

The treatment of six panels by Hans Süss von Kulmbach (1480/85–1522) from St. Mary's basilica in Kraków

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Restaurování šesti deskových maleb od Hanse Süss von Kulmbach (1480/85–1522) z basiliky Panny Marie v Krakově

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Key words

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Klíčová slova

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Abstract

The two altarpieces that Hans Süss von Kulmbach delivered to St Mary's church in the former capital of Poland – Kraków, between 1514–1516, are amongst his most important commissions and most beautiful works. These are the altarpieces of St Catherine of Alexandria (1514–1515, from which six, of the original eight, painted panels survived) and St John the Baptist's (1516, only predella panel preserved). Up to the recent conservation treatment we did not know too much about these artifacts. Since the 1950's six panels from the cycle of St Catherine restituted after the World War II, have been kept in the Cracovian St Mary's church treasury, these were not on display. The panels had neither been examined nor treated. There was no detailed photographic documentation, nor data on the conditions of the storage or conservation control.

The paper presents findings made during two years of the complex conservation and restoration of the six panels from the St Catherine's altar. Following basic information on its original technique, history of the former interventions and the state of preservation, it discusses the decision-making process and recently undertaken structural treatment. These included modification of the cradles, repair of fractures and reconstruction of missing corners.

Abstrakt

Dva oltáře, které Hans Süss von Kulmbach provedl pro kostel Panny Marie v Krakově mezi lety 1514–1516, patří mezi jeho nedůležitější a nejkrásnější práce. Jde o oltář sv. Kateřiny Alexandrijské (1514–1515), ze kterého se dochovalo šest z původních osmi desek, a oltář sv. Jana Křtitele (1516), ze kterého se dochovala pouze predela. Než se přikročilo k restaurování uvedených děl, mnoho se o nich nevědělo. Desky z cyklu sv. Kateřiny Alexandrijské byly po druhé světové válce restituovány a od 50. let minulého století uloženy v klenotnici krakovského kostela Panny Marie. Nevystavovaly se, nebyly zkoumány ani restaurovány. Neexistovala k nim fotografická dokumentace a nesledovaly se podmínky uložení ani stav dochování.

Článek přibližuje poznatky, získané během dvouletého komplexního restaurování všech šesti desek oltáře sv. Kateřiny. Věnuje se základním informacím o technice provedení, o posloupnosti druhotných zásahů a stavu dochování a zabývá se také koncepcí obnovy i způsobem nedávno provedené strukturální konsolidace, která zahrnovala úpravu rastru, opravu prasklin ve dřevě a rekonstrukci chybějících částí.

About the Project

Conservation of the Kulmbach panels was one of a group of major international projects supported by the Getty Foundation as part of its Panel Paintings Initiative.

Old master paintings on wooden panel are among the most significant works in European and American collections, but only a small number of seasoned conservators have mastered the skills needed to care of these artworks. The Panel Paintings Initiative was training the next generation of conservators before the current experts retire, through structural treatment of some of the world's most cherished masterpieces, including panels by Pieter Brueghel the Elder, Albrecht Dürer, Hubert and Jan van Eyck, and Peter Paul Rubens among others. The Kulmbach project started in early 2013 and was completed in March

2015. It was carried out by the group of young specialists from the Jan Matejko Academy of Fine Arts in Kraków, supervised by two expert-conservators: Jean-Albert Glatigny from Brussels and Salvatore Meccio from Geneva and it hosted two mid-career professionals from the Wawel Royal Castle and the National Museum in Kraków.

Brief history

After the successful fifteenth century, the sixteenth century is considered to be the golden age of Polish culture. Many artists, merchants, thinkers, and other prominent personalities arrived in the country welcomed by Polish royalty. Most of them settled in Kraków, as during this time it was the capital and the center of Poland. In the first quarter of the sixteenth century Hans

Süss von Kulmbach, commonly considered to be the most eminent painter of the circle of Albrecht Dürer, was commissioned to create two retables for St Mary's church in Kraków namely, the altarpieces of St Catherine (1514–1515) and St John the Baptist (1516). Undoubtedly these works must have been highly valued by the painter himself, which is tellingly testified by the presence of his signatures and dates on them.

