilot pipes	3 dalers	3 dalers
Dito större	Ditto larger [longer?]	3 ½ dalers	3 dalers 16 öre
Korta	Short	2 ½ dalers	2 dalers 16 öre
Diverse sorter Engl:	Miscellaneous English	2 dalers	2 dalers
Stumpar	Stumps	1 ½ daler	1 daler 16 öre

Jacob Crom (merchant), 1743

Table 16. Pipes listed in the estate inventory of Jacob Crom who died in 1743 (SE/SSA/0145A/F 1/F 1 A/140 1746).

Name of pipe in Swedish	Name of pipe in English	Price per gross in dalers, mark, öre copper	Price per gross in dalers and öre copper
English Pipes			
18 tums	18 inch	10 ½ dalers	10 dalers 16 öre
15 tums	15 inch	8 dalers	8 dalers
13 tums	13 inch	6 ¼ dalers	6 dalers 8 öre
11 tums	11 inch	5 dalers	5 dalers
9 tums	9 inch	3 ¼ dalers	3 dalers 8 öre
Swedish Pipes			
Cronpipor	Crown pipes	10 ¼ dalers	10 dalers 8 öre
Medel	Middle/Medium	5 ¼ dalers	5 dalers 8 öre
No. 3	No. 3	3 dalers	3 dalers
No. 2	No. 2	11 mark	2 dalers 24 öre

Johan Zachris Andersin (merchant), 1742

Table 17. The second list of pipes in Johan Zachris Andersin's estate inventory (SE/SSA/0145A/F 1/F 1 A/129 1742) differentiates Swedish Crown pipes from English Crown pipes.

Name of pipe in Swedish	Name of pipe in English	Price per gross in dalers and öre copper
Swänska Cronpipor	Swedish Crown pipes	9 dalers
Krusiga Engelska	Fluted English	6 dalers
Engelska smalklackiga	English spurred	5 dalers
Bredklackiga dito	Heeled ditto	5 dalers
Små postl:[in] pipor	Small porcelain pipes	6 dalers
Engelska	English	4 dalers 16 öre
Cronpipor	Crown pipes	7 dalers
Små engelska heles[?]	Small English [?]	3 dalers
Större postl:[in] pipor	Larger [longer?] porcelain pipes	7 dalers 16 öre

Olof Aspegren 1758

Table 18. The pipes listed in Olof Aspegren's probate inventory from 1758 (SE/SSA/0145A/F 1/F 1 A/171 1758). Pipes in bold italic are type names found in both his father's estate and bankruptcy inventories as well as in the Forsberg price lists. Pipes in bold unitalicized are also found in Forsberg's price lists.

Name of pipe in Swedish	Name of pipe in English	Price of pipe per gross in daler copper
Smahl klack[ar] No. 2,	<i>Spurs No. 2</i>	2 dalers
Smahl klack[ar] No. 3,	<i>Spurs No. 3</i>	2 dalers
Smahl klack[ar] Hiert Pipor,	<i>Spurs Heart Pipes</i>	3 dalers
Smahl klack[ar] Medel,	<i>Spurs Middle</i>	4 dalers
Små hufwudh 3 Cronor,	<i>Small Bowls 3 Crowns</i>	6 dalers
Dito sort afbrutne	Ditto sort broken [stems]	4 dalers
Smahl klack[ar] 3 Cronor	<i>Spurs 3 Crowns</i>	6 dalers
Dito sort afbrutne	Ditto sort broken [stems]	4 dalers
Sveriges Vapen	<i>Arms of Sweden</i>	12 dalers
Dito sort, broken	Ditto sort broken [stems]	5 dalers
Vasa Vapen	Arms of Vasa	10 dalers
Dito sort afbrutne	Ditto sort broken [stems]	4 dalers
Stiern Pipor	Star Pipes	6 dalers
Dito sort afbrutne	Ditto sort broken [stems]	4 dalers
Bred kl[ackar] Medel	<i>Heels Middle</i>	4 dalers
Bred klack[ar] 3 Cronor	<i>Heels 3 Crowns</i>	6 dalers
Bred klack[ar] Hiert Pipor	<i>Heels Heart Pipes</i>	3 dalers
Bred klack[ar] No. 2	<i>Heels No. 2</i>	2 dalers
Bred klack[ar] No. 3	<i>Heels No. 3</i>	2 dalers

Olof Forsberg 1741, 1743, 1747 and 1753

Table 19. Pipes listed in the appendix to Forsberg's appeal for an embargo against foreign pipes from 1740 (SE/RA/6122/8/R 2767 1740–1741).

Name of pipe in Swedish	Name of pipe in English	Amount held in storage in gross	Price of pipes per gross in dalers and öre copper
B:[red] K:[lack] N: 1	Heel N[o]. 1	1819	3 dalers
B:[red] K:[lack] N: 2	Heel N[o]. 2	Included above	3 dalers
B:[red] K:[lack] N: 3	Heel N[o]. 3	1170	3 dalers 8 öre
B:[red] K:[lack] N: 4	Heel N[o]. 4	133	3 dalers 16 öre
Medel	Middle	417	7 dalers 8 öre
Eng:[elsk] St[äm]p[e]: med:[el]	English Stamp Middle	295	8 dalers
B:[red] K:[lack] 3 Cronor	Heel 3 Crowns	47	11 dalers 8 öre
Dito sort afb:[rutna]	Ditto sort broken [stems]	7 ½	7 dalers 4 öre
S:[mal] K:[lack] No. 1	Spur No. 1	1451	2 dalers 24 öre
S:[mal] K:[lack] No. 2	Spur No. 2	Included above	2 dalers 24 öre
S:[mal] K:[lack]N: 3	Spur N. 3	1237	3 dalers 8 öre
S:[mal] K:[lack] Medel	Spur Middle	408	6 dalers 8 öre
S:[mal] K:[lack] 3 Cron:[or]	Spur 3 Crowns	19	11 dalers 8 öre
Dito sort afb:[rutna]	Ditto sort broken [stems]	5	7 dalers 24 öre
Mercuri Staf	Mercury's Staff	11 ½	3 dalers
Stockh:[holms] Wapen	Arms of Stockholm	24 ½	15 dalers
Dito sort afb:[rutna]	Ditto sort broken [stems]	5	8 dalers
Turck hufwuden	Turk's heads [bowls?]	85	3 dalers 16 öre
Stora St:[umpar]	Long/large stumps	15	4 dalers 8 öre
Alleh:[anda] stumpar	Miscellaneous stumps	186	2 dalers
B:[red] K:[lack] C	Heel C	48	4 dalers
B:[red] K:[lack] D	Heel D	72	5 dalers
B:[red] K:[lack] E	Heel E	45	6 dalers

Table 20. The price list from Olof Forsberg's factory from January 1745. The price list also specifies that "Of the long sorts, there are also those, that on the ends are somewhat broken, and sold at a fair price" (Anonymous/Stockholms pipbruk 1745–1747).²⁶⁰

Name of pipe in Swedish	Name of pipe in English	Price of pipes per gross in dalers and öre copper
Långa Sorter	Long Sorts	
Swärjes Wapen Porcellin	Arms of Sweden Porcelain	13 dalers 16 öre
Swärjes Wapen Engelsk	Arms of Sweden English	13 dalers 16 öre
Långa Krusiga	Long fluted	13 dalers 16 öre
Långa krushufwuden	Long fluted bowls	13 dalers
Lång Porcellin	Long Porcelain	12 dalers 16 öre
Stockholms Wapen	Arms of Stockholm	11 dalers 16 öre
Tre Cronor breda och smala Klackar	Three Crowns Heels and Spurs	10 dalers 8 öre
Ordinair Porcellin	Ordinary Porcelain	8 dalers
Medel Sorter	Middle Sorts	
Engelsk Stämpel	English Stamp	7 dalers
Medel krushufwuden, breda och smala klackar	Middle fluted bowls, heels and spurs	6 dalers
Medel släta, N:o 3 breda och smala klackar	Middle smooth, No. 3, heels and spurs	5 dalers 24 öre
Medel släta, N:o 2, breda och smala klackar	Middle smooth, No. 2, heels and spurs	5 dalers 16 öre
Medel släta N:o 1., breda och smala klackar	Middle smooth, No. 1, heels and spurs	5 dalers 8 öre
Korta Sorter	Short Sorts	

²⁶⁰ "Af de långa Sorterne, finnas ock de, som på ändarne äro något afbrutne, och säljas till billigt pris"

Name of pipe in Swedish	Name of pipe in English	Price of pipes per gross in dalers and öre copper
Korta N:o 4, breda och smala klackar	Short No. 4, heels and spurs	5 dalers 8 öre
Turckhufwuden	Turk's heads [bowls]	3 dalers 8 öre
Korta N:o 3, krushufwuden	Short No. 3, fluted bowls	3 dalers 8 öre
Korta N:o 3., släta, breda och smala klackar	Short No. 3, smooth, heels and spurs	3 dalers
Korta N:o 2, släta, breda och smala klackar	Short No. 2, smooth, heels and spurs	2 dalers 24 öre
Korta N:o 1., släta, breda och smala klackar	Short No. 1, smooth, heels and spurs	2 dalers 24 öre
Stora Stumpar	Large [long?] Stumps	3 dalers 8 öre
Allehanda Stumpar	Various Stumps	2 dalers

Table 21. The price list from Olof Forsberg's factory from January 1747. The price list also specifies that "Of the long sorts, there are those, that on the ends are somewhat broken, and sold at a fair price."²⁶¹ (Anonymous/Stockholms pipbruk 1745–1747).

Name of pipe in Swedish	Name of pipe in English	Price of pipes per gross in dalers and öre copper
Långa Sorter	Long Sorts	
Swerjes Wapen	Arms of Sweden	13 dalers
Långa Krusige	Long fluted	13 dalers
Stockholms Wapen	Arms of Stockholm	11 dalers
Bred Klackar tre Kronor	Heels, three Crowns	10 dalers
Smal Klackar tre Kronor	Spurs, three Crowns	10 dalers
Ordinair Porcellin	Ordinary Porcelain	8 dalers
Medel Sorter	Middle Sorts	
Engelsk Stämpel	English Stamp	7 dalers
Medel Krushufwuden	Middle fluted bowls	6 dalers
Bred Klackar Medel	Heels, Middle	5 dalers 24 öre
Smal Klackar Medel	Spurs, Middle	5 dalers 16 öre
Små Medel	Small [bowls?] Middle	4 dalers 16 öre
Korta Sorter	Short Sorts	
Bred Klackar Krushufwuden	Heels, fluted bowls	3 dalers 8 öre
Bred Klackar N:O 3	Heels, No. 3	3 dalers
Smal Klackar N:O 3	Spurs, No. 3	3 dalers
Bred Klackar N:O 2	Heels, No. 2	2 dalers 24 öre
Smal Klackar N:O 2	Spurs, No. 2	2 dalers 24 öre
Bred Klackar N:O 1	Heels, No. 1	2 dalers 24 öre
Allahanda stumpar	Various Stumps	2 dalers

Table 22. The price list from Olof Forsberg's factory from January 1753. The price list also specifies that "Of the long sorts, there are those, that on the ends are somewhat broken, and sold at a fair price" (Anonymous 1753).

Name of pipe in Swedish	Name of pipe in English	Price per gross in dalers and öre copper
Långa Sorter	Long sorts	
Lång Porcellin	Long Porcelain	15 dalers
Långa Kron-Pipor	Long Crown Pipes	14 dalers
Långa Krusiga	Long fluted	13 dalers
Sweriges Wapen	Arms of Sweden	13 dalers
Bred Klackar tre Kronor	Heels Three Crowns	10
Smal Klackar tre Kronor	Spurs Three Crowns	10
Ordinair Porcellin	Ordinary Porcelain	8 dalers
Medel Sorter	Middle sorts	
Medel Krushufwud	Middle fluted	6 dalers

²⁶¹ "Af de långa Sorterne, finnas ock de, som på ändarne äro något afbrutne, och säljas till billigt pris"

Name of pipe in Swedish	Name of pipe in English	Price per gross in dalers and öre copper
Bred Klackar Medel	Heels Middle	5 dalers 24 öre
Smal Klackar Medel	Spurs Middle	5 dalers 24 öre
Små Medel Hiärtpipor	Small [bowls?] Heart Pipes	4 dalers 16 öre
Korta sorter	Short sorts	
Bred Klackar krushufwuden	Heels fluted	3 dalers 8 öre
Turckhufwuden	Turk's heads [bowls]	3 dalers 8 öre
Bred Klackar No. 3	Heels, No. 3	3 dalers
Smal Klackar No. 3	Spurs, No. 3	3 dalers
Bred Klackar No. 2	Heels, No. 2	2 dalers 24 öre
Smal Klackar No. 2	Spurs, No. 2	2 dalers 24 öre
Stora Stumpar	Large Stumps	3 dalers 8 öre
Allehanda Stumpar	Miscellaneous Stumps	2 dalers

Daniel Almqvist 1760

Table 23. The first list of pipes in Daniel Almqvist's estate inventory from 1760 (SE/SSA/0145A/F 1/F 1 A/182. 1760, p. 347).

Name of pipe in Swedish	Name of pipe in English	Price per gross in dalers and öre copper
Porcellains Pipor	Porcelain Pipes	18 dalers
Sweriges Wapn [sic]	Arms of Sweden	17 dalers
Medel Porcellain	Middle Porcelain	13 dalers
Långa Krom Huvud	Long bent bowls ²⁶²	11 dalers
Tre smal klacka kronor [sic]	Three Crowns spurred	10 dalers
Stor & små hufda 3 Kronor	Large and small bowls 3 Crowns	7 dalers
Breda och smal klackar	Heels and spurs	4 dalers
Stora Hiärt Pipor	Large Heart Pipes	4 dalers 8 öre
Små Bre Klackar Hierta	Small heeled Heart	3 dalers
Bred och smal klackar No. 3	Heeled and spurred No. 3	2 dalers
Dito No. 2	Ditto No. 2	1 daler 24 öre
Stora stumpar	Large/long stumps	2 dalers
Små Dito	Small ditto	1 daler 16 öre

Carl Wettervik 1798

Table 24. Pipes listed in Carls Wettervik's estate inventory (SE/SSA/0145A/F 1/F 1 A/336 1798).

Name in Swedish	Name in English	Price per gross
Långa Gus. Wapen	Long Arms of Gus[tav]	15 dalers copper
Långa Sweriges Wapen	Long Arms of Sweden	15 daler copper
Reffel hufwuden	Fluted bowls	9 dalers copper
Små Swäriges wapen	Small Arms of Sweden	9 dalers copper
Mussel hufwud	Mussel/Scalloped bowls	9 dalers copper
Långa 3 kronor	Long 3 crowns	6 dalers copper
Medel pipor	Medium pipes	5 dalers 8 öre copper
Hjertpipor	Heart pipes	~5 dalers copper [13 shilling]
Turck hufwuden	Turk bowls/heads	4 dalers 16 öre copper
No. 3	No. 3	~3 dalers 11 öre copper [9 shilling]
Stumpar	Stumps	2 dalers 8 öre copper
Holländska Pipor	Dutch Pipes	21 dalers copper

²⁶² "Krom Huvud" is the literal translation of the Dutch word "kromkop" and may have been a Dutch style pipe.

