

Jewellery Studies

The Journal of The Society of Jewellery Historians



2024/2
KAREN STEMANN-PETERSEN AND CONNI RAMSKOV

Published by the Society of Jewellery Historians



The Society of
**JEWELLERY
HISTORIANS**

The **Society of Jewellery Historians** is a Registered Charity: No.1151393, and a company limited by guarantee, No. 7032947, registered in England. The logo of the Society is the copyright of the Society and shall not be used if the Work is republished in any way other than as an unaltered pdf of the Work in this Publication.

The Society was formed in 1977 with the aim of stimulating the growing international interest in jewellery of all ages and cultures by publishing new research and by bringing together those interested in the subject, whether in a professional or private capacity. The membership includes archaeologists, museum specialists, collectors, art historians, dealers, gemmologists, practising jewellers and designers, scientists and conservators.

The Society runs a programme of lectures from September to June, inviting speakers from different disciplines and many parts of the world.

The lectures are usually held in London at the Society of Antiquaries, Burlington House, Piccadilly, London W1V 0HS, and are made available afterwards on the Society's website. In addition, the Society arranges a variety of other occasional events including international symposia on aspects of the history and technology of jewellery, study visits to museums, and private views of special exhibitions.

For full details visit the Society's website at: www.societyofjewelleryhistorians.ac.uk or write to: The Membership Secretary, The Society of Jewellery Historians, Scientific Research, The British Museum, London WC1B 3DG

Jewellery Studies

2024/2

Editor: Susan La Niece

Jewellery Studies is the Journal of the Society of Jewellery Historians, and is the leading academic journal on the subject. Articles cover all aspects of jewellery from antiquity to the present day, and include related material from archives, technical data, gemmology and new discoveries on collections and designers. All papers published in ***Jewellery Studies*** are subject to peer review.

Jewellery Studies was published in hard copy form from 1977 to 2012, and has been an electronic publication since 2015.

Articles published from December 2020 (2020/3) are Open Access. A full list of all articles published and information on how to access them is available on the Society's website at: www.societyofjewelleryhistorians.ac.uk/js_online and [/js_printed](http://www.societyofjewelleryhistorians.ac.uk/js_printed)

Articles from all issues of ***Jewellery Studies*** are available free of charge to members as pdf downloads from the website. Members, non-members and libraries can buy the hard copy volumes 2 to 12 online or from the Membership Secretary at membership@societyofjewelleryhistorians.ac.uk (with discount for SJH members).

The Editor welcomes contributions of unpublished material on current research into all topics of jewellery history. See the Notes for Contributors at the end of this paper. Please email suggestions for articles to the Editor at js@societyofjewelleryhistorians.ac.uk

Jewellery Studies is designed by Doug Barned www.design-is.co.uk and published online in digital pdf format by The Society of Jewellery Historians.

The views expressed by authors in their articles published in ***Jewellery Studies*** are those of the contributors and not necessarily to be taken as those of the Editor or The Society of Jewellery Historians. It must be appreciated that some papers may represent work in progress.

© The Author retains the copyright in this article but has granted the Society of Jewellery Historians an irrevocable worldwide, royalty-free licence to publish this article in printed and electronic format and to include the article in electronic document-delivery services and databases. This article may only be reproduced in whole. The individual images or other elements cannot be used separately or in other contexts without any further necessary consents and permissions being obtained. The Author(s) have warranted that they have made every possible effort to obtain any necessary copyright permission in respect of images. If, however, there are any image copyright queries, then please contact the Author directly or via the Society, at js@societyofjewelleryhistorians.ac.uk.

A sixteenth century bridal jewel, a gift from Queen Dorothea of Denmark to the town-hall of Copenhagen

KEYWORDS:

Denmark/16th century/Queen Dorothea/Copenhagen/bride/brooch/pendant

https://www.societyofjewelleryhistorians.ac.uk/JSO_2024_2.pdf

CONNI RAMSKOV has a master's degree in classical archaeology, formerly a curator at the Museum of Koldinghus and now at Museum Kolding, Denmark, which has one of Denmark's most important silverware collections. cra@museumkolding.dk

KAREN STEMANN-PETERSEN is a trained goldsmith and has a master's degree in conservation science. She was employed at the conservation department of the National Museum of Denmark and is now an emeritus researcher at the Museum's Danish Prehistoric and Medieval department for a project on medieval golden altars from Denmark. karen@foto-grafisk.dk



Front cover:

Jewel of gilt-silver with rock crystal, sapphire, enamel and pearls, given in 1557 by Queen Dorothea of Denmark to the city of Copenhagen for daughters of mayors and councillors to borrow for their wedding celebrations at the town-hall. 15.7 x 10.7 x 3 cm. Museum of Copenhagen, Reg. no.1921:239X0001

A sixteenth century bridal jewel, a gift from Queen Dorothea of Denmark to the town-hall of Copenhagen

KAREN STEMANN-PETERSEN AND CONNI RAMSKOV

In 1557, the Danish Queen Dorothea, wife of King Christian III, gave a large bridal jewel of gilt-silver with stones, enamel and pearls to the city of Copenhagen for daughters of mayors and councillors to borrow for their wedding celebrations at the town-hall. The jewel, created to be used either as a brooch or a pendant, is made of multiple components. The central pelican has a tail that had, at some stage, been extended to hold a setting with an enamelled shield plaque featuring the year 1557, the year of the gift, and also the coat-of-arms of Sachsen-Lauenburg, belonging to Dorothea and her ancestors.

In 1986 the Museum of Copenhagen gained funding for scientific analysis of individual parts of the piece. Analysis of the back-panel and the scroll-work of its framing proved it to be of fine silver but other parts of the jewel are of lesser quality. This study of the bridal jewel found it to be composed of components of different materials and different standards of workmanship. It is proposed that these components were brought together, probably in 1557, and that the frame and back-panel could have originated from a small pax/reliquary. The other parts may be reused from items in the queen's jewellery box or outdated costume jewellery.

This paper presents the historical background to the creation of this jewel, as several issues seem relevant to the royal couple's situation and interests: Christian had come to power after a civil war, forcing the entire state to convert from Catholicism to Lutheranism. He and Dorothea had for several years to 'make ends meet' and present an exemplary Lutheran face while maintaining royal dignity. Dorothea is known to have re-used parts of her coronation crown in a hat ornament for her husband, so it would not be surprising that she re-used other items to create this jewel.

The Danish Queen Dorothea (1511-71), married to King Christian III (1503-59), gave a large bridal jewel as a present to the city of Copenhagen.¹ The glamorous piece is made of gilt-silver with stones, pearls and an enamelled shield bearing the year 1557. The gift, referred to here in the following as the bridal-brooch, became available for daughters of mayors and town councillors to wear as a brooch or pendant at their wedding parties at the town-hall (figs 1 and 2). At sixteenth century wedding ceremonies it was a custom for brides to display their status and wealth through the jewellery they wore – necklace chains, pendants and brooches, whether their own or borrowed. For this purpose, young women had a thick piece of textile known as a *dolslag* in Danish, *dalslach* in Low German and a *scapulare* in Latin, worn over their chest and neck for the jewellery to be attached to.

The large brooch is composed of several gilt-silver components. The main body, here termed the frame, has an arched top and is 15.7 cm high, 10.7 cm wide and, including its mounted ornamental elements, about 3 cm thick. The frame is largely symmetric and consists of scrolling acanthus leaves, stems and carnation-like flower shapes. The organic effects include stamens and stems of coiled beaded wire. The frame is set with four gemstones and six pearls in individual settings and a central pelican figure with two chicks on its wings. This pelican, in her

piety,² has a clear transparent breast of a large cabochon-shaped rock crystal and the bird's claws grip a setting with the coat of arms of Sachsen-Lauenburg marked with the year 1557. The frame's thin gilt back-panel reflects the foreground.

The research presented here describes historical facts about the royal family, the precious metalwork of the period and our analytic results. Taken together these research strands provide a basis for our hypothesis on the choices made in the assembly of the parts of the bridal-brooch. The origins of these individual parts may never be fully established but the goal is to find possible explanations for the origin of the reused parts and to suggest historical objects to which they can be compared.