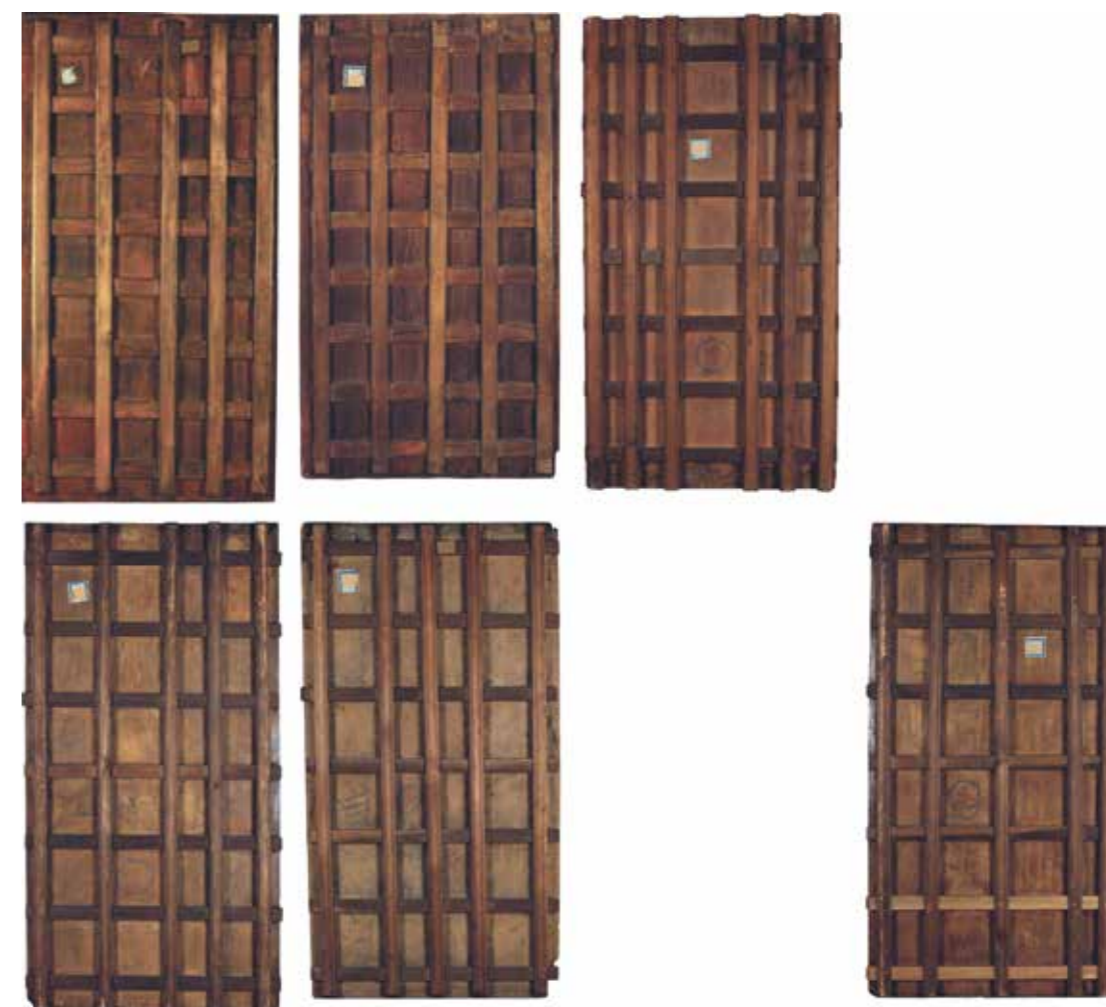
Today there is no surviving information on the altarpieces' original appearance. It is only known, that in the 18th century the St John retable was transferred to the monastery of the Benedictine Sisters and in 19th century to the Cracovian St Florian's church.

