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Autor(es) / Author(s): **Grazia Maria Fachechi; Susanna Bracci**

Afiliação institucional (Unidade de Investigação, Faculdade ou Departamento, Universidade, Código postal, Cidade, País) / Institucional affiliation (Research Center, Faculty or Department, University, Postcode, City, Country): **School of Humanities, Arts, Philosophy – Department of Humanities, University of Urbino, 61029, Urbino, Italy**; **Institute for the Conservation and Promotion of Cultural Heritage, Italian National Research Council, 50019, Sesto Fiorentino-Florence, Italy**

ORCID: **0000-0003-2995-496X; 0000-0001-6775-1966**

Email Institucional / Institutional email: **grazia.fachechi@uniurb.it; s.bracci@icvbc.cnr.it**

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Abstract

The most important and rich collection of wooden sculptures in Italy is conserved at the National Museum of Palazzo Venezia in Rome. Some years ago, the study of this collection was carried out by the University of Urbino in collaboration with the Institute for Conservation and Valorization in Florence (ICVBC-CNR) thanks to funding by the Getty Foundation. This was an extraordinary opportunity for interdisciplinary research, between art history and technical-material scientific analysis, concerning the almost two hundred works preserved there, of different dating and provenance. Among them is the so-called *Madonna di Acuto*, one of the most fascinating wooden sculptures of the Romanesque period in Italy, remarkable for its stylistic quality and state of preservation. And it is precisely the interest aroused by this Madonna at the origin of a new research project, just started by the same team, dedicated to the polychrome sculpture of the Romanesque era in Italy; a subject that is still little frequented by scholars. The aim is to collect data concerning the historical-artistic and technical-material aspects, with particular attention to polychromy, and to create a digital database, to verify if, between the 11th and the third quarter of the 13th century, existed a "typical behaviors" by the masters of lumber operating in a specific geographical area. This will help to establish the relationship, which was certainly created, between the nature of pigments, iconography, and symbolism of colors.

Keywords: Museum of Palazzo Venezia in Rome, *Madonna di Acuto*, Romanesque Italian wood sculpture, Digital database, Interdisciplinary research.

Resumo

A mais importante e rica colecção de esculturas de madeira em Itália encontra-se conservada no Museu Nacional do Palazzo Veneza em Roma. Há alguns anos, o estudo desta colecção foi levado a cabo pela Universidade de Urbino em colaboração com o Instituto de Conservação e Valorização em Florença (ICVBC-CNR), graças a um financiamento por parte da Getty Foundation. Tratou-se de uma extraordinária oportunidade de investigação interdisciplinar, entre história da arte e análise científica técnico-material, sobre as quase duzentas peças aí preservadas, com datas e proveniências

diversas. Entre elas, encontra-se a chamada *Madonna di Acuto*, uma das esculturas de madeira mais fascinantes do período românico em Itália, notável pela sua qualidade estilística e pelo seu estado de preservação. E é precisamente o interesse suscitado por esta Madonna que está na origem de um novo projeto de pesquisa, iniciado pela mesma equipa, dedicado à escultura policromada na era românica em Itália; um tema que continua a ser pouco visitado pelos académicos. O objectivo é reunir dados sobre aspectos histórico-artísticos e técnico-materiais, com particular atenção à policromia, e criar uma base de dados digital, para verificar se, entre o século XI e o terceiro quarto do século XIII, existiam "comportamentos típicos" por parte dos mestres das madeiras a operar numa área geográfica específica. Isto ajudará a estabelecer a relação, que certamente se criou, entre a natureza dos pigmentos, iconografia e simbolismo das cores.

Palavras-chave: Museu do Palazzo Venezia em Roma, *Madonna di Acuto*, Escultura românica italiana em madeira, Base de dados digital, Pesquisa interdisciplinar.

Romanesque polychrome wood sculptures in Italy: towards a Corpus and a comparative analysis of the data from art-historical and technical studies / Esculturas românicas de madeira policromada em Itália: para um *corpus* e uma análise comparativa a partir dos dados de estudos técnicos e de história da arte

Grazia Maria Fachechi and Susanna Bracci

Introduction

The starting point for this study is an interdisciplinary research, supervised by the Italian Ministry of Cultural Heritage, and financed by The Getty Foundation, concerning the collection of sculptures preserved in the National Museum of Palazzo Venezia in Rome, and involving not only art historians from Universities but also scientists from the Italian National Research Council, in order to collect also information about materials and techniques[1].

The Museum of Palazzo Venezia in Rome contains the most important collection of wood sculptures in Italy for variety and for quantity: almost two hundred pieces, even though only a tiny portion of these works (less than twenty) is on display in the Museum. The rest are in the warehouses of the Museum and were unknown to scholarship and to the public, until the publication of the catalogue of the entire collection, which includes

[1] Whereas the study presented here is the result of a joint project undertaken by both the authors who signed the paper, paragraphs 1, 3, 4, 6 are the work of Grazia Maria Fachechi, paragraphs 2, 5 are the work of Susanna Bracci.

technical entries for all the sculptures[2], plus an on-line catalogue (in English, too)[3]. The collection is varied by chronology, ranging from the 12th to the 18th century, and geographical origin, covering Italy, Spain, Germany, Netherlands and more. This is because the collection comes mostly from a donation to Italy in 1933 from a couple of very rich American collectors, George and Henriette Wurts, who moved from Philadelphia to Rome, traveling and buying artworks all over Europe[4]. In the 2017 an exhibit in the Museum of Palazzo Venezia and in the Vittoriano in Rome was dedicated to them[5].

Precisely because of this diversity, and since all the sculptures were examined by the same team and with the same methods (both stylistic analysis and technical-scientific investigation), this collection was perfect for a comparative study, in order to interconnect data concerning materials and technique with the cultural environment of the artists.

Methods of scientific examination

Identification of the wood species and construction was carried out through microscopic examination of thin sections, by the "Trees and Timber Institute of the Italian National Research Council-IVALSA CNR-Florence". 130 micro samples were drawn from 93 sculptures, and a total of 11 timbers were identified. Lime and poplar are the most common timbers, present in more than one half of the identifications; the next most common woods are Swiss stone pine and walnut. These four timbers together make up 80% of the identifications.

