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STUDY DAYS ON VENETIAN GLASS

Diamond-Point Engraved and Cold-Painted Glass of the Renaissance and Baroque Periods

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STUDY DAYS ON VENETIAN GLASS
Diamond-Point Engraved and Cold-Painted Glass of the Renaissance and Baroque Periods

edited by
ROSA BAROVIER MENTASTI and CRISTINA TONINI

VENEZIA
2023

Si raccolgono qui alcuni dei contributi presentati dall'8 al 10 settembre 2021
al Corso di alta formazione organizzato dall'Istituto Veneto sul tema:

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Diamond-Point Engraved and Cold-Painted Glass
of the Renaissance and Baroque Periods

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INDICE DEL FASCICOLO PRIMO-SECONDO-TERZO

Rosa Barovier Mentasti and Cristina Tonini

VENETIAN DIAMOND-POINT ENGRAVED AND GILT GLASS OF THE RENAISSANCE AND BAROQUE PERIOD

The Senate of the Venetian Republic granted a ten-year patent («*privilegio*») for a new technique of engraving glass («*maniera di lavorar de intaglio sopra i vetri*») to Vincenzo de Anzolo dal Gallo in the 3rd of August, 1549. Already fifteen or fourteen years before, as the Podestà of Murano testified on the 28th of January 1549, Vincenzo had applied this technique, which was diamond-point engraving, to mirrors.

The family D'Angelo or D'Anzolo could boast an important tradition in glassmaking, as it was known in Murano since the 14th century and Iacobo d'Angelo had obtained the privilege of working crystal glass and *lattimo* in 1457, following the invention of such new glass materials by Angelo Barovier. Fifty years later, in 1507, Andrea and Domenico D'Angelo could obtain a twenty-year lasting patent for the production of crystal glass mirrors. Later, the family name D'Angelo slowly became Dal Gallo, because the *gallo* (rooster) was the sign of its glassworks[1].

Venetian diamond-point engraved glass vessels were never deeply and exhaustively studied and published in books and articles. Actually, works of the late 17th and early 18th century are often dated to the 16th century in many books[2].

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[1] Gallo 1953: 754-755; Zecchin 1990, III: 62-67.

[2] For instance, in his book *Vetri italiani del Cinquecento* Giovanni Mariacher publishes twelve diamond-point engraved vessels vases as Renaissance pieces but only three can be dated to the 16th century (Mariacher 1959: 63-66, pl. VII). In her book *L'arte del vetro a Murano,* in the chapter *Cinquecento*, Attilia Dorigato publishes five diamond-point engraved vessels but only three can be dated to the 16th century (Dorigato 2002: 81-86). Brigitte Klesse, renowned scholar, published several diamond-point vessels of the Renaissance and Baroque period but she dated three baroque pieces, clearly made in the late 17th or early 18th, to the 16th century (Klesse and Mayr 1987: 31. 32, 34, 37). We could continue with a list of books.

Today, it is possible to distinguish three periods concerning the style of diamond-point engravings on Venetian glass.
- The first period ranges from ten to twenty years just before and after 1560. This is the period when diamond-point engravings on blown glass are much refined and complex, based on the typical motifs of the late Renaissance or Mannerism style, generally derived from antique works of art: tritons, dragons, griffons, sphinxes, masks, cornucopias, garlands and similar patterns.
- The second period lasts from the last quarter of the 16th century to the early 17th century. The engraved patterns of this period, inspired by antique marbles and decorative arts as the earlier ones, are simpler and more conventional. Scrolls, foliage, fleurs-de-lis are often included.
- The third period begins before the middle of the 17th century and lasts until the early 18th century. The patterns are naturalistic, with vegetal branches, flowers, birds and other animals, generally combined in free and asymmetric composition.

Very early, this novelty (dated 1549) caught the attention of the high society in Italy and elsewhere. A document related to the Medici court, reporting some purchases of maiolica and glass in Venice, at the time of the Tuscan duke Cosimo I (1519- 1574) and his wife Eleonora di Toledo, shows an early interest for Venetian diamond-point engraved glass vessels commissioned on behalf of the duchess at Murano. Indeed, this document is dated 15th January 1550, only a few months following the Venetian Republic's issuing of a patent for this technique, applied to blown glasses, to the Muranese glassmaker Vincenzo d' Angelo dal Gallo in August 1549. The Medici document explicitly mentions that a box with 45 pieces of crystal glass, among them «*una tazza et una coppa intagliate con la punta di diamante*» (a *tazza* and a large bowl, both diamond-point engraved) «*che è foggia nuova*» (which is a new style), was sent to Florence by Pietro Camaiani, secretary of the Florentine State Council, then in Venice[3]. Unfortunately, we have no description of the motifs decorating such vessels but we can suppose that they were as rich and refined as the later diamond point engraved decorations of two large blown plates bearing the impaled coats of arms of the Medici and Orsini families[4].

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[3] Spallanzani 1981: 74; Spallanzani 2023: 69-72.
[4] Whitehouse 2004, p. VI, pl. 4. Bayer 2008: 99, n. 31.

One of these plates is kept in the Corning Museum of Glass (Fig. 1), the other in the Metropolitan Museum of Art. They were commissioned by Paolo Giordano Orsini in 1560, just after he married Isabella de' Medici, daughter of Cosimo, the first Grand Duke of Tuscany[5]. Much probably, Paolo Giordano himself commissioned also some Venetian plates with the coat of arms of Pope Pius IV (r. 1559-1565), his protector[6] . We know four plates with the coat of arms of Pius IV, diamond-point engraved, kept in the Museum für Angewandte Kunst in Cologne, in the Toledo Museum of Art in Toledo (Ohio), in the Grand Curtius Museum in Liège and in the Victoria and Albert Museum in London[7].

Three other plates have no armorial shield but the papal emblems, the crossed keys of Saint Peter and the umbrella. Two are kept in the British Museum and the third in the Ashmolean Museum, Oxford[8] and they all may be connected with Pius IV, as well. The Glasgow Museums collections include a plate with similar diamond-point engraved decorations[9]. Two gorgeous plates of the same group, one in the Musée Ariana, Geneva, the other in the Landesmuseum Württemberg, Stuttgart, show the allegorical figures of Temperance and Prudence, respectively. We can suppose, following Erwin Baumgartner's opinion,

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[5] The wedding contract between Paolo Giordano and Isabella was signed in 1553, when she was eleven years old, the church wedding was celebrated in 1556, the marriage was consummated in 1558. Pope Pius IV, the protector of Paolo Giordano, transformed the Bracciano feud of the Orsinis into a duchy in 1560 and the new duke restored and furnished the Bracciano castle sumptuously. Elisabetta Mori, former archivist in the Archivio Storico Capitolino, Rome, author of the general inventory of the Orsini archive (2016. *L'archivio Orsini. La famiglia, la storia, l'inventario.* Roma: Viella) and of the biography of Isabella de' Medici, *L'onore perduto di Isabella de' Medici* (1913. Milano: Garzanti), informed us that Paolo Giordano payed 576 ecus, a big sum, when he bought glass vessels, mirrors and leathers in Venice. Probably the Orsini archive might be very interesting for the history of decorative arts and glass.

[6] Pius IV, born as Giovanni Angelo Medici di Marignano in Milan in 1499, boasted of having family relations with the Medicis of Florence. He has not to be confused with his brother Gian Giacomo Medici, called Medeghino, who was a famous condottiere (for instance in: Page 2006: 88).

[7] Buckley 1932: 168-161; *Glas* 1963, n. 169; Page 2006: 88-89; Philippart 2009:140.

[8] Tait 1979: 130-131, nos. 223-224; Newby 2000: no. 34.

[9] Recent Important Acquisitions 1982: 43, no. 20; Engels-de Lange and Engels 2015: 66, fig. 7.

that these two plates belonged to a group of four with the allegories of the four cardinal virtues (Justice, Fortitude, Prudence and Temperance)[10].

Very similar, as to the shape of the heraldic shield, is the fragment of a goblet, probably a conical goblet, excavated in the site of Locatelli palace, in Cesena, which incorporates the previous tower-house of the Tiberti family, one of the most influential ones in that town in Renaissance period (Fig. 2). The fragment shows the upper part of a diamond-point engraved shield which has the same form and frame as the Medici and Orsini ones[11].

Other pieces can be considered Venetian and dated to the same years as the afore mentioned plates. Among them is the vase of the British Museum with stylized foliate pattern and dolphins[12]. Its shape is very similar to the shape of the *Veronese* vase, which, actually, was not first depicted by Paolo Veronese (1578: *Annunciation*, Gallerie dell'Accademia, Venice) but by Titian in *Diana and Actaeon* (1556-59), a main painting by the Venetian artist, co-owned by the National Gallery of London and the National Galleries of Scotland. The Venetian blowers conceived a variant with a longer neck which, too, is depicted by Titian in *Venus and Cupid* (1550-1569), kept in the Uffizi. Therefore, this painting by Titian confirms the date around 1560 for the British Museum diamond point vase.

Dolphins are included in the diamond-point decoration of a goblet in the collection of the late Anneke Engels-De Lange and Anton Engels[13], while a goblet or tazza, belonging to the former Bagnasco collection and later auctioned, has a bowl decorated with cherubs and winged lions[14]. Tritons and dragons are the most remarkable adornments of an exquisite small lidded bowl kept in the Civici Musei di Arte e Storia in Brescia (Fig. 3)[15]. Perhaps, other archaeological findings and whole

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[10] Klesse and Mayr 1987: no.30; Baumgartner 1995b: no. 9.

[11] Cesena, Deposito Soprintendenza Archeologica, inventario no. 219339 (unpublished). Some earlier glass findings of the same site and other areas were published: Pasini 2002: 162-164, nos. 150-155. We thank Romina Pirraglia, Soprintendenza Archeologia, Belle Arti e Paesaggio province di Ravenna, Forlì-Cesena, Rimini and Dimitri Degli Angeli for showing the Renaissance glass findings in Cesena.

[12] Tait 1979: 132, no. 226.

[13] Engels-de Lange and Engels 2015: 64-69 ; Lameris 2015: 70-71.

[14] Baumgartner 1995 b: 64-65, 109, no. 199; *An Important Collection* 2000: 56-57, no. 128.

[15] Barovier Mentasti and Tonini 2012: 53, 95, no. I/11.

vessels, belonging to public and private collections, will be included in this earliest group in the future but we suppose that there will not be many additions. Actually, we suppose that such earliest engraved vessels were not produced in large quantity because their decorations required artisans with outstanding skills and long and accurate work.

The hypothesis formulated by Page that such plates might be decorated in Milan is absolutely unfounded[16]. On the other hand, in his very important book about the Medici glassworks, which employed Murano glass masters, Detlef Heikamp tentatively connected the plates decorated with the Medici and Orsini coats of arms, with some Florence glassworks but his proposal is not acceptable because no document or drawing in the Medici archives supports such assumption[17].

Very soon, diamond point engraved vessels were successful in the German market. Indeed, a trial paper of the Murano Podesteria, dated five years later (1556), concerning the merchant Rinaldo Todesco, documents the export – and specifies the patterns of some of them – of several (about six thousand) Venetian glass vessels to *Alemagna* (Germany), through the Fondaco dei Tedeschi [18]. Some of them were probably mould blown glasses with specific patterns, others were decorated with diamond-point engravings («*intagiadi con il diamante*»). The latter were more expensive. This list includes: lidded reliquaries («*Tabernacoli* […] *con coverchio*»), imperial beakers («*Gotti imperiali*»), lidded mortars («*Morteri* […] *con coverchio*»: probably bowls or beakers), funnel shaped goblets («*Pifareti*»), «*Spesi* [?]», smaller mortars («*Mortaruoli*») and bell-shaped items (*Campanele*).

