

Conservation of the cope of Bishop Ramon de Bellera

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RESUM

El Museu Episcopal de Vic va confiar al taller de conservació tèxtil de l'Abegg-Stiftung la capa pluvial del bisbe Ramon de Bellera, una peça *opus anglicanum* del segle XIV feta de vellut vermell. Al segle XVII la capa es va dividir en diverses parts per fer-ne dues dalmàtiques, un drap de faristol i una enquadernació de llibre. El 1899 aquestes peces es van desmuntar i es va tornar a reconstruir la capa. Per tant, el dilema amb què es van trobar els conservadors tèxtils fou si s'havia de mantenir aquesta reconstrucció o no. L'article que publiquem és un resum de l'informe de conservació.

Paraules clau: Conservació, bisbe Ramon de Bellera, brodat, *opus anglicanum*.

ABSTRACT

Conservation of the cope of Bishop Ramon de Bellera

The Museu Episcopal de Vic entrusted the Abegg-Stiftung's textile conservation workshop with the cope of Bishop Ramon de Bellera, a 14th-century «opus anglicanum» vestment made of red velvet. The cope had been cut into pieces in the 17th century and made up into two dalmatics, a lectern cloth and a book binding. These, in turn, were dismantled in 1899 and the cope was subsequently reconstructed. Thus, the main question facing the textile conservators was whether this reconstruction should be preserved or not. The article published here is an abridged version of the conservation report.

Key words: Conservation, Bishop Ramon de Bellera, embroidery, «opus anglicanum».

The Museu Episcopal de Vic, an institution the Abegg-Stiftung has been collaborating with for many years, decided to entrust to the Abegg-Stiftung's conservation workshop an embroidered cope made of red velvet.[1] Before the actual treatment of this object could commence, however, it first had to be examined in great detail. The analyses of the materials and techniques used and appraisal of the cope's condition took about one month. The actual conservation and restoration work was performed by textile conservators and students of the Abegg-Stiftung between early June and the end of August 2005. The article published here is an abridged version of the conservation report.

The exciting and eventful history of this cope, an object of significance to both the history of textiles and that of culture generally, confronted the textile conservators with some difficult decisions, which is why this report will begin by outlining that same history.[2]

The cope has been associated with Ramon de Bellera, Bishop of Vic. Although the inventories of the Cathedral of Vic dating from this bishop's term of office (1352–1377) do not include any cope that could be identified as the one submitted for treatment here, the inventories for the years 1402–1425 and 1443–1466 mention a cope made of velvet belonging to one «Monsenyor de Bellera». According to a necrologue from Vic, Bishop Bellera shortly before his death bequeathed to the cathedral two vestments, one of which was made of velvet. The cope mentioned in the necrologue and in the aforementioned inventories can be identified as the object we are dealing with here.

Probably in the mid-seventeenth century, the cope was cut into pieces and the costly material used to make two dalmatics, several appliqués for other vestments, a lectern



Cope of Bishop Ramon de Bellera. General view of the reconstruction of 1899

hanging and a missal binding, all of which remained, and were used, in the cathedral. At the end of the nineteenth century, however, it became apparent that all these items were in fact fragments of a single piece of embroidery and that they could be reassembled to reconstruct a cope. In 1899, therefore, the fragments were sewn back together again, although there is no detailed record describing how this was done.

1. Description

The decorative embroidery on the cope takes the form of three rows of arcades placed one on top of the other, but staggered. While the upper and middle rows show the eleven apostles and John the Baptist,[3] the lower arcade shows various other saints, the figures being identifiable from the inscriptions and attributes. The saints are lined up in a row on the two symmetrical halves of the vestment, meaning that each figure has a counterpart occupying the same place on the opposite half of the cope. The centre back, meanwhile, features three scenes, namely the Adoration of the Magi, the Nativity and the Coronation of the Virgin Mary, positioned one on top of the other under much wider arcades.