The analysis of the results, combined with the geographical and cultural origin of the sculptures, demonstrated that in central-southern Germany limewood was preferred, in

[2] FACHECHI, Grazia Maria – *Museo Nazionale del Palazzo di Venezia. Sculture in legno*. Roma: Gangemi, 2011.

[3] http://museopalazzovenezia.beniculturali.it/index.php?it/125/progetto-getty-foundation-catalogo-delle-sculture.

[4] FACHECHI, Grazia Maria – "George Washington Wurts, Henriette Tower, una collezione di curiosità e opere d'arte e una villa *magnificent, the handsomest ever bestowed on Rome*". in PERINI FOLESANI, Giovanna; AMBROSINI MASSARI, Anna Maria (ed.) – *Riflessi del collezionismo tra bilanci critici e nuovi contributi. Reflections on/of Art Collecting, between Critical assessments and New Contribution. Atti del Convegno (Urbino 2013)*. Firenze: Olschki, 2014, pp. 321-329.

[5] PELLEGRINI, Emanuele – *Voglia d'Italia: il collezionismo internazionale nella Roma del Vittoriano*. Napoli: Arte'm, 2017, in particular FACHECHI, Grazia Maria – "I Wurts e Roma: arte, mondanità e potere", pp. 110-121.

northern Europe (Lowlands around the Rhine delta) walnut and above all deciduous oak were favored, while the alpine sculptors used preferably Swiss pine wood. In Italy, poplar and lime were the first choice for wood carving. While the analytical results of this comparative study concerning the timbers were published[6], the results of the analyses regarding polychromy have never been published.

For the characterization of the polychromies an integrated protocol was developed including both non-invasive and micro-invasive techniques to provide the required information and cover the broad spectrum of issues and materials present. The investigations were carried out in a sequence that would allow the optimization of the different phases based on the results obtained from time to time[7]. The statues under study were 22.

The first step was based on a non-invasive approach conducted directly in the Museum, thanks to portable instrumentation such as Fiber Optics Reflectance Spectroscopy (FORS)[8] with the acquisition of 123 spectra and the documentation of the area analysed by digital optical microscopy (OM). Successively, X-ray fluorescence spectra (XRF)[9] were acquired for a total of 53 areas[10].

On the basis of the data collected in the first step, specific areas were chosen for taking one or two micro samples from some of the statues, in order to both clarify questions still

[6] MACCHIONI, Nicola; FACHECHI, Grazia Maria; LAZZERI, Simona; SOZZI, Lorena – "Timber species and provenances of wooden sculpture. Information from the collections of the National Museum of Palazzo di Venezia". *Journal Cultural Heritage* 16 (2015), pp. 57-64.

[7] PINNA, Daniela; GALEOTTI, Monica; MAZZEO, Rocco – *Scientific Examination for the Investigation of Paintings: A Handbook for Conservators Restorers*. Firenze: Centro Di, 2010.

[8] BACCI, Mauro – "UV-VIS-NIR, FT-IR, FORS Spectroscopies, in Modern Analytical Methods". in CILIBERTO, Enrico; SPOTO, Gilberto (ed.) – *Art and Archaeology. Chemical Analysis: A Series of Monographs on Analytical Chemistry and Its Applications*. New York: John Wiley & Sons, 2000, pp 321-361. BACCI, Mauro; BOSELLI, Lara; PICOLLO, Marcello; RADICATI, Bruno – "Ultraviolet, Visible, Near Infrared Fiber Optic Reflectance Spectroscopy (FORS)". in PINNA, Daniela; GALEOTTI, Monica; MAZZEO, Rocco (ed.) – *Scientific Examination for the Investigation of Paintings. A Handbook for Conservator-restorers*. Firenze: Centro Di, 2009, pp. 197-203.

[9] SECCARONI, Claudio; MOIOLI, Pietro – *Fluorescenza X, Prontuario per l'analisi XRF portatile applicata a superfici policrome*. Firenze: Nardini, 2004; SHUGAR, Aaron N; MASS, Jennifer L. (ed.) – *Handheld XRF for Art and Archeology. Studies in Archeological Science* 3. Leuven: Leuven University Press, 2012.

[10] The XRF spectra were acquired by Claudio Falcucci (MIDA Laboratory, Roma) in correspondence of the areas already analyzed with FORS technique.

open and to observe the stratigraphy. After taking it, the sample was further sampled in the laboratory under the microscope to obtain material to be analyzed by Infrared Spectroscopy (FT-IR)[11] and X-Ray Diffraction (XRD)[12] in particular for investigating the preparatory layer both in term of aggregate and binder. With the remaining sample a cross section was prepared and observed under the microscope with visible and UV light[13]. Furthermore, the cross section was analyzed with scanning electron microscopy and energy dispersive spectroscopy (SEM-EDS)[14].

Sculptures at the Palazzo Venezia: results of technical analysis

If we want to sum up, briefly[15], in the sculptures of Palazzo Venezia we observe that, regarding the preparatory layer, together with the binder, gypsum is always used in the sculptures south of the Alps and either gypsum or calcium carbonate in the north of the Alps. The most frequent pigments are cinnabar and white lead, almost inevitable for the flesh tones, although in different doses; for example, the Germans show a preference for very pale faces, even going so far as to mix the white lead with the ocher. Azurite is rather frequent, used above all for the Virgin's mantle. In one case, it is applied on a black base, according to a procedure that we know applied more frequently in the Nordic area, probably aimed at intensifying the tone of the color[16]. Rare is the use of lapis lazuli, found, for example, in the guise of the figure of a king[17]. Also greens are present, but more difficult to identify in their components. We find also minium, for example, in the mantle of a Nursing Madonna[18]. Gilding, present in not rare cases, is made only in pure gold leaf, almost always applied over an orange bolus base. Very interesting is the case of a Christ