Among different types of diamond- point engraved items listed in Todesco's paper, several reliquaries with lids, are mentioned but we do not know the kind of their patterns from this document. Also a later paper, *Memoria di vetrerie che si cava di Murano* (1592), a report found in the correspondence of Lorenzo Usimbardi, secretary at the Medici's court, mentions the export of *tabernacoli*, just specifying that some of them

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[16] Page 2006: 88.

[17] Heikamp 1986: 188-189.This author publishes, in connection with such pages, the plate with the Medici and Orsini coats of arms kept in the Metropolitan Museum of Art and a drawing of the *Bichierografia* by Giovanni Maggi, depicting a handled vase, which, actually, seems to be a Catalonian enamelled vessel (ff. 85-86).

[18] Zecchin 2019: 205.

were *messi a oro* (reliquaries, some of them gilt), to Germany [19]. Some gilt reliquaries, which are also cold painted and diamond- point engraved with conventional ornamentations, are known and they are usually dated to the last quarter of the 16th century- early 17th century. Among them, a colourless reliquary with cylindric body and lion-shaped stem, housed in the church of Santa Maria Gloriosa dei Frari of the Franciscan Order, in Venice, shows, on the body, a diamond-point engraved chequerboard pattern, small lilies and two escutcheons which include yellow and red cold painted ornamentation (Fig. 4). Above, there is another horizontal gilt and cold painted decoration, partially lost. This Murano glass product was probably kept in the Frari church from the 16th century onwards, like other glass reliquaries housed in several Italian churches. The same shape and the same diamond-point engraved patterns characterize another cylindrical shaped reliquary or goblet of a former Venetian collection, belonging to Piero Toso, Venetian collector, today kept in the Liuanig Museum, Neuhaus Austria (Fig. 5)[20]. The only slightly difference regards the cold painted decoration at the centre. We may suppose that the former Toso vessel was made in Murano, due to its provenance and to its strict relation with the Frari reliquary. Moreover, the horizontal cold painted frieze, in both reliquaries, should have been, in origin, like the one ornamenting two diamond- point engraved and cold painted cylindric shaped reliquary, housed in the monastery of San Damiano of the Franciscan order, in Assisi and a goblet or reliquary of the former Manca collection, today housed in Museo del Vetro Murano (Figs. 6-7-8)[21]. One of the two Assisi reliquiaries is a key reference for its diamond- point engraved and cold painted decoration. On both sides, *all'antica* motifs, consisting of two

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[19] Corti 1971; Barovier Mentasti and Tonini 2014: 15-16. Moreover, «*tabernacoli schieti ala todesca*» (reliquaries- shaped with no decorations of German style or in fashion in Germany) are mentioned in another document of a Murano glassworks (1585): Zecchin 2009: 27.

[20] Kovacek 2015: 26-27. In this publication the reliquary has been ascribed, without any proven evidence, to the Innsbruck court glassworks of the archduke Ferdinand II.

[21] The reliquaries kept in San Damiano are four; two of them are diamond- point engraved and cold painted: Tonini 2015: 84-85, figs.1-4. Barovier Mentasti and Tonini 2013: no. 43. The same cold painted band, on the upper part of the Assisi reliquaries, characterizes a reliquary or goblet in the Kunstsammlungen in Veste Coburg; Theuerkauff-Liederwald 1994: 247-248, no. 224.

busts in profile of armigers, are depicted (Fig. 6). These motifs also recur in Venetian and Italian maiolica of the second half of the 16th century.

Similarly, the same subject with armigers, a crown or a wreath of green leaves with fruits and the almost lost horizontal frieze are painted on a colourless glass reliquary, originally housed in the church of San Martino in Burano, an island near Murano, today kept in the Museo del Vetro, Murano. It is also diamond-point engraved with stylized scrolls, small lilies, and gadroons[22] (Figs. 9-9a). Its body has a rounded lower part and cylindrical upper part and two small handles are attached to the rounded part and are decorated with small strawberry prunts. Its handles are fragmented at the apexes that, originally, ended in a curl.

Archive documents and paintings are useful references for dating glassware. The Burano reliquary shows similarities with a reliquary portrayed by Dominíkos Theotokópoulos, called El Greco, in one of his canvas, *Penitent Magdalene* (1576-1577), painted in Rome, just after his sojourn in Venice (Fig. 10)[23]. The two reliquaries have similar curled handles and applied strawberry prunts, showing some slight differences in their bodies. Indeed, the Burano has a lower rounded part flattened and a cylindrical upper part while El Greco's has an ovoid body and short cylindrical upper part. The Burano reliquary's form is, also, similar to a colourless vase without handles and with applied strawberry prunts gilt prunts on the body, kept in the church of Sant 'Agostino in Rimini, a town not far from Venice, until now unpublished (Fig. 11). This vessel shows few differences with the Burano reliquary, such as a baluster stem and moulded ribs on its body.

In another painting, *Noli me tangere*, depicted by Ludovico Pozzoserrato (Lodewijk Toeput), a Flemish artist, active in Veneto region, mainly in Treviso, is portrayed, near Magdalene, a gilt glass vase with lid, very similar in shape to El Greco's one, without curled handles

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[22] The reliquary, which contained the relics of St. Heliodorus and the Holy Innocents, was purchased from the church of San Martino of Burano by Angelo Barbini in 1880 for the Murano Museo Vetrario. He paid the price of 75 lire and offered in exchange a completely new reliquary, which is no longer kept: Zecchin 2009: 28, 31, note 10; Barovier Mentasti and Tonini 2013: no. 41; see also Mauro Stocco's article in this publication. A similar shaped reliquary, diamond-point engraved is kept in the Wallace Collection, London; Higgott 2011: 90-93.

[23] Puppi 2015: 101, 119.

(Fig. 12) [24]. These Magdalene vases, containing unguents, were very frequently depicted in Italian paintings to the point to be mentioned as «*vasi della madalena con doi* [...?] *e manego a grapella*» (Magdalene vases with two…(?) and *a grapella* handle) in a Murano list of glass vessels (1599), related to Vincenzo and Bastian Buselli glassmakers; some years earlier, in 1590, in the list of glassware to be sent to Constatinople by Pietro Ballarin, Murano glass entrepreneur, are significatly quoted twelve *Vasi a grapele inquartadi grandi* (diamond-point engraved vases with grapele [handles])[25]. The word *grapella* o *grapela*, found in this document, derives from the word *grapelus*, which means iron hook or staple[26]. Indeed, the Burano reliquary and El Greco's Magdalene vase show curled handles which may resemble a hook. The Sebastiano Buselli inventory has to be taken into consideration for both the *Madalena* vase, as a special type, and for the *grapella* handles.

Moreover, the Burano urn shape derives from classical models re-proposed by Italian Renaissance artists, including Giovanni da Udine (Friuli), a pupil of Raphael. Indeed, he frescoed, in one of the rooms, the Camerino di Apollo, of the palazzo Grimani near Santa Maria Formosa square (Venice), in 1540, a still life where a lidded vase with *grapella* handles, similar to the Burano reliquary, is depicted. The same Giovanni da Udine had also, in the same years, designed some glassware, made in the Serena glassworks, following the style of antiquity, as Pietro Aretino recalls[27].

The diamond- point engraved decorations with stylized scrolls and cold painted armiger heads of the Burano reliquary are similar to the ones ornamenting Assisi reliquaries. Armiger heads are also painted on a diamond-point engraved urn with lid, belonging to the former Bagnasco collection (Fig. 13)[28]. This vessel also shows the same horizontal gilt and cold painted frieze decorating the Burano, Frari, Liuanig, Manca and Assisi reliquaries. The Bagnasco urn is also ornamented with diamond-point engraved garlands, encircling the upper part of the vase[29]. Figurative sources

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[24] *Pinacoteca Civica* 2003: 400-401, no. 229.

[25] Zecchin 2003: 25; Zecchin 1989 : vol. II, 166.

[26] *Glossarium mediae et infimae latinitatis* 1884: vol. III: 556; Pandiani 1915: 273, 365.

[27] Aretino 1997: 82-83; Barovier Mentasti 2019: 372-373.

[28] *An Important Collection* 2000: 116-117, no. 282.

[29] Similar garlands are also diamond -point engraved in two glass vessels recovered at Gnalič. Lazar and Willmott 2006: 17, pl. 9; 120, pl. 12.

are also key references for this urn. Its shape is very similar to a colourless vase with applied strawberry prunts depicted in the *Portrait of Maffeo Barberini*, future pope Urbano VIII, attributed to Michelangelo Merisi da Caravaggio, kept in Palazzo Corsini, Florence, dated late 1590 (Fig. 14)[30]. The depiction of Venetian glasses, in Caravaggio's earliest works, is well-known. Moreover, the glass vessel in Barberini's portrait recalls the form of the Magdalene vases painted by Pozzoserrato and El Greco (Figs. 10-12).

The glass urns of this kind were generally attributed to the Court glassworks in Innsbruck (active 1570-1591), founded by Ferdinand of Tyrol. Nevertheless, their shape is of Italian origin, as supposed by some scholars, and as documented by Italian figurative sources and decorative arts[31].

Diamond-point engraved stylized scrolls, like the ones decorating reliquaries and goblets, also ornament other types of glass vessels. Among them, vases with handles and spouts are to be taken into account. Some of them are still housed in Italian collections and churches, from early times; others come from archaeological excavations in Urbino and from a wreck of a Venetian ship found in Gnalič, in Croatia. The latter glass finds, dated 1583, are well-known and were published several years ago. Recently, some new documents have been found in the State Archive of Venice, regarding the Venetian ship and its cargo. In particular, papers mentioning glass window panes, made in Murano, for the harem of the Sultan Muhrad III, and a new shipment of glass, promised by the Venetian Senate to the *bailo* (resident ambassador of the Venetian Republic at the Ottoman court) Francesco Morosini, to replace the ones lost, due to the shipwreck, were unearthed [32].

Some diamond- point engraved vases with spouts housed in Italian religious buildings and coming from archaeological sites are still unknown or unpublished. The first one is a fragmentary small vase of blue glass, recovered in the archaeological excavations of Santa Chiara Convent, in Urbino, alongside other Venetian glass vessels and local ceramics[33]

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[30] Christiansen 2004: 43-58.

[31] Theuerkauff-Liederwald 1994: 270-271; Baumgartner 1995b: 44-45, 99; Higgott 2011: 90-93.

[32] Radić Rossi, Nicolardi and Batur 2016: 242-247.

[33] Paolinelli 2011: 11-47. The other glass vessels recovered are made of *retortoli* filigree, *marmorino* (opaque white translucent) and opaque turquoise. The authors are

(Fig.15). This convent was strictly related to the two subsequent ruling families in Urbino, the Montefeltro and Della Rovere, who both used to acquire Venetian glasses for their palace in town[34], and the high-quality finds of the convent confirm the provenance of the nuns from the region's upper class. The refined blue glass vase found in Santa Chiara is similar to some blue vases with three spouts kept in London, in the British Museum and in the Victoria & Albert Museum, and to a third example of the former Strasser collection, today housed in the Ambras Castle (Innsbruck)[35]. Usually, these types of vessels are attributed to Hall Tyrol or to the Hapsburg court glassworks in Innsbruck without proven evidences. The Urbino vase, which was found in an Italian convent, alongside other Venetian glass vessels, may open new perspectives on the attribution of these types of vases. Its diamond-point engraved decoration with stylized scrolls is similar to the one ornamenting a vase with spouts housed in the Bargello Museum, Florence[36].