The eight panels from the St Catherine cycle stayed in situ. At the end of the 18th century they were adapted to become the front doors of the cabinet placed at St Mary's treasury. During this time some of the outermost planks on either side of the panels were trimmed, most probable to fit

the opening, in the way that three compositions (see Fig. 1: paintings No 1, 4 and 6) have survived in their original dimensions and only the unpainted edges have been reduced, and the other three (No 2, 3, 4) are missing at least a 2 cm of composition along their vertical sides. In 1874 Władysław Łuszczkiewicz wrote about key holes drilled in the boards.^[1] Their presence was confirmed in the course of the works. After the conservation campaign completed in 1896, the paintings were exposed on the pillars of the main nave of the St Mary's.^[2]

During WW II the St Mary's church was plundered by the Nazis and the panels were stolen and transported to Germany. However, in 1946 six out of the original eight paintings from the altar of St Catherine, together with the predella panel from St John's, were restituted by the rightful owner. Two of the St Catherine's and four St John's panels have never been found.^[3]

1. and 2. 'The Story of St Catherine of Alexandria', Hans Süss von Kulmbach (1480/85–1522), 1514–1515. Top left: *Conversion of St. Catherine* (1), *Disputation with Philosophers* (2), *Burning of the Philosophers Converted to Christianity* (3), *Conversion of Empress Faustina (A)*, *Beheading of Empress Faustina* (4), *Flagellation of St. Catherine* (5), *Execution of St Catherine (B)*, *Miraculous Translation of St. Catherine's Body to Mount Sinai* (6). Compositions A and B were looted during the WWII and have never been found. © St Mary's Basilica, Kraków.