[11] DERRICK, Michelle R; STULIK, Dusan; LANDRY, James M. (ed.) – "Infrared Spectroscopy in Conservation Science". in *Scientific Tools for Conservation*. Los Angeles: The Getty Conservation Institute, 1999.
[12] CORBEIL, Marie-Claudie – "Application of X-ray diffraction in conservation science and archeometry". *Advances in X-ray analyses* 47 (2004) pp. 18-29.
[13] BRACCI, Susanna – "Cross section microanalysis using UV/VIS microscopy". in DE JONGH, Ingeborg *et al.* (ed.) – *Authentication in Art - A handbook of Scientific Techniques for the Examination of Works of Art*. The Hague: Authentication in Art Foundation, 2018, pp. 76-77.
[14] SCHREINER, Manfred; MELCHER, Michael; UHLIR, Katharina – "Scanning electron microscopy and energy dispersive analysis: application in the field of cultural heritage". *Analytical and Bioanalytical Chemistry* 387 (2007) 3, pp. 737-747. PINNA, Daniela – "Scanning Electron Microscopy (SEM) coupled with energy dispersive X-ray Spectroscopy (EDS or EDX)". in DE JONGH, Ingeborg *et al.* (ed.) – *Authentication in Art…*, pp. 52-53, 2018.
[15] For some more details, see: FACHECHI, Grazia Maria – *Museo Nazionale...*, p. 46.
[16] FACHECHI, Grazia Maria – *Museo Nazionale...*, pp. 82-83, cat. 10.
[17] FACHECHI, Grazia Maria – *Museo Nazionale…*, pp. 124-125, cat. 60.
[18] FACHECHI, Grazia Maria – *Museo Nazionale…*, pp. 78-79, cat. 5.

between Saints Peter and Paul. These figures, originally polychrome, were then entirely gilded, with some pictorial effects, given by the use of boluses of different colors (yellow, red, black) that create various shades, and by a differentiated browning[19]. The silver leaf is rarer and exclusively found in the German sculptures.

Among the techniques of pictorial decoration, the *estofado de oro* is present in various Italian examples, which is another proof that in Italy there existed a long tradition of using polychromes "a sgraffito", and that therefore these works are not necessarily an indication of Iberian influence. Sometimes we find lacquer. In one case, it serves to mark the trace of a tear that flows on the pale face of Our Lady of Sorrows[20].

Madonna di Acuto

Among the sculptures in Palazzo Venezia, is the so-called *Madonna di Acuto* (fig. 1), one of the best-preserved Romanesque wood sculptures in Italy. Based on stylistic observations, scholars have been proposed various dates, from 1100 to 1220; the date currently proposed is between the end of the 12th century and the beginning of the 13th century[21]. The *Madonna di Acuto* was originally preserved in a church in Acuto, a small town near Rome, then was moved to the Museum of Palazzo Venezia in 1920. In the literature, on the basis of stylistic criteria, it is attributed to a Central Italian sculptor, although Northern Italian and French (Auvergne) influences are also highlighted.

[19] FACHECHI, Grazia Maria – *Museo Nazionale…,* pp. 100-105, cat. 32.
[20] FACHECHI, Grazia Maria – *Museo Nazionale…,* pp. 117-118, cat. 51.
[21] FACHECHI, Grazia Maria – *Museo Nazionale…* pp. 71-74, cat. 1.

Fig. 1 – Romanesque sculptor, *Enthroned Madonna with Child,* called *Madonna di Acuto*, 12th-13th century, polychrome wood, 107 x 45 x 24 cm, Roma, Museo Nazionale del Palazzo di Venezia (permission for reproduction obtained by the Soprintendenza SSPSAE e per il Polo Museale della Città di Roma, 2011).

The iconography is reminiscent of byzantine icons, specifically, the so-called *Odigitria* (meaning she who is pointing the Way); to be more precise, a pretty rare version in Rome of this type, representing the Virgin *dexiokratousa* (i.e. holding the Child on her right knee). The model for the *Madonna di Acuto* was probably the icon once preserved in the church of S. Nicola della Pescheria in Rome, stolen in 1988, dated back to the beginning of the 12th century (fig. 2)[22]. They share not only the iconography, but palette, considering the original aspect of their polychromy, in the icon now covered by diverse pigments, in the *Madonna di Acuto* not entirely visible anymore, but still quite visible in some pictures from the '50s (fig. 3), and that we can digital reconstruct (fig. 4). This provides "food for thought" on how research on Romanesque polychrome wood sculpture can be disseminated to the public, and if the virtual reconstruction of lost polychromy is not only a tool of research but also a good method to make students and visitors of museums understand the original appearance of works of art changed over time, and the so-called "colour shift", that means a change in colour quality of a sculpture as it originally appeared and as it is seen today; even though, we must indeed admit that we will never be able to reproduce their original state, which is definitively lost.

[22] FACHECHI, Grazia Maria – "Di legno e d'oro, d'azzurrite e di cinabro: la romanica Madonna di Acuto e il suo statuto di oggetto di transizione". in CAPPELLETTI, Francesca *et al.* (ed.) – *Le due Muse. Scritti d'arte, collezionismo e letteratura in onore di Ranieri Varese*. Ancona: Il lavoro editoriale, 2012, pp. 216-227.

Fig. 2 – Romanesque painter, *Enthroned Madonna with Child*, tempera on wood, 12th century, once preserved in the church of S. Nicola della Pescheria in Rome, stolen in 1988 (from: FACHECHI, Grazia Maria – *Museo Nazionale del Palazzo di Veneziz. Sculture in legno*. Roma: Gangemi, 2011).

Fig. 3 – Historical photograph of the *Madonna di Acuto* (from: CARLI, Enzo – *La scultura lignea italiana*. Milano, 1960).

Fig. 4 – Digital reconstruction of the polychromy of the *Madonna di Acuto* (© Fachechi, 2018)

The sculpture, which measures 107 cm high x 45 cm wide and only 24 cm deep, was made from walnut, considered all over Europe a precious wood thanks to its warm colour, medium to fine texture, and good workability. It is carved from a single piece of wood, as it is possible to see from the X-ray radiograph (fig. 5)[23], that also shows an unidentified piece between the Madonna's eyes. The back is deeply hollowed (fig. 6), as is common practice, with the removal of the core of the log, in order to minimize the formation of cracks. Both heads are conceived in the round.