Vases with spouts, made in different sizes, were used to display flowers and were in fashion in Italy, as documented by contemporary Italian figurative sources[37](Fig. 16). Therefore, we may suppose that the design of these bouquetières has an Italian origin and not a Catalan one, as sustained by some scholars. Another vase for flowers with spouts is housed in the church of San Giovanni in Monte, in Bologna, where it has been located from the time it was produced (Fig. 17). This piece has three gilt ribbed spouts, a diamond-point engraved decoration with stylized scrolls and two shields which enclose a cold painted ornamentation in red, yellow and green. Its gilt flattened rim has three applied gilded

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planning to publish them shortly; the turquoise double handled bowl, has been already published: Barovier Mentasti and Tonini 2021: 32, fig. 5. We thank Claudio Paolinelli for informing us about Urbino Santa Chiara glass finds.

[34] Lopez 1997; 14-17, 77-80 and forthcoming article by the authors: 2023. Renaissance Venetian Enamelled and Gilded Glass with inscriptions. In *Porte des Arts. Études et recherches au Louvre*.

[35] Tait 1979: no. 228; V&A (inv. no. 8469); Strasser and Baumgärtner 2002: 33, no. 7.

[36] The Bargello vase shows also a decoration with rows of heart-shaped patterns similar to the ones ornamenting a glass find from Gnalič: Barovier Mentasti and Tonini 2013: no. 36; Lazar and Willmott 2006: 120, pl. 12.

[37] Barovier Mentasti and Tonini 2013: no. 53; Barovier Mentasti and Tonini 2014: 18-19, fig. 8.

raspberry prunts like the ones which can be seen in a vase with one spout and three handles found in Gnalič[38]. The diamond- point engraved opposing big S shaped patterns ornamenting the Bologna vase resemble to ornamentations found in other decorative arts of the Mannerism period, such as a carved cupboard, dated 1564, kept in the Diocese of Padua, attributed to a Veneto workshop. The same design also recurs in textiles, such as the ones painted by Guido Reni in a fresco in the Oratorio of Santa Silvia, San Gregorio al Celio, Rome (1604).

Finally, another vase with three gilt ribbed handles without spouts was originally in the collection of Marco Mantova Benavides (1489-1582), a Paduan Jurist and Humanist (Fig. 18). It entered, together with all his antique art pieces, in the heritage of the Padua University, even if it is not mentioned in the *Inventario delle antichità di Casa Mantova Benavides* (1695)[39]. Its cold painted decoration, unfortunately, is almost totally lost, but the diamond-point engraved stylized scrolls show strict similarities with the ones ornamenting both Burano and Assisi reliquaries. This kind of decoration seems to be influenced by ancient patterns.

Vases for flowers with spouts were in fashion in Italy and also in the Ottoman world. These were sent as diplomatic gifts, by the Venetian Senate, to the Sultan and his court. For instance, Pietro Ballarin, renowned Murano glassmaker, made, approximately, nine hundred vessels, to be sent to Constantinople, at the time of the *bailo*, Venetian resident ambassador, Girolamo Lippomano, in 1590. Among them, twenty two «*Vasi da fiori con pipii inquartadi*» (Vases for flowers with spouts *inquartadi*) are mentioned[40]. The Venetian word *pipio* means, like in nineteenth century Italian language, spout, and is still used today in Murano glassworks. We suppose that Ballarin's *inquartadi* vases with spouts, might have been diamond-point engraved with horizontal and vertical lines in order to create different fields or sectors on the body. Our supposition is based on the Italian Renaissance expression *arme inquartade* (quarterly heraldic shields). These shields are divided by means of two intersected lines (one horizontal and the other vertical, or both diagonal),

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[38] Lazar and Willmott 2006: 123, pl. 15.

[39] Favaretto 2002: 108-110; Favaretto and Menegazzi 2013: no. 140.

[40] Zecchin 1989: vol. II, 166.

in order to create four quarters in which the coats of arms are displayed. Moreover, some Italian maiolicas of the 16th century show a decoration, called *a quartieri*, generally more than four, well-illustrated by a drawing of Cipriano Piccolpasso in his treatise, *Li tre libri dell'arte del vasaio* (1556-1559), where the surface of the ceramic vessels, especially dishes, is divided in radial sectors, each ornamented with different patterns. Similarly, the above mentioned reliquaries and vases for flowers show a partition on their body in sectors, obtained by diamond-point engraving, gilding and cold painting. This is also found in some glass vases recovered from the Gnalić wreck intended to reach Constantinople[41].

In 1599, Pietro Ballarin, received, once again, a new order of one thousand and one hundred ninety-six glass vessels, by the Venetian Senate, to be sent as diplomatic gifts, to the sultan, at the time of the *bailo* Vincenzo Gradenigo[42]. Among them, one hundred vases for flowers with three or six spouts, in small and big sizes, «*schietti*» (undecorated), «*doradi*» (gilt) and «*tagiadi e d'oro coloridi*» (diamond-point engraved, gilt and coloured) are recorded[43]. The latter might have been very similar to the vases with spouts, diamond-point engraved, gilt and cold painted, discussed in this article.

Glass items housed in Italian churches and collections, like the afore mentioned ones, and glass finds from Urbino convent and the Gnalič shipwreck finds are key references to compare and better understand pieces of unknown origins, kept in European collections and elsewhere. Another archaeological find, recovered in Udine (Friuli), a town under the political dominion of the Venice republic, might be added as an example of a different kind of diamond-point engraved ornamentation (Fig. 19). It was found in Palazzo Ottelio, built between the late 15th and early 16th century and owned, from 1550 approximately, by a branch of the renowned Venetian patrician family Dolfin del Banco which restored the palace taking inspiration from buildings in Venice[44]. The glass fragment is probably the bowl of a goblet, and shows a diamond-point engraved decoration with geometric lines and

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[41] Lazar and Willmott 2006: 50-51, 122, pl. 14, 123, pl. 15.

[42] Molà 2018: 59-61.

[43] This inventory will be published shortly by the authors in an article dedicated to Venetian glasses exported to Constantinople in the 16th century. *Coloridi* (coloured) probably meant: cold painted.

[44] Buora 1996: 552; Casadio, Malisani and Vitri 2000: 150, pl. 1.

lilies, an *inquartado* decoration, as mentioned in Ballarin's glass list, or *a quartieri* like in Italian maiolicas. A similar pattern characterizes a goblet exhibited in the Musée Ariana, Geneve, in 1995[45].

Venetian documents offer other clues regarding diamond-point engraved, gilt and painted ornamentations. Among them, decorations with eagles, highly appreciated in Austrian and German countries, are recorded in two Murano glassworks inventories. The first one, dated 1578, listing the products of G. Antonio Zanchi dal Castello, glass entrepreneur, mentions: *Goti intagiadi con aquile* (diamond-point engraved beakers with eagles) and the second one (1570), related to the well-known glassmaker Bortolo d'Alvise, quotes «*Tre vasi doradi con le aquile, roti nelli coverchi*» (Three gilt vases with eagles, with broken lids)[46]. Moreover, an inventory of the Kunstkammer in Dresda, also called the Green Vault, quotes «*Venedische gläßlein ohne deckel worauf zwey Adler, und anders gesschniedten*» (Venetian vases without lids on which are two eagles and other engravings)[47]. These were displayed in the Treasure Room with other *cristallini* (crystal glass vessels) and Venetian glasses. Among them, other diamond-point engraved vessels are quoted, including a Venetian vase with Fortune and Justice [48]. This inventory is dated 1640 and is recording several artifacts collected by the Saxon dukes. This collection began with the Elector August, in 1560. Scholars, studying this inventory and the collection, still kept in the Dresden Kunstkammer, found several connections between existing artifacts in the Kunstkammer and the ones quoted in the 1640 inventory, sustaining that some of these objects were made before the year 1640, including some glass vessels, crystal and coral items and others art objects[49].

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[45] Baumgartner 1995a: 46-47, 100, no.185. The goblet is attributed in this publication to Venice or *Façon de Venise*. The attribution of this goblet to Venice, rather than the *Facon de Venise*, is now more convincing due to the comparison with Ottelio find.

[46] Zecchin 2009: 34; Zecchin 1989: vol. II, 174. In the Kunsthistorisches Museum, Wien, is kept a colourless goblet diamond-point engraved with eagles from the Kunstkammer of Ferdinand II (inv. no. KK 10195).

[47] Marx and Plaßmeyer 2016: 221-fol. 103v no. 417.

[48] *Ibid*.: 221- fol. 103v no. 419: «*Schon Venedisch gläßlein ohne deckle,mit einer langen hüls, allendhalben mit krigsrüstungen , neben der Fortuna und Justitia geschnidten*» and *ibid*.: 221-222.

[49] *Ibid*.: 219-222, abb. 31, taf. 21-22-24; Syndram and Minning 2010, no. 3-4-5-6.

The current tendency to attribute all diamond-point engraved and cold-decorated pieces to the Innsbruck court glassworks of Ferdinand II Hapsburg should therefore be reconsidered, on the basis of glass vessels of possible proven Venetian origin and Venetian inventories. Moreover, the diamond-point engraved technique, invented in Murano, was constantly used in the glassworks of this Venetian Island. In the second half of the 16th century, these were numerous compared to the only one active in Innsbruck[50]. In 1568, Ferdinand II, before founding his glassworks in 1570, asked his ambassador, Veit von Dornsberg, in Venice, to provide him with several beautiful drinking glasses, diamond-point engraved and of other types, gilded and not gilded («*etliche schöne drinkgeschirr von glaswerck, als von schifflein und allerlei gattung, vergült und unvergült*»)[51]. Later, few Murano glassmakers, as well two members of the Savonetti family, Sebastiano and his son Salvatore, worked in the Innsbruck court glassworks, and only for short periods, in the years 1574-1575 and 1577; Sebastiano also sent several glass objects, vases, goblets, beakers and *christalli* to the archduke from Murano, following his requests[52]. As already noticed by other glass scholars, Ferdinand II continued to buy glass in Venice, as he was not always satisfied with the quality of the products coming out of his glassworks in Innsbruck. The archduke's collection of diamond-point and cold painted glass vessels of the Kunstkammer deserves an in-depth study, in order to distinguish the pieces that are more closely related to Venetian examples from the ones that show a naïve and colourful cold painted ornamentation, probably made or issued from the Innsbruck court glassworks.

In the late baroque period, decorative motifs changed. Naturalistic and floral patterns became dominant in this period. Among them, vessels, mainly goblets, were diamond-point engraved with Venetian and Veneto names. For instance, a colourless goblet, with a stem formed by hollow

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[50] In 1550, the theologian Leandro Alberti mentioned twenty-four *apoteche* (glassworks): Alberti 1550: 468. Presumably they became more numerous towards the end of the 16th century, but in 1592 a secretary of the Grand Duke of Tuscany reported from Venice: «of about 40 glass-furnaces that work day and night continuously, are reduced to the number of about 24»; Corti 1971: 651.

[51] In 1575, he acquired other Venetian glasses and among them, «*10 vergoldete Deckelpokale*» (10 gilded lidded goblets are recorded): Egg 1962: 43-45.

[52] Marcon 2017: 146-151, esp. 150, notes 106-107-108.

flattened knops with three applied streaked wings and pincered decorations (*creste*), housed in the Museo Poldi Pezzoli, Milan, is showing, around the rim, an engraved sentence of good wishes: «W. AL: SIG^{e} ZUANNE VIOLIN» (Giovanni Violin), clearly a Veneto name (Fig. 20). It is also diamond-point engraved with foliate motifs which recalls similar decorations ornamenting glass items housed in the Rosenborg Castle, Copenhagen. Some of these glass vessels were acquired by Frederik IV during his sojourn in Venice (1708-'09) and some were given as gifts by the Venetian republic. This collection is a key reference for glass scholars in terms of dating and provenance. Therefore, the Poldi Pezzoli goblet, for its engraving and its hollow stem, characterizing other Venetian baroque glasses, has to be dated to the end of the 17th-early 18th century[53]. Similarly, a goblet, kept in the Paul Getty Museum, Los Angeles, is engraved with the name of the presumable owner of the object: «SIG. DOTTORE D. PIETRO LESSIO». The name Lessio is found in Veneto region, near Padua. It has not to be considered a shortened version of another name, Alessio or D'Alessio, common in other Italian regions, to sustain a *Façon de Venise* origin of this goblet, alongside the presence of a double eagle diamond point engraved[54]. Therefore, an attribution to Venice of this goblet is highly likely.

