The conservation and restoration of the sculpture of the Crucified Christ was part of the International Conservation Workshop Lopud (ICWL). The continuation of the initial investigation has recently revealed the use of maize stalks (Zea mays) for the making of the volumes of the image. The employment of this material is part of a technique that is found exclusively in the Mexican art of the sixteenth and part of the seventeenth centuries. Likewise, the notable formal dependencies that will be later disclosed, as well as technical aspects of this piece, which are comparable to similar examples found in Mexico and Spain, allow us to confirm that this crucifix is an early import to Lopud, an island that at the time belonged to the Republic of Ragusa, in present-day Croatia. This case, therefore, sheds light on the early contact between the eastern Adriatic and Mexico and, at the same time, it is a noteworthy work of reference for current scholarship on early lightweight-sculpture production in New Spain (present-day Mexico): the famous maize crucified Christs.

Fig. 1: Lopud, Croatia, parochial church Gospa od Šunj, Holy cross retable; condition before treatment

Fig. 2: Lopud, Croatia, parochial church Gospa od Šunj, Holy cross retable; condition after treatment
The Holy Cross Altar Commission and the Mexican Crucifix

The crucifix occupies the central niche of the Holy Cross retable in the parish church of St Mary of Šunj (figs. 1, 2). The retable is located in the Holy Cross chapel, situated on the northern side of the church, which was commissioned in 1527 by Thomas Pidelli. As proclaimed by the Latin inscription chiselled on the stone arch framing the chapel, it was originally dedicated to St Roch. Initially, the chapel treasured the statue of the saint, which was later replaced by the retable with the crucifix, and the chapel has been called the chapel of the Holy Cross ever since.

The life-size sculpture of the crucified Christ is attached to the cross with three nails (fig. 3). *Patinulum* and *antenna* of the cross are made of simple wooden rectangular beams, bearing a carved wooden *titulus* at the top. Christ is portrayed as drained and weary, and the incarnate displays signs of Passion: drops of blood and uniform blue marks caused by the flagellation (fig. 4). Investigation of the crucifix reveals the making of the *corpus* by an assemblage of maize stems, which is a technique only to be found in Mexican art. Comparable sculptures in Mexico confirm that the Lopud crucifix is a very early import to the eastern Adriatic coast. This example should therefore be considered in the context of the early travels of Ragusan shipmen and traders to Mexico and at the same time it throws new light on the early Christian art of the Spanish-dominated Americas after the *conquista* (1519–1521) by Hernán Cortés.

In the scholarly literature published so far, a more precise date for the construction of the Holy Cross altar has not been proposed. Some indirect archival notes exist concerning the supposed period of the erection of this retable. The very first mention of the altar of the Holy Cross is recorded in the testament of Blasius Allegretto, the parishioner of Lopud, drawn up in April 1567 (fig. 5). The sum of money bequeathed, 30 scudas, was substantial enough to cover the expenses of the altar’s furnishings. Although the construction of the retable could have started around that date, it might have been prolonged or postponed and could therefore postdate Blasius’s will by years or even decades.

Unfortunately, the archival research has not yet brought to light any further documents concerning the chapel. The fourteen *arma Christi* motifs, displayed on the inner frame of the retable, match the dedication of the chapel and could easily be referred to the phrase “un altare depinto de Crucifisso” contained in the will. A more precise moment for the acquisition of the sculpture from Mexico will be discussed below using the historical evidence of trans-Atlantic contacts between Lopud and New Spain.

A comparison of the visual and stylistic qualities of the Lopud crucifix with Mexican sculpture, as well as the results of the analytical investigation of the polychromy, brought to light in this paper, make it probable that the sculpture of Christ was imported for the altar commissioned in 1567. The last quarter of the 16th century is the period, which can be established for the completion of the whole. Similar crucifixes,
dating from the last quarter of the 16th century, have been preserved in Mexico (fig. 6).

It is possible that the sculpture was not made exclusively for exhibiting in the niche of the retable but for processional use as well. If the life-size sculpture was intended to be carried in processions, the lightweight material and the construction with a hollow inside was a suitable choice. While such use of the crucifix from Šunj is highly probable, it is not attested by the archival sources. Nevertheless, processions were a common practice in Dubrovnik and Lopud as well. For instance, the testament of Miho Pracat, one of the most prominent natives of the island, bequeaths money for the Holy Sacrament procession organized by the confraternity of St Mary of Šunj.7

The subsequent written sources regarding the Holy Cross chapel are equally thin. In 1632, a chapel opposite the Holy Cross chapel, commissioned by Bishop Brautti “of the same form and size” was built.8 The “altar of the Holy Crucifix” is mentioned in the canonical visitations of the Lopud church, dating from the turn of the seventeenth century, but there is no mention of the crucifix or retable.9 However, the information provided by bishop Pietro de Torres in 1680, of four masses per week celebrated at the Holy Cross altar, testify to its significance for the Lopud community.10 This is further corroborated by the account of the eighteenth-century Ragusan
historian Gian-Maria Mattei. His description of the island of Lopud and its churches talks of a highly venerated crucifix on the Holy Cross altar in the Šunj church. Interestingly, Mattei praised its artistic qualities, but was unaware of its distant provenance.11

**Mexican sculpture made of maize stalks**

Studies on lightweight maize Crucified Christs have a significant place in both the Mexican and the Spanish bibliographies.12 Many of these studies keep insisting on the interpretation of such pieces in the following terms: “devotional images of maize stalk that have been preserved in Mexico are a clear expression of religious syncretism, something that should not be simply interpreted as the result of the union of a pre-Hispanic manufacturing technique with Christian symbols. Beyond that, it must be understood as the amalgamation of different religious beliefs as a consequence of a particular historical process and the cultural dynamics.”13 Recent publications, however, on the results of long-standing interdisciplinary investigations assume a different take on this subject matter.14 Now that these old and sterile debates, which had been conditioned by, and were a product of a “nationalist vision”, have been overcome, today it is widely accepted that these sculptures are directly related with a serial production that was similar to a European production made in accordance with Flemish pipe clay formulae, Italian cartapesta and, of course, Spanish papelón.