The first of three historical printed sources to describe this bridal-brooch is by P.H. Resen, Copenhagen's Lord Mayor in 1675. It includes detailed illustrations of the piece (figs 3 and 4) and explains its presence in the council chamber and the circumstances surrounding its donation.³ At some later stage the pin with corresponding curved pin-catch were broken and maybe the bridal jewel, then only wearable as a pendant, was seen as impractical or out of fashion. The next description of the

1 The couple reigned over the Kingdom of Denmark and Norway 1536-59.

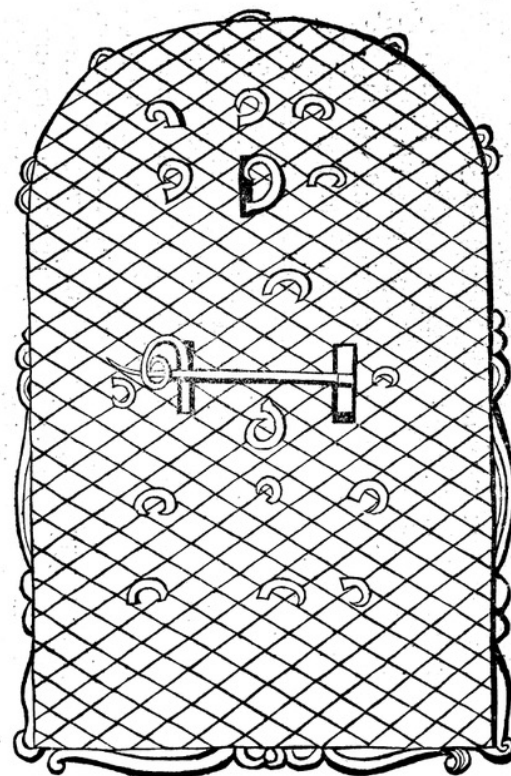
2 The legend of the female pelican feeding her young with blood from her own body symbolises the self-sacrificing mother, or perhaps in this case, a ruler's sacrifices for a whole nation.

3 An original print of the book by Resen (1675) belongs to the University of Southern Denmark, Odense, and a Danish translation from Latin is by O. Nielsen, 1871, pp. 97-123.



Figs 1-2.

Front and back of the bridal jewel: the front is seen here after examination, careful cleaning and re-assembly. The frame is 15.7 x 10.7 cm and, with applied ornaments, about 3 cm thick. Photos: National Museum of Denmark 1986. Museum of Copenhagen, Reg. no.1921:239X0001



Figs 3-4. Two graphical illustrations from the book by P.H. Resen (1675: 62-63) showing the bridal jewel's front and back before its pin and pin-catch were broken. At that date a total of nine pearls in settings are illustrated.

piece was by the later Lord Mayor, H.C. Hersleb in 1776 (fig. 5). From the council chamber the piece was moved several times, from 1859 onwards. First it was deposited, still in Copenhagen, at Rosenborg, and in 1867 was published in their catalogue (Andersen 1867) (fig. 6) and included in the royal collections as an example of jewellery from Christian III's time. Its history was further documented by Troels-Lund (1914), who noted the large piece was very clumsy to wear. In 1922 it was moved from Rosenborg to the then newly opened Museum of Copenhagen. In 2018, the brooch was a main feature of the exhibition at the Museum of Koldinghus, on the south eastern part of the Jutland peninsula, celebrating the castle's 750-year anniversary: 'The Splendour of Power' (in Danish: *Magtens Smykker*). Ramskov (2018) reviewed previous research and described the jewel in the exhibition catalogue. In 2020, the Museum of Copenhagen moved to new premises, which opened up the possibility of depositing the brooch at Koldinghus, where it is exhibited to this day.

Erichsen and Møhlenfeldt Jensen (2004; 2006), suggested that its frame had originally been a late gothic belt-end mount.⁴ The hypothesis however, that this scroll-work had been a low hanging strap-end with the rounded end hanging downwards seemed worth questioning as the frame's width of 10.7 cm would have had to fit to a belt that was nearly as broad. Contributing to their study, analysis of the individual jewellery parts had been carried out in 1986 in collaboration between the Museum of Copenhagen and the conservation department of the National Museum of Denmark. Stemmann-Petersen was responsible for the project's procedures and the documentation of analytic results. Temporary dismantling of the piece was undertaken in order to take small samples in discreet places for scientific analysis and to document different assembly possibilities, as noted from the historical printed illustrations (figs 3-6). The latter, from 1867, shows the jewel's stones and pearls for some reason had been rearranged.

In 1943 the jewel was restored on the basis of the earlier prints.⁵ In figure 2 it can be seen that pegs fastening the central ornaments of the brooch go through the back-panel and are bent. These were straightened and later bent again to make the changes.

When starting the research in 1986 the frame's original use was still a very open question. Stemmann-Petersen (2011) published a description of the analytic results and an interpretation suggesting that the frame and back-panel had been from a small pax/reliquary because of its arched top (Hackenbroch 1979:119). A pax was used within the Catholic faith and could furthermore include a container for holy items, then making it a reliquary. It is relevant to this suggestion for the original source of the frame that the Catholic Church was disestablished during the reign of Christian and Dorothea (see below) and consequently many Church items were repurposed or melted down.

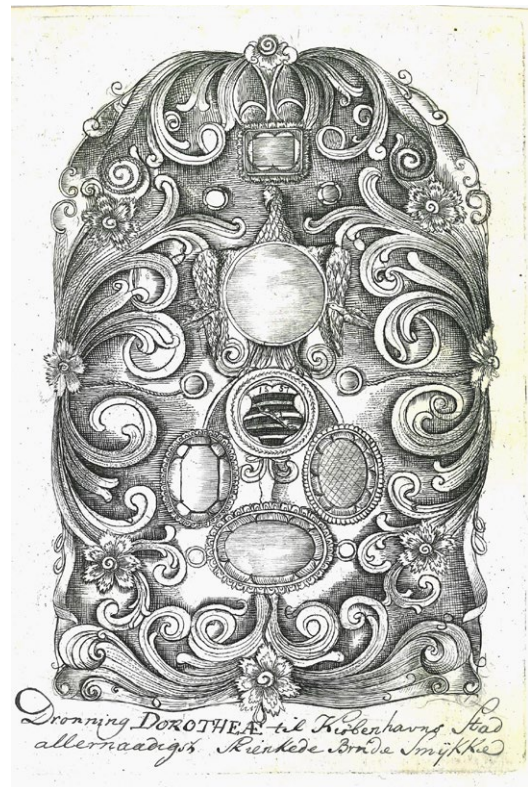


Fig. 5.
The front of the piece is illustrated, with slightly more detail, by Hersleb (1776, on the flyleaf).

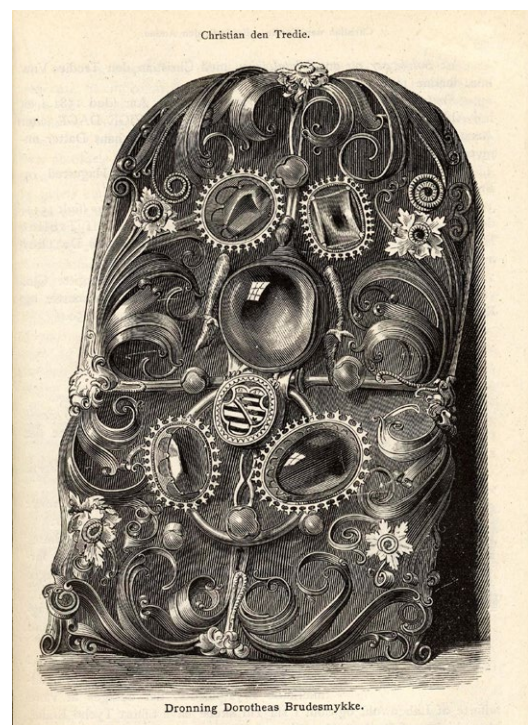


Fig. 6.
In this illustration from C. Andersen (1867: 16) it can be seen that the jewel's stones and pearls had been rearranged. Photo: The Royal Danish Collections

⁴ Erichsen and Møhlenfeldt Jensen, 2004, p. 54-6, 91; 2006, p. 27.

⁵ Erichsen and Møhlenfeldt Jensen, 2004, p. 46. This mentioned repair was done by sculptor William Larsen, also working for the National Museum of Denmark at that period.

The historical background

A brief review of the royal couple's background and the historical era is given here to explain why elements of jewellery of merely gilded silver possibly could have belonged to the royal wardrobe and, together with the frame, have been reused in 1557.

In the early sixteenth century, silver and gold was increasingly available from mines in America and Central Europe and precious metal items were produced in the leading goldsmithing cities such as Antwerp and Nuremberg. Over time, other enterprising cities stepped up to meet the growing demand for jewellery from the upper classes to display their wealth and good taste. European rulers and other wealthy people often commissioned goldsmiths to remodel jewellery or otherwise reuse precious metal and gems. In the beginning of the sixteenth century, for King Christian II of Denmark and Norway there had been some unfortunate wars and consequently valuables, even including royal regalia, were either pledged or pawned (Boesen 1986: 20; Jensen 2007:37).