Mathias Nyberg 1799

Table 25. Molds listed in Mathias Nyberg's estate inventory (SE/SSA/0145A/F 1/F 1 A/336 1799).

Name in Swedish	Name in English	Price
Gustafs Pip-form	Gustaf's pipe mold	N/A
Carosells	Carousel	N/A
Stora Sverges vapens	Large [long] Arms of Sweden	N/A
Mindre dito	Smaller ditto [Arms of Sweden]	N/A
Reffelhufvud	Fluted bowl	N/A
Stor Porcellains	Large [long] porcelain	N/A
Mindre dito	Smaller [shorter] ditto	N/A
Musselhufvud	Mussel [scalloped/lobed] bowl	N/A
Hjert formar	Heart [pipe] molds	N/A
Alingsås	Alingsås	N/A
Turkhufs.	Turk bowls/heads	N/A
No. 2	No. 2	N/A
No. 3	No. 3	N/A

Table 26. Pipe types in the estate inventory of Mathias Nyberg (SE/SSA/0145A/F 1/F 1 A/336 1799). The prices are not specified as the pipes are to be auctioned. Instead, the amounts of pipes in crates and barrels are listed. The inventory lists more crates and barrels than those listed here; included are only the posts specifying types.

Name in Swedish	Name in English	Gross in crate or barrel
Carasels [sic] vapen	Carousel Arms	3 1/4
Gustafs dito	Gustaf's ditto [arms]	7 1/4
Musselhufvud	Mussel bowls [lobed/scalloped]	9
Små Svärge vapen	Small [short] Arms of Sweden	6 3/4
Reffel hufwuden	Fluted bowls	8 3/4
Små Porcellins	Small [short] porcelain	8 1/2
Tunna med Medel Pipor	Barrel of Medium pipes	13
Hjertpipor	Barrel of medium pipes	15
Alingsås	Barrel of Alingsås [pipes]	18
No. 3/2[?]	Barrel of No. 3/2[?]	16
Turk pipor	Turk pipes [bowls?]	13
No. 2	No. 2	16

Catharina Spak Wettervik 1827

Table 27. Pipes listed in the probate inventory after Catharina Spak Wettervik (SE/SSA/0145A/F 1/F 1 A/450 1827)

Name in Swedish	Name in English	Price per gross in rixdollars and shilling	Price per gross in daler and öre copper
Långa pipor, Sveriges Vapen	Long pipes, Arms of Sweden	2 rixdollars 24 shilling	45 dalers copper
Räffelpipor	Fluted/lobed (?) pipes	1 rixdollar 24 shilling	27 dalers copper
Långa pipor, 3 Kronor	Long pipes 3 Crowns	1 rixdollar	18 dalers copper
Hjertpipor	Heart pipes	28 shilling	10 dalers 16 öre copper
Turkpipor	Turk pipes [bowls]	28 shilling	10 dalers 16 öre
No. 3	No. 3	20 shilling	7 dalers 16 öre
No. 2	No. 2	20 shilling	7 dalers 16 öre
Krusnackar	Lobed necks	32 shilling	12 dalers
Räffelnackspipor	Fluted-neck-pipes	36 shilling	13 dalers 16 öre
Stumpar	Stumps	24 shilling	9 dalers

Falun

Transcript of the report from the Falun Hallrätt to the National Board of Trade from 1768

Pip Bruket Handelsmannen Daniel Fried: Theel som erhallit [sic]

Högloflige Kongl: Commer-

ce Collegii privilegium af

den 19 Junij 1754 til et

pip bruks inrättande

här i staden, har detta år drifwit det samma

genom

Mästare 1

Lärdräng 1

Lärling 1

Diverse 4

Samt tilwerkadt

77 gros långa Kronpipor a 4 D Smt 308

206 do. Ordinarie a 2.2 1/3 549.10 2/3

101 do. Medel sort a 2.2 1/3 168.10 2/3

317 ¼ do. No. 3 & 4 a 1 D 317.8

156 ¼ do. No. 2 a 26 2/3 130.26 2/3

857 ½ gros summa 1473[?]

Åt hwilken tilwerkning üpgådt sju hundra

klimpar Kölnisk ler, och

til öfriga behofwet an

wändt en slagz Berg

Lera, som här i orten finnes

The Pipe Factory [lit. Pipe Works]

The Merchant Daniel Fried: Theel who has received charters/privileges from the honorable Royal National Board of Trade on June 19, 1754, for the establishment of a pipe factory here in the city, has this year operated the same through

Master 1

Journeyman 1

Young Apprentice 1

Apprentice 1

Miscellaneous 4

And manufactured

77 gross long Crown pipes at 4 D[alers] S[silver] 308

206 do. Ordinarie at 2.2 1/3 :- 549.10 2/3

101 do. Medel sort at 2.2 1/3 :- 168.10 2/3

317 ¼ do. No. 3 & 4 at 1 D :- 317.8

156 ¼ do. No. 2 at 26 2/3 öre [silver] 130.26 2/3

857 ½ gros total 1473[?]

To which the manufacturing has used seven hundred lumps of Colognian clay, and for the other requirements a type of mountain clay, which is found in the surroundings

Pipes mentioned in annual reports from the Falun Factory, 1758, 1762, 1776 & 1783

Table 28. Pipe types produced at the Falun factory in the annual report to the National Board of Trade in 1758 (SE/RA/420132/3/D/D a/Da 1/13 1758–1758. n.p.).

Name of pipe in Swedish	Name of pipe in English	Price per gross in daler and öre silver	Price per gross in dalers and öre copper
Längsta Kron-pipor	Longest Crown Pipes	4 dalers	12 dalers
Ordinarie	Ordinary	3 dalers	9 dalers
Medel sort	Middle sort	1 daler 21 ¼ öre	5 dalers
No. 3	No. 3	1 daler	3 dalers
No. 2	No. 2	26 2/3 öre	2 dalers 16 öre

Table 29. Pipe types produced at the Falun factory in the annual report to the National Board of Trade in 1762 (SE/RA/420132/3/D/D a/Da 1/19 1762–1764. n.p.).

Name of pipe in Swedish	Name of pipe in English	Price per gross in daler and öre silver	Price per gross in dalers and öre copper
3 Cron Pipor	3 Crown Pipes	3 dalers 10 2/3 öre	10 dalers
Ordinaire	Ordinary	2 dalers 21 1/3 öre	8 dalers
Medel	Middle	1 daler 21 1/3 öre	5 dalers
No. 3	No. 3	1 daler	3 dalers
No. 2	No. 2	26 2/3 öre	2 dalers 16 öre

Table 30. Pipe types produced at the Falun factory in the annual report to the National Board of Trade in 1776 (SE/RA/420132/3/D/D a/Da 1/30 1776–1776).

Name of pipe in Swedish	Name of pipe in English	Price per gross in daler and öre silver	Price per gross in dalers and öre copper
3 C[ronor]	3 Crowns	4 dalers 16 öre	13 dalers 16 öre
Porcel:[in]	Porcelain	4 dalers 16 öre	13 dalers 16 öre
Ordinaire	Ordinary	3 dalers	9 dalers
Medel	Middle	2 dalers	6 dalers
No. 4	No. 4	1 daler 8 öre	3 dalers 24 öre
No. 3	No. 3	1 daler 8 öre	3 dalers 24 öre
No. 2	No. 3	1 daler	3 dalers

Table 31. Pipe types listed in the annual report to the National Board of Trade in 1783, the last year in which the types manufactured in Falun are specified. SE/RA/420132/3/D/D a/Da 1/37 1783–1783, fol. 505v.

Name of pipe in Swedish	Name of pipe in English	Price per gross in shilling	Price per gross converted to daler silver	Price per gross converted to daler and öre copper
Porcellains pipor	Porcelain pipes	36	4 dalers 16 öre	13 dalers 16 öre
3 Cronor	3 Crowns	36	4 dalers 16 öre	13 dalers 16 öre
Ordin:[arie]	Ordinary	24	3 dalers	9 dalers
Medel	Middle	16	2 dalers	6 dalers
No. 4	No. 4	10	1 daler 8 öre	3 dalers 24 öre
No. 3	No. 3	10	1 daler 8 öre	3 dalers 24 öre
No. 2	No. 2	8	1 daler	3 dalers

Alingsås 1747–1754 (1787)

Below are, in chronological order, transcriptions of the annual reports from the pipe factory in Alingsås, submitted to the Chamber of Commerce. Individual costs of each pipe type are only stated in the reports between the years 1747 and 1754. After that, the production volumes for each pipe type are specified until 1774. After 1774, rather than specifying the different types of pipes being made, the total value of the production is stated instead. Other documentary sources with price information for Alingsås pipes is available in the form of an advertisement in *Göteborgs Weckoblad* from 1787 (see chapter 7). Included below is also an inventory receipt from the same year (SE/GLA/10003 1618–1799).

Reported production, 1747–1754

Table 32. Pipes manufactured at the Alingsås factory in 1747 (SE/RA/420132/3/D/D a/Da 1/1 1740–1747).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1	No. 1	2307	1	3
No. 2	No. 2	852	1	3
No. 3	No. 3	1118	1	3
No. 4	No. 4	2030	1	3
No. ½ 5	No. ½ 5	1122	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	1276	1 daler 24 öre	5 dalers 8 öre
No. 6	No. 6	1525	3 dalers	9 dalers
Pipor med Wapen	Pipes with Arms [of Sweden]	15	6 dalers	18 dalers

Table 33. Pipes manufactured at the Alingsås factory in 1748 (SE/RA/420132/3/D/D a/Da ½ 1748–1748).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1, 2, 3 & 4	No. 1, 2, 3 & 4	5938	1	3
No. ½ 5	No. ½ 5	657	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	1504	1 daler 24 öre	5 dalers 8 öre
No. 6	No. 6	1635	3 dalers	9 dalers
Pipor med Wapen	Pipes with Arms [of Sweden]	17	6 dalers	18 dalers

Table 34. Pipes manufactured at the Alingsås factory in 1749 (SE/RA/420132/3/D/D a/Da ¼ 1749–1749).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1	No. 1	1973 ¾	1	3
No. 3	No. 3	1285 ¼	1	3
No. 4	No. 4	1854	1	3
No. ½ 5	No. ½ 5	687	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	1678	1 daler 24 öre	5 dalers 8 öre
No. 6	No. 6	1236 ½	3 dalers	9 dalers
No. 7	No. 7	11	3 dalers 16 öre	10 dalers 16 öre
No. ½ 8 med wapen	No. ½ 8 with arms [of Sweden]	19	6 dalers	18 dalers
No. 8 med D:o	No. 8 with Ditto	63 ¾	6 dalers	18 dalers

Table 35. Pipes manufactured at the Alingsås factory in 1750 (SE/RA/420132/3/D/D a/Da 1/5 1750–1750).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1, 3 & 4	No. 1, 3 & 4	6078	1	3
No. ½ 5	No. ½ 5	1853 ½	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	893 ¼	1 daler 24 öre	5 dalers 8 öre
No. 6, 7 & 8	No. 6, 7 & 8	1276 ¼	6 dalers	18 dalers
Med wapn	Pipes with Arms [of Sweden]	21 ½	6 dalers	18 dalers

Table 36. Pipes manufactured at the Alingsås factory in 1751 (SE/RA/420132/3/D/D a/Da 1/6 1751–1751).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1, 3 & 4	No. 1, 3 & 4	5574	1 daler	3
No. ½ 5	No. ½ 5	1583 ¼	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	735 ¼	1 daler 24 öre	5 dalers 8 öre
No. 6	No. 6	1244 ¼	3 dalers	9 dalers
No. 7	No. 7	30	6 dalers	18 dalers
Med wapn	Pipes with Arms [of Sweden]	19	6 dalers	18 dalers

Table 37. Pipes manufactured at the Alingsås factory in 1752 (SE/RA/420132/3/D/D a/Da 1/7 1752–1752).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper
No. 1, 3 & 4	No. 1, 3 & 4	5379 ½	1	3
No. ½ 5	No. ½ 5	1585	1 daler 16 öre	4 dalers 16 öre
No. 5	No. 5	668 ¼	1 daler 24 öre	5 dalers 8 öre
No. 6	No. 6	1224 ¾	3 dalers	9 dalers
No. 7	No. 7	40	6 dalers	18 dalers
Med wapn	Pipes with Arms [of Sweden]	4	6 dalers	18 dalers

Table 38. Pipes manufactured at the Alingsås factory in 1753 (SE/RA/420132/3/D/D a/Da 1/8 1753–1753).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers, mark, and öre silver	Price per gross in dalers and öre copper
No. 1, 3 & 4	No. 1, 3 & 4	7353 ¼	1	3
No. ½ 5	No. ½ 5	2069 ¼	6 mark	4 dalers 16 öre
No. 5	No. 5	1141 ½	7 mark	5 dalers 8 öre
No. 6	No. 6	1362 ¾	3 dalers	9 dalers
No. 7	No. 7	16	6 dalers	18 dalers
Med wapn	Pipes with Arms [of Sweden]	9	6 dalers	18 dalers

Table 39. Pipes manufactured at the Alingsås factory in 1754 (SE/RA/420132/3/D/D a/Da 1/9 1754–1754).

Name in Swedish	Name in English	Amount manufactured in gross	Price per gross in dalers, mark, and öre silver	Price per gross in dalers and öre copper
No. 1, 3 & 4	No. 1, 3 & 4	9379 ½	1	3
No. ½ 5	No. ½ 5	2690 ½	6 mark	4 dalers 16 öre
No. 5	No. 5	1371	7 mark	5 dalers 8 öre
No. 6	No. 6	1625 ¼	3 dalers	9 dalers
No. 7	No. 7	11 ¾	6 dalers	18 dalers
Med wapn	Pipes with Arms [of Sweden]	5 ¼	6 dalers	18 dalers

Alingsås factory inventories, March 25, 1787

Table 40. Warehouse inventories of the Alingsås pipe factory on March 25, 1787, when Ludwig von Norman assumed ownership. SE/GLA/10003 1618–1799.

Name in Swedish	Name in English	Amount of barrels or boxes/crates	Cost in rixdollars and shilling per barrel or box/crate
No. 1	No. 1	134 barrels	3 rixdollars
No. 3	No. 3	39 ½ barrels	3 rixdollars 32 shilling
No. 4	No. 4	34 barrels	4 rixdollars
No. ½ 5	No. ½ 5	313 barrels	2 rixdollars 32 shilling
No. 5	No. 5	50 barrels	3 rixdollars
No. 6	No. 6	118 barrels	5 rixdollars 16 shilling
No. 7	No. 7	27 boxes/crates	40 shilling
Af Wrak	Of stumps [lit. wrecks]		
No. ½ 5	No. ½ 5	4 barrels	1 rixdollar
No. 6	No. 6	48 barrels	2 rixdollars 16 shilling
No. 7	No. 7	15 boxes/crates	16 shilling

Norrköping, Stiernan and Kronan, 1758

Table 41. The pipes manufactured at Stiernan/Stjernan in 1758 (SE/RA/420132/3/D/D a/Da 1/13 1758–1758).