As part of these investigations it has been possible to identify at least two main centres of production: Michoacán (former Valladolid), which has been consistently mentioned in the traditional bibliography, and Mexico City. Since it was mentioned by a sixteenth century chronicler, the use of maize stalk in New Spanish lightweight sculpture has been related to the production centre of Michoacán. The invention of the technique has been attributed to the purhepecha culture (tarascas) and today we know that they made objects from a combination of materials, mostly maize stalk, but with a construction formula in which it is more frequent to find that the sculptures are solid and not hollow. Although the identification of the adhesives used to glue the maize stalks together is one of the aspects that still requires deeper inquiry for both production centres, it is important to consider that the difference between the two lies precisely in the adhesive. Some pieces from Michoacán show the use of the famous tatzingue for the joining of the maize stalks, an adhesive of pre-Hispanic origin obtained from the local orchid bulbs. “[...] they [the aztecs] are the inventors. Because they take the corn stalk and they take out the heart [...] and grinding it, a paste is made with a genus of glue that they call tatzingueni”. They gave the name tatzingueni to the mixture of orchid bulbs with a paste made from the medulla of the corn stalk to form a spongy mass with which they moulded the body of the effigies.15 In the sculptures of the central region of Mexico we have frequently found a glue of animal origin, which was alluded to in the mid-nineteenth century when the image of the Christ of Saint Theresa was restored in Mexico City.

Mexico City was the capital of the Viceroyalty of New Spain, and there are also early references that confirm that it was a centre of production. In this case, its uniqueness lies in that, like the Lopud Christ, they are, as the Franciscan friar Mendieta describes, “…statues [de bulto], from wood or bone, made so light and curious that they are taken to Spain in order for them to be seen, just as the hollow maize stalk crucifixes are also taken, which while having the corpulence of a big man, weigh so little that a child can carry them, and so perfect, proportioned and devoted, that even made from wax, they can not be as polished.”16 There is abundant documentary information regarding these objects thanks to the historical descriptions and contemporary scientific studies undertaken in Europe and the Americas. The following comparative analysis of the Christ of Lopud with the mentioned crucifixes, will allow its inclusion in that group of works. (fig. 6).

**Trade and diplomatic connections with the Spanish Kingdom and related artistic commissions in late-sixteenth century Lopud**

The island of Lopud formed part of the Ragusan astarea, that is, the closest city district of the Ragusan Republic, flourishing from the fifteenth century to the early seventeenth. Close to the concept of repubbliche marinare, a rich and powerful republic with active ship-building, strong merchant activities and high diplomatic abilities, Dubrovnik was small yet successful in the complex political situation of that period. The wealth and population of the island of Lopud led to the concurrent building of three prominent churches during the fifteenth century. More than thirty chapels are documented on the island over the centuries, and a number of preserved palaces and villas reflect the former wealth of Lopud society.

At least two natives of Lopud carried out business or diplomatic offices in Mexico and Spain: Miho Pracat or Prazzatti (Lopud, 1522 – Dubrovnik, 1607) and Vice Bune (Lopud, 1559 – Naples, 1612). At the probable time of the construction of the Holy Cross retable, the treasurer of the estates of the Šunj church was Miho Pracat, a distinguished naval captain, merchant and banker. In his capacity as con-
servator bonorum ecclesiae Pracat commissioned a set of improvements and elaborations for the lavish wooden ensemble displayed on the high altar of the church. In August of 1574 he stipulated a contract with the Tuscan painter Simone Ferri da Poggibonsi to refresh the figures on the altar, and to execute wooden shutters to cover the altarpiece and a tondo representing God the Father. After a brief quarrel between Pracat and Ferri, the client withdrew his complaint in 1575 and the work was probably carried out as originally planned. The tondo actually displayed on the attic of the Holy Cross retable has been linked to the oeuvre of Ferri on stylistic grounds, and it has been suggested that it was relocated from the high altar.

The quest for the client of the Lopud crucifix is necessarily a difficult one. As argued above, a reasonable possibility is Miho Pracat. In 1589 Pracat was rewarded by Philip II of Spain for his services in the expedition to Portugal. Further legend narrates that in the 1550s Pracat was invited to a reception held by Charles V, where he was to be rewarded for providing the Spanish Kingdom with grain in the time of famine. Having rejected any material gifts – as legend has it – he requested the king’s shaving cloth, embroidered with golden threads. The alleged royal gift was long kept in the parish collection on Lopud, while today it is treasured in the episcopal seminary in Dubrovnik. Apart from a number of artistic commissions for Lopud churches, Pracat’s most important undertaking was the erection of the private free-standing chapel of the Holy Cross in the town of Lopud. Pracat’s comprehensive last will (including five codicils), mentions the confraternity of St Mary of Šunj and his private chapel, but no individual altar is listed, nor the crucifix. Although we are not arguing that Pracat brought the crucifix to Lopud in order to display it in his own chapel, all the evidence presented here could point to him as a possible agent behind the acquisition of this particular object.

Nevertheless, the only direct link between Mexico and Lopud is Vice Bune. Concise and illuminating information regarding his life can be gleaned from the pompous text of his epitaph, displayed in the church of the Holy Trinity on the cliffs outside of the town. The epitaph praises Bune for his role as an emissary of the Spanish kings Philip II and III, and for his merits in the matters of spreading of Catholicism; he was “continuously occupied with spreading faith in India” (in the sixteenth century Latin America was called India). Moreover, a legend reported around the year 1800 by Francesco Maria Appendini asserts that Bune was appointed the viceroy of Mexico by the Spanish crown. Appendini gathered this information from Maroijca Caboga, a seventeenth-century Ragusan diplomat who could have been well-informed about his near-contemporary, but whose writings are unfortunately lost. The detailed list of the viceroys of Mexico in the General Archives for the the Indias in Seville does not mention Bune; however, one of the temporary interregnum governments (interinato) during which a suitable person acted as a governor, falls precisely between April 1583 and September 1584, and there is a theoretical possibility that Bune took up this office while in Mexico. However, another comprehensive study of all the high officials of the Royal Council of the Indies remains silent on Vice Bune’s involvement in high Mexican politics at the end of the century. Bune’s viceregal title remains, therefore, highly hypothetical, but the prominent diplomatic role he played in Mexico City represents, nevertheless, a sound basis for his possible role in the acquisition of the Mexican crucifix. After all, Bune could have witnessed firsthand the specific type of crucified Christ sculpture, given that Mexico City was one of the two main centres of its production.

Bune returned to Europe in 1597; in that year he sent a letter to the Ragusan authorities offering his diplomatic services and his offer was accepted. Several years later, in June 1600, Bune returned briefly to Dubrovnik, where he was honoured and awarded a golden collar. He spent the last decade of his life in Naples, where he died. As with Miho Pracat, his testament, although exhaustive, does not mention an object that can be identified as the Lopud crucifix; however, a number of other objects were listed in his will, namely nineteen oil paintings of various saints and a gilded cross, all bequeathed to Lopud friaries and his church of the Holy Trinity.