Dorothea⁶ in 1525, at the age of 14, was married to the 22-year-old Christian, Duke of Haderslev and Tørning Len, Schleswig⁷ and eldest son of the then Danish Catholic King Frederik I. (Frederik had been elected and crowned to replace his brother Christian II only two years earlier). The newly-wed couple settled at Haderslevhus and began a mission to introduce Lutheranism in their duchies in Jutland, situated just south of the Danish-Norwegian kingdom. When King Frederik died in 1533, Christian, his eldest son, was not the first choice of the Catholic noblemen leading the deciding council to succeed his father, because he was a declared Lutheran. At that stage and for their many and very diverse interests, they preferred as successor the younger half-brother, Hans, though only 12 years old and already appointed as a (Catholic) bishop in Bremen. Consequently, from 1534 to 1536, Denmark became engaged in a bloody civil war, the Count's War (Danish: *Grevens Fejde*) – a very complicated situation with many participants. Finally in 1536 Christian gained power over the entire kingdom and he and Dorothea arrived together in Copenhagen on the 6th of August 1536 to mark this. That same year the Reformation was implemented throughout the country: churches were ordered to turn over their valuables of silver and gold, except those essential for religious services. The silver was used to mint coins to cover war expenses and gold was then available for the royal jewellery (Jensen 2007: 34). An eye witness description of their coronation in 1537 mentions the regalia, possibly the regalia of Frederik I and his queen, and tells us that the king had a crown, a gilded sword, an orb and sceptre and the queen a crown and a

sceptre, unfortunately none of these are preserved today.⁸ After the coronation, the Lutheran Church was established as the state church with the king as its head and the holdings of monasteries passed to the king.

In the search for pieces of jewellery perhaps related to parts of the bridal-brooch, our inquiries extended to the Staatliche Kunstsammlungen Dresden. Research by Christine Nagel had shown that jewellery worn at the European princely courts by the mid-sixteenth century was exclusively made of solid gold with precious stones and pearls.⁹ Other metals such as silver, gilt-silver and steel were sufficient only for more utilitarian or religious purposes. As described above though, neither Christian nor Dorothea, as children, had been prince or princess or very close to Europe's most wealthy rulers. Therefore we assume it possible that Dorothea, in her younger years in Sachsen-Lauenburg and after her wedding to Christian, may have possessed and used some gilt-silver jewellery and accessories: also, coming to power they had limited finances for a number of years, as will be described below, as well as other significant challenges.

In 1544, in the Treaty of Speyer, Christian III was recognized as the rightful king of Denmark and Norway and he undertook not to interfere in religious conflicts elsewhere in Europe. This reduced the king's expenses in employment of mercenary troops and made life easier for him. The following year a lavish christening party for the couple's third son could therefore be arranged at Koldinghus castle.¹⁰ The year after, the same was done for their fifth and last child, a daughter, also named Dorothea (Jensen 2007:100-3).

In spite of the growing prosperity of the Danish royal couple, they did not have unlimited funds for jewellery and dowries. Before their first-born child, Anna's, wedding to Duke Augustus in Torgau near Dresden in 1548, they issued a so-called maiden tax (Jensen 2007:105-6). It was to raise funds for the purchase of the elegant trousseau etc. that had been agreed the bride-to-be should bring to the marriage. In 1553 Duke Augustus' elder brother, Moritz died and Augustus became elector and duke of Saxony, thus Anna and Augustus became among Europe's most prosperous nobility. This of course became of importance to

8 Christian and Dorothea were aware that this first Protestant coronation was of great symbolic importance and chose Johannes Bugenhagen, theologian at Wittenberg and Luther's assistant, to create the new ritual and layout of the ceremony. Denmark's nobility and citizens of Copenhagen in particular participated, providing manpower, various equipment and loans, to receive and entertain visiting, high-ranking guests for almost 14 days. Even Christian's half-sister was able to borrow a tiara for her hair, ensuring that the young lady of noble rank would be properly attired at the coronation (Boesen 1986, p. 23, 225-8; Hassø, 1936-38, p. 317 note 1; Jensen 2007, pp. 42-3).

9 Pers. comm. Christine Nagel, 2022, Art-historian, Collection Researcher, Staatliche Kunstsammlungen, Dresden Castel, Dresden.

10 Between 1545 and 1549 Koldinghus was the royal couple's preferred residence and became Dorothea's permanent residence after Christian's death in 1559.

6 Jensen 2007, pp. 20-2: Born in 1511 to Catherine of Braunschweig-Wolfenbüttel and Duke Magnus I in the small northern German duchy of Saxony-Lauenburg-Ratzeburg.

7 Len is an administrative territory, ruled by a duke in Denmark until 1662.

Christian, Dorothea and their kingdom but nevertheless, in 1561, before the wedding of Anna's younger sister, Dorothea, a maiden tax was once more collected to pay for her dowry. This, being more thoroughly described than Anna's, helps us to understand its extent. The many embellishments included: a gem-studded wedding dress; a diamond-studded hat; golden chains; 25 other dresses; and splendid carriages. One of these was adorned with coats of arms on front and back and is still preserved in the Veste Coburg Art Collection in Bayern (Jensen 2007:115-17).

Table 1 - Analytical results from the metal components of the bridal-jewel

Analysis no.	Sample: location of analyses and notes	Ag wt%	Cu wt%	Au wt%	total wt%	Other elements	Analysis Method	Sample size μm or mg
10.3	Pelican: cast two-phase alloy (dendritic structure)	95.0	5.0		100		SEM/EDS	2500 x 2500 μm
12.3	Rivet in the pelican's leg (single-phase alloy)	97.7	2.3		100		SEM/EDS	2500 x 2500 μm
12, AAS	" " analysed by AAS (result has slightly less Ag than that by SEM/EDS)	97.4	4.1		101.5	0.6 Zn	AAS	weight not noted
	<i>The calculated Ag-Cu ratio by AAS</i>	96.0	4.0		100			
2.2	Frame. The tip of the leaf foliage: matrix	98.6	1.4		100		SEM/EDS	2500 x 2500 μm
7.1	Back-panel with lozenge pattern: matrix alloy	98.8	1.2		100		SEM/EDS	2500 x 2500 μm
7.3	Back-panel with lozenge pattern: matrix alloy	99.0	1.0		100		SEM/EDS	2500 x 2500 μm
	<i>Mean of the two results</i>	98.9	1.1		100			
6.3	Frame. Strip of metal of U-profile with waved edges: matrix	99.0	1.0		100		SEM/EDS	2500 x 2500 μm
6.5	" " " "	99.1	0.9		100		SEM/EDS	2500 x 2500 μm
	<i>The alloy is mostly single phase. The mean of the two results</i>	99.1	0.9		100			
3.2	Frame. Lower left loop: at outer edge of matrix	88.5	11.5		100		SEM/EDS	2500 x 2500 μm
3.3	Frame. Lower left loop: in centre of matrix	87.7	12.3		100		SEM/EDS	2500 x 2500 μm
3.5	Frame. Lower left loop: at outer edge of matrix	89.9	10.1		100		SEM/EDS	2500 x 2500 μm
	<i>The alloy is two phase. The mean of the three results</i>	88.7	11.3		100			
4.3	Frame. Lower middle loop in matrix. Single phase alloy	96.2	3.8		100		SEM/EDS	2500 x 2500 μm
5.4	Pin holder on the frame, in the alloy matrix (beside the central solder area)	89.7	10.1		99.8	0.2 Zn	SEM/EDS	2500 x 2500 μm
	<i>It is a coarse grained two-phase alloy. The calculated Ag-Cu ratio</i>	89.9	10.1		100			
5, AAS	Pin holder on the frame. Pb & Zn detected - sample includes alloy matrix and solder	74.7	11.4		86.1	0.6 Pb, 0.7 Zn	AAS	weight not noted
	<i>Calculated Ag-Cu ratio</i>	86.8	13.2		100			
14, AAS	Curled pin-catch on frame	79.4	14.3		93.7		AAS	4.2 mg
	<i>Calculated Ag-Cu ratio</i>	84.7	15.3		100			
15, AAS	Frame. Big tubular ring in the lower centre of jewel	86.4	3.9		90.3		AAS	3.4 mg
	<i>Calculated Ag-Cu ratio</i>	95.7	4.3		100			
16, AAS	Silver pipe soldered to frame to support the pin	90.8	2.3		93.1		AAS	6.0 mg
	<i>Calculated Ag-Cu ratio</i>	97.5	2.5		100			