[23] It was carried out by Claudio Falcucci (MIDA Laboratory in Rome).

Fig. 5 – X-ray radiograph of the *Madonna di Acuto* (permission for reproduction obtained by the Archivio Laboratorio M.I.D.A., Roma, 2011).

Fig. 6 – Back of the *Madonna di Acuto* (permission for reproduction obtained by the Soprintendenza SSPSAE e per il Polo Museale della Città di Roma, 2011).

Polychromy

Let's focus now on the polychromy of the *Madonna di Acuto*.

In fig. 7 all the analyzed areas are reported with a progressive number and an initial indicating the technique applied. All these analyses have been conducted *in situ* in the museum. In fig. 8 some detailed pictures of the surfaces, taken with the digital optical microscope, are reported. Summing up the results, all the red areas are realized with cinnabar. The FORS spectrum corresponds very well to the reference one, while in the XRF spectrum the signals of mercury (Hg) are very evident. The calcium (Ca) and iron (Fe) are likely to derive from the preparatory layer (fig. 9). Flesh tones are realized with white (lead white) and variable amounts of cinnabar to impart more or less pinkish tones to the flesh. Light blue areas, such as the dress of the Madonna, are realized with azurite. The FORS spectrum corresponds very well to the reference one, while in the XRF spectrum the signal of copper (Cu) are the most intense (fig. 10).

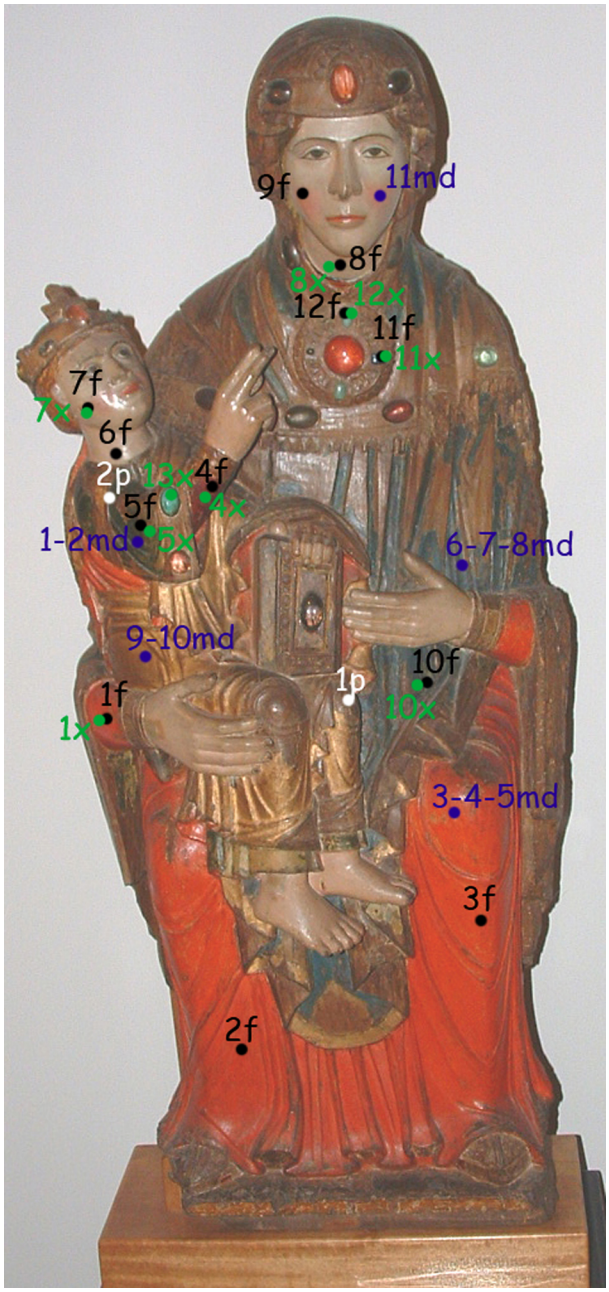

Fig. 7 – *Madonna di Acuto*. Areas analyzed with FORS (black dots), with XRF (green dots) and areas documented with digital optical microscopy (blue dots). The white dots are the areas chosen for sampling (© Bracci, ICVBC-CNR, 2011).

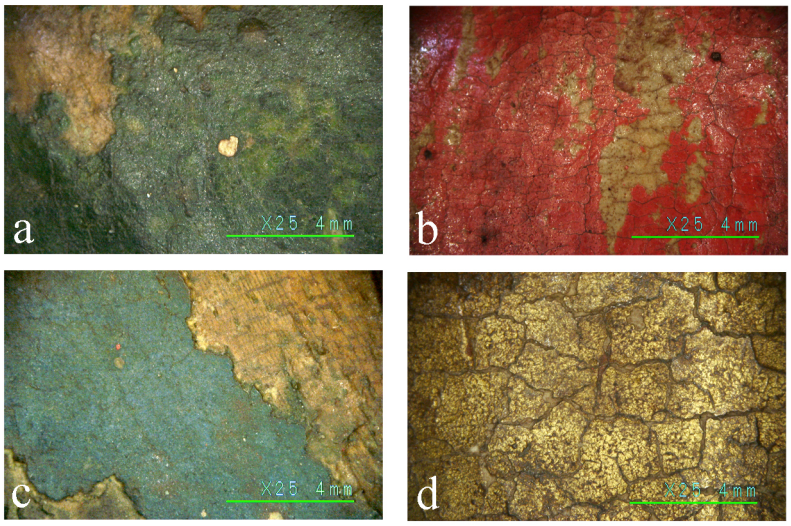

Fig. 8 – Detailed pictures of the surfaces: a) green on the left arm of the child (1md); b) red on the left knees of Madonna (3md); c) blue of the mantle (6md); d) gilding on the mantle of the child (9md) (© Bracci, ICVBC-CNR, 2011).