During the sixteenth century approximately seventy to eighty captains and owners of ships that sailed through the Mediterranean and beyond lived on Lopud or were natives of the island. For this reason, further archival research could bring to light additional arguments for other possible candidates. At the moment, two possible scenarios of the transfer of the Lopud crucifix to the Holy Cross chapel in the church of St Mary of Šunj can be proposed. First, the crucifix could have been bought by Bune (or given to him as a present) in Mexico, and then brought to Lopud, possibly upon his brief return to Dubrovnik in 1600. This option can so far be related to Bune, seeing that there is no evidence of Pracat having journeyed to Mexico. However, we should not rule out the possibility that the crucifix was bought in Spain (either by Bune or by Pracat) and from there transported to Lopud, which would imply that this particular Mexico – Lopud connection was mediated through Spain. That this could easily be the case is corroborated by an event that took place during a public sale in Jerez in 1553, where the friars of Bornos bought a crucifix from Mexico, comparable to the one on Lopud, which was shipped from Mexico with other goods and then sold at public auction.
Technical findings on the making of the sculpture of the Crucified Christ

At the very beginning of the conservation of the Holy Cross retable, we noticed that the sculpture of the crucified Christ is extremely light in weight, although it is almost of the human size. First idea was that it was severely infested with wood insects and had been, at some point, consolidated with layers of paper, as this material could be seen in some areas of the disturbed surface. Another idea was that it was entirely made of papier-mâché. An examination with the stereomicroscope through holes in the surface drilled by insects revealed a strange sponge-like material, white in colour. This material, soft and easy to crush, suggested an organic origin. However, further inspection showed that the inside of the sculpture is hollow, and that the “walls” (“shell”) of the sculpture are made of the stems of maize and an additional putty material on the basis of ground maize. The inner area of the maize stems contain pith, or medulla, a soft, spongy material composed of parenchyma cells, as we know from several other plants like elder (Sambucus sp. Adoxaceae). This material was skilfully used to create the life-size crucifix (fig. 7).

Computer tomography (CT) provided insight into the unique construction of the sculpture, the composition and materials (figs. 8–13). Several digital imaging techniques were applied to the sculpture of the crucified Christ. Each of them offered the possibility of obtaining different types of results, which complemented one another and, finally, made it possible to understand the construction completely.

Materials and construction in the context of Mexican lightweight sculpture

It can be supposed that some kind of positive mould existed, possibly from plaster or clay, whose form corresponded to
the void inside the sculpture. A wooden positive would be ideal given its resistance and reusability. We have evidence of this primary shape through small fragments of clay and straw that were found inside the Christ of Telde, Gran Canaria (Spain), as well as an original mould that was discovered through videoscopy in a representation of Saint Anna from the Franz Mayer Museum, Mexico City. However, before the mould was covered with different layers of paper, a thick stratum (cartón) which formed the necessary consistency of the shape of the interior structure, an element that would have prevented this paper layer from sticking and thus facilitated its removal must have been applied. As in other cases, the Christ of Lopud shows a stratum of dust applied to the mould, which coincides with the early references, dating back to 1858, that we have of the procedure. In fact, a description of the remains of the Christ of Saint Theresa (also made from maize stalk and cardboard in 1555–1560), written after the earthquake of April 1845, during which the Neoclassical dome of the church fell on to the sculpture, suggests that on its inside there was: “búcaro, or white clay with which all of its interior shape is covered, and powdered in between the creases of the rolls of the arms and legs”. Such remains of the búcaro have been identified in the image of Lopud, as some fragments of it are still visible in its interior. In other sculptures it has been identified as calcium sulphate, and plaster dust without an agglutinant. This is the case for Spanish examples such as the Christ of the Chapter, in Bonos, Jerez, dated prior to 1553, the oldest amongst those found in Spain; and also the Christ of the True Cross of Zacatecas de Montilla, Córdoba, donated to its confraternity in 1576. Another example found in Mexico is the Christ of the Conquest from San Miguel de Allende, which also belongs to the last third of the sixteenth century.

As in other pieces from the same period, the shape of the Christ of Lopud must have required several moulds, as can be deduced from its axial tomography and by comparing it with other pieces. This is also observed in the mid-nineteenth-century description of the Christ of Saint Theresa that we are using as a reference: “The sculpture is formed from a hollow shape (horma) that seems to have been constructed by using a mould from the neck and a small part of the shoulders up to half of the legs, whose shape is made in two halves, one that shapes the front part, and the other, the back part that was glued or assembled with stripes of the same material of the hollow shape [...] The head is also hollow and made from two halves from up and down [...] The arms are also hollow, but one cannot see in them the kind of hollow shape over which it was formed in...
the area of the body. Rather, some simple cylindrical rolls from layers of the material that will be described..."42

In fact, as the results of the CT scans (figs. 8–13) taken of the image demonstrate, the body must have been shaped with wet paper layers over a mould that sketched a general shape, which, once the layers of paper had dried, was cut “along the equator”, the mould was removed and then the hollow paper “body” closed again, possibly with strips of the same material. As there is proof of the existence of identical sculptures, the mould was probably saved for the making of the next sculpture.

The seamlike join registered inside the hollow chest explains how the two halves of the paper “shell” were put back together (fig.10, 14). Aside from the reference provided by the documents, this kind of joining has been observed in different images that were analysed. For example, in the Christ of Santiago Ahuizotla, in Azcapotzalco, Mexico City, the joint is perfectly visible as it runs throughout the torso, while in the Christ of the Misericord of Valverde de Leganés (Badajoz, Spain) the body was reinforced with sewn thread.43

Once the different pieces that form the general hollow shape (torso and legs through the area under the knees, the head and arms) were made, the sculpture was assembled. For the head, a small wooden pin was used to anchor it, which must have been also glued and reinforced (fig. 8, 14). The use of this technique is almost identical in the image that we are taking as reference. It has been described in the following way: “The head is also hollow and formed from two halves, up and down.”44 These halves also extended through the neck, which is described as follows: “At the centre of the sacred head, a small piece of wood was found, from a quarter long, [...] which served, without doubt, to join the body to the sacred head.”45 Although the CT scan of the Lopud Christ shows no trace of a separate making and connection of the head to the main body, this wooden pin is perfectly identified both in the CT scan and the view through the arm hole (fig. 14). In the latter it was also possible to see the remains of a rolled string that we still have not been able to interpret. The use of the wooden pin for the head has also been seen in other works from the workshops of Mexico City. Aside from the examples that have been mentioned above, other pieces that show these characteristics are the Cristo de la Buena Muerte from Gran Canaria, Canary Islands (Spain), dating from the last third of the sixteenth century, and the Christ of Churubusco in the Museo de las Intervenciones, Mexico City. Both of them are important works, whose formal and technical relationships make them part of a group called “Taller de los Grandes Cristos” (Workshop of the Great Christs), and “Taller de Cortés” (Workshop of Cortés), whose dates of reference are also in the last third of the sixteenth century.46