Name in Swedish	Name in English	Price per gross in dalers and öre silver	Price per gross in dalers and öre copper	Amount of pipes manufactured
No. 6	No. 6	5 dalers silver	15 dalers copper	60 gross
No. 5	No. 5	3 dalers silver	9 dalers copper	150
No. 4	No. 4	2 dalers silver	6 dalers copper	200
No. 3	No. 3	1 daler 16 öre silver	4 dalers 16 öre copper	175
No. 2	No. 2	1 daler silver	3 dalers copper	500
No. 1	No. 1	1 daler silver	3 dalers copper	700
Lombre	Lombre/Ombre	3 dalers silver	9 dalers copper	50
Hemsort	[Lit.] Home sort	1 daler silver	3 dalers copper	75
Små mussel	Small mussel [lobed]	1 daler 8 öre silver	3 dalers 24 öre copper	100

Table 42. The pipes manufactured at Olof Lindahl's factory Cronan in 1758 (SE/RA/420132/3/D/D a/Da 1/13 1758–1758).

Name in Swedish	Name in English	Cost per gross in dalers and öre silver	Cost per gross in dalers and öre copper	Amount manufactured in gross
No. 6	No. 6	2 dalers	6 dalers	40
No. 5	No. 5	1 daler 16 öre	4 dalers 16 öre	75
No. 4	No. 4	1 daler	3 dalers	100
No. 3	No. 3	24 öre	2 dalers 8 öre	90

Appendix III:Recording clay tobacco pipes

One of the main aims of this study is to make salient attributes of pipes that are relevant for analyses of socioeconomic aspects based on smokeways. The results presented above show that archaeologically recovered clay tobacco pipe fragments from Swedish factories and workshops display attributes that can be traced to manufacturing and use, which in turn can be linked to explicit and implicit idealized notions of socioeconomic differentiation and recognizability. The ways in which these pipes were used, as implemented in differentiating smokeways, served to both signal and rupture socioeconomic differentiation during the studied period. Elements of these smokeways, some inextricably linked to socioeconomic status and as expressions of taste, also resulted in tangible and observable traces in the archaeological record.

In order to allow these tangible and observable attributes and traces to be studied and presented, a recording praxis that allows for contextual considerations and quantifications is of assistance. The recording practice suggested below integrates findings presented by the study above to recording praxes considered best practice in other pipe-producing countries. As such, chronometric attributes are recorded alongside attributes of smokeways which in turn can be linked to the historical record.

Based on the fact that clay tobacco pipe assemblages in Sweden consist primarily of Dutch, English, and domestic pipes that have been manufactured in workshops that to great extents applied the manufacturing traditions of the aforementioned countries, the proposed recording practice is also based on attributes traditionally applied in clay tobacco pipe recording praxes in these two countries as well as on conclusions drawn from the chapters above.

The suggested attributes of Dutch pipes have been drawn extensively from the deductive method proposed by Don Duco for Dutch pipes (1987), the recording systems developed by Hans van der Meulen (1999), and Jan and Annemieke Bonnema van Oostveen (2001). For the recording of English clay pipes, the recording system suggested as best practice by David Higgins (2017), and Higgins and Peter Davey (2004), has been consulted. Following immediately below is a brief presentation of attributes that are significant to record for dating clay tobacco pipes from Sweden, England, and the Netherlands. The next section is focused on attributes related to socioeconomic aspects of smokeways. Both sections and the recording system, while based on recording systems from England and the Netherlands, is specifically tailored for pipes recovered in Sweden.

Following the two sections on chronometric attributes and smokeways-related attributes is a section presenting the suggested recording system in a table-format. As will become evident, the recording system allows for detailed recording of individual fragments as well as batch-recording of multiple fragments.

Measurements of bowls and/or bore holes are not recorded in this system. As shown by a multitude of studies (for example, Duco 1987; Higgins 2017), production dates based on stem bores are unreliable. Bowl-measurements carried out by Åkerhagen out on Forsberg's pipes (see chapter 7 and Åkerhagen 1992) show that such time-consuming steps provide no reliable chronometric

information. Indeed, bowl sizes within a single type-group can vary up to several millimeters. Should measurements be required, such fields can be added.²⁶³

Recording chronometric attributes of pipes

This section outlines attributes and characteristics of pipes that can be employed to obtain production dates for pipes made in Sweden, England and the Netherlands. For more detailed descriptions of specific chronometric details and typologies of Dutch and English pipes, I refer readers to Duco's *De Nederlands Kleipijp [...]* (1987), *Merken en merkenrecht* (2003) and the vast bibliography of the National Pipe Archive.

The recording system is primarily based on the deductive method applied for identifying or “determining” pipes used in the Netherlands and England, with minor additions of attributes of Swedish pipes. It is important to bear in mind that industry standards varied between these countries and also shifted over time. It is also important to bear in mind that attributes related to production quality and socioeconomic aspects of smokeways may also be relevant as chronometric attributes. Firstly, this means that production quality is a relative factor that must be comparatively estimated based on an understanding of a pipe's origin and production date, and considered when using the system.²⁶⁴ Secondly, regarding Dutch pipes, Duco has recurrently pointed out that higher-quality versions of specific types are usually older than lower quality versions of the same type.

1. Type. By comparing bowls and bowl fragments to available bowl-form typologies, it is often possible to obtain an estimate of production dates. As pipes imported to Sweden are generally made in England or the Netherlands, typologies from these countries are of great assistance to identify the origin of a bowl. Moreover, as Swedish pipe manufacturers commonly modelled their products after pipes from these countries, the same typologies are useful for obtaining a foundational *terminus post quem*. There are, however, strong indications pointing towards a form of arrested development of bowl-forms at Swedish pipe factories – particularly in the low-cost segment. This means that certain bowl-forms that had fallen out of fashion in the Netherlands and England remained in production in Sweden. Therefore, narrow production dates of Swedish pipes may not be obtainable through typological comparison. Instead, factory-specific marks or designs and typological comparisons can often be combined to obtain a narrow production-date range.
2. Mark(s). Marks, in molded relief or stamped onto the surfaces of bowls, heels, spurs or stems are very often useful for identifying the maker, workshop or factory and production date-range for fragments that have them. It is important to note that marking traditions vary between countries and regions. In eighteenth-century Sweden, a common way of marking pipes was by stamping the fronts of bowls with a design that included factory or workshop

²⁶³ Åkerhagen's results do however indicate that relative bowl-volume/size may have a certain correspondence to the relative lengths of stems. A method of obtaining volumes of bowls that is less time consuming than taking measurements with calipers is to use clean fine sand poured into tobacco chambers of bowls and then measured.

²⁶⁴ For Swedish conditions, this means that caution is necessary when attempting to estimate production quality of pipe fragments from mixed and/or tertiary deposits. As pipes were imported on a vast scale until the 1740s, estimating the production quality of pipes from secure contexts dating to the first five decades of the eighteenth century may also be problematic.

owners' initials and the town or city where the factory was located. Other common places to find marks that can be used to identify Swedish markers are in molded relief on the sides of heels or spurs. If these marks are initials, they can most often be identified by comparing them to the names of makers listed in Appendix I above. One significant caveat to bear in mind when basing production dates on marks on Swedish pipes is that some initial marks, such as I/A or J/A, and A/O or O/A, and WETTERVIK cannot currently be as narrowly dated as previously claimed (see Appendix I above).

3. If these marks are the letter N and a number, they are an indication of stem length, production quality and price. Some factories also stamped stems with so-called name band decorations that often include the name of the factory owner and the name of the city where the factory was located.
4. Decoration(s). Decorations, in molded relief or stamped onto the surfaces of bowls, heels, spurs or stems are often useful for obtaining production date-spans for the fragments that have them.
5. Production quality. Although primarily applicable for pipes made in the Netherlands, higher quality pipes of a certain type can more confidently be dated narrowly than their lower-quality counterparts. There is a possibility that this may also be true for some Swedish types as indicated by decreased prices for certain types or traces of visibly old or unkept molds and a reduced care during manufacturing (see Appendix II and III).

Recording attributes of smokeways – production quality, type, and price...

As shown by the comparative study of manufacturing descriptions, archaeologically recovered pipes and price information in chapters 6 and 7, there were variations between the manufacturing techniques and operations applied in making pipes that would have been considered high or low quality respectively. Many of these variations, provided that the fragments have not been subjected to environmental conditions that have been detrimental to their surface finish, remain visible on fragments recovered from the archaeological record to this day.

Attributes of pipes worthy of consideration in assessments of relative production quality and price are:

1. Polishing. If a Swedish pipe fragment, regardless of what part of the pipe it represents, shows signs of having been polished with agate, glass, steel, flint or any other material prior to firing, it comes from a pipe that was relatively more expensive. It is noteworthy that this is also true for imported pipes. Inexpensive Dutch pipes, however, are often also polished but to a lesser extent than more expensive Dutch counterparts. This means that stem fragments from inexpensive Dutch pipes may be mistaken as coming from expensive Swedish pipes. As the availability of inexpensive Dutch pipes in Sweden decreased in the 1740s, it is therefore important to consider the origin of the pipe fragments as well as the depositional dates of the contexts from which they are recovered. It is important to note that relatively expensive unpolished pipes were also manufactured at Swedish factories. This means that a lack of polishing is not necessarily indicative of a less expensive pipe.

2. Bottering. A bottered rim or rim fragment, visible as compressed, rounded tops of rims or rim fragments, are a sign of a more expensive pipe. It is important to note that bottering ceased in England in the early eighteenth century. Therefore, a lack of bottering on an English eighteenth-century pipe is not indicative of production quality. Dutch pipes, regardless of price, were commonly always bottered. When Dutch bowl-rims have not been bottered, they most commonly come from a less expensive pipe.
3. Dutch-style Swedish pipes (with exceptions). Pipes manufactured in Sweden that are apparent “copies” of Dutch-style bowls such as the *kromkop*, and oval bowl-shape are recurring among the most expensive types in period price lists. These can often also be identified through the presence of milling (see below). It is important to note that Swedish copies of Dutch styles were made with plain or decorated surfaces, and with or without polishing. Decorated types are for example the armorial Dutch-style pipes with the greater coat of arms of Sweden or the so-called revolution pipes with the cipher of Gustav III. The former was made as both expensive long types and slightly cheaper medium-length types (and in versions mimicking English styles). Another Dutch-style pipe type made in Sweden is the oval bowls with lobes or scallops in molded relief and milling. These were made in several price categories and are more difficult to assess in terms of price.
4. Milling. Dotted bands near the rims of Dutch-style Swedish bowls, provided that they have been carefully applied, can be seen as evidence of a more expensive pipe. However, less expensive pipes such as pipes with oval lobed or scalloped designs in molded relief on the bowls are also relatively common. The care taken during the application of the milling may be indicative of relative price. It is also important to note that milling is present on most Dutch pipes throughout the studied period. On seventeenth-century Dutch and English pipes, milling does not always extend across the full circumference of the rim. An incompletely milled rim is evidence of a less expensive pipe. It is also important to note that molded milling may be present on nineteenth-century pipes. In such cases, milling is not an indication of price.
5. Heels or spurs with the letter N, usually on the left side, and a number on the right side in molded relief. Generally, the lower the number, the less expensive the pipe is. However, at many factories, the least expensive pipe in standard production were marked with N and a 2 or 3. Pipes marked with numbers 5 or 6 are known from the pipe factories in Norrköping. These are the most expensive types made there.
6. Classificatory congruence. If a pipe fragment can be identified and tied to a known maker, type and price information presented in this book through decorations or marks, it is possible to determine its relative cost. As certain pipe types decreased in price throughout the eighteenth and early nineteenth centuries, it is important to note that establishing depositional chronology is essential for such conclusions to be made.
7. Stem straightness. Generally, stems of less expensive pipes are more likely to be warped than stem from expensive pipes. This is due to differences in handling during manufacturing. Warped stem fragments, particularly unpolished ones or those with starkly visible mold seams, can be seen as indicative of less expensive pipes. It is important to note that intentionally bent, curled or curved stems appear in documentary and archaeological contexts beginning in the late eighteenth century.

8. Mold seams. As mold flashes and mold seams were generally more carefully removed on more expensive pipes, their presence serves as an indication of less expensive pipes. However, as with a lack of polishing described above, the presence of mold seams is not necessarily conclusive evidence of an inexpensive pipe.
9. Red-firing clay tobacco pipes. Documentary evidence from the eighteenth century indicates that pipes made from red-firing clay were manufactured for use by commoners. As this association appears to have been explicit and acknowledged during the period, pipe fragments of red-fired clay recovered from contexts that can securely be dated to the eighteenth (and most likely the seventeenth) centuries act as evidence of smokeways of people of lesser means. It is important to note that this does not necessarily include red-fired stub-stemmed or socketed bowls, nor pipes made from red-fired clay from the nineteenth or twentieth centuries.
10. Bowl-to-mouthpiece ratios. Swedish documentary evidence from the studied period shows that beyond stem length and production quality, degrees of intactness at the time of sale also affected the price of pipes. Provided that efforts have been made during fieldwork to collect as many pipe fragments as possible, it is possible to compare amounts of bowls to amounts of mouthpieces based on find context or chronological phase. If intact pipes were used, the ratio of bowls to mouthpieces should be relatively equal. If stumps were used, the number of bowls should be higher than the number of mouthpieces. In cases where mouthpieces outnumber bowls in a context, it is more possible that (broken) pipes were removed from the site, i.e. sold or manufactured at the site or deposited elsewhere.

... traces of use and modifications

1. Signs of smoking. Recording traces of whether a pipe has been smoked or not, and relative degrees of how much it has been smoked may shed light on several aspects of activities and smokeways at a site. For example, a large amount of pipe bowls showing no signs of having been smoked from a context or phase may indicate activities related to sales or manufacturing of pipes. When pipes show signs of having been smoked, often visible through discolorations and/or charcoal deposits in the tobacco chamber of bowls, it may act as evidence of how much they were used prior to being deposited. As shown by documentary evidence, perceptions of smokeways that employed blackened or seasoned pipes may have varied synchronically, diachronically and regionally. It may therefore be difficult to base interpretations of socioeconomic status on such traces alone. However, combined with relative price and contextual evidence, signs of use may add to interpretations of socioeconomic status and smokeways. It is, however, also important to consider the possibility that depositional conditions may have discolored and/or altered or completely removed discolorations from pipe fragments.
2. Bite marks. One of the most conspicuously visible traces of a particular aspect of smokeways in the archaeological record is the presence of bite marks on stems. Bite marks on stems can generally be held as evidence of smokeways of people positioned on the lower end of the socioeconomic scale. This type of wear is a result of a practice known today as clenching, where the pipe stem is held by the smoker's teeth rather than by holding on to the stem or bowl while smoking. Although bite marks are known to exist on mouthpieces, they most

commonly appear on stems that have either been either intentionally snapped off or broken. Reasonable explanations for this are the obvious impracticalities and discomforts of clenching even the shortest pipes in regular production, with stems of circa 20 centimeters.

3. Mending, carved or whittled stems. Stems that show signs of carving or whittling can generally be interpreted as evidence of smokeways associated with people at the lower end of the socioeconomic scale. However, such modifications may have been made for a number of reasons; most often associated with difficulties of obtaining new pipes. As with bite marks, many such modifications are likely representations of people whose smokeways included biographical expectations on pipes that extended beyond hegemonic notions of correctness. It is important to consider not only socioeconomic factors as explanations for carving or whittling of stems – it is possible that this was done to fit quills or mouthpieces made from other materials to protect lips and teeth of wealthier smokers.

