



Retables on the Croatian Island Lopud

Construction – Polychromy – Restoration

A review of 20 years of ICWL project work
International Conservation Workshop Lopud

2002 - 2023

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2. revised edition

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This publication summarizes the results of more than 20 years of cooperation of the authors within the International Conservation Workshop Lopud ICWL.

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Fig. 1: The church of the former Franciscan monastery Sv. Marija od Špilice (St Mary of Špilica) with the buildings of the former monastery left of the nave

Introduction to the project

The island of Lopud, part of the Elafiti islands, is situated off the Croatian coast, about a 40-minutes boat ride from Dubrovnik. Lopud combines an idyllic mediterranean landscape with a rich cultural heritage. Not far from the trading city of Dubrovnik, formerly Ragusa, once it was a favourite place for wealthy merchants and sailors to settle. The inhabitants brought prosperity and culture, built numerous chapels and adorned their religious buildings with commensurately rich furnishings.

In addition to its numerous chapels, the island of Lopud is home to three large churches: the church of the former Dominican monastery of St Nicholas, the church of the former Franciscan monastery Sv. Marija od Špilice (St Mary of Špilica) (Fig. 1), and the parish church Gospa od Šunja (Our Lady of Šunj) (Fig. 2). The churches were all built in close succession during the heyday of the Dubrovnik Republic and during the island's strongest economic period in the 15th century, a tremendous feat of construction for such a modest, sparsely populated island. Typically, it was the Mendicant orders of Franciscans and Dominicans, which had then spread throughout the eastern Adriatic coast, who built these churches, thereby exercising their influence over the island.¹

The Cologne Institute of Conservation Sciences (CICS) at the Technical University of Cologne (formerly Cologne University of Applied Sciences) and the island authorities have been in close contact since 1987. Since then, groups of students and their lecturers have been visiting the island annually over the summer term break to work on projects aimed at restoring endangered works of art. From the beginning, the project has been supported by the Association for the Protection of Lopud's Cultural Heritage and Nature (Croatian: *Društvo za zaštitu spomeničke baštine i prirode Lopuda*), Diocese of Dubrovnik (*Dubrovačka biskupija*), Monuments Care Office in Dubrovnik (*Konzervatorski odjel u Dubrovniku*), Ministry of Culture of the Republic of Croatia (now: Ministry of Culture and Media of the RC / *Ministarstvo kulture i medija Republike Hrvatske*), Croatian Conservation Institute in Zagreb (*Hrvatski restauratorski zavod*) and its department in Dubrovnik (*Restauratorski odjel Dubrovnik/Villa Stay*).



Fig. 2: The parish church Gospa od Šunja (Our Lady of Šunji) with the cemetery of the island

Following conservation work in the island's museum of local history and the restoration of individual paintings, work on the large retablo in St Nicholas' Church began in 1997, after the Croatian War of Independence (1991-1995), and was completed in 2001 with its re-erection.²

In 2002, the project, which until then had been exclusively Cologne-based, was transformed into the International Conservation Workshop Lopud (ICWL), a partnership between the universities of Antwerp, Brussels, Split, Dubrovnik and Cologne.³ From then until 2023, a further 4 retables as well as historical furniture from the two churches were restored in annual two-week summer schools with students and lecturers from the stone, painting, polychromy and wood disciplines in changing teams. Also worth mentioning are the inventarisation and storage of the paraments of the churches as well as the analysis of a series of “Tüchlein” paintings, a special feature of the ensemble in the parish church.⁴

The ICWL is ongoing and is currently focused on the conservation and restoration of the old choir stalls in the Franciscan monastery church.⁵

The focus here will be on the results of the examination of the retables, as this is a unique collection of wooden polychrome retables. Elsewhere, especially on the mainland of the Dubrovnik region, they have been lost in the devastating earthquake of 1667 or have been replaced by marble retables in the later Baroque style. The relatively isolated location of the island as well as the economic decline of the former Dubrovnik Republic (Ragusa) in the 17th century, to which the island of Lopud belonged, may account for why the early Baroque retables continued to be valued and preserved here. Although alterations to church furnishings after secularisation led to changes in the inventory, the retables remained largely untouched during this phase. A further century of neglect due to various reasons like the straitened situation of the church during the period of Yugoslav communism or lack of funding may be the reason why, on the one hand, the retables were preserved and, on the other, they survived in a fragile, but never reworked, largely untouched, authentic state.

The retable of the former Dominican church of St Nicholas

The Dominican monastery and church of St Nicholas were completed by 1482.⁶ The magnificent wooden retable was probably constructed during the end of the 16th century.⁷

With three vertical axes, the retable rises behind the stipes on a stone plinth wall (Fig. 4). The central axis is protruding like a risalit and thus emphasised. Here the wooden sculpture of St Nicholas is situated and flanked by two rectangular panel paintings showing St George on the right and the baptism of Christ on the left. The sturdy entablature on four candelabra columns is followed by a second register with three paintings on panel, now difficult to read due to the fragmentary condition. Traces allow for the identification of the Virgin Mary in the central panel, with groups of Dominicans and bishops depicted in the panels on either side. With a second entablature and the painting of the Resurrection of Christ in the lunette-gable, the retable reaches the vault of the choir room.

The Renaissance origin is clearly evident in the pronounced vertical and horizontal disposition, the ornamental columns, the consoles, and the symmetric pattern of acanthus and wine leave ornaments on the surfaces of the predella and the architraves. Its monumental size is unparalleled in the region of Dalmatia.

The design of the retable clearly reflects Italian origins, as



Fig. 3: Retable before treatment

exemplified by the Polyptych of San Vincenzo Ferreri (1464-68) with panels by Bellini (Fig. 5). Exactly which of the paragons were relevant to the local (i.e. Dubrovnik-based) master may be reserved for future research. There are related examples in the Dubrovnik region such as the retable in the church of St Mary in Pakljena on the nearby island of Šipan.⁸ Finally, the retable in the Franciscan church Sv. Marija od Špilice on Lopud must to be noted as the closest related piece (Fig. 6).

As coherent and uniform the structure of the retable is, as heterogeneous are the execution and design of the painted panels. The paintings in the upper register differ from those on the lower storey both in terms of the style and the proportions of the depicted subjects. They appear to have been taken from an older context and to have since been adapted. What is also unusual from a constructional perspective is the flawed horizontal lower joint to the otherwise vertical boards of these panel paintings, which could have been due to an adaptation of the format for use in this retable.

Following the earthquake of 1667, which caused considerable damage to the entire Dubrovnik region, the monastery was abandoned. While today the monastery building is still in ruins, the church survived and, thanks to the efforts of the local community, was restored after the Croatian War of Independence and once more serves as a place of worship.

In 1997, at the start of the project, only the main storey of the retable itself was still in its place in the church (Fig. 3); with the exception of a lost cande-



Fig. 4: Lopud, former Dominican monastery church of St Nicholas; retable after treatment; H: 7,25 m

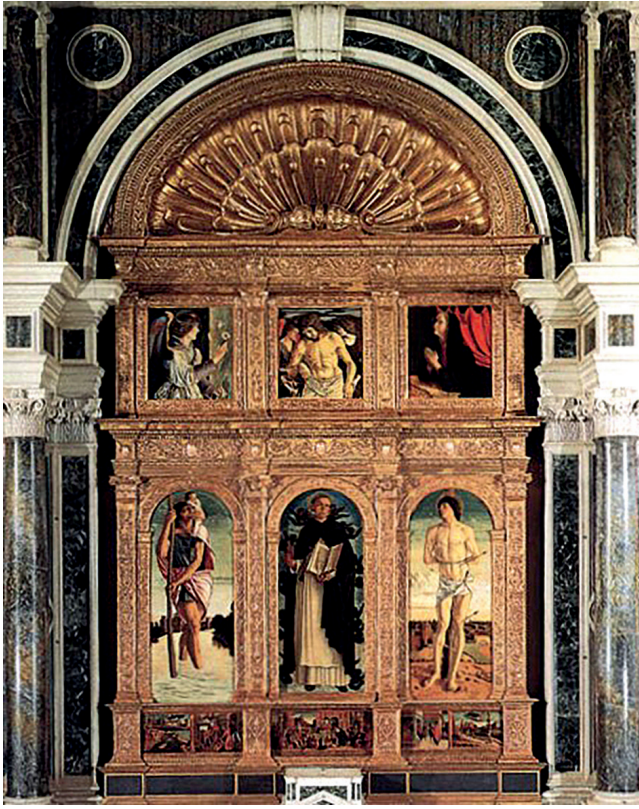


Fig. 5: Venice, Basilica dei Santi Giovanni e Paolo, Polyptych of San Vincenzo Ferreri: Giovanni Bellini (1464-70)⁹; H: 2,75 m

labra column, the remaining parts were collected from various storage locations on the island, some of them in catastrophic condition. The desolate storage conditions and centuries of neglect had taken their toll on the substance. Infestation by wood pests had resulted in a comprehensive loss of stability, with the degradation of the glue joints leading to the loss of about 70% of the ornamental design of the fronts. The extreme fluctuations in the mediterranean island climate had affected the mounts and gilding, so that in addition to the loss of stability and the loss of the ornamental decoration, there was also a loss of approx. 80% of the paint layer and gilding. Only the central sculpture of St Nicholas and the two



Fig. 6: Lopud, former Franciscan monastery church Sv. Marija od Špilice, main retable: Pietro di Giovanni¹⁰; about 1523; H: 5,40 m

paintings on the main storey survived in more sheltered conditions and were thus in a better condition, while the paintings in the upper register now only reveal individual paint fragments on the exposed wooden panel. This desolate condition and the island's parish desire for a dignified liturgical function for the retable prompted a concept involving a considerable amount of reconstruction of the ornaments, mouldings, polychromy, and gilding, while the fragmentary paintings of the upper register were only consolidated. There, a calming "archaeological retouching" renders the lost depictions at least vaguely recognisable. One of the main achievements of the rescue operation was the retable's reassembly on a new wooden support frame, in which the individual storey segments are now supported separately and no longer rest directly on top of one another. Following its restoration and reconstruction, the retable can once again be admired in all its magnificence. The rescued work, however, suffers from the heterogeneity of its appearance, resulting from the contrast between the extensive reconstruction and new gilding of the ornamentation on the one hand and the fragmentary condition of the upper panel paintings on the other. This approach of extensive reconstruction was not pursued for any of the retables discussed below.¹¹

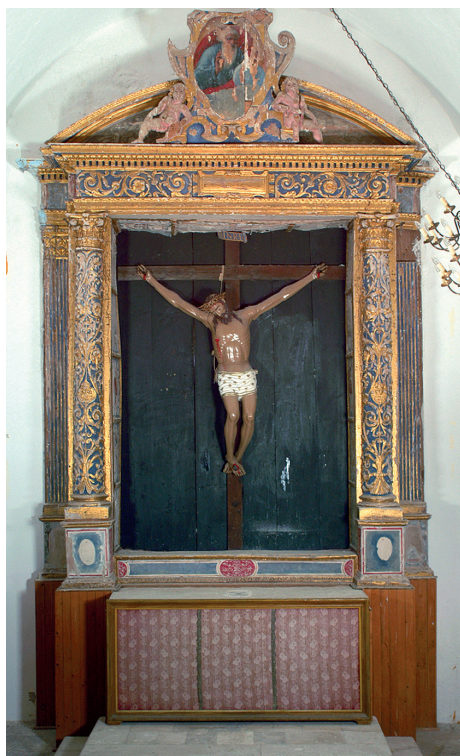


Fig. 8: Holy Cross retable, before treatment



Fig. 9: Retable after treatment

PIEDELLI CONDIDIT SACELLUM MDXXVII” (To you, St Roch, Thomas Piedelli erected this chapel in 1527).

The right-hand chapel was commissioned by Bishop Brautić as his funerary chapel. His last will, drawn up in 1631, stated that the chapel should be built in the likeness of the St Roch Chapel opposite and contain both tomb and the retable.¹⁵ The retable, bearing the discreetly placed date 1637, is called the Annunciation retable because of the altarpiece depicting the Annunciation of Mary with saints (Fig. 10, 11).

These two retables were restored as part of the ICWL programme from 2002 to 2017 and will be presented here.



Fig. 10: Annunciation retable, before treatment



Fig. 11: Retable after treatment

The Annunciation retable

The entire south chapel, including the altar, was constructed in the years following 1632 as a donation from Bishop Nikola Brautić. The altar was attached flush to the south wall. During dismantling, an inscription written in the paint used for the retable was discovered on the underside of the entablature, probably dating the painting and gilding of the retable: “1637 dio 20 marcio”, (20th of March 1637) (Fig. 12). This dating is supported by the dates of Bishop Nikola Brautić’s life and by direct mentions of the building of the altar in his will.¹⁶

A document preserved in the Dubrovnik archive contains a contract from 1636 between Blasius Allegretti and master woodcarver Urban “[...] magister

Urbanus de Tenum Dorfort Bavarus [...] faberlignarius [...]”. According to this contract, he was obliged to make *“unum ornamentum altaris ligneum”* for the church Gospa od Šunja within three months for a remuneration of 72 ducats. The date of the contract (4/11/1636) with Urban Bavarac, the timespan of three months, and the date found on the retable (20/3/1637) are in close proximity to each other, so it is very likely that this contract refers to the Annunciation retable.¹⁷ It should be mentioned as well that the date 20th of March is only five days before the festivity of the Annunciation (25th of March). Therefore, the workers (whoever they were) were probably rushing to finish the retable for the festivity of Annunciation.¹⁸ The altarpiece depicts the Annunciation above a sacra conversazione with the saints Nicholas, Anthony, Augustine and Carlo Borromeo. The stipes is fronted by an 18th century gilt-leather antependium (Fig. 14), which was already restored in 2001 by a student of CICS Cologne as part of her diploma thesis, but is not considered further here.¹⁹

Strong climatic fluctuations and heavy pest infestation badly damaged the woodwork, the polychromy, the gilding, and the painting, and led to considerable loss of many areas. During an earthquake, the upper storeys



Fig. 12: Inscription underneath the entablature: *“1637 dio 20 marcio”*

Fig.13: The gravestone of Bishop Nikola Brautić: „NICOLAO BRAVTIO EPO SARSINAE ET COMITI BOBII OBIIT ANODNI 1632. MENSIS MAII 27, AETATIS SUE. LXVI. EPISCOPATVS SUI XXX” (Nicholas Brautić, Bishop of Sarsina and Count of Bobium, died in the year of our Lord 1632, May 27, 66 years old, 30 years after receiving his episcopal consecration)



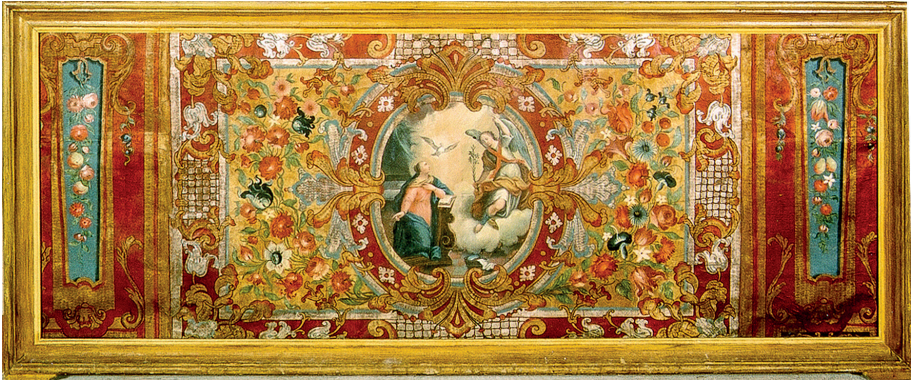


Fig. 14: Annunciation retable; gilt-leather antependium, *La B. V. dell'Annunciata*'

had collapsed and had been provisionally re-erected by local labour. The stone altar table also exhibited dangerous structural weaknesses.

An essential first step was taken in the summer of 2002: as a basic prerequisite for the subsequent restoration work, a specialised company was contracted to fumigate all of the church's wooden elements with methyl bromide to combat the insect infestation.

Description of the retable

The altar stipes on a two-tier stepped podium is composed of rough-hewn limestone supporting three more or less rectangular limestone slabs serving as the mensa.²⁰ A depository is embedded in the central mensa slab. The front of the stipes, covered by the gold leather antependium, is decorated with a mortar cross.

The retable, mounted on the mensa in the classical form of an aedicula, provides a magnificent architectural frame for the altarpiece. A distinctive pedestal zone on either side of the stipes attests to the architectural character of the design.

The predella rises above the mensa with protruding postaments for the two half-columns of Corinthian order that support the entablature with an ornamentally carved lower part and fluted shaft. Together with flat jambs, these columns form the niche for the painting. The broken pediment corresponds to the sequence of frieze and cornice of the entablature. The central surfaces of the predella and frieze are richly ornamented

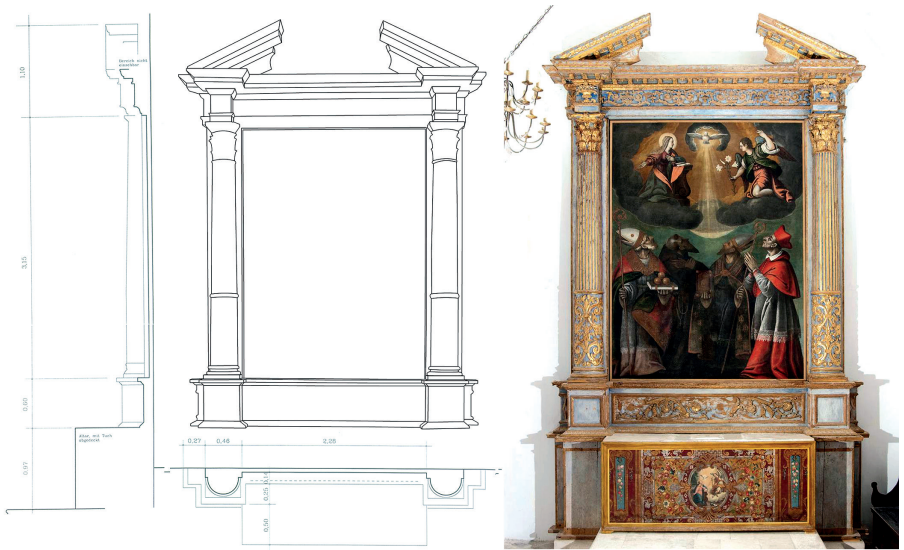


Fig. 15: Annunciation retable, measurement; H: 6,28 m

with acanthus tendrils, the cranked zones of the frieze above the columns are decorated with filled vases, additionally “diamonds” or narrow lozenges can be found on the sides of the predella (Fig. 16, 17).

All carved parts, including the mouldings, have a uniform water-based gilding and are set against light grey-blue matte background surfaces (Fig. 18).

Various coniferous types of wood were found to have been used for the woodwork of the structure. Beams, boards and mouldings of the functional part of the structure are made of fir (*Abies alba Mill.*) and spruce (*Picea abies Karst.*).²¹ The sculptural parts of the demi-columns and the ornamental applications are made of light, dense poplar wood (*Populus spec.*), which serves well for carving. Interestingly, the wood species used for similar ogee mouldings in the architrave, broken pediment, and the rhombus ornaments vary. Some of the them are made of coniferous wood and some of poplar.

These differences were not relevant to the woodworkers, as the gilding and painting was planned from the outset.



Fig. 16: Front of predella, detail; condition before treatment



Fig. 17: Lozenge at the projecting side of the predella; condition before treatment

The boards are mechanically sawn, with the reverse left rough and the front jack planed and smoothed. The structure is conceived as a system of eight separate box-like elements to be assembled in situ, the two pedestals, the predella, the columns, and the entablature with the two parts of the broken pediment, all of which form separate entities. They are currently not connected to each other. However, there are traces that indicate



Fig. 18: Complete view of entablature and predella; condition before treatment (digital composite)



Fig. 19: Detail of the entablatura, compare Fig. 20

there once was a groove-and-tenon system in place for fixing the pillars onto the predella. Those tenons are lost.

There are no signs of classic carpenters' wood joints. Wooden beams, boards and mouldings are only connected by iron hand-forged nails. Even the carved ornamental applications are fixed with nails to the flat surfaces of the construction. Glue has only been used for small elements such as the rosette. This additive way of construction is very effective and fast (Fig. 19, 20).



Fig. 20: The view of the end section of the entablatura exemplifies the additive building manner



Fig. 21: Marks of mechanical sawing

Boards with “puzzling holes”

The main construction boards show traces of a mill driven saw, rough but perfectly equilateral and squared to the length of the boards, probably indicating the use of wet wood ²² (Fig. 21). Most of these boards have a thickness of about 20 mm.

Characteristic holes with a diameter of about 30 mm are visible in various boards of the construction, having no function or obvious reason within the construction (Fig. 22, 23, 31, 32, 49).

Fig. 22: Strainer of the Annunciation painting, detail



Fig. 23: Left side of the retable, hole with no function but closed with a dowel



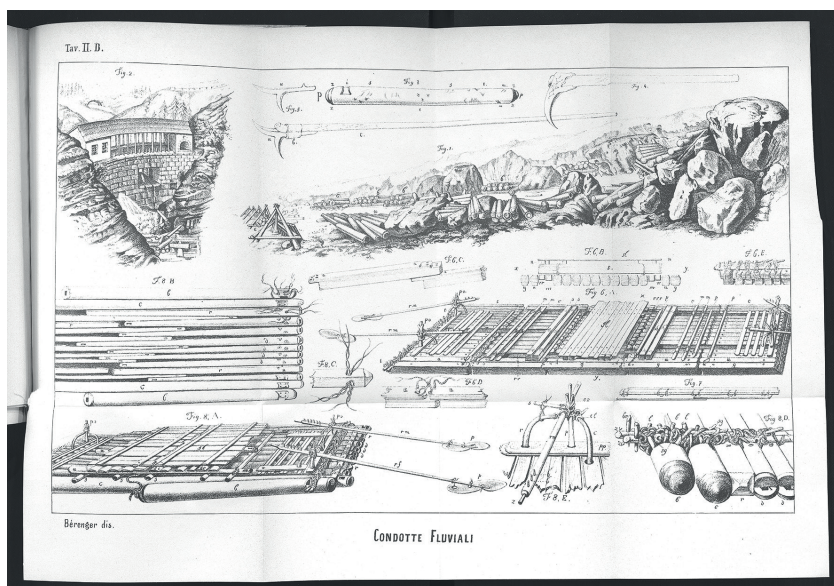


Fig. 24: Table from Berenger, Dell' Antica storia e giurisprudenza forestale in Italia. Treviso/Venezia 1859-1863. Tavola II.B, p. 809.

The raft on the right (Fig. 6) is constructed using pre-sawn boards, piled and connected as shown in Fig. 6B, 6C, 6D and 6E. Series of drilled holes are clearly recognisable.

Similar holes with the same diameter have also been found in other objects in the church Gospa od Šunja, such as in the stretcher frame of the Annunciation painting, the organ gallery, the main retable, the ceiling of the choir, as well as in the Holy Cross retable and the side retables in the church of St Mary of Špilica (Gospa od Špilice). This brings up the question of what they were used for. It seems highly probable that these holes were made for timber rafting. While the holes do not seem to have an obvious function in the construction, they indicate that the beams and boards must have been transported on a raft, the holes made for joining the timber or boards in the raft. Transporting wood in a raft has long tradition. High quantities of wood were imported via Venice from the forests of the Piave valley.²³ There, typically, holes of 3 and 5 cm were drilled into the beams and tree trunks to construct the raft and to connect the beams with young branches of hazelnut.²⁴ In particular, extra boards were used to transversely stabilise the rafts. Water-powered sawmills on the upper course of rivers produced planks that were rafted as well. The holes observed were made to join the board stacks.²⁵ (Fig. 24)

It is well documented that Lopud had a fleet of over 100 wooden boats and ships during that time.²⁶ It is obvious that the enormous demand for wood for this and other purposes could not have been fulfilled with the limited resources of the tiny island itself and must have been imported from elsewhere. Besides Venice with its well-established wood trade with the Piave region, Rijeka was the primary port for transporting timber from the lush forests of the Frankopan estates of Gorski Kotar to the islands.²⁷ Other areas like Montenegro and Albania could be added as additional sources. Import also explains the existence of poplar boards in the retable, as poplar does not grow on the island.

Polychromy and gilding

The character of the polychromy and water-based gilding also reflects the quick routine of the craftsmen. After a first sizing, two or four priming layers made of gypsum and animal glue were applied: two layers where blue was planned, i.e. in the background areas, and four layers where gold leaf was applied. The white priming coat covering the entire surface was applied in varying thicknesses, resulting in a smooth but slightly uneven surface. In the corners and recesses of the gilded areas in particular, the layers measure up to several millimetres. This is apparently due to the application of colour and gilding without prior reshaping or grinding of the priming layers. Gilded areas show an extremely thin layer of subsequently applied ochre-coloured poliment. After the application of gold leaf and burnishing, the ungilded backgrounds were painted in two layers with two slightly different blue paints that define the borders of the gilded areas. Smalt was identified as the pigment, while animal glue serves as the binder. Typically, the pigments of the lower layer are fine-grained, whereas those in the upper layer have a coarse-grained structure. The blue surfaces show different hues of blue, resulting in a patchy character (Fig. 25, 26). In the corners and along the boundaries of the carvings, the blue tends to be darker, contrasting with the pale blue flat surfaces. This could be the result of uneven application, lack of stirring in the pot, and re-orientation processes during the drying of the glue-based paint with very irregular pigment sizes. In the pale blue layer, coarse dark-blue pigments can be clearly distinguished with the naked eye.



Fig. 25: Even before gilding, the lower right volute had broken off. Here, the gilding lies on the flat support (condition before treatment). The blue paint has a patchy, irregular appearance



Fig. 26: Detail of the frieze; drops of preparation and colour that had run behind the applied ornamentation are now visible due to the loss of the carving. The horizontal orientation makes it clear that the gilding and polychroming took place before the individual elements were assembled

Horizontally oriented tears from dripping paint beneath ornaments that have since been lost indicate that the retable elements had been painted and gilded before mounting (Fig. 26). At the time of applying the gilding and paint, some parts of the ornaments were clearly already damaged or missing. In these areas, the gilding was applied in the form of the missing ornament on the flat background (Fig. 25). This suggests that the polychromy was carried out some time after the construction and/or delivery of the wooden structure. Furthermore, this confirms the division of the work between carpenter, carver, and painter, most probably having different contracts and working schedules.