The arms had been made separately; they were formed with carton tubes that were attached to the torso with large wooden dowels, and the join was reinforced with more pieces of glued paper (figs. 7, 13). This technique as used in the Christ of Saint Theresa was described as follows: “The arms are also hollow, but the kind of hollow shape that forms the body is not visible in them, but rather, simple cylindrical rolls”.47 Regarding the presence of this technique in other works, there are other examples from the “Taller de los Grandes Cristos”, such as the crucified Christ of the Cathedral of Vitoria-Gasteiz. On the other hand, other images such as the Christ of Telde (c. 1555) show a large wooden pin that runs along the tube.48

A piece of wood was observed at the ends of both arms (from the elbows down to fix the wooden elements, which are made to carve the hands) and for the dowel-joints between the shoulders and the arms. A binding with ropes stabilizes the wooden elements in the paper shell (fig. 7).

In order to finish the sculpture, the hands and feet were added. Given their function as the anchors to the cross, these were made from wood, a material that offered greater strength. Although it still has not been identified, they seem to have been made from the wood of the zum pantle, also known as “colórin”(Erythrina coralloides), a native tree from North America whose wood is known for its lightness and resistance, which are ideal qualities for the kind of sculptures we are studying. Scholars who studied the Christ of Saint Theresa observed the same characteristics displayed by the Christ of Lopud: “The hands, from the wrists, are solid, from zum pantle, just like the feet, from the ankle, from these points upwards they are from a wood that seems to enter into the hollow shape (horma) that forms the remaining part of the trunk.”49 In fact, the CT scan revealed how the hands display a pin that enters into the tubes.
of both arms. For the feet, however, the system varies a bit. After having carved the feet up to the ankles in zumpantle – which is perfectly visible when comparing the appearance of the pins in the X-ray images taken of this part of the sculpture and the neck and arms – a pin whose ends were previously covered in paper to give it the necessary width was inserted into the hollow shape, and reinforced with more paper. The structure of the hands is made of a small board of wood to which separately cut fingers and the thumb were attached. The fingers are made of small tree branches cut obliquely, glued and covered with paper. The identified figwood is probably the wood of the colorín (Ficus maxima Mill. Moraceae).

The same formulas were used in other works such as the Christ of the Precious Blood from the cathedral of Puebla, a sculpture that will be discussed at the end of this paper, and in different examples from the “Taller de los Grandes Cristos”, a group from which the most evident example is the one in the main altarpiece of the Colegiata de San Pedro, in Lerma, Burgos (Spain), which received special devotion from the famous Spanish duke, Francisco Gómez de Sandoval, Duque de Lerma (1553–1625).50

After this first part of the construction was finished, the application of the maize stalks followed. These were placed in an orderly manner that served to create the volumes from which the anatomy could be carved: “Over such hollow shape and rolls the muscular part of the body was formed, with maize stalks from the country […], that were bonded with a paste made from pulverized stalks, which is used especially in the voids that remain between one and another. Some parts of the head are made from this same paste, such as the hair, the ears, the beard […].”51 This solution also appears in most of the images that belong to Mexico City, and for this reason, shall be considered as one of its most distinctive traits. Furthermore, its identification, which is close to the Christ of Lopud, is present in many pieces, among which some examples will be mentioned.52

Once the anatomical volumes were achieved, “built as such all the muscles, head, hands and feet”, the construction followed with “a light layer of the same kind [paper] that make the hollow shape, but so fine and thin that in spite of its colour it is not thicker than common paper”,53 which homogenizes the surface and prepares it for the polychromy, thus acting as some sort of first layer of skin over flesh. (fig. 15) This layer of paper in the Lopud sculpture presents the typical structure of végré paper and scientific investigation has revealed it as cotton paper, which is not frequent but not rare.54 In this context, the conservators of the Christ of Churubusco (Mexico) discovered that this part of the interior epidermis of the image showed fragments of coloured codices to have been recycled.55 This final paper cover was not added in areas of detailed surface like hair, beard, hands: these fine details had been modelled with a paste-like material based on maize. A preparation was applied to the finished surface in a number of layers and smoothed. Finally the polychromy was added.

The crown of thorns is made of plant fibres (Genista sp)56 twisted to form a two-strand rope, which is assembled in a four-strand plait very similar to the one the Christ of Telde still has.57 The different strands are fixed to each other with pieces of thin rope and covered with long-fibre paper (fig. 16). Pinewood thorns point through the vegetal rope to be pricked into the head.

Investigation of the plant material

In order to identify the character of the plant material, a microscopic investigation was performed.58,59 The sample consists
of a large piece of parenchyma tissue with an irregular distribution of small vascular bundles (fig. 15, 17). The parenchyma is composed of isodiametric cells with small schizogene intercellulars. The vascular bundles are surrounded by a thin layer of sclerenchyma. The phloem has mostly collapsed due to the drying process. The few vessels in each vascular bundle are arranged in typical pattern with proto- and metaxylem.

From its structure, the sample was confirmed to come from the central part of a corn stem. In the longitudinal cross section, equal quantities of the mechanical elements (sclerenchyma), conducting elements (xylem and phloem) and parenchyma cells can be seen. Identification is possible with the very pronounced vascular bundles.

The anatomical structure of the cross-section of maize or corn (Zea sp.) is dominated by the presence of parenchyma cells, which create the typical spongy appearance of the plant. Cells are isodiametric with small schizogene intercellulars (fig. 18). The parenchyma cells are smaller near the vessels. The transformation from the parenchyma to the sclerenchyma sheath of the vessel is gradual without any sharp edge, which indicates that, physically, these cells have slightly lignified walls. Vessels are small (the diameter of the tracheas is similar to the smallest cells of the parenchyma), but densely packed within the parenchyma.