The recording system

Presented below is a recording system that considers categories/attributes for purposes of analyzing and presenting both chronometrics and attributes related to smokeways. The system can be applied in any relational database environment and can be modified to suit local requirements and to facilitate recording.

It is highly recommended that free text entries be kept to a minimum to facilitate queries. Free text entries can be kept to a minimum by modifying the system after required standards. For example, adding typology codes, the most common types of stem-decorations, lists of makers' marks, milling increments, and other standard categories as drop-down lists have been found to facilitate the workflow significantly. It is also possible to standardize this recording system to an extent where, for example, if makers can be identified, their years of operation can be automatically filled in as their names are entered.

Category/attribute	What to enter/specify	Further explanation
Context number	Enter the number or name of the context from which the fragment(s) were recovered.	
Find number	Enter the assigned find number of the fragment(s).	If several fragments with the same number need to be recorded separately, this can be done by adding a suffix in the form of a letter or number.
Amount	Specify the number of fragments being recorded.	This allows for batch recording of fragments from the same context. ²⁶⁵

²⁶⁵ If a context yields large numbers of pipe fragments, it can be a time-consuming task to record fragments individually. In order to facilitate the recording of pipe fragments with shared attributes, this recording system allows for a batch-style recording. Contextual recording of pipe fragments in batches can be done accordingly: Fragments can be sorted and grouped according to the part of a once-intact pipe they represent. This means that all bowl fragments, all bowl-stem junctures, all stem fragments and all mouthpiece fragments from the same context are grouped. Once this has been done, each "anatomical group" can be sorted according to their shared specific attributes. The simplest way is often to divide these according to surface treatment, for example, undecorated polished stem fragments are recorded as one batch, polished stem fragments may be recorded as one separate batch, stem fragments with identical decorations are recorded as one batch etc. The fragments in each batched group can then be counted and recorded separately.

Note that there are potential pitfalls to this method; small sherds and chips of pipe bowls can be problematic in quantitative analyses aimed at identifying minimum numbers of functional pipes. While it is possible to omit such

Category/attribute	What to enter/specify	Further explanation
Photo or illustration number	Specify the individual photo number for any potential photographs taken or illustrations of the fragment(s) being recorded.	If several photos or illustrations are available, enter them all.
Bowl, Juncture, Stem, Mouthpiece	Specify what part(s) of the pipe(s) are being recorded. This allows for so-called batch recording, particularly of stems and mouthpieces. If recording stems or mouthpieces, it is possible to skip the following ten attributes.	By specifying which part of the pipe is being recorded, it is possible to record identical or similar fragments simultaneously. For example, this allows unpolished stem fragments with no decorations or bite marks can be grouped and recorded as a batch.
Type	Specify the closest matching type based on comparisons to established typologies. Attributes more closely describing decorations (for example lobed, heart-pipes, armorial bowls) should also be specified here according to type. Note also if the pipe has been made from red-firing clay or if it has been fired in an oxygen-reduction. Stub-stemmed/socketed bowls should also be specified here.	See for example Duco (1987), Atkinson & Oswald (1969). Specify if it is a Swedish version of a foreign type (i.e. AO25S for a London type 25 made in Sweden or D4S for a <i>kromkop</i> made in Sweden. A Swedish armorial pipe imitating a Dutch oval bowl will be recorded as follows: D3S Arms of Sweden. The D3 denotes Duco's base type 3, the S that the pipe is made in Sweden and
Side mark	Specify potential marks on the sides of bowls. Leave blank if there is no side mark.	Side marks in molded relief are most commonly found on Dutch pipes yet are also known on some English pipes.
Front mark	Specify potential marks on the front of the bowl. Front marks are common on Swedish pipes, Dutch export styles, and some English pipes. If recording a bowl with molded relief design, this should be noted here. Leave blank if there is no front mark. If the front is missing, enter N/A.	If desired, it is possible to also describe if the mark is molded or impressed/stamped onto the bowl.
Sub-mark [mark on side(s) of heels or spurs]	Specify any marks on the sides of the heel or spur. Marks can range from mold-maker marks on Dutch pipes, the Gouda guild mark to molded initials, N/numbers and symbols. Most often in molded relief.	
Heel mark	Specify if there is a mark on the bottom of the heel and describe what it is. Enter a dash (-) if there is no mark. If a heel or spur is missing, enter N/A.	If recording pipes from Gouda, it is also possible to refer to the mark-number in Duco (2003).
Surface treatment	Specify if the bowl fragment(s) has/have been trimmed, wiped, or polished. If weathered, trampled, worn or water rolled beyond determination, enter N/A.	
Rim treatment	Specify what type of rim treatment has been applied. Rims can be cut or bottered. There are also examples of internal knife cuts visible as beveled edges. If the rim is missing, enter N/A.	
Rim milling	Specify the extent of milling around the circumference of the bowl rim(s) in increments of quarters. When rims are damaged or incomplete, make a note of this here.	Milling that extends over the full circumference on Dutch and English pipes generally indicate a higher quality pipe.
Signs of use	Specify if the bowl is smoked or unsmoked. It is also possible to specify if a bowl is particularly well-smoked here.	
Other/comments	Record any attributes of the bowl not covered above.	Any modifications or particularities of note can be entered in this field.

fragments and instead record only relatively intact bowls and bowl-stem junctures to avoid disproportionate amounts of bowl fragments in comparative analyses of fragment types, this also risks omitting potentially important information that these fragments carry. Omissions of shards and chips of bowls must be clearly stated in a potential section on methods.

It is important to note that if fragments display any deviating attribute(s), for example bite marks or slightly different decorations, they should be recorded individually. Only on rare occasions is it possible to record bowls as batches. Examples where this may be suitable are wasters, shipwrecks, and single-event dumps with identical pipes.

Category/attribute	What to enter/specify	Further explanation
Stem surface treatment	Record if the fragment shows signs of having been trimmed, smoothed, wiped or polished during manufacturing. If weathered, trampled or water rolled beyond determination, enter N/A.	
Stem decoration	Record any potential stem decorations. This includes name band marks. If desired, it is possible to specify if it has been stamped or if it is in molded relief. Enter a dash (-) if no decorations are visible. N/A if undeterminable.	
Stem use-wear	Record if bite marks or signs of whittling, carving or mending are visible. Enter a dash (-) if no wear is visible. N/A if undeterminable.	
Mouthpiece type/finish	Record the type of mouthpiece and/or the way the mouthpiece has been finished. Enter a dash (-) if no mouthpieces are recorded. N/A if undeterminable.	The most common mouthpiece finish is a cut that has formed a beveled edge. Unfinished mouthpieces with uneven surfaces are also known. Molded nipple mouthpieces become common on pipes from the mid-nineteenth century onwards.
Other/comments, Stems	Record any attributes of stems not covered above. Warping, weathering, water-rolling or trampling can be entered here. Leave blank if no comments are necessary.	
Relative production quality	Based above mentioned attributes related to production quality, specify if the fragments are of a high or low production quality.	It is important to note that medium quality types are also known to exist, particularly from Dutch workshops from the seventeenth century.
Country of origin	Enter the most likely country and/or city where the pipe was made. N/A if not possible to discern.	If the city of origin can be determined, entering the country of origin is often redundant.
Maker	Based on type, mark(s), and/or design, enter the most likely maker or makers, factory or workshop where the pipe has been made. Enter "unknown" if it is not possible to identify a maker.	Instances where several makers share initials or marks are common. It is should therefore be possible to enter several makers. ²⁶⁶
Production date	Enter the most likely production date-span based on the above specified categories/attributes.	When encountering pipes with an established chronological provenance based on find context, it is worthwhile to note such dates in parentheses. ²⁶⁷
References	If desired, enter a reference to the typology used to identify the pipe, potential comparisons to pipes in other catalogs, and/or lists of makers' marks used to identify the pipe fragment.	Standard typologies are generally referenced in the "Type" field, making further referencing to these redundant. Similarly, references to standard lists of marks can be noted in the section on methods.

²⁶⁶ There are instances where pipes are marked with the initials of a master rather than the factory owner. For example, pipes made at the Schrickel factory in Stockholm under the mastership of Thure Ljungren are known to have been marked with variations of Ljungren's initials or name. As Ljungren's mastership is a more precise chronometric indicator than Schrickel's ownership of the factory, it may be better to enter Ljungren's name and period of operation, while making note of potential factory owners as well.

²⁶⁷ Examples of this are pipes recovered from secure contexts such as undisturbed shipwrecks, contexts with a firmly established date based for example on destruction or burnt layers with a known provenance, and pipe manufacturing sites.

Appendix IV

Factory inventories

Inventories from Olof Aspegren's factory in Stockholm, 1758

Table 43. Factory inventories at Olof Aspegren's factory (SE/SSA/0145A/F 1/F 1 A/171 1758).

Name in Swedish	Name in English	Value in dalers and öre copper
18 gamla filar av diverse sorter	18 Old files of different kinds	4 dalers
15 Skaf Järn	15 Scrapers	3 dalers
15 Graf sticklar	15 Burins (engraving tools)	3 dalers
1 sats <i>Alphabeth defect</i>	1 batch Alphabet defect	8 dalers
1 mässingssåg förnötter	1 brass saw worn	3 dalers
1 dito mindre	1 ditto smaller	2 dalers 16 öre
1 drill med 12 st utnötta Bårar	1 drill with 12 worn drills [drill bits?]	5 dalers
2ne Gl hammar	2 old hammers	24 öre
1 filklåfwa	1 hand vise	24 öre
1 huggjärn	1 chisel	24 öre
11 meislar	11 chisels	24 öre
2 durkslag	2 collanders	16 öre
8 Trämknifvar	8 trimming knives	1 daler 16 öre
16 Stoppare obrukbara	16 stoppers unusable	2 dalers 16 öre
6 dito	6 ditto	1 daler
1 Brän Järn	1 branding iron	6 öre
30 oduglige stänger	30 useless rods	16 öre
10 förråstade skafjärn	10 rusty scrapers	2 dalers 24 öre
1 skrufstäd	1 vise	6 dalers
10 större och mindre skrufvar, til en del benkkare	10 screws [vises for pipe molds], some with benches	95 daler 24 öre
43 mässings formar hwaraf större delen äro obruklige, wäga tilsammans 5 lispund 2 mark	43 brass [pipe] molds of which most are unusable, together weighing 5 lispounds 2 marks	128 dalers 8 öre
3 3 Cronor stämplar	3 3 crown stamps	3 dalers
4 medel stämplar	4 medium stamps	1 daler 16 öre
1 bestik af mässing sirklar med till behör och foutral	1 set of brass circles with paraphernalia and case	18 dalers
1 Ny graverad mässing form	1 new engraved brass mold	10 dalers
[...]		
900 Klimpar Holländskt Lehra	900 lumps Dutch clay	506 dalers 8 öre
104 utlägningsbrädor	104 drying boards [lit. laying out trays/boards]	65 dalers
46 rackbrädor	46 rack-boards [shelves for trays]	5 dalers 24 öre
12 dubla Reffel bräder	12 double grooved trays [for drying pipes]	12 dalers
120 Enkla dito	120 single [grooved] ditto	60 dalers
77 medel bräder	77 medium trays/boards	9 dalers 20 öre
46 små kast bräder	46 small casting trays/boards	2 dalers 28 öre
2 inwiknings baljor	2 soaking tubs/vats	16 öre

Inventories from Daniel Almqvist's factory in Stockholm, 1760

Table 44. Pipe factory inventories in Daniel Alqvist's estate inventory (SE/SSA/0145A/F 1/F 1 A/182 1760).

Name in Swedish	Name in English	Value in dalers and öre copper
1 Stort skrufståd	1 Large vise	9 dalers
1 Dito mindre gammalt	1 Ditto smaller old	3 dalers
1 Fihl kloffwe	1 Hand vise	3 dalers
1 Kniptång	1 pair of tongs	1 daler 4 öre
5 gamla raspar	Old files	4
5 små flata fihlar	5 flat files	5
3 trekantiga dito	3 three-sided ditto	1 daler 16 öre
1 halfrund dito	1 half-circular ditto	12 öre
16 halfrunda, mycket slitne	16 half-circular, very worn	2 dalers 16 öre
7 hufwud järn	7 head [bowl?]-irons	1 daler 4 öre
9 runda järn	9 round irons	1 daler 4 öre
Stickjärn	Lit. "poking irons" [wires?]	1 daler 4 öre
8 meislar	8 chisels	1 daler
1 liten hammar	1 small hammer	18 öre
2ne dito större	2 small ditto larger	1 daler
2 drillbor	2 drills	1 daler
34 stoppare	34 stoppers	3 dalers
Mässingsformar	Brass molds	Weight of brass stated [in <i>lispund</i> and mark]
1 Lång form, utan namn	Long mold, without name	1 lb., 5 mark
1 Dito kallad Sweiges wapen	Ditto called Arms of Sweden	15 mark
1 Lång dito	Long ditto	1 lb.
1 medel sort	1 middle sort	14 marks
1 Mercurii wapn	1 Arms of Mercury	16 marks
1 Långa Kromhufwud	1 Long bent bowls [kromkop?]	18 marks
2 Medel sort Dito	2 Middle sort Ditto	1 lb. 2 marks
2 wid namn: Kronan	2 named: The Crown	1 lb. 16 marks
1 Kallad smal klackar	1 called spurs	16 marks
1 Kallad Stiernan	1 called the star	13 marks
2 Långa Bredklackar	2 Long Heels	1 lb.
1 Dito smalklackar	1 Ditto Spurs	9 marks
1 små hufwud	1 small bowls	9 marks
2 medelsort Bred klackar	2 middle sort heels	17 marks
2 Dito sort smalklackar	2 ditto sort spurs	1 lb. 2 marks
2 stora Bredklackar	2 large Heels	1 lb.
2 små dito	2 small Ditto	14 marks
2 kallas 3 kronor	2 called 3 crowns	1 lb.
2 Bred klackar 3 kronor	2 heels 3 crowns	15 marks
1 räfflad form	1 fluted mold	5 marks
2 smalklackar 3 kronor	2 spurs 3 crowns	15 marks
2 Bredklackar No 2	2 Heels No. 2	10 marks
2 smal klackar No 2	2 spurs No. 2	10 marks
1 räfflad Dito	1 fluted ditto	4 marks
1 utan namn	1 without name	14 marks
		Total 19 lbs. 10 marks
6 stenar att slipa formar på	6 stones to grind molds on	2 dalers
22 Lerknifvar	22 clay knives	2 dalers
12 hufwud smudrare	12 bowl smoothers	3 dalers 14 öre
8 stämplar	8 stamps	2 dalers [? öre]
14 Dito sämbre	14 Ditto worse	2 dalers [? öre]
2 ringlar	2 ringles	[? öre]
6 glasnings stenar af flint	6 glossing/polishing stones of flint	[? öre]
2 brynstenar	2 whetstones	2 öre
5 stora järnskrufvar	5 large iron screws	36 dalers
1 Dito mindre	1 Ditto smaller	3 dalers

4 Kran skrufwar	4 Crane screws	12 dalers
1 Dito mindre	1 Ditto smaller	2 dalers
3 Eld gafflar	3 Fire pokers	1 daler
3 huggyxor	3 chopping axes	1 daler 16 öre
14 Liusesaxar	14 candle scissors	1 daler 14 öre
1 liten murhammare	1 small mason hammer	6 öre
1 profjarn	1 probe [lit. iron for testing/testing-iron]	6 öre
4 ungjarn [ugnsjarn]	4 kiln irons	
2 Barar	2 ?	1 daler 16 öre
Ett antal små trälådor at torka pipor uppå, som anses tilhopa wara werda	A number of small wooden crates to dry pipes upon, which together are considered worth	54 dalers
11 skrubbselbyttor	11 scrap buckets	2 dalers
Några små släta brädor	Some small smooth boards	1 daler
8 Pott formar	8 Pot [saggar] molds	1 daler
En hop mindre sorter af ringa värde	A bunch of smaller kinds of lesser value	15 dalers
Rudematerien til Pipbruket	Raw materials for the pipe factory [clay, firewood?]	1536 dalers

Inventories of Carl Wettervik's pipe factory in Stockholm from 1798

Table 45. Pipe factory inventories in the estate inventory of Carl Wettervik (SE/SSA/0145A/F 1/F 1 A/330 1798).