The painting

The upper half of the painting depicts the annunciation scene, which is witnessed below by four almost life-size saints in a grouping of a “*sacra*

conversatione" (Fig. 27). Older literature mentions that this painting was imported by Nikola Brautić from his bishopric in Sarsina/Umbria at the beginning of the 17th century.²⁸ There is no doubt that the painting was specifically intended for the altar and has belonged to it from the very beginning, although artist and origin remain unclear.

The painting was created using traditional oil painting technique. A distinctive feature is the fabric used by the artist. It consists of a single large piece (3.13 x 2.30 m); the preserved selvedge at the lower left-hand side shows that the cloth must have been at least 2.30 cm wide in the direction of the weft, indicating an extraordinary large loom for hand weaving at the time. The weave shows a complex pattern of rhomboid shapes and can be described as a variation of a diamond shaped point twill (Fig. 28, 29). Such canvasses are known to have been used in the 16th and 17th centuries, especially in Venice and Spain. Similarly complex weaving patterns can be found in paintings by Titian, Tintoretto, El Greco and particularly frequently in Tuscan and Emilian paintings.²⁹ The very common weave pattern was named *mantelillo veneziano* or *perugine cloth*.³⁰ Paintings from



Fig. 27: Painting "Annunciation"; condition as found



Fig. 28: Detail of the back of the canvas

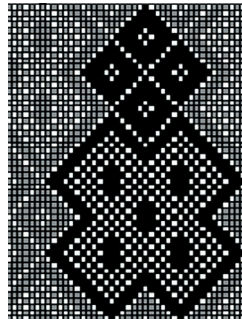


Fig. 29: Schematic layout of the canvas weaving pattern (patrone)



Fig. :30 “Ultima Cena” by Bartolomeo Schedoni (1578 to 1615) Galleria Nazionale, Parma; GN 132. (by concession of Ministero della Cultura - Complesso Monumentale della Pilotta - Galleria Nazionale, Parma), The depicted tablecloth shows a comparable pattern.

the period depicting laid tables show such fabrics as tablecloths, as can for example be seen in the painting “Last Supper” by Bartolomeo Schedoni (1578 to 1615)(Fig. 30).³¹ The wide, seamless canvas could well have been particularly valuable and could also be interpreted as a special gift to the altar.

The canvas was nailed to the front of a simple, non-wedgeable frame and coated with a very thin brownish preparation layer.³²

The paint layer is also very thin. Impasto is only found in a few areas, such as the bishop’s mitre. In most of the surface areas, it has an even and smooth character, but nevertheless shows the relief of the woven structure.

Condition - general observations

The retable had remained virtually untouched to this point except for the pedestal zone which had been clad with modern-day tongue and groove boards. The only traces of restoration work could be found on the painting. An earthquake in 1996 probably caused the entablature to shift, subsequently collapsing during a church service, after which it was re-erected and secured by local labour.



Fig. 31: Predella, detail; damage due to insect attack

This state of being relatively untouched, neither by the restorer's hand nor by the usual reworking, means that we can clearly see the traces of normal ageing over the last 400 years. The situation is aggravated by climatic stress on the materials of the retable, extensive wood pest infestation of the wooden construction, and damage to the painting caused by bats. The bats used a hole in the painting as an entry, nesting behind the painting and damaging the surrounding substance with their droppings. The painting itself had in the past already been restored once. Two patches on the back and numerous mismatching retouches and overpainting bear witness to this. In addition, the historical strainer frame had been modified into a stretcher with wedges. The canvas edges had become very brittle due to the repeated removal from the stretcher and the re-stretching of the painting. The paint layer is brittle, adhesion to the canvas very weak, thus flaking and losses appeared all over.

The condition was critical, particularly in view of the partially rotten wood substance and the severe damage to the polychrome surfaces and the painting. Despite everything, the retable still made a powerful impression on the viewer.

Conservation and restoration of the retable

In contrast to the restoration of the Nicholas retable, here it was decided to adopt a more cautious and differentiated approach. The doubts raised by the extensive reconstruction in the Church of St Nicholas were to lead to more thorough reflection on the purpose, necessity, and scope of reconstruction in the new project, which was also discussed with the students.

All decisions were to be based on a thorough examination of the technical aspects and condition of the retable. The fundamental task was to conserve the damaged wood, polychromy and gilding. To this end, the modern tongue-and-groove boards on the pedestals were also removed.

To strengthen the wood, the acrylic resin *Plexigum PQ 611* was applied in several passes. Consolidation of the polychrome and gilding was also carried out in several passes. Sturgeon glue in a concentration of 3-7% was used for the matte blue smalt. Flaking of the gilding was treated with *Plex-tol B500*. The unstable mensa plates were taken up and laid horizontally in a new mortar bed. Up to this point, standard conservation principles were adhered to.

From thereon, new paths were to be taken with a different restoration goal. Contrary to the customary, far-reaching reconstruction measures undertaken in the context of other restorations in Croatia, the retable was only to be improved in its visual appearance through limited retouching



Fig. 32: Pedestal, seen from the back; stabilisation of fragile joints with cut-to-size wooden blocks



Fig. 33: Injection of *Plexigum* consolidant

and refining its presentation. Reconstructions were to be avoided wherever possible. The conditions here were much better than for the Nicholas altar, as the loss of substance had not been quite so extensive. All those involved shared the impression that the conditions here were sufficiently good to favour such a restrained approach.³³

As a guiding principle for the decision, the authors adopted the following premise: conservation instead of restoration and reconstruction, thereby following the lead of Dehio, whose views are still ground-breaking.³⁴ Refraining from reconstruction also means that the work is recognised as unrepeatably and unique. Due respect is paid to the authentic original. Damage and ageing is accepted as part of its history. What is lost cannot be replaced.

However, the fragmentarily preserved work also possesses its own aesthetic values and calls for an engagement with its meaning and the desire for a positive reaction. Are the historical intention and the pictorial representation sufficiently legible? Does the viewer's optical discomfort prevail or is the overall impression coherent in itself despite the damage? This is where subjectivity comes into play, requiring decisions to be made in a larger group.

For this reason, examples of possible approaches for the treatment were first tested and put up for discussion. The final restoration concept was derived from the opinions formed in these discussions (Fig. 34).



Fig.34: Entablature; test area for the retouching concept; left side untreated / right with retouches



Fig. 35: Predella, reconstruction of moulding with subsequently added wood-sticks, before shaping and retouching

To date, complete reconstruction of all missing and damaged elements has been regarded the norm by most professionals involved in the treatment of retables in Croatia, as well as by local authorities. Refraining from reconstruction is an unusual position. The damaged work of art is perceived as unattractive or blemished, and there is a desire to remedy it, to cover up or reverse the damage. The notion of the unrepeatable authentic original was introduced into the discussion.³⁵

The aesthetic qualities of the retable can be brought to the fore through targeted retouching without complete reconstruction. At the same time, the substance is conserved by minimising intervention and reducing the amount of additional material added to the existing old substance.

Formal reconstruction only took place in two areas, one of which is the upper corner of the right-hand gable segment, where there was a gap in the contour. The line of the structure is enhanced using the technique of supplementing with wooden sticks (Fig.35, 36).

The second place is the lower profile of the predella. This is so close to the viewer and to the mensa, which is still in liturgical use, that it was necessary to fill the worn and fragile surface of the profile with filler material to add strength.



Fig.36: Right gable; reconstruction of the broken corner

A total of three filler systems were developed, designed to allow for maximum customisation according to the respective damage: injectable filler for undercut holes, trowelable fillers for deep voids and topcoat fillers for a smooth surface. The binder used was a combination of acrylic resin *Plexigum PQ 611* and animal glue as *Plexigum* was used for the wood consolidation work. The fillers with cork granulate (in two particle sizes and various proportions), hollow phenolic microspheres, and chalk were prepared as standard mixtures (Fig. 38-41). The injectable filler was primarily required for those parts of the eroded wood substance where the polychromy and gilding were left without support, but to which the supporting filler could not be applied to with a spatula. This compound could be injected through exit holes (Fig. 37).³⁶

The retouching was carried out using pigments and acrylic resin *Paraloid B72* as a binder, and only prominent defects were minimised. Covering the primer-visible surfaces with the appropriate local colour achieved a significant calming of the surfaces (Fig. 34, 42, 43).

The aim of the retouching was to calm the surfaces by accentuating the values of the local colours. Whereas wood and gold are close together in colour, the contrast between the visible preparatory layer to gold, wood,

and the blue areas is high and could be softened by covering the white borders. This approach is in keeping with the desire to highlight the aesthetic qualities of the retable without the need of regilding and repainting. A special situation arose regarding additions or the extent of the retouching in the area of the pedestals, where the decorative mouldings had been destroyed before being covered with modern tongue-and-groove boards. Here too, no additions were made. However, the calming retouching of the blue areas emphasises the original structure and compensates for the loss (Fig. 44, 45).



Fig.37: Injection of filler



Fig.38: Predella, bottom moulding after consolidation



Fig.39: First step of formal reconstruction with coarse filling mass



Fig.40: Second layer of filling



Fig.41: Top coat of filling prepared for retouching

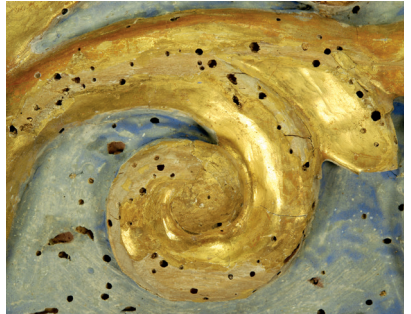


Fig.42, 43: Frieze; detail of carving before and after retouching



Fig. 44: Pedestal after removal of modern tongue-and-groove boards; the wood surface is visible in place of the lost mouldings



Fig. 45: Pedestal after treatment

The more or less untouched polychromy of the retable is, in spite of the amount of loss, still remarkably vivid. Smaller retouches produced a positive effect on the whole.

The works were completed with the re-erection of the retable. In order to improve ventilation, especially for the painting, the whole construction was moved forward by about 8 cm. The individual segments lie unattached, one above the other. Two lateral wall anchors and a custom-made hanging of the architrave provide sufficient stability, whilst also allowing room for possible vibrations caused by earthquakes.

The treatment of the painting

The treatment was carried out over nine workshop periods. Due to the limited progress possible during of the annual two-week working periods, the team had the task of dividing up the treatment into distinct steps. The painting regularly had to be remounted to the retable ad interim, waiting for next year's measures. The positive side effect of this periodical work was the chance to evaluate the achievement of former measures as well as to correct and adjust the proposed concept.

The main challenge was the extreme brittleness of the paint layer and the big hole in the upper left corner of the canvas, which was used by bats as an entrance to their roost behind the retable. Excrements of the bats had caused severe losses in the paint layer, with deterioration of the canvas into a powdery condition in the wider area of the hole (Fig. 46-49). Deformations in the bottom half of the painting, (Fig. 50) surface dirt, and mismatching retouches (Fig. 51) from an earlier restoration attempt, together with very irregularly applied varnish that had become brown emphasised the pressing need for treatment.

The first aim was to stabilise the canvas. In order to leave the beautiful and special fabric visible as such, it was decided to stabilise it with local measures and thus dispense with the initially planned lining. The treatment focused on a local intarsia with additional support of the area with a thin *Stabiltex* polyester and a striplining on all sides of the canvas, both achieved with *BEVA 371* (Fig. 52-57). In order to minimise future stress, the painting was re-stretched over a loose-lining (polyester canvas) (Fig. 62).

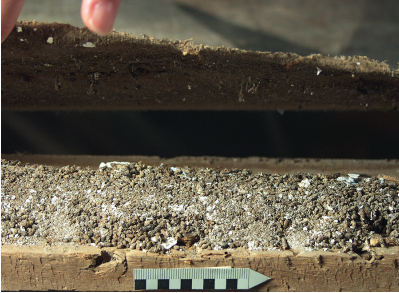
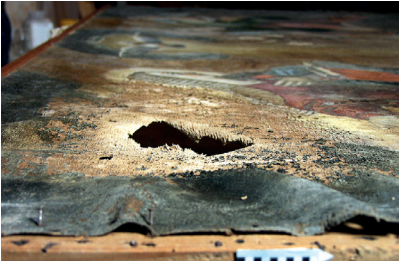


Fig. 46-49: Damage to the painting caused by bats; the hole in the upper left corner was used by bats as an entrance to their roost; the droppings caused severe cupping of the paint layer, deformation, and bleaching of the canvas



Fig. 50: The bottom of the painting was deformed through the weight of the large format. The surface is covered by dust and dirt. (position on the working table)

Fig. 51: Mismatching old retouches and new losses in the area of Mary's coat.



Fig. 52: Impregnation of weak and powdery canvas in the area of the hole with *Paraloid B 72*



Fig. 53: During the cutting of the intarsia; local bridging threads

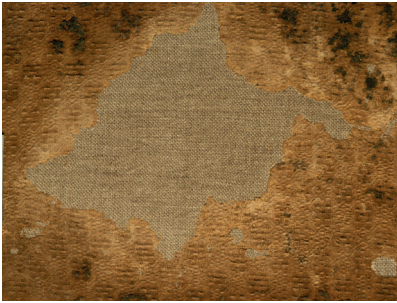


Fig. 54: The intarsia



Fig. 55: Local *Stabiltex* lining of the intarsia

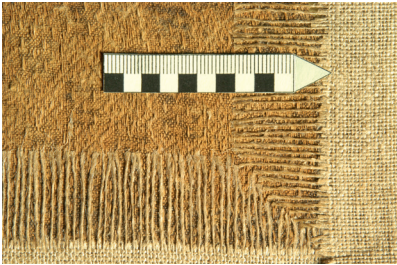


Fig. 56: Detail of the striplining



Fig. 57: The application of the striplining



Fig. 58, 59: Before and after removal of varnish and mismatching retouches

After several unsuccessful attempts to consolidate the brittle paint layer with sturgeon glue from the front, the treatment was changed to *Plectol B500* applied locally to the front and an additional total impregnation with *Plexisol P550* to the back followed by a heat-sealing process.³⁷

The solvent-based varnish removal and the removal of the mismatched retouching was carried out before this impregnation.³⁸ The success of this measure was significant, in particular regarding the contrast of the colors and the legibility of the details.

Filling of lacunae

A filler was required to fill large lacunae quickly and precisely. A liquid filler for brush application was developed to provide a replication of the distinctive structure of the canvas without soaking the textile and without the need of extensive manual shaping of the surface.³⁹



Fig. 60, 61: The area of the "bat hole" after filling and after retouching

For the smaller lacuna, it was an easier and more suitable approach to apply a more paste-like putty with a fine spatula. The mentioned formula was modified with additional filling material to achieve a paste-like consistency. Due to the amount of loss, it was decided to fill and retouch almost every individual loss down to a very small size. This fulfilled the need for additional stability of the paint layer, allowing for the checking of any future damage or loss.⁴⁰

After closing the lacunae, retouching varnish MS2A in a 25% solution in white spirit 100-140 was applied on the painting. A cotton wad with fine textile covering moderately soaked in varnish was gently rubbed over the surface in circular strokes to achieve a balanced gloss.

Retouching

In order to achieve an aesthetic balance of the entire object and to restore the legibility of the depicted scene, a complete retouching was decided

upon. Small losses within defined colour areas were completely integrated tonally, while larger losses, especially of shapes and contours, were filled with fine brushstrokes (rigatino), to distinguish the addition from the original. Fortunately, the large loss in the upper left corner did not affect any figurative depiction and was limited to the very schematic clouds of the celestial sphere. The rigatino-retouching carried out here blends in seamlessly but is easily recognisable as an addition when viewed from a short distance. Uneven or reduced colour surfaces due to former overcleaning or colour changes as well as remaining residues of overpainting were adjusted with glazes and/or rigatino on top of the retouching varnish. For the retouching acrylic paint “PRIMAcryl” by “Schmincke” was used (Fig. 60, 61).

The uneven gloss required a final varnish. Matte areas were covered by sequential brushed layers of MS2A in white spirit 100-140 to obtain a regular saturation. Glossy retouches were matted with *Acematt HK 25* in varnish. A final spray coat of MS2A in white spirit 100-140 was applied for an overall final gloss.

Fillet frame

Although there is no identifiable reference about the original framing or mounting system of the painting in the retable, a plain fillet framing was added for aesthetic considerations. The bare wooden fillet strips were painted with acrylic paint to match the color of the aged wood and attached to the front edge of the painting with small screws. This completely reversible evocation of a “frame” covers the unpainted edges of the painting creates a more “solid” impression (Fig. 11).

Backing system

To stabilise the painting and protect it from the dampness of the wall, it was decided to insert plywood panels into the spaces between the stretcher frame (Fig. 62). This was to slow down the water transport through the painting.⁴¹ With the same aim and to allow for better ventilation, it was decided to create more space between the painting and the wall by moving the whole retable 8 cm forwards.



Fig. 62: Installation of the rigid backing; the polyester loose-lining is visible in the right-hand spaces between the bars of the new stretcher

Quick disassembling device

For future treatment and accessibility of the large painting, a system was installed that allows for its removal and reinsertion without the need for scaffolding. For this system two wooden sliding rails were mounted to the inner jamb boards of the retable. They carry two short pieces (25 cm) of aluminium U-profiles at their upper end with an opening, serving as locking slots for two runners, (Fig. 63, 64) specially formed oak dowels fixed to the painting on the back corners of the upper stretcher bar. Additionally, two webbing-belt grip handles were fixed to the back of the bottom stretcher bar for handling.



Fig. 63: Sliding rail with U-profile and opening at the top stretcher

Fig. 64: Oak dowel runner at the top bar of the stretcher

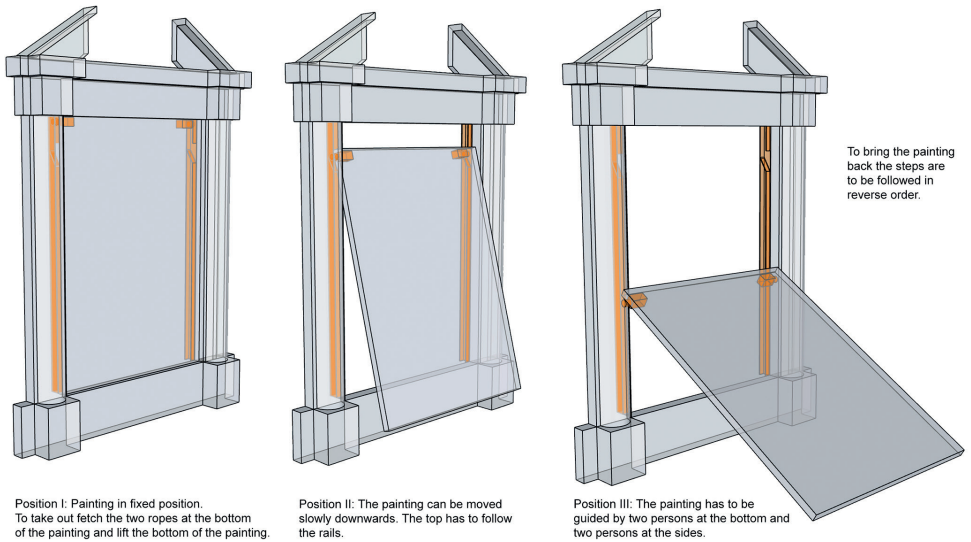


Fig. 65: Schematic diagram of the disassembling sequence

Protruding from the bottom border of the painting, they are to be used for lifting the painting in future demounting processes. To optimise the handling of the painting, four additional webbing-belt grip handles were screwed to the main vertical bars of the stretcher.

This invisible system serves both as a means of holding the painting in place as well as a means to withdraw it from the retable with only four people (Fig.65). Once the bottom of the painting is released from the position on the predella, the painting can slide down the sliding rails. The sliding dowels at the top of the painting will pass through the openings in the sliding rails after 25 cm and the painting can then be lowered down.⁴²

Evaluation

The remounting of the finished painting in 2010 marked the completion of the treatment of the retable. The moderate treatment with retouches, fillings and reconstruction in defined areas restores a lot of positive aesthetic values by respecting the age-related value of the authentic original. Although general opinions regarding the treatment are very positive concerning the aesthetic appearance and achieved consolidation, some criticisms should be considered.

The consolidation treatment of the painting had several drawbacks. In consequence, three different materials had to be used to achieve proper adhesion. The painting is still in a weak condition and suffers extremely from changes in humidity. The excrements of bats could not be extracted completely from the canvas, it is therefore likely that new damages, especially flaking of paint, may occur. Regular monitoring is necessary.

Ordering and using a new stretcher instead of using the old one was not strictly necessary. The use of the old stretcher could have been made possible by minor changes.

The whole wooden inventory of Gospa od Šunja was fumigated with methylene bromide in Spring 2002. This was a curative measure to kill the insects but has no depot effect. It is therefore likely that the retable as well as other wooden objects in the church will be at risk of new insect infestations in the future. As greater parts of the wooden construction were treated with acrylics for consolidation, some preventive effect is achieved through that application.

The burial chapel dedicated to Bishop Brautić was originally closed with an iron gate. Today, the chapel serves as a transept, which can lead to soiling and wear on the valuable gravestone. The installation of a rope barrier could help to prevent it from mechanical damage and soiling.

Retouching of the surfaces of the aedicula

Small differences in the retouching in the gilding and in the blue areas bear witness to the number of hands involved. The extent of the retouching in the blue areas was controversially discussed and extended in some areas in order to achieve a uniform result. The aim was to calm the scattered image but avoid a total reconstruction and a dominant effect of

the blue-painted areas. The goal was achieved, but now some remaining non-retouched areas might result in a manneristic appearance.

Integration of the painting

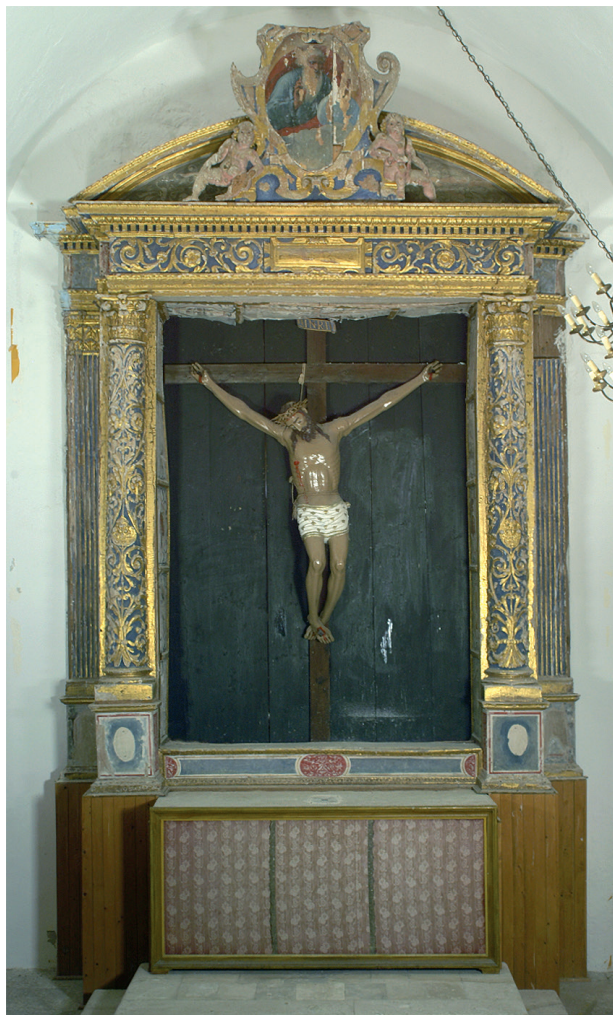
Due to the invasive previous restoration, the painting required a different approach, including the removal of mismatching overpaint. This resulted in the reintegration and reconstruction of losses and abraded areas to restore the legibility of the painting. The reconstruction of bigger losses was done in rigatino manner to distinguish those areas from the original. However, they match when viewed from a distance and help to reproduce the spatial effect of the depicted scene. Compared to the retable, the amount and degree of retouching is higher, resulting in a more dense character.

The Holy Cross retable

The Chapel of the Holy Cross

On the northern side of the Gospa od Šunja parish church, close to the sanctuary, the nave opens into the Holy Cross chapel now housing a retable dedicated to the Holy Cross.

Commissioned by Thomas Pidelli, the chapel was erected in 1527, and was originally dedicated to St Roch, as is proclaimed by a Latin inscription



carved on the stone arch of the chapel: “*Hoc tibi dive Roche Thomas Pidelli condidit sacellum 1527.*” (To You, St Roch, Thomas Pidelli erected this chapel in 1527.). The statue of St Roch, originally on the altar of the chapel, was later replaced by the wooden polychrome retable with the Crucifix and the chapel has been called the chapel of the Holy Cross ever since.⁴³ It is worth mentioning that there is a small rosette window in the north wall, now hidden behind the Holy Cross retable that must, however, have been visible in earlier times.

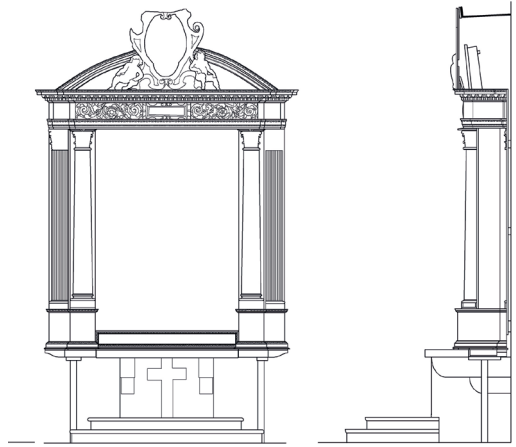


Fig. 66: Holy Cross retable; condition as found

Fig. 67: Holy Cross retable; after treatment

Fig. 68: Measurement; H: 6,75 m; W: 4,08m

Part of the ensemble, and in close iconographical connection to the retable with representation of the Passion of Christ, are two paintings from a series of four painted “wall-hangings” that adorned the side walls of the Holy Cross chapel. The two other paintings were hung in the Brautić chapel. This rare and precious part of the ensemble of the church shall be addressed here shortly.⁴⁴ The paintings were



Fig. 69: Tüchlein "Jeremiah", H.: 154 cm; the inscription reads as: OBSTUPESCITE CAELI SUPER HOC - IER. CAP. II (Be horrified about this, you heavens; Jeremiah, chapter 2, [verse 12])

most likely made in the 16th century and are painted in the rarely preserved technique called 'Tüchleinmalerei', unique in the Croatian heritage. They depict six prophets of the Old Testament identified by inscriptions as: Moses, King David, Daniel, Jeremiah, Isaiah, and King Solomon. The paintings show the full-length figures of the prophets in a narrow black niche (Fig. 69). Each prophet holds an inscription with a verse from the Old Testament in Latin language.^{45,46}

Placed in the Annunciation Chapel the hangings with Moses, King David, Isaiah, and King Solomon reflect the ancestry of Christ. Daniel and Jeremiah were located in the Holy Cross Chapel and are depicted as witnesses to the Passion of Christ. Some of the inscriptions of the other prophets refer to the passion as well.