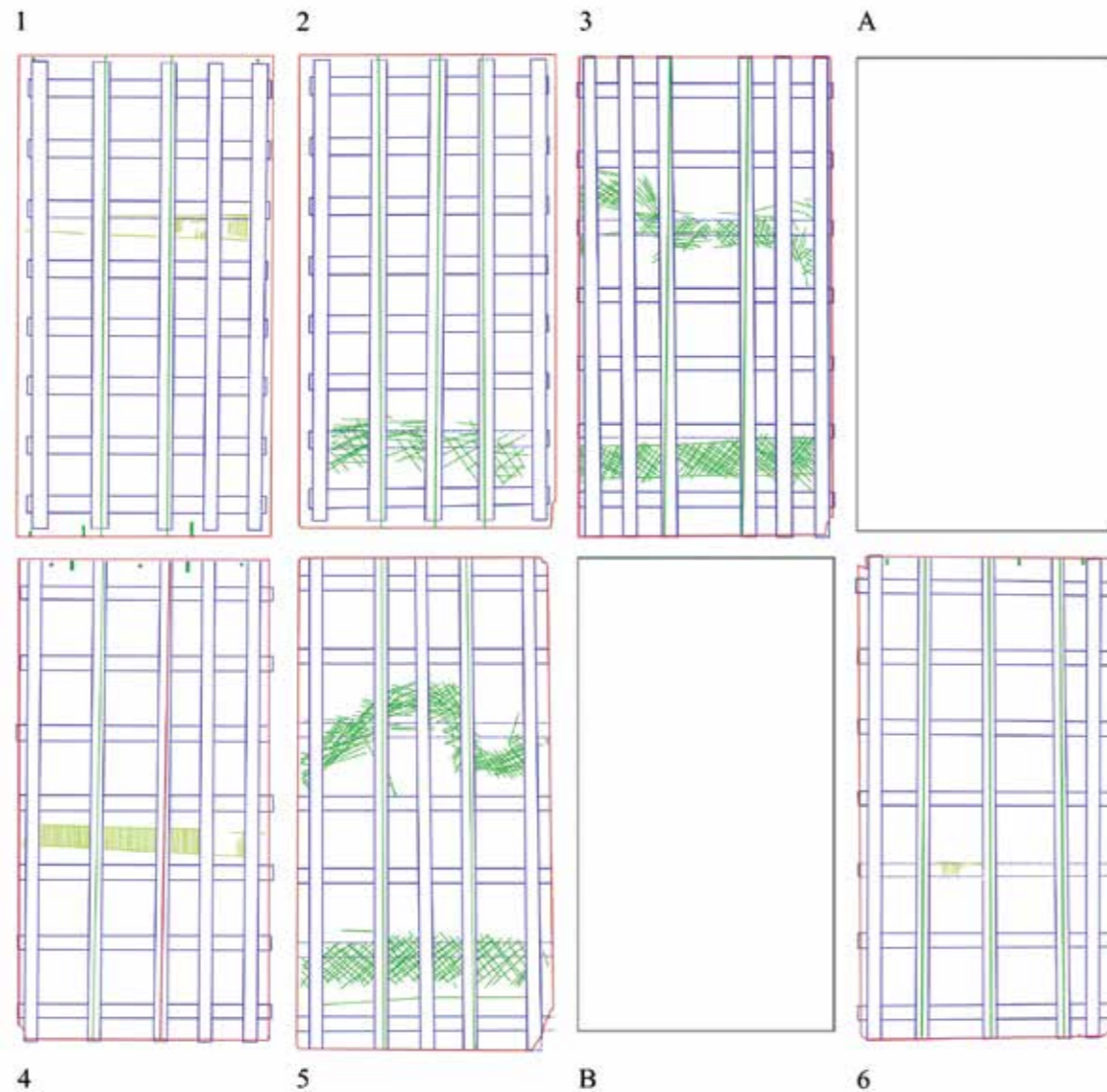


The panels

All the panels stand upright with the comparable (not original) dimensions: c. 118 x 62 x 0.7 cm. They are executed in fat tempera technique on a thin gesso. The painter laid a yellow-ochre priming – brush strokes are visible under X-ray. The infrared images show the freely made underdrawing. Minor alterations were made in the course of painting. The supports consist of three (panels No 1, 3, 4 and 5) and four (No 2 and 6) limewood (*Tilia*), butt-joined boards. The presence of the barb on all four sides testifies to the notion that the panels were originally gessoed in their frames. Each panel has three horizontal bands of linen fibres, arranged symmetrically at the top, middle and the bottom; they are visible as distortions

in the painting surface. This procedure is described by George Bisacca and Jose de la Fuente Martinez as relatively common in German painting and it was supposed to stabilize the panel against warping.^[4] The X-ray images reveal that the wood underneath the linen stripes is scored with cross hatching.

Although the panels have been thinned, it is still possible to distinguish traces of the original toolmarks (**Fig. 3**). Remains of the grooves were observed on three panels (No 1, 4, 6). Some original fir pegs (*Abies alba*) and peg-holes were found at the top (panels No 4, 6) and bottom (No 1) edge. Most probably these three panels (No 1, 4, 6) were thinned by a half of their original thicknesses (as the preserved pegs are of half of their original width), when the other three panels (No 2, 3, 5) were thinned only slightly (?).



3. 'The Story of St Catherine of Alexandria', Hans Süss von Kulmbach (1480/85–1522), 1514–1515. Original joints, traces of original toolmarks, peg-holes (green), rejoin (red), cradles (blue).



4. Beheading of Empress Faustina, detail, Hans Süss von Kulmbach (1480/85–1522), 1514–1515. © St Mary's Basilica, Kraków.

Former interventions

Evidence of at least two campaigns of filling losses of gesso and paint layer and restoration prior to the end of the 19th century, and one intervention after 1946 were discovered during cleaning. Major conservation works were carried out in 1895–96 and 1932. No written sources have been found on the details on these measures up to now, however the archive research is still in progress.