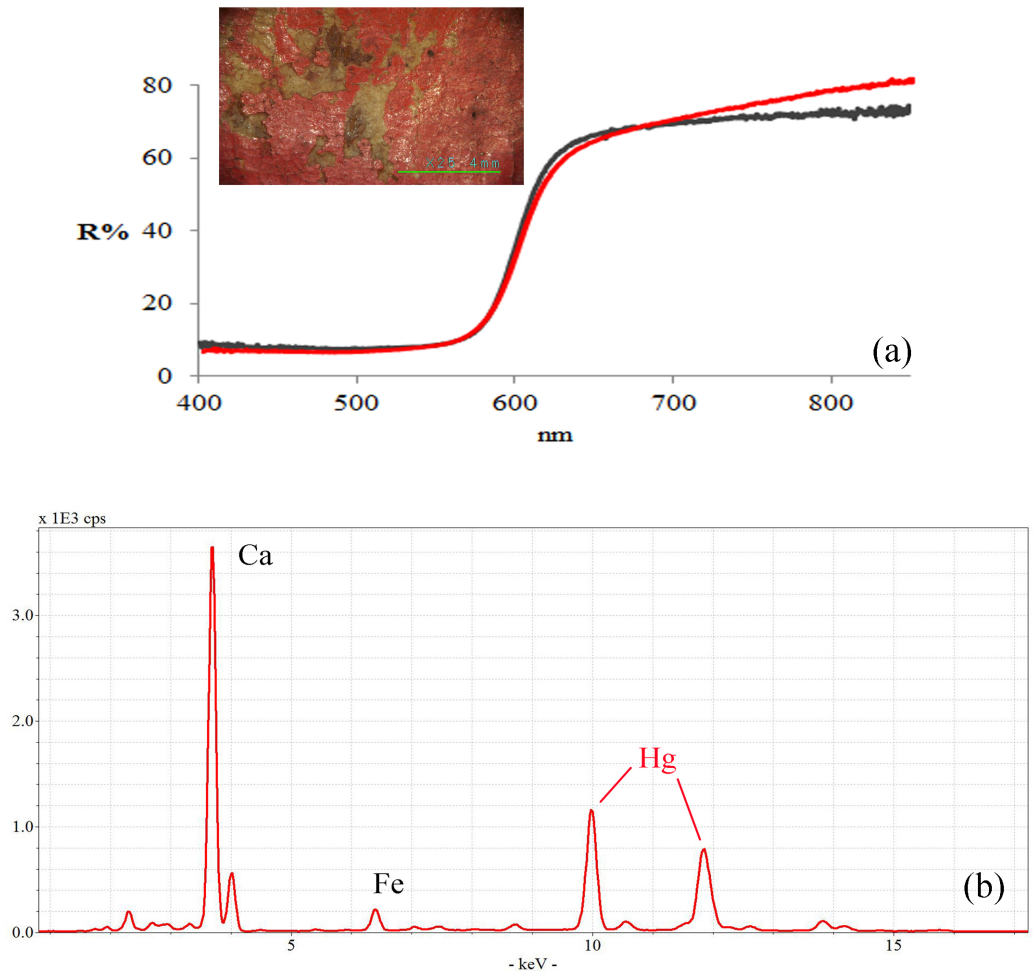

Fig. 9 – (a) FORS spectrum of area (1) of the red mantle of the Madonna (red line) compared to the reference spectrum of cinnabar (black line). (b) XRF spectrum of the same area on the mantle, where signals of mercury (Hg) are evident (© Bracci, ICVBC-CNR, 2011).

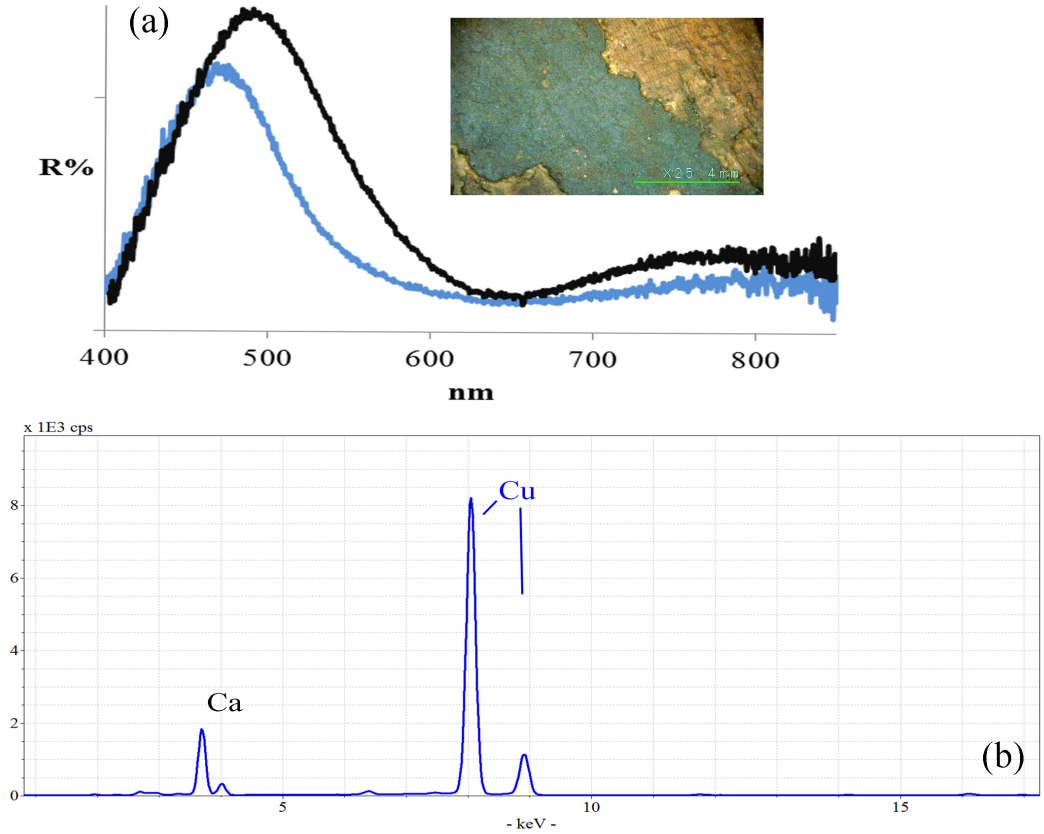

Fig. 10 – (a) FORS spectrum of area (10) of the blue dress of the Madonna (blue line) compared to the reference spectrum of azurite (black line). (b) XRF spectrum of the same area on the dress where signals of copper (Cu) are evident (© Bracci, ICVBC-CNR, 2011).