This is the anatomical reason why the structure of the material is light and strong. Namely, the domination of the described form of the parenchyma with intercellulars filled with air and with relatively soft (cellulose) walls gives to the whole structure a spongy characteristic. A multilayer, suberized dermal tissue forms the outer margin. Underneath are, in the wavy agglomerations, dead lignified sclerenchyma cells. In crosscut examination the typical forms of vascular bundles present in Zea sp. are visible (fig. 18).

Furthermore the images show numerous needle-form idioblasts with an obvious inorganic quality as proven by imaging with polarized light. They are probably calcium oxalate as present in many plants. Unexplained until now are the rainbow colours that show when the episcopic images are magnified (fig. 19). Perhaps this effect is due to mineral inclusions.

Material of the external and internal paper cover of the core

The paper-layer that covers the external and internal faces of the core of the sculpture is made of a fibrous plant material. Microscopic investigation shows fibre material of the species Gossypium herbaceum, or another similar species from the same genus of the family Malvaceae. These are annual, shrub-like plants, created by crossing and polyploidy of some tropical-subtropical Asian, African and American species – nowadays cultivated for cotton.
Polychromy

Through stratigraphic study of the paint layer, carried out by microscopic observation in situ and by chemical analysis on the cross-sections, knowledge of its paint layer structure as well as the chronological modification in the appearance of the sculpture was gained. First, a local overpaint is discernible around the area of the right shoulder, over an old restoration made of a thick piece of paper fixed with glue and small nails. It is likely that this restoration was done after the transport to Lopud.

The second "restoration" is recognizable by the very unsuitable overpaint. This can be traced back to an intervention by a tourist during the early 1990s (figs. 1, 20, 21). During this second treatment, the arm joints were reinforced with medical surgical plaster, additionally a textile addition to the perizonium was attached to the hip of Christ. As the overpaint was applied in situ, the original paint layer is still visible on the back of the sculpture (figs. 22, 23).

As has been mentioned in the section devoted to the support medium and its construction, the carved surface was covered with a layer of paper that consolidates and smoothes the surface. As the microscopic examination suggests, it was probably not applied to the fine relief (beard, hair). Indeed, the paper would hide these finely carved areas.

The white gesso ground, applied to the paper epidermis, is composed of calcium sulphate CaSO₄. Up to five layers are recognizable on the stratigraphic cross-sections (fig. 24). The size of the particles of the ground allow us to distinguish two levels. The upper one, with fine grain size can be considered as gesso sottile (fig. 24, A). The bottom one, presenting coarse particles, corresponds to a gesso grosso (fig. 24, B). In between these levels, there is evidence of a thin intermediate layer, containing some inorganic particles (Al, Si, Mg, Fe), which indicates the grinding of the first gesso layer. The impurities, such as celestite (strontium sulphate SrSO₄), silica or fine sand (silica dioxide SiO₂) were mainly found in the gesso grosso. Also some non-identified particles containing a large amount of potassium-based compound were revealed in the gesso sottile.

The perizonium has a white background decorated with the gilded quatrefoil pattern outlined in blue. A very similar decoration is found on the Christ of Saint Theresa, Mexico, which was mentioned previously. Motifs of this kind were historically known as "metalla." Contrary to what we were expecting, the white background of perizonium is not composed of any opaque white pigment, such as lead white for example. Only the gesso ground covered with two transparent finishing layers, containing calcium sulphate and earth pigments, is observed in
the cross-section from this area. These finishing layers slightly overlap the gilded patterns, and suggest that they were applied at the end of the decoration process. It is interesting to note that calcium oxalates were identified in one sample from the white area of the perizonium. The gilding of the quatrefoil pattern seems to be water-based, as the tests of solubility suggest. The blue layer of the contour is composed of azurite with oil-based binder. The morphology of the blue particles and the presence of the mineral impurities (Mg, Si, Fe and Ca) and some blue-green, copper and chlorine-containing particles (possibly atacamite and/or paratacamite) indicates a natural source. The analysis with X-ray diffraction identified a small amount of malachite in this blue layer. The use of azurite is quite frequent in the decoration of the same garments in lightweight sculptures of the Crucified Christ, as is the case of the Christ of the Forgiveness of Huejotzingo, State of Puebla, Mexico, where it has been clearly identified and where it appears to be barely crushed, resulting in a very intense blue colour.

One of the samples taken from the blue line shows a thin opaque white layer between the gesso and the azurite layer. The SEM-EDX analyses carried out on this cross-section revealed, together with calcium sulphate, the presence of an unknown compound containing lead and potassium. It is quite likely that the lead was introduced as a lead-white pigment, however the analysis with Raman spectroscopy did not show its presence. It is worth to mention, that this layer was not found in the white area of the perizonium and thus it cannot be considered as the finishing layer of the white background. The only sample in which this layer was found, was taken close to the gilded patterns. Therefore we can reasonable suppose that this lead and potassium compound-containing layer is linked to the gilding adhesive. Nevertheless, further sampling is required in the gilded pattern, in order to chemically identify the components of this layer and to determine the gilding technique.

The flesh tone shows a single pinkish-brown polychrome layer with blood marks and bluish bruises worked thinly into the fresh paint layer. Details of the face and the dark brownish single-layered beard were added subsequently.

The stratigraphic cross sections show the evidence of an intermediate layer between the gesso ground and the flesh-tone layer (fig. 24). It is highly fluorescent under UV illumination and is linked to the isolation of the ground before the application of the oil-containing flesh tone. The composition and the proportion of pigments vary according to the colours:

- The pinkish-brown flesh tone contains the lead-white matrix in which some vermilion and ochre earth pigments are dispersed (fig. 24);
• The bluish-pink flesh tone on the feet under the blood contains, in addition to lead white, red lake, vermilion, earth-pigment ochres, azurite, and a partially discoloured smalt (fig. 25, 26).

If we consider that the bluish hue was obtained by azurite, the evidence of the addition of smalt, with quite large granulometry, in these bluish wound areas can be interpreted in different ways. The smalt, as a cobalt-containing blue pigment, could play a siccative role in an oil-based binder. On the other hand, its economic role should be considered as well, since natural azurite was an expensive pigment. The addition of smalt to the slightly bluish area of the flesh tone can reduce the cost of serial production.