The panels were cradled in three different periods of their history. The third panel has the heaviest construction consisting of six vertical, fixed, larchwood members and seven oakwood crossbattens. The cradles attached to the other three panels (No 4, 5, 6) are made of five larchwood pieces and seven oakwood crossbattens. These constructions are slightly lighter than the one on the third panel and have different finishing. The last two cradles (on the first and the second panel), are relatively light, flat, made of five vertical and eight horizontal limewood battens, shorter on each side than the original boards.

Sources say that between 1895–1896 four out of original eight panels were restored in Kraków by Bronisław Abramowicz and the other four in Munich by Aloys Hauser.^[5] It is quite possible, that the panels were divided into two groups in accordance to the depicted scenes of St Catherine's legend (compositions No 1–3 and

A stayed in Kraków, when the panels No 4–6 and B were sent to Munich; see **figure 1**). It is possible, that Abramowicz had learned the cradling technique during his residencies in Munich and Vienna, which explains the similarities in the constructions between the third panel and the other three (No 4, 5, 6). Recent cleaning of the fourth, fifth and sixth composition (with identical cradles on their backs) revealed similar surface damage – characteristic solvent-runs most likely to be explained as caused by rash cleaning with strong, liquid solvent introduced in the vertical position. This kind of damage does not appear on the other paintings. The presence of the two flat cradles on the first and second panel (applied in 1932 by Waclaw Szymborski?) might be linked to repairs of long splits visible on both of panels.

On panel No 4, *Beheading of Empress Faustina*, a specific treatment has been executed. Most probable the panel has cracked along its original joint and to get a good gluing surface, the sides of the split were slightly planed down. The lines of the composition no longer match as an approx. 2 mm strip of composition along the full length is missing (**Fig. 4**). Next to this joint there is a serious damage visible on the Faustina's face (forehead, eye and cheek). This part of the composition was cut out and glued back into place. The table below presents the list of major works on the supports that are now attributed most likely to Abramowicz, Hauser or Szymborski.

Bronisław Abramowicz (1895) panel No 3 (possible also panels No 1, 2 and A, but no clear evidences have been found up to today)	Aloys Hauser (1895–96) panels No 4, 5, 6 and B	Waclaw Szymborski (1932) panels No 1–6, A and B
slight thinning and cradling	slight thinning, reconstruction of missing corners, making wood inserts in the key holes, cradling partial consolidation, filling worm-galleries with wax-resinous putty, coating of the reverses with paraffin or wax based mixture	panel 4: planing down the sides of the split along the original joint, (probably improving surface of the Faustina's face), rejoining the panel panels 1 and 2: repair of the splits, cradling

State of preservation

Four historical facts had a crucial impact on the panels' state of preservation:

- mounting and usage as front doors of a cabinet,
- cradling and exposure to (typical in historic building) unstable climatic conditions,
- exposing to damp and woodworm infestation,
- over-cleaning and other unfortunate interventions. Nevertheless, the general condition of the panels can be described as good.
- Damage to the paintings results from: alteration of the original composition due to minute resizing of the panels (No 2, 3, 4) and cutting out the key holes (No 1–6; **Fig. 5**); multiple, little dents and scratches made by hitting with the keys or other metal items; rounded, crushed or broken corners resulting from inappropriate handling (No 1–6).
- Cradling caused local deformations (most pronounced on panel No 3), numerous minor and a few serious fractures in the structure of the wood (No 1–6; some poorly repaired), as well as disjoints (No 1); however, there were no fresh cracks or fresh spreads along the existing ones. None of the panels were under stress, even if the cradles have been seized (once the fractures had appeared, the tension was relieved). The dimensional variations both on the rear of the panels as well as on the painted surface were aesthetically acceptable.

g. The boards display a significant amount of woodworm damage; galleries filled with putty, galleries not filled, and the presence of more recent holes testify a long-standing issue. Stains along the bottom (No 3, 4, 6) and top (No 5) edges, together with minor traces of fungus decay, indicate clearly that these parts were exposed to water or damp conditions. Plastic deformation of the bottom left corner of the *Miraculous Translation of St. Catherine's Body to Mount Sinai* (No 6) indicates that the exposure to damp had lasted relatively long.

h. The earlier conservation campaigns had greatest influence on the general appearance of the paint layer. In order to cover various abrasions, over-cleaning and other damage, extensive repainting was executed on some panels (No 2–5). During filling, the well-preserved original painting was covered with putty (No 4, 5).