Green areas, such as the sleeve of the child's dress, are realized by using a copper based green pigment mixed with some yellow (most likely orpiment, As_2S_3). In addition, thanks to the non-invasiveness of the techniques it was also possible to analyze the supposed gems on the Madonna's chest and on the child's sleeve (fig. 11). The blue gem on the Madonna's chest is probably sodium based glass, most likely discolored with iron and stabilized with calcium oxide, slightly opaque due to antimony and lead based compound (likely lead antimoniate, $Pb_2Sb_2O_7$). Color is due to the presence of Co (II) which is well highlighted by FORS. The presence of cobalt, even in small quantities, gives the intense blue tonality of glass. The position of the three absorption bands of Cobalt confirms the soda rich glass[24,25]. The green gem is probably a sodium based glass, partly opacified with

[24] CEGLIA, Andrea *et al.* – "Cobalt absorption bands for the differentiation of historical Na and Ca/K rich glass". *Surface and Interface Analysis* 44 (2012) 2, pp. 219-226.
[25] FORNACELLI Cristina *et al.* – "The role of different network modifying cations on the speciation of the Co2+ complex in silicates and implication in the investigation of historical glasses". *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 188 (2018), pp. 507–515.

tin oxide (SnO) antimony and lead based compound (likely lead antimoniate, $Pb_2Sb_2O_7$). The chromophore imparting the green color is copper Cu (II) identified by one broad absorption band centered around 750 nm at in the FORS spectrum. From these data it is possible to conclude that those there were always supposed to be gems are not gems but glass.

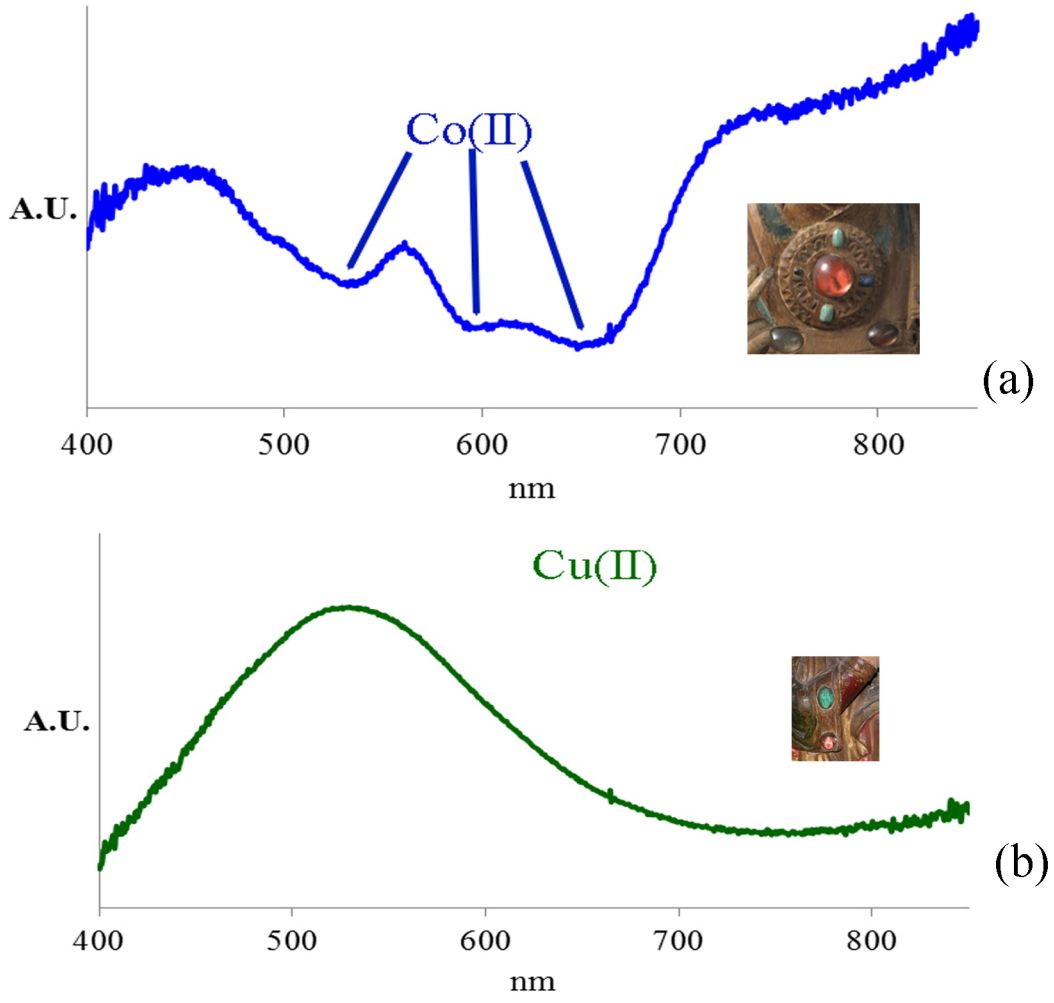

Fig. 11 – (a) FORS spectrum of blue gem on the chest of the Madonna, where the signal of Co(II) are evident. (b) FORS spectrum of green gem on the sleeve of the child, where the signal of Cu(II) are evident (© Bracci, ICVBC-CNR, 2011).

In order to clarify some still open questions that could not be solved with data obtained using non-invasive techniques, two samples were taken and analyzed in the laboratory. Here we report the data about the sample 1p taken from the knee of the child

corresponding to a supposed re-gilded area. The data obtained show an original stratigraphy in contact with the wood composed of a preparatory layer made of gypsum (calcium sulphate dehydrated, $CaSO_4$ $2H_2O$) mixed with animal glue on which a thin layer of red bole was applied for the adhesion of the pure gold leaf (few fragments left). Above this, a new preparatory layer, different from the original one, very thick, is present. This new preparatory layer is composed by calcite (calcium carbonate, $CaCO_3$), silica and animal glue. A very thin layer of bole is the preparatory layer for a new pure gold leaf (even this layer is not continuous) (fig. 12).