17, AAS	Loop on the frame for a necklace chain	84.9	12.1		97.4	0.7 Pb, 2.4 Zn	AAS	6.6 & 6.0 mg
	<i>Calculated Ag-Cu ratio</i>	87.1	12.9		100			
11.4	Pearl setting (without pearl), surface cleaned to remove gilding. Analysed in the SEM	97.2	2.8		100		SEM/EDS	2500 x 2500 µm
11.1	Pearl setting. Sprig on the back: Analysed in the SEM on small area, gilding removed	97.1	2.9		100		SEM/EDS	2500 x 2500 µm
9.2	Setting for octagonal rock crystal - surface cleaned and analysed in the SEM							
	Setting's prong to grip the stone, where the gilding was worn off	96.0	2.4		98.4	1.59 S	SEM/EDS	area not noted
	<i>Calculated Ag-Cu ratio</i>	97.5	2.5		100			
9.6	This setting's openwork edge: on the back where the surface had been scraped off	98.5	1.5		100		SEM/EDS	area not noted
	<i>The Ag-Cu ratios of nos. 9.2 and 9.6 used to calculate a mean within the setting</i>	98.0	2.0					
9.5	This setting's peg on the back where the surface had been scraped off	87.1	12.9		100		SEM/EDS	area not noted
8.2	This setting's metal matrix sample from the peg	83.4	16.6		100		SEM/EDS	2500 x 2500 µm
8, AAS	From this setting's peg a sample was dissolved and analysed by AAS	79.9	16.2		96.1	0.7 Pb, 0.04 Zn	AAS	weight not noted
	<i>AAS detected lead but otherwise the result matches that of the SEM/EDS</i>	83.1	16.9		100			
13, AAS	A sample from the peg of the setting with the sapphire	86.6	15.8		102.4	0.7 Pb, 0.04 Zn	AAS	weight not noted
	<i>Calculated Ag-Cu ratio</i>	84.6	15.4		100			
12.1	Solder area showing dendritic structure: by a rivet of the pelican's leg	84.2	12.7		96.8	3.19 Zn	SEM/EDS	2500 x 2500 µm
12.2	Solder area by a rivet of the pelican's leg: spot analysis of dark (Cu-rich) phase		91.7		91.7	Cl, Fe & Zn	SEM/EDS	Spot
6.1	Suspected solder area on the frame's metal in U-profile with waved edges	97.0	3.0		100		SEM/EDS	2500 x 2500 µm
6.2	“ “ “ “	97.2	2.2	0.7	100		SEM/EDS	2500 x 2500 µm
6.4	“ “ “ “	78.3	2.5	17.7	98.5	1.5 Si	SEM/EDS	2500 x 2500 µm
	<i>The sampled areas of the three above were mainly within a spongy solder area</i>							
5.2	Solder in the center of the frame's pin holder: dark copper rich phase	9.05	80.3		89.7	10.26 Zn	SEM/EDS	Spot
5.3	Solder in the center of the frame's pin holder: light silver rich phase	91.4	6.7		98.1	1.92 Zn	SEM/EDS	Spot
	<i>This zinc-containing solder is seen as a 30 µm wide band holding silver parts together</i>							

Table 1.

SEM-EDS analysis on sample no. 1-12 was performed by Vagn F. Buchwald

(over an area of the magnification listed or in spots, as indicated).

AAS analysis on samples no. 5, 8 and 12-17 by Janne Winsloew (sample mass in mg is noted).

The results list the silver-copper ratios from metal core material (the last three are solder areas).

They are listed in the order of the article's text and those being referred to there are marked in bold.

The scientific study of the bridal-brooch

Analysis and sampling

Metallurgist Professor Vagn F. Buchwald of the Technical University of Denmark carried out most of the analysis on the bridal-brooch components in a Scanning Electron Microscopy (SEM) using Energy Dispersive X-ray Analysis (EDX) in 1986. These results, from samples 2-12, were mathematically adjusted (normalised) to reach a total of 100% to allow comparison.

The results (Table 1) are listed in the order the components are described, starting with the metal cores and last are noted results from three solder areas. The analysis was mostly performed on polished cross-section samples, but the dismantled octagonal rock crystal in its setting and the setting (marked IIII) belonging to a detached pearl were both small enough to be put into the analytical chamber so that material-loss by sampling was avoided. Samples 13-17, almost certainly from parts added during the construction of the bridal jewel, were instead analysed by Atomic Absorption Spectroscopy (AAS) at the National Museum's conservation department by Laboratory Technician Jane Winsloew. The results from the two analytical methods were cross-checked using three samples (nos 5, 8 and 12) and found comparable. Applying two methods can be criticised, but at the time it was an economic choice that afterwards gave us the opportunity to compare their qualities.

The table illustrates that the Ag-Cu ratios of the core alloys vary from component to component, with silver contents from about 83.1% to 99.0%. Most of these results were free of impurities, but with one (no.17) reaching 3.1% of other elements. That and others were mathematically adjusted as above, to allow comparison.

The analytical results from the thin fire-gilt surfaces (gold amalgam gilding) were not useful in characterising one object part from the other. This was also the case for the results from the silver solder samples.

Pelican with chicks and coat of arms: The bird with chicks had been cast in a relatively noble silver alloy with 95.0% silver (analysis no. 10.3), suited to casting. The very precise shapes indicate it was cast by the lost wax technique (*cire perdue*). Just below the rock crystal mount a strip of silver forming the bird's two tail feathers is noticeably different in appearance (figs 7 and 8). A metal sample was taken where the cast figure and the tail piece meet and inspection confirms that the bird's tail extension was soldered on at that point.¹¹ Apart from the figure's main body and solder areas, all the remaining sampled parts were formed in forged silver (hand-shaped sheet metal or wire). The claws of the bird are of silver wire, riveted and soldered on just below the rock crystal setting. Analysis of one rivet shows that the claw has a high silver content with 97.7% Ag (analysis no. 12.3). Attempts to analyse the extended silver tail (presumably forged) without sampling were unsuccessful because the gilt surface interfered and made the data unreliable.

The pelican figure with chicks has two holes on each side intended for mounting. The holes may indicate that the bird was



Figs 7-8.

The front and back of the pelican figure c. 6,1 cm high. Photos: National Museum of Denmark 1986

¹¹ This tiny sample was not analysed.

originally nailed, riveted or sewn to a background or else used to join a double chain as a pendant. The bird at some stage had its tail extended to add the round setting with scalloped edge to hold the coat of arms plaque with the year 1557. The enamelled plaque has been made separately and the scalloped setting-edge made it easy to press the even row of claws of the mount around it. Taking a metal sample from the plaque was not attempted, but it would be expected to have a high silver content to be suited to enamelling. The setting has a back-plate and a beaded lower rim that does not match the frame's beaded wires or those of the stone mounts. The extension is fine goldsmith work and results in a total height of the pelican to about 6.1 cm.

The tail extension to carry the shield could date from 1557 or earlier. Because the mount of the shield has the scalloped edge it is possible that the edge could have been bent back to exchange an older shield with a new – such a change would presumably require re-gilding. The two pegs on the back of the bird, looking similar to the pegs behind the separate stone mounts must date to the construction of the bridal-brooch – see below.

Frame: The silver alloy of an acanthus leaf from the frame is of high purity (no. 2.2 with 98.6% Ag), meaning that the metal would have been quite soft and easy to form into curled shapes (scrollwork). The leaf result matches that from both the back-panel and an awkward U-shape profile in the seemingly rebuilt frame centre (no. 7.1 and 7.3 with 98.9% Ag; no. 6.3 and 6.5 with 99.1% Ag). This similarity points to these being from the same original item. Five other parts from the rather clumsy, seemingly rebuilt, central frame were also analysed and are described later.

Three slender loops soldered to the lower frame edge appear to be original (fig. 9). This type of loop, or jump ring, could have held small pendants as found on some medieval small crosses. This indicates that the lower edge of the frame was not intended to be standing directly on a table, but in some way suspended. Samples from the left and middle loops show two different silver contents (no. 3.2, 3.3, 3.5 with an average of 88.7% Ag and no. 4.3 with 96.2%). These differences from the very noble frame samples were at first discouraging in establishing which parts originally belonged to the frame, but the loops are made of thin wire, and this the goldsmith may have deliberately chosen as having more strength than high purity silver.