Painted in the technique of 'Tüchleinmalerei', the colours are applied directly to the textile without priming. An underdrawing carried out with thin red lines (red ochre) is visible in unpainted areas or under bright colours like in the pleats. Typical for 'Tüchlein' paintings, some areas are completely without paint. In these spaces, the textile, which has likely been bleached, is used as bright colour. The colours are applied thinly in a water-based system and have soaked into the canvas, so the depiction is partially seen on the reverse side and the canvas has kept its flexibility. There is no varnish applied.

The retable – description

In the literature published to date, a more precise date for the construction of the Holy Cross retable has not been given. Art historian Kruno Prijatelj believed that this altar, together with the Annunciation retable in the opposite chapel, and two similar but significantly smaller retables in the church of Gospa od Špilica, dates from around the 1600s.⁴⁷ However, Prijatelj briefly observes that the shape of the Holy Cross retable still reflects a renaissance style, indirectly suggesting a possible, significantly earlier origin of this altarpiece when compared with the Annunciation retable in the Brautić chapel and other retables within the group. As mentioned before, the Annunciation retable can be dated to 1637. Most likely the Holy Cross retable represents an earlier phase. An indirect archival note exist concerning the supposed period of erection of this altarpiece. In the testament of Blaž Alegretto – a Lopud’s priest– written on the 15th of April 1567, he donates 30 scuda (*škuda*) to the construction of the Holy Cross retable.⁴⁸ This date indirectly suggests the period when the altar was erected, i.e. just after 1567.



Fig. 70: Holy Cross retable seen from the side; condition after treatment

The retable belongs to the type of architectural aedicula, forming a deep niche for the crucifix. Two vertical “boxes” are flanking the niche, and attached to the front, semi-columns with rich ornamental carving and corinthian capitals are the prominent vertical elements, supporting the entablatura and a lunette pediment, whereas fluted pilasters in blue and gold with gilded corinthian capitals in the level close to the wall provide the outer contour (Fig. 70). The semi-columns are decorated with carved and gilded symmetrical vegetal motifs on blue background, surrounding the central motif of a



Fig. 71: Central motif of the columns

winged angels head in relief (Fig. 71). In the centre of the lunette pediment, a cartouche with the painting of God the Father and rich scrollwork ornamentation and accompanying putti was placed.

Even the predella obeys the architectural principle, enhancing the central niche with a lower middle area and the two protruding postaments that carry the semi-columns. To the sides these postaments step back to support the fluted pilaster. The inner walls of the niche are decorated with a series of “Arma Christi” paintings, five on each

side, four on the lintel, all framed with a gilded moulding in a regular sequence thus forming a coffered reveal (Fig. 70).



Fig. 72: Holy Cross retable, stipes, mensa and suppedaneum; the supporting posts are of later date



Fig. 73: About 1950; small cartouches on the front of the postaments are missing today; the retable has no lateral pedestals (with permission by the photo archive of the monument care office, Split).



Fig. 74: Right postament; empty position of former attached cartouche

The altar itself (stipes and mensa) is built of simple and coarse masonry, not massive but hollow with openings on both sides providing an entrance to the inner space and access to gravestones in the floor underneath the stipes. The mensa is made of one stone slab. The stone suppedaneum is a later addition with two steps fitted to the front but not to the sides of the stipes (Fig. 72).

Viewed in context with the retable, stipes and mensa are too small for the retable. The observation of gravestones in the inner structure of the stipes—visible but partly covered by the masonry of the stipes, is evidence for the late dating of the stipes or a rearrangement of the whole, which must have been carried out in the second half of the 19th century. This timing would align with the rearrangement of the gravestones in the nave and the erection of the two small altars at the frontwall of the nave.



Fig. 75: Painted square pattern of masonry joints became visible after the removal of the modern paneling of the pedestal zone

Historical photos show small cartouches on the postaments of the columns that are now lost. It is unclear whether a heraldic representation was depicted there (Fig. 73, 74).

The photo shows the retable without lateral pedestals. After removing the modern paneling of this area, which was considered inappropriate, it became apparent that the retable had been standing without lateral supports for some time. The wall behind the retable shows a continuous square pattern, which is assumed to be a 19th-century design. The supporting beam for the retable was probably



Fig. 76: Central area of the architrave with the cartouche in the frieze, condition as found

installed together with the modern paneling (Fig. 75). It remains completely unclear what the original design of the lower area might have been. The selection of the decorative motifs of the Holy Cross altarpiece both in carved relief and in the polychrome decoration still remains very much within the renaissance tradition. However, the symmetrically ornamented columns already point to the Mannerism of the late 16th century. The architrave shows a dentil and egg-and-dart cornice, carved acanthus ornamentation scrolled in opposite directions and a central cartouche in classical form in the frieze (Fig. 76).

The retable stills shows the original polychromy. Gilded ornaments are set against a dark blue background. This is most prominent in the columns, pilasters, and the frieze. The polychrome decoration of the flat surfaces of the predella is imitating an inlaid work with a system of combined rectangular frames and oval forms in red and blue in front of a white background (Fig. 77). The coloured areas are decorated with a pattern of white floral ornaments, evoking an engraved and filled work. This decoration is reminiscent of *pietra dura* work. Some of these surfaces are worn out, making the ornaments hard to discern.



Fig. 77: Central motif of the predella; condition as found



Fig. 78, 79: Arma Christi; detail with the symbols of the flagellation; (left) white dots in the background of the inner cartouche indicate the position of lost gold dots that had been gilded with mordant gilding; the gilding is lost except for microscopic traces; white preparation layer is now visible; (right) digital reconstruction of the lost gold-dotted background decoration

The “Arma Christi” are set in grisaille-painted cartouche frames and feature illusionistic effects with light and shadow in order to create a three-dimensional character, thus enhancing the effect of the coffering. The symbols were surrounded by a gold-dotted background. These gold dots are lost completely today and can be traced only by microscopic remains. The painting is more decorative than of artistic quality (Fig. 78, 79).

The segmental pediment is decorated with a carved and gilded cornice moulding. The flat surface is painted in a greyish colour and decorated with a pattern of white floral ornaments. A blue circle, now hidden behind the cartouche with the depiction of God Father, occupies the centre (Fig. 80).



Fig. 80: Pediment with blue circle hidden behind the cartouche (here removed), condition as found



Fig. 81: Cartouche “God Father”; condition after conservation

The central front of the pediment is adorned with a separately made and attached decoration in form of a cartouche being presented by two carved putti in high relief. In the centre, God the Father in a painting on wood is holding the sphaera in his hand. The cartouche, baroque in form, is carved, gilded and polychromed, the putti are fully polychromed as well (Fig. 81).

This separate addition represents a more developed baroque style. The carved putti and the style of frame and painting do not directly match the decorative pattern of the polychromy of the retable, although the blue smalt layer seems to be of the same character. The artistic quality of the painting is much greater than that of the “Arma Christi”. An existing contract from 1574 with the painter Simone Ferri concerning the commission of a painting of God Father can be linked to this cartouche.⁴⁹

Construction

The wooden body of the retable is made by butt-joined and nailed coniferous planks. Several elements, like the boards of the niche, the semi-columns and some parts of the predella are made of poplar boards. On the back of the cartouche, some tool marks provide insights into how the boards were prepared. The horizontal board at the bottom of the cartouche shows the regular traces of a mechanical frame saw. A frame saw was used as well for the poplar boards for the “Arma Christi”. Sawing marks of different levels suggest that other boards were sawn by hand from both sides. Marks of hand sawing can be seen on the backside of the putti as well. The retable is mounted in situ in form of an assemblage process. All elements were added successively with nails to form the body of the retable. The whole structure is assembled in a complex system, not always following the logic of carpentry. Some parts, such as the sides of the predella, were made from boards that look like odds and ends (Fig. 82).



Fig. 82: Predella; side wall made of board pieces without logical arrangement

Only the cartouche and the pediment can be separated from the retable by simple intervention. All other parts are in connection to each other and are fixed by subsequent nailing, the nail heads in most cases hidden by the polychrome layers. The decorated surface is like a skin over an entangled and composite (“organically grown”) inner structure. It is necessary to note that this construction differs fundamentally from the retable of the “Annunciation” in the Brautić chapel, where the maker had planned the retable in several separately constructed modules, put together in a reversible systematic manner of stacking the elements on top of each other.

Polychromy

The polychromy can be divided into three major elements: the gilded surfaces, blue monochrome small areas (semi-columns, architrave), and the glue-distemper decoration covering the surfaces of the predella, niche-boards, entablature and gable.

Preparation

Some areas of the wooden construction, especially joints and areas with changes in wood direction were prepared by covering them with pieces of canvas.

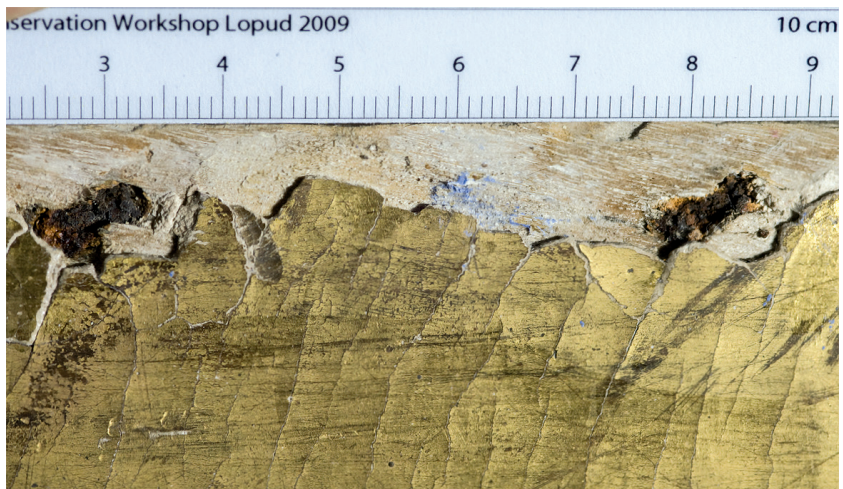


Fig. 83: Detail of the gilding; condition before treatment. The loss in the gilding shows the nail heads, which had been covered by preparation and gilding

The applied ground layer was analytically determined as a mixture of calcium carbonate and animal glue. It was spread by brush over the entire surface including the attached mouldings, subsequently covering all nail heads of the making of the construction (Fig. 83). For gilded areas, the preparation was applied three times thicker than for polychrome flat surfaces. No traces of grinding or amendment of the applied preparation are visible.

Gilding

Gilded surfaces are decorated by water gilding. For that an extremely thin layer of brownish bole (poliment) had been applied, subsequently the gold leaf was applied and burnished.



Fig. 85: Detail of the right column; dark blue smalt is contrasting the gilded ornaments

A second matte gilding technique was used in the “Arma Christi” paintings. The background of these depictions had been stippled with tiny gold dots (4-6mm) in a mordant technique. Although lost except for some very small remaining traces, the decoration can be described as being made by the application of a viscous binding medium, which was subsequently gilded with gold leaf after reaching the desired tackiness. Excess of gold leaf was brushed away after drying of the mordant. Due to deterioration and (possibly hygroscopic) surface tension of the medium, all dots have disappeared, leaving a shallow white lacuna of their former position in the preparation layer (Fig. 78, 79).

Following the application of the gold leaf and the burnishing process, the matte monochrome deep blue glue-paint containing coarse smalt particles was applied to contrast the gold and to define the contours of the gilded carving (Fig. 84, 85). The smalt on the frieze, the pilasters, and the columns is particularly colourful due to the coarse grain. The pigment particles and the grainy surface are clearly visible to the naked eye.

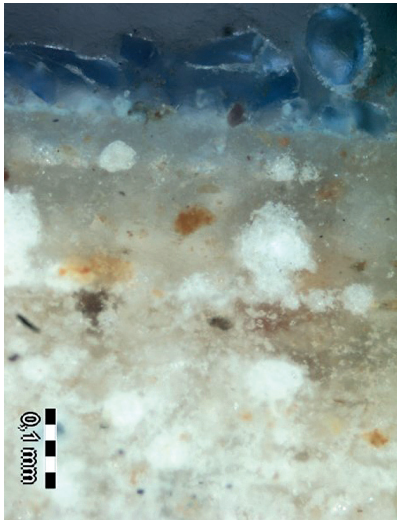


Fig. 84: Cross-section through blue area; coarse smalt particles on multilayered preparation

All other polychrome areas are painted very thin in a layering system, based on a first layer of the general background colour, subsequently followed by the details of either ornaments, contours or the detailed pattern of the paintings like the “Arma Christi”. The medium is very water sensitive, most

likely it is based on a glue distemper and applied in very thin washes. The watery consistency is clearly visible in irregularities and traces of brushwork, showing more or less dense areas of applied paint. The whitish preparation layer is used as a white background and is left visible around the main formal elements (Fig. 86, 88).



Fig. 86: Predella; the grotesque ornament was applied as final touch

Fig. 88: Predella, detail; main forms had been prepared by incised lines and a compass (arrows), white preparation layer was left visible as background colour; the floral ornament on the blue area is nearly lost

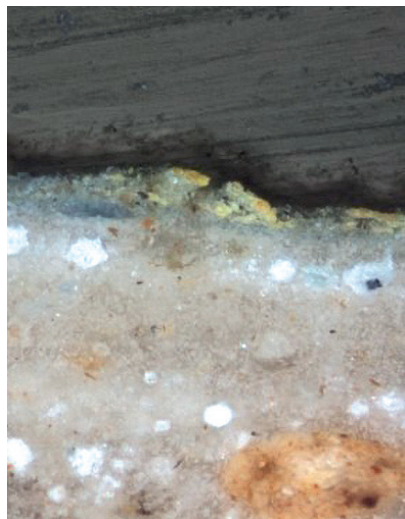


Fig. 87: Cross-section through blue grey area of the pediment with painted ornament

The puzzle of the unpainted sides of the retable

Obvious modern interventions were limited to the repainting of the sculpture of the Christ, the panelling of the pedestal zone, and the black background of the central niche. Small remnants of a fabric that have survived there show that the original textile design of the back of the niche was torn away and black colour applied instead. All other areas of the retable appear to remain unchanged and authentic.

However, the situation presents some puzzles:

- the outer sides of the retable are not decorated and show the bare wood (Fig. 89)
- the frieze has two vertical cuts through the finished gilding, causing a formal damage of the central cartouche and possibly made to narrow the dimension (Fig. 90)
- several gilded mouldings have been added to the structure of the predella after finishing with gilding and polychrome layers. Here nail heads are visible, which is not the case anywhere else
- the vertical joint between the semi-columns and the “Arma-Christi” boards show naked wood
- an original pedestal zone is missing

The most obvious puzzle is the bare wood on both sides of the aedicula (Fig. 89). The small gap to the adjacent pilaster and the uncovered edge at the front indicate a missing decorative panel. Did it never exist in the first place or was it lost at some point? The fact that the entire construction is nailed step by step and additively manufactured does not help to explain these missing panels.



Fig. 89: Bare wood on the side of the retable; condition as found

Both sides of the central cartouche in the frieze are cut sharply and the outer parts of the ornament are missing (Fig. 90). As there are no traces of preparation and/or gil-



Fig. 90: The central cartouche was cut on both sides after the finishing of the gilding



Fig. 91: Holy Cross retable; left part of the entablatura, condition as found; white paint splashes from the wallwashing on the gilding

ding on the edges of this board, it is most likely that it had been cut when already gilded and painted. This may point to a reduction of width or the deliberate use of ready prepared elements, which were cut to fit. There is a 0.2-0.5 cm gap between the piece with the cartouche and the adjacent boards with carved acanthus ornaments. The joint is clearly visible as it has not been filled. Instead, it was simply painted over with blue paint.

Further observations on nails in the gilded mouldings of the predella are puzzling. They were driven through the finished gilding, probably to complete the construction with further decorative elements. As a rule, all other nails are hidden underneath the finished gilding and polychromy. Furthermore, these mouldings do not match the decorative elements seen on the architrave and the pediment of the retable.

These observations can only be explained hypothetically. It is possible that the retable was never fully completed or that it was made with prefabricated parts that were then adapted to the desired shape on site. The lack of decoration on the outer sides may be the result of a temporary relocation of the retable during the renovation of the church interior, combined with some adjustments, changes, and thus the loss of several elements.

Condition

The retable still shows the original polychromy and was touched in the past only in a few areas - the sculpture and the background of the niche was overpainted; modern tongue and groove boards had been used to build postaments next to the stipes.

The retable was found in an extremely bad state of preservation. Lifting and flaking of the paint layer and gilding was present on all surfaces with significant losses in painted and gilded areas, revealing the wooden support with only traces of the ground layer (Fig. 91-93). Centuries have deposited dust and dirt on all surfaces. One of the most significant problems was the warping and shrinkage of the painted boards flanking the central niche (Fig. 94). This damage was caused by frequent and extensive changes in relative humidity and temperature due to a small unglazed rosette window located in the wall directly behind the retable. The deterioration of some carved ornaments caused by wood eating insects posed an additional problem.



Fig. 92: Detail of the cartouche "God Father"; condition as found



Fig. 93: Right column; condition as found



Fig. 94: Demounted panels with the "Arma Christi"; before conservation; detached paint flakes collected for refixing; the extreme warping of the boards is obvious

Conservation strategy

The conservation treatment had to deal with the severe lifting and flaking as well as the considerable losses in the gilding and the polychromy due to the hygroscopic response of the support. Surface cleaning was the obvious first step. Wood consolidation was necessary only in limited areas, the majority of the wooden structure was very well preserved and stable. The aim of the treatment was to stabilise the construction, polychromy, and gilding, and to enhance the aesthetic perception. In general, the approach follows the concept of minimal to moderate intervention as employed for the treatment of the opposing “Annunciation” retable. The deformation of the “Arma Christi” panels with extreme flaking of the paint layer posed a major challenge for treatment. There, big sheets of Japanese paper and strong glue had been applied in the course of an earlier conservation treatment. Shrinkage in the paper and warping of the wooden support caused further detachment of the paint layer.

The conservation treatment started with consolidation of painted and gilded surfaces, hand in hand with surface cleaning. Several consolidants had to be used and specialised techniques for their application had to be developed depending on the problem at hand. The deteriorated (insect-eaten) wooden support of some parts of the altarpiece was consolidated as well.⁵⁰

Wood conservation

Only few damages by wood eating insects needed consolidation with *Plexigum PQ 611*.⁵¹ First, a 5% solution of the resin was injected into holes and gaps to “wet” the wood. Then, a 20% solution was applied with a syringe. Bare wood with the need for consolidation was first treated with a 5% skin glue in order to saturate the wood surface and to prevent a discolouration by the application of the *Plexigum* resin.

Paint layer consolidation

A 10% solution of sturgeon glue was used to consolidate the blue paint layer (smalt), as the thick ground layer required high glueing power and staining had to be avoided.

The consolidation of the friable gilding was executed with *Plextol B 500* dissolved in acetone and water (*Plextol B 500* : acetone : water = 2 : 2 : 1).

Acetone was used as a surfactant (wetting agent), aiding penetration of the consolidant under the flakes, to increase the liquidity of the consolidation and to speed up the evaporation so that the glueing process would take place faster. The consolidant was applied with a small brush. Excess adhesive was removed with ethanol. Following the application of the consolidant, treated areas were temporarily covered with Japanese paper. Here, the following mixture was used: *Plextol B 500* : acetone : ethanol = 1 : 2 : 4. The solvents from this mixture evaporate quickly and thus the Japanese paper acted as stabiliser of the lifted flakes within few minutes. Several areas of unstable gilding were treated by applying *Medium for Consolidation* (Lascaux).

In the case of the blue paint of the cartouche with God Father, a different consolidation approach was taken. Saturated Cyclododecan solution was applied to the surface first to prevent the soaking of the consolidant to the surface and thus preventing staining.

Boards painted with the cycle of symbols of the Passion of Christ

The paint layer of the boards flanking the central niche was lifting and flaking heavily. Removing the facing paper of the last conservation measure from the water-sensitive and extremely brittle surface was an extremely difficult task.

Regarding the boards to the side of the niche, an attempt to consolidate the flaking paint layer *in situ*, so as to avoid dismantling and possible damaging of the original construction, failed. It was then decided that the boards would be dismantled and treated in a horizontal position. For that it was necessary to cut nails of the original construction in order to retrieve the boards.

Then the consolidation of the painted surfaces was done with *Medium for Consolidation MFC* (Lascaux), diluted with water (1:1) and applied by brush or, in case of heavily lifted paint, with a syringe. After the application of the consolidant, the paint layer became soft and was gently pushed down through *Melinex* after 5 minutes. Larger surfaces were treated with sand-bag weights to provide pressure. Remnants of the consolidant were later removed with acetone. The treatment had to compromise between the need for consolidation of the extreme flaking damages and the negative



Fig. 95: Applying one strip of the facing



Fig. 96: Strips of Japanese paper over bulged area

side effects of staining and discolouration. Every tested consolidant caused discolouration. The decision for MFC was taken, as the discolouration could be reduced by subsequent surface treatment with acetone. During consolidation, a lot of collected detached flakes could be reassembled and refixed to the wooden surface. As the wooden surface had shrunk in transversal

direction, several areas of lifted paint layer did not have enough space for total flattening and consolidation. In some cases of uniform colour areas, it was decided to sacrifice tiny amounts by precise cuts, thus managing flattening and consolidation.

In those areas where paint layer was found stable but lifting in a closed “bulb”, a nearly invisible permanent facing with japanese paper stripes and Ethylcellulose *ET 200* was added to reinforce the overall stability. These areas will require regular monitoring. (Fig. 95, 96)

The conservation intervention on the wooden support of the “Arma Christi”

The annual review of the consolidation effect revealed that the complex situation of the climate, the cutting direction of the boards, and the design of the construction caused stress on the paint layer and subsequent lifting of areas. Thus, the main objective was the treatment of these deformed and endangered painted panels. After completely dismantling these boards, a reinforcing substructure was realized. This involved the installation of four separate rigid frames made of acetylated wood.⁵² The warped panels are connected to these frames only by the tension force of springs attached to the back of the panels by locally glued wood blocks. The tension of the springs has been set low and can be adjusted if necessary (Fig. 97-100). This system fulfils several purposes:

- stabilisation of the whole retable structure and of the painted panels
- additional and reversible support and connection between semi-columns and the body of the retable
- easy access for inspecting the paint layer and manipulating of the tension springs if necessary

Additional long-term effect of this construction can be the retro-deformation of the painted panels. The implemented system with tension springs is an experimental approach and delivers a long-term load situation to the boards without visual disturbance to the retable and with the possibility of regular monitoring. The high relative humidity in the church and the depending high humidity ratio in the wood (calculated 8% up to approx. 30%) and permanent load can achieve plastic deformation of the wood cells both near the saturation of the fibre as well as in dry conditions and can result in a slow retro-deformation. The use of metal springs attached only locally can distribute the load flexibly and without further constructive and invasive operations.⁵³ The applied system is reversible. (Fig. 97 – 100)

The four assembled units were adjusted to the retable by a cleat system. Four cleats are screwed to the retable, the opposite members are part of the frame construction. With these cleats, the frame with the attached boards can be hung into the retable without further manipulation (Fig. 98). This system was introduced on both sides, as well to the lintel and to the

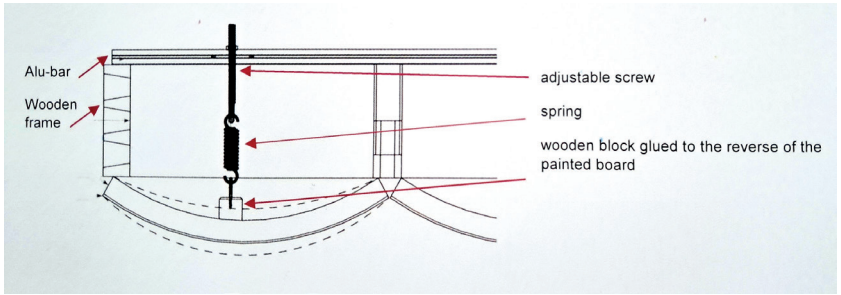


Fig. 97: Scheme of the implemented system

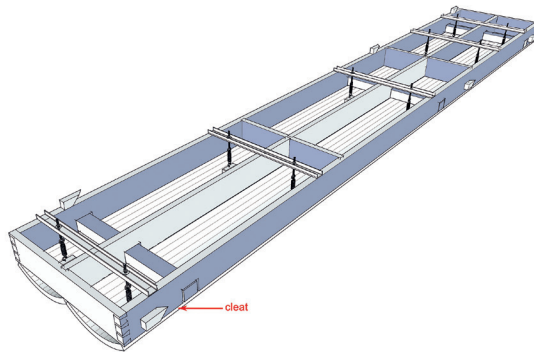


Fig. 98: Schematic overview of one unit

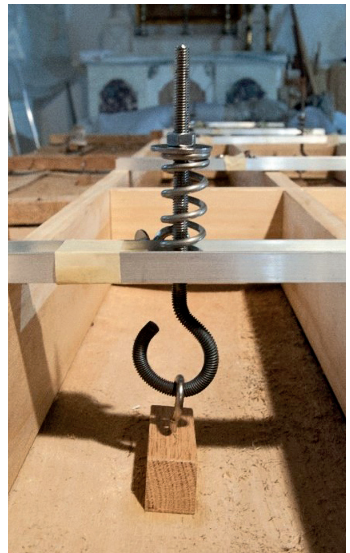
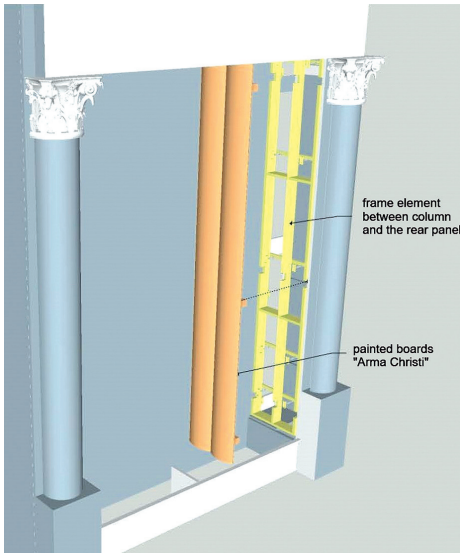


Fig. 99: Schematic view (exploded-view drawing) of one part of the implemented system

Fig. 100: View from the back during construction; added separate frame; the hook with adjustable spring to hold the panel is attached to the aluminium traverse



Fig. 101: View of the space behind the pediment and cartouche "God Father; condition as found



Fig. 102: Condition after treatment; the original mounting with two naturally grown wooden "knees" and one iron strut is reinforced with two additional stainless-steel struts; small wooden blocks stabilise the outer moulding



Fig. 104: Upper part of left column and pilaster; condition as found, the capital of the pilaster is missing



Fig. 105: Recovered fragment of the capital during reconstruction of the volume with balsa wood



Fig. 103: Condition after treatment; the fragile upper part of the cartouche is stabilised with a movable cradle system



Fig. 106: After reconstruction

bottom board of the niche. Furthermore, the fragile upper part of the cartouche was reinforced by a movable wooden cradle system attached to the back (Fig. 103).