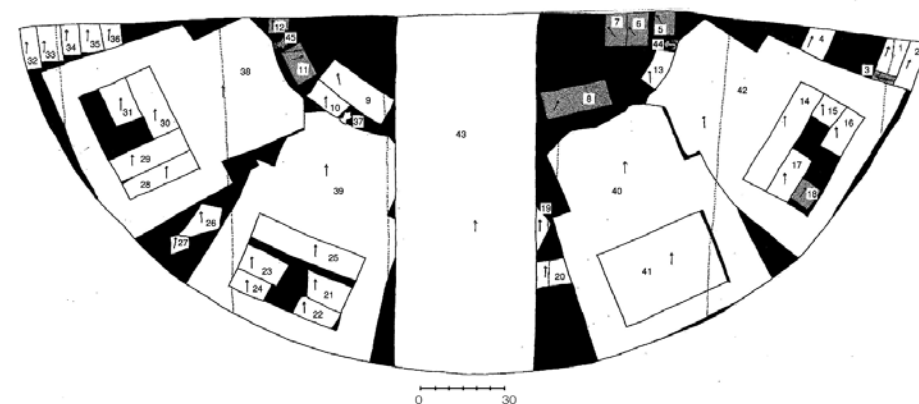


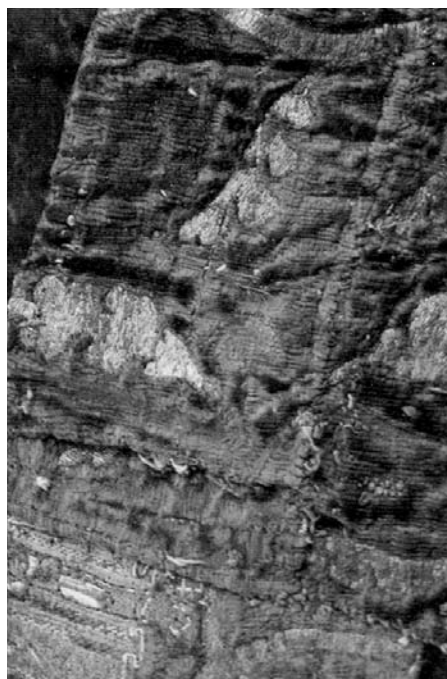
Fig. 1. Reconstruction of 1899: Arrangement of the original fragments (numbered 1-45); incorrectly positioned fragments are coloured in grey

The motifs were embroidered onto red velvet using metal thread and silk. The original silk velvet[4] consists of five panels of fabric and two triangular patches of the same fabric sewn together; these panels have been preserved in full loom width, with selvages on either side (the dotted lines in fig. 1). The selvages have been used as seam allowances. In the condition the cope is in today, the width of the five panels varies between 58 and 60,5 cm, as some of the fragments are misshapen or have had to be pieced together again.

The foundation for the embroidery consists of three layers of fabric: the aforementioned red velvet, which has been reinforced throughout with an undyed linen backing material, while on top of the velvet there is a fine light-brown silk tabby.[5] Those parts of the pale brown silk that were still visible after embroidering were cut away along the outer contours of the motifs.

The embroidery was executed using gold and silver metal thread and coloured silk threads. The figures and tendril ornaments are worked almost exclusively in gold thread. Only the faces, hair, hands and feet as well as the linings of the figures' robes are embroidered in coloured silk. The gold thread embroidery was done by underside couching, a technique in which the gold thread is laid on the fabric and then fixed in place with the aid of a couching thread running along the underside of the fabric. As the couching thread remains hidden, the gold on the right side appears as a shining, homogeneous surface.

To create a relief-like effect, especially in the drapery, linen cord was sometimes worked into the embroidery as well. The stitching in those parts of the cope that are embroidered in silk is very fine in most cases. Only the stitching used for the shoes of the figures in the lower part of the design is comparatively coarser.



Embroidery fragments sewn together by overlapping (1899 reconstruction)

2. Reconstruction of 1899

Forty-five fragments of the original embroidery were available for the reconstruction of 1899 (numbered 1-45 and given in white in fig. 1). To recreate a complete cope, however, these had to be supplemented by 28 pieces of plain red velvet[6] (given in black in fig. 1).