The frame with scrolling acanthus leaves, stems and flowers in the foreground has been shaped from thin silver sheets and wires and joined in a silver-soldering technique. It appears to have been built up from a central cross of four clusters of stems at the back (the remains are there, but the inner centre was demolished in the re-build). A slightly thicker silver wire supports the arched frame edge at the back. In its two lower corners this wire curls up around two even thicker wire shapes. They bend upwards and join to support the frame's central lower cluster of stems. These lower wires are the frame's most supportive as if designed to have carried the greatest load. All of the preserved foliage parts extending to the partly preserved structural wires of the mid-frame are connected by silver-soldering in both a logical and discrete way, as best seen from the back (fig. 9).

There are no indications of what the frame originally held.



Fig. 9.

The back of the frame shows details in the scroll-work and the three loops along the base. Photo: National Museum of Denmark 1986

Religious images such as a Virgin and Child, an *Agnus dei* or, in view of its symmetry, a Calvary group with a central crucifix are all possible suggestions. It is completely unknown what held the frame vertical or connected it to the back-panel. Maybe parts of the frame's central stems (now missing) had fastened the original figures. Only a few well-placed holes in the flat back-panel (of the many holes visible in figure 2) would have been needed to fasten the pax or reliquary to a now missing plinth or handle (that many pax are known to have had).

On the frame the goldsmith had only applied gilding where it would be seen, but avoiding unnecessary use of precious gold. Thus, the gilding covers the frame-front and overlaps the outer edges indicating that the frame originally had a back-panel, like the current one, which does not entirely cover the edges. On the frame there are some flaws in the gilding, forming small blisters. Gilt-silver is known to form blisters when reheated, for example in connection with later repair and changes involving silver solder (Northover and Anheuser 2000; van Bork et al. 2011). Completing the bridal-brooch by applying new fire gilding could not erase the disfiguring blistering completely.

The frame's scrolling lobed leaves and flowers, etc. belong to a group of leaf ornamentations in goldsmith's art from the Gothic period in the latter part of the fifteenth century until the beginning of the sixteenth century – see below. Craftsmen had been able



Figs 10-11.

Pax with reliquary, gilt copper with small leaves decorating its edge. 1503. 19.2 x 8.5 cm, Cathedral Treasures of Linburg, Germany. The photos kindly supplied from the Bischöfliches Ordinariate Limburg

to work quite freely with sinuous forms and at the same time demonstrate their individual skills. The frame and its reflective and glittering back-panel cannot currently be dated precisely, as no closely comparable example of this type is known, but the elegance of the work must be attributed to one of Europe's enterprising goldsmith cities. A pax/reliquary with a simple arched leaf frame is illustrated in figures 10 and 11. Among works with spectacular foliage are examples which resemble that of the bridal-brooch: a frame with leaves above a large house-shaped shrine *die Heiligen Gervasius und Protasius* in partly-gilt silver), made in Strasburg in 1496 (some of its many leaves however, may have been produced by casting). The splendid gilt-silver leaf ornamentation forming the crown on a bust reliquary of Saint Agnes (fig. 12) (Fritz 1982), looks even more like that of the bridal piece's leaves shaped from thin silver sheets and wire.

The secondary frame components: The brooch construction components in the centre of the frame are irregular, as is their solder-work. Analyses of six such parts revealed that they are produced from silver of different alloy compositions – the high purity silver U-shape mentioned above (no. 6.3 and 6.5), with other, seemingly random, silver scraps (no. 5.4, 5, 14, 15, 16 and 17 with 84.7 - 95.7% Ag). Onto a large, tubular ring are attached vertical parts and parts symmetrically sloping up and outwards. To these shapes are soldered small tubular components to support the pegs of the pelican, pearls



Fig. 12.

Bust of Saint Agnes, Valentin Schauer, Hans Klocker and Master Christoph: 1481/1491, cast and chased/forged silver, partly gilded, set with precious stones, 50.5 cm. high, Cathedral Treasury, Bressanone, Photo: © Hofburg Brixen Bressanone

and gemstones. Attached were also the brooch-pin with corresponding pin-catch and a large loop so the brooch could also function as a pendant. There are obvious attempts to partially hide some of these attachments below the scrollwork. To understand the construction of the bridal-brooch a photo-manipulated illustration of the attachments is provided (fig. 13).

The back-panel: The polished back-panel is about 0.3 mm thick, with a lozenge pattern (fig. 2). It is fire-gilt on both sides. Between the lines of the pattern, the slightly raised areas glitter with the reflections of both frame foliage in the foreground and surroundings. The outer form of the frame and back-panel follow each other reasonably well and their analytical results match, so are likely to have belonged together before being repurposed in the bridal jewel. The large and many small holes made in the back-panel for the attachments from 1557 are irregular. A few of the used smaller holes though, could very well be from the frame and back-panel's original system of assembly.

Six pearls and their settings: A pearl setting without its pearl was analysed directly in the SEM/EDS detection chamber. Carefully scraped areas on both setting and peg were found to have equally high silver contents (analyses 11.4 and 11.1 with 97.2% and 97.1% Ag, respectively).

Pearls of that date must be natural – collected from shells on the seabed. Their individual settings look very much the same even though they vary in size to fit each pearl (fig. 14). The close similarity of their alloy composition indicates that the settings were produced together with their pegs. All their outer silver surfaces are gilt.

The earliest prints (figs 3 and 4) of the front and back of the brooch show that in 1675 it had as many as nine pearl settings. Holes in the back-panel (fig. 2) and the small tubular components in the rebuilt frame centre match this (fig.13). The pearls with their pegs may originally have been pressed into wood, bone or heavy leather before being reused in the jewel. They seem too long to have been inserted into a book binding, but possibly a bishop's staff, other clerical decoration or even a royal

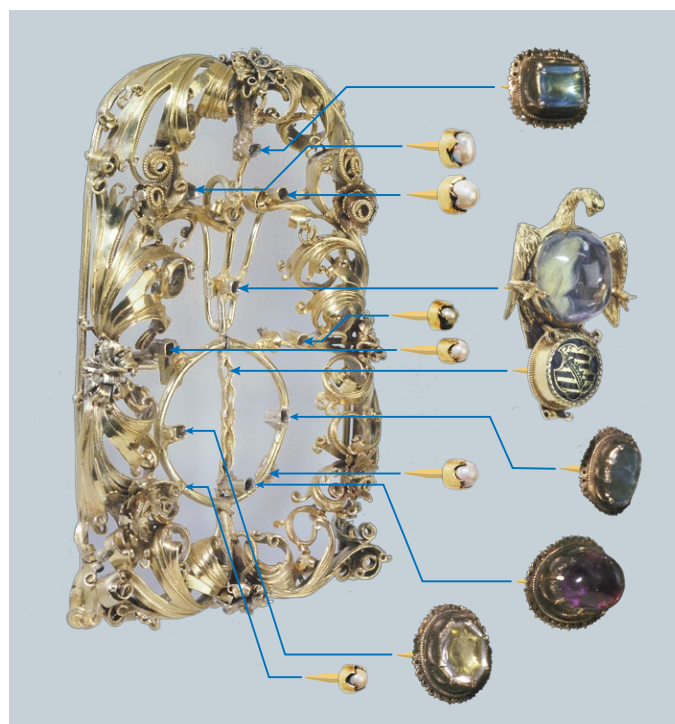


Fig. 13.
Exploded illustration of the construction of the bridal jewel, without the back-panel. Photos by the National Museum of Denmark 1986 are the basis for this computer manipulation by photographer Svend Erik Andersen 2022

sceptre or orb, if made with a base of wood or other organic materials. The pearls could not have been taken from the sceptre or orb registered among the king's silverware in 1557 (see below), however, the missing hat ornament that Dorothea had had made for the king could be a clue to the origin of the pearl pegs.



Fig. 14.
The six pearls in mounts are shown during reassembly (with their pegs fastened into soft cardboard). Photo: National Museum of Denmark 1986



Fig. 15.