Name in Swedish	Name in English
300 klimpar lera	300 lumps clay
10 famnar granwed	10 fathoms spruce firewood
Diverse pip formar af Metall	Miscellaneous pipe molds made from metal
2ne skruf städ	2 vises
2ne fil klåfwar	2 hand vises
10 Diverse sorter filar	10 miscellaneous files
12 Diverse andra form werk tyg	12 miscellaneous mold-tools
11 Diverse skrufwar	11 miscellaneous screws [pipe molding vises]
2ne slag Järn	2 beating rods
Slag Bänk	Beating bench
130 Räffel Bräder	130 grooved trays/boards
34 utläggnings bräder	34 drying trays [lit. laying out boards]
30 Diverse kast-Bräder	30 miscellaneous casting/molding trays/boards
4 skott-kjerror	4 wheelbarrows
11 kastar stolar	11 molders' chairs
11 skrubsel Byttor	11 scrap tubs
Een tolfte zaf [?] Bottns Bräder	One twelfth sap-bottom tray[?]
9 Tolfte Enkla Bräder	9 twelfths simple boards/trays
11 Stoppare	11 stoppers
5 knifwar	5 knives
4 gamla Ringlar	4 old ringlets

Inventories of Mathias Nyberg's pipe factory in Stockholm from 1799

Table 46. Factory inventories in Mathias Nyberg's estate inventory (SE/SSA/0145A/F 1/F 1 A/336. 1799). Note that No. 3 pipes appear to have had specific drying trays.

Name in Swedish	Name in English
18 Diverse graveur jern	18 miscellaneous engraving irons
11 Diverse filar	11 miscellaneous files
2 fil klåfvar	2 hand vises
[illegible]	
1 sax	1 pair of scissors
1 låda med diverse jern skräp	1 box with old scrap iron
7 obrukbara trä formar	7 unusable wooden molds
1 jern mortel med stöt	1 iron mortar with pestle
1 Skrufstäd	1 vise
7 Skrufvar	7 screws [pipe making vises]
1 Tång och Hammare	1 pair of pliers and hammer
1 Kniptång	1 pincers
1 Handyxa	1 hand axe
1 wedbår	1 pail for firewood
2 Jern spadar	2 iron spades
52 Reffelbräder	52 grooved trays/boards
43 Rull dito	43 rolling ditto [trays]
16 utläggnings dito	16 drying trays/boards [lit. laying-out boards]
23 medel utskasts dito	23 medium molding/casting trays/boards
20 Dubbl. Dito	20 double ditto [medium molding/casting trays/boards]
8 Lös do.	8 loose [trays/boards]
15 No. 3 do	15 No. 3 trays/boards
10 [18?] Huvd. do.	Bowl/head ditto [trays/boards]
6 arbetsbenkar	6 work benches
22 Pottor	22 Pots [saggars]
40 Kassor	40 boxes/crates
12 Kubbar i ugnen	12 blocks/logs [firing supports?] in the kiln
10 diverse stomar [?]	10 miscellaneous [<i>stomme</i> lit. "frame", other possible explanations include rods/handles]
3 Baljor	3 tubs
2 Tunnor	2 barrels
1 Trappa	1 ladder [lit. stairs]
12 Pottformar	12 molds for saggars [lit. pot-molds]
1 Kastform	1 mold for molds [?]
3 Blad formar	3 molds for tiles [lit. leaf-molds]
2 Klintformar	2 clinker molds
20 Klintsten	40 clinkers
1 jernbalance med två skåla [sic]	1 iron scales with two bowls
13 diverse victor	13 miscellaneous weights
1 lår med stoft	1 box with [of] clay[?]
2 små lådor	2 small boxes/crates

Inventories of Jöns Brunbeck's pipe factory Stjernan in Norrköping from 1809

Table 47. The inventories of Jöns Brunbeck's pipe factory Stjernan according to his estate inventory (SE/VALA/01697/F I aaa/62 1809).

Item	Cost, rixdollars and shilling
1 barrel pipe clay	16 shilling
2 carving machines	2 rixdollars 32 shilling
3 Presses	2 rixdollars
31 pair pipe molds	30 rixdollars
3 stamps, 5 tin forms	24 shilling
4 trays/boxes, 2 tables	32 shilling

Inventories from Catharina Spak Wettervik's pipe factory from 1827

Table 48. Factory inventories in the estate inventory of Catharina Spak Wettervik (SE/SSA/0145A/F 1/F 1 A/450 1827).

Name in Swedish	Name in English
55 Pipformar af Metal	55 Pipe molds made from metal
5 Skrufstäd	5 vises
30 Filar	30 files
3 Filklöfvar	3 hand vises
2 Borrskäft med 10 Borrar	2 drills with 10 drill bits
3 Hammar	3 hammers
28 diverse Verktyg	28 miscellaneous tools
14 Skrifvar af gjutet Jern	14 screws of cast iron
14 Stopparhäften af Smidt Jern	14 Stopper attachers made from forged iron
169 Räffelbräder	169 grooved trays
108 Kastarbräder med lister	108 casting trays with ledges
63 do. utan lister	63 ditto without ledges
31 Utlägningsbräder	31 drying trays [lit. laying out trays]
32 Piphufvudbräder	32 pipe bowl trays
89 Rullbräder	89 rolling trays
6 Kastarbänkar	6 casters benches
12 Kastarstolar	12 casters' chairs
6 Skruffelbyttor	6 scrap tubs
6 Trämarknifvar	6 trimmers' knives
3 Ringlar	3 ringlets
4 Skottkärror	4 wheelbarrows
1 Jernstör, 1 Kofot	1 iron rod, 1 crowbar
2 Såar, 2 Ämbar	2 tubs, 2 pails
2 Lerbäljor	2 clay tubs
1 Temperbalja	1 temper-tub
6000 Klump lera	6000 lumps clay
9 Tolfter enkla utskotts Bräder	9 twelfths simple [poor quality] boards/trays
2 Farnar Björk Ved	2 fathoms birchwood/ birch firewood
31 do. Gran Ved	31 ditto spruce firewood

Appendix V: Descriptions of pipe making in Sweden

Descriptions of pipe making in Alingsås

Linnaeus' description of the manufacturing process at the Alingsås pipe factory (1746)

Pipbruket var anlagt utom staden; här voro 60 personer sysselsatta med lerets ältande, rullande, kastande, torkande, polerande, stämplande; och huru små gossar här användes till samma tjänst som store: piporne formerades uti en mässingsform av tvenne stycken, som långs åt och emellan sig lika slutades tillsammans. Formgöraren filade och formerade desse pipformer uti en särskild kammare. Pipleran, som hämtades ifrån Holland, var vit, och rodnade icke uti bränningen; då man skrapade på henne med nagel eller kniv, glänsade hon, som en vit talk, och mjölet var emellan fingrarna fett, slipprigt, klabbigt, nästan som en talg eller talkmjöl. Källare voro anlagde, i vilka de obrände pipor bevarades för frost och stark torka. Tunnorne, i vilka piporne brändes, voro av ler, liknande nog sockerformer, fast desse hade en flat botten. När piporne sattes in i tunnan, täcktes hon med ett papper, som hon böjt *in formam coni*, och beströks med lera på båda sidor, så att lerskorpan blev kvarstående, sedan papperet brunnit bort. Piporne brändes 24 à 26 timmar uti en hög halv cylindrisk ugn; 15 à 16 tunnor brändes tillika, 10 à 20 gross i var tunna, 144 pipor i vart gross.

The pipe works was established outside of the town; here 60 people were busy working the clay, rolling, casting, drying, polishing, stamping; and how small boys were here used for the same service as the big: the pipes were formed in a brass mold of two pieces, which closed along and between one another. The mold maker filed and formed these pipe molds in a separate room. The pipe clay, which was brought from Holland, was white and did not turn red during firing; when she was scraped with a nail or knife, she shone, like white talcum, and the flour felt, between the fingers, fatty, slippery, sticky, almost like tallow or talcum powder. Cellars were built, in which the unfired pipes were kept from frost and strong drought. The barrels in which the pipes were fired were made from clay, similar to sugar molds, but these had a flat bottom. When the pipes were placed in the barrel, she was covered with a piece of paper, which was shaped *in formam coni* [in the shape of a cone], and covered in clay on both sides so that the clay crust remained after the paper had burned away. The pipes were fired for 24 or 26 hours in a tall half-cylindrical kiln; 15 to 16 barrels were fired, 10 to 20 gross in each barrel, 144 pipes to each gross.

Anonymous account of the pipe making process at the Alingsås factory

The following description of manufacturing methods at the Alingsås factory (SE/GLA/10003/-/1 1618–1799) is discussed in depth in chapter 7 above.

A translation follows below.

Pro Memoria
Angående Pijpmakeriet

/1 Kölniska Leret kommer utj klumpar, hwilka när de tagas till inwekning skrapas wäll rena af den orenlighet som har kunnat komma på, under öfwer förslen på skieppet; Till en Inwekning tages sedan 3 T:r el:r 6[-?]7 klumpar, hilka klappas sönder och lägges utj ett der till giort stort faat med Järnband, och giötes watn therpå så thet står wähl öfwer leret, när det då har liggat tills det är wähl igenom blött äro små tappar på sidorna hwarmed watnet kan aftappas, sedan tagas upp och lägges på trampbrädet, som tillförendet måste wara wähl rent, då tagas Skrubsel el:r mangell deraf en tunna el:r 20 klumpar tort lera, hwilket klappas helt fint och upblandas det weka Leret, tils des det blifwer lagomt stöft, men af Skrubsel går wähl 2 à 3 Tunnor [?] til, sedan trampas, slås i hoop och skiäres med en dertill giord knif, och Continueras så länge tils det blifwer alt lijka arbetat, och utan klumpar el:r knutra [sic. knutar?], då slås medelmåttiga klumpar i hoop, och bäres utj ett fugtigt kiällare Rum at de hålles weka, och förwaras til uparbetande.

/2 Taga gåsarna en klump i sänder til utrullning för kastarne, och rullas uth efter formens längd och tiocklek som man tänker kasta utj; och sättas tillsammans utj satzer elr: (stäncken?) 20 à 30 utj varje satz och sätter uppå höllor omkring wärckstaden at det blifwa något stöft och står der kastarne tillhanda Aß (?), En gåse kan af de mindre sorter utrulla om dagen, 40 à 50 sådane satzer, men af de längre och Porce-laine 18 à 20 satzer.

/3 Kastarne tager sedan för sig an [en] satz i sänder och tager åtskillt, och nu efter annan igenom renner med en stöf stähl tråd, hwilken tilför-ende litet smörjes med rofolia. N.B. skulle satzen hafwa stå så länge at den blifwa något hård kan man draga tillförnade igenom watn en gång elr: två, när han ränt tråden igenom lägas utj formen och bögt efter hufwudet, hwilcken ock ibland

litet smörjas, och sedan i skrufwen skrufwas till, och håller skrufwen så länge fast, på knäet tils han med stoppen haar giordt hufwudet, drager sedan knäet undan och skrufwen springa tillbaka, då tagas formen ut och öppnas Pipan tages ut och medan tråden sitter uti af skiäres ändan, och hwardpå sijdorne är utpräbat putsas af, med et der till giordt instrument, och läggas utj trädaren; En kastare kan kasta af de längre elr: Porcelaine Pijporne 3 à 5 groß, men de mindre 6 à 7 groß om dagen, kan förtiena i wekan 18 à 20 daler kmt p groß betalt.

/4 Sedan de äro något styfwa komma de at trämas elr: putsas av goßarne på det sättet nämbl. Porcelaine Pijporne elr: de längre, afskiäres på hufwudet jämt klacken och på sijdorne med med en knijf dertill giord, dock först igenom rännas de med en stähl tråd at han kan hanteras strykas och putsas, sättas en liten swarfwad knapp uti hufwudet och med baken på knijfwen omlöpes, som gör kränset på hufwudet uppi kanten, stämplas hufwudet, och skaftet krusas med ett besynerl instrument, sedan lägges de wackert i ordning på wharandra, tils de äro half torra glosas de elr: poleras med de der till giorda stenar, at de få wähl glans, sedan lägges de utj torck brädorne, som äro af starck Eek med diupa refluor utj efter Pijporne, at de eij slås krumma utj torkningen och lägges någon last af Ler ofwan på, utj dessa brädor kan 40 stk läggias skaffotes mot hwarandra 20 åt hwar ända, med hufwuden, och skiutas brädorne utj Rackorne j wärckstaden, at der torckas, om Wintern, men om Sommaren ute; och Continueras med tils de äro wähl torra, och till infyllning i pottorna och bränning tienliga; Med de korta pijpor förfaras sammaledes alenast at de eij glosas och krusas, eij eller komma utj reflade brador at torkas, utan strykes raka uti en Refel som är giord uti et litet Ekebräde, och lägges ordentel [sic] utj slätta torkbrädor till torkas.

/5 När de äro torra infyllas de utj Pottorne, på det

Sättet, till Porcelaine elr: de långa Pijporne
 Sättes mitt utj Påttan ett rör af fint Ler
 elr: trompet kallad, denna måtte wara
 förut bränd och tilförende lägges något
 brändt sönder stött ler utj Pottan elr: ge-
 nom en tratt inösas utj trompeten
 hwilket faller emellan hufwudena
 på pijporne, at de står stadigt, och sättes
 så pijporne runt omkring denne trum-
 peten, hufwuden under, och Continueras
 med till pottan blifwit full, hwarutj un-
 gefär 3 à 4 groß kan infylles af de större,
 denne trumpet blifwa på det sättet giord af
 den kölniska Leran utrullas ett tunt
 blad, efter en der till lijten träram, sedan
 lägges omkring en der till giord kafla af
 Ek som tilförende smörjes med talg, härpå
 skiärs några hål som slutar sig utföre
 hwarigenom det små stötta stoftet, som
 tilförende är mäلت, igenom faller
 mellan piporne, denna trumpet
 är af 16 til 18 tums lång, 2 tums tjocklek
 J öfwersta ändan och proportionaliteten litet
 Widare under åt med et blad elr: foot at stå
 På, Öpen i bägge ändar; Pottorne blifwa
 här gjorde af swänsk läre med liten dehl
 af grof kölnisk, til den swänska Leran tages
 3 delar Lera och en dehl sand, desse arbetas på
 det sättet, sedan Leran är tillredd, utrullas
 efter en dertill giord Rahm, och sättas till
 sammans utj formen som är giord af träd,
 större och mindre, lijka alla blifwa wijda
 ofwan och smala nedan til, proportio-
 naliteter, desse potter kan brukas till
 många bränningar, och så länge de
 äro hela, kan och den någon skull spricka
 i 3 à 4 stycken bindas med ståhl tråd, och sedan
 brukas många gånger.