Prior to reconstruction, the original fragments were reassembled as far as possible according to the design, the remains of the seams that connected the original velvet panels doubtless proving helpful here. Only on fragments 11 and 3 these seams were not recognised or, for some other reason, an incorrect placement was preferred. The original fragments were then attached

to the plain red velvet either edge to edge, or by overlapping, or with a seam allowance on the reverse, the seams being overcast in each case.[7]

Some of the smaller original fragments were appliquéd onto the added pieces of velvet, as was the case with nos. 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 and, at least in part, nos. 18, 26 and 27 (fig. 1). The entire cope was lined with a waxed red linen lining.[8] Six of the smaller rectangular fragments (nos. 3, 5, 6, 7, 11 and 18) were positioned the wrong way round for the direction of the nap (fig. 1). Some of the added pieces of velvet were likewise positioned counter to the nap – as became apparent when the vestment was viewed in its entirety.

A fragment of velvet worked into a wide tubular band was attached towards the middle of the upper edge. This velvet is different from that of the added pieces, suggesting that the band was attached merely to facilitate the three-dimensional presentation of the cope and later cut so that the vestment could be stored flat.

As it presented itself, the cope seemed much too short (centre back) in relation to its breadth. If its dimensions are compared to that of other «opus anglicanum» copes dating from the same period, it seems likely that an orphrey (probably some 17 to 25 cm in breadth) is missing. Yet there are no indications (traces) to such a band on the original fragments and it seems that nothing now remains of the original lining either.



Torn embroidery fragment underlaid with a red silk fabric (repair prior to 1899 reconstruction)

3. Condition prior to conservation

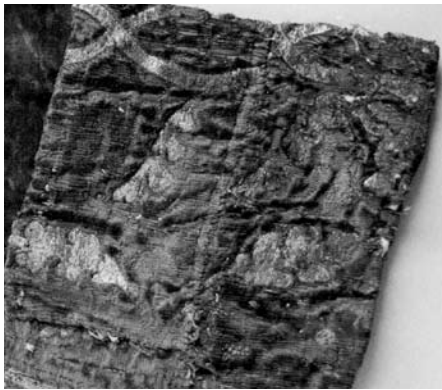
Velvet

Tension between the stiff metal embroidery and the soft and pliable velvet has caused the velvet between the embroidered motifs to ripple over the years both through use and as a result of ageing. The mechanical strain on those areas that were raised and hence exposed as a result of this rippling has caused the pile to wear away; the weave is often broken here too.

Many of the original fragments have holes and tears in the fabric, some of which have been either patched by being underlaid with a red silk fabric[9] or darned using red thread. Traces of seams are still visible on many of the original fragments, the needle



Detail of the reconstruction of 1899



Embroidery fragments sewn together by overlapping and with folded edges (1899 reconstruction)



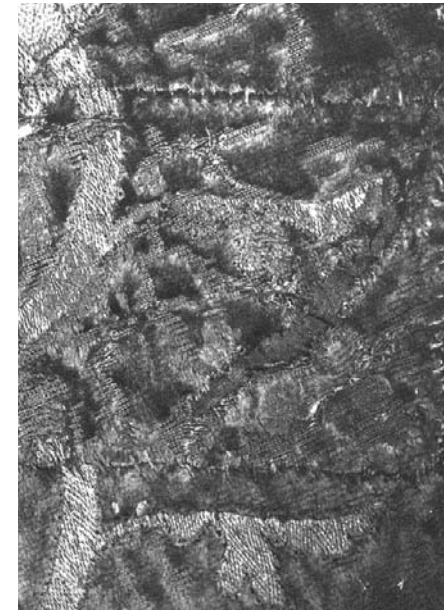
Effects of strain and tractive forces are visible at the seams between the embroidery fragments and the added pieces of velvet

holes in some cases containing remains of the thread with which they were sewn together. It is possible that these seams date from the production of the dalmatics.

During reconstruction, most of the original fragments were sewn together flush, even if this meant that the pattern did not always match exactly and some of the fragments became misshapen. Another consequence of this was that the original velvet was too wide in places, as is evident from the overlapping, crinkling and bulging in some parts of the reconstructed cope. This patchwork-style handling of the original fragments and added pieces of velvet put quite a strain on the seams between the two; this was most apparent in those places in which tractive force had actually pulled the seam apart. At the outer edges of the cope, in particular, parts of the original fragments were made to serve as seam allowances and so folded over or otherwise hidden. The various darned, underlaid and sewn repairs likewise generate tension, which in turn has led to various tears in the more fragile areas of the fabric.