The four separate gemstones in their settings are here shown during reassembly (with their pegs fastened into soft cardboard). From left to right are the two rock crystals with table-cut upper surfaces and coloured yellow and light blue foils behind, the cabochon amethyst and last, the blue rose-cut sapphire. Photo: National Museum of Denmark 1986

The four stones in settings: The shapes of the settings for the four separate gemstones differ to fit the individual stones but are of similar construction, suggesting they come from one workshop (fig. 15). Each setting has a band of beaded wire, under which the backing of the setting protrudes to form an edge of openwork ornamentation. The fire gilding covers all of the front surfaces and the openwork edges. The backs of each setting have rough areas with surplus silver solder where the silver pegs were attached, as also noted for the pelican. The analyses of the setting of the octagonal rock crystal (nos 9.2, 9.6), give an average of 98% silver. This differs in composition from the pegs, where two analyses (peg from the setting mentioned and that of the sapphire's (nos 9.5, 8.2, 8 and 13) show 87.1%, 83.4%, 83.1% and 84.6% Ag. These very low silver contents match that of the pin-catch on the frame and its big necklace chain loop (no. 14 and 17 with 84.7% and 87.1% Ag). Judging from the analyses and appearance it is clear that these roughly made parts are secondary. It seems, however, that the rest of the frame's more crudely made parts, with varying higher silver contents, are also connected to this secondary group.

All the parts examined predate most hallmark regulations for jewellery and unsurprisingly no marks were found. The analytic results can be compared with regulations from 1515 stating that

silverware should contain at least 15 lod silver (= 93.8% Ag), but quality was then difficult to control (Galster 1972). According to Jakobsen (2022:12-14) the regulation only counted in some cities in the period 1514-1537. The quality permitted before 1608, however, was not lower than 14 lod (87.5 % Ag).

We presume that the four gemstones may originally have been sewn onto fabric through the openwork edges of their settings. The largest stone is a cabochon drop-shaped amethyst (c. 2.4 x 1.9 cm). The oval clear blue sapphire has an upper surface of facets.¹² This rose cut seems to have been introduced in Europe for diamonds in the early sixteenth century. The two other stones are clear rock crystals polished on the front in the table-cut facet technique, known as emerald cut, a technique known to have been used even earlier. They have simple rounded backs. The lower right rock crystal is octagonal and has a yellow reflecting foil behind. The rectangular crystal placed above the pelican is backed by a light blue foil. In this manner, the rock crystals imitate more precious gemstones.

Based on this dating of the introduction of the rose cut, the four separately mounted stones could be imagined to have been sewn onto Dorothea's wedding gown or on a robe for the couple's coronation in 1537.

¹² Erichsen and Møhlenfeldt Jensen 2004, p. 42-4; Nielsen, 1871, pp. 97-123.

Jewellery and regalia of the royal couple

Compared to fine European jewellery among royalty of the period, the bridal-brooch appears large and outlandish, though it is eye-catching and consists of elegant individual parts.

The mature queen clearly had a sense of elegance as is evident from the royal couple's clothing as seen in contemporary portrait paintings. The pieces worn by Dorothea in the portraits gives

insights into the type of jewellery that she wore, or at least was happy being shown as wearing: from a pair of undated full figure portraits of the royal couple one can observe their relatively moderate use of jewellery (figs 16 and 17),¹³ possibly due to their strict Lutheran outlook on life and a desire to show moderation as role models to their subjects. Dorothea's pendant and belt-end



Figs 16-17.

Portraits of Christian III (194 cm x 99 cm) and Dorothea (194 cm x 99.5 cm). It is the narrow chain around the queen's neck and parts of its pendant that have the colour of silver. Inventory no. Kb 189 and Kb 190, Schlossmuseum Sonderhausen in Thuringia. Photo: 2007

¹³ According to preserved notes the portraits may have been a gift from Dorothea to Günther of Schwarzburg-Blankenburg in about 1560. With Christian's death in 1559 the paintings might be earlier.



Fig. 18.
Dorothea, Queen of Denmark. Oil on copper c. 1550. 55 x 52 cm.
Artist (attributed): Jakob Binck, inventory no. R 215, Museum of
National History, Frederiksborg Castle, © Photo: Ole Haupt



Fig. 19.
Dorothea, Queen of Denmark, Artist: Jakob Binck, (attributed), Oil
on canvas, without frame 80.5 x 62 cm, inventory no. MKH 166x1,
Museum Kolding

at the hem of her dress seem to some degree to be matching ornaments. Dorothea in the painting (fig. 16) apparently wears a single braided/knitted silver necklace and that strongly supports the theory that in the first half of the 16th century and maybe later, she and her close family may sometimes have worn pieces that were less expensive than those in solid gold.

As in several extant portraits, the king is seen wearing a golden gem-studded figure of a mythical beast. Two other portraits of Dorothea survive, dated about 1550 and attributed to the artist Jakob Binck (see below) originating from Cologne (1500-1569) (figs 18 and 19). The pieces of jewellery seen in portraits of the couple are no longer preserved.

There are surviving inventory lists from 1549, 1551 and 1557 of silverware belonging to King Christian III, indicating that he became more and more prosperous. The lists mention, for example, silverware, swords and regalia. All three lists note a gilded orb with stones and two sceptres, however without any details. Among the regalia the king's crown is mentioned first. The gold crown consisted of 19 parts with stones and pearls.¹⁴ No mention of Dorothea's possessions are preserved with the king's, suggesting that she had independent control over them. This is supported by the fact that there is an account noting

that the queen had her crown dismantled in order to have a hat decoration made for her husband.¹⁵ This hat ornament has not been preserved.

The Danish queen had close connections with Saxony through her daughter Anna, who, with her husband Duke Augustus, from 1553 became the rulers of Saxony. The number of goldsmiths' workshops in Saxony grew significantly during the reign of Augustus: previously there is only scant mention of the profession even being in the area.¹⁶ Anna bought pieces in Nuremberg and Augsburg and employed her own goldsmith in 1555.¹⁷ Dorothea visited her daughter several times in connection with Anna's numerous births and she and Augustus also made return visits. Dorothea must have been influenced by her family's interest in jewellery but in their regular exchange of letters, according to Nagel, there is no mention of any goldsmith's work on which they may have collaborated. From 1555 until his death at Koldinghus in 1559, the king suffered declining health: Dorothea's elevated position would of course be less assured with her eldest son, Frederik, on the throne (Jensen 2007: 75-6, 141).

The royal couple paid for several weddings, for example that of

¹⁵ Ibid; Jensen 2007, p. 240.

¹⁶ Personal communication with C. Nagel and Nagel 2008, pp. 39-58.

¹⁷ Kappel and Brink 2009, p. 14; ibid 2010, p. 16.

¹⁴ Boesen 1986, p. 27.

Dorthe Lange, daughter of a noble couple, who had been raised and served at the queen's court. Dorothea had a keen interest in selecting suitable candidates for the marriages of young women at the court (Jensen 2007:78-9). This is consistent with her personal interest in the choice of the bridal-brooch gift.

In 1557 the king was still concerned about the state of the country's finances and placed restrictions on the extravagant spending of both high-ranking and ordinary citizens' wedding celebrations.¹⁸ The bridal-brooch gift from the queen that same year may possibly have reflected this cost consciousness, in reducing the need for new bridal accessories among the wealthy families that used the town-hall. Furthermore the construction of the bridal-brooch of re-used parts also reflects the cost-consciousness of the queen. The splendour of it however clearly was intended to contribute to Dorothea's status and to cement the bonds with the mayors (mostly wealthy merchants) of Copenhagen by giving the opportunity for their daughters to use an ornament directly connected to the royal family. The central pelican at the same time symbolising that she as queen was prepared to sacrifice herself for her subjects.

During the autumn and fall of 1557, the royal couple hosted an extended visit to Copenhagen from Augustus of Saxony and Anna. When presenting the gift Dorothea may have as well been rewarding the mayors for their loyal services during this visit.

Artists associated with the royal family

It is reasonable to believe that favoured artistic craftsmen in the service of the royal couple influenced or took some part in the creation of the bridal-brooch. From 1531 the portrait painter Jakob Binck mainly worked for the Danish courts, primarily for Christian and Dorothea. In addition to the portraits of the couple painted around the year 1550 (figs 18 and 19), he is believed to have contributed to the staging of ceremonies. With Dorothea he attended Anna and Augustus' wedding and, as a widely travelled, versatile artist and connoisseur of the fashion of the time, produced graphics in the German *kleinmeister* school. Being in Copenhagen from the winter 1549-1550 he is thought to have made drawings for the creation of the king's still preserved imperial sword. Binck stayed until August 1551, after which he left the country more permanently.¹⁹

Johan Siebe (Johan Siebe Sybenius), born in 1513 in Flanders, was a goldsmith and instrument maker who also worked for the royal couple from the 1530s with both goldsmithing and clocks. In that period he was a registered goldsmith in Copenhagen and, following the dowager queen, moved to Kolding in 1559 (Jakobsen 2022). From Boesen's research (Boesen 1986) it is assumed that it was he who carried out the silver work on the king's sword and scabbard, but the surviving documentation from an account dated December 1551 only proves a payment to him for the gilding. Boesen does not doubt that Siebe also carried out the goldsmith's work on the sword and presumes that the king had partly influenced its ornamentation. From a contemporary source it is known that Christian III enjoyed observing skilled artists working with gold: he frequently spent time with Johan Siebe, often offering advice and sometimes assistance to the workers and contributed to a better and more appropriate design.²⁰ The king shared this interest in goldsmith's work with his son-in-law Augustus.²¹ It might be inferred that, with the king's commitment and understanding of working in precious metal, it is possible that there was personal involvement of the king or queen during the construction of the bridal-brooch and that Johan Siebe may have been following the royal couple's wishes, but without possessing the artistic qualities of Jakob Binck.