Reconstructive operations

Reconstruction of missing elements was restricted to only a the capital of the right pilaster and some lost areas of the cartouche. In general, these additions were executed with balsa-sticks and *Plextol B500*. Some small losses were filled with putty.⁵⁴ The capital of the right pilaster was found in the cellar of the church between other items. It had obviously been badly damaged by wood pests, crashed down, then been stored and forgotten. In order to reattach this fragment, it was necessary to reconstruct the contour and volume using the wood-stick completion system (Fig. 104-106).⁵⁵ Losses in the surface of the cartouche were filled in with the same system.

Retouching

Following the principles of minimal intervention, retouching was done only where the white colour of the preparation layer could be seen, some white spots were present, or the wooden support was stained. The preparation layer was



Fig. 107: Before retouching



Fig. 108: After retouching

not reconstructed, i.e. the lacunae were not filled in. Before retouching, the surface of the wood was coated with 5% hide glue in the areas where the preparation or the polychromy and gilding were missing. This significantly reduced the whitish appearance of these areas and created a more desirable surface for retouching.

Dry pigments were used with *Paraloid B72* dissolved in a mixture of diacetone alcohol and ethanol.⁵⁶ For bigger losses, retouching was done in the Italian *tratteggio* or *rigatino* technique, applying small, parallel, coloured brush strokes. At closer inspection, these retouches can be clearly distinguished from the original. Viewed from a distance, they match harmoniously. Smaller spots were retouched in full. The aim was to achieve harmony in colour by calming down the losses in the paint layer without a total reconstruction. Each area of loss required the decision of either retouching the whitish ground layer with a colour matching the wood or the colour of the paint layer. (Fig. 107-110)

The dramatic losses in the polychromy and gilding of the cartouche with God Father led to a more reconstructive approach. Besides the tonal integration of some smaller reconstructions in the wooden support, the retou-



Fig. 109: Cartouche "God Father", after demounting, condition as found



Fig. 110: After treatment

ching focussed on enhancing contours of blue areas and gilded borders to establish a more readable situation. These retouches were executed in *tratteggio*.

The retouching concept did not include any formal or pictorial reconstruction.

The textile backing of the central niche

During the examination, fragments of a dark textile covering that had been attached to the background boards of the niche with nails were found. This led to further survey and to the reconstruction of a textile backing. The decision was supported by the fact that modern black paint in a very simple and inferior quality had been applied instead, detracting the appearance. It was decided to reconstruct a dark textile backing on top of that black paint in a reversible manner. The decision was further supported by the fact that dark backgrounds can be found in most of the Holy Cross retables in Dalmatia.

The reconstruction is based on a wooden fillet frame that is attached to the background panels with a few screws. A *Velcro* system is stapled to



Fig. 111: Holy Cross retable; reconstructed right pedestal

this frame, one side of which is sewn to the fabric and is used to attach the black polyester fabric to the frame. The reconstruction is completely reversible except for a few screw holes.

Reconstruction of a pedestal zone

Following the decision by the Monuments Care Office in Dubrovnik, a pedestal zone was developed in simple geometric shapes and painted to match the predella (Fig. 111).⁵⁷

The sculpture of the crucified Christ

The crucifix occupies the central niche of the Holy Cross retable.⁵⁸ The figure of the crucified Christ is attached to the cross, *patibulum* and *antenna* of the cross are made of simple wooden rectangular beams. Close to the top of the cross is a carved wooden *titulus*.

Christ is portrayed as drained and weary, a way that still reflects the late medieval tradition of depicting Christ's passion. The elements of the pathos of the gothic style are particularly obvious in the modelling of the Christ's head. As reported above, the retable was made in accordance the last will of Blaž Alegretto from 1567 to house the crucifix. Additional research has revealed the crucifix as being imported from Mexico and belonging to the group of light-weight crucifixes made of maize stalks, a technique which was developed in the early years of Christianisation of the colonised "New Spain", probably based on an indigene working technique.⁵⁹

Construction and making of the corpus

Computer tomography (CT) provided an insight into the unique hollow construction of the sculpture, the composition and materials (Fig. 110-117). It can be assumed that a particular type of positive mould (possibly of gypsum or clay) existed, the shape of which corresponded to the observed cavity within the sculpture (torso and legs). First, this mould must have been covered with a layer of rigid thick wet paper to form the inner shell of the body. When dry, the paper had to be cut "along the equator" so that the mould could be removed. Suggesting that there might have been other sculptures made on that mould, it was probably saved for the next sculpture.

The seamlike joint registered by endoscopy inside the hollow chest explains how the two halves of the paper "shell" were subsequently joined again (Fig. 112, 113). Round pieces of wood (small stems or branches) were introduced to this paper "shell" to those points of the construction where the extremities were to be attached, i.e. at the far ends of the legs and arms, another one was used to join the head with the body (Fig. 114). The arms were made separately. A piece of wood was found at the ends of

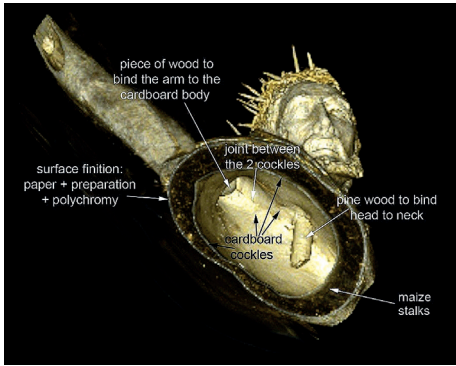


Fig. 112: 3D image processed from the from the CT scan; structure of the sculpture



Fig. 113: Endoscopic view; piece of wood from the head attached with a rope; seam or overlap of the inner paper shell



Fig. 114: CT scan; cross section through the upper body; A: Piece of wood to strengthen the neck; B: Maize stalks; C/D: Hollow body, the white contour is the inner paper shell and the outer paper layer with the polychrome layer system

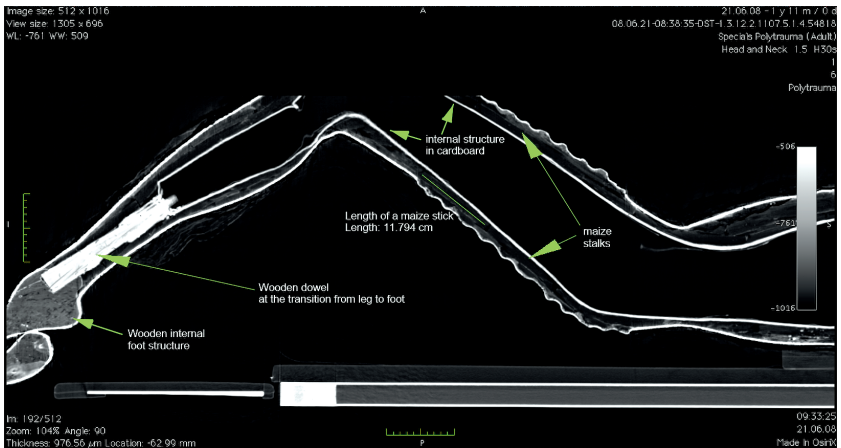


Fig. 115: CT scan; cross-section of the body

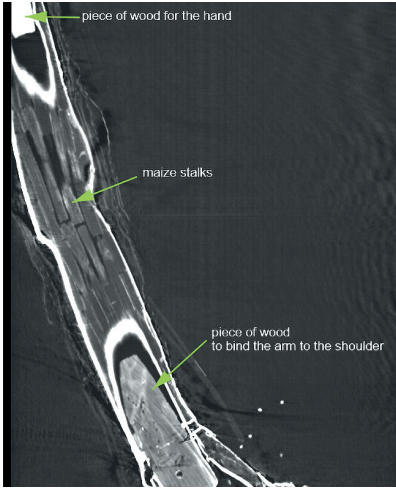


Fig. 116: CT scan; cross-section of the left arm



Fig. 117: CT scan; central cross-section of the perizonium and the lower abdomen

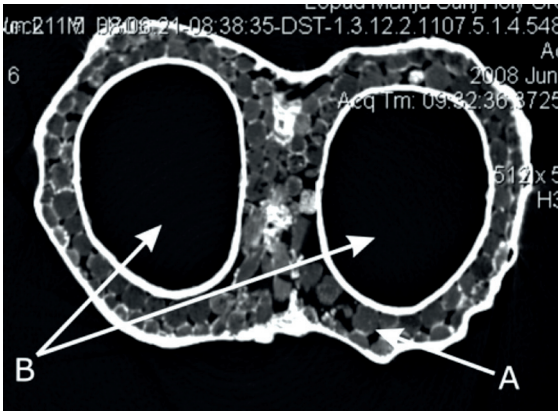


Fig. 118: CT scan; cross-section through the perizonium (A: maize stalks; B: hollow in the legs with a paper shell)



Fig. 119: The shoulder with the paper lined cavity for the arm dowel (condition before treatment)



Fig. 120: View through the arm hole; the inner paper shell of the chest



Fig. 121: Detail of one arm; surface structure of the outer paper cover; raking light

both arms (from the elbows down) and for the joints between the shoulders and the arms. Rope bindings stabilise the wooden elements in a cardboard tube (Fig. 115, 116, 122).

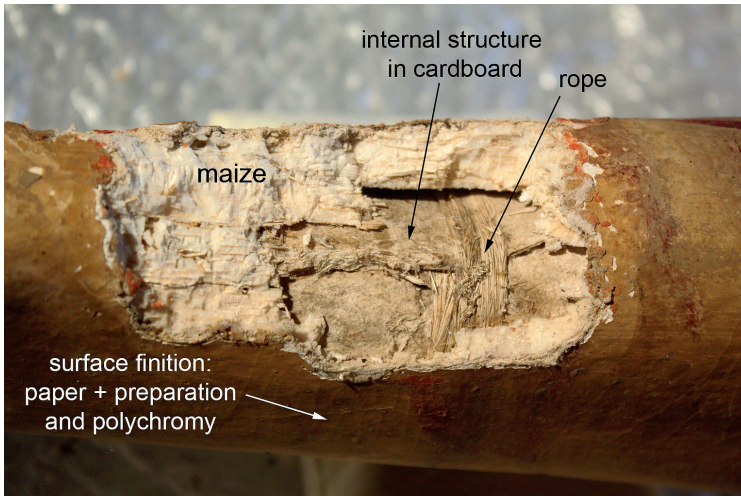


Fig. 122: Insight into a damaged area of the arm; condition before treatment



The round pieces of wood at the end of the legs and arms were extended with further pieces of wood to carve hands and feet. The structure of the hands is made of a small board onto which separately cut fingers and the thumb were attached.

The paper “shell” and attached wooden elements were then covered with several layers of maize stems. These were arranged as evenly as possible and glued together to form the necessary volume of the body. When the desired maize volume was obtained, it was possible to chisel and possibly rasp out the anatomi-

cal details of the body in this soft material. Emerging gaps between the maize stems were filled with a filling material based on grinded maize with a binding medium. This material was subsequently used for the fine modelling of the face, beard and hair. When the required shape was obtained, the whole surface of the sculpture was covered with another layer of thick paper. In some areas, the surface of this paper reveals the structure of manufactured laid paper (french: *Vergé* paper; german: *Bütten*, paper with chain lines and wire lines)(Fig. 120, 121). Cotton fibers (*gossypium herbaceum*) or a similar species of the same genus of the family (*malvaceae*) were identified as the main body of the paper pulp. This paper cover was not added in areas of detailed surface like hair, beard, fingers, etc.

The thorncrown is made of plant fibres (*genista*) twisted to form a two-strand rope, which is assembled in a four-strands plait. The different strands are fixed to each other with pieces of thin rope and covered with a long fibre paper. Wooden thorns point through the vegetal rope.

A preparation was applied to the paper surface in two layers and smoothed. Finally, the polychromy had been added.

Polychromy

A well-intentioned but rather ugly overpaint with glossy brown household paint has spoiled the to this point preserved original surface. It could be traced back to an intervention of a layman during the early 1990s (communication by Don Ivan Vlasic†, Lopud). During the same treatment, the arm joints had been reinforced with gypsum and textile cover, additionally a textile addition to the perizonium was attached to the hip of Christ.

As the overpaint had been performed in situ, the original, completely untouched original surface is still visible on the back of the sculpture (Fig. 123).

Description of original polychromy

The carved maize stalk surface was covered with a layer of paper that consolidates and smoothes the surface. It was not applied to the finest sculpted details (beard, hair) in order not to lose the precision of the sculpted form.

The polychromy was then prepared with a thin white preparation in two layers (animal glue + gypsum/calcium sulphate).

The incarnate reveals a single layer of pinkish-brown polychrome paint with blood marks, precisely set drops of blood and bluish bruises worked thinly into the fresh colour layer. Details of the face and the dark brownish single-layered beard were added subsequently (Fig. 139, 140).

The white perizonium is characterised by a pattern of gilded quatrefoils and a gilded seam. The first step of this decoration was a square glue-based gilding with gold leaf in the required areas. Subsequently, the form

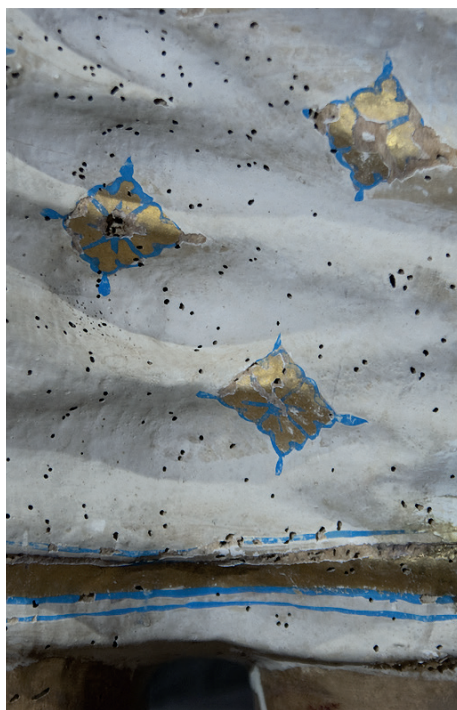


Fig. 123: Back of the perizonium; preserved original polychromy with ornamental quatrefoil pattern (goldleaf and azurite)



Fig. 124: Thorncrown with traces of original green colour

of the quatrefoils is defined by the thin white overall paint layer and an additional blue contour (Fig. 123).

The thorncrown was painted in green (Fig. 124).

Pigment analysis revealed a palette of pigments used in different quantities and mixtures to obtain different hues: lead white, minium, red lake, copper green, azurite⁶⁰, ochre, umbra. The binding medium contains oil.⁶¹ Particular attention was paid to the analysis of the blue pigment, as the colour of the blue did not appear to be typical of azurite. However, the detection of azurite was confirmed by a powder diffraction analysis.

The presence of calcium oxalate detected in the pigment analysis and the particular colour of the azurite could well be pigment variants attributable to the Mexican origin of the material.

The light weight crucifixes from “New Spain”, Mexico

Investigation of the crucifix reveals the body was constructed by an assemblage of maize stems, a technique only to be found in Mexican art, shedding light on the early Christian sculpture production of the Spanish-dominated Americas.

Soon after the conquest of Hernan Cortez (1521) and with the ongoing Christianisation, the local production of religious sculptures started to meet the high demand of religious images for newly built churches and monasteries. It is assumed that Spanish artists adopted the technique of working with maize stalks and paste from the natives. The large number of surviving sculptures and the fact that some types are identical in size and design suggest serial production, in which negative molds were used for the heads in particular.⁶² The high number of similar sculptures still preserved in Mexico and the more than 100 crucifixes of that type and material in Spain allows to confirm that this crucifix is a very early import to Croatia, providing insights into early travel of Dubrovnik shipmen and traders to Mexico or close contact to Spain.



Fig. 125: Crucifix Puebla/Mexico (foto by Pablo F. Amador Marrero in the rooms of Museum Amparo/ Puebla)



Fig. 126: Crucifix Lopud; after treatment

Considering the comparison to Mexican examples as well as the results of the analytical investigation of the polychromy and observing the visual and stylistic qualities, allows for an early dating of the sculpture. If our speculation that the Holy Cross retable was constructed not too long after 1567 (first known record of the intention to build it), it is possible that the sculpture of Christ has been imported for this altar, or the retable was made after the import of the crucifix. The last quarter of the 16th century is the period established for the completion of the entire work. Among the large number of comparable crucifixes that have survived, the crucifix in the cathedral in Puebla/Mexico is particularly similar both in form and polychrome decoration (Fig. 125, 126). It has been confirmed that this sculpture dates from the last quarter of 16th century.⁶³

Condition

Support

The general condition was relatively good. The structure was firm enough to stay together. Surface holes due to insect infestation are visible on the entire sculpture. Severe losses in the surface of the hair, the beard, the fingers, and the eye were result of insect attack as well. The thumb of the right hand and the little finger on the left hand were missing, the index finger on the left hand was broken. The thorn crown was fragile, several thorns were missing. The arm joints were fragile and unstable.

Polychromy

The deterioration of the surface and poor overall condition of the sculpture with zones of flaking polychromy and with losses due to the insect attack were the cause for well-intentioned maintenance efforts by a layman, which made things even worse. The completely untouched original polychromy was painted over with glossy uniform synthetic commercial paint material (Fig.127 - 130). In the context of this treatment, the broken left shoulder was repaired and strengthened with a medical bandage of cotton with gypsum, the same technique was used to “repair” the damaged left eye. The pattern and seam of the perizonium have been completely painted over with “bronze” paint. A crude textile addition to the perizonium



Fig. 127: The overpainted face



Fig. 128: View of the skull with overpaint over deteriorated surface



Fig. 129: Detail the arm joint; during removal of overpaint and of superficial repair



Fig. 130: Overpaint and textile addition to the perizonium

was added on the left side bound to a wooden stick inserted into the hip (Fig. 130).

The overall appearance of this overpaint was of very low quality.

The conservation treatment

As the crucifix is part of the retable and the interior of the church, the conservation strategy was part of the general concept for the treatment of all the retables in the church and which, with the aim to concentrate on conservation, follows the general policy of the ICWL. Concerning the sculpture of Christ, a different approach had to be taken as the sculpture itself had undergone a different fate. The sculpture was found with a modern, aesthetically disturbing overpaint which added major contrast to the retable with its preserved authentic surfaces that had never been treated, only aged.

This overpaint was judged to be a negative and disruptive aspect in the his-

tory of the retable and sculpture. Although having been added with good intentions, the performance of the new polychromy stands in stark contrast to the stylistic quality of the sculpture and the preserved authentic surface of the retable. As the investigation validated a well-preserved original polychromy underneath the overpaint – with good chance for a restoration treatment – it was decided to remove the overpaint with the aim to re-establish as much as authenticity as possible. Regarding the liturgical function of the sculpture, it was decided to reconstruct losses in the three-dimensional form like the eye and the missing fingers.

For demounting, a specially designed wooden frame construction was placed around the sculpture. Once the sculpture had been fixed to that padded construction, the three fixing nails at hands and feet were removed and the sculpture lowered to the working table.

Removal of the overpaint

Given the poor artistic quality of the modern overpaint and the good state of preservation of the original polychromy underneath, it was decided to remove the overpaint, re-exposing the original paint layer. After testing and comparing the effect of different solvents and solvent gels on the overpaint, *Klucel G* gel (70/30 ethanol/acetone) was chosen as the most appropriate. The gel was applied over Japanese paper and covered with *Melinex* to halt the evaporation of the solvent. After five or more minutes, the compress was removed and the swollen overpaint removed with a scalpel. The surface was then cleaned with a mixture of ethanol and acetone (70/30) (Fig. 131, 132)

No safe way was found to remove the white overpaint from the perizonium without harming the original white paint layer. It was decided to retain the overpaint layer in order to preserve the original polychromy underneath. To improve the aesthetic appearance of the perizonium and bring it into balance with the restored original surface of the incarnate, a reversible reconstruction of the polychromy was carried out on an intermediate layer of Japanese paper which will be described later.

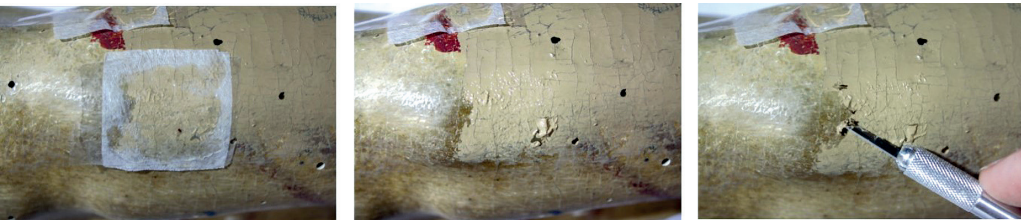
The removal of the dark brown overpaint on the hair and the beard required a mixture of DMSO (dimethyl sulfoxide) and ethyl acetate (30/70) in *Klucel G*. In some areas of the hair, the removal of the overpaint was very difficult



Fig. 131: During removal of overpaint

due to severe woodworm damage. In these parts, the gel softened the original polychromy and the paper support. To prevent damage, the wormholes and the losses of the support were first consolidated with a 20% solution of *Plexigum PQ 611* in acetone. The consolidant was injected with a syringe. The cavities were then filled with a filler mixture of *Plexitol B 500* and glass microballoons (*Cara XV99*) before the overpainting was removed.

Fig. 132: Application of the solvent gel with a Japanese paper and a *Melinex* cover – overpaint after swelling – removal of the overpaint with a scalpel



Consolidation of the flaking preparation and paint layer

As all tested consolidants showed certain negative effects – mostly swelling of the ground and paper layer – polar solvents were omitted and consolidation was done with Ethylcellulose *ET200* in medical benzine and a small quantity of toluene (80/20).

Consolidation of the supporting structure

Certain parts of the sculpture (the head and neck), severely damaged by the wood eating insects, had to be consolidated in order to prevent further loss of the original material. A 20% solution of *Plexigum PQ 611* in acetone was injected with a syringe. Sticks of harvested dry *Ferula comunis* were used to fill gaps and cracks.⁶⁴ The pith of *Ferula* is softer than balsa wood and was an excellent substitute for lost material. *Ferula* sticks, cut in the appropriate shape, were inserted and glued with a solution of *Plexigum PQ 611* in acetone (40/60). To further strengthen bigger lacunae, it was possible to insert a few sticks up to 15 cm into the inner structure (Fig. 133, 134).

Ferula pieces were also used to reconstruct the lost eye. They were inserted step by step into the lost area, rebuilding the missing volume. The eye could then be reconstructed by carving (Fig. 135).

The index finger of the left hand had to be reattached. *Plexigum PQ 611* in acetone (50/50) was used.

The thorn-crown was removed from the Christ's head for consolidation and to have access to the head for treatment. Fragile thorns and original paper bridges were strengthened with Japanese paper and *Klucel G* dissolved in acetone/ethanol 70/30. The paper detached from the joints was refixed and the joints were reinforced using *Plextol B 500* with addition of 8% *Tylose* in water (1V/1V).

The arm joints had been weakened by insect attack and recent repairs. After consolidation and filling of voids with *Ferula* sticks, the arm hole in the shoulder and the corresponding arm dowels were strengthened with layers of Japanese paper glued with *Klucel G* in ethanol/acetone (75:25) at 8% (Fig.: 133, 134, 138).

Woodworm holes and losses in the right arm, the beard, the perizonium, and other areas were filled to consolidate and to improve the aspect of



Fig. 133: The arm joint "dowel" during application of *ferula* sticks to increase stability



Fig. 134: Cut to shape inserts of ferula material to stabilize the arm joint "dowel"



Fig. 135: During reconstruction of the destroyed eye

the surface in those areas. Diluted 1/1 mixture of *Plextol B 500* with the addition of glass microballoons (*CaraXV99*) was applied in several turns.

Retouching

The retouching was aimed at regaining readability of shapes and the surface. The areas that had been reconstructed in the support and the ones that showed scratches and losses on the surface were retouched.

In preparation, the filled areas were coated with a thick solution of ethyl cellulose *ET200* (medical benzine and a small amount of toluene) to isolate the filling for subsequent retouching. *Paraloid B72* and dry pigments were used as retouching agents, as was generally the case in this project. To distinguish the retouching as a restoration treatment, it was decided to use the *Tratteggio* technique. The *Tratteggio* lines were set in the direction of the original brush strokes.