Most of the velvet fragments are stained with wax. On one of the underlaid areas, on fragment 24, the wax stain not only covers the original fragment, but spills over onto the underlaid patch, from which it can be concluded that the vestment (dalmatic or cope) was still in use even after the repairs were made.

Fading was evident only in the thread used for the reconstruction, some of which had lost almost all its original colour.



Wax stains cover the fragment and the fabric underneath (repair prior to 1899 reconstruction)

Embroidery

The embroidery, both that executed in metal thread and that in silk, has worn away over the years. The figures are very poorly preserved and have to a large extent been destroyed, particularly in the incarnate areas. No more than traces of the original black outlines have survived. The linen cord used to create relief like effects is exposed in several places, meaning that the metal embroidery has either not survived at all, or only in part. Some of the cords have broken and can be seen sticking out of the embroidery that covers them.[10]

Evidence of corrosion (silver sulphate) is visible on some of the areas embroidered with metal thread, the silver thread being almost completely black and the gold thread black only in places.

Measuring the pH

In order to work out a conservation concept and clarify the extent to which the cope could be moistened, fragment 4, which had been appliquéd to the reconstruction velvet, was removed. Thus the reverse with the coarse linen used to reinforce the embroidery came to the fore and a large brownish stain was visible, which can be attributed to the fabric having come into contact with water. The pH of one of the fibres taken from this area did not differ visibly from that of the water used (approx. pH 7), indicating that the fabric is pH-neutral. There was therefore no risk of the fibres disintegrating upon moistening as a result of over-acidification.

4. Conservation concept

The two main aims of the conservation project were the preservation and the presentation of the embroidered fragments in their original form as a cope. The most important question facing the textile conservators of the Abegg Stiftung was whether the reconstruction of 1899 – which after all is now an integral part of the object's history – could be preserved. A list of the arguments for and against this was drawn up to help reach a decision:

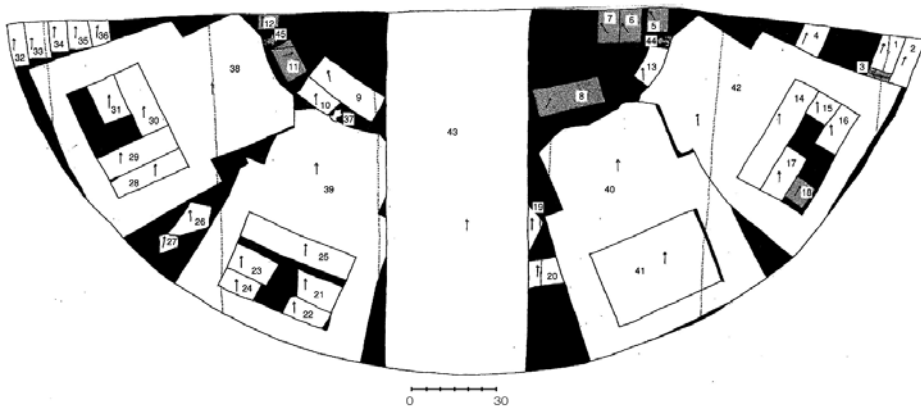


Fig. 1. Reconstruction of 1899: Arrangement of the original fragments (numbered 1-45); incorrectly positioned fragments are coloured in grey

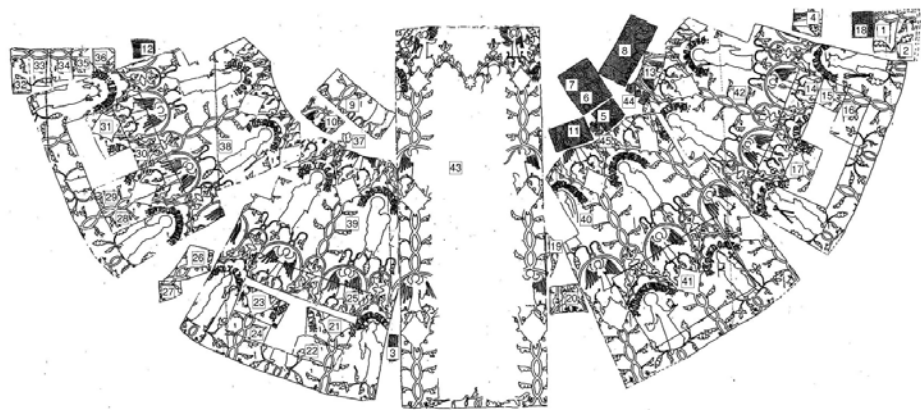


Fig. 2. Reconservation at the Abegg-Stiftung in 2005 with the formerly incorrectly positioned original fragments placed correctly (coloured in grey)