18 Kolderup-Rosenvinge 1824, p. 180 for 1537 §15 for 1539 p. 195 §

12: Christian III first attempted to control expenses spent on wedding by merchants and citizens, which he had to withdraw two years later, but (p. 248-249 § 4) in 1557 he specifically gives limits for the number of guests and the amount of food which could be spent on weddings held in market towns by merchants, councillors and mayors – and also he specifies that the wedding should be held in private homes – so the fact that the mayors and councillors of Copenhagen were allowed to use the Town Hall for their parties was an exception.

19 The sword's blade is steel, but the hilt and scabbard are of ornamented gilded silver with small enamels and set diamonds Boesen 1986, pp. 27-37, 230-1.

20 *ibid*, pp. 33-7.

21 Kappel and Brink 2009, p. 14; *ibid* 2010, p. 16.

Discussion

The pelican with Dorothea's personal shield and the year 1557 on its extended tail is clearly a key to understanding the bridal-brooch. That the year 1557 was the year of Anna and Augustus' visit raises the possibility that Anna, with her close connections to goldsmiths in South Germany, could have brought pieces for the brooch with her to Denmark.²² Unfortunately nothing is mentioned from letters preserved to and from her mother and, as Anna at that time is thought to have considered only gold jewellery appropriate for her family, it is unlikely that the pelican figure was among the gifts for her family. Dorothea could of course have obtained the piece elsewhere but she visited the young couple in Saxony several times before the events of that year so it is possible that the pelican was altered with the coat of arms during one of these visits.

Another possibility is that the pelican had a history in the family, from the time before Dorothea and her husband gained power in Denmark. It is possible that she or her first born, Anna, may have worn the pelican as a necklace pendant (before it was extended), just as other nobles of the time adorned themselves or their children with the symbolic pelican in her piety. An example is a rather stylized pelican in silver with a rock crystal breast topped with a crucifix now preserved in the Germanisches Nationalmuseum in Nuremberg (Hackenbroch 1979:109). In paintings, we find this pendant pelican motif on a portrait by Jean Hey from about 1490 of Margaret of Austria as a child and also in the so-called pelican portrait of Queen Elizabeth I of England as an adult, attributed to Nicholas Hilliard in 1575 and now in the Walker Art Gallery, Liverpool.

If not for a necklace, the bird may have been sewn to a garment or could it even have been part of Dorothea's coronation crown, which we know was dismantled in order to use the precious stones in a hat ornament for Christian. The elegant pelican, the stones and pearls in settings here examined appear simpler than the very ornamented and often enamelled gold jewellery produced for European princely courts in the middle and late sixteenth century. Among these is the famous Danish gold crown from 1596 for the coronation of Frederik II's son Christian IV that includes the same motif, a pelican with its spread wings and the small chicks at its feet, made in gold ornamented with enamel and diamonds. Nothing suggests that the crown's use of the pelican was inspired by that of the bridal-brooch, but the sentiment conveyed, of a monarch's sacrifice for his subjects, is the same.

The technical and artistic skills of making the frame's original parts and the pelican are admirable but the process behind the construction of the brooch must be considered in further detail. The seventeenth century prints (figs 3 and 4) of the front and back of the brooch show that in 1675 it then had as many as nine pearl settings. The fact that nine pearls were presumably already mounted with pegs may partly explain why the bridal piece was

constructed in an unconventional way, using additional soldered silver pegs – one behind each of the four set stones and two on the pelican. However, the task of soldering on these six new pegs was done with some technical skill, because the mounted stones, the coloured foils beneath them and the coat of arms with enamel had to be protected. These could only withstand limited heating. The edges of the settings are quite well preserved. It may have been possible to keep the stones in their settings cooled in wet sand or tissue while soldering pegs on their backs, but protecting the coloured coating on the foil would have been even more problematic. To spare these fragile components, the stones and foil may have been carefully pressed/winkled out via drilled holes on the back of the mounts – just where pegs were later to be soldered on. If that was done, the coloured foil would also have to be cared for in some way. At this stage an out-dated coat of arms could have been exchanged.

It is the jewel's irregular shaped parts that governed the position of those added when the brooch was commissioned. These are the components with the lowest silver contents and the secondary frame components identified by analysis (see above), apparently put together from whatever was available. It is possible that goldsmith and instrument builder Johan Siebe (see above), with many years of service to the royal couple, together with a less skilled craftsman, was involved in creating the brooch.

The mayors of Copenhagen must surely have appreciated the spectacular bridal-brooch and held Queen Dorothea in great respect for the piece to be preserved to this day. At some stage after 1675 the pin and pin-catch of the brooch had broken, seemingly in use and maybe the fashion-conscious brides also lost interest in it. Thereafter the safe-box of the city hall kept it from the melting pot, almost forgotten by everyone but historians. As described above, the brooch seems to have undergone very few alterations from 1557 until now and can be followed in the contemporary graphical prints. In the last 150 years, the brooch has passed into several museum collections. There seem to have been no new parts added from when the stones and pearls of the brooch were re-arranged in about 1867 and put back in 1943. The publications of the piece illustrate its national importance and the speculation it has provoked.

As discussed above, the theory of the frame originally being a belt-end has been found to be unlikely. This is not only due to its considerable size but also because of the three small loops along its straight edge. The examination of the piece (see above) indicated that they were original but they are too weak to have held the weight of the frame to the end of a belt, however, small ornaments could have hung from them. This and its shape lead us to suggest that the frame originally had been part of a pax or reliquary since some reliquary crosses are embellished with small hanging pendants. From comparison with the impressive pieces of European scroll-work described above, the frame would appear to date from the very late fifteenth or early sixteenth century.

²² It is known, from thank-you letters, that she had brought a ring and a small cross for her youngest brother and a chain and a precious jewel for her sister (Kappel 2009, p. 92; *ibid* 2010, p. 94).

Concluding remarks

We can only guess at the reasons for the clumsiness of the construction and the reuse of important parts: whether this is connected to Dorothea being in a hurry because she wanted to deliver the gift while Anna and Augustus were visiting, we will never know. It is also possible that slightly later the same year it was presented to the mayors of Copenhagen as a gift in gratitude for their services. Dorothea may well have overlooked the appearance of the back of the jewel, as the splendour of the front overshadowed this. Her gift's symbolic value would likely have been more important than its qualities for practical use. The older constituent parts, in addition to their individual beauty, may, as we have suggested, have had personal meanings for her. The pax may have come from family, such as one of Dorothea's or Christian's older relatives, from before the Reformation. If, on the other hand, it came into the couple's possession as a result of the disestablishment of the Church by the king, and its original central group of Christian figures removed, the frame may have simply been saved from melting down because of its elegance. It must be assumed that the queen, in 1557, considered it unlikely that her subjects would recognize its original use.

The brooch is one of the few items having a certain provenance to this royal couple and is still preserved almost intact to the present day. Publishing here our hope is to bring more attention to the fine components of the jewel and perhaps finding further references or comparable pieces.

Acknowledgements

We with gratitude thank art-historian, Senior Curator Jørgen Hein, The Royal Danish Collections, and Professor Vagn F. Buchwald for their earlier contributions and art-historian, Collection Researcher Christine Nagel for her communication in 2022 and the institutions that have permitted the use of photographs here presented. We are as well grateful for the special help received from the editor and contributions from colleagues and family.