Conclusions

At the middle of the 16th century, the first Venetian diamond-point engraved glass vessels, such as the Medici-Orsini dishes and

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[53] Mariacher and Roffia 1983: 170, no. 70. The dating in this publication to the second half of the 16th century has to be postponed. A goblet with similar stem without wings is kept in the Corning Museum with a coin of Pope Innocent IX (1679-1689): *Three great centuries* 1958: 96-97, no. 102; similar applied wings with *creste* decorate some examples housed in Rosenborg: Boesen 1960: 19.

[54] Hess and Husband 1997: 122-125. Others glasses diamond-point engraved show dedications with names common in Veneto region: a goblet engraved with «VIVA IL PADRE COLOMBAN» is kept in the Museo del Vetro di Murano (Zanetti 1881:106), another with «SIGNORA ANGELA GARIBOLDI» dedication is housed in the Veste Coburg Museum (Theuerkauff-Liederwald 1994: 309-310, no. 297) and a third example with «PAOLINA BADOER MOCENIGO» belonged to Mocenigo Collection, Venice, S. Stae (Mariacher 1972: plate III). We may attribute all of them to Venice.

other blown vessels, show a highly refined decoration. They are mainly ornamented with grotesques, dragoons, dolphins, festoons and coat of arms. Later, in the last decades of the 16th century, the Venetian diamond-point engraved vessels show more conventional types of patterns and ornamentations, such as chequerboard, lilies, trefoils, dots, stylized scrolls, if compared with the previous pieces. They also differ from the earlier ones in virtue of their cold painted ornamentations, sometimes with *all'antica* motifs.

In the 17th century and in the early 18th century, the diamond-point engraved glass items show more whimsical decorative motifs. Naturalistic, floral and animal themes were common and were rendered with greater compositional freedom in comparison to the sixteenth century diamond-point engraved glass vessels.

REFERENCES

Alberti, Leandro. 1550. *Descrittione di tutta Italia*. Bologna: Anselmo Giaccarelli.

Aretino, Pietro. 1997. *Lettere,* vol. 1, edited by Paolo Procaccioli. Roma: Salerno.

An Important Collection of Venetian and Façon de Venise Glass. Christie's. 2000. Auction: London, 28 March 2000. London: Cristie's.

Barovier Mentasti, Rosa. 2019. "La foggia de l'antiquità" Vetri del Rinascimento veneziano. In *Il dono di Altino. Scritti di archeologia in onore di Margherita Tirelli*, edited by G. Cresci Marrone, G. Gambacurta and A. Marinetti. Venezia: Ca' Foscari.

Barovier Mentasti, Rosa and Tonini, Cristina. 2012. I vetri. In *Collezioni e collezionisti. Arti applicate dei Civici Musei di Arte e di Storia di Brescia*, edited by A. Benedetto Spada and E. Lucchesi Ragni. Brescia: Grafo: 37-106.

Barovier Mentasti, Rosa and Cristina Tonini. 2013. *Fragile. Murano, chefs-d'oeuvre de verre de la Renaissance au XXI siècle*. Paris: Gallimard.

Barovier Mentasti, Rosa and Tonini. Cristina 2019. Venetian Renaissance Vessels: Mould Decorations and Applied Bosses. In *Study Days on Venetian Glass. Moulding and Applying Hot Glass*, edited

by R. Barovier Mentasti and C. Tonini. Venezia: Istituto Veneto di Scienze, Lettere ed Arti: 1-74 (*Atti dell'IVSLA* 177/II-III, 2018-2019, Classe di scienze fisiche, matematiche e naturali).

Barovier Mentasti, Rosa, and Cristina Tonini. 2021. Les verriers à Murano. Familles, ateliers, Groupe social. In *Émailler le verre à la Renaissance. Sur les traces des artistes verriers entre Venise et France*, edited by A. Gerbier, F. Barbe and I. Biron. Paris: Réunion des Musées Nationaux: 27-33.

Baumgartner, Erwin. 1995a. *Catalogue des Collections du Musée Ariana. Verres de Venise et "Façon de Venise"*. Genève: Musée Ariana.

Baumgartner, Erwin. 1995b. *Verre de Venise. Trésors inédits*. Genève: Musée Ariana.

Bayer, Andrea, ed. 2008. *Art and Love in Renaissance Italy*. New York: The Metropolitan Museum of Art. New Haven and London: The Yale University Press.

Boesen Gudmund. 1960. *Venetianske Glas på Rosenborg / I vetri Veneziani del Castello di Rosenbor / Venetian Glass at Rosenborg Castle*, København.

Buckley, Wilfred. 1932. Six Italian Diamond Engraved Glasses. *The Burlington Magazine* 61, no. 355: 158-161.

Buora, Maurizio.1996. Udine, area di Palazzo Ottelio. 1995-96. *Archeologia Postmedievale* XXIII: 552.

Casadio, P., G. Malisani and S. Vitri, eds. 2000. *Le mattonelle rinascimentali di palazzo Ottelio*. Udine: Soprintendenza per i beni e le Attività Culturali.

Christiansen, Keith. 2004. Caravaggio *Portrait of Maffeo Barberini* in the Palazzo Corsini Florence. In *Caravaggio Reflections and Refractions,* edited by L. Pericolo and D.M. Stone. New York: Ashgate.

Corti, Gino. 1971. L'industria del vetro di Murano alla fine del XVI secolo in una relazione al Granduca di Toscana. *Studi veneziani* 13: 649-654.

Dorigato, Attilia. 2002. *L'arte del vetro a Murano*. Venezia: Arsenale.

Egg, Erich. 1962. Die Glashütten zu Hall und Innsbruck im 16. In *Jahrhundert, Tiroler Wirtschaftsstudien 15,* Innsbruck: Universitätsverlag Wagner.

Engels-de Lange, Anneke E. and Anton I. Engels. 2015. A goblet and

twelve plates from the mid-16th Century. In *The Collection Engels-de Lange*, edited by A. Lameris, K. Lameris and W. Lameris. Amsterdam: Frides Lameris Art and Antiques: 64-69.

Favaretto, Irene. 2002. *Arte antica e cultura antiquaria nelle collezioni venete al tempo della Serenissima*. Roma: L'Erma di Bretschneider.

Favaretto, I. and A. Menegazzi, eds. 2013. *Un museo di antichità nella Padova del Cinquecento. La raccolta Marco Mantova Benavides all'Università di Padova*. Roma: L'Erma di Bretschneider.

Gallo, Rodolfo.1953. Contributi alla Storia dell'Arte del vetro di Murano. *Giornale Economico* XXXVIII: 753-757.

Glas. Kataloge des Kunstgewerbemuseums Köln. 1963. Köln: J.P. Bachem.

Glossarium mediae et infimae latinitatis/ conditum a Carolo Dufresne, domino Du Cange, auctum a monachis ordinis S. Benedicti cum supplementis integris D.P. Carpenterii et additamentis Adelungii, et aliorum digessit G.A.L. Henschel. 1844. vol. III. Paris: Institutii Regi Franciae Tipographie.

Hess, Catherine and Timothy Husband. 1997. *European Glass in the J. Paul Getty Museum*. Los Angeles: The J. Paul Getty Museum.

Higgott, Suzanne. 2011. *The Wallace Collection. Catalogue of Glass and Limoges Painted Enamels*. London: The Trustees of the Wallace Collection.

Klesse, Brigitte and Hans Mayr. 1987. *European Glass from 1500-1800. The Ernesto Wolf Collection*. Vienna: Kremayr & Scheriau.

Kovacek, Regine. 2015. *Glassammlung Liaunig: Schnitt und Farbe*. Neuhaus: Museum Liaunig.

Lameris, Kitty. 2015. Venetian glass. In *The Collection Engels-de Lange*, edited by A. Lameris, K. Lameris and W. Lameris. Amsterdam: Frides Lameris Art and Antiques.

Lazar, Irena and Hugh Willmott. 2006. *The glass from the Gnalić wreck*. Koper: Zalozba Annales.

Lopez, Maria Giannatiempo, ed. 1997. *Urbino Palazzo ducale. Testimonianze inedite della vita di corte*. Urbino: Ministero per i Beni Culturali e Ambientali. Soprintendenza dei Beni Artistici e Storici delle Marche.

Marcon, Gabriele. 2017. Mobilità artigianale in area alpina. L'esempio di alcuni vetrai italiani in Tirolo nel XVI secolo. *Geschichte und Region/Storia e regione* 1: 129-153.

Mariacher, Giovanni. 1959. *Vetri italiani del Cinquecento*. Milano: Vallardi.

Mariacher, Giovanni. 1972. *Vetri graffiti veneziani del Cinquecento*. Venezia: Cassa di Risparmio di Venezia.

Mariacher, Giovanni and Elisabetta Roffia. 1983. *Vetri*. In *Ceramiche - Vetri - Mobili - Arredi. Museo Poldi Pezzoli.* Milano: Electa.

Marx, Barbara and Peter Plaßmeyer. 2016. *Sehen und Staunen Die Dresder Kunstkammer von 1640*. Berlin: Deutscher Verlag.

Newby, Martine S. 2000. *Glass of Four Millenia*. Oxford: Ashmolean Museum.

Page, Jutta-Annette. 2006. *The Art of Glass. Toledo Museum of Art*, Toledo: Toledo Museum of Art. London: D. Giles Limited.

Pandiani, Emilio.1915. Vita privata genovese nel Rinascimento. *Atti della Società Ligure di Storia Patria* XLVVI.

Paolinelli, Claudio. 2011. Inediti reperti ceramici dall'ex convento di Santa Chiara. In *Ceramica d'Eccellenza: il Monastero di Santa Chiara a Urbino*, edited by A. Vastano. Vado: Tipografia Vadese: 11-47.

Pasini, Pier Giorgio, ed. 2002. *Malatesta Novello Magnifico Signore. Arte e cultura di un principe del Rinascimento.* San Giorgio di Piano (BO): Minerva Edizioni.

Philippart, Jean-Paul. 2009. Assiette aux armes des Médicis. In *700 ans d'art et d'histoire au Grand Curtius*, edited by Cl. Garier, C. Chariot and A. Lemeunier. Bruxelles: Tournesol Conseils sa/ Éditions Luc Pire: 140.

Puppi, Lionello, ed. 2015. *El Greco in Italia. Metamorfosi di un genio*, Treviso, Casa dei Carraresi. Milano: Skira.

Radić Rossi, Irena, Mariangela Nicolardi and Katarina Batur. 2016. The Gnalić Shipwreck: Microcosm of late Renaissance World. In *Croatia at the Crossroads. A consideration of Archaeological and Historical Connectivity* edited by D. Davinson, V. Gaffney, M. Preston and J. Sofaer. Oxford: Oxuniprint: 223-248

Recent Important Acquisitions. 1982. *Journal of Glass Studies* 24: 87-114.

Spallanzani, Marco. 1981. Maioliche veneziane per Cosimo I de' Medici ed Eleonora di Toledo. *Faenza* LXVII, fasc. I-VI: 71-77.

Spallanzani, Marco. 2023. *I fiorentini e il vetro veneziano (ca. 1450-1550)*. Firenze: Leo S. Olschki editore.