Arguments for the reconservation of the cope

If the original fragments were to be separated from the added pieces of velvet, the misshaping, bulging and folded-over edges brought about by the reconstruction of 1899 could be reduced or even eliminated altogether.

Incorrectly positioned fragments could be positioned correctly (cf. the grey areas in figs 1 and 2) in such a case. Rearranging the fragments with overlapping or folded-over edges would render visible more of the original substance.

The dimensions and shape of the reconstructed cope could be improved.

The pieces of velvet added in 1899 were inserted without regard for the direction of the nap. This means that light falling on the cope is refracted differently on each fragment, which spoils the overall visual impact. These added pieces could be replaced by a single piece of support fabric (a modern fabric dyed to match the original), which would have the effect of enhancing the impressive original.

Sewing the original fragments onto this single piece of support fabric would provide proper support for the whole vestment.

The reconstruction of 1899 is certainly part of the object's history, but it dates from a time when the cope was already considered a museum piece – the dalmatics would never have been taken apart, had this not been the case. The reconstruction can therefore be regarded more as a record of the cope's earlier «restoration history» than as a change made while it was still in use.

Arguments against

Reconservation would inevitably result in the loss of still more of the original substance. Old stitching would be lost and the removal of old seams and sewing of new ones expose the cope to physical stress.

There is a more fundamental problem with reconservation, however: it would mean breaking what is now an important rule in modern conservation practice, which is that objects should be preserved in their entirety, i.e. with their history.

Reconservation would mean reassembling the fragments and sewing them onto a support fabric, and there is a risk that if, some years from now, the new arrangement of the fragments, presentation of the cope, or material used were to prove unsatisfactory, it would again have to be unpicked and reconstructed.

Decision in favour of reconservation

After all these arguments had been weighed up, a decision was made in favour of reconservation, even though the reconstruction of 1899 was acknowledged to be evidence of earlier conservation work and hence a historically valuable aspect of the cope's own history. The decisive argument in favour of reconservation was that it offered a chance of providing proper support for and preservation of the individual fragments, while producing an aesthetically pleasing result that would make it easier for museum visitors to appreciate the exhibit.

It was decided that the original fragments should be supplemented with a modern fabric in order to create a complete cope and that this reconstructed cope should be sewn onto

a support fabric using rows of running stitches. Velvet was to be chosen for this purpose so as to retain the characteristics of the original and enhance the homogeneous appearance of the end result.

5. *Planning the work required*

Surface cleaning

Being only slightly soiled, the object could be cleaned by the application of mild suction to the surfaces.

Wax stains

Given the weakened nature of the fibres, the hardened oily wax components could lead to further physical stress in the form of tension and even tears in the velvet. Yet these stains can be regarded as an integral part of the object, as they are clearly a result of the cope having been worn for liturgical purposes.

Preliminary tests to establish whether and how this wax could be dissolved were carried out on small particles of wax removed from the cope. Three low polarity pure solvents and one solvent mixture were tested.[11] In each case, the wax was only softened but not dissolved.

It was clear from these tests that this kind of intervention would be disproportionate. The mechanical strain on the pile of the velvet resulting from the removal of the wax would be excessive and working with solvents is in any case a health risk. The risks the wax stains posed for the properly preserved object, on the other hand, were relatively minor.

Needlework conservation of the individual fragments

After separating the original fragments from the lining and the pieces of velvet added in 1899, the fragments were to be treated only as much as was necessary to stabilise them. Old patches (whether underlaid or darned) were to be unpicked only in those places in which they were causing tension in the velvet and there was a tear, or risk of tearing, at a weak spot nearby. Any large holes were to be underlaid with a modern fabric in a matching colour, secured by couching stitches.

