To organize the dead

– stratigraphy as a source for typology in post-medieval burials

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This paper, presented at the VIII Nordic Meeting on Stratigraphy and the EAA meeting in Helsinki 2012, deals with the stratigraphy and typology of post-reformation burials, primarily those encountered during excavations in the North transept of Uppsala Cathedral in 2007 (Kjellberg et al 2011). This was at that time the largest excavation ever conducted inside the cathedral. The excavation resulted in a substantial amount of archaeological data, with features such as a preserved and previously unknown medieval cellar, foundations for a medieval gallery and original floor levels, two preserved and intact burial chambers and remains of more than 150 medieval and post-medieval burials. In total, the remains of 18 more or less preserved coffins, all dating to the post-reformation period, were recorded. The stratigraphical analysis revealed a chronological pattern in the development of coffin shapes and coffin attributes. This inspired an outline for a typology that may be used as a tool for dating future finds of unstratified burials. The typology has since been tested and modified through comparison with other well-dated and documented archeological and art historical coffins from within other churches in Central Sweden. To a lesser extent comparison with materials from excavated churchyards have been made.

The excavation

Uppsala, along with its predecessor Gamla ('Old') Uppsala, has been the seat for the Swedish archbishops from mid-12th century to present day. Construction of the cathedral began in about 1270, likely replacing a small Romanesque parish church. The earlier church is believed to be the place where S:t Erik, the patron saint of Sweden, attended mass right before he met his end on Christmas day in 1160. The choir and nave of the gothic cathedral were completed in the mid-14th century and building activities continued into the late 16th century, mostly in the western parts and towers. Much of the present appearance of the cathedral is predominantly the result of quite substantial restorations during the 1850s - 1870s by the architect Helgo Zetterwall. The cathedral itself is also the final

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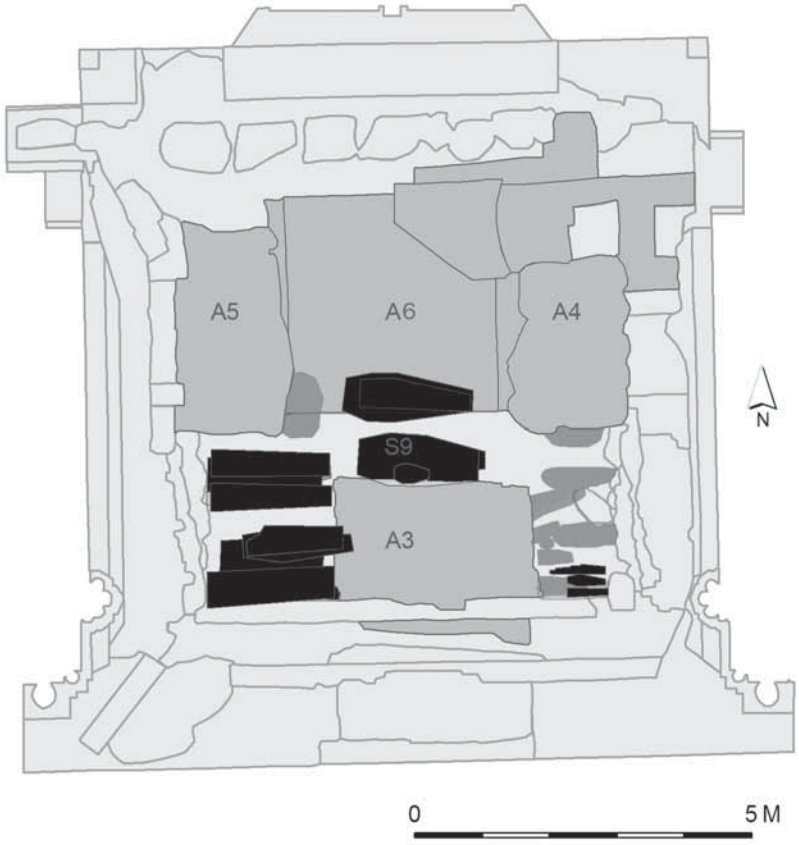


Figure 1. Plan and overview of the site with features and the graves indicated. Post-reformation coffins are marked in black with white frames, while dark grey irregular shapes represent 10 intact medieval burials, all without coffins and dated to the period before the construction of the transept in the 14th century. Contexts mentioned in the following text are numbered A3-A6.

resting place for what is thought to be more than 3000 individuals, buried between the 13th to the early 19th century (Lovén 2010).