Decision making

Knowing about the historic variations of the relative humidity to which the panels have acclimatized allows for a better understanding of the mechanical properties of these unique, complex, multilayer systems. Proper recognition of the cause – effect relationships between the relative humidity variations and physical change in the panel is essential to build up a successful restoration and effective preservation strategies.^[6] The first step in decreasing the risk of further damage and slowing down the aging process was to reduce the humidity fluctuations in the panels' environment together with improving storage and handling conditions.

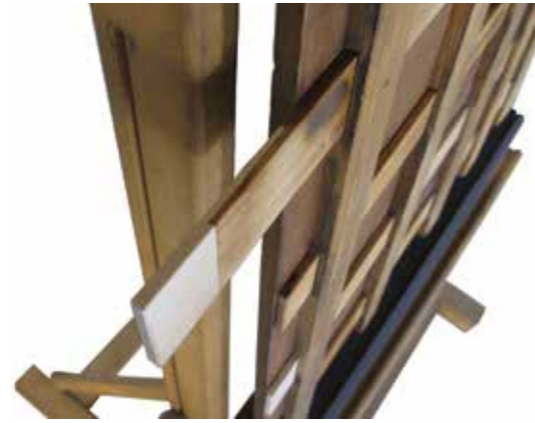
Most probably after the cradles were mounted in 1896, and until 1940, the panels were subjected to rather rough conditions. During the time when they were exposed on the pillars in the main nave, the following alterations of the church took place: two extensive renovations of the roof, introduction of electric installations, complex drainage of the foundation, exchange of the floor and complex restoration of the win-



5. *Flagellation of St. Catherine*, detail, Hans Süß von Kulmbach (1480/85–1522), 1514–1515.



6. New, flexible sliding cradle members.



7. Extension of a sliding cradle members.

dows damaged in World War I. Up to the recent conservation campaign, there was no data on the climate condition in the church's new treasury, where the paintings have been stored since the early 1950'. A one-year climate control project started before the recent treatment, to give a sense of the historic temperature and humidity fluctuations; this allowed the ensuring of optimum long-term climate control strategy during the conservation.

It was decided not to remove the cradles but only to modify them. During the decision process the following concerns were taken into account: once the fractures and disjoints are repaired, the risk, that the 19th century cradles may provoke new fractures will be significant, even in an improved and controlled, but still not stable enough environment. On the other hand, after a complete removal of the cradles, the panels would probably need new auxiliary supports (not only the thinning is a problem, but also extensive worm damage). It would also implicate the necessity of coating of the exposed parts of the wood or most likely – its consolidation. Since any conservation treatment affects the mechanical properties of the restored structure, the removal of a historic cradle significantly alters these properties. The state of preservation and the surface irregularities of the treated Kulmbach panels have clearly not called for a full structural treatment. Thus the decision was taken to search for less invasive solutions than the complete removal of the cradles, and to develop a strategy of long-term climate control and surface monitoring. If any alarming change is observed, there is time to remove the cradles.

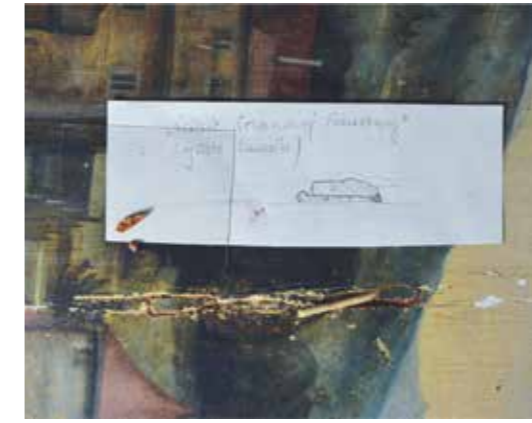
Treatment

a. Panels

The cradles have been made functional. The first step in releasing the sliding members required a fair amount of pressure. In order to prevent any further damage, the panels were held securely on a tray, with the end grain edges closed between precisely shaped battens and additional wedges underneath, to give a uniform support for the entire painting surface.