Strasser von, Rudolf and Sabine Baumgärtner. 2002. *Licht und Farbe. Dekoriertes Glas- Strasser Renaissance, Barcok, Biedermeier. Die Sammlung Rudolf von Strasser*. Wien: Kunsthistorisches Museum.

Syndram, Dirk and Martina Minning. 2010. *Die Kurfürstlich-Sächsische Kunstkammer in Dresden*. Dresden: Sandstein Verlag.

Tait, Hugh.1979. *The Golden Age of Venetian Glass*. London: British Museum Press.

Theuerkauff-Liederwald, Anna-Elisabeth. 1994. *Venezianisches Glas der Veste Coburg*. Lingen: Luca Verlag.

Three great centuries of Venetian glass. 1958. Corning, New York: The Corning Museum of Glass.

Tonini, Cristina. 2015. Reliquiari del convento di San Damiano ad Assisi. In *Il vetro in Italia Centrale dall'antichità al contemporaneo,* edited by L. Mandruzzato, T. Medici and M. Uboldi. Cremona: A.I.H.V. Comitato Italiano (*Atti delle XVII Giornate Nazionali di Studio sul vetro* - Massa Martana e Perugia, 11-12 maggio 2013).

Whitehouse, David. 2004. Foreword. In *Beyond Venice. Glass in Venetian Style, 1500-1750* ,edited by J.-A. Page. Corning (New York): The Corning Museum of Glass: II-VI.

Zanetti, Vincenzo. 1881. *Il Museo Civico-Vetrario di Murano*. Venezia: Tip. Municipale di Gaetano Longo.

Zecchin, Luigi.1987, vol. I; 1989, vol. II; 1990, vol. III. *Vetro e Vetrai di Murano*. Venezia: Arsenale Editrice.

Zecchin, Paolo. 2003. Prodotti vetrari muranesi alla fine del Cinquecento. *Rivista della Stazione Sperimentale del Vetro* 3: 23-32.

Zecchin, Paolo. 2009. Due importanti inventari muranesi del Cinquecento. *Rivista della Stazione Sperimentale del Vetro* 5: 27-34.

Zecchin, Paolo. 2019. I reliquiari dei vetrai muranesi del '500. *Journal of Glass Studies* 61: 197-208.

Fig. 1 - *Plate*, diamond-point engraved dish with Medici-Orsini coat of arms, Venice, 1560 ca. Corning, Corning Museum of Glass, inv. no. 83.3.51 (courtesy of).
Fig. 2 - *Fragment of a goblet*, diamond-point engraved, Venice. Cesena, Soprintendenza Archeologica, Belle Arti e Paesaggio province di Ravenna, Forlì-Cesena, Rimini (courtesy of)..

Fig. 3 - *Bowl,* diamond-point engraved, Venice, 1550-1560. Brescia, Musei Civici (courtesy of Archivio Fotografico Brescia Musei Civici -Fotostudio Rapuzzi).

Fig. 4 - *Reliquary*, diamond-point engraved and cold painted, Venice, last quarter of 16th-early 17th century. Venice, Chiesa Santa Maria Gloriosa dei Frari.

Fig. 5 - *Reliquary* or *Goblet,* diamond-point engraved and cold painted, Venice, last quarter 16th-early 17th century, h 24,6 cm. Neuhaus, Austria, Liaunig Museum, (courtesy of), former Pietro Toso Collection, Venice).

Fig. 6 - *Reliquary*, diamond-point engraved and cold painted, Venice, last quarter 16th-early 17th century. Assisi, Monastery of San Damiano (courtesy of).

Fig. 7 - *Reliquary*, diamond-point engraved and cold painted, Venice, last quarter 16th-early 17th century. Assisi, Monastery of San Damiano (courtesy of).

Fig. 8 - *Reliquary or Goblet*, diamond-point engraved and cold painted, Venice, last quarter 16th-early 17th century. Murano, Museo del Vetro, inv. Cl VI 2923 (courtesy of).

Fig. 9 - *Reliquary,* diamond-point engraved and cold painted, Venice, last quarter of the16th century. Murano, Museo del Vetro, inv. no. CL VI 1124 (courtesy of), originally in Burano, Church of San Martino.

Fig. 9a - *Reliquary*, detail, diamond-point engraved and cold painted, Venice, last quarter of the 16th century. Murano, Museo del Vetro (inv. no. CL VI 1124), originally in Burano, Church of San Martino.

Fig. 10 - Doménikos Theotokópoulos, called El Greco, *The Penitent Magdalen,* detail, 1576-1577. Budapest, Museum of Fine Arts (courtesy of).

Fig. 11 - *Vase with lid*, Venice, last quarter 16th century, Rimini, Church of Sant'Agostino.

Fig. 12 - Ludovico Pozzoserrato (Lodewijk Toeput), *Noli me tangere*, detail. Vicenza, Museo Civico di Palazzo Chiericati (courtesy of).

Fig. 13 - *Vase with lid*, diamond-point engraved and cold painted, probably Venice, last quarter of the 16th century. Former Bagnasco collection (photo: Bonhams auctioneers, London, courtesy of).

Fig. 14 - Michelangelo Merisi, called il Caravaggio, *Portrait of the cardinal Maffeo Barberini*, detail, late 1590. Florence, Palazzo Corsini.

Fig. 15 - *Fragmentary vase with spouts,* blue diamond-point engraved glass, archaeological find from Urbino, Santa Chiara Convent, Venice, last quarter of 16th -early 17th century. Urbino, former Santa Chiara Convent, today in Istituto Superiore per le Industrie Artistiche. (Photo: Andrea Pierleoni, Urbino, Istituto Superiore per le Industrie Artistiche (courtesy of).

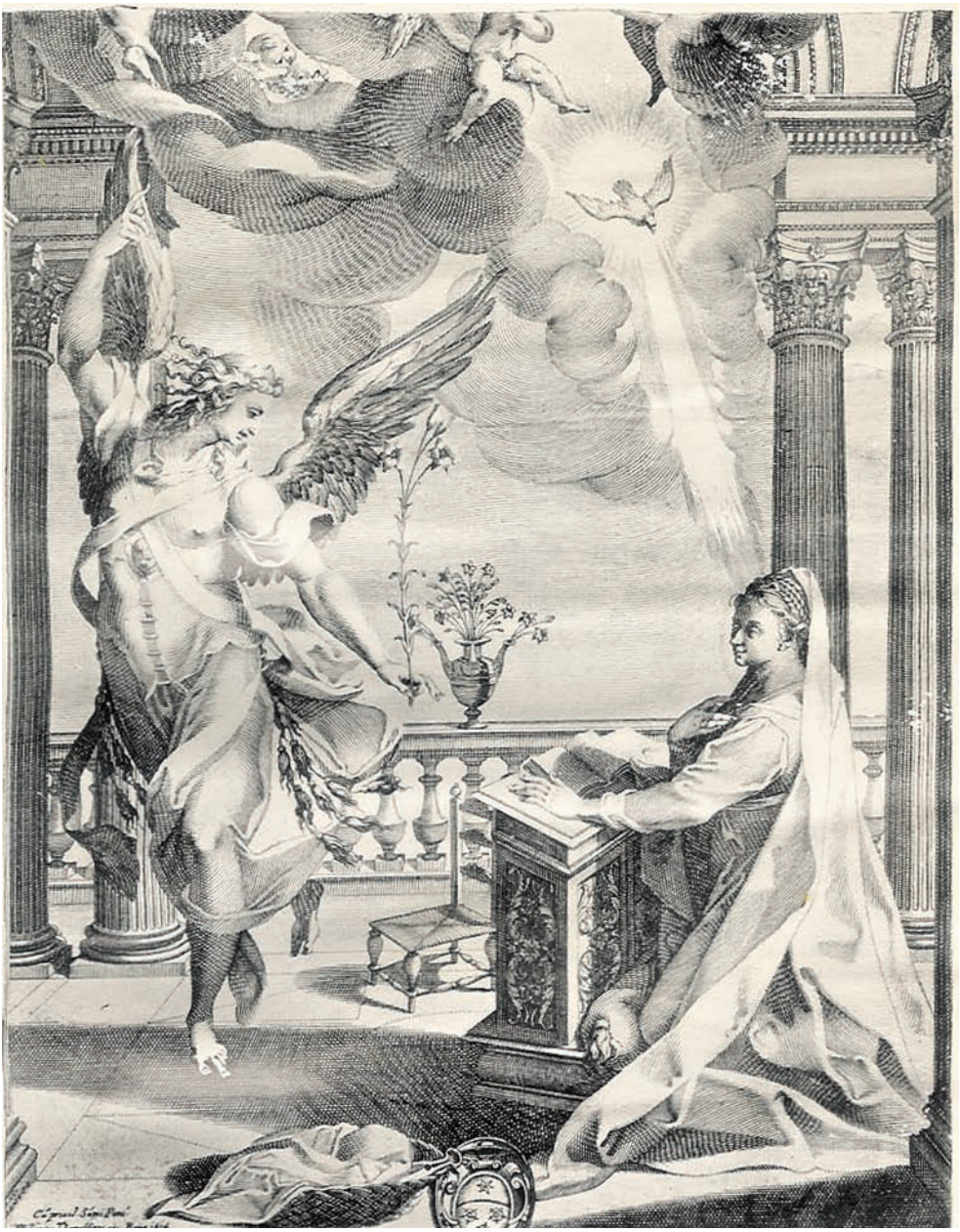

Fig. 16 - Francesco Villamena, *Annunciation,* 1603, copper engraving, cm. 53,2x 33,6. Budapest, Szépmüvészeti Múzeum (inv. 52358).

Fig. 17 - *Vase with spouts*, diamond-point engraved, gilt and cold painted, Venice, last quarter of the 16th - early 17th century, cm. 21. Bologna, Church of San Giovanni in Monte (photo: Bologna, Arcidiocesi, courtesy of).

Fig. 18 - *Vase with handles*, Venice, diamond-point engraved, gilt and cold painted, last quarter of the 16th -early 17th century. Former Marco Mantova Benavides (1489-1582) collection, Padua, Museo di Scienze Archeologiche e d'Arte, inv. no. MB118 (photo: Padua, Museo di Scienze Archeologiche e d'Arte, courtesy of).

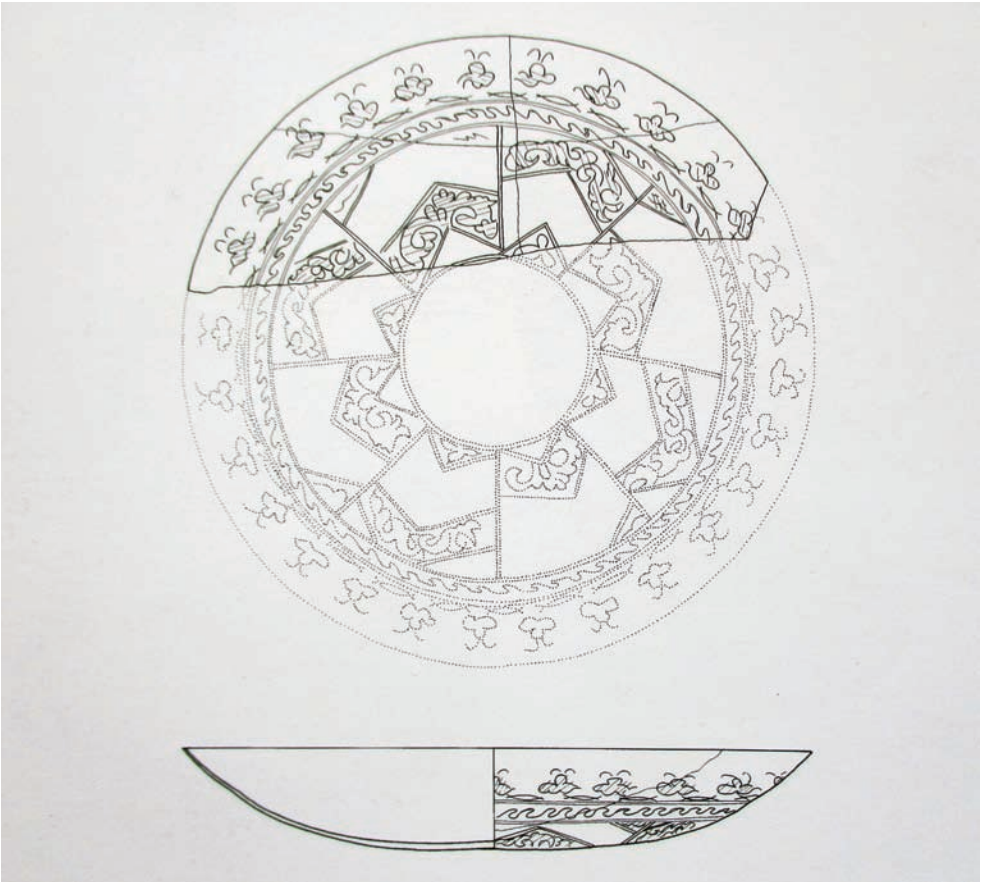

Fig. 19 - *Fragment of a goblet*, diamond- point engraved, Venice, last quarter of 16th-early 17th century, archaeological find from Udine, Palazzo Ottelio, Soprintendenza Archeologia, Belle Arti e Paesaggio del Friuli (courtesy of).