The 2007 excavation covered more or less the whole of the North transept, in total about 90 m^2 with a volume exceeding 180 m^3. The reason for excavating was the building of a platform to support a new choir organ. Beneath the platform various installations were to be placed such as restrooms and facilities for visitors and staff. Prior and parallel to the excavations in 2007 the so-called Huselius research project had been carried out at Upplandsmuseet. The project involved a number of scholars and experts from various disciplines to present different aspects of the cathedral and its history from the 12th to 19th centuries. The project and researchers

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have been an enormously valuable resource during the project, especially in establishing a chronological framework for the excavations. The results of the Huselius project have been published in 6 volumes as part of the series Sveriges kyrkor (Uppsala domkyrka 1-6 2010).

In 2007 the historical records of use for this part of the cathedral were still unprocessed and no previous excavations had been carried out. Ground-penetrating radar had been used a few years earlier to evaluate potential underground structures, though the results were limited and inconclusive. For these reasons, before the start of the excavations, our knowledge of previous constructions and activities in the transept could be described as limited at best. Furthermore the excavation permit from the County Administrative Board was very generally formulated, lacking regulations and costs regarding the conservation of artifacts and preservation of structures on site (Kjellberg 2011). There was unfortunately no adequate research plan formulated at the onset of the project, and the resources set aside for archeological and osteological analysis and presentation were limited. This soon became a problem that grew bigger as a rich and costly archeological material was uncovered daily causing a strained relationship with the contractor. After some compromises on both sides, the contractor agreed to change the construction plans and adopt a new type of foundation that allowed for some of the subterranean structures to be preserved, as well as a limited osteological analysis to be conducted along with a specialized recording of some of the encountered textile material (Kjellberg et al 2011). The downside was that it was not possible to get full cost coverage for a complete documentation and preservation of the coffins themselves, nor a full osteological analysis or future access to the redeposited bones. On the request of the Archdiocese, all skeletons and recorded parts of coffins were placed in new containers, re-interred in a sealed but newly discovered medieval cellar under the new concrete floor at the end of the excavation.

The coffins from Uppsala Cathedral

A total of 18 post-reformation burials with more or less preserved coffins were encountered in relatively hasty circumstances, dating from at least the early 17th century to the late 18th century. The material consist of the remains of 14 adults and 4 children (Bäckström 2011). All were in-terred in so called ”mull-gravar”, without masonry constructions although originally marked with a stone slab. The coffins and skeletal material were in varying condition. The coffins were in most cases intact but caved in. In some cases they were only partly preserved due to

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mechanical tear from more recent burials and constructions.

Even though there is a surprisingly large amount of written sources from the post-reformation period in the cathedral, we have limited knowledge of who was buried in the North transept. Though we have some names from the so called grave plans from the mid 17th-century onwards (Bengtsson 2010) it is almost impossible to link the graves on the plans to the archeological record directly. The exception is the burial chambers and the grave of a Norwegian tradesman by the name of Martin Wärn. He died of sudden fever in 1748 and was identified from an engraved brass mount still attached to the head end of the coffin.

We therefore had to rely almost completely on the archeological observations to get some understanding of the chronological development of the site. Unfortunately the possibilities for keeping a good and tidy stratigraphical record was somewhat limited, since the material surrounding the coffins consisted of 2 meters of building debris, loose sand and gravel overturned so many times that almost no original strata was recognizable anywhere. Instead we had to turn to other observations, such as contacts, superpositioning and relations of the coffins to other on-site features.

One of the two burial chambers (A3 in fig.1 & 2) was important for establishing the chronology. From written records the chamber was recognized as belonging to the astronomy professor Anders Spole who had it built sometime between 1679 and prior to his death in 1699. The burial chamber was not opened during the excavations, as it was to be preserved beneath the new concrete flooring. There had been coffin-shaped niches made in the brickwork at the time of its construction, likely to avoid damaging the foot end of previous burials nearby. Another key to the chronology was derived from the coffin of Martin Wärn (S9 in fig.1 & 2) dated to 1748. The foundations for the medieval gallery and adjoining cellar (A4-6 in fig.1 & 2) gave the framework of an earliest possible dating of the coffins to 1440-1445 (Lovén 2010).