Reconstruction of the perizonium

Reconstruction was carried out on the front of the perizonium, where it was not possible to remove the overpaint without damaging the original. Gaps were filled up with the mixture *Plextol B500*- water 1:1 + addition of microballoons *CARA XV99*. The whole surface was covered by applying a Japanese paper with hide glue 4%. This paper will be a release layer for any future attempt or further restoration treatment. Before the paper was applied, the position and design of the quatrefoil pattern were transferred to the paper with a pencil.

The colour of the surface was achieved with titanium white pigment in retouching medium (5% *Paraloid B72* in 25% diacetone alcohol/75% ethanol). The pattern was reconstructed in *Tratteggio* with yellow ochre pigment and the blue lines with ceruleum pigment (Fig. 136, 137). The use of gold was avoided to indicate the reconstruction as such. The blood was retouched in *Tratteggio* as well.

Final mounting

To avoid strain on the arms, a webbing belt sling was first passed through the arm holes and through the upper body for the final assembly of the crucifix (Fig. 138). This strap was attached to the vertical crossbeam. In addition, a central stainless-steel screw was placed in the area of the loincloth, where the sculpture is very solid. The arms were then inserted, fixed to the shoulders with Japanese paper bridges, and finally the sculpture was secured with the original wooden nails onto the cross. Most of the weight is held by the webbing belt.

Evaluation

Thanks to the treatment, the condition of the sculpture is stable again. A comparatively high proportion of restoration interventions (removal of the overpaint, reconstruction of the fingers, the eye; reconstruction of the polychromy of the perizonium) brought back the high quality of the carving and polychromy to this outstanding and unique work of art, which is of great importance to the local community and Croatia. Since the quality of the recent treatment had so dramatically affected the



Fig. 136: Side view of the perizonium; reconstruction of the pattern on top of an intermediate Japanese paper



Fig.137: Back of the perizonium with the preserved original polychromy



Fig. 138: Joining the arm; a webbing belt was passed through the arm holes and fixed to the beam of the cross; before mounting the arm, a small notice on the treatment was placed inside the hollow body for future reference; arm dowel and shoulder hole are coated with several layers of Japanese paper to increase stability and fit



Fig. 139: After treatment

Fig. 140: After treatment



Fig. 141: After treatment





Fig. 142: Before treatment



Fig. 143: After treatment (2016)

artistic evidence of the sculpture, there was no choice but to act in the manner described (Fig. 139-143). The positive result of the treatment and the revelation of the extraordinary connection to Mexico was unexpected at the start of the workshop.



The Church of Our Lady od Špilice – St Mary retable / St Joseph retable



Fig. 144: The interior of Our Lady of Špilice with the retables next to the triumphal arch and the main altar retable in the sanctuary

The church of our Lady of Špilice (Sveta Marija od Špilice) is the church of the former Franciscan monastery from 1483. Today, it is used for parish services and is open to the public during the day (Fig. 144).⁶⁵

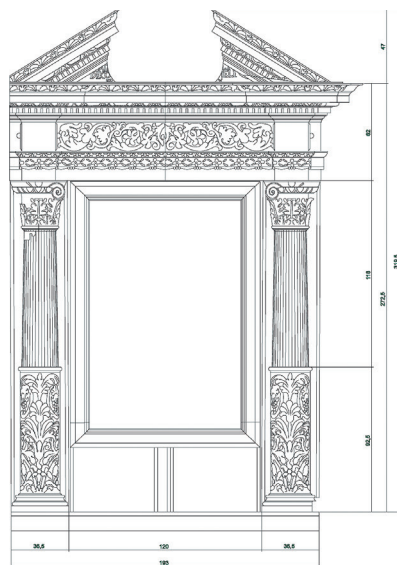
The single nave church with a flat wooden ceiling and the groin-vaulted sanctuary houses 5 retables and several prominent paintings and furniture. Major changes during the 19th-century due to secularisation and abolition of the monastery in 1808⁶⁶ led to the present situation. The choir screen was removed and the choir seats, probably originally positioned



Fig. 145: St Joseph retable; (as found, 2011)

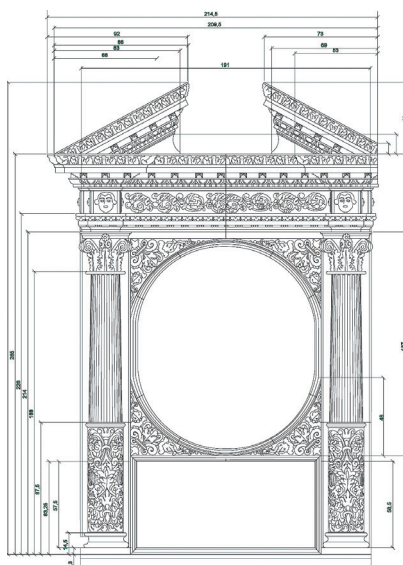


Fig. 146: St Mary retable (Holy Mary of Carmel); (as found, 2011)



OBJECT	DATE OF STUDY	PHASE	DOCUMENTATION	AUTHOR	PETER-PERLAN
OBJEKT	2011	SKICA	1:10	2011	2011

Fig. 147: St Joseph retable; measurements; total height 3,19 m



OBJECT	DATE OF STUDY	PHASE	DOCUMENTATION	AUTHOR	PETER-PERLAN
OBJEKT	2011	SKICA	1:10	2011	2011

Fig. 148: St Mary retable; measurements; total height 3,13 m

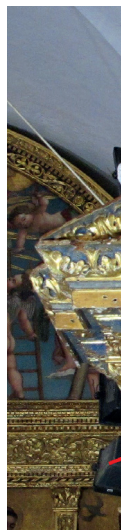
in a double L-shape, were arranged along the walls. The two 17th-century retables, which will be discussed here, were reduced in size and placed on both sides of the triumphal arch. According to a description by the Jesuit Ivan Marija Matijašević from 1773, the St Mary retable had been standing on the western Wall near the sanctuary.⁶⁷ The St Joseph retable was not mentioned in that source.

Description⁶⁸

Both retables are shaped in the form of the classical aedicula with a half-column on both sides, corinthian capitals, ornamented architrave and a split gable. The columns are divided into an ornamented lower part of the shaft and a fluted upper area. The left retable is coloured in a reddish brown and gold, the right is bright blue with gilded ornaments.

The general construction is based on the manufacture of separate elements, which were then combined to form the shape of the aedicula. Both retables follow the same general set-up. It is likely that there was once a predella on which the two columns and the adjacent jamb boxes were placed. On top of these, the entablatura is positioned as a separate carpentry element. The two elements of the split gable were mounted on top of the architrave. Every unit has been carpentered separately from coniferous boards. All elements which were decorated by carving are made from softwood like willow, poplar, etc. and were attached to the basic construction with nails. All joints between boards were made using hand-forged iron nails.

In shape, construction and carved decorative elements these retables are closely related to the Annunciation retable in the church of Our Lady of Šunj (1637). They show great similarity and were most probably made in the same carpenter's workshop, and during the same period. So far, no archival traces have been found that would give a more precise date of their making. But unlike the Annunciation retable, these two retables were not intended for the place in which they are now installed: they were modified and rearranged to fit into their present position. In the course of this modification, the current paintings were taken from somewhere else and transformed to fit the inner niche of the retables. The former (original) content of the aediculae is



unclear. It is evident that the polychrome layer extends to the inner side of the jamb boxes. Although there are no traces of a frame or of any fixing elements, it is most likely that canvas paintings had been displayed there ever since.

Both retables are now standing on separate narrow modern wooden sub-structures which in turn are resting on a stone mensa held by two stone corbels.

Although the two retables are very similar in style and general appearance, there are distinct differences in details and patterns of the decorative scheme.

Cartapesta elements

Most of the decorative elements like mouldings, friezes, and consoles were carved of wood and were attached to the body of the retables with nails. The ornament in the lower part of the columns was chiselled out of the body of the columns.

The main acanthus ornament of the entablatura frieze, the applied rosettes of the metopes in the console frieze as well as the puttiheads of the Mary retable, however, were found to have been made in cartapesta (Fig. 149, 150).



Fig. 149: St Mary retable; entablatura and gable; red arrows indicate the cartapesta elements



Fig. 150: St Mary retable; head of a putto, made in cartapesta and applied to the wooden surface

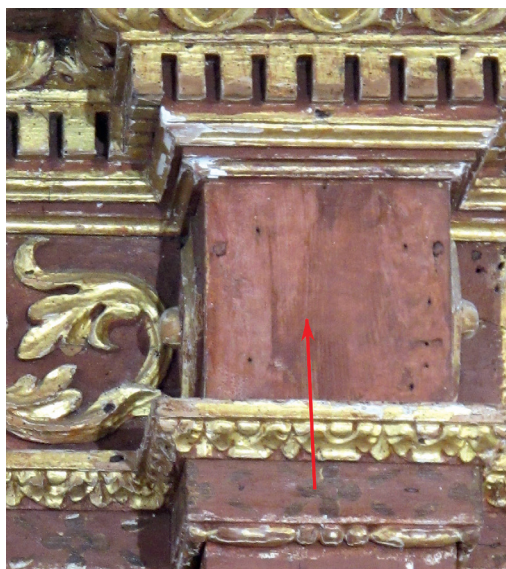


Fig. 151: St Joseph retable; (condition as found); the rectangular protruding elements of the entablatura were originally decorated with an applied decoration. A “pattern” of nails, nail holes, cutting traces and fragments of fibrous material underneath some nail heads indicate the deliberate removal of some decorative element. It is most likely that the lost decoration was similar to those on the retable of Holy Mary, showing heads of putti, made in cartapesta. The brown color on this area is probably a later local touch-up

These hollow elements have a thin outer papier-mâché layer and an inner reinforcement layer with canvas and are nailed to the wood. Due to corrosion, the sequence of iron nails is clearly visible.

Cartapesta elements may have been produced in advance to serve as a cost-effective and efficient means of creating the decorations. The use of cartapesta could be an indication of the Italian origins of the craftsmen, the technique being particularly widespread in southern Italy (Naples, Lecce).

The paintings

Today the St Mary retable houses two paintings on canvas. The 19th century oval painting with the Virgin Mary and the standing child in a garland of fruit and flowers is the central element (Fig. 152). It is probably based on the “Madonna in the flower garland” by Rubens and Breughel from 1617 in the Munich Pinakothek, however, here the garland consists of mediterranean fruits, flowers and laurel leaves.⁶⁹ Mary is handing the child a peach while holding a brown scapular in her right hand, identifying her as “Our Lady of Carmel”.⁷⁰ The gussets between the oval gilded frame and the inner edges of the retable structure are filled with symmetrically ornamented decorative panels.



Fig. 152: Our Lady of Carmel, as found 2011 (not part of the ICWL project)

The lower painting shows “The poor souls in the purgatory” in a narrow rectangular format, painted on canvas and framed with a small gilded frame (Fig. 153). Some of the “souls” standing in the flames and pleading for salvation with their hands raised are wearing the brown scapular,



Fig. 153: Purgatory painting before treatment (as found 2011)



Fig. 154: Death of St Joseph (as found 2011)



Fig. 155: Archangel Gabriel (as found 2011, not treated within the ICWL)



Fig. 156: St Clara (as found 2011, not treated within the ICWL)



Fig. 157: St Roch (by Girolamo di Santa Croce), (not treated within the ICWL)

which is believed to bring them salvation. This painting, along with the retable, was treated as part of the ICWL project, whereas the painting *Our Lady of Carmel* was treated at the Croatian Conservation Institute.

On the left, the retable of **St Joseph** houses a painting on canvas depicting the death of Joseph, which can be dated in the 18th-century (Fig. 154). Below it are two 16th-century panel paintings, arranged next to each other but separated by a small board. The left painting shows the archangel Gabriel, the panel on the right is depicting St Clara (Fig. 155, 156). Stylistic comparison clearly indicates that these panels belong to an abandoned polyptych of Girolamo di Santa Croce.⁷¹ One central panel of that former polyptych with the depiction of St Roch (Sv. Roko). is still preserved in the church, hanging on the left wall of the nave (Fig. 157).

The conversion of the retables

This unusual compilation of paintings of different origins and several other observations indicates major changes in the retables. Both retables have been reduced in size to fit their current position. Both retables are lacking a predella which was probably part of the

original design, but was discarded during this conversion. A central vertical cut through the entablatura of both retables and obvious losses in the symmetrical pattern of ornaments of the friezes indicate a reduction in the width of the retables.⁷² With an additional section of the entablatura edges they were moved closer to the walls, now perfectly aligned with the edge of the triumphal arch. An additional horizontal cut was made on top of the ornamented part of the columns to reduce the height of the retables. The bottom sections of the fluted parts were removed (Fig. 158, 159). The split gable of the Joseph retable was modified further. Both parts show an inserted board with a fragmentary inscription obviously taken from a different context. The right gable part shows an interrupted saw cut at a different angle (Fig. 160). Further losses at the bases of the columns pointing to the choir occurred when a groove was cut out for the protruding railing of the adjacent stone septum (Fig. 161, 162).

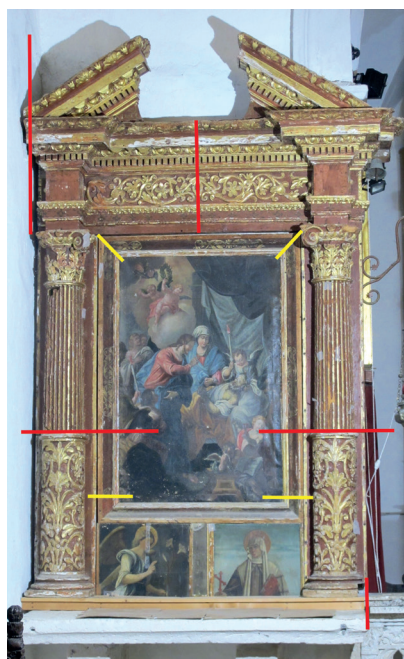


Fig. 158: Joseph retable: red: cutting lines to reduce the size of the retable; yellow: cutting lines to reduce the size of the frame



Fig. 159: Mary retable: red: cutting lines to reduce the size of the retable; dotted line: cutting lines to reduce the corner elements of the Mary painting



Fig. 160: Joseph retable, right gable; red: inserted part with fragmentary inscription; green arrow: interrupted sawing line

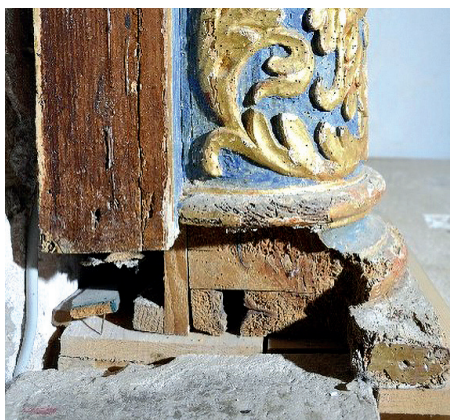


Fig. 161: Mary retable (condition as found); base of the left column; visible cut-out. The cut-out was made to insert the retable between the cover plate of the septum and the wall. After the later lifting of the retable onto the modern box-like subconstruction, this cut-out was left untreated

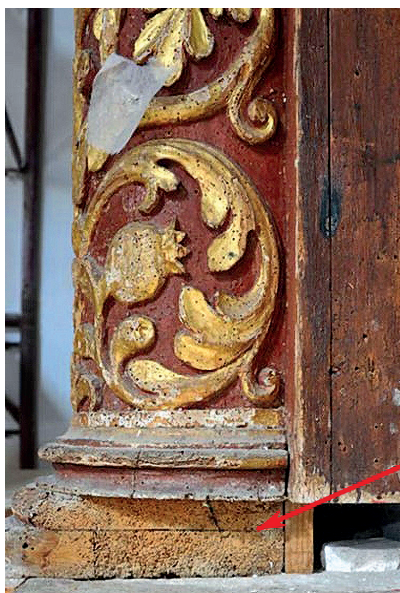


Fig. 162: Joseph retable; here the same cut was made in the base of the right column. It is most likely that this cut was made to obtain a position directly on the surface of the mensa. The cut was made for the railing of the septum which is about 10 cm higher than the mensa. Later, the modern under-construction was made to lift the position of the retable onto the niveau of the septum again. No attempt was made to close the large, then visible gap

Modification of the paintings

The painting “Death of St Joseph” is set in a decorative frame that shows traces of modification to accommodate its use in this retable. As indicated through the disruption in the formerly symmetric disposition of ornaments, the frame was cut in the lower area of the vertical bars, probably to reduce the height. All corner joints were opened and cut as well to reduce the width. The outer molding of the frame was planed down to match the surface of the aedicula. The painting itself is still attached to its original strainer but reduced in width by only 1-2 cm. The panel paintings in the lower register were cut out from bigger paintings of the former polyptych of Girolamo di Santa Croce.

The former oval canvas painting of Virgin Mary with the child was mounted onto a square wooden panel construction⁷³, the corners between the oval gilded frame and the inner edges of the retable structure were filled with carved ornamental boards in a symmetrical pattern. These framing elements also show tool marks and losses in the ornamental pattern, again pointing to a reduction of the format to fit the position in the retable. The painting of the purgatory is mounted on an unusual boxlike construction. It is highly likely that these major changes and the current arrangement of paintings from different contexts took place during the reorganisation of the church interior in the 19th-century. There is no trace of the original content of the retables.

This reorganisation also introduced a new dedication. The dedication of a retable to St Joseph is typical of the 19th century.⁷⁴ Although these interventions include abandonment of original material, they are to be understood and preserved as a “layer of time” in the history of the retables.

Treatment during the 20th century

Both retables were treated recently in order to place them on a new narrow box-like sub-construction and to optimise the stability of the construction. With that higher position, the older cut-outs of the columns were left untreated. The retables were found mounted to the wall with modern screws. The paintings are fixed with modern screws to separately installed wooden blocks.

As visible from glossy stains, a consolidation of worm-eaten wood was performed probably in the context of this treatment.

Polychromy

The **St Joseph retable** has a general plain reddish-brown polychromy with gilded ornaments and mouldings. Only the lower frieze of the architrave shows a different decoration featuring a series of brown quatrefoils (Fig. 163). In contrast to the St Mary retable and in contrast to usual practice, the preparation layer of the St Joseph retable was applied exclusively to the gilded areas (Fig. 163, 164). Poorly defined brush strokes, tears, and droplets of the material were left on the adjacent flat areas and are still clearly recognisable in raking light and close view (Fig. 164, yellow arrows). These traces have not been reduced, but application of the thin reddish bole layer and of gold leaf was performed immediately.

The following brownish paint layer was then applied to all flat background areas. It has poor hiding power and is not able to completely cover the irregularities of the gold leaf borders and the droplets of the previously applied preparation. The brownish colour defines the outlines of the gilded ornaments to a certain extent, but was applied in a cursory, not very precise or subtle way.



Fig. 163: St Joseph retable; architrave, detail with brownish quatrefoil ornament; note the simple quality and poor hiding power of the general brown colour, the preparation for only the gilded elements is clearly visible (red arrow); condition before treatment, 2011



Fig. 164: St Joseph retable, detail next to the right column, raking light; Preparation was only applied for the golden contour (red arrows) and the carved ornaments of the columns; drops and superficial material (yellow arrows) from the careless execution are visible everywhere and were not smoothed out before the imprecise application of the brown paint.

To date there are only hypotheses about the simple quality of the brown layer and the exclusive application of preparation only for the gilded areas. The reason for this unusual approach which contrasts with the finding in the Mary retable may be shortage of material or lack of time. It is possible that the retable stood unfinished in the church for some time with only gilded details. It can also be assumed that the imprecise application of the brown paint was later carried out by a layman.

This could also explain the unusual design of the rosettes on the architrave frieze. They were prepared by dark pencil sketches on the wooden surface. It appears that a glossy layer was applied over the sketches. The form of the flowers is defined by the application of the overall reddish-brown paint (Fig. 163).

The **St Mary retable** shows gilded carvedings contrasted against a blue background. Exceptions are the putti heads on the protruding elements of the architrave, which are painted in a realistic manner.

Starting with an all over glue-based white preparation layer, the gilded ornaments were then coated with additional layers to create a base for water gilding. After a very thin,



Fig. 165: St Mary retable, condition as found; the variation in the appearance of the blue paint is clearly visible

warm brownish layer of bole and the subsequent application and polishing of the gold leaf, the blue-coloured layer was applied with a brush to define the contours of the carved and gilded ornaments and to fill the surfaces. The blue colour varies between dark blue and light grey and has a patchy character (Fig. 165). The colour application reveals a lack of care and precision in the execution with a large brush. For this matte blue paint, the pigment smalt was used in a glue-based medium.



Fig. 166: St Mary retable; condition as found; losses in the outer contour

Condition of the retables

Generally, the condition of the two retables was comparable, with differences in amount and position of damages. Most obvious is the deterioration of carved



Fig. 167: St Mary retable, plinth of the right column, condition as found; deterioration of wood

ornaments due to an infestation of wood-eating insects and climatic stress. Climatic stress caused flaking and losses of gilding and polychrome layers due to losses in adhesion and cohesion.



Fig. 168: St Joseph retable, condition as found; losses of thin carved softwood areas



Fig. 169: St Joseph retable, condition as found; losses of leaves in the capital and the upper part of the fluted column

Wood

All ornaments, gable, columns, and capitals are made of softwood (possibly poplar), and are badly damaged by wood-eating insects (anobidae). Those elements are full of holes made by insects and many parts – especially the thin outer tips of ornaments and outline – are lost (Fig. 166 - 169). Elements made of coniferous wood are in much better condition and less infected by insects.

Many of the decorative elements that were attached with glue, such as the pyramidal diamond-shaped elements of the gable and entablature of the St. Joseph retable, are missing due to failure of the glue (Fig. 170).

Polychromy

Lack of cohesion and adhesion had caused many losses. Separation between priming layers was an additional effect (Fig. 171).



Fig. 170: St Joseph retable, condition as found; clearly visible losses in gilding, the upper contour of the entablature is destroyed by insects. Many of the separately carved diamond-shaped applications are lost. Yellow arrows indicate the few surviving ones. The red arrow indicates the area where the gilding shows a reddish discoloration.

A reddish hue can be seen on the gilded ornaments of the left side of the Joseph retable, especially on ornaments of the left side of the architrave, left capital, and dentils. It is difficult to determine whether this is some kind of corrosion layer of the gilding or if it is bole with lost gilding (Fig.172).

The brownish paint layer of the Joesph retable, which was applied directly on wood, is in excellent condition, although it shows distinct differences in gloss, possibly due to a local brown overpaint.



Fig. 171: St Mary retable; layer separation in the preparation has caused losses in the gilding



Fig. 172: St Joseph retable; reddish appearance of gilding

Treatment concept

The treatment concept was developed within the framework of the general ICWL standards and prioritises the conservation measures. Restoration was limited to selected areas of particular concern. Another aim was to ensure the congruence of both retables.

Consolidation and conservation treatment was urgent. Since the small retables could easily be reached with scaffolding, it was possible to perform the treatment in situ, thus avoiding the risky dismantling of the retables. The aim of the restoration and reconstructive treatment was not to hide every sign of ageing but was restricted to eliminate the most disruptive interruptions in surface, colour, and outline of the retable in the lower levels of the retable which are closest to the viewer.

The St Joseph retable was much more damaged by insects than the St Mary retable. The formal unity and the lines of the structure, particularly at the fluting of the columns and at the corners of the architrave, were disturbed by a large number of voids. For this reason, the reconstruction of these areas was decided.

The retouching protocol consisted in closing every new filling and the visible white preparation. The aim was to improve the readability of the ensemble and to obtain a more aesthetic result by just adjusting the colours, without intervening too much and without adding any new gilding.

Treatment

Weakened wood was consolidated with 20% *Plexigum PQ 611* in *Shellsol T*/toluene (9/1) by injection and brush application. This was followed by removing the disturbing glossy adhesive from earlier treatments using acetone and consolidating the polychromy and gilding with *Medium for Consolidation*.

The wooden pieces for the cut-out gaps of the column base of both retables were reconstructed on a lathe and put in place with glue and a central screw (Fig. 173 – 176). The losses in the columns of the Joseph retable were reconstructed by using the base filler and top filler with an additional reinforcement by prefixed bamboo sticks and balsa wood⁷⁵ (Fig.177 - 182).

Corroded nails were sanded and then treated with *Paraloid B 72*.

Additions, fillings, and areas with visible white preparation were retouched with *Paraloid B72* and dry pigments⁷⁶ (Fig. 182 - 185).



Fig. 173: During formal reconstruction with massive wood

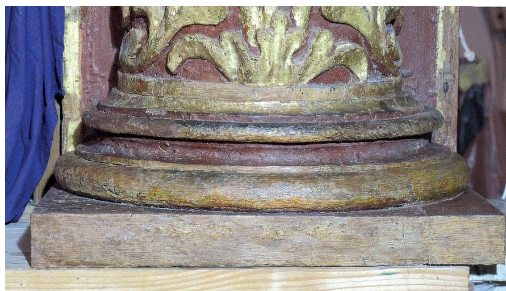


Fig. 174: After treatment



Fig. 177: St Mary retable, right column; condition as found



Fig. 178: During reconstruction with filler formulations

Fig. 180: St Joseph retable; left column, condition as found

Fig. 181: First reinforcement with bamboo sticks





Fig.175: During formal reconstruction with massive wood



Fig.176: Reconstructed area with preparation



Fig. 179: St Mary retable, lower section of the right column; after retouching

Fig. 182: After filling and formal reconstruction

Fig. 183: After retouching





Fig. 184: St Mary retable; before retouching

Pest monitoring

In order to assess whether the insect infestation is still active in the retable, Japanese paper was applied (with a weak solution of methylcellulose adhesive) to several bare surfaces of the wood (on top of the architrave).



Fig. 185: After retouching

These papers were left in place and can be examined for exit holes of active insects in the future.



Fig. 186: St Joseph retable, after treatment



Fig. 187: St Mary retable, after treatment

The painting „Death of St Joseph“



Fig. 188: Painting before treatment

The painting (146.5 x 97 cm) dates from the 18th-century. It was not created for this retable and was slightly reduced in order to fit into the retable's niche. The decorative frame was upcycled from a much bigger one by opening all corner joints and cutting the bars to reduce the size.