Fig. 20 - *Goblet*, diamond- point engraved, Venice, late 17th century-early 18th century. Milan, Museo Poldi Pezzoli, inv. no. 1378 (courtesy of).

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MEDIEVAL ITALIAN GILDED GLASSES DECORATED WITH CUT AND ENGRAVED GOLD LEAF

Introduction

Gold in the form of very thin beaten leaves has been used in the glass objects decoration since the 3rd century BC. The technique of decorating glasses with gilded scenes made with designs incised through gold leaf applied to the glass, whether protected or not by a second layer of glass was diffused in northern Italy mostly in the 3rd-4th c. AD. The gold leaf applied to the glass surface was cut to form the subject and some details of the scenes could be enhanced with cold painted layers[1].

Some studies have been carried out on the techniques used to fix gold onto glass, combining the examination of preserved objects with the information provided by historical technical texts and the reproduction of ancient techniques[2]. Nevertheless, the techniques have not been fully understood and a discouraged author concluded: «the fact remains that the ancient craftsmen devised a method and applied it successfully!»[3].

This technique was revived in Italy during the 13th-14th c. when a large amount of gilded glass plates was used to decorate goldsmith works (for instance small devotional altarpieces) and stone works[4]. Some scholars suggest that the Medieval technique was developed in Giotto's environment in Umbria starting from the Assisi workshops, Tuscany and in Northern Italy from Verona to Padua and from Emilia to Lombardy[5].

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[1] Painter 1987.
[2] *E.g.* Charleston 1972; Gudenrath 2006; Gueit *et al.*, 2010; Coutinho 2016.
[3] Painter 1987.
[4] Pettenati 1986.
[5] Pettenati 2000.

The first examples appeared in the 13th c.: pulpits of Nicola Pisano in the baptistery of the cathedral of Pisa and in the cathedral of Siena, of Guglielmo da Pisa in the church of S. Giovanni Fuorcivitas in Pistoia and of Giovanni Pisano in the church of S. Andrea in Pistoia. Gilded glass pieces are found also in the ark of S. Domenico in Bologna and on the tomb of S. Clemente IV in Viterbo[6]. Small gilded glass pieces are found in painted works on wood to decorate the halos, like in the florentine crosses of S. Maria Novella and of Ognissanti, painted by Giotto between 1290 and 1315[7].

Aim of this paper is the study of a set of gilded glass artefacts manufactured in Italy during the 14th c. to identify the type of glass and gold leaf used. The results are compared with the recipes of Medieval treatises to bring new information on the materials and techniques of the gilding process.

Analytical results

Investigated samples

Five glass pieces were sampled from different parts of the hexagonal pulpit in the cathedral of Siena (Fig. 1) and one green glass from the exagonal pulpit in the church of S. Andrea, in Pistoia (Fig. 2).

Giotto's Crucifix in S. Maria Novella (Florence) was made around 1300 and was restored by the Opificio Pietre Dure in Florence (1992-2000). During the restoration it was discovered that the decorative motifs of the halo in relief were made of alternating circular and rectangular (of about 15x35 mm) gilded glass pieces. A small fragment of glass was sampled and analysed (Fig. 3).

A number of glass objects, decorated with cut and engraved gold leaf and painted in the areas free of the gold leaf are preserved in the Museo Diocesano in Recanati (Macerata). These artworks date back to the first half of the 14th c. and were probably manufactured in

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[6] Bertelli 1970.

[7] Ciatti and Seidel 2001; Ciatti 2010.

Umbria by some artisans who worked at the decoration of the San Francesco Basilica in Assisi. Before submitting these items to restoration at the Istituto Centrale per il Restauro in Rome, archaeometric analyses were performed on a gilded glass disc (Fig. 4)[8].

Results

Glass - The thickness measured on two glass pieces (one from Recanati and one from Siena) was found in the range of 2.5 - 3 mm. Nevertheless, thicknesses up to 6-7 mm were measured on similar glass objects by other authors[9].

The quantitative chemical composition of glass was performed by means of SEM-EDS technique on small fragments embedded in resin and polished. Details of the technique are reported elsewere[10]. The quantitative glass chemical compositions in wt% of the oxides are reported in Tab. 1. The samples are made of a soda-lime-silica type glass melted from a batch of a silica source and soda plant ash. Only the gilded glass sample of Giotto's cross is a potash-lime-silica type made by melting a batch of a silica source and continental plant ash, following the recipes of the northern glasshouses[11]. In some cases (samples indicated with VE in Tab. 1) the glass composition shows a clear similarity with Venetian *vitrum blanchum*, a soda-lime-silica glass very well decolorized made with a pure silica source like Ticino pebbles and soda plant ash imported from Levant[12]. Instead, the composition of sample C37 from Siena and of sample PP1 from Pistoia show strong similarities with Tuscan glass[13]. It is interesting to observe that a similar variety of compositions was found by analysing glass pieces from stained glass windows of the 14th c. in Orvieto and Assisi cathedrals. Also in these stained windows, Venetian glass was used together with glass sheet imported from northern Europe and glass of local production[14].

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[8] Radeglia *et al*. 2006.
[9] Bertelli 1970: 70-78.
[10] Verità *et al.* 1994.
[11] Santopadre, Vallotto and Verità 2003.
[12] Verità 2021.
[13] Cagno *et al*. 2010.
[14] Verità *et al*. 2010.

Gold leaf - 1-2 micrometers thick beaten gold leaves (similar to the thickness of leaves used for wood decoration) were used; in mosaic glass tesserae the thickness is lower, of the order of 0.5-1 micrometer. The analysis of the leaves of two samples (one from Recanati and one from Siena) showed the use of pure gold (Au 100%, no silver and/or copper were detected). Cennini states in two recipes (cap. 139 and 189) that the gold leaf was obtained by beating duchy gold coins from Venice (also in use in Padua) and not the Florentine florin[15].

Gilding techniques - An open question is how the gold leaf was fixed onto the glass and if an indelibly fixing process was performed in order to protect the artwork from deterioration, or if other techniques were applied. For instance, in the Recanati artworks the gold leaves are covered by a foil of metallic tin, apparently applied originally to protect the gold leaf and the painted work[16]. On the other hand several treatises dating from the 15th to the 17th c., highlight the need for the use of a mordant made of a glutinous medium with a variety of compounds, most of them containing lead or borax, and to fire the artworks to fix the gold leaves on glass[17].

In the impossibility of carrying out invasive analytical investigations, recipes reported in Medieval and Renaissance treatises dealing with glass gilding and painting techniques were studied. The most famous is *Il libro dell'arte o trattato della pittura* of Cennino Cennini[18], probably written between 1398 and 1401 when the author lived in Padua[19]. The gilding technique is described in the first part of the chapter 172 (*Come si lavora in opera musaica per adornamento di reliquie*) a very detailed recipe, summarised as follows. The recipe prescribes to use a flat colourless glass; the glass surface must be carefully cleaned. The gold leaf is then cut of the required sizes and applied on the glass sheet using a cold binder (egg white): after few days the binder is completely dry. The decoration is created by scraping away the gold leaf with a sharp tool (*sgraffito* technique) and the areas free of gold are painted with blue, black,

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[15] Frezzato 2003: 227 nt. 152.
[16] Radeglia *et al.* 2006.
[17] Coutinho *et al.* 2016.
[18] Frezzato 2003.
[19] Frezzato 2003: 15-19.

green and red pigments suspended in an oil medium. This technique is defined as unfired gilding technique (or cold-gilding). Nevertheless, a cold method can result in a lack of permanency of the gold which can be readily rubbed off.

Some recipes require the gilded glass to be covered with a protective layer. The procedure to make gold glass mosaic tesserae is detailed in several recipes. First, large bubbles of transparent, colorless glass were blown so as to obtain a thickness of few tenths of a mm. The gold foil was cold fixed with a mixture of egg white and water on a piece of thin glass cut from the bubble and left to dry. Then the gold leaf was covered with molten glass, the slab is pressed and annealed. Clearly, this is a procedure that cannot be applied to our works of art without damaging the artistic work.

Another important source of information is Chapter 13 in the second book of Teophilus, *L'arte vetraria* (The art of the worker in glass)[20] where the author tells that

> the Byzantine also make drinking goblets [...] embellishing them with gold in this way. They take gold leaf [...] and from it shape representations of man, birds, animals, foliage. Then they apply these on goblet with water [...]. This gold leaf must be rather thick. Than they take glass that is very clear, like crystal, [...] which melts soon after it feels the heat of the fire. They grind it carefully […] and apply it very thinly all over the gold leaf with a brush. When it is dry, they put the goblet in the kiln […].

In this way the gold leaf, sandwhiched between layers of glass, will never come off. Theofilus describes the preparation of mosaic gold tesserae with a similar procedure (Chapter 15) «coating the gold leaf with the very clear ground glass, as above». In this case Theophilus description is questionable: the process was made by applying thin sheets of blown glass (0.2-0.5 mm thick) on the gold leaf.

Other recipes are found in the recipe book known as the Three Treatises (tre *Trattatelli*) of the State Archive in Florence, collections of

[20] Teophilus 1979.

recipes of different origins and not only for glass[21]. Several aspects of the glass gilding technique are considered. The III-29 recipe of the third treatise refers to a cold painting technique («*A dipingere in vetro sanza fuoco e sanza cuocere*»). A mixture of very thin powders of common glass cullet, minium and pigments is prepared and mixed with a binder made with egg yolk and linseed oil. The painting will adhere firmly and permanently to the glass support without fire. In III-99 recipe a cold mordant to fix firmly gold leaves on glass is prepared by mixing cooked linseed oil, with ochre, liquid varnish, minium, verdigris and bone ash. The mordant is then applied on the glass surface and the gold leaves are applied on the liquid layer: it will be sufficient to let dry the mordant to have a durable adhesion.

III-28 recipe for gilding or silvering glass («*A dorare o arientare vetri*») is very interesting, despite a text imprecise and incomplete. In the first part, quite similar to the first part of chapter 172 of Cennini, the glass surface is washed with a beech ash lye, rinsed and dried. Then a binder made with water and white egg is applied onto the glass surface, covered with the gold leaves and let to dry. In the second part, a thin powder of a low melting glass for enamels («*di quello vetro che gli orafi adoperano*») is applied on the gold leaf and the art work is fired at relatively low temperature in the reverberatory furnace («*da'gli tenero fuoco e ch'egli imbianchi*»). The powder will melt, forming a shining, protective glass layer.