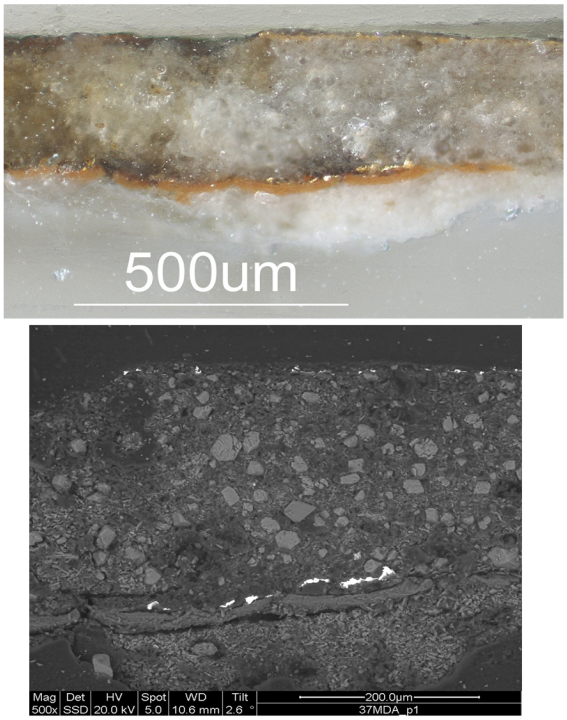

Fig. 12 – Cross section of the sample taken from the gilded mantle of the child (left knee of the child) observed under the optical microscope and image of the cross section in backscattered electrons acquired in the scanning electron microscopy (SEM) (© Bracci, ICVBC-CNR, 2011).

State of research and future endeavors

It would be very useful to compare the results on the investigation on the polychromy of the *Madonna di Acuto* with the results of the investigation on polychromy of other Romanesque Madonnas from the Lazio region with the same stylistic features: the so-called Madonna di Costantinopoli (Collegiata di Santa Maria Maggiore at Alatri, FR)[26],

[26] SALVADORI, Eugenia – *La Madonna di Costantinopoli in Alatri*. Alatri: Tofani, 2016.

and the very damaged Madonna di S. Maria della Valle at Subiaco (RM)[27], and the Madonna of the Santuario di Santa Maria at Vico nel Lazio (FR)[28]. But none of them were ever analyzed from the technical standpoint. Only the Madonna di Guadagnolo (near Rome), called the *Mentorella* or the *Vulturella*, very similar to the Madonna di Acuto, was investigated for remains of its polychromy; but the results are not that useful since the traces of the original colors are very few, specifically in the flesh tones, and some gold for the mantle and for the dress of the Madonna[29].

In Italy, not much attention is paid to polychromy of wood sculpture, above all from the Middle Ages and most of all from the Romanesque period. The sculptures of this era continue to be investigated by traditional methods, stylistic and more rarely iconographical (which includes sometimes the mere description of the colors)[30]. Only in the case of restoration's treatment, often carried out before an exhibition, curators of Museums and restorers publish the results of technical investigations[31].

So, we have to admit that, even though the technical study of European Romanesque polychrome wood sculpture has developed considerably in the last several decades, published scholarship on the materials and techniques of Italian Romanesque polychrome wood sculpture is still scant, and this topic is still a relatively small field.

Nevertheless, the topic is far from insignificant, but, on the contrary, very important not only to underscore the sophistication of these works of art and the high quality of craftsmanship in the Romanesque era, but also to better understand the cultural context of these works. That is why we decided to launch an interdisciplinary research-project entitled "Romanesque polychrome wood sculptures in Italy: towards a Corpus and a comparative analysis of the data from art-historical and technical studies", just started at

[27] LUDOVISI, Alessia – "Madonne lignee laziali del Duecento. Il caso della Vergine di Subiaco". in FIDANZA, Giovan Battista (ed.) – *L'arte del legno in Italia. Esperienze ed indagini a confronto*. Perugia: Quattroemme, 2006, pp. 159-168.
[28] TOMEI, Natale – "La Madonna lignea è tornata a Vico nel Lazio". *Terra nostra* 34 (1995), pp. 9-11.
[29] TOESCA, Ilaria – "Madonna con Bambino". in *Attività della Soprintendenza alle Gallerie del Lazio*. Roma: Soprintendenza Gallerie Lazio, 1967, p. 11.
[30] CURZI, Gaetano – "La diffusione delle *Sedes Sapientiae*. Questioni cronologiche tra Toscana, Umbria, Lazio e Abruzzo nei secoli XII e XIII". *Studi Medievali e Moderni* 15 (2011), pp. 19-43.
[31] For an overview, see: TONINI, Francesca – *La scultura lignea – Tecniche e restauro. Manuale per allievi restauratori*. Padova: Il Prato, 2015.

the University of Urbino[32].

The idea is, firstly, to understand the state of the question, secondly, to create a digital database, collecting all data we have about Romanesque wood sculpture in Italy (never collected until now), from both historical (i.e. chronology, original provenance/settings, iconography) and technical analysis, creating a data entry form, adding images of each sculpture, and finally trying to interpret them and, of course, sharing the results. Some of the data and images can be obtained from the databases of the MiBACT (Ministry of Cultural Heritage and Activities and Tourism), CEI (Italian Episcopal Conference), ICCD (Central Institute for Cataloguing and Documentation), ISCR (Italian Institute for Conservation and Restoration), OPD (Opificio delle Pietre Dure), and private restoration laboratories. The most important source of information (even though it is discontinuous information) is, in any case, the literature on this subject.

In this research project special attention is given to polychromy, meaning the intersection of materials, technique, iconography, symbolism of colors. The aim is to detect similarities or differences regarding the use of color in various regions in Italy from the iconographic-iconological and technical standpoint, for cognitive and educational purposes, and the reason for the use of a specific color in a specific sculpture, chosen certainly not by chance but intentionally.