In the case of the four panels with rigid constructions (No 3–6), the sliding, oak crosspieces were replaced. For this purpose a simple and flexible system designed by Jean-Albert Glatigny was chosen (Fig. 6). This consists of two Norway spruce, straight grain and relatively narrow annual ring slats, held together in the middle with two nylon screws. This elastic joint holds the slats tight and in an exact position, with almost no effect of local stiffening. The screws also do not limit the final adjustments of the ready piece when necessary, as they are soft enough to be planed down. For the smooth surface the new sliding members were finished with paraffin and burnished with agate stone.

The modification of the flat, more flexible, limewood cradles on the other two panels (No 1 and 2) was only to extend the sliding members which were too short. The battens which were shorter than the width of the panels (by approx. 3 cm on the left and 1 cm on the right hand side) accelerated local deformations and two fractures by their ends (unlike the deformations developed during numerous cycles of humidity fluctuations, these splits most likely resulted from im-



8. Treatment of the collapsed islands of the original gesso and paint film.

proper handling). The lap extensions have been made in limewood and the members – slid back alternately (Fig. 7).

The panel depicting the *Flagellation of St. Catherine* (No 5) required a local consolidation in the left bottom edge. For this purpose 20% Plexigum PQ 611 in Shellsol T was used. The splits have been repaired with 40% and 50% High Tack Fish Glue (Lee Valley) with phenolic resin microballoons and the missing parts of the wood have been reconstructed with carefully selected limewood.

b. Gesso and paint films

Initially, the surfaces of the paintings were cleaned with natural enzymes. The varnish was removed with isopropanol in Italian „pappina“ (wax-stearic acid paste). Major overpaintings and retouches were easily removable with the varnish. Some more resistant remains were removed with acetone and acetone-ammonia-alcohol mixture. The further treatment included also efforts towards leveling of the locally collapsed painting surface over the frass galleries (No 4, 6). The collapsed islands of the original gesso and paint film were carefully cut out with a jewelry saw and scalpels (Fig. 8). After gently cleaning and some frass removal, empty galleries were consolidated with 20% Plexigum PQ 611 in Shellsol T and filled with 20% PVA thickened with a mixture of saw dust and phenolic microballoons (1 : 1). In some areas, where necessary, this was preceded with methylcellulose and Japanese tissue facing. Later the gesso and paint film were attached back using the same materials.



9. Reconstruction of the missing part of the wooden support.

Ground loses were filled with self made chalk-rabbit glue putty and covered with 3% shellac in ethanol. Then the paintings were varnished with MS2A and retouched with Gamblin Conservation Colours. For final varnishing removable ketone resin Winsor & Newton has been used.

Within the last stage of the project, long-term preservation and exposition strategies have been developed.

Summary and Conclusions

In fact, the only information that we have about the panels are the panels themselves. The presented chronology is based on limited data collected in archives and in literature followed by the conclusions drawn from physical study of the objects. It is very interesting, that unlike Kulmbach's St John retable, there is hardly anything in historic sources on the St Catherine's cycle – the set of panels considered to be among the most precious works of art in Poland. The information gathered within the project enabled the identification of numerous patterns in the panels' original construction and later alterations, which will be crucial in hypothetical reconstruction of the possible altarpiece's appearance and its place at the Cracovian St Mary's.

Acknowledgments

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10. and 11. 'The Story of St Catherine of Alexandria', Hans Süss von Kulmbach (1480/85–1522), 1514–1515. State after the conservation. © St Mary's Basilica, Kraków.



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