Clearly, this process could be applied only after the gold leaf was incised and before painting. This procedure is not reported by Cennino, but it is quite similar to the one described in chapter 13 of Teophilus. How two distinct recipes of Teophilus and Cennini merged into the imprecise and incomplete recipe III-28 of the Trattatelli, it remains a fascinating mystery.

III-78 recipe of the third *trattatello* («*A mettere oro in sul vetro*») proposes a different system from the previous ones. A thin layer of a mixture (in water) of borax (hydrated sodium borate, $Na_2B_4O_7 \cdot 10 H_2O$), arabic gum and glass cullet grounded into a thin powder is applied on the glass surface. The gold leaf is than placed on and the mixture is left to dry. Then the artwork is exposed to the fire for 12

[21] Milanesi [1864] 1968.

hours at a temperature sufficient to melt the intermediate glass layer formed by the reaction of borax and glass powder (presumably around 500-600 °C), fixing firmly the gold leaf to the glass. This method can be applied to the cut and engraved gold leaf; only after that the areas free of gold leaf can be painted.

Painted areas - The analyses of the Recanati objects supply useful data for the identification of the materials used. The blue (azurite pigment) background of the scenes was applied in a 100-200 micrometers thick layer. Other areas were painted with layers of 20-30 micrometers of red (cinnabar, HgS), green (Cu-resinate) and black (vegetal carbon black). The pigments were applied as a suspension in oil medium, containing also lead probably for drying purposes.

Conclusions

Through the combination of comprehensive research on historical gilding recipes with material analysis, it was possible to investigate the techniques used in some middle age gilded glasses, and to infer a number of conclusions relating to its manufacturing origin.

The analyses of the glass pieces identified two soda-lime-silica compositions compatible respectively with the Venetian and Tuscan glass production, and a potash-lime-silica glass (cross of Giotto) traditionally in use in Northern Europe, but also commonly found in Italian stained glass windows of the period.

The chemical composition of the gold leaf was identified in three samples as Au 100% and thicknesses of the leaves in the range of 1-2 micrometers was measured confirming the use of relatively thick leaves as suggested by Cennini.

The most intriguing aspect that will require further investigations is the understanding of the technique (or techniques) used to ensure the adhesion of the gold leaves to the glass piece. The application of a thin tin foil was observed in the Recanati artworks. And at least four techniques were suggested by the recipes of Medieval treatises: from a simple cold application with an organic binder, to techniques requiring the firing at around 500-600°C of the gilded glass piece, after the application of

a low melting glass between the gold leaf and the glass support, or of a thin glass layer over the gold leaf.

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REFERENCES

Bertelli, Carlo. 1970. Vetri italiani a fondo d'oro del secolo XIII. *Journal of Glass Studies* 12: 70-78.

Cagno, Simone, Marja Mendera, Teresa Jeffries and Koen Janssens. 2010. Raw materials for medieval to post-medieval Tuscan glassmaking: new insight from LA–ICP–MS analyses. *Journal of Archaeological Science* 37: 3030-3036.

Charleston, Robert J. 1972. Enamelling and gilding on glass. *The Glass Circle* 1: 18-32.

Ciatti, Marco and Max Seidel, eds. 2001. *Giotto: la Croce di Santa Maria Novella*. Florence: Edifir.

Ciatti, Marco, ed. 2010. *L'officina di Giotto: il restauro della Croce di Ognissanti*. Florence: Edifir.

Coutinho, Inês, Teresa Medici, Rui J. Silva, Bernard Gratuze, Helena Catarino and Augusta Lima. 2016. Gilding on glass: New evidence from a 17th century flask found in Portugal. *Journal of Archaeological Science: Reports* 6: 293-301.

Frezzato, Fabio, ed. 2003. *Cennino Cennini. Il libro dell'arte*. Vicenza: Neri Pozza.

Gudenrath, William. 2006. Enamelled glass vessels, 1425 B.C.E., 1800: the decorating process. *Journal of Glass Studies* 48: 23-60.

Gueit, Eléonore, Evelyne Darque-Ceretti and Marc Aucouturier. 2010. Glass gilding process in medieval Syria and Egypt (13th-14th century), *Journal of Archaeological Science* 37: 1742-1752.

Milanesi, Gaetano, ed. [1864] 1968. *Dell'arte del vetro per musaico. Tre trattatelli dei secoli XIV e XV*. Bologna: Gaetano Romagnoli editore. Anastatic reprint, Bologna: Editrice Forni.

Painter, Kenneth. 1987. Group K: Gold-glasses, in *Glass of the Caesars*, edited by D.B. Harden. Milan: Olivetti: 262-268.

Pettenati, Silvana, ed. 1986. *Vetri dorati e graffiti dal XIV al XVI secolo*. Florence: S.P.E.S. Studio per Edizioni Scelte.

Pettenati, Silvana, 2000. Twenty years of studies on gilded glass and painted glass: An account and some innovations. In *Annales du 14e Congrès de l'AIHV, Italia-Venezia-Milano 1998*. Lochem: AIHV: 313-319.

Radeglia, Daila, Elisabeth Huber, Domenico Artioli, Paola Santopadre, Giancarlo Sidoti and Marco Verità. 2006. Il restauro dei vetri dorati e graffiti del Museo Diocesano di Recanati. *Bollettino ICR* 13: 73-91.

Santopadre, Paola, Marta Vallotto and Marco Verità. 2003. Il vetro di Giotto. *Rivista della Stazione Sperimentale del Vetro* 32, 2: 25-33.

Teophilus. 1979. *On divers arts (De Diversis Artibus)*, edited by J.G. Hawthorne and C. Smith. New York: Dover Publications Inc.

Verità, Marco, Ruggero Basso, Mark T. Wypyski and Robert J. Koestler. 1994. X-ray microanalysis of ancient glassy materials: a comparative study of wavelength dispersive and energy dispersive techniques. *Archaeometry* 36: 241-251.

Verità, Marco, Paola Santopadre and Alberto Conventi. 2010. Studio dei materiali costitutivi di vetrate medievali del complesso basilicale di San Francesco in Assisi. *Bollettino ICR* 20-21: 17-45.

Verità, Marco. 2021. Venetian Glass. In *Encyclopedia of Glass Science, Technology, History, and Culture*, 1st Edition, edited by P. Richet. Westerville (OH), Hoboken (NJ): American Ceramic Society, Wiley: 1327-1340.

Tab. 1 - *Quantitative chemical composition in wt% of the oxides of the glass samples. The samples C2, C3 and PS19 from Siena show the same composition. Glass type: VE, glass composition compatible with Venetian glass dataset; TU, glass composition compatible with Tuscan glass; K, potash-lime-silica glass. (*) The glass PP1 is voluntary coloured in dark green by the addition of copper (CuO 1.7%) and iron. (**) Small amounts of lead (PbO 1.0%) and barium (BaO 0.3%) were detected in the sample SMN-1.*

Sample	**Prov.**	**Colour**	**Glass Type**	**SiO_2**	**Al_2O_3**	**Na_2O**	**K_2O**	**CaO**	**MgO**	**P_2O_5**	**SO_3**	**Cl**	**TiO_2**	**MnO**	**Fe_2O_3**
C1	Siena-Pulpit	natural	VE	68.7	1.80	14.5	2.50	7.70	2.30	0.30	0.06	1.00	0.20	0.20	0.75
C2-C3-PS19	Siena-Pulpit	natural	VE	70.0	0.70	13.7	2.30	8.18	2.90	0.22	0.20	0.88	0.05	0.50	0.40
C37	Siena-Pulpit	natural	TU	66.9	3.70	13.7	5.20	5.80	1.70	0.60		1.20	0.10	0.70	0.40
PP1	Pistoia-Pulpit	dark green (*)	TU	66.2	2.30	15.3	2.00	6.00	1.80	0.30	0.20	1.70	0.20	0.90	1.40
REC-1	Recanati	colourless	VE	68.0	0.68	13.4	2.50	9.85	3.50	0.28	0.26	0.83	0.10	0.26	0.35
SMN-1	Florence Cross	natural (**)	K	47.0	2.45	0.30	24.5	17.2	3.80	1.60	0.22	0.02	0.11	0.70	0.80

Fig. 1 - *Gilded glass from the hexagonal pulpit of Nicola Pisano*. Siena, Cathedral.
Fig. 2 - *Gilded glass pieces from the exagonal pulpit of Giovanni Pisano*. Pistoia, Church of Saint Andrea.

Fig. 3 - *Cross of Giotto:* gilded glass pieces of the halo of Christ. Florence, Church of Santa Maria Novella.

Fig. 4 - *Tondo Natività,* before restoration (REC-1). Recanati, Museo Diocesano.

Rainald Franz

DIAMOND-POINT ENGRAVED AND COLD PAINTED GLASS DECORATION IN AUSTRIAN GLASS FROM THE 16TH TO THE 17TH CENTURY: FROM HALL TO AMBRAS TO VIENNA

The glass decoration technique of diamond-point engraving and the use of cold painting have a long tradition in Austrian artistic glass, dating back to the Renaissance.

The technique of decorating glass with the point of a diamond and cold painting are known since Roman times. The decoration techniques were also taken up in Venice. In 1549, the glassmaker Vincenzo dal Gallo was granted a privilege by the Venetian Senate to execute diamond decoration, which he started already in 1534. The most important period with outstanding masters in the use of cold painting on Venetian glass objects can be dated between the first half of the 16th century and the early 17th century, as to enamel painting already started in the 13th century in Murano, documented on the so called Syrian-Franconian beakers from the second half of the 13th century[1]. Venetian glass, imported for the noble courts and the Emperors, made the techniques of enamel painting, cold painting and diamond engraving familiar in the North. In the late 17th century diamond-Point Engraving served as an alternative for Northern cutting techniques[2]. Cold painting was used to copy pictures and graphics on glass. Patterns from ornamental prints were taken over for diamond-point engraving and cold painting, in order to follow the taste.

The earliest examples of Venetian style diamond cut decorated

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[1] Barovier Mentasti and Tonini 2019: 14.

[2] Barovier Mentasti and Tonini 2019: 19.

objects in the MAK collection come from Ambras Castle[3]. Production of luxury glass in Venetian style in the Austrian provinces of the Sacrum Imperium Romanum reached its pinnacle during the lifetime of Archduke Ferdinand II. (1529-1595), the second son of Emperor Ferdinand I. (1503-1564), who reigned in the Tyrol from 1567 on. Ferdinand practiced glass blowing himself and the Imperial envoy in Venice of the time, Veit von Dornsberg, was often contacted by Ferdinand to acquire luxurious drinking glasses, made according to the Archdukes designs and specifications[4]. After he had taken over the reign in the Tyrol in 1564, upon his father´s death, he focused his interest on Venetian glass making there. As a commissioning patron, he also surrounded himself with European artists and was instrumental in promoting the Renaissance in central Europe. At Ambras Castle the most striking legacies bequeathed by the cultured humanist and sovereign prince include specifically the *chamber of art and curiosities*[5].

Another important source for diamond-point engraving and the use of cold painting on Venetian glass and glass made according to Venetian style in the MAK is the Albert Figdor Collection. The collection, brought together by the banker in Vienna between 1869 and 1927 was the largest and most important private collection of its time[6]. At the core of Figdor's passion for collecting were objects of all sorts which, whatever their differences, had in common artistic and historic-cultural values. He also collected Venetian glass, which came to the museum from the auction of his collection held after his death in 1927.