Moistening

It was necessary to ascertain how flexible the embroidered velvet still was and whether the stretching and creasing could be smoothed out again. Fragment 4, which in the reconstruction had been sewn onto the added velvet in a puckered condition (fig. 1) and was separated from the added velvet for the pH measurement, turned out to be quite flexible even without any additional steps being taken. After unpicking, the puckered lower edge expanded by 5 mm of its own accord. The fragment was then moistened

from the back[12] through a Sympatex membrane and while still damp stretched into shape and pinned onto a piece of soft fibreboard (face upturned). The most crinkled part of the fragment had to be partially moistened again for several minutes while in this condition. After moistening, the fragment retained its flat shape and the lower edge was found to have expanded by another 5 mm. This experiment showed that the fragments could be returned to their much less crinkled original shape by moistening. The larger fragments could be moistened only in part, however, as they had so far been subjected to surface cleaning only and there was a risk of hydrolysis; it was also necessary to protect the metal fibres from contact with moisture.

6. *Execution of the conservation work*

Separation of the original fragments and surface cleaning

The seams sewn during the 1899 reconstruction of the cope using the remaining embroidered fragments were unpicked. While some of these seams connected two original fragments, others connected an original fragment to an added piece of velvet. After these had been separated, the embroidered fragments were carefully vacuum cleaned low suction on both sides.

The remaining cope lining and added pieces of velvet were not subjected to any further treatment, but were preserved separately from the cope as evidence of the first reconstruction.

Needlework conservation of the various fragments

The original fragments were then subjected to various needlework repairs. Most of the old mends (whether underlaid or darned) were unpicked and the underlaid fabrics removed. The larger holes were underlaid again using a fine cotton fabric dyed in a matching colour and secured by couching stitches. The smaller holes and tears that did not pose a threat to stability were not repaired at all.

Moistening

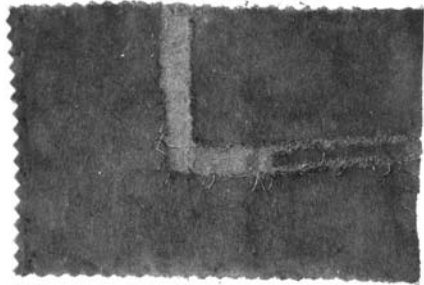
To restore the various fragments to their original flatness, certain areas had to be moistened. Most of these areas were edges that had been used as seam allowances and hence folded over – either during the reconstruction of 1899 or when the fragments were reworked as other items, such as the dalmatics – although the old patches had also resulted in some serious deformities in both layers of fabric (the velvet and the linen). The fragments were then moistened from the back through a Sympatex® membrane and while still damp stretched into shape and pinned onto a soft fibreboard to dry. The application of this method allowed most of the fragments to be realigned, which greatly improved their shape.

Rearrangement and additions

The separated and treated fragments were then pinned onto a soft fibreboard in the



Detail of an embroidery fragment sewn onto the new velvet serving as a kind of framework and extending beyond the fragment by approximately 1 cm



Detail of the new velvet with pile plucked out in those areas where it will be covered by an original fragment



Windows were cut out of the new velvet after the embroidery fragments had been sewn onto it (photo taken from the reverse)

position they had occupied on the original cope and their position transferred onto a sheet of Melinex® polyester film placed over them.

Those fragments which could be aligned with precision following this treatment were stitched together in the following way. Cotton cloth was dyed to match and then cut to shape to match the areas along the joins that are not embroidered. These patches were inserted between the linen backing and velvet of the fragments to be joined together as a connecting piece invisible from the front. Using couching stitches, these underlaid pieces of fabric were then stitched into place from above through all three layers of fabric.

It was decided that velvet should again be used to supplement the original fragments as this would have the same characteristics as the original cope and make for a more homogeneous appearance. The new velvet is a cotton velvet with a much shorter pile than the original silk velvet. It was dyed to match at the Abegg-Stiftung.