For now, the research is focusing only on Madonnas, considering those dated earlier than 1265 and still preserved in religious building and in public collections in Italy, and then it will be considering other subjects. Unfortunately, the first results of this initial research confirm our first impression: we have information about polychromy just for a small group of Madonnas in Italy. For instance, looking at the central-southern Italy, the Madonnas of S. Giovanni at Castelli (TE)[33], Carsoli (now in the Museo d'Arte Sacra della

[32] VASTANO, Agnese; CUZZOLIN, Silva – "La Madonna col Bambino del Museo Diocesano di Recanati". in IACOBINI, Antonio; FACHECHI, Grazia Maria (ed.) – *Legni marchigiani.* Urbino: Quattroventi 2001, pp. 21-38.
[33] ARBACE, Lucia – *Antiche Madonne d'Abruzzo. Dipinti e sculture lignee medioevali dal Castello dell'Aquila*. Torino: Allemandi, 2010, pp. 40-42.

Marsica, AQ)[34], Collegiata at Arpino (FR)[35], the so-called "Sipontina" (now in the Cathedral of Mandredonia, FG)[36], the so-called Santa Maria Inelice (in S. Biagio at Rapolla, PZ)[37], the Madonnas of the Santuari of Viggiano[38], Seminara (RC)[39], Tindari[40], Museo Civico at Recanati (MC)[41], SS. Pietro e Paolo at Pescasseroli (AQ)[42], Museo Civico at Gubbio (PG)[43], and some others, non that many, considering that the number of Romanesque polychrome wood Madonnas in Italy are no fewer, at the very least, than one hundred. In the last three Romanesque Madonnas we mentioned, restorers and scientists found azurite, just as we did in the *Madonna di Acuto*, which seems to be the earliest of the four works. This is a very interesting and relevant result, since, as we know, azurite was rarely used in wooden sculpture before the middle of the XIII century[44]. On the contrary, azurite was used in stone sculptures throughout the Middle Ages. For example, it was found in the west lunette of the Baptistery of Parma, sculptured by Benedetto Antelami at the beginning of the XIII century[45], and even in a very old artwork, the altar of Ratchis in Cividale del Friuli, which dates back to the VIII century[46]. Now,

[34] BAGNOLI, Alessandro; BARTALINI, Roberto – *Madonna col Bambino*. in BAGNOLI, Alessandro; BARTALINI, Roberto (ed.) – *Scultura dipinta. Maestri di legname e pittori a Siena 1250-1450*. Firenze: Centro Di, 1987, pp. 16-17.

[35] ACCONCI, Alessandra – "La Madonna della Civita di Arpino. Intervento di manutenzione conservativa del gruppo ligneo policromo nella collegiata di Santa Maria Assunta ad Arpino, Frosinone". *Kermes* 27 (2014), pp. 41-57.

[36] VAN DER WERF, Inez; LAVIANO, Rocco; SABBATINI, Luigia – "Indagini archeometriche sulle Madonne lignee dal volto bruno nei santuari della Puglia e della Basilicata". in GROPPO, Lalla; GIRARDI, Oliviero (ed.) – *Nigra sum. Culti, santuari e immagini delle Madonne Nera d'Europa. Atti del convegno internazionale (Santuario e Sacro Monte di Oropa, Santuario e Sacro Monte di Crea, 2010)*. Ponzano Monferrato: Atlas, 2012, pp. 49-54.

[37] VENTUROLI, Paolo; CASCIARO, Raffaele (ed.) – *Scultura lignea in Basilicata*. Torino: Allemandi, 2004, pp. 130-131.

[38] VAN DER WERF, Inez; LAVIANO, Rocco; SABBATINI, Luigia – "Indagini archeometriche sulle Madonne lignee dal volto bruno nei santuari della Puglia e della Basilicata". in GROPPO, Lalla; GIRARDI, Oliviero (ed.) – *Nigra sum…*, pp. 49-54.

[39] DE CHIRICO, Fabio – *La Madonna dei poveri di Seminara: il culto, la storia, il restauro*. Soveria Mannelli: Rubbettino, 2011.

[40] FAZIO, Giuseppe – *La Madonna di Tindari e le Vergini nere medievali*. Roma: L'Erma di Bretschneider, 2012, pp. 40-55.

[41] VASTANO, Agnese; CUZZOLIN, Silva – "La Madonna col Bambino…", pp. 21-38.

[42] ACCONCI, Alessandra – "La Madonna della Civita di Arpino…", pp. 47-59.

[43] SPERANZA, Laura – "La scultura lignea policroma. Ricerche e modelli operativi di restauro". *Le antologie di OPD restauro* 3 (2007), pp. 253-264.

[44] A rare case of use of azurite in the XII century wood sculpture is discussed in BERTONI CREN, Nadia; CREN, Stéphane – "Note dal restauro del crocefisso di San Salvatore". in PREZZOLINI, Carlo (ed.) – *Il crocifisso di Abbadia San Salvatore*. Montepulciano: Thesan & Turan, 2010, pp. 33-41.

[45] PINNA, Daniela – "Casi di policromia nella scultura medievale in Emilia". in ANDREUCCETTI, Paola Antonella, LAZZARESCHI CERVELLI, Iacopo (ed.) – *Il colore nel Medioevo. Arte simbolo tecnica. Pietra e colore: conoscenza, conservazione e restauro della policromia*. Lucca: Istituto storico lucchese, 2009, pp. 103-109, particolarly p. 105.

[46] CHINELLATO, Laura – *Arte longobarda in Friuli. L'ara di Ratchis a Cividale: la ricerca e la riscoperta delle policromie*. Udine: Forum, 2016, especially pp. 148-149.

since sculptors used azurite in stone before the middle of the XIII century, even in the Early Middle Ages, why shouldn't they have used it in wood sculpture too? So, if the *Madonna di Acuto* can't be dated later than 1220 for stylistic reasons, and the analysis says that the polychromy we see is original, we must conclude that in Italy azurite, used in stone sculpture, was also used in some Romanesque Madonnas, starting, on the bases of our current knowledge, with the *Madonna di Acuto*.

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