/6 När piporne således äro insatta utj Pottorne,
 lägges en liten ring af Pijpleran giord
 om ändarne, som håller dem tillsam-
 mans, men för an de insättas i ungnen (ungnar?)
 tages groft Papper som bestrykes med en
 af Lera beredd smet, tiock som klister
 öfweralt, och lägges omkring den dehlen
 af ändarne som står öfwer pottan och piporne.

Sedan sätties den uti Ungnen, den ene
 öfwer den andre tills Ungnen blif:r full
 under hwallfwet, hwarutj kan bringas
 när något af hwarje sort inkomma till
 150 à 200 groß à 100 à 120 pottor, hwilcket
 sedan Brännes j 14 à 15 timmar, hwar
 till uppgår 1 1/3 (famta) granwed, som till
 förende blifwit små huggna.

/7 Enär det är utbränt, smetas ungnen wähl
 igen och står så 1 dag el:r 2 till afkyllning,
 sedan öppnas ungnen och tages ut, Pijporne
 blifwa sorterade, och sidst af goßarne snor-
 lade kallat, med en der till beredd såås
 af wax, gummi och venedisk twåhl der
 på inpackas de i Tunnor och till försälg-
 ning färdiga uti en ordinair T(unna?) af
 spihlräd, kan inpackas 21 à 22 groß
 No. 1 à 2 med de längre el:r No. 3. 4. 5.
 & 6 10 à 11 groß.

Pro Memoria

About the pipe factory

1. The Colognian clay arrives in lumps, which must be well cleaned from the dirt that has been accumulated during the transport on the ship:

One soaking requires 3 barrels or 67 lumps, which are beaten apart and are placed in a for the purpose built vat with iron bands, and water is poured on it so that it stands well above the clay, when it has been properly soaked, there are small taps on the sides through which the water can be drained, then the clay is taken up and placed on the trampling board, which must be cleaned in advance, then waste from the factory [skrubsel] or broken pieces thereof, one barrel or 20 lumps of dry clay, which is beaten finely and mixed with the weak [soaked] clay, until it becomes sufficiently stiff, but of factory waste [skrubsel] 2 or 3 barrels are used, which are then trampled, beaten and cut with a purpose-made knife, and this process is continued until everything is equally mixed, and without clumps or knots, then medium sized lumps are made and carried into a damp cellar room, so that they stay weak [plastic/soft], and are stored until being used.

2. The boys take a lump at a time to the rolling for the casters, and are rolled according to the shape of the mold's length and thickness, that is intended for casting; and are placed together in batches consisting of 20 or 30 in each batch, which are placed on racks around the workshop so that they become stiff and are available for the casters, a boy can of the smaller kinds roll 40 to 50 such batches per day, but of the longer and Porcelain 18 to 20 batches.
3. The casters then take one batch at a time and pierce them individually with a steel wire, which is smeared in flaxseed oil. If the batch has been sitting so long that it has become too hard the aforementioned can be dragged through water one time or two, when he has pushed

the wire through it is placed in the mold is bent after the bowl, which is also sometimes smeared, and is then screwed in the screw, and the screw is held with the knee until he, with the stopper has made the bowl, then withdraws the knee and the screw goes back, then the mold is removed and opened, the pipe is taken out and while the wire is still in it, the end is cut off and what is pressed out from the sides is trimmed, with a purpose made instrument, and laid in the tray; A caster can cast of the longer or the porcelain pipes 3 to 5 gross, but the smaller 6 or 7 gross per day, can earn per week 18 to 20 dalers copper, paid per gross.

4. When they are somewhat stiff they are trimmed or polished by the boys in this manner, namely the porcelain pipes or the longer are cut off with a purpose made knife, however they are first run through with a steel wire so that he can be handled, stroked and polished, a turned small button is placed on/in the bowl, and with the back of the knife is placed around the bowl to make milling around the rim, the bowl is stamped, and the stem is polished with a particular instrument, then they are placed in order on top of each other, until they are half dry when they are glossed or polished with specially made stones, so that they get a good sheen, then they are placed on the drying trays, which are made from strong oak with deep grooves the length of the pipes, so they do not warp during drying, and an amount of clay is placed on top, in these boards 40 pipes can be placed bowl to stem, with bowls, and are placed in the racks in the workshop to dry during the winter, but in the summer outdoors; and this is done until they are well dried and ready to be placed in pots for firing. With the short pipes, the process is the same, apart from them not being glossed or polished or placed in grooved trays to dry, but are placed in a groove which is made from a little oak board, and are placed properly in flat drying boards to dry.
5. When they are dry they are filled into pots, in this manner, for porcelain or the longer pipes is placed in the middle of the pot a tube of fine clay, a trumpet called, this must be fired beforehand and before is placed some beaten/broken clay in the pot or through a funnel poured into the trumpet, which falls between the bowls of the pipes, so that they stand firmly, and thusly the pipes are placed around this trumpet, bowls down, and this is continued until the pot is full, where about 3 to 4 gross can be filled of the longer, this trumpet is made in the following way by the clay from Cologne, which is rolled out into a sheet after a purpose made little wooden frame, it is then placed around a roll-pin made from oak which has been smeared with tallow in advance, then some holes are cut through which the finely ground dust, which has been ground in advance, fall through between the pipes, this trumpet is 16 to 18 inches long, 2 inches thick in the upper end and proportionally slightly wider at the bottom with a foot to stand on, open at both ends; The pots are made here from Swedish clay with a small part coarse Cologne clay, for the Swedish clay, 3 parts clay and one part sand is taken, these are worked accordingly, when the clay is prepared, it is thereafter rolled in a purpose made frame, and placed in the mold which is made from wood, larger and smaller, similarly all are wide at the top and narrow at the bottom in proportion, these pots can be used for many firings, and as long as they are whole, in case one should crack into 3 or 4 pieces it can be tied with steel wire and then used many times.
6. When the pipes have been placed in the pots, a small ring made from pipe clay is placed around the ends, which holds them together, but before they are placed in the kiln coarse paper smothered all over in a slurry made from clay, thick as glue, is placed on the part of the ends that are above the pot and the pipes. Then it is placed in the kiln, one over the other until the kiln is full below the arch, in which of every kind can hold 150 to 200 gross to 100

to 200 pots, which is then fired for 14 to 15 hours, for which is required 1 1/3 fathoms of pinewood, which has been finely chopped in advance.

7. When it is burned out, the kiln is smeared closed and stands as such for 1 day or 2 to cool, then the kiln is opened and emptied, the pipes are sorted, and lastly by the boys they are “*snorlade*”²⁶⁸ called, which is made with a sauce made for the purpose consisting of wax, gum [Arabic] and venetian soap, thereafter they are packed into barrels made from staves 21 to 22 gross No. 1 or 2 with the longer or No. 3. 4. 5. & 6 10 to 11 gross.

Calculations for a pipe factory in Alingsås, pre-1738

Below are specifications of the costs of materials required to open a pipe factory. These are also held in the archive SE/GLA/10003/-/1 1618–1799.

Ungefärl:t Förslag Hwad Medel
som Efordras till ett Tobaks Pijp Manu-
factories anläggning med nödig Byg-
nad, och Redskap; Så wähl som der til
hörige Rudjmaterier, til första
Inrättningen.

Till Byggnings Omkostnad med Redskap	Silf:mt
Till Byggnad af Trä, med nödiga wärkstäder och Rum, synas ungefärl:n kunna uppgå med Inrede och murning	2500
Til Rossten el:r hwalfwet à brennugnen behöfwas Eldfast Leer, utur Hol- land el:r annorstädes ungefärl: 30 Tunnor à 3 daler	90
Till Skrufwar, <i>formar af Metall</i> , Skruf Städt, fjhlar, med andra Instrumenter för <i>formorne</i> , Eek torkbräder för Pjöporne, samt andre bräder, bord, stohlar T:r och träkiärl, med mehr af hwarje handa sorter, som för myc- kenheten skull ej kan Specifi- ceras, uptagas till ett ungefär <i>quantum</i> för	600
Til Pottor hwarutj Pjöporne blifwa brände, franskt el:r bornholmskt leer, til wärkets inrättning Lärer wähl åtgå första åhret 30 T:r kostar ungefärl: 12 daler K:mt tunnan gör S:mt	120
Sedan wärket kommit i stånd	

²⁶⁸ See description under the Description of the manufacturing process at Olof Forsberg's and Olof Aspegren's factory from 1741.

Brukas halfparten mindre åhrl:n

Transport 3310

Rudj Materien

Holländskt Leer el:r Cölnskt kallat

Uppgår ungefärl: för 3:ne kastare om året 80 T:r à 7 daler 560

Mastrichs leran el:r den finare

brukas til *Porcelaine* pypor

behöfwas om året ungefärl:

10 oxhöft el:r 18 T:r à 8 daler 144

Weed till brenugnen synas wähl

50 F:r kunna upgå ungefärl:

lärer kosta 2 daler 100

804

Aflöning Åhrl:n

Till wärkets drifwande och besty-

rande, med 3ne Skrufwar, och

nödigt Arbetsfolks aflö-

nande, med mehra, lärer

åhrl:n åtgå ungefärl: 1808 daler 16 öre

Till T:r för Pypornas inpackning

samt *Extra* utgifter ut-

sättas ungefärl:n 300

Summa S:mt 6222 daler 16 öre

Ungefärl: Calculation öf:r Ett Åhrs utgift wid Tobak Pijp Manu- Factoriet, Jämte Avancen

DEBET

Till Rudj Materien el:r leran upgår

åhrl: efter uträkning för 3ne

kastare ungefärl:n

704 [daler silvermynt]

Till 50 fambnar wed för brenugnen

ungefähr à 2 [daler silvermynt]

100 [daler silvermynt]

Kastarnes Arfwode el:r Lön för

1000 Gross af No. 1 & 2

grossen à 8 öre s:mt gör

250 [daler silvermynt]

D:o No. 3. & No. 4. 1000 gross a 6 öre

187 daler 16 öre [daler silvermynt]

D:o No. 5 & 6 3000 gross à 4 öre

375 [daler silvermynt]

Den man som förestår och Diri-

gierar wärket åhrl lön

400 [daler silvermynt]

Otta Läre Gåssars underhåld til
kåst och kläder, hwardera un-
gefähl. i weckan 1 daler gör

416 [daler silvermynt]

Twänne Daglönare à 2 daler S:mt i weckan
gör 45 arbetsveckor 180 [daler silvermynt]

Till Tunnor för Pypornes in Packning
samt till Extra utgifter och

Pottors wid magt hållande

Om åhret ungefähl:

300 [daler silvermynt]

Åhrl förlagd Summa

2912 daler 16 öre [silvermynt]

P:r Avance, hwilken om alt går lyckelig

och wähl, enär det kommit utj god ordning

/: men ändoch så kan Avancen förmehras i syn-
nerhet om tienlig lera skulle finnas inom

Ryjkes:/ utföras

1212 daler 16 öre [daler silvermynt]

CREDIT

Försäljas En Gross No. 1 & 2 ungefähl;

til 1 daler 16 öre s:mt, gör P:r 1000 gross

1500 [daler silvermynt]

én Gross No. 3 & 4 försäljas til

24 öre s:mt, gör P:r 1000 gross

749 [daler silvermynt]

én Gross No. 5 & 6 försäljas til 16 öre s:mt gör P:r 3000 gross

1500 [daler silvermynt]

Enär wärket kommit utj Redig

gång, så kan af *Laccagen* som

bestås af kastarne uptagas unge-
fähl:

Af No. 1. & 2. 100 Gross

150 [daler silvermynt]

Af No. 3. & 4. 100 Gross

75 [daler silvermynt]

Af No 5. & 6. 300 gross

150 [daler silvermynt]

375 [daler silvermynt]

Summa

4124 [daler silvermynt]²⁶⁹

²⁶⁹ Note that the names of the pipes are reversed in this document. Once the factory was operational, the cheap short pipes were called No. 1, No.2, No.3, while the most expensive pipes were called No. 6, No. 7, and “*med Wapen*” – armorial pipes.

Approximate estimation for the funds required to construct a tobacco pipe manufactory with required buildings and tools; as well as necessary rudiments, for the first establishment

For building costs with tools

[dalers] silver coin

For building made from wood, with necessary workshops and rooms, should approximately amount to, with furnishings and masonry 2500 dalers

For the chimney or the arch in the kiln, fireproof clay from Holland or elsewhere approximately 30 barrels at 3 dalers 90 dalers

For screws, molds of metal, vises, files, with other instruments for the molds, oak drying trays for the pipes, and other trays, tables, chairs, barrels and wooden vessels, and more of various kinds, which for their large amount cannot be specified, an estimated quantity is 600 dalers

For pots in which the pipes are fired, French or Bornholmian clay, for the establishment of the factory should require 30 barrels during the first year, costs approximately 12 dalers copper per barrel, equals 120 dalers

When the factory is operational, half of this amount is used annually

Transport

3310

Rudiments

Dutch clay or Colognian called reaches approximately, for 3 molders per year 80 barrels at 7 dalers 560 dalers

The Maastricht clay or the finer is used for porcelain pipes needed per year approximately 10 oxheads or 18 barrels at 8 dalers 144 dalers

Firewood for the kiln should amount to 50 fathoms: should cost 2 dalers 100

Salaries Annually

For the factory's operations and management, with 3 screws and payment to the required workforce, and more, should annually cost approximately 1808 dalers 16 öre

For barrels for packing the pipes and extra expenditures is approximately 300

Sum silver coins

6222 dalers 16 öre

Approximate calculation for one year's expenditure at the tobacco pipe manufactory, beside the profit (advance)

Debit

For rudiments or the clay, annually amounts for 3 molders approximately 704 dalers

For 50 fathoms of firewood for the kiln at approximately 2 dalers 100 dalers

Molders' salaries or salary for 1000 gross of No. 1 & 2 gross at 8 öre silver amounts to 250 dalers

Dito No. 3 & No. 4 1000 gross at 6 öre 187 dalers 16 öre

Dito No. 5 & 6 3000 gross at 4 öre 375 dalers

The man who manages and directs the factory annual salary 400 dalers

Eight boy apprentice subsistence for food and clothes, each approximately per week is 1 daler 416 dalers

Two day laborers at 2 dalers silver per week is 45 weeks 180 dalers

For barrels for packing the pipes and for extra expenditures and maintenance of pots [saggars] per year approximately 300 dalers

Annually placed sum 2912 dalers 16 öre

For advance [profit], which if everything goes happily and well, when it is in good order/: yet however the advance can be increases in particular if serviceable clay would be found in the kingdom:/ be taken 121 dalers 16 öre

Credit

When sold one gross No. 1 & 2 approximately at 1 daler 16 öre silver, is per 1000 gross 1500 dalers

One gross No 3 & 4 sold at 24 öre silver, is per 1000 gross 749 dalers silver

One gross No. 5 & 6 sold at 16 öre is per 3000 gross 1500 dalers silver

When the factory is readily operational, the waste accrued by the molders can be summed to approximately:

Of No. 1 & 2 100 gross 150 dalers silver

Of No. 3 & 4 100 gross 75 dalers silver

Of No. 5 & 6. 300 gross 150 dalers silver

Sum 4124 dalers silver

Extracts from travel journals held by Manufakturkontoret mentioning the Alingsås factory

Äfwen woro wi wid herr Commencie Rådet Alströms wid Nollhaga inrättade Pipebruk, bestående af twenne werkstäder och twenne bränugnar under twenne mästaress styrsel och inseende den ena war inrättad efter det Engelske och den andre efter det tyska maneret. Arbetet gick starkt, och war ett godt förråd af gode diverse sorter pipor färdige.