The new velvet was to provide a framework for the original fragments rather than supporting them. Using the Melinex® template, the position of the various fragments was transferred onto two velvet panels to be placed to the left and right of the central original fragment. For the seams to be strong enough, the new velvet had to extend approximately 1 cm underneath the original fragments. At the same time, however, it was important that these would not look like appliqués on the new velvet, but rather be integrated in such a

way that the end effect would be more like that of an inlay. To achieve this, the pile of the new velvet had to be plucked out in all those places which would eventually have original fragments lying on top of them.

The original fragments were then placed on the marked and plucked velvet panel and their overcast edges stitched onto the new velvet. After all the fragments had been sewn on in this way, the two side panels were turned over and windows cut out of the new velvet behind the original fragments along the lines of the plucked-out pile. The two velvet panels treated in this way were then positioned with their selvages adjoining the central original fragment and attached to this as described above. A strip of the new velvet had to be inserted both below and above the central fragment in order to restore the cope to its original shape. This was also done in the manner described above.

Fixing to support fabric

A strong cotton fabric was selected as a support fabric and lining, and this material was then dyed to match the cotton velvet.

The reconstructed cope was laid out on this two-piece lining and attached to it with the aid of a grid of running stitches. Whereas double-ply silk thread was used for the stitching wherever original fragments were involved, for aesthetic reasons only single-ply silk thread was used in all the other areas. To prevent any further damage, the running stitches were omitted altogether in the areas still covered by dense metal thread embroidery.



Grid of running stitches along which the fragments were fixed onto the support fabric



General view of the cope after the reconsevation at the Abegg-Stiftung in 2005

A window was cut out of the lining material in the lower half of the depiction of Edward the Confessor (shown holding a model church and sceptre in the top left of the spread-out cope) so that the reverse of the embroidery would remain visible.

The supporting/lining fabric and new velvet were sewn together at the hem. To prevent bulging, however, the pile was plucked out of the last 3 mm of the 1 cm-wide seam allowance.

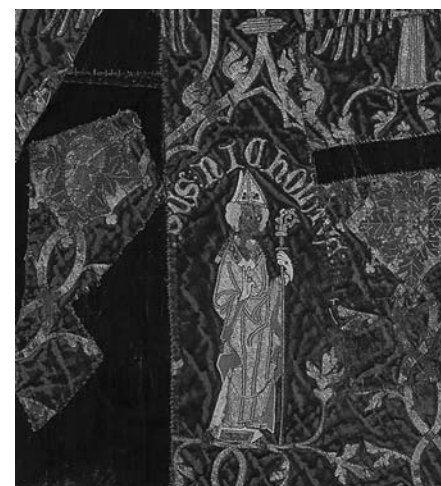
This marked the completion of the conservation work on the cope. The advantages of its reconsevation are readily apparent: the original fragments have all been stabilised and supported. The appearance of the object as a whole is more homogeneous and hence easier to appreciate. The original fragments stand out better than they did previously. There is no disturbing patchwork of original fragments, and added pieces of velvet and the unsightly seams dating from the reconstruction of 1899 have all been removed. The fragments are no longer sewn flush, but instead have been arranged in keeping with the pattern.

Following the conservation work, a suitable display board on which the cope could be mounted was prepared. The cope was then transported back to Vic in a custom-made crate in December of 2005 and since then has been on display in a specially manufactured showcase in the textiles section of the Museu Episcopal.

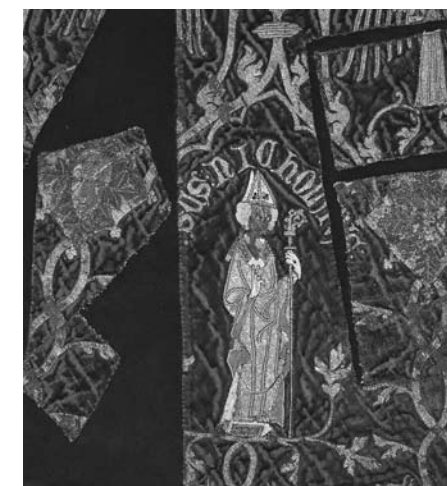
Appendix: Analysis of Materials and Techniques of the Original Fragments

Velvet

Plain velvet, solid cut pile. – The ground is woven in a weave derived from tabby, with the weaver returning the ground weft in the same shed before and after inserting the rod.