The dark red layer corresponding to Christ’s blood mainly contains red lake mixed with some azurite and smalt (fig. 25, layer A). The reason for the addition of the smalt to the azurite can be understood in the same way as explained above, either as a siccative or as an economic additive. The red lake was characterized by HPLC and SEM-EDX analysis. The evidence of carminic acid as the main colorant of the lake indicates that it was prepared from one of the scale cochinneal insects. However, there are two kind of cochinneals that contains the carminic acid as their main component: the Old World cochinneal (Polish cochinneal – Porphyrophora polonica L.) and the New World cochinneal (Mexican cochinneal Dactylopius coccus Costa 1835). Their identification is possible in theory thanks to presence of some specific minor components, but unfortunately, in the present study, no specific component was found in the chromatogram. Although, we cannot conclude with certainty, we can reasonably suppose that the cochinneal used for the polychromy of the red paint used for the blood was the Mexican one (Dactylopius coccus Costa 1835). The substrate of this cochinneal lake contains some hydrated alumina, some calcium carbonate and some proteins. This substrate composition, together with many glycosidic red components, revealed by the chromatography, suggests that this lake pigment was prepared from the raw material and not recycled from dyed wool (wool shearing) as it was usually done in the Europe of the fifteenth and sixteenth Century. This observation supports the use of the non-European lake manufacturing process from the crushed raw insect.

The crown of thorns was painted in green, mainly with a copper-based green pigment. The analysis also revealed the presence of other red, blue and brown pigments, such as azurite, red lake, red ochre and minium. Taking into account the colour of these pigments, it is very likely that they are intended to represent the dried blood. The organic medium seems to be an oil-based binder.

Given the knowledge of the Mexican origin of the sculpture, these results must be discussed in the context of Mexican pigment use.

**Condition**

**Support**

The general condition is relatively good. The structure is firm enough to stay together. Over the whole surface holes due to insect attack are visible. Severe losses in the surface of the hair (fig. 27), the beard, the fingers and the eye are the result of insect attack as well. The thumb of the right hand and the little finger on the left hand are missing, the index finger on the left hand is broken. The crown of thorns is fragile, several thorns are missing. The arm joints are fragile and unstable and have been repaired frequently (fig. 28).
**Polychromy**

The deterioration of the surface and poor overall condition of the sculpture with zones of flaking polychromy and with losses of the decorative ornaments and gilded borders of the perizonium gave rise to a good-will action of "lay maintenance", which made things even worse (figs. 1, 20, 21). The almost intact original polychromy was overpainted with uniform synthetic commercial gloss paint. In the context of this treatment, the broken left shoulder was repaired and strengthened with "surgical plaster" made of cotton and gypsum, and the same technique was used to repair the damaged left eye.

The pattern and seam-line of the perizonium have been completely overpainted with bronze paint. A crude textile addition to the perizonium was added on the left side bound to a wooden stick inserted into the hip. The overall appearance of this overpaint is 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 which was set up for the treatment of all the retables in the church and which, with the aim of concentrating on conservation, follows the general policy of the ICWL. Concerning the sculpture of Christ, a different starting point had to be taken into consideration, as the sculpture itself had undergone a different fate. The sculpture was found with a disgusting modern overpaint which added a major contrast to the untreated and aged condition of the retable with its preserved authentic surfaces.

This conspicuous overpaint was judged to be a negative and disturbing aspect of the history of the retable and sculpture. Although added in a goodwill action, the new polychromy is in extreme 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, offering good chances for a restoration treatment, it was decided to remove the overpaint with the aim of retrieving as much authenticity as possible. In view of the liturgical function of the sculpture, it was decided to reconstruct the three-dimensional losses that we found in the eye and the missing fingers. Further reconstruction is the retouching of the front side of the perizonium, where it was not possible to remove the overpaint without harm to the original.

Thanks to the conservation treatment the condition of the sculpture is stable again. A relatively high ratio of restoration interventions (removing the overpaint, reconstructing of fingers, eye; reconstruction of the pattern of the perizonium) brought back the high quality of carving and polychromy to this outstanding and unique piece of art, which is of major importance for the sacral heritage of Lopud and Croatia. As the quality of the recent treatment had spoiled the artistic evidence of the sculpture in such a dramatic way, there was no choice but to act in the described way.
The positive result of the treatment and the insight into the extraordinary link to Mexico were not foreseen at the beginning of the workshop.

**Conclusions**

The particular findings of this interdisciplinary study make it clear that the crucifix of Lopud is a work of Mexican origin. Its iconographic correspondence with the retable in which it is placed and the documentary references to which we have alluded, suggest that the sculpture must have been acquired sometime after 1567 (and produced in approximately the same period). That moment coincides with the period of active production of these sculptures in the centre of the former New Spain, many of which were exported to the Iberian Peninsula and to the Canary Islands. Such a developed distribution network resulted in one of the crucifixes making its way to the eastern Adriatic.

The detailed analysis of the materials and the constructive system of the Lopud Christ totally coincides with what is known about similar Mexican works from this period that are preserved in Mexico and Spain. This serialized production system is part of the evangelization of the “new” continent. The serial production of sculpture followed the high level of demand from the newly established Christian parishes, monasteries and churches in New Spain, and obviously the fame of these sculptures reached far and wide, and they were exported to meet the needs of churches in Europe. Although the identity of the client of the Lopud crucifix is not revealed yet, it is evident that the context of this commission was related to trade networks and diplomatic missions.

A direct formal relationship of the Lopud crucifix with similar works makes it possible to consider them as products of the same artisan or workshop, both of which are still unidentified. In this regard, in the case of the Christ of Lopud, the thorough scientific analysis has shown a close relationship with pieces such as the Christ from the cathedral of the archbishopric of Puebla de los Angeles, Mexico. In line with the common art historical practice, we propose to name this workshop the “Puebla-Lopud workshop”.

**Abstract**

The paper describes the investigation, conservation and restoration of the sculpture of a Crucified Christ which was part of the International Conservation Workshop Lopud (ICWL). The hollow volume of the body was made using maize stalks (*Zea mays*). The use of this material is part of a technique that is only found in the Mexican art of the 16th and part of the 17th centuries. Formal dependencies as well as technical aspects of this piece are comparable to similar examples found in Mexico and in Spain, which allows us to confirm that this crucifix was an early export to Croatia. This case sheds light on the early contact between Croatia and Mexico and, at the same time, it is an important work of reference for current scholarship on the early lightweight sculpture made in New Spain (present-day Mexico). CT scans, botanical investigation as well as pigment analysis reveal the making of the sculpture, while a short chapter provides an overview of the condition of the piece and its recent restoration.