Olof Hamrén, 1742 (SE/RA/4113/1/D/D 5/176, 1742–1760)

We were also at Mr. Commerce Councilman Alström's, at Nollhaga established pipe works, consisting of two workshops and two kilns under the supervision of two masters one was established after the English and the other after the German manner. The work was strong, and there was a good supply of finished good various sorts of pipes.

Pipebruk är af HL: Commerce Rådet i negden af tegelbruket, anlagt, och äger genom plantager och upparbetade feldt rundt omkring en ganska behagelig situation. Det består af 19 prässar behändigt inrättade, 2ne ugnar, och har 70 arbetare, som nu woro i fult arbete. De tillverkningar som här äro, hafwa en besynnerlig credit öfwer alt, så til façon och utseende som fastheten, hwaraf och hänt att

afsättningen merendels warit giwedt, och werket indrägtigt. Nu woro uti magazinet 600 tunnor a 21 gross i hwardera inpackade och till försälgning aldeles färdiga: det enda som härwid kan påminnas är om den swårighet, som är med transporten, utom hwilket detta bruket woro det bästa; äfwen som det är i sig sjelf det största i Riket. Ifrån Bruket till staden är dragen rät allée.

Friederich Friesendorf, 1758 (SE/RA/4113/1/D/D 5/176 [1742–1760]).

Pipe works are by the Honorable Commerce Councilman in the vicinity of the brickworks, established, and owns due to plantations and worked fields all around a quite pleasant position. It consists of 19 presses, conveniently established, 2 kilns, and has 70 workers, who now were in full work. The products made here, have a particular credit everywhere, so to shape and appearance as the firmness, for which sales have mostly been a given, and the factory profitable. In the warehouse now, were 600 barrels of 21 gross in each packed and ready for sale: the only thing that can be minded is the difficulty that the transportation poses, without which this factory would be the best; also as it is the largest in the kingdom. From the factory to the town is drawn a straight avenue.

Descriptions of pipe making in Stockholm

Description of the manufacturing process at the Forsberg and Aspegren factory on Södermalm, c. 1740

From the annual reports to the National Board of Trade (SE/RA/420132/3/D/D a/Da 1/1 1740–1747).

Tobaks Pipbruket, som blifwit flyttat
til en wacker lägenhet wid lång holms
Sundet, på Södermalmen, och der, med sten-
hus til arbets rum, samt ny ugn, ma-
gazin och flera commoditeter försedt,
drifwas af Secreteraren herr Olof Fors-
berg och Mästaren Olof Aspegren i Com-
pagnie, enligit så wäl de de gamla för-
framledne handelsman Aspegren d.
19 November 1708 och 22 Julii 1729, som för-
bemelte Forsberg och Aspegren d. 13 Mar-
tii 1739 på wiß tid allernådigst utfär-
dade exclusive privilegier, med 5 st:
Gesäller, 7 st: lärodrängar, 7 st: läro-
goßar, 4 st: bruksdrängar, 1 rullare,
och 7 stycken diverse arbetare,
tilsammans 35.
Warande Processen wid Tobaks Pipors
tilredande korteligen sådan, at leret
hämtas ifrån Holland och flera utlän-
ska orter, trampas här och rullas til sto-
ra ämnen, deraf bakas Piporna emel-

lan händerne, kastas sedan i meßing
formerne, derefter trämmas, utläg-
gas, torkas och brännas de i ugnen,
och sedan rensas, snollas och föras de
såsom färdige i Magazinet.

Tilwärkningen i åtskillige slags pipor
har för i åhr, efter Interessenternes
upgifwande bestigit sig til 7300 gross,
och kunde anseligare drifwas, om
icke 2ne Tobaks Pipbruk desutan wo-
re i Riket anlagde, nemligen för
någre åhr sedan i Alingsåhs, och
et nu nyligen i Norkiöping; Och
som deße 3ne wärk nog samt kun-
na fournera Riket med Tobaks Pi-
por, både til godhet och prys, som bil-
ligt kan erfordras; Så wore wäl
om utlänske Tobaks Pipor hädan efter
til införsel blefwo förbiudne, hwar-
om herr Secreteraren Forsberg i
brist af tilräckelig debet, jemwäl hos
Rätten anhållit.

The tobacco pipe factory, which has been moved to a suitable location by the Långholm sound on Södermalm, and there, with a stone house as a work room, and a new kiln, warehouse and provided with many other amenities, is run by the Secretary Mr. Olof Forsberg and Master Olof Aspegren in Company, according to both the old, for the deceased merchant Aspegren the 19th of November 1708, and the 22 of July 1729, as well as the aforementioned Forsberg and Aspegren the 13th March 1739 on a certain time most graciously issued exclusive charters, with 5 journeymen, 7 apprentices, 7 apprentice boys, 4 factory hands (*bruksdrängar*), 1 roller, and 7 miscellaneous workers, together 35.

The process of making tobacco pipes is briefly thus, that the clay is taken from Holland and other foreign places, is trampled here and rolled into big pieces, from which the pipes are rolled between the hands, are then cast in brass molds, after that they are trimmed, laid out, dried and fired in the kiln, and then dressed, [*“snollas”*]²⁷⁰ and taken as finished to the warehouse. The production of various kinds of pipes has this year, according to the stakeholders’ statement amounted to 7300 gross, and could be increased if not two tobacco pipe factories besides were established in the kingdom, namely a few years ago in Alingsås, and one recently in Norrköping; And as these three factories can adequately supply the kingdom with tobacco pipes, both concerning goodness and price, as reasonably [priced] as required; It would be well if imports of foreign tobacco pipes were banned, which the Secretary Forsberg, in lack of adequate debit, has likewise applied for at the court.

²⁷⁰ Snollas – a loanword from Dutch *snollen*, which roughly translated means “to make things beautiful”, in clay pipe making referring to the practice of dipping pipes in a solution of wax, gum Arabic, soap and water and then polishing them to give the pipes a sheen.

Calculation of production rates at Olof Forsberg's factory in Stockholm from 1741

From an appendix to a plea for a full embargo against foreign pipes to the *Handels- och manufakturdeputationen* 1741 (SE/RA/6122/8/R 2766 1740–1741, 17E).

1 Journeyman casts per day, of **short pipes**, with a mediocre work effort, 7 gross, which adds up to, not counting Sundays, holidays and the inventory time, 270 working days per year:

	1890
1 Ditto [Journeyman]	1890
1 Ditto [Journeyman]	1890
1 Ditto [Journeyman] of the same sort	1620
1 Ditto [Journeyman] of Ditto sort at Ditto amount	1620
1 Ditto [Journeyman] of medium pipes 4 gross	1080
1 Ditto [Journeyman] of Ditto sort [medium pipes] at Ditto amount	1080
1 Ditto [Journeyman] of long [pipes] at 3 gross	810
1 Apprentice short [pipes] at 5 gross	1350
1 Ditto [apprentice, short pipes]	1350
1 Ditto [apprentice, short pipes]	1350
1 Ditto [apprentice] of the same sort [short pipes] 4 gross	1080
1 Ditto [apprentice] of the same sort [short pipes] at 3 gross	810
1 Ditto [apprentice] of Ditto [short pipes] at ditto amount	810
1 Ditto [apprentice] of Ditto [short pipes] at 2 gross	540
Sum, gross	19170

Letter specifying wages for pipe factory workers in Stockholm 1766

From the archives of the Arboga *Hallrätt* (SE/ULA/10018/3 1750–1821, n.p.).

Ädel och högaktad Herr Borgmästare Så ock
 Den Högstärade Hall och Manufactur
 Rätten
 Rätten har hört Pip bruks mästarne
 här i staden och funnit arbetslöner-
 ne så beskafade, at, för en gross af 25
 tums form, bestå i Kastar lön 2 d:r och
 trämare lön 27 öre en gross medel sort
 i Kastare lön 24 öre och trämare lön
 9 öre, en gross, No. 3 i Kastare lön 20 öre, trä-
 mare lön 6 öre, No 2 Kastare lön 18 öre trä-
 mare lön 6 öre Kopp:r mt. Och som här
 wid Bruken icke är wanligit, at ar-
 betts folket går ledigt, utan, i brist af
 Piparbete, sysselsättas med annat hwar

före de undfå dags penning, såsom
andre dage Karlar, så hafwa de
icke eller om wedergällning
för arbets lösa dagar sig yttra kun
nat. Hwilket Rätten til hörsamt
swar uppå Herr Borgmästarens
och den Högtärade Hall och Manu-
factur Rättens Högtärade skrif-
welse af d: 29 nästl:n Septemb:r
lemna bordt. Och Rätten förblif-
wer
Ädel och Högaktad Herr Borgmä-
starens
samt
Den Högtärade Hall och Manufactur
Rättens
Hörsamma tjänare
A Sweder O:J Bremming
Lennart : Wetter
/Steph: Hagerblom

Stockholm d. 27
Octobr. 1766

Till Hall och Manufactur Rätten i Arboga
swar, ang:de arbets lönerne wid Pipbruken

Noble and esteemed Mr. Mayor, and the Highest esteemed *Hall- och Manufactur Rätten*

The Court has heard the Pipe factory masters here in the city and found the labor wages as such, that for a gross of 25 inch form, a Caster's wage is 2 dalers, a trimmers wage is 27 öre, one gross middle sort, a Caster's wage is 24 öre and the trimmer's wage is 9 öre, per gross No. 3 the Caster's wage is 20 öre, the trimmer's wage is 6 öre, No. 2 the Caster's wage is 18 öre and the trimmer's wage is 6 öre copper. And as it is unusual that the laborers at the factories here are disengaged, but in lieu of Pipe work, are kept occupied with other tasks for which they are paid a daily wage, such as other day-laborers, they have not been able to state anything about compensation for days without work. Which the Court as an obedient reply to Mr. Mayor's and the Esteemed Hall och Manufactur Rätten's Esteemed letter of the 29th of September last has submitted. And the Court remains,

The Noble and Esteemed Mr. Mayor's and the Esteemed Hall och Manufactur Rätten's obedient servants

A Sweder O:J Bremming
Lennart : Wetter
/Steph: Hagerblom

Stockholm the 27th October 1766

To Hall och Manufactur Rätten in Arboga, reply concerning labor wages at the Pipe factories

Abraham Hülphers' description of the manufacturing process in Karlskrona, 1759

From Walde (1953):

Pipebruket som handels. Nils Mat. Norsten upbyggt besågs, förledit år hade tillverkningen i anseende till byggnad allenast skedt med 9 arbetare till 348 dlr 12 öre smt, nu voro med små och stora 14 arbetare. Bränugnen var nu 3de gången uppsatt, rund så att den stod mitt i rummet, leer till piporne förskrifves alt från Holland, undligt at ingen tjenlig svänsk leera har kunat upfinnas, dene arbetas först i lårar, sedan delas den i ämnen och formas till pipor, med ståltrå göres hol genom skaftet, ämnet kastas eller tilltryckes i en metallskruf och hål med en machin göres i hufvudet, sedan trämas de, eller göras jämnda, torkas i lådor, staplas sedan, de korta i krukor och långa i kistor, som göres af sämre leer, öfvertäckas med carduus papper som öfverstryks med leera, som blir sedan efter bränningen som tunt glas, ugnen muras till, och piporna brännes färdige på 3 till 4 dagar. 6 sorter göres vid detta värket.

The pipe factory that the merchant Nils Mat. Norsten has constructed was seen, last year the production in regard to the building [had] only been carried out with 9 workers to 348 dalers 12 öre silver, now there were small and large [young and old?] 14 workers. The kiln was now for the third time set [fired], round so that it stood in the middle of the room, clay for the pipes is imported from Holland, peculiar that no serviceable Swedish clay has been found, this is first worked in crates, then divided into pieces and formed into pipes, with a steel wire a hole is made through the stem, the piece is then cast or pressed in a metal screw and a hole is made with a machine in the head [bowl], then they are trimmed, or made smooth [lit. even], dried in trays [lit. boxes], then stacked, the short in pots and long in chests, which are made from lesser clay, covered with cartridge paper which is covered with clay, which after firing becomes like thin glass, the kiln is closed [lit. walled off], and the pipes are fired until done in 3 to 4 days. 6 types are made at this factory.

Appendix VI: Glossary

This glossary has been compiled to present nomenclature used throughout the study above. My hope is that it will be helpful for readers who are not accustomed to the nomenclature commonly used in clay pipe research. The list includes both the English terms that has been used throughout the study and the Swedish words either previously used by Åkerhagen or as found in archival sources during my work with this text. Further English nomenclature for clay tobacco pipes can be found in the 'Pipe Glossary' available online via the website of the National Pipe Archive, and Dutch nomenclature in Don Duco's *De Nederlandse Kleipijp [...]* (1987, especially pp. 141–146) and Duco's articles on pipe nomenclature and types (1979a & 1979b).

So as to not confuse readers that are previously familiar with the terminology used by Arne Åkerhagen I have, to a large extent, attempted to continue using the majority of the terms introduced to Swedish clay pipe research by him. For example, this means that the side of the pipe bowl facing the smoker is referred to as the front of the bowl, a tradition borrowed from Dutch pipe recording praxis. Regarding stamped stem decorations resembling milling and milling on bowl rims, Åkerhagen used the terms *millning*, *rillning* or *rillor/rill*, and (less commonly) *roulettering* interchangeably. I suggest *millning* as the general term for this type of decoration.

It has been found that the Swedish clay pipe industry of the eighteenth century used many loanwords from English, Dutch, and likely also German. This is likely due to the fact that master pipe makers were brought from pipe workshops in these countries to work at Swedish pipe factories. These pipe makers introduced words like “*skrubsel*” from *schroebeles* or scraps, “*snårla*” or “*snolla*” from *gesnollen*, “*kasta*” from *kasten* or cast, and “*träma*” from *tremmen* or trim.

Eighteenth-century nomenclature referring to some pipe types remains somewhat unclear. The terms *räffelhufwud*, *krushufwud*, *musselhufwud* etc. appear to have been used interchangeably to refer to both Dutch style pipe bowls with a lobed design in molded relief and to English style pipes with fluted designs in molded relief. Similarly, the term *porcellin* (with spelling variations), most often appears to refer to pipes mimicking Dutch styles of pipes rather than the surface finish referred to in Dutch sources. In some cases, however, price information indicates that the term may have referred to both bowl style and surface finish.