Detail of the reconstruction of 1899



Detail of the reconsevation in 2005

Warp: 3 main warp ends to 1 pile warp end; main warp: silk, Z-twisted, pale red/orange; pile warp: silk, Z-twisted, red, paired; 42 main warp ends and 14 paired pile warp ends per cm. – Weft: 3 picks to each rod; silk, Z-twisted, pale red, tripled for the two picks before inserting the rod, paired for the pick after inserting the rod; 24 tripled or paired picks and 8 pile rods per cm.

Selvage: w. 5-7 mm; on one side 22, on the other side 34 warp ends of silk, Z-twisted, white, paired, worked in a weave derived from tabby (cannelé de 1 coup, 2 coups). Loom width (excluding selvages): 58-60.5 cm.

Linen backing fabric

Tabby. – Warp:[13] linen, Z-spun, white; 15 warp ends per cm. – Weft: linen, Z-spun, white; 18 picks per cm. – Selvage and loom width: not preserved.

Silk fabric covering the velvet

Tabby. – Warp: silk, Z-twisted, pale brown; 44 warp ends per cm. – Weft: silk, no noticeable twist, pale brown; 34 picks per cm. – Selvage and loom width not preserved.

Embroidery

Underside couching: gilded silver lamella tightly wound in S-direction around a silk core (S-twisted, white) and silver lamella tightly wound in S-direction around a silk core (S-twisted, white), both couched down with small stitches of linen, S-ply from two Z-spun ends, white (these stitches do not appear on the front of the embroidery). – Split stitch: silk, slightly S-twisted, white, beige, yellow, light green, dark green, pink, blue,

black. – Surface couching for a few decorative elements: silk, slightly S-twisted, predominantly green and white, couched down with small stitches of silk, slightly S-twisted, in matching colours. – Cord underlay for raised areas in gold embroidery: Linen, Z- or S-ply from multiple threads, each S-spun from 2 Z-twisted ends, white.

Seams

The original seams joining the velvet panels were closed with oversewing stitches using silk, S-ply from 2 Z-twisted ends, beige/yellow.

NOTES

[1] Museu Episcopal de Vic, MEV 1430, 1432, 1433 and 1434.

[2] This historical information was taken from Rosa M. Martín i Ros, «Chape de l'évêque Bellera», in *La seta in Europa, secc. XIII-XX* (Atti della «Ventiquattresima Settimana di Studi» 4-9 maggio 1992 a cura di Simonetta Cavaciocchi), Prato: Istituto internazionale di storia economica «F. Datini», 1993, pp. 909-932. Cf. also the article by Rosa M. Martín i Ros in this volume.

[3] Rosa M. Martín i Ros discusses the iconography in much greater detail in her article in this volume.

[4] Detailed analyses of the materials, techniques, seams, sewing threads and of the embroidery are given in the appendix. The analyses of the parts added during the reconstruction of 1899 are not published here, but can be consulted in the Abegg Stiftung's conservation report.

[5] The purpose of this fine silk was probably to hold down the pile of the velvet as it is much easier to do embroidery on a smooth surface.

[6] Velours coupé uni 3 coups au fer, fond taffetas doublé.

[7] The sewing threads are all silk (Z-ply from 3 S-twisted ends, red). We are probably dealing with different qualities

of thread here, as some of the red threads have faded to pale beige, whereas others have retained their original colour.

[8] Assembled from five panels and two triangular patches of the same fabric.

[9] Four types of weave can be distinguished here: two plain damasks, one tabby weave and a cannelé.

[10] The two outermost figures in each row on the right-hand side of the cope are the only ones embroidered without any structural linen cord.

[11] Petroleum benzine, cyclododecane, cyclododecane/toluene in the ratio 50:50 and toluene. The cyclododecane/toluene mixture softened the wax after approx. 1 min., while it took just 30 s to achieve the same effect with pure toluene.

[12] This was the best way of protecting the metal threads, only tiny parts of which are exposed on the reverse of the fabric.

[13] The direction of warp and weft cannot be determined with certainty because there are no visible selvages. However, since the linen fabric is aligned with the velvet, it is assumed here that its warp and weft direction coincides with that of the velvet.