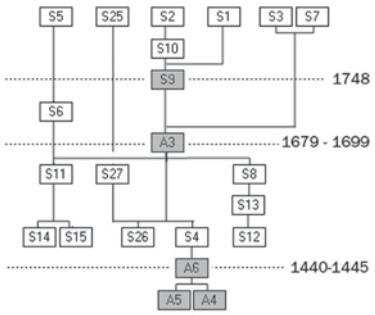
It was noticed that the shapes and styles of the coffins varied substantially and seemingly systematically over time. The need for a system of recording the coffin shapes on site was soon apparent, as the coffins were held together mainly by the earth surrounding them and subsequently were destroyed during the process of excavation. This record was later transferred directly in to the Harris matrix during analysis. When we compared the shapes of coffins to the stratigraphic sequence a clear line of development could be discerned.

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The data

To widen the somewhat narrow basis of the Domkyrkan typology and to validate its use on other sites it was necessary to incorporate similar material from other parts of Sweden, a task which proved more challenging than expected. The number of easily accessible and well dated materials are small. The registration of individual burials (and especially the recording of coffins) are at times disorganized and fragmented even within one excavation. This makes it virtually impossible to get an overview of the material from different sites without the frame work of time consuming re-processing of records. The material that has been gathered for this article consists of archeological sources in and around churches as well as churchyards (e.g. Jonsson 2009, Bäckström & Ingvarsson –Sundström 2010, Wallenbom & Edlund 2004, Tagesson & Westerlund 2004), art-historical surveys of churches and burial chambers (Nygren 1957, Olsson 1936) as well as conservation records (Zetterström 2010).

In most cases only some attributes could be recorded for each coffin, making the number of completely recorded coffins very small. For a relatively large number of archeologically recorded coffins, especially from churchyards, the outer shape of the coffins and mostly only the grave cut could be recognized. Subsequently, the somewhat "rougher" graveyard materials have only been partly included in this study since the material is awaiting further analysis. The material from art-historical surveys and conservation reports includes outer coffins in lead, copper and other metals. The greater part of coffins in the study are made



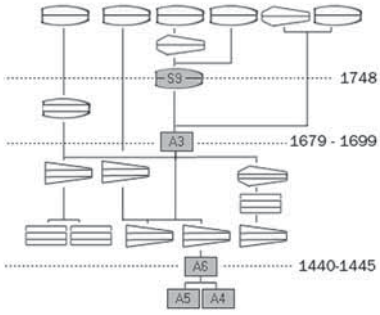


Figure 2, left. Harris matrix showing the stratigraphic relations of the burials in connection to more well dated structures (shown with grey filling).

Figure 3, right. A graphic presentation of the different coffin shapes encountered and their relations within the matrix. Clearly, the oldest shapes, dating before the construction of the burial chamber A3, are predominantly rectangular or trapezoid in shape. The later ones are rhombic or lancet shaped.

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of wood, however sometimes clad with different fabrics and/or painted. The registration is therefore somewhat reduced to basic shapes and main features which are relevant in both cases. When both outer and inner coffins exist, as in several of the coffins from Badelunda church (Nygren 1957), both have been registered as separate coffins.

The material has been systematically collected and is summarized in a registration table similar to that of the archeological record from Domkyrkan. The table from Domkyrkan was extended to include information about cross-sections and various attributes used in the excellent records from Badelunda church and Riddarholmskyrkan by Nils Nygren and Martin Olsson in the mid-20th century. The establishing of a new table was a necessity to coherently summarize and structuralize the material as they were all registered in different ways. To date, the complete list of stratigraphically or historically well dated coffins includes more than 90 entries, statistically speaking still quite a small number. New material has continually been added, and hopefully this number will increase even further as other materials are discovered.

Typology

From the complete material, including the coffins from Domkyrkan, it is possible to outline a typology



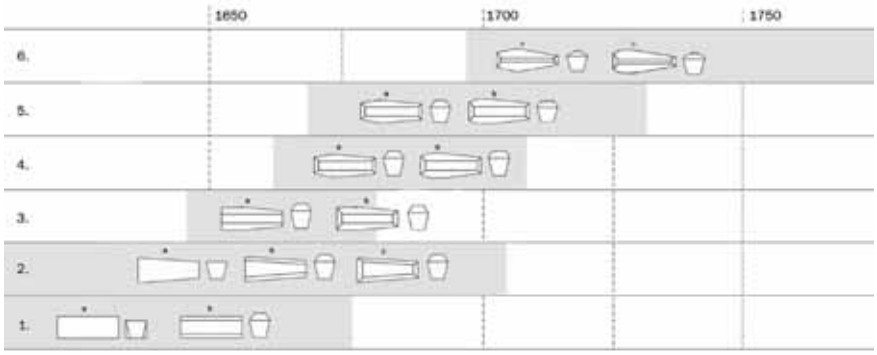
Figure 4.The latest addition to the registration of coffins was made during a visit to the Maasenbach burial chamber in Uppsala Cathedral in June 2011.