Fig. 189: The back of the painting with strainer and frame

Description and iconography

The painting depicts the dying Joseph accompanied by Mary and Jesus. The centre of the scene shows St Joseph on a horizontally aligned bed with a large canopy in light and dark blue. Mary stands behind the bed, while Jesus Christ approaches the scene from the left with a gesture of blessing. This central pyramidal group is surrounded by a row of putti, two of whom are holding candles. In the foreground on the right is a putto with an hourglass, while a second mourning putto is leaning against a small table with a drinking glass and a small glass

bottle. He is covering his face with a cloth and holding an open book that reads:

Intra

in gaudium

Domini

Math: C:25 V.21

[“Go into the joy of the Lord”];⁷⁷

The upper left corner depicts a luminous heavenly area, from which rays of light are radiating. Clouds with a number of putti are visible, one of whom is presenting the wreath of honour to Joseph (Fig. 188).

Technical description

Strainer system

The painting is mounted on a wooden strainer made of coniferous wood with one horizontal beam in the middle (Fig. 189). The strainer is original. It has undergone small structural changes in order to fit the painting into the decorative frame and niche.

Originally the width of the strainer was slightly bigger; the canvas was dismantled along the vertical beams, the width of which was reduced by 1cm or slightly more.

Textile support

The textile support in plain weave is made from flax (or hemp) and composed of two pieces, joined together with a pronounced horizontal seam running close to the centre of the painting.⁷⁸ The canvas is brightly coloured and fairly thin, woven relatively evenly and narrowly⁷⁹ (Fig. 189, 190). The upper tacking margin and the seam have selvages, indicating that the canvas, which has a loom width of approximately 78cm, was used in horizontal orientation. Original tacking margins are preserved along the horizontal beams. Here the canvas is fixed with the original wooden pegs⁸⁰ (Fig. 190).



Fig. 190: Original mounting of the canvas with wooden pegs

Preparation

The preparation was applied in two layers. The brownish bottom layer is thick, with a very rough granular structure. The upper layer is significantly thinner but irregular, reddish and with a finer granular structure (Fig. 191). On the unaltered horizontal sides, the preparation ends at the front edges of the painting, indicating that the preparation was applied after the stretching of the canvas.

Paint layer

The paint layer consists of oil colours applied mainly *alla prima*, executed in a fast, simple, and experienced manner. Glazes could only be observed in the area of the green drapery on the lower left side of the painting. The paint body itself is quite coarse resulting in a very granular appearance of the surface (Fig. 192). Brushstroke marks are clearly visible on a large part of the surface especially in bright areas where the paint layer is thicker and has visible *impasto*. The areas with figures seem to be of a more elaborate quality than the drapery of the baldachin, clouds, and sky in the background.

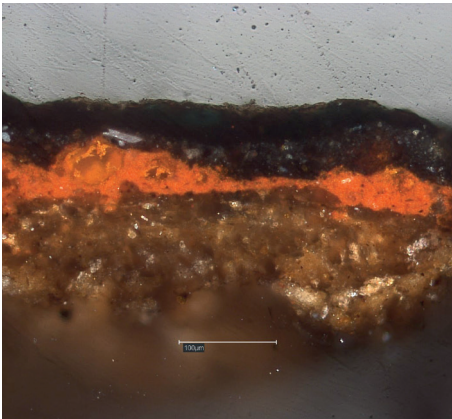


Fig. 191: Cross-section (Sample PS1), with a brown and a red preparation layer (taken from the greenish drapery in the bottom left area of the painting), VIS, the scalebar is 100 μ m

Fig. 192: Granular appearance of the paint layer

Varnish

The varnish is not original. It was applied quite thickly with a brush over the entire painting with the exception of the edges, which were hidden by the frame. This is a clear indication that the varnish was applied only after the painting had already been placed in its current frame.

Condition*Preliminary remark*

Despite significant traces of material deterioration, the general condition of the painting was fairly acceptable. Effects of the specific climate conditions, the church being in close proximity to the sea, were most apparent in the presence of salt on the whole surface of the paint layer. The original strainer was preserved, with only minor changes. Along the horizontal bars of the strainer, the original mounting system was preserved to a large extent. The canvas had only minor tears and losses and was found to be sagging. Paint losses were present but not to a large extent. Cupping of the paint layer was evident in many areas. Although the edges of the paint flakes had detached from the textile support, adhesion between ground and textile support was still acceptable in most areas of the painting.

The painting had already undergone restoration treatment before – it appears there were only one more extensive (earlier) and some minor (more recent) interventions. The more extensive restoration involved filling of losses, retouching, and application of the varnish.

Strainer

The strainer was damaged by wood eating insects, resulting in a partial loss of strength of some sections. The corners had been opened for the modification of the strainer, causing some loss of the original wooden material (Fig. 193). Reworking of the joints in the corners and the use of rather large T-headed nails led to insufficient stability. This contributed to the slight deformation of the whole painting and loss of planarity.

Most of the wooden pegs along the horizontal tacking margins were in good condition, fulfilling their function well. The iron nails along the vertical tacking margins were very rusty. A few of them were missing.



Fig. 193: Reworked corner joint

Textile support

The seam is very pronounced on the front of the painting. The canvas is generally in good condition still exhibiting a significant level of elasticity. The corners of the canvas were not fixed to the strainer. This contributed significantly to the sagging and deformation of the canvas. Corrosion of the nails caused degradation of the surrounding canvas, some small holes and tears were present along the tacking margins.

The canvas had two holes of approximately 1,5 cm, one of the holes was located in the upper left and the other in the bottom right corner.

The strainer bars had left distinct marks. The back of the canvas showed a few darkened spots and some accumulation of dirt.

Paint layer

The paint layer has a dense craquelure that follows the area of the respective colours. Adhesion between the canvas and the superposed layers was generally weak. This consequently caused flaking and cupping of the ground and paint layer and significant losses of these layers, especially along the vertical borders of the canvas, probably caused by the previous modifications to the size of the painting

Substantial cupping and tenting was most pronounced on the left lower side of the painting (Fig. 194), mostly related to certain colours – dark blue and brown, and some areas of the red colour of the Christ garment.



Fig.194: Condition of the paint layer (left lower corner)

Previous restoration

In a previous restoration, losses had been filled with a white-yellowish material; prominent in areas close to the lower edge of the painting, the two lower corners, and in the area close to the right vertical edge. The biggest ones can be found between the back of the putto displaying an hour glass and the edge of the painting in its lower right part. These fillings were not applied in a careful manner, the material spread over the surrounding original paint layer. With the uneven and rough texture the filling material did not match the surface structure of the surrounding original.

In the same restoration, retouches have been applied, not precisely covering the fillings but spreading over the surrounding original paint layer as well. In time, these retouches had discoloured somewhat. They appeared like dark areas on the brighter original paint.

Varnish

During that recent restoration a thick and irregular varnish layer had been applied with a brush over the entire painting with the exception of the edges, which were hidden by the frame. This is a clear indication that the varnish was applied after the painting had already been placed in its current frame. It also covered most of the retouches and overpaints. More recent retouches were visibly apparent as matte areas on the top of the glossy varnish (Fig. 195).

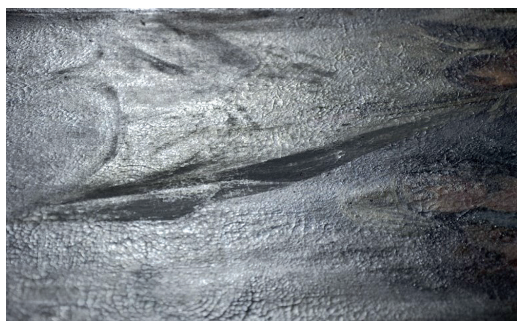


Fig. 195: Matte overpaints on the top of the varnish (reflecting light)

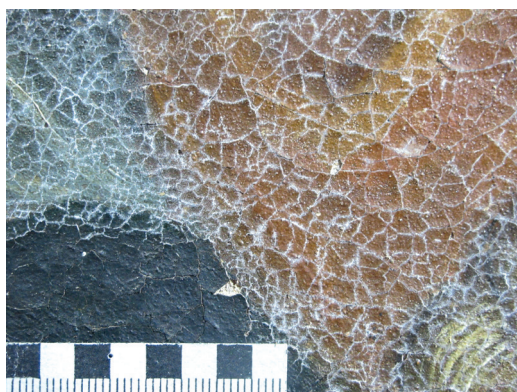


Fig. 196: Crystallised salt along the craquelure

Residues of an original or older varnish could not be found, suggesting that the painting was originally not varnished.

The varnish layer was covered with crystallised salt that has penetrated in the craquelures of the paint layer and had concentrated along the borders of the cracks (Fig. 196). This contamination was probably caused by the humid climate and the church's close proximity to the sea.

Concept

The overall appearance of the painting was marred by the greyish deposit of salt, surface dirt, yellow varnish, and mismatching dark retouches, contributing to a matte and dull look.

The approach was based on the concept of minimal intervention. However, the focus on a purely conservation treatment would have left the painting with an unpleasant appearance. Therefore, the inadequate additions, such as the yellow varnish and mismatching overpaints, had to be removed to reveal the original surface and improve the painting's appearance. The overall aim was to regain the structural stability of strainer, canvas, preparation, and paint layer while preserving the original mounting system of the canvas as much as possible. At the same time, the concept respected the natural ageing of the paint layer such as cupping, craquelures, etc.

The decision was made to undertake not only conservation treatment but restoration treatments as well. This involved the filling of losses in the paint layer and the tonal integration of these additions, motivated by the fact that the painting is in regular liturgical function and should be appealing to its viewers.

Treatment

The painting was dismantled from the retable and taken out of the frame. The first step was to clean the surface and remove the salt deposits. To avoid any penetration of salt, a waterbased gel of *Klucel G* (6%) in demineralised water proved best results. For the treatment, this gel was applied to the paint surface with a brush. After approximately two minutes, the gel was removed with water-moistened *Saugwunder* suction blocks in several passes. It was possible

to remove both the salts as well as the superficial dirt in one operation. The back of the painting was cleaned first with strong bristle brushes and vacuum cleaner followed by a treatment with *Wallmaster* sponges.

Consolidation of the paint layer

Because of the unfavourable climate conditions on the island (high humidity and salty atmosphere), and negative experiences with animal glues in previous conservation projects, it was decided to use a synthetic consolidant to consolidate weak areas of preparation and paint layer. Best results were achieved using *Plextol B500* in H₂O and ethanol in a 1/0,5/0,5 ratio. The addition of ethanol made it possible to minimize staining on the back of the painting.⁸¹ With consolidation, the paint layer achieved acceptable stability and cupping deformations of the paint layer were significantly reduced.

Removal of varnish and mismatching overpaint

Solubility tests for the removal of the varnish layer were executed with the idea of removing varnish and residues of *Plextol B500* at the same time. Best results were achieved with acetone in the form of gel. Acetone gel (in *Kluwel G 3%*) was applied with a bristle brush to one side of an *Evolon* tissue which was then laid on the painting's surface and covered with *Melinex* sheet in order to prevent fast evaporation of the solvent. The gel had to stay on top of the tissue for about a minute. During that time, the area was gently rubbed by finger. The solvent dispersed through the tissue and dissolved the varnish. After the removal of the compress, the surface was



Fig. 197: Before removing the varnish



Fig. 198: After removing the varnish

cleaned with a dry and clean *Evolon* tissue. Leftover residues were removed with microfiber cloth and acetone. The result was satisfactory, although blanching occurred in the darker areas.

To avoid this, the solvent and application method were modified. A microfibre cloth was moistened with a mixture of isopropanol and isooctane (9/1) and rubbed over the varnish surface with the fingertip. The solvents reactivated and softened the varnish. Immediately after applying the solvent, the surface was rubbed with an *Evolon* tissue in several passes to absorb the solvent and remove the dissolved varnish. This method worked quite well and was therefore used to remove the whole varnish (Fig. 197, 198).

Additionally, this method additionally removed overpaints on top of the varnish, as well as some of the overpaints underneath. Stubborn rests of overpaints were removed with dimethylsulfoxid.

Structural conservation of canvas and strainer

Taking into consideration that a mounting system with wooden pegs is rarely preserved, it was decided that the original mounting should be preserved as far as possible. Only the vertical tacking margins, where iron nails had been introduced during resizing of the painting at the beginning of 19th-century, were demounted.⁸²

Partial strip lining and treatment of tears and holes in the canvas

The existing mounting holes on the tacking margins of the canvas were reinforced to ensure sufficient stability for the upcoming mounting. The

reinforcement was done using patches of *SEFAR* polyester mesh laminated with *BEVA-Film 371*. The patches were then attached along the tacking margins using a hot spatula.

Fragile areas of the tacking margins along the vertical beams and in the corners were stabilised with local striplining. Local holes were prepared by canvas intarsia in a first step. Then, strips of canvas with a length of 15 cm were prepared with *Beva 371* film (65 μ) and ironed to the back of the canvas using a hot spatula.

These canvas strips served as new tacking margins to allow for the stretching and mounting of the painting onto the strainer.

Remounting and flattening of the painting

The weakened and partially separated joints of the strainer were joined again by the use of liquid fish glue (Kremer). Missing areas of wood were reconstructed by using sticks of balsa wood, which were cut to size and glued in place. Nail holes were closed with sticks as well.

The mounting process provided an opportunity to flatten the canvas and achieve acceptable planarity and tension of the textile support. Moistened blotting paper was inserted behind the original canvas and the whole painting was covered with *Melinex*. After a few minutes, the canvas had absorbed enough moisture to relax. It was then possible to stretch the canvas slightly by hand and to fix it permanently with stainless steel nails along the vertical tacking margins and in the corners, using the old but reinforced holes in the canvas whenever possible. Along the horizontal tacking margins, the intervention was restricted only to the insertion of new wooden pegs into the holes of missing ones.

Reinforcement of the original strainer and backside protection system

To reinforce the original strainer, an additional frame made of fir in the same size as the original frame was constructed in order to provide mechanical support. Polyester sailcloth was stretched over it. Two sheets of polyester wadding with a thickness equal to the thickness of the bars of the original strainer were cut to the required size and inserted in the areas between the beams of the original strainer. Then, the new frame with mounted polyester sailcloth was attached with screws to the back of the

original strainer. With the polyester wadding "sandwiched" between the original canvas and the new polyester sailcloth, the additional frame provides gentle and reversible support to the original canvas and improves stability overall.

Restoration

The approach of the restoration was to preserve the painting as an historical object with respect to its aged condition. By addressing all disturbing lost areas, the treatment aimed to restore the painting to an aesthetically pleasing condition, thereby regaining its function as a devotional painting. Since the "Death of St Joseph" painting is positioned very closely to the viewer, the visual integration of the lacunae was an important part of the concept.

Filling of lacunae

Many smaller and larger losses, where the paint layer had flaked, had to be filled. For the fillings, a recipe already used for the treatment of the Annunciation painting in the church Gospa od Šunja was chosen. A

mixture of 15% *Plextol B500* and 3% *Methocel A4C* in a 2:1 ratio with champagne chalk was prepared into a highly viscous filler.⁸³ This consistency enables an efficient and fast working process. The filling was applied with a small spatula and modelled in order to match the texture of the surrounding original surface.

Initially, the decision was made to keep two very large areas of the old filling and to reintegrate them during the retouching process. However, after filling all other losses, the very uneven and rough surface of the old filling in these two areas looked even more unpleasing. In



Fig. 199: Painting after the filling of lacunae

order not to harm the textile support too much, the old filling was removed completely in areas where the connection to the canvas was weaker. Stable areas were scraped off to a certain extent to even out the surface (Fig. 199, 200).

Retouching

Losses were retouched to achieve an aesthetic balance of the whole object and to regain readability of the depicted scene. The retouching was executed in fine brush strokes to achieve full tonal integration with the original paint, but in a way that it is clearly distinguishable as an addition upon close inspection.

Gouache colours were used for the first retouching layer. After application of the varnish, the finer nuances and details were executed with *Gamblin colours*.⁸⁴ (Fig. 200).

Application of a new varnish

Two varnish layers were applied before the final retouching. A 25% dammar solution (with 2% *Tinuvin 292* as stabiliser), in a solvent mixture of *Shellsol T* and *Shellsol A* (80/20). was applied with a brush. The relatively high concentration was chosen to reduce the penetration of the resin to a minimum. To balance out uneven gloss and saturation of the colours, a second varnish had to be brushed on the next day. For this second varnish layer, a 25% dammar solution in a solvent mixture of isooctane and *Shell-*



Fig. 200: Filling of losses



Fig. 200: Inpainting with gouache



Fig. 200: Final retouching and new varnish

sol A (70/30) was used to get an even gloss. The higher evaporation rate of this solvent mixture enabled a fast film formation and a relatively even gloss was achieved on the whole surface. The amount of varnish applied depended on the requirements of the particular colour section.

After varnishing and final retouching, the painting was mounted in its decorative frame.



Fig. 201: Before treatment



Fig. 202: Painting after treatment

The painting "Purgatory" of the Mary retable

The horizontal predella painting (63.5 x 122.5 cm) depicts a purgatory scene that has been common since the Middle Ages: a grim, dark cave filled with fire and embers. The souls in purgatory, depicted here as a group of naked women and men, stretch their arms, hands, and faces up to heaven in search of help and salvation. The so-called "poor souls" are up to their waists in fire, surrounded by flames, glowing logs, and flying sparks (Fig. 203).

The iconographic connection between the paintings "Purgatory"⁸⁵ and "Our Lady of Carmel" is the scapular that Mary holds in her hand, presenting it to the believer. This is understood to be the badge of election for salvation. Brown small scapulars on the breasts of the figures indicate that they already belong to those who will escape the purgatory.

The examination of the painting's technique and condition could not clarify when and in which context the painting had been painted. Format and subject suggest that the painting has always held the function of a predella piece. Although the condition of the painting suggests it may have originated from a different context, it cannot be ruled out that it was



Fig. 203: Mary retable; canvas painting "Purgatory"; condition before treatment

specifically designed for the Mary retable during the assembly of the individual elements.

Technical description

Mounting

The painting fits the space between the two columns of the retable perfectly. The canvas, however, is not mounted on a "classical" strainer or stretcher. Instead, four wooden boards, 30 mm thick and 10 cm in depth are simply nailed together to form a box-like construction. The canvas is nailed to the small front side of this wooden construction (Fig. 204).

Textile support

The textile support consists of one single woven piece made by flax (or hemp). The weave structure is a plain weave.⁸⁶ The handwoven textile exhibits several nodes and weaving errors, such as protruding loops of threads. Selvedges do not exist.

The canvas is exclusively nailed to the front of the strainer, with nails spaced approx. 10-15 cm apart; the excess fabric has not been folded over but cut off flush.



Fig. 204: Reverse of the painting "Purgatory": Canvas and "strainer" construction before treatment



Fig. 205: Cross-section (sample No P2/S5); The greyish preparation has a darker upper border, which could be an isolation layer. A thin layer of incarnate and the red layer for the flames follow (the measurement bar is 200 µm)

Since the paint layer is found under the nail heads as well, this mounting is not original. The original tacking margins or even more parts of the original format were lost when the painting was cut on all four sides after mounting it on the “strainer box”.

Preparation

The painting has a very thin brown, slightly greyish preparation layer, probably with an isolation layer on top (Fig. 205). No size underneath was found. Silicium and calcium were identified with EDX, which can be interpreted as a mixture of ochre and calcium carbonate or -sulfate.⁸⁷

Paint layer

The painting, presumably containing oil or tempera, was carried out in rather thin layers. The surface has a smooth appearance, although the paint body itself is quite coarse. The paintwork is mainly alla prima with a very detailed and precise design, e.g. single fine brush strokes as curls in the hair and eyelashes on the local color of the hair and incarnate. It was carried out in a fast, simple and experienced manner with clear brushstrokes. Lead white was identified as the main pigment of the incarnates, vermilion in the flames.⁸⁸



Fig. 206: Craquelures in the paint layer are covered with a thick later varnish layer; unvarnished edges with several nail holes due to the application to the strainer structure and the framing



Fig. 207: Condition after the dirt and varnish removal: matte and leached paint surface (nail holes already closed with pulp filler)

Varnish

A thick varnish layer was applied with a brush to the entire painting except for the edges, which were hidden by the frame. This clearly indicates that the varnish is not original (Fig. 206).⁸⁹

Frame

Five pieces of small gilded fillet mouldings, mitered together, are attached to the front of the strainer with nails through the painting (Fig. 203). The wooden, profiled, and water-gilded strips have a height of 1.2 cm, the width is 3.5 cm. They cover the nails of the mounting and the edges of the painting.

Condition

Preliminary remark

The general condition of the painting can be explained by the extreme climatic conditions, which had severely affected the hygroscopic material. The canvas was found to be extremely sagging. Many areas of the paint layer showed significant losses, flaking and tenting. The surface was covered with extensive candle wax residue due to its proximity to the altar candles, which must have frequently been extinguished carelessly. Exten-

sive restoration work had also been carried out in the past. This included harsh cleaning and varnish removal, retouching, and overpainting as well as the mounting on the strange "strainer construction", including the cutting off the edges of the canvas. Dirt, wax, inappropriate overpainting, the brownish varnish, and the deformations contributed to an overall neglected and unpleasant appearance, severely impairing the legibility of the scene. (Fig. 203)

Textile support

Generally, the canvas appeared to be in good condition in the lower part. In the upper part, the canvas was quite brittle. The increased brittleness as well as the brown discoloration resulted from the accelerated ageing of the fibres, caused by the impregnation with varnish. A check of the pH value of the canvas revealed high levels of acidity, further suggesting a weakening.

Some small tears and holes along the edges, particularly close to the upper edge, were observed. Another tear of 3 cm in length at the lower left edge was gaping. The tension of the textile support was too low due to relaxation and creep over time. Therefore, the canvas was bulging heavily at the bottom.

The back of the canvas was covered with dust. After removing the dirt, many brown stained areas, where varnish and dirt had migrated from the surface during former cleaning and/or varnishing procedures, became more prominent.

All original tacking margins are lost: the painting was cut all around to an unknown extend. The nails that were used to fix the painting were completely corroded and the fabric underneath the nail heads was deteriorated.

Paint layer

The paint layer exhibits a fine and delicate craquelure pattern. The adhesion between the textile support and the priming had evidently been very weak for decades already. The detachments, tenting, and cupping of the paint layer appear to be the result of ongoing issues caused by the high shear forces between canvas and paint layers. Many small paint losses, as along with cupping and flaking, were present throughout the painting,

particularly concentrated in areas that had previously undergone treatment. The largest paint loss was found on the body of one female "soul" at the right-hand side. The entire canvas is relaxed and enlarged, while at the same time the canvas has shrunk in many local areas resulting in small tenting paint flakes.

The solvent-damaged, blanched and leached paint surface – caused by earlier varnish removal treatments – became visible during varnish removal.

The surface of the paint, particularly in some red and brownish details and in shades of the incarnates, was damaged by aggressive cleaning with strong solvents or chemicals. At the higher weave points the paint layer was severely thinned, revealing lower layers and the preparation from underneath. Significant details and outlines were missing e.g. curls, shades, faces, flames.

The extent of retouches and overpaint indicated significant previous damage to the paint layer and subsequent restoration treatment. Some losses were filled with a white-yellowish filling material. These areas of recon-

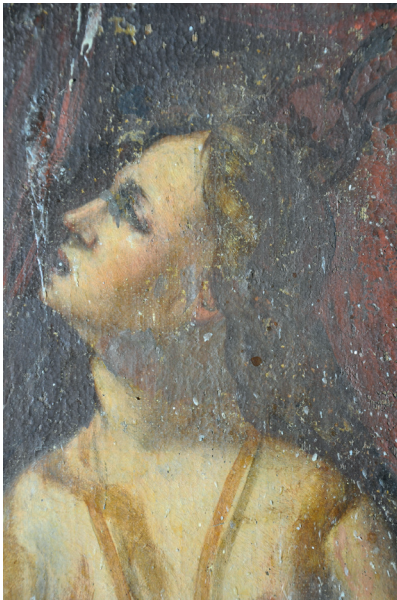


Fig. 208: "Purgatory"; condition as found: dirt, wax and disturbing overpaint; after removal of overpaint and during retouching

structured ground layer were mainly found in the lower right corner of the painting. The even and dense texture of the filling material did not match the surrounding surface. Many retouches were found directly on the textile, especially in smaller areas.

The dark brown color of the overpainting in all heads significantly mar the original composition – the style and blonde color of the hair of some figures had been completely changed (Fig. 208). Typically, contours and shadows had been repainted to enhance contrast.

Most of the overpaint does not match at all – particularly in the bright incarnates they are too dark and not brilliant enough.

Varnish

The overall appearance of the painting was seriously marred by the thick greyish dirt layer, extensive wax residues on the entire painting, and the yellow and blanched varnish (Fig. 203). The surface of the painting appears matte and dull, the proper tones and colors were not visible.

Strong fluorescence of the varnish under UV-inspection visualised the uneven thickness and distribution of the varnish on the entire plane (Fig. 209). Several local retouches of a later restoration phase on top of the varnish were visible as dark brush strokes.



Fig. 209: Fluorescence of varnish under UV exposure; local retouches on the varnish are visible as dark brush strokes

Concept

The overall aim of the concept was to restore the structural stability of the paint layer and canvas. Due to the neglected and severely damaged condition, measures to improve the visual appearance were urgent. The removal of wax and dirt aimed at improving the appearance and eliminating the catalytic degradation effect of it. The low pH value of the canvas required deacidification.⁹⁰ Structural stabilisation of the canvas required closing the holes and treating the edges in order to be able to stretch the painting again.

However, the concentration on a „pure” conservation treatment would have preserved the painting with an unpleasant appearance. Therefore, the inadequate additions, such as the dark brownish varnish and mismatching overpaints were to be removed to reveal the original surface, thus improving the painting’s appearance.

The aim was to regain readability. Retouching focused on the areas of paint loss. In the larger paint loss area in the right lower edge, reconstruction of the female body and flames on the old and new fillings was necessary. The varnish removal as well as the application of a new varnish were decided upon to improve the contrast and colour saturation.

Conservation and restoration treatment ⁹¹

In this case, the treatment required the demounting of the canvas from the strainer. The initial step involved cleaning the front and back. This included the removal of surface grime and wax drops with *Pemulen TR 2* gel at pH 8, with the addition of 30% *Shellsol T*.