Some pipe-related words used in the study

Armorial pipe (*pipa med vapen/Sveriges vapen/riksvapenpipa*): Pipes with the greater coat of arms of Sweden flanked by lions in molded relief on the fronts of their bowls. Although versions mimicking English styles are known from both the Alingsås factory and the Forsberg factory, the most commonly encountered type of armorial bowls mimic Dutch style bowls. These usually have milling and some show signs of having been bottered.

Arms of Stockholm (*Stockholms vapen*): A pipe type known from archival records to have been manufactured at the Forsberg factory in Stockholm, and from the archaeological record to (most likely) have been made at the Aspegren factory in Stockholm. Bowls that can be attributed to the Aspegren factory have two types of bowl stamps and the crowned letters A and O on the sides of heels or spurs. The bowl stamps are either the *globus cruciger* in a shield or a griffin rampant in a shield.

Back of the bowl (*baksida av huvudet/huvudets baksida*): In Sweden (and the Netherlands) the side of the pipe bowl facing away from the smoker.

Bottering (*bottring*): The finish of the bowl rim made with a button-like tool to create smooth edges where the rim has been cut. Throughout the eighteenth century, English pipes and English style pipes made in Sweden were generally not bottered. Dutch pipes and Dutch style pipes manufactured in Sweden were bottered.

Bowl (*huvud* or *piphuvud*): The part of the pipe designed to hold tobacco intended for smoking.

Bowl stamp (*huvudstämpel*): Impressed markings on a bowl. In Swedish factories, these stamps were most commonly applied on the fronts of bowls. Swedish bowl stamps often display designs or initials that can be tied to specific factories or the place where the pipe was made. The combination of the town the factory was in, the initials of the factory's owner, and three crowns is a bowl stamp commonly found on Swedish pipes. Three crowns with no initials or place names is another common bowl stamp.

Charters (*privilegier*): Rights to manufacture. In Sweden, charters for pipe making were issued by the king or the National Board of Trade. Carl Aspegren held an exclusive charter for pipe making between 1708 and 1729. This meant that no one else in Sweden was allowed to manufacture pipes. Charters were a technical requirement for manufacturing pipes in the eighteenth century. There are however makers known from both the archival and archaeological records that operated without charters (see for example Gustaf Sommelius in Lund or Hr. Grönberg in Helsinki under Appendix I). All chartered factories were obligated to report their annual productions to the local *Hallrätt* or magistrate and pay fees based on their stated productions. These annual reports are useful indicators of the periods of operations for Swedish factories.

Eye-band decoration (*ögonbandsdekor* also *pärlbandsdekor*): A type of stamped stem decoration found on Dutch stems and copies of these made at Swedish factories and workshops. These are often combined with lines of **milling** and/or zigzag patterns. They can also be combined with **name band decoration**.

Fluted bowl (*krusigt huvud/krushuvud* and *räffelhuvud*): Usually referring to an English style bowl with a fluted design or gadrooning in molded relief. See also **lobed bowl** and **mussel-bowl**.

Front of bowl (*huvudets framsida*): In Sweden (and the Netherlands) the front of a pipe bowl is the side of the bowl facing the smoker while the pipe is being smoked.

Gin press (*gin press*, *kranskruv*): A vise-like bench which is used to clamp pipe molds while simultaneously forming the tobacco chamber with a stopper attached to a lever. See also: **mold**, **screw** and **stopper**.

Guild mark (*skråmärke*): A mark consisting of the coat of arms of the city of Gouda (or copies of this mark) in molded relief on the side of either heels or spurs (or near the lower bottom of heel- or spurless pipes) applied on pipes manufactured in Gouda after 1739. This mark was copied by makers

in other production centers to deceive consumers that their pipes were genuine Gouda pipes. The only currently identified Swedish factory to do so is Daniel Almqvist's factory in Stockholm.

Heel (*klack*): A protrusion with a flat base below the bowl of a pipe. These are sometimes marked on their sides and/or on their bottoms with marks that allow for the identification of a maker and/or factory location, and/or relative production quality. See also: **N-number pipe**, **spur**, **heel mark/stamp**, **side of heel or spur mark**, **guild mark**.

Heel mark/stamp (*klackmärke*): A mark, most commonly impressed, on the bottom of the heel of a pipe. Extensive research in the Netherlands and England has successfully tied heel marks on pipes to pipe makers known from documentary sources. Only a limited number of Swedish factories appear to have marked their pipes on the bottom of their heels. For example, Forsberg's factory marked some of its Dutch-style pipes with an incuse flower design on the bottoms of their heels. Factories and workshops in Sweden more commonly applied bowl stamps.

Internal cut (*skuren insida*): A beveled edge sometimes seen on the inside of tobacco bowls as a result of slivers of clay having been removed with a knife prior to firing.

Kromkop: A Dutch pipe bowl-style copied by several Swedish manufacturers. The word *kromkop* literally translates to bent or hooked bowl.

Left side of a pipe (*pipans vänstra sida*): The side of the pipe that is on the left hand side of the smoker when the pipe is being smoked (with the bowl rim facing upwards).

Lobed bowl (most commonly *musselhuud*, also *krushuud*): Dutch style pipe bowls with lobed designs in molded relief. Versions made in Swedish factories and workshops draw morphologically towards both the *kromkop* and the oval style. See also **mussel-bowl**, **kromkop**, **oval bowl**, and **fluted bowl**.

Maker's mark (*tillverkarmärke*): A mark that (often) identifies a maker or a workshop, often in combination with typologies of bowl-forms. Marking traditions vary between countries and production centers. Makers' marks can often be found either under the heel (see **heel mark/stamp**), on the sides of heels or spurs (see **side of heel or spur mark**), on the front of bowls (see **bowl stamp**), on the sides of bowls in molded relief (see **side mark**) or as so-called name bands on stems (see **name band decoration**).

Milling (*millning*, *rillning*, *roulettering*): A dotted incuse line that ideally runs parallel to the rim of a pipe's bowl. Milling was applied using a special type of serrated knife (see fig. 32). Molded milling was introduced during the nineteenth century. Milling can also refer to dotted decoration applied on stems. The presence of milling around bowl rims is commonly seen as an indication of production quality, especially for Dutch pipes.

Mold (*gjutform*, *pipform* or *form*): Most clay tobacco pipes are and were pressed/cast in bipartite molds made from metal. There are and were also complex molds with more than two parts. Molds could be made from brass, bronze and iron. Wooden molds have likely also been used.

Mold flash (*gjutskägg*): Excess clay that has been extruded through mold parts during pressing in the screw.

Mold seam (*gjutsöm*): A protruding line of clay parallel to the length of the pipes center where mold-halves met. Mold seams are remnants of mold flashes and are most easily detectable seen on pipes that have not been polished or smoothed. On higher quality pipes, these lines are often more difficult to detect as they have been carefully removed and polished over. As the eighteenth century progressed,

mold designs adapted to disguise mold seams were introduced, often hiding them behind tendrils or leaf-designs in relief.

Mold maker's mark (*formmakarmärke*): Markings in molded relief such as one or more dots on the side/sides of heels or spurs most commonly found on Dutch pipes.

Mouthpiece (*munstycke*): The intentionally finished end of an intact pipe that is inserted into a smoker's mouth through which the smoke is inhaled through the stem from the bowl. Mouthpieces often have beveled edges formed from being cut with a knife during manufacturing. Mouthpieces on shorter pipes manufactured after the mid-nineteenth century often have a molded button mouthpiece to facilitate clenching.

Mussel-bowl (*musselhuvud, krushuvud*): Pipe bowls with a mussel-shell like designs in molded relief, also referred to in this text as lobed pipes or bowls. Bowls such as this have been attributed to the factories/workshops of the Wetterviks and Nyberg. See also **fluted bowl** and **lobed bowl**.

Name band decoration (*namnbandsdekor*): A type of decoration found on stems displaying the name of the factory owner or master and often the town or city in which the pipe was made. Although exceptions occur, this type of decoration is believed to have been most commonly applied on Swedish pipes manufactured to resemble pipes made in the Netherlands. See also **point of gravity decoration**, **eye band decoration**, and **stem decoration**.

N-number pipes (*N-nummerpipor*): Pipes marked with the letter N and a number, commonly between 2 and 6, in molded relief on the sides of their heel or spur. Generally, the lower the number on the heel or spur, the shorter the stem and lesser the production quality. The Forsberg factory is known to have manufactured medium-length pipes with low numbers. Other factories known to have manufactured pipes marked with numbers are *Kronan* and *Stiernan* in Norrköping, the Falun factory. Archival evidence suggests that most Stockholm workshops and factories that did not limit their production to stub-stemmed bowls as well as the factory in Arboga also made these pipes. As of yet, and although its pipes are referred to as No. 3, No. 4 etc. in archival sources, no pipe with a number-mark has been convincingly tied to the Alingsås factory. The factories in Karlskrona and Varberg do not appear to have marked their pipes in this manner either. The N is commonly on the left and the number on the right side of the heel or spur. The letter N is sometimes mirrored – especially on low-numbered pipes.

Point of gravity decoration (*tyngdpunktsdekor*): A type of stem decoration applied at the point of gravity of a pipe's stem most commonly found on Dutch pipes and Swedish pipes attempting to mimic these. Some Dutch styles of point of gravity decorations have been found to be datable (see Duco 1987). In Swedish pipe factories, name band decorations are the most common type of point of gravity decorations. See also **name band decoration**.

Polishing, also **burnishing** (*polering, glättning*): Rubbing the surface of an unfired pipe with a pin made commonly from agate to achieve a glossy effect. Flint or glass pins have supposedly also been used. Polishing leaves visible striations on the surface of pipes and would have increased a pipe's price compared to unpolished pipes.

Porcelain (*porcelain, postelin, postlin, porcellin* etc.): 1. The highest quality category for Dutch pipes made in the city of Gouda. 2. The generic name for most Dutch and Dutch-style pipes manufactured in Sweden during the eighteenth century. 3. Pipe bowls made from true porcelain were introduced on a wide scale during the nineteenth century.

Post-horn pipe (*Posthornspipa*): A type of pipe manufactured by at least one pipe factory in Stockholm. These pipes are believed to have had curled stems, similar to Dutch *krulpijpen*. It is likely that such pipes were also referred to as *Carousellpipa*.

Right side of a pipe (*pipans högra sida*): The side of the pipe that is on the right-hand side of the pipe when being held by the smoker while smoking.

Rim (*Mynning*): The edge/lip of the top of the bowl.

Saggär: From “safeguard”. The name of a type of pottery vessel that contains pipes to prevent discoloration during firing. Known in eighteenth-century Sweden as *potta*, *tunna*, or *kruka*.

Screw (*skruf*, *skruv*): A name for a vise used to clamp pipe molds during manufacturing.

Side of heel or side of spur mark (*märkning på sidan av klack eller sporre*): Marks in molded relief on the side/sides of heels or spurs. These can be initials of pipe factory owners, commonly (but not always) with the first initial on the left side and the surname initial on the right side. On Swedish pipes, the letter N (which can also be mirrored) and a number in molded relief on either side of the heel or spur denote pipes of different stem lengths and production quality, with a higher number indicating a longer and higher quality pipe. The lowest number is often 3, although 2 and 1 are also known. See also **Guild mark**.

Snolling (*snollning*, *snorling*, *snårling*): When pipes had been fired, they were dipped in a solution consisting of wax

Spur (*sporre*, *smal klack*): A protrusion with a pointed base below the bowl of a pipe.

Stem (*skaf*, *pipskaf*): The tube that extends from the bowl to the mouth of the smoker. An intact pipe consists of a bowl, a stem, and a mouthpiece. The ideal pipe during much of the eighteenth century was straight-stemmed pipes. Although exceptions exist, stems from the Swedish archaeological record usually do not show signs of having been intentionally curved. See also **point of gravity decoration** and **name band decoration**.

Stem decoration (*skaftekor*): Any ornamentation applied to the stem. Stem decorations can be either applied with a stamp or as molded relief.

Stopper (*stopper*, *dubb*): A tool used to form the tobacco chamber in the bowl of a pipe. A stopper can either be hand-held or attached to a lever (see gin press).

Stump (*stump*, *nubb*): generally referring to broken yet functional pipes. According to archival sources from Stockholm, stumps were sold at a discount. Archaeological evidence from the Karlskrona factory also indicates that stumps were sold there as well.

Three crown-pipe (*3 Cronor*, *Tre Kronor* etc.): A pipe type known from archival records from several makers in Stockholm and the Falun factory. Most likely these are pipes with bowls stamped with three crowns with or without place names and/or initials. Note that the factory *Kronan*/*Cronan* (the crown) in Norrköping marked many (if not all) of its pipes with this mark. Note also that several bowls from the factories in Alingsås, Karlskrona, and Varberg have been marked with three crowns although they were most likely not referred to as three-crown pipes in their contemporaneity.

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When the Smoke Clears

Clay Tobacco Pipes and Smokeways in Eighteenth-Century Sweden

This study of clay tobacco pipes made in Sweden during the eighteenth century is focused on the socioeconomic significances that these pipes had in their contemporaneity. A source-pluralist approach that includes archaeological, documentary, and pictorial evidence from a perspective that considers potentially different and differentiating smokeways shows that pipes were intentionally made to signal socioeconomic differentiation. Since tobacco smoking was nearly socially ubiquitous, the pipes themselves and how they were smoked were employed to stage and uphold a recognizable social hierarchy.

Drawing on social practice theory to contextualize clay tobacco pipe smoking as differentiated and differentiating, this study proposes that pipes should be considered as material elements in different smokeways. In doing so, this study considers variations in manufacturing methods which in turn were connected to retail prices of pipes, as well as contemporaneous conceptions of different smokeways gathered from the archival and pictorial records. This perspective also proposes that different social groups had different biographical expectations of their pipes.

Based on a comparison of manufacturing descriptions and archaeologically recovered pipes, it is concluded that many steps of production remain visible on pipe fragments recovered from the archaeological record. Moreover, documentary and archaeological evidence strongly indicate that the Swedish pipe industry of the eighteenth century was largely standardized in terms of types, stem lengths, production quality, and price. Not only does this show that different pipes and their socioeconomic connotations would have been immediately recognizable in their contemporaneity, it also means that it is often possible to estimate the relative expenditures of eighteenth-century smokers based on archaeologically recovered pipes.

Traces of smokeways visible on pipes recovered from the archaeological record are found to be described and depicted in archival and pictorial records. Examples of such are smokeways that resulted in bite marks on stems, the use of so-called stumps and heavily seasoned bowls. Evidence shows that the use of short and coarse pipes and stumps and the clenching of such pipes between teeth were strongly associated with commoners and the poorest demographic segments. Perceptions of seasoned bowls appear to be more complex and may have varied as a result of shifting perceptions of pipes made from meerschaum.

The study shows how a specialized understanding of pipe manufacturing, the prices of different types of pipes, traces of how pipes were used, and perceptions thereof allow archaeologically recovered pipes to act as evidence of living conditions and practices related to socioeconomic status in eighteenth-century Sweden.



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