**Zusammenfassung**

The ICWL was founded in 2002 with the aim of conservation/restoration of art in the churches of the island. Meanwhile during annual two-week workshops with student groups and teachers of conservation education programs in Antwerp (Charles Indekeu, Lou Gils, Caroline van der Star), Brussels (Marianne Decroly, Georges Dewispelaere), Dubrovnik (Joško Bogdanović, Vjeran Duvnjak) Split (Jurica Matijević, Sagita Mirjam Sunara, Lana Kekez, Lara Aranza) and Cologne (Petr Demuth, Andreas Krupa, Hans Port stefen), five retabes with paintings and sculpture were treated. The project is ongoing with the treatment of the choir stalls of the church of St Mary of Špilica. The investigation of the sculpture was already published by Frane Mihanović, Nada Bezić, Valeria Dunkić, Elma Vuko, Jurica Matijević, “Skulptura raspetoga Krista iz lopudske Crkve Gospe od Šunja: Proučavanje unutarnje grade uz pomoć CT uređaja – identifikacija pojedinih materijala,” Dubrovnik 21, no. 2 (2010): 199–225. The new findings of the Mexican origin of the Lopud crucifix make it necessary to revise some of the conclusions published in this article.

The inscription reads: Hoc tibi dive Roche Thomas Pidelli condict sacellum 1527 (“To you, St Roch, Thomas Pidelli erected this chapel in 1527”).

It is worth noting that there is a rose window in the north wall, now hidden behind the retable, which must have been visible in earlier times. Kroko Prijatelj believes that this altar, together with the Annunciation retable in the opposite chapel, and two similar, but significantly smaller retabes in the church of St Mary of Špilica, dates from around the 1600s. He also adds two retabes from the Franciscan church in Slano and a retable from the village of Grgurići near Slano to this group. 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 the Holy Cross retable still reflects a Renaissance style, indirectly suggesting a possible, significantly earlier origin of this altarpiece, when comparing it with the similar Annunciation retable in the Brautti sacellum (1637) and other retabes within the group; Kroko Prijatelj, “Spomenici otoka Lopuda XVII.-XVIII. stoljeća,” Anal. Hist. Instituta JAZU u Dubrovniku 3 (1954): 309.

The text of the relevant section of the testament reads: Testamentum presbiteri Blasii de Allegretto, parochiani insulae mediae […]. +1567, adi XV aprile in isola di mezzo. […] Item lasso scudi trenta che sia fatto un altare deputato di Crucifisso in santa Maria del Bis son (“Testament of Blasius de Allegretto, parochian of the island of Lopud […]”. 1567, the 15th of April on the island of Lopud. […] I also leave thirty scudas for the making of a painted altar of the Crucifix in the church of St Mary of Bissoni [Sunj”). Dubrovnik, Historical Archives (HR-DADU), Test. Not. 42, fol. 205v–206r; Jorjo Tadić, Grada o slikarskoj školi u Dubrovniku XIII – XVII, vol. II (Belgrade: Srpska akademija nauka, 1952), 208.

For instance, in 1568 the Florentine painter Simone Ferri received 80 scudae for the execution of the altarpiece (several painted figures and the entire stucco decoration) for a chapel in the Franciscan friary in Dubrovnik; Tadić, Grada o slikarskoj školi u Dubrovniku, vol. II, 209–10.


Fabricate una capella nella chiesa parochiale di Santa Maria di Bis son in contro a quella del Santissimo Crucifisso dell’istessa forma e grandezza; Vicko Lisić, Lopud: historički i savremeni prikaz (Dubrovnik: self published, 1931), 37.

Archives of the Bishopric of Dubrovnik (ABD); we are referring to the records of visitations conducted by Torres, Luchasini, Scotti, De Robertis and Franchi.


A careful historiographical analysis is found in Elizabeth Ávila, Materiales y técnicas de la escultura ligera novohispana con caña de maíz: Una aproximación historiográfica (Mexico City: Facultad de Filosofía y Letras, Universidad Nacional Autónoma de México, 2010–2011). An important advance in the material is in Pablo Francisco Amador Marrero, Imaginaria ligera novohispana en el arte español de los siglos XVI–XVII (PhD dissertation, Universidad de Las Palmas de Gran Canaria, 2012).


Amador Marrero, Imaginaria ligera novohispana, 749–60.

Fray Alonso de la Rea, Chronicón de la Orden de M. Seraphico P. S. Francisco Prouincia de S. Pedro y S. Pablo de Mecohcan, Mexico 1643; quoted from Federico Gómez de Orozco (Selección, introducCion y notas) Crónicas de Michoacan, Mexico 1940 (1991), 33–53.


Ibid.


Pracat’s church is preserved only fragmentarily. Moreover, a wooden crucifix is preserved there, but no in-depth study of its dating and commissioning has been carried out.


“To Vincent Bune son of Peter, Christ’s knight, who elevated his dig-
nity by his virtue under two Spanish kings, Philip II and III, embracing difficult navigations in both worlds, and wishing to add fame to his name. And so, continuously occupied by spreading faith in India and defending piety in Belgium, while in both duties he fervently pursued the honourable deeds to his kings, he was called back to Naples by the royal command, and appointed as a royal counsellor. After many accomplished efforts, he was called to the other life and by the power of his last will he was transferred here to his homeland and here he lies and waits for the sound of the trumpet, waiting to be called back to life. The family unanimously raised this monument. He lived 53 years. Died 12th of November 1612” (translation AA.);


De Velasco, Historia de la milagrosa Renovación, 152.

Amador Marrero, Imaginería ligera novohispana, 237–238.

Gossypium herbaceum, or another similar species from the same genus of the family Malvaceae was identified by Dr. Nada Bezić, Faculty of Science, University of Split.

39  Pablo Francisco Amador Marrero, Traza española, ropaje indiano. El Cristo de Telde y la imaginaria en caña de maíz (Gran Canaria: Ayuntamiento de Telde, 2002), 112.


41  Ibid., 611–612. In the Mexican case it was found in the restoration that we carried out together with Claudia Alejandra Garza Villegas and Ramón Avendaño Esquivel in 2015.

42  Alonso Alberto De Velašco, Historia de la milagrosa Renovación de la soberana imagen de Cristo Señor Nuestro Crucificado, que se venera en la iglesia del convento de Santa Teresa la Antigua (Mexico City: Imprenta de Andrade y Escalante, 1858), 153.

43  Amador Marrero, Imaginería ligera novohispana, 631.

44  De Velašco, Historia de la milagrosa Renovación, 153.


46  Amador Marrero, Imaginería ligera novohispana, 226–258, 276–305.

47  De Velašco, Historia de la milagrosa Renovación, 153.

48  Amador Marrero, Traza española, ropaje indiano, 93–95.

49  De Velašco, Historia de la milagrosa Renovación, 153.

50  Amador Marrero, Imaginería ligera novohispana, 295–297.

51  De Velašco, Historia de la milagrosa Renovación, 154.

52  Filling material prepared by milling the maize and binding it with a special glue: “[…] they take the corn stalk and they take out the heart […] and grinding it, a paste is made with a genus of glue that they call tatzungueni. ; see: Brito Benitez, “Symbolism and Use of Maize”.