The weak and brittle paint layer was treated with a general facing and a brush coat of animal glue (5%) for a first consolidation and flattening. As the test for acidity showed raised values, it was decided to deacidify the canvas with the bookkeeper method. Bookkeeper MgO solution was evenly applied to the back of the painting with a spray bottle, which was repeated twice after intermediate drying. By increasing the pH value to over 7, a buffer was introduced as alcaic reservoir for the future.⁹²

After the removal of the facing paper, it became evident that the adhesion between the preparation and the canvas was still very weak. An additional consolidation was needed.⁹³ As there was not enough space for the raised edges of the colour flakes, the textile support had to be stretched across

the entire plane so that the flaking layer of paint could be laid down. For further treatment and the required stretching, all holes, tears, and fragile areas of the canvas and stretching margins were stabilised with inserts and patches attached with *BEVA 371*. A strip lining with *BEVA 371* was applied to all four sides with canvas strips.

All small holes in the canvas were filled with a cellulose fibre pulp mixture.⁹⁴ As a supplementary treatment, prepared *Beva 371*[®]-coated linen threads were stretched over these fillings and heat-sealed with a small hot spatula (Fig. 210).

Larger holes in the canvas were filled with inlays of linen fabric whose structure was close to that of the original canvas.⁹⁵ Thusly prepared, the canvas could be stretched on a temporary stretcher to work on the consolidation of local tenting areas (Fig. 211, 212).

For the consolidation of the tented paint flakes, hide glue (approximately 5.5 wt %) was used as an adhesive in combination with the "light bulb" method.⁹⁶ The consolidation of the paint flakes was difficult, because there was not enough space for the tented paint flakes on the shrunken canvas. The "light bulb" method was used to solve this problem locally: The warm light bulb (regulated by a dimmer to approx. 40-50°C) is pressed towards the reverse of the canvas with slight pressure. Due to the



Fig. 210: Application of bridging threads. The canvas is prepared by extracting threads in one direction. The resulting parallel threads are coated with BEVA. After the heat-sealing of the bridging threads, the excess of canvas will be cut off



Fig. 211: Front view of an insert



Fig. 212: Reverse side of the painting (stretched onto a temporary working stretcher).



Fig. 214: detail after removal of varnish with xylene based gel mixture – old white fillings exposed after removal of overpaint



Fig. 213: Purgatory painting, detail before treatment

round shape of the warm bulb, the canvas is stretched, creating a bulge. By using different shaped light bulbs, it is possible to achieve different degrees of stretching. *Colour shapers* with silicone tips and the hot spatula were used to manipulate the paint flakes during the gluing process. After setting of the glue, the last step was the careful flattening of the local bulge with a sandwich of *Viledon*[®] polyester tissue followed by thick and soft wet blotting paper and sandbags.

Next followed the varnish removal and removal of mismatched retouches with a Xylene solvent gel (Fig. 213, 214, 216, 217).⁹⁷

The painting then was re-stretched on the former strainer box which was improved by a back protection, comprised of a plywood panel flush to the surface of the strainer and an additional cushion of a polyester canvas stretched over it. This will slow down any moisture transport through the painting and will provide protection against mechanical impact (Fig. 215).

Restoration

To regain readability and optical balance to the Mary painting, it was decided to close all losses with a filling mass and subsequent retouching.⁹⁸

By treating all problematic lost areas, the painting's aesthetically pleasing condition was to be re-established, restoring its devotional function. Since the purgatory painting is in close proximity to the viewer, next to the entrance door of the church, the visual integration of the lacunae was an important aspect of the concept.

The retouching was carried out in fine brush strokes for full tonal integration and focused on the fillings, the missing paint areas. Additionally, a few local glazes were applied on top of the new varnish to adjust the tonality and colours of over-cleaned (reduced) details such as flames. Lost forms were reconstructed along small preserved original paint flakes (Fig. 218, 219).



Fig. 215: Strainer box with backboard protection; front (left) and back (right)



Fig. 216: Right corner before treatment (UV-exposure); overpaint is distinguishable as dark brushstrokes



Fig. 217: Right corner after removal of varnish, overpaint and old fillings



Fig. 220: "Purgatory" painting after conservation and restoration

Acrylic emulsion paint (*PRIMAcryl* by Schmincke) was used as a first re-touching layer. After the varnish application, the finer nuances and details were carried out with *Gamblin colours*.

Dammar resin with 2% *Tinuvin 292* as a stabiliser varnish was applied step-by-step, with three separate layers added over time.⁹⁹ For additional gloss-levelling of few matte areas, *Laropal A81* (20% solution in a mixture of White Spirit : xylene in the ratio 1:1) was applied locally with fine re-touching brushes.



Fig. 218: Same detail after filling

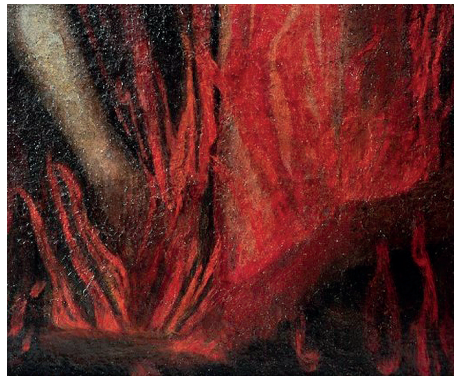


Fig. 219: Same detail after reconstruction and varnish application

Concluding remarks

The retables: art historical questions

There is little archival information about the production of the four retables discussed in this publication.

For the Holy Cross retable in the Church of Our Lady of Šunj, we know from the last will of the priest Blaž Alegretto, written in 1567, that he donated 30 scuda for the creation of a painted retable for a crucifix. This is the only indication for the dating of this retable, as well as for the crucifix that occupies its central niche (the crucifix must have already been in existence when the will was written). It can be concluded that this retable was created around 1567.

A testament also helps with the dating of the Annunciation retable from the same church. From the last will of Bishop Nikola Brautić, which dates from 1631, we learn that he donated 16,000 ducats for the construction of



Fig. 221: Lopud, Gospa Maria Šunj;
Annunciation retable

Fig. 222: Lopud, Gospa Maria Špilica;
Mary retable

a chapel, altar, and retable for his grave and memorial. During the conservation treatment, the date '1637' was discovered on the retable in a concealed location. We can therefore assume that the retable was constructed between 1632 and 1637.

Historian Vicko Lisičar (1879–1938) noted that the Annunciation painting adorning the central part of the retable was ordered in Umbria. This raises an important question: Was the retable specifically created to fit the painting? Or was there a joint plan for the retable and the painting, in which shape, content and size of the two were coordinated?

Unfortunately, the archives contain no contracts or documents that would provide information on the contractors or the commissions for the craftsmen and artists. The only archival trace is the 1636 contract with *faber-*



Fig. 223: Lopud, Gospa Maria Špilica; Joseph retable

Fig.224: Trsteno, Church of Sv. Vid (St Vitus) ¹⁰¹; Holy Cross retable



lignearius (master woodcarver) Urban Bavarac (Urban of Bavaria) for an “ornamentum altaris” in the Church of Our Lady of Šunj. However, the text of the contract does not allow for any conclusions about the shape of the work to be created. Therefore, the connection between the contract and the Annunciation retable remains hypothetical.

Furthermore, we know nothing about the creation of the two smaller retables in the Church of Our Lady of Špilica: the Mary retable and the Death of Joseph retable. It is important to note, however, that these two retables share striking similarities with the Annunciation retable from Our Lady of Šunj. A close resemblance is evident in both form and in detail, even in the layout of the construction. It was art historian Kruno Prijatelj (1922–1998) who first formulated these relationships.¹⁰⁰ A very similar retable in Trsteno, on the mainland opposite the island of Lopud, needs to be added to this group (Fig. 224).

But who was the patron? Who was the person responsible for the design and realisation of the project?

Božena Popić, an art historian who studied wooden retables dating from the 15th to the 18th century in the area of the former Republic of Dubrovnik, correctly noted that these retables cannot be included in the group of Dalmatian retables that were produced in Venice or under Venetian influence.¹⁰² While there are differences in the overall structure and in the ornamentation, the main distinction lies in the design of the columns: the Venetian retables in Dalmatia all have full-round columns, whereas the four retables in question all have half-columns.

These retables must have been made in a collaborative effort by several craftsmen, the carpenter and the *indoradori* for the gilding and polychromy, and they were most likely made on the island. The wood was brought in from farther afield. It could even have been brought from the Piave region, north of Venice, indicated by the holes found in the boards used for the construction. Holes like these were used for transporting the wood in rafts. A group of craftsmen must have constructed the retables on Lopud and, in the case of the Joseph retable, left the island with the last drop of material for the preparatory layer, leaving the retable unfinished with only the gilded elements. But who were they? And where did they come from?

The discovery of pre-prepared cartapesta elements in the two retables from Our Lady of Špilica may indicate a South Italian influence, as cartapesta is a

widely-used technique especially in Naples and Apulia (Lecce).

This is all we know so far. However, the wealth of information that was gained from the close analysis of the retables provides a valuable basis for future research.

The project

Reflecting on the years of the ICWL project since 2002 and the results achieved, the most striking aspect is the positive cooperative, international approach.

The ICWL took place annually, with each workshop lasting two weeks. As usually 15-25 participants attended the workshop, the project reached many individuals over the years. Students worked under the mentorship of professors from different universities, providing them with a great learning opportunity. Organising the on-site working space, assigning tasks and responsibilities, dealing with diverse conservation-restoration problems, and taking part in the complex decision-making process are just some of the challenges the participants of the ICWL faced each year. Another important aspect of the workshops was the opportunity to share knowledge and experiences, establish professional contacts, meet new people and form friendships.¹⁰³ The workshop being conducted in English also gave participants the chance to practise the language and enhance their vocabulary and oral expression.

Open discussion, opinion-forming, and the development of concepts thus served as the basis for an academic training workshop, a platform for intercultural conservation debate, and a training programme to gain practical experience in the field of heritage conservation, whilst at the same time contributing to the preservation of the cultural heritage on the island of Lopud.

Investigating and treating the retables in this context was a challenging, ongoing process. As only limited progress was possible during of the annual two-week working periods, the team had to divide the treatment into distinct steps while maintaining a cohesive overall approach. The positive side effect of this periodical work was the chance to evaluate the results of previous measures as well as to correct and adjust the proposed concept. The approach of minimising reconstructive measures and instead fo-

cusssing on consolidation resulted in the conservation and restoration of four retables, the sculpture of the Holy Christ, and the paintings “Annunciation”, “Death of St Joseph”, and “Purgatory”. The treatment stabilised the objects and restored many positive aesthetic qualities by respecting the age-related value of the authentic original. While in the treatment of the retables, where the original polychromy had been preserved untouched, reconstruction was kept to a minimum, the approach used for the paintings and the sculpture, which had all already been treated before, was different. Focussing on a purely conservation treatment would have preserved them, however with an unpleasant appearance. Therefore, inadequate additions, such as the dark brownish varnish and mismatching overpaints, were removed to reveal the original surface, thus improving appearance and readability. The treatment involved the filling of losses and the tonal integration of these additions, motivated by the liturgical function and the close viewing distance. All additions and retouches were applied in a manner that ensures an overall harmonious appearance. At the same time, they remain distinguishable from the original.

Many hundreds of working hours were invested, many of them with an invisible effect, as they were aimed at consolidating and stabilizing the endangered substance of the material. Nevertheless, significant improvements in the appearance of the exterior have been achieved, allowing the beauty of the original surface and the creation intended by the artists and craftsmen to be perceived again.

With these measures, there is hope that this unique group of retables will be preserved for the (near) future and that their beauty and dignity will remain visible for generations to come.

Appendix I

„Die IV Novembris 1636.

Blasius Allegretti interveniens pro se et pro alijs sibi notis ex una et magister Urbanus de Tenum Dorfort Bavarus hic Rhaciisij commorans parte ex altera, sponte ac omni meliori modo devenerunt ad infrascripta conventionem, videlicet dictus Vrbanus faberlignarius obligans se suaque bona omnia presentia et futura promisit et convenit eidem Blasio Allegretti se hinc ad menses tres proxime venturos sua arte et labore suisque sumptibus, expensis et materialibus facere complere et perficere unum ornamentum altaris ligneum ut dicitur con tre scudi vacui longitudinis pedum tresdecim, latitudinis pedum octo et 1/3 et in vacuitatibus predictis videlicet in illa pro medium altitudinis pedum trium et unciarum trium latitudinis vero pedum duarum et unciarum octo et in alijs duabus a dextris et a sinistris altitudinis pedum quatuor cum dimidio et latitudinis pedis unius et unciarum duarum pro quolibet ex eis et hoc pro ecclesia Sanctae Mariae de Bissone insulae mediae cum proportionibus tam ornamentis laboreris suae arte congruis et iuxta formam et tyram graphidis in mei publici cancellarii presentia traditi atque consignati eidem magistro Urbano a predicto Blasio septuaginta duos ducatos[....]“; (Diversa Cancellariae 1634 -1637, sv. 207, str. 125, Historic Archiv Dubrovnik) cit. after Prijatelj, 1993

We suggest the following translation:¹⁰⁴

4. November 1636.

Blasius Allegretti, acting for himself and on behalf of other persons known to him, on the one hand, and the Bavarian master Urban de Tenum Dorfort, who lives here in Rhaciisij¹⁰⁵, on the other hand, came to the following agreement of their own free will and to the best of their ability: the said Urban, a woodworker, has namely committed himself with his present and future goods and has promised and agreed with the said Blasius Allegretti, from now until in the three coming months with his art and labour and at his own expenses, to make, have finished and complete (*perficere*) a wooden ‘ornamentum’¹⁰⁶ of the altar with expenses and materials, with three empty ‘scudi’¹⁰⁷ (*con tre scudi vacui*) of thirteen feet length and eight and 1/3 feet width and in the mentioned free spaces, namely the one for the centre (?¹⁰⁸) with a height of three feet and three ounces and a width of two feet and eight ounces and in the other two, to the right and to the left, with a height of

four and a half feet and a width of one foot and two ounces, for each of the two, namely for the church of Our Lady of Bissone on the middle island [Lopud], in the right proportions and with the decorations appropriate to the work of his art, according to the shape and drawn model(?¹⁰⁹). In my presence as public notary (*cancellarius*), 72 ducats were handed over to the same Master Urban by the aforementioned Blasius and [the contract] signed.

With the information given in the contract the shape of the agreed object remains unclear, this might have been specified verbally or within a drawn modello. As pigment and goldleaf are not mentioned here it is obvious, that a separate contract with a painter or indoradori had existed. It is also astonishing that the contract makes no reference to the subject matter of the work.

It may be assumed that the units used in the contract were Venetian, rather than Ragusan. In the Venetian measuring system, the ratio of 1 ounce to 1 foot is 1:12, and in the Dubrovnik system it is 1:8. 12 is divisible by 2, 3 and 4, while 8 is divisible only by 2 and 4. Thus, the given length of 8 1/3 can be expressed as 8 feet and 4 ounces in the Venetian system, whereas the Ragusan system does not give whole units here (8 feet and 2,666 ounces). Furthermore, the length given as 2 feet 8 ounces does not make much sense in the system of Dubrovnik, because it actually equals 3 feet.

To make it easier to interpret the values specified in the contract, they have been converted. This at least clarifies the dimensions of the contracted workpiece:

Venetian foot: 0,347m = 12 ounces / one ounce (uncia): 2,897cm¹¹⁰

given value	calculated dimension (rounded)
13 feet (length)	4,52m
8 1/3 feet (width) [8 feet 4 ounces]	2,87m
3 feet 3 ounces	1,13m
2 feet 8 ounces	0,93m
4 1/2 feet [4 feet 6 ounces]	1,56m
1 foot 2 ounces	0,40m

Appendix II: Recipes

1 Injectable filler (for wood)	
7 pw* parts per weight	<i>Plexigum PQ 611 (now Degalan PQ 611)</i> 20% in Shellsol T within this mixture 2% <i>Acematt HK125</i> is dispersed
1,5 pw	<i>Plastorit super</i> , <12 µm
1,5 pw	Phenolresin micro-hollow-spheres (<i>Phenoset BJO 930</i>)
1 pw	Shellsol T
see: Monika Bürger, Entwicklung injizierbarer Kittmassen zur Unterfüllung von stark durch Insektenfraß geschädigtem und destabilisierten Holz. In: Kölner Beiträge zur Restaurierung und Konservierung, Bd. 18, München 2008	

2 Spatula filler for small voids (for wood)	
7 pw* parts per weight	<i>Plexigum PQ 611</i> 20% in Shellsol T, within this mixture 1% <i>Acematt HK125</i> is dispersed
1,5 pw	<i>Plastorit super</i> , <12 µm
2 pw	Phenolresin micro-hollow-spheres (<i>Phenoset BJO 930</i>)

3 Filler for bigger voids (2 step-filler) (for wood)	
Basic filler	
2 pw* parts per weight	<i>Plexigum PQ 611</i> 50% in Shellsol T
2 pw	sturgeon glue 10% in demineralised water
1 pw	corkgranulate ca. 0,1-0,2/0,3 mm
Cover filler	This filler serves as a smooth and even coverlayer, providing an appropriate surface for retouching. It is a mixture of fillers and a mixture of binding media, mixed together in a special ratio.
Mixture of fillers	
cork powder	these fillers in equal proportions
Champagne chalk/chalk of Bologna 1:1	
<i>Dualite 040</i> (thermoplastic microspheres)	
Mixture of binding media	
1 pw	warm sturgeon glue 10% in demineralised water
1 pw	<i>Plexigum PQ611</i> , 50% in <i>Shellsol T</i>
Ratio filler - binder	
1,3 pw	mixture of fillers
1 pw	mixture of binding media
It is useful to prepare a larger amount of the filler mixture, but to mix just little amounts with the binding mixture, as the fresh mixture has better working properties. It is important to mix the components very carefully, therefore it is useful to work with a pestle and mortar to mix the fillers and the final filling mass. First the binding media should be mixed thoroughly, then the filler mixture is added and mixed until a soft homogeneous mass is obtained that does not stick to the mortar.	

4 Filling mass (low viscosity for brush application) (for painting)	
2 pw* parts per weight	<i>Plextol D498</i> (15% in distilled water)
1 pw	<i>Methocel A4M</i> (3% in distilled water)
added to the desired consistency:	mixture of champagne chalk and glass platelets (15 μ) (Kremer 59852) 2,5:1 The glass particles allow optimising the consistency and shrinkage

5 Filling mass (high viscosity) (for painting)	
2 pw* parts per weight	<i>Plextol D498</i> (15% in distilled water)
1 pw	<i>Methocel A4M</i> (3% in distilled water)
to be added to match the desired viscosity (compact, but smooth and not friable)	champagne chalk

6 Cellulose fiber filler for small canvas holes	
3 ml	10% hide glue
3 ml	4% <i>Methocel A4C</i> (methylcellulose ether) in water
1,2 gr	<i>Arbocel BC200</i> (cellulose fibers)

7 Xylene gel for removal of varnish and overpaint		
Xylene gel 80 wt%	Water based buffer system 20 wt %	
100 ml xylene	0.5 % citric acid in distilled water	1
2 g <i>Carbopol</i>	TEA to reach pH 6	
20 ml <i>Ethomeen® C 12</i>	<i>Ethomeen® C 12</i>	1
~ 1.5 ml H ₂ O		

8 Filling mass (for painting)	
0,5-1 pv* parts per volume	<i>Primacryl</i> acrylic emulsion color (Schmincke)
1 pv	<i>Methocel A4C</i> (5% in distilled water)
2,5 pv	filler mixture: chalk (champagne): glass platelets (15 μ) (Kremer 59852), 2,5 : 1 (ratio of the two fillers: parts per weight)
Ratio between binding medium: filling medium - mixture 1:1, /1:1,25 parts per volume The filling material was coloured to a light-greyish local color with <i>PRIMAcryl</i> emulsion paint to allow for a precise monitoring of the surface structure and to facilitate the following re-touching	

Picture credits

Fig. 5: https://it.wikipedia.org/wiki/Polittico_di_San_Vincenzo_Ferrer

Fig. 24: Di Berenger, A., *Dell'Antica storia e giurisprudenza forestale in Italia*. Treviso/Venezia 1859-1863. Tavola II.B., p. 809

Fig. 30 “Ultima Cena” by Bartolomeo Schedoni (1578 to 1615) Galleria Nazionale, Parma; GN 132. by concession of Ministero della Cultura - Complesso Monumentale della Pilotta - Galleria Nazionale, Parma

Fig. 73: Photo archive of the monument care office, Split

Fig. 125: Pablo F. Amador Marrero/Museum Amparo/Puebla

All others by ICWL

Endnotes

- 1 Timothy Clifford, *Italy & Dalmatia: Architecture, Sculpture, Painting & the decorative Arts, c. 1400-1800*. In: *Croatia – Aspects of Art, Architecture and Cultural Heritage*. London 2009, p.120
- 2 This 1997–2001 project was supervised by Prof. Dr. Ingo Sandner, CICS Cologne and is addressed here only briefly, while the focus here will be on the retables examined and treated during the ICWL project.
- 3 Cologne Institute of Conservation Science/Technical University Cologne/CICS; University of Antwerp; Ecole Nationale Supérieure des Arts Visuels – LaCambre, Brussels; Umjetnička Akademija Sveučilišta u Splitu (Arts Academy, University of Split); University of Dubrovnik, Department of Arts and Restoration
- 4 Jana Eich, *Tüchleinmalereien (oslikana zidna platna) s otoka Lopuda*. In: *Dubrovnik 2/2012*, p. 62 -71 and: Jana Eich, *Die Tüchleinmalerei der Kirche Maria Sunj auf Lopud, Croatiën. Möglichkeiten zur Erhaltung und erneuten Präsentation*. Diploma Thesis TH Köln, 2010
- 5 Joško Bogdanović, Andreas Krupa, Lisa Burkart, Marianne Decroly, Charles Indekeu, *The Choir Stalls of the Franciscan Monastery Church on Lopud*. In: https://www.hr.z.hr/en/images/stories/novosti5/korske_klupe_2023_knjizica-06.pdf
- 6 Lisičar, V., *Lopud - Eine historische und zeitgenössische Darstellung*. Dubrovnik 1932, p. 53
- 7 Božena Popić – Kurtela, *Drveni oltari od 15. do 18. Stoljeća na dubrovačkom prostoru*. Master Thesis, Zagreb, 2010. p. 160
- 8 <https://www.h-r-z.hr/en/index.php/spotlight/european-year-of-cultural-heritage/2181-sipan-church-of-st-mary-polyptych-of-the-assumption-of-the-virgin-mary> (26.5.2024)
- 9 https://commons.wikimedia.org/wiki/Category:San_Vincenzo_Ferrer_polyptych_by_Giovanni_Bellini?uselang=iti/Polittico_di_San_Vincenzo_Ferrer (21.05.2024)
- 10 Popić, p. 104
- 11 We will not go into further technical details at this point, as the focus of the treatment at the time was on the reconstruction of the retable and the authors were not yet involved in its realisation.
- 12 In addition to the high altar retable and the retables discussed here (Holy Cross and Annunciation), there are four other retables in the church. At the front of the nave are 19th-century stone retables containing panels from the 15th and 16th century. The panels of the left-hand retable with the Madonna and accompanying saints can be attributed to the painter Matheus Junčić based on surviving sources. They come from a larger polyptych, other panels of which are preserved in the island's museum. This polyptych might have been the original high altar retable. The right-hand retable shows an icon of the Madonna and Child. Two further altars on the walls of the nave are decorated with large-format

- paintings, on the left St Catherine with other saints, a panel attributed to the surrounding of Palma il Vecchio and on the right a painting on textile support with the Holy Family, signed ABD.
- 13 Igor Fisković, Lopudski oltari Miha Pracata. In: *Ars Adriatica* 2/2002 p. 202. This retable by Paolo Campsa will not be discussed here. It has been undergoing restoration at the Croatian Conservation Institute - Department Dubrovnik. A separate publication is expected.
 - 14 Anne Markham Schulz, Tessie Vecchi, Paolo Campsa e la manifattura di ancone lignee nella Venezia del rinascimento. In: *Saggi e Memorie di Storia dell' Arte*. No 25/2001 p. 9, 11-53
 - 15 Lisičar, V., Lopud, historički i suvremeni prikaz, Dubrovačka hrvatska tiskara. Dubrovnik, 1931, p. 37
 - 16 The gravestone in the floor in front of the retable reads: „NICOLAO BRAVTIO EPO SARSINAE ET COMITI BOBII OBIIT ANODNI 1632. MENSIS MAII 27, AETATIS SUE. LXVI. EPISCOPATVS SUI XXX” (Nicholas Brautić, Bishop of Sarsina and Count of Bobium, died in the year of our Lord 1632, May 27, 66 years old, 30 years after receiving his episcopal consecration).
Sarsina is a municipality in the province of Forlì-Cesena in Emilia-Romagna. <https://www.catholic-hierarchy.org/diocese/ds208.html> (26.5.2024); here Brautić is listed as *Nicolas Braverio*.
Brautić left 7763 ducats for the construction of the chapel and the masses that were to be held in his memory. The relevant passage in his will for the construction of the chapel and the donation of the retable reads as: „*fabricare una capella nella chiesa parrocchiale die santa Maria Bison in contro a quella del S[a]ntissimo Crucifisso dell' istessa forma e grandezza*“. „*Diversa notariae*“, Vol No. 211, p. 139 (Dubrovnik archive) contains the terms of the Bishop's will, drawn up in 1631.
 - 17 Further preserved documents confirm that Urban Bavarac (or Urban de Surgge) had been active in Dubrovnik, the islands Lastovo and Hvar, as well as in Kotor. See: Kruno Prijatelj, Prijedlog za Urbana Bavarca, in: *Peristil* 35/36, 1992/93, p. 143-150. Prijatelj also provides the text of the other surviving documents. He tried to attribute the main altar of the church to this Bavarac, which recent research has attributed to Paolo Campsa. But the coincidence of the date of the document (1636) and the date of the annunciation retable tempts us to assume that Bavarac was the creator of our retable, although the difficulty remains in relating the provided very detailed measurements in this contract to the present retable. The contract fails to allocate the measurements in concrete terms. The shape of the ordered work therefore remains unclear. It is possible that a design drawing also existed. The mentioned total length of 13 feet (4,43m) corresponds approximately to the height of the retable above the mensa. (4,36m) For the contract and a proposed translation see Appendix I
 - 18 We will see that for the Holy Cross retable, a priest of the same name is mentioned (presbyter Blasio de Allegretto), who might be the uncle or great-uncle of Blasius Allegretti who commissioned the retable from Urban Bavarac. It is not uncommon for members of the same family, across generations, to be involved in the furnishing of the churches in this region.