References

- Andersen, C., 1867. *Rosenborg. Mindeblade fra de danske kongers kronologiske samling*. Copenhagen, p. 16.
- Boesen, G., 1986. *Danmarks riges regalier / The Danish coronation regalia*. Copenhagen, Gyldendal, pp. 20-37, 230-1.
- Bork, E. van, Creange, S. and Joosten, I., 2011. 'Blisters in fire gilding on silver: An investigation into blister formation and the effect of conservation treatments'. *Metal 2010, Proceedings of the interim meeting of the ICOM-CC Metal Working Group*, USA, ICOM, pp. 286-93.
- Erichsen, J. and Møhlenfeldt Jensen, J., 2004. *Queen Dorothea's bridal-jewel – Weddings in 16th century Copenhagen*. Copenhagen, Københavns Bymuseum/Museum of Copenhagen, pp. 42-4, 46, 54-6, 86-91.
- Erichsen, J. and Møhlenfeldt Jensen, J., 2006. 'Ægteskab og Brudesmykke'. *Skalk*, no. 5, Højbjerg, Denmark, pp. 20-8.
- Fritz, J.M., 1982. *Goldschmiedekunst der Gotik in Mitteleuropa*. München, Verlag C. H. Beck, cat. figs 705-7, 766 and pp. 283, 292.
- Galster, G., 1972. *Unionstidens udmøntninger, Danmark og Norge 1397-1540 – Sverige 1363-1521*, Copenhagen, p. 25.
- Hackenbroch, Y., 1979. *Renaissance Jewellery*. München, Verlag C. H. Beck, p. 109, 119.
- Hassø, A. G. 1936-38. 'Kong Kristian III's og Dronning Dorotheas Kroning den 12. August 1537'. *Kirkehistoriske Samlinger 6. Række*, 2. Bind, Copenhagen, p. 317.
<https://www.ronlev.dk/bibliotek/3433.pdf>
- Hersleb, H.C., 1776. Om brude-smykket, som Dronning Dorothea, Kong Christian den 3dies Gemahl Anno 1557 har foræret til Kiöbenhavns Raadstue, samt andre til Raadstuen gjorde Foræringer og Antiquiteter som er bevaret, Copenhagen.
- Jakobsen, H., 2022. *Danske guld- og sølvsmedemærker før 1870*. University of Southern Denmark, pp. 12-14, 32, 469.
- Jensen, V., 2007. Dorothea. *Guds vilje – og dronningens*. Copenhagen, Gads Forlag, pp. 20-2, 34-7, 42-3, 75-6, 78-9, 89, 100-3, 105-6, 115-7, 141, 240.
- Kappel, J., 2009. 'Zwischen Koldinghus und Annaberg'. eds. Jutta Kappel and Claudia Brink, *Mit Fortuna übers Meer: Sachsen und Dänemark, Ehen und Allianzen im Spiegel der Kunst (1548-1709)*, Dresden, Deutscher Kunstverlag, pp. 91-5.
- Kappel, J., 2010. 'Mellem Koldinghus og Annaberg'. eds. Hein, J. and Kristensen, P., *Tro . Styrke . Kærlighed, Danmark og Sachsen – ægteskaber, politiske og kulturelle forbindelser 1548-1709*, Denmark, Rosenberg, pp. 93-7.
- Kappel, J. and Brink, C., 2009. 'Die Kunst der Allianz'. eds. Jutta Kappel and Claudia Brink, *Mit Fortuna übers Meer: Sachsen und Dänemark, Ehen und Allianzen im Spiegel der Kunst (1548-1709)*, Dresden, Deutscher Kunstverlag, pp. 13-23.
- Kappel, J. and Brink, C., 2010. 'Kunst under alliancen'. eds. Hein, J. and Kristensen, P., *Tro . Styrke . Kærlighed, Danmark og Sachsen – ægteskaber, politiske og kulturelle forbindelser 1548-1709*, Denmark, Rosenberg, pp. 15-25.
- Kolderup-Rosenvinge, J.L.A., 1824. *Danske recesser og ordinantser af kongerne af den oldenborgske stamme. Samling af danske love part 4. Kong Christian den tredies Kjøbenhavnske reces 1557*, København, Gyldendalske Boghandels Forlag, pp. 248-9.
- Nagel, C., 2008. 'Schmuck der sächsischen Kurfürsten um 1600. Untersuchung zum Umgang mit Schmuck und dessen Funktionen im Rahmen fürstlicher Repräsentation und Kommunikation'. A dissertation from Technical University Dresden, pp. 39-58.
- Nielsen, O., 1871: P. Resens Efterretninger om Københavns Rådhus. *Danske Samlinger*, Vol. 6, Copenhagen, pp. 97-123.
- Northover, P. and Anheuser, K. 2000. 'Gilding in Britain: Celtic, Roman and Saxon'. In ed. Drayman-Weisser, T., *Gilded Metals*, London, pp. 109-121.
- Ramskov, C., 2018. 'Dronning Dorotheas brudesmykke/ Queen Dorothea's bridal ornament'. In ed. Thulstrup, T.C., *Magtens Smykker/ The Splendor of Power*, Denmark, Koldinghus, pp. 82-99.
- Resen, P.H., 1675. *Descriptio et illustratio Samsoæ insulæ maris Balthici præmissa uti specimen Theatri Daniæ sive potius Atlantis Danici sequentibus annis in lucem prodituri*. pp. 62-3.
- Stemann-Petersen, K., 2011. 'Queen Dorothea's gift to the City of Copenhagen – Analyses and interpretation of its late gothic and renaissance metalwork'. *Zeitschrift für Kunsttechnologie und Konservierung*, heft 2, Worms am Rhein, Wernerche Verlagsgesellschaft, pp. 169-86.
- Troels-Lund, T., 1914-15. *Dagligliv i Norden i det sekstende århundrede*, X Book, Forberedelse til bryllup, 4th ed. Gyldendalske Boghandel, Copenhagen, pp. 162-3. Internet link accessed March 2023: <http://runeberg.org/dagligt/10/0162.html>

Jewellery Studies Notes for contributors - revised version for 2021 onwards

Please go to www.societyofjewelleryhistorians.ac.uk/js_notes for more information

Jewellery Studies is the peer-reviewed academic journal of The Society of Jewellery Historians. The readers of *Jewellery Studies* come from a wide range of disciplines with an interest in the history of jewellery and gemstones. *Jewellery Studies* was published in hard copy form from 1977 to 2012, and has been an electronic publication since 2015, which facilitates more rapid publication. Papers published from December 2020 (vol. 2020/3) are Open Access.

The Editor welcomes contributions of unpublished research (around 4000 – max. 8000 words); you do not have to be a member of the Society. Under the terms of Open Access the author retains the copyright in any paper accepted for publication by the

Society in *Jewellery Studies*, which gives you, the author, the freedom to use and reuse the paper and/or the research pertaining to it in any form. We do not charge authors for publication nor do we pay a fee. Papers should be original research, submitted by the author(s). If it, or any part of it, has previously been published in another language or format, or is being submitted to another publisher, please consult with the editor before sending.

Papers are appraised by at least two appropriate reviewers and are also subject to copy editing. The edited text, with any editorial queries, will be returned to the author for approval, and clarification where necessary, before publication. The Editor's decision is final.

Your paper should be written in English. If English is not your first language, your writing should be checked by a native speaker before it is submitted for consideration.

Papers should be submitted electronically as a doc text without formatting. They should include:

- Title and Author(s) name(s)
- Brief biography of author(s), relevant affiliations, author's email address (preferred but optional)
- Abstract (c. 300 words) outlining the content and stating its approach e.g. archival study/ practising jeweller/technical study
- Brief concluding paragraph(s)
- Acknowledgements - where relevant
- Bibliography in alphabetical author order - at the end of the paper. [details on website]
- Footnotes should only be used when essential to avoid a break in the argument of the text. They should be numbered in the text with a superscript numeral directly after punctuation, e.g. ...in Paris.¹

Illustrations - There is no limit to the number of relevant illustrations.

- Illustrations - submitted as high-resolution digital files (TIF, PNG or JPG format), ideally at a minimum of 200dpi when at a size of 216mm wide, should be submitted by email or via a file transfer website. Where appropriate and/or possible, clipping paths or alpha channels should be included in the file allowing for a transparent background around objects.
- Captions for illustrations, must be listed at the end of the text. Do not embed captions or illustrations in your text. Number illustrations consecutively, at the appropriate place in the paper (fig. 1), (figs 2 and 3). Captions should explain what the illustration shows, pointing out relevant details and include, as appropriate, maker, origin, date, materials, dimensions, owner and accession or inventory number, photographer. Copyright information is essential.

Contributors are responsible for obtaining permissions to use the images from the copyright holder, where relevant, and for paying any reproduction fees.

Go to www.societyofjewelleryhistorians.ac.uk/js_notes for details of style

Papers should be sent to the Editor: js@societyofjewelleryhistorians.ac.uk



The Society of
**JEWELLERY
HISTORIANS**