53  De Velašco, Historia de la milagrosa Renovación, 154.

54  Gossypium herbaceum, or another similar species from the same genus of the family Malvaceae was identified by Dr. Nada Bezić, Faculty of Science, University of Split.


56  Genista (genista) was identified by Dr. Nada Bezić, UMAS.

57  Amador Marrero, Traza española, ropaje indiano, 107, 136.

58  In the first instance the plant material was identified as being Ferula communis, a Mediterranean plant with spongy pith in the stem. Ferula communis L. systematically belongs to the order of Apioideae (Umbelliferae) and to the genus Ferula. After the establishment of the Mexican origin of the sculpture, the findings were reconsidered. The spongy insides of ferula and maize are very similar and very likely to be misinterpreted.

59  The preparing of microscope samples of centuries-old plant material proved to be rather difficult and did not result in super-sharp images. Samples were prepared by embedding them in paraplast wax, and cut on a Jung Tetramer sledge microtome to 30 µ. Differentiated with Etzold FCA direct colouring and enclosed with Euparal. Pictures made with a Leica camera on a Leitz DMRBE microscope and an Olympus Vanox. The identification was performed together with Dr. Dora De Cremer, botanist.

60  Examination by Dr. Nada Bezić, Faculty of Science, University of Split

61  Communication by Don Ivan Vlašić, Lopud.

62  Pablo Francisco Amador Marrero and Patricia Díaz Cayeros, “Divina material y material sacralizado: El caso del Cristo de Ixmiquilpan”,

38  Namely: representation of individual axial slices, application of different contrasts to the picture, representation of slices of the sculpture in more planes (outside axial slices), 3D representation of the sculpture, and virtual endoscopy of the sculpture interior. For details see: Mihanović et al., “Skulptura raspetoga Krista iz lopudske Crkve Gospe od Šunja”, 199–225.

37  The CT scanning was executed in the hospital in Dubrovnik in June 2008 by Franze Mihanović, Dr. Andreo Vlahušić, and Ivo Njavo. The radiographic scan was carried out on a Somatom Sensation 64 MSCT machine. Radiographic parameters: Penetration setting: 120 kV; X-ray beam intensity setting: 380 mA; Slices per rotation: 64; Slice thickness: 0.6 mm (0.2 mm slice overlay).

36  Initial botanical analysis of the plant material led to the assumption that the stems of ferula communis, a regional plant, were used. The sample for the analysis contained parenchyma cells of the stem, which does not offer clear characteristics for identification.

35  Although there is no record of the price reached by the image, we know that in June 1553 the friars were willing to pay for the Christ of the Indies, one hundred and twenty bushels of wheat. Amador Marrero, Imaginería ligera novohispana, 181.


33  However, research into the testaments from Lopud (second half of the sixteenth century) has not identified any mention of the Lopud crucifix, see Slavica Stojan, “Oporuke ‘Trista Vica udovica’: iz lopudske svakodnevice u drugoj polovici 16. stoljeća”, Anali Zavoda za povijesne znanosti HAZU u Dubrovniku 45 (2007): 191–218.

32  Lewis Hanke, Guía de las fuentes en el Archivo General de Indias, vol. 1; quoted in Polić-Bobić, “Prilog utvrđivanju podataka”, 224.

31  Ibid, 264.


29  Ernesto Schäfer, El Consejo Real y Supremo de Las Indias – su historia, organización y labor administrativa hasta la terminación de la casa de Austria, vol. II; quoted in Polić-Bobić, “Prilog utvrđivanju podataka”, 225.

28  The sample for the analysis contained parenchyma cells of the stem, to the genus Ferula. After the establishment of Ferula communis L. systematically belongs to the order of Apiaceae (Umbelliferae) and to the genus Ferula. The spongy insides of ferula and maize are very similar and very likely to be misinterpreted.


26  Lewis Hanke, Guía de las fuentes en el Archivo General de Indias, vol. 1; quoted in Polić-Bobić, “Prilog utvrđivanju podataka”, 224.


24  Although there is no record of the price reached by the image, we know that in June 1553 the friars were willing to pay for the Christ of the Indies, one hundred and twenty bushels of wheat. Amador Marrero, Imaginería ligera novohispana, 181.

23  Internal botanical analysis of the plant material led to the assumption that the stems of ferula communis, a regional plant, were used. The sample for the analysis contained parenchyma cells of the stem, which does not offer clear characteristics for identification.

22  The CT scanning was executed in the hospital in Dubrovnik in June 2008 by Franze Mihanović, Dr. Andreo Vlahušić, and Ivo Njavo. The radiographic scan was carried out on a Somatom Sensation 64 MSCT machine. Radiographic parameters: Penetration setting: 120 kV; X-ray beam intensity setting: 380 mA; Slices per rotation: 64; Slice thickness: 0.6 mm (0.2 mm slice overlay).

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63 The oxalates were identified by FTIR.
64 The binder was determined by FTIR.
65 Dr. E. Jägers CICS, Luigi di Stefano/CICS and Dr. Jana Sanyova, Institut royal du Patrimoine artistique, Brussels
66 The conservation/restoration (2006–2013) was supervised by Marianne Decroly, LaCambre, Brussels and will be reported elsewhere. The general treatment steps included the consolidation of insect-damaged areas of the support with Plexigum PQ 611, the removal of overpaint with a gel-based solvent mixture (acetone/ethanol 70/30), stabilization and formal reconstruction of losses in the support with the spongy inside of Ferula comunis, filling of losses with a filler based on Plextol B 500 and glass microballoons (Cara XV99). Retouching medium: Paraloid B72 (5%) in diacetonalcohol and ethanol (25-75), and dry pigments. To mark the retouching as a restoration treatment, it was decided to use the Tratteggiore technique.

Images

Fig. 1-4, 7, 14, 16, 20-23, 27, 28: ICWL, Andreas Krupa
Fig. 5: Ana Marinković, with permission of the Historical Archives in Dubrovnik
Fig. 8-13: Frane Mihanović
Fig. 6: Pablo Amador
Fig. 15, 17-19: Jef Schoors and Charles Indekeu
Fig. 24-26: Jana Sanyova, Cécile Glaude