ENDNOTES

- 19 Kristin Meise, Die Restaurierung des Goldlederantependiums ‚La B. V. dell Annunciata‘ – Studien zur aktuellen Goldlederrestaurierung, Konzeptentwicklung und Durchführung. Diploma Thesis TH Köln 2001
- 20 This three-part mensa is unusual. The character of these stone slabs suggests that the stones were probably originally intended as floor slabs.
- 21 Wood species were analysed under the microscope.
- 22 Water-driven mechanical sawmills (*segeheria*) had been widespread since the 16th century. See: Mauro Agnoletti, Technology, Economics and Forestry: Water powered sawmills in Italy´s Cadore Region. In: Forest & Conservation history. 1994, p. 24-32
- 23 A separate publication by N. Lucic / H. Portsteffen et.al is in preparation.
- 24 In case of the Venetian wood trade, we have the following: piede veneto = 0,347 m (feet). un ´ncia veneta = 0,028977 m = 2,89 cm. This would correspond to our ~3 cm diameter of the holes. see: Giovanni Fabbiani, Appunti per una storia del commercio de legname in Cadore. Belluno 1959, p. 21. The standard sawlog “taglia” used to be 4,10 m long. See: Agnoletti, Technology, Economics and Forestry: Water powered sawmills in Italy´s Cadore Region. In: Forest & Conservation history. 1994 p. 26
- 25 Mauro Agnoletti, From the Dolomites to Venice: Rafts and River Driving along the Piave River in Italy (13th to 20th Centuries). p. 25; In: The Journal of the Society for Industrial Archeology. pp. 15-36, and Giuseppe Šebesta, Struttura - evoluzione della Zattera. In: Daniela Perco, Zattere, Zattieri e Menadàs. Feltre, 1988, p. 196 and Fig. 46, 55 and 78
- 26 Lisičar, V., Lopud – eine historische und zeitgenössische Darstellung. Dubrovnik 1932, p. 36
- 27 Maritime and History Museum of the Croatian Littoral Rijeka. Personal communication.
- 28 Lisičar, p. 44 mentioned Sarsina and Bobium as being in Umbria, whereas it has to be stated that Sarsina is located in Emilia-Romagna. (see reference 16)
- 29 Koller, M., Das Staffeleibild der Neuzeit. In: H. Kühn, H Roosen-Runge, R. E. Straub, M. Koller (ed.) Reclams Handbuch der künstlerischen Techniken Bd.1 Stuttgart, (1984) p. 293. Koller, M. Zur Restaurierung großformatiger Leinwandbilder in Österreich. In: Die Bamberger Himmelfahrt Mariae von Jacopo Tintoretto. Arbeitsheft des Bay. Landesamtes für Denkmalpflege Bd. 42, München 1988 p. 29 – 53; Reifsnnyder, J. M.; Artists Canvas – Or Just A Tablecloth? In: Painting Techniques. History, Materials and Studio Practice. IIC (ed.) Summaries of the Posters at the Dublin Congress 1998 (without pagination); Susanna P. Griswold, Two Paintings by ElGreco: Saint Martin and the Beggar - Analysis and Comparison. in: Conservation Research; National Gallery of Art, Washington, 1993 p.133-156; Helena Loermans, Weave draft canvases deciphered. In: <https://labo.pt/>; (26.5.2024); Jill Dunkerton, Marika Spring, Rachel Billinge, Helen Howard, Gabriella Macaro, Rachel Morrison, David Peggie, Ashok Roy, Lesley Stevenson, Nelly von Aderkas, Titian's Painting Technique from 1540. In: National Gallery Technical Bulletin, Vol 36, p. 38 - 75
- 30 Jill Dunkerton, Marika Spring, Rachel Billinge, Helen Howard, Gabriella Macaro, Rachel Morrison, David Peggie, Ashok Roy, Lesley Stevenson, Nelly von Aderkas, Titian's Painting Technique from 1540. In: National Gallery Technical Bulletin, Vol 36, p. 42

- 31 We owe the reference to this painting to Martina Pfeiffer.
- 32 As shown above, the strainer frame has some holes with a diameter of 30 mm, presumably from the raft transport of the wood. It is possible that the strainer frame was produced on the island and the painting was probably delivered rolled.
- 33 In developing the concept, the interests of the locals, the requirements of the Croatian monument authority, the opinions of the restorers involved, and the appreciated results of the reconstruction of the Nicholas retable all had to be balanced in the decision-making process.
- 34 Georg Gottfried Julius Dehio (1850-1932), German art historian. He developed the concept of the modern monument care with the topos "*Konservieren, nicht Restaurieren*" meaning that reconstruction of losses and removal of traces of the historic development of the object might not be the only possible option.
- 35 It was very important that our project partners in Croatia took up the challenge of an unfamiliar approach with curiosity, an open mind and a critical eye, thus to some extent helping to pave the way for that concept.
- 36 see Appendix II 1-3
- 37 The used mixture of two parts *Plexisol P550* and one part *Plexigum PQ 611* provides a heat-sealing temperature of approx. 55°C, an acceptable temperature for the paint layer.
- 38 A solubility test proved the effectiveness of ethanol. The best results in all test fields were achieved with a mixture of Ethanol/*Shellsol T* 1:1 and with Ethanol in a gel of Klucel G 5%.
- 39 see Appendix II 4
- 40 see Appendix II 5
- 41 Plywood would have a maximum of about 30% humidity content in equilibrium to 100% relative humidity in the air which can happen during winter.
- 42 As this system is invisible, a guide on how to handle the painting was stored behind the retable and a notice where to find it was attached on top of the predella.
- 43 Lisičar, Vicko, *Lopud, historički i suvremeni prikaz*, Dubrovačka hrvatska tiskara. Dubrovnik, 1931, p. 37
- 44 The objects were studied in a diploma thesis (see 4) at the University of Applied Sciences Cologne, Germany. The aim was to gain information about the historical background and the rare technique as well as to develop a concept for conservation treatment and a new way of presentation to preserve the objects in the church. The conservation and restoration of these objects had been performed by HCI Zagreb. The plan is to exhibit the treated paintings in the museum of the island.
- 45 The dimensions of the small hangings are about 154 cm x 65 cm, whereas the big hangings have a total length of 268 cm.
- 46 Each figure holds an inscription with a verse from the Old Testament in the Latin language. Two of the hangings consist of two figures on top of each other (Moses and David, Isaiah and Solomon). The two smaller hangings show only one figure each. There

is some indication that they originally used to be six separate hangings. The bigger hangings were sewn together out of two pieces in a later modification. The hangings are fixed between two wooden rods and are probably all made of the same hand-loomed tabby linen fabric. Painted in the technique of 'Tüchleinmalerei', the colours are applied directly on the textile without priming. An underdrawing with thin red lines (red ochre) is visible in unpainted areas or underneath bright colours or in the pleats. The realisation is not exactly following the underdrawing. Typical for 'Tüchlein' paintings, some areas are completely without paint. In these spaces the likely bleached textile is used as bright colour. The colours are applied thinly in a watery system (binder: gluten glue). Following pigments were used: yellow and red ochre, copper pigments (as a component of the black colour), carbon black, lead white, smalt. All pigments except lead white were mixed with an addition of chalk. The paint layer is thin and has soaked into the canvas so the depiction is partially seen on the reverse side and the canvas has kept its flexibility. Only in the incarnate the colour is applied thicker and in diverse layers. No varnish has been applied.

- 47 Prijatelj, Kruno, Spomenici otoka Lopuda XVII. – XVIII. Stoljeća. In: Anali historijskog instituta u Dubrovniku, Dubrovnik, 1954, p. 390.
- 48 Tadić, Jorjo, Građa o slikarskoj školi u Dubrovniku XIII – XVI vijeka. In: Srpska akademija nauka, Beograd, 1952, p. 208. The text of the related section of the testament is: "*Testamentum presbiteri Blasii de Allegetto, parochiani insulae Mediae (nuper defunctus). 1567, a di XV aprile in Isola di Mezzo.Item lasso scudi trenta che sia fatto un altare dipinto di Crucifisso in santa Maria de Bissone.*" [Testament of the clergyman Blaž de Alegretto, a priest of the island of Lopud (who died recently) 1567, on the fifteenth day of April on the Middle Island (Lopud) ... I also leave thirty scudas for the making of a painted altar of the Crucifix in the church of St Marija od Šunja.]
- 49 Prijatelj mentions that the "medallion" with the image of God the Father on the cartouche in front of the pediment could possibly be linked to the Florentine painter Simone Ferri. His presumption is based on a document published by Jorjo Tadić (see 49), a contract between Simone Ferri, the painter, and Miho Pracat, the churchwarden of the church Gospa od Šunja, signed on 11th August 1574. The contract contains the following statement: "*che'il dicto mo. [maestro] Simone debbia dipingere nella dicta chiesa nell'altare grande d'essa ...nel mezzo tondo di sopra un Dio Padre con gl'angeli*". Although it has been precisely set out that Ferri would work on the main altar (*altare grande*), the only image of God the Father in the church of Gospa od Šunja is that on the Holy Cross retable. Here, there are no painted images of angels. Instead, there are one carved, polychromed, and gilded angel head with wings on top of the shield, and two carved, polychromed, and gilded putti at its bottom, one opposite another.
- Ferri lived and worked in Dubrovnik from 1568-1578. See: Alessandro Nesi, Simone Ferri – Recuperi e amplicamenti. Firenze 2021, p.1 and A. Nesi, Simone Ferri da Poggibonsi. Nuove opere e alcuni recuperi. https://www.academia.edu/45262897/Simone_Ferri_da_Poggibonsi_Nuove_opere_e_alcuni_recuperi. (26.5.2024); although the date of the

- contract matches the Dubrovnik working period of Ferri, A. Nesi doubts the authorship of Simone Ferri for stylistic reasons. (personal communication 5/2024)
- 50 Chronology of the ICWL conservation works: In the conservation campaign of the years 2006, 2007, and 2008, the paint layer was consolidated. In the following years, all polychromed and gilded surfaces were checked for flaking before taking any further action. Consolidation had to be repeated on many parts of the retable; sometimes consolidation materials were changed to enhance the effect of consolidation. Parts of the retable which could not be treated from the scaffolding had to be dismantled. These include: the gable (pediment) with the central cartouche decoration (dismantled in 2006), semi-capital of the left pilaster (2006), painted boards that flank the inner side of the central niche (upper board in 2007, lateral boards in 2008) and the pilasters (2008). All elements were reassembled finally in 2012. The work on the statue of Holy Christ was finished in 2014.
- 51 Although *Paraloid B 72* is more stable than *Plexigum PQ 611*, the latter was chosen because it can be dissolved in aliphatic solvents. Due to working in an environment without proper ventilation, special attention had to be given to health safety issues.
- 52 *Accoya*® from *pinus radiata* (<https://www.accoya.com/uk/>) (26.5.2024)
- 53 The system is an experimental set up. It is necessary to note that overload may cause severe flaking in the paint layer. Regular monitoring is obligatory. To improve the climate situation in the area of the retable, the small rosette window behind the retable was closed with Perspex, a decision that was informed by monitoring the climatic conditions with and without glazing.
- 54 see 36
- 55 Nina Erhardt, Möglichkeiten der Ergänzung großer Fehlstellen an fraßgeschädigtem Holz. Diploma thesis, FH Köln 1995; Alexandra Haas, Die Restaurierung des Holzdeckeleinbandes einer Kurfürstenbibel aus dem 18. Jahrhundert. Möglichkeiten und Problematik der Stäbchengänzung großer Fehlstellen im Bereich der Ecken und der Bundübergriffe. Diploma thesis FH Köln 2004. in: Kölner Reihe Bd. 18
- 56 Paraloid B72 5% in ethanol and diacetone alcohol 3+1
- 57 Realisation by Denis Vokić, Zagreb/Dubrovnik
- 58 The investigation of the sculpture was already published by Frane Mihanović, Nada Bezić, Valerija Dunkić, Elma Vuko, Jurica Matijević, “Skulptura raspetoga Krista iz lopudske Crkve Gospe od Šunja: Proučavanje unutarnje grade uz pomoć CT uređaja – identifikacija pojedinih materijala”. in: Dubrovnik 21, no. 2 (2010), p. 199–225. The later discovery of the Mexican origin of the Lopud crucifix made it necessary to revise some of the conclusions published in this article.
- 59 Pablo F. Amador, Marianne Decroly, Cécile Glaude, Charles Indekeu, Ana Marinković, Matko Matija Marušić, Jurica Matijević, Hans Portsteffen, Jana Sanyova, The Crucified Christ of Lopud, Croatia. A Unique Early Import of Mexican Polychromed Sculpture Made of Maize Stalks. in: Zeitschrift für Kunsttechnologie und Konservierung 2/2018, p. 183-200; In his research, Amador recognised that groups of similar sculptures can be traced. In the

- case of the Lopud crucifix, the „twin” sculpture is housed in the Chapel of the Holy Blood in the cathedral of Puebla, Mexico, see 64.
- 60 Analysed by di Stefano, CICS and Dr. Jana Sanyova, Institut royal du Patrimoine artistique, Brussels
- 61 Analysed by Prof. Dr. E. Jägers, CICS Cologne
- 62 There is extensive literature on the production of lightweight sculptures in early Mexico. Selected relevant publications: Araujo Suarez, R., La escultura ligera de México” en *Imaginería indígena mexicana. Una catequesis en caña de maíz*, Córdoba, CajaSur, 2001. A careful historiographical analysis is found in: Ávila, Elizabeth. *Materiales y técnicas de la escultura ligera novohispana con caña de maíz: Una aproximación historiográfica*. México, Facultad de Filosofía y Letras, Universidad Nacional Autónoma de México, 2010-2011. An important advance in the material is in: Amador Marrero, Pablo Francisco. *Imaginería ligera novohispana en el arte español de los siglos XVI-XVII*. Universidad de Las Palmas de Gran Canaria, Islas Canarias, España, 2012. E.L. Brito, *Symbolism and Use of Maize in Pre-Hispanic and Colonial Religious Imagery in Mexico*, e-conservation Journal 2, 2014, pp. 116-127 https://www.academia.edu/35072485/Symbolism_and_Use_of_Maize_in_Pre_Hispanic_and_Colonial_Religious_Imagery_in_Mexico (26.5.2024)
- 63 Amador Marrero, Pablo F. *Catedral de Puebla – una mirada*. Mexico-City, 2015, p. 82
- 64 In an initial botanical analysis (see 58), *Ferula Communis* (giant fennel) was erroneously identified as the sculpture’s material, as the microscopic structure of the medulla of this plant is very similar to maize. Thus, *Ferula* was considered as a suitable material to fill the losses. The pith of ferula is as soft as balsa wood and can be cut, sanded and carved with a knife. While the analysis was misleading, the material nevertheless is very suitable for the additions.
- 65 The conservation/restoration of the two retables in the church Sveta Marija od Špilice within the framework of the International Conservation Workshop Lopud (ICWL) started with a first investigation in the year 2011 and was performed during the annual conservation workshops until 2016. No treatment was performed in 2012.
- 66 Lisičar, V., *Lopud – Eine historische und zeitgenössische Darstellung*. Dubrovnik 1932, p. 53
- 67 Popić, p. 211 after J. Lučić, (1993) p. 21. This description is difficult to interpret, as the current location is next to the western wall (the church is orientated to the south-east). In particular, the mensa slabs of these altars resting on stone corbels could indicate that retables have been here ever since. The present retables would therefore represent the second design phase at this location.
- 68 The following chapters will be dealing with both retables in parallel, as technique, state of conservation and treatment are very comparable.
- 69 David Freedberg, *The Origins and Development of the Flemish Madonnas in Flower Garlands: Decoration and Devotion*. In: *Münchener Jahrbuch der Bildenden Kunst XXXII*, 1981, pp 115-150; Susan Merriam, *Seventeenth-Century Flemish Garland Paintings*. Still

- Life, Vision and the Devotional Image. Ashgate, 2011. (The conservation treatment of this painting was performed by HCI Dubrovnik)
- 70 Lexikon für Theologie und Kirche, Vol. 8, 1999; p. 714
- 71 Ivana Čapeta Rakić, Prilog poznavanju tipologije triju oltarnih cjelina iz radionice Santa Croce. In: Radovi Instituta za povijest umjetnosti 35; Zagreb, 2011. pp. 93-102; and *ibid.*: Contribution to the Research on Three Altars from the workshop of Santacroce, in: Journal of the Institute of Art History, 35; Zagreb, 2011, pp. 93-102 and *ibid.*: A View from the South East. Works of the Santa Croce Workshop. In: *Il capitale culturale*, X, 2014, pp. 215-237
- 72 Assuming a symmetrical layout of the acanthus ornament would result in a reduction of approx. 30 cm.
- 73 This wooden panel had been introduced to provide a stable fundament for the metal crowns, which were added later as devotional presents. They are lost, but holes in the canvas indicate the position of the crowns. During the recent restoration treatment through HCI Dubrovnik, the panel was omitted, the canvas relined and stretched on an oval stretcher.
- 74 Joseph was the declared patron saint of the Catholic Church by Pope Pius IX in 1870, and Pope Leo XIII promoted the veneration of St Joseph in his encyclica *Quamquam pluries* in 1889. (Saint Joseph in: Wikipedia 26.5.2024)
- 75 The filling was done in two steps, with two different filling recipes (base filler, top filler; see 36).
- 76 Paraloid B72 in 5 % in diacetone alcohol and diluted with ethanol
- 77 The indication of the verse from Mathew c[apitulum] 25, v[ersus]21 (chapter 25, verse 21) is not reproduced correctly. It is actually verse 23.
- 78 The distance between the upper edge of the painting and the seam is 76.5 cm, the distance between the seam and the lower edge of the painting is 68 cm. The seam has an overlap of 0,5 cm on each border. Selvedges (weaving edges) exist, making it possible to define the direction of the warp and weft.
- 79 The thread number/cm is approximately: 13 threads in warp-direction (horizontal) and 13 to 14 threads in weft-direction.
- 80 Wooden pegs were used for centuries in the Dubrovnik region.
- 81 It was also possible to control the grade of penetration by altering the painting's position prior to application of the consolidant. There was little to no staining when applying the consolidants with the painting in a standing vertical position, but the penetration level and therefore the consolidation properties were insufficient. The best consolidation and flattening results were achieved when the hot spatula was used immediately after application of *Plextol B500* while the painting was placed in a horizontal position. *Plextol B500* was applied on the surface with a brush. Surplus material was taken away by using a paper tissue. After a few minutes, the paint layer was flattened with the aid of a hot spatula placed on top of a *Melinex* folium. After applying the consolidant in small square

- areas, it became clear that traces of it remained visible at the edges of the square areas. It was decided to continue the treatment following the forms and shapes of the painting. Consequently, the resulting marks were less visible.
- 82 Where it was not possible to remove the iron nails completely, the remaining remnants were filed down with a metal file and were covered with two applications of *Paraloid B72* 30% dissolved in acetone and xylene 1/1 to prevent further corrosion and subsequent deterioration of the adjacent canvas. In addition, small cut-to-size patches of *SEFAR* Polyester tissue, laminated with *BEVA-Film 371* were ironed onto all treated iron nails with a hot spatula as a second protection from corrosion.
- 83 The decision for the binding materials was made because of the high humidity in the church. Animal glue should not be used due to the reactions to the changing of the humidity in the surrounding.
- 84 After the varnish application the final retouches were done with *Gamblin* colours and a solvent mixture of two parts of *Dowanol* (1-Methoxy-2 propanol) and one part of *Shellsol T*. This relatively high *Dowanol* content allowed for a smooth mixing of the paint and precise application of fine glazes. In order to achieve easy reactivation of the colours, pure *Dowanol* was sometimes used. To achieve the appropriate gloss, an additional quantity of *Laropal A81* was occasionally needed. This was prepared as a 20% solution in *Dowanol* for further reactivation of the *Gamblin* colors.
- 85 “According to a theological doctrine especially developed in the West catholic church, purgatory (Latin “Ignis purgatorius” or “Purgatorium” purification site) is the place for purification. It is experienced by those who have died in the grace of God but have not yet been completely purified (not yet freed from all sins) to enter into heaven. Purgatory is therefore a place of “temporary punishment” and thus a vision of hope for the faithful.” Purgatory, in: Wikipedia (26.5.2024)
- 86 The thread diameters vary between approximately 0.7-1.0 mm in both directions (s-drill). The canvas is woven relatively evenly and narrowly. The thread number/cm is horizontal approximately 11-12 and vertical 13-14.
- 87 EDX by CICS TH Köln
- 88 EDX by CICS TH Köln
- 89 Due to the severe damage caused by earlier cleaning measures, the examinations did not provide any clear indications if the painting was originally varnished although this can be assumed.
- 90 A pH measurement was made by an Abbey pH pen on several places to determine whether the canvas was acidic or not. Test showed that pH was below pH 7.
- 91 As the treatment was planned for a series of workshop periods, there was the chance to evaluate and control the separate procedures in annual distance. Thus, a process of regular quality control was possible.
- 92 This is a common method for the preservation of paper, but an uncommon treatment for canvas as there is the risk of shrinkage due to the amount of water applied to the canvas.

- The benefits and risks have to be discussed carefully and the method is quite limited. Experience and precise investigation results on the hygroscopic behaviour are necessary. The limits of this method became evident during the application on the canvas of the purgatory. A certain shrinkage could not be prevented.
- 93 Due to the time intense paint consolidation of the very fragile paint layer and the limited time of annual workshops in situ on Lopud, it was decided to consolidate the paint layer at the University of Split. The painting was prepared for the transport as follows: The entire surface of the paint layer was covered with pieces of Japanese paper (10 x 10 cm), over which a saturated Cyclododecane solution in white spirit was used as a temporary consolidant.
- 94 see Appendix II 6
- 95 The surrounding threads were glued with a mixture of one volume part of 4% methyl-cellulose ether *Methocel A4C* in demineralised water and one volume part EVA copolymer dispersion *Evacon-R™*.
- 96 The method is described in detail in: Isabella Thieme, Martin Hess: Risszusammenführung und Festigung großflächiger Malschichtstauchungen an einem Leinwandgemälde. In: Zeitschrift für Kunsttechnologie und Konservierung, 13/1999, Vol. 1, pp. 55-62.
- 97 see Appendix II 7
- 98 see Appendix II 8
- 99 A 25% dammar solution, in a solvent mixture of 80% *Shellsol T* and 20% *Shellsol A* was applied with a square brush. The relatively high concentration was chosen to reduce the penetration of the resin to a minimum. Because of the uneven gloss and saturation of the colors, a second varnish had to be brushed on the surface the next day. This treatment was executed with a small and soft flat bristle brush. The amount of varnish was precisely chosen according to the needs of the paint layer. As a second varnish layer a 25% dammar solution, in a solvent mixture of 80% isooctane and 20% xylene was used to get an even gloss. The faster evaporation rate of this solvent mixture enabled a fast film formation and allowed to start with the retouching the next day. Dammar was used because of its well-known ageing properties – particularly in difficult climate conditions. After one year, the dammar varnish exhibited an uneven gloss and a lack of saturation in many areas. Therefore, a third thin dammar varnish layer was applied to the entire surface with a brush. The same varnish solution that was used for the first layer was applied
- 100 Prijatelj, Kruno, "Spomenici otoka Lopuda XVII. – XVIII. stoljeća", in: Anali historijskog instituta u Dubrovniku. Dubrovnik, 1954, p. 390.
- 101 Popić Kat. 47; p. 126
- 102 Popić pp.160, 256
- 103 Sagita Mirjam Sunara; 2012 / International Conservation Workshop Lopud: Student Perspectives / INTERVIEW; in: https://www.academia.edu/1974856/2012_International_Conservation_Workshop_Lopud_Student_Perspectives_INTERVIEW
- 104 We owe this translation and comments to Dr. Doris Oltrogge, CICS Cologne

- 105 Prijatelj interprets this name as Dubrovnik and as Urban's place of residence. Prijatelj, Perisitil, 1993, p. 143
- 106 "*ornamento*"; "the most common term for framing parts of altarpieces" and "the word used in woodworkers' contracts to describe the carved, architectural structures that were to be created specifically in order to be erected on altars." See: Michelle O' Malley, The business of art – Contracts and the Commissioning Process in Renaissance Italy. New Haven, London 2005; p. 29
- 107 Most difficult to understand is the meaning of the term *empty scudo*. Scudo actually means "coats of arms", next to the name of a coin at the time. According to the Grande dizionario della lingua italiana, Vol. 18, p. 331, scudo could also be an obsolete term for a rectangular frame on the stern of a ship, on which the owners name and coat of arms and the like were inscribed. Thus, rectangular framed recesses or three openings within the "*ornamentum altaris*" could be meant here. https://www.gdli.it/pdf_viewer/Scripts/pdf.js/web/viewer.aspx?file=/PDF/GDLI18/GDLI_18_ocr_338.pdf&parola=scudo
- 108 This passage is difficult: "*per medium altitudinis*" would be "at half height", but it obviously says "*pro*" and not "*per*" and, in addition, the assignment of "*altitudinis*" to "*medium*" lacks a reference value for the following figures. And the height ("*altitudinis*") is then also measured for the two lateral openings. However, "*pro medium*" is somewhat difficult grammatically; only the context with the later mention of right and left suggests that the centre in a horizontal plane is intended here. Obviously, a division into 3 segments is described here, whereby a higher middle segment is symmetrically flanked by two lower segments.
- 109 "*typram*" seems to be a spelling mistake in the document, it should probably mean "*typam*", which is perhaps a by-form of "*typus*". This would be the template, "*graphidis*" possibly indicating a graphic template, perhaps a type of drawn modello
- 110 The calculation with historical measurements is a complex matter, as it requires knowledge of the relevant historical ratio and the measurement system referred to in the contract. For the foot of Venice and Dubrovnik see: Goran Nikšić, Marko Andrijić – egregius et prudens magister. Korčula 2022; p. 60

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