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of changes in coffin shapes and attributes during the post-reformation period.

Through analyzing the complete listing it has been possible to divide the material into six general types. The types is based mainly on the plan- and cross-section shapes of coffins.

Coffins of type 1, together with type 2, are the oldest form of coffin in this period, going back well into the Middle Ages (Kieffer-Olsen 1993, Jonsson 2009). Type 2 is relatively common and long-lived, remaining in use during the entire 17th century. Type 2 is also, together with type 3, the first showing an increasing amount of decorated handles, especially in the later examples. Inner coffins of type 1 and 2 are found in outer coffins of type 3 and 4. Type 3 is a hexagonal hybrid type between 2 and 4 and seems to have been in use for a rather limited period during the later part of 17th century. Type 3 is, together with the late forms of type 2 coffins, the first group that shows any curved lines and profiled carvings, predominantly on the lids of the coffins. Type 4 is a rhomboid or hexagonal coffin with a wide foot end, more than half the width of the head side gable. There are also an increasing amount of coffins with curved shapes in both plan- and cross-section. Type 5 is a hybrid shape showing features from both types 4 and 6, still with a wide foot end but incorporating a wider



1. Rectangular coffins with a 4 or 6-sided cross section.
2. Trapezoid coffins with a 4 or 6-sided cross section.
3. Hexagonal coffin with a wide base and 6-sided cross section.
4. Rhomboid and curved coffins with a wide base and 6-sided cross section.
5. Rhomboid and curved coffins with a wide base, 6-sided cross section and a wide and often profiled ridge along the lid.
6. Lancet shaped coffins with a narrow base (less than ½ of the head side) and mostly curved lines. 5-sided cross section with a narrow and profiled ridge along the lid.

Figure 5. Schematic presentation of the development of coffin shapes dating from the post-reformation period until approximately 1800. The approximate dating of each category is highlighted in grey.

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and rougher profiled ridge along the lids from type 6. Type 6 is another long-lived shape and is also the latest in the material. These lancet-shaped coffins of type 6 have a narrow foot end, less than half the width of the head side gable, and often showing curved lines along the body along with elaborate profiling of the edgeworks and high-rising integrated and decorated feet. No inner coffins were registered in coffins of type 6.This form is represented throughout the 18th century until abandonment of the custom of interment inside churches in Sweden. This also seems to be the form most commonly represented in the archeological record from churchyards. Most likely because its long period of use and because it often represents the last stage of burials (e.g. Kjellberg 2010).

The study also showed that there were more detailed developments in coffin attributes, such as feet, handles and ornaments, to be recognized in the material. Especially the introduction of standardized handles around 1650 and the increased use of externally mounted ornaments from the 18th century were apparent. The transition from pegged and ball- shaped feet into the elaborately carved and integrated feet from the mid-18th century were also obvious.

Finishing touch

It is clear that the shapes of coffins in general have been influenced by changes in style and fashion during the early-modern period. The first and second group clearly are set in a medieval tradition while the shapes of groups 3, 4 and 5 clearly link to the general and fashionable forms of the early Baroque. The more elongated and slimmer shapes of group 6 dating from the 18th century onwards might best be described as late Baroque and later on even neoclassical shapes.

Of course the archeological material from the excavations in Uppsala cathedral and other places contains a lot more information of importance for further studies but to fully cover all these aspects is however too big a challenge for this article. With increasing numbers of coherently registered and well-dated coffins, be it by stratigraphy or other sources, it will be possible to narrow some gaps in the sequences from the complex settings often encountered in and around churches. Alongside the records of osteological material, the study of coffins and other funerary objects has a potential to give a fuller understanding of the identity and mind-sets of any population, albeit this time a population of presumed high social status ranging from about the 16th to the 19th century.

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