After short-lived glass houses for Venetian glass with glass makers coming from the Veneto, had been established in Vienna and Ljubljana/Laibach in the first half of the 16th century, in 1534 the Augsburg Patrician and entrepreneur Wolfgang Vitl had founded the first glass factory for Venetian style glass in Hall in the Tyrol, leading it from 1534-1540[7]. Archduke Ferdinand had ordered luxury glass in Venetian style for him already from Prague in his time there. Upon his

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[3] Page 2004: 20-83.
[4] Page 2004: 24-26.
[5] Haag and Sandbichler 2017.
[6] Friedländer and Falke 1930.
[7] Page 2004: 29-30. Weirather 2022.

settlement in Innsbruck in 1567, he visited the Hall glassworks and did not approve of the quality of the current work there. Therefore, for his personal use, Ferdinand referred to Venetian import glass and products of the Innsbruck Imperial glassworks, which he had established in the Pheasants garden there in 1570. However, Augsburg and Nuremberg patricians bought glass in Venetian style from Hall and supported the developments there. Affluent customers north of the Alps in the German speaking countries depended on the services of the large German Merchant houses from Nuremberg and Augsburg. These houses like the Fuggers and Welser merchant families, were represented in the Fondaco dei Tedeschi, the German trade center in Venice, established in 1222-1225[8]. They alone negotiated the trade from Venice through Tyrol for centuries. In turn one of the goods imported from Germany that was used for the Murano glass industry and badly needed, was zaffera, a mineral mixture, produced from cobalt ore, exclusively unearthed in the mines of Leogang, used as blue colorant for glass. A good example is the Armorial Table Setting for the Fugger family from Hall, dated around 1570-1580, today in the Fugger Museum, Babenhausen[9]. The Fugger family dominated the luxury trade between Venice and Germany, being one of the leading families to establish the Fondaco Dei Tedeschi.

Venetian glassmakers, appointed by their government, worked in Innsbruck according to the personal wishes of Archduke Ferdinand. We know the names of Salvatore and Sebastiano Savonetti and Andrea Tudin from the Leon Bianco glassworks in Venice, who returned to Venice after fulfilling their commissions in Innsbruck, only to return once more in 1578[10]. Production continued until 1590. The Hall glassworks were taken over by Sebastian (1542) and later Chrysostomus Höchstetter, Ferdinand's advisers and rich patricians, who led them until Chrysostomus death in 1599. Then his son Hieronymus took over. A follower of Hieronymus Hochstötter, Gilg Schreier, founded his own glasshouse in Kramsach, near Brixlegg, in 1627, which existed well into the 20th century[11]. The diamond point decoration is found on many pieces from Hall, where it was familiar as «Zugwerch». Cold painting

[8] Page 2004: 25.

[9] Rückert 1982: 87-88, no. 149, fig. 39, color pl. VI. Page 2004: 80-81.

[10] Die Hofglashütte in Innsbruck, in: Weirather 2022: 26.

[11] Weirather 2022: 18-19.

was used to fill cartouches surrounded by diamond point decoration ornament.

Venetian glassmakers brought the techniques of diamond-point decoration and cold painting in the North, masters in Bohemia are known already in the late 16th century, taking their training in the glassworks there in both decoration techniques. With the decay of Venetian Glass Industry and the ascent of Bohemian export glass, Venetian style glass with some Venetian techniques was scarse, only to be taken up again in Austria in the 19th century[12]. In the centers of the North Bohemian Glass Industry, in Nový Bor/Haida and Kamenický Šenov/Steinschönau, only refineries and no glassworks existed. Raw glass was bought and decorated. Biedermeier glass was meant to be thick and heavy, very much the opposite of Venetian glass. Glasses in Venetian style could be produced easily, allowing high numbers and making the glass competitive for exports, even to Venice, where glass industry on the island of Murano had come to a halt before the arrival of Antonio Salviati. After the Venetian decoration techniques of diamond-point engraving and the use of cold painting had been taken up again in Bohemia in the 1840ies, it was revived once more by the Modernist glass designers, working for commissioning retailers like J. & L. Lobmeyr and E. Bakalowits Söhne in Vienna around 1900. Teachers and pupils of the Wiener Kunstgewerbeschule like Michael Powolny, Hans Bolek, Emanuel Josef Margold and young architects like Josef Hoffmann and Leopold Bauer, deliberately went to work with the glassmakers in the glassworks, experimenting with historic decoration techniques. The traditional diamond-point engraving and the use of enamel painting technique from Venice, invented in the 16th century, thus lives on as an expression of glass mastership in Austrian glass design[13].

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[12] Pazaurek 1976: 270-272.

[13] Franz 2016: 219.

REFERENCES

Barovier Mentasti, Rosa and Cristina Tonini. 2019. Venetian Reinaissance Vessels: Mould Decorations and Applied Bosses. In *Study Days on Venetian Glass. Moulding and Applying Hot Glass Through the Centuries*, edited by R. Barovier Mentasti and C. Tonini. Venice: Istituto Veneto di Scienze, Lettere ed Arti (*Atti dell'IVSLA* 177/2, 2018-2019, Classe di scienze fisiche, matematiche e naturali).

Franz, Rainald, ed. 2016. *The Glass of the Architects. Vienna 1900-1937*, Milan: Skira.

Friedländer, Max and Otto von Falke, 1930. *Die Sammlung Dr. Albert Figdor, Wien*. Wien, Berlin: Artaria & Co. Glückselig, Paul Cassirer Verlag.

Haag, Sabine and Veronika Sandbichler. 2017. *Ferdinand II.: 450 Jahre Tiroler Landesfürst*. Innsbruck: Haymon.

Page, Jutta-Annette. 2004. Venetian Glass in Austria. In *Beyond Venice. Glass in Venetian Style, 1500-1750*. New York: Corning Museum of Glass.

Pazaurek, Gustav E. 1976. *Gläser der Empire- und Biedermeierzeit*, Braunschweig: Klinkhardt & Biermann Verlag.

Rückert, Rainer. 1982. *Die Glassammlung des Bayerischen Nationalmuseums, München*. Vol. 1. München: Hirmer.

Weirather, Christine. 2022. *Fragil. Die Glashütte Hall 1534-1635*. Hall: Stadtmuseum Hall in Tirol.

Fig. 1a, b - *Plate*, blow molding, reverse painting on glass, cold painting, gold decoration, anonymus, Venice, third quarter of the 16th century. Vienna, MAK/ Museum of Applied Arts, Inv. F 178.

Fig. 2 - *Goblet*, translucent glass, diamnod point engraving, Innsbruck, after 1570. Vienna, MAK/ Museum of Applied Arts, Inv. Gl 2198.

Fig. 3 - *Bottle*, in the form of a calabash, green Glass, Diamond point engraving, Hall / The Tirol, around 1570. Vienna, MAK/ Museum of Applied Arts, Inv. Gl 1310.

Eva Lenhart

DIAMOND-POINT ENGRAVING AND LAMPWORKING:
A COVERED GOBLET WITH CRUCIFIXION GROUP FROM THE GLASS COLLECTION OF ARCHDUKE FERDINAND II OF TYROL

The *Kunstkammer* of Archduke Ferdinand II of Tyrol at Ambras Castle near Innsbruck was one of the most important collections of the Renaissance. It was housed in a purpose-built building complex, the first museum building north of the Alps. The collection was stored in specially made wooden cabinets placed back to back in the middle of the room. One of these cabinets contained artworks made of glass. The showpieces included lampworked glass objects, namely, glass ornaments, several glass pictures, a chessboard, a glass mountain, a covered beaker and a covered goblet with a crucifixion group. All the objects are now in the possession of the Kunsthistorisches Museum in Vienna. They are on display at two locations: in the Kunstkammer Vienna and in the Kunst- und Wunderkammer at Ambras Castle. History and technique of the collection were researched as part of the author's dissertation, which was completed in 2016 at the Institute of Conservation at the University of Applied Arts Vienna[1].

The covered goblet with crucifixion group[2] is one of the most unusual pieces in the collection. While all the other lampworked glass items are already mentioned in the inventory of Archduke Ferdinand II's estate[3], the goblet is only clearly identifiable in the inventory of the *Kunstkammer* of 1621[4]. It consists of a foot with a lion-mask stem and a cylindrical cup. The latter is decorated with diamond-point engraving. The central motif on the front and back is a double-headed eagle framed

[1] Putzgruber 2016.
[2] Kunsthistorisches Museum Vienna, Kunstkammer, KK_3314.
[3] Inventory 1596: 484r-485r.
[4] Inventory 1621: 225r.

by a cartouche and foliage; inside there is a colourful lampworked crucifixion group. The cover also has decorations of coloured glass (Figs. 1-2). The design of the goblet goes back to reliquaries, which were originally silvergilt and fitted with a rock crystal cylinder[5]. In the course of time, the relic became less and less important and the reliquaries developed into showpieces[6]. The covered goblet illustrates the end point of this development: instead of the relic, the ostentatious crucifixion group takes its place.

In Venice, reliquaries were made entirely of glass[7]. The so-called *tabernacoli* not only contained relics, but were also used to store sweets, herbs and other small items[8]. The covered goblet combines all the qualities of Venetian glass. Venice produced *cristallo*, a glass comparable to rock crystal in its transparency and homogeneity[9]. Coloured glass was also characteristic of Venetian glass production. The glass of the covered goblet was blown in front of the furnace and then decorated with diamond-point engraving. This involves scratching the surface of the glass with a diamond point[10]. The crucifixion group and the decorations of the cover were made by lampworking: glass tubes and rods are processed in front of the flame of an oil lamp[11]. All three techniques were practised in Venice during the Renaissance. In most cases, specialists were entrusted with their execution in the glassworks. The increased emigration of glassmakers eventually led to the establishment of Venetian glassworks throughout Europe.

Archduke Ferdinand II had a preference for Venetian glass. He had designs made by his court artists and ordered glass for his collection via the imperial envoy in Venice[12]. However, he also bought glass from the glassworks in Hall, where Venetian glassmakers were also active, at least at the beginning[13]. Glass engravers also seem to have worked

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[5] Braun 1940: 100-103.
[6] Laube 2011: 180-196.
[7] Barovier Mentasti and Tonini 2014: 17-19.
[8] Zecchin 2019: 198.
[9] Verità 1985: 17.
[10] Von Strasser and Baumgärtner 2002: 13.
[11] Lierke 1990: 363.
[12] Egg 1962: 43-45.
[13] Zecchin 2019: 206-207.

there, decorating glasses with diamond-point engraving[14]. In addition, he founded the Innsbruck court glassworks as early as 1570, which was in operation until 1591. Venetian glassmakers were also active there. Salvatore and Sebastiano Savonetti set up a professional glassworks in Innsbruck[15]. They were also adept at the technique of diamond-point engraving[16]. A unique feature of the Innsbruck court glassworks is lampworking, first traced to Venice in 1574[17]. Only a few years later, the Archduke instructed the imperial envoy in Venice to assign to Innsbruck a glassmaker who could make gilded glass chains[18]. Gilt chains are also part of the lampworked glass collection.

The attribution of the covered goblet is hindered by its present appearance, which is marked by losses. After the death of Archduke Ferdinand II, the collections at Ambras Castle were largely neglected[19]. The later inventories document damage to numerous glass objects, including the covered goblet with crucifixion group[20]. The lampworked decorations of the cover were particularly affected. The holdings at Ambras Castle subsequently became part of the collections of the imperial house and were transferred from Tyrol to Vienna[21]. The covered goblet followed in 1880 together with other glasses from the collection[22]. In order to preserve the precious glasses, the first restorations took place shortly afterwards[23]. The covered goblet also underwent restoration work between 1910 and 1926[24]. These restorations involved changes to the decoration of the cover which are verifiable by comparison with descriptions in the historical inventories.

The covered goblet is now back in its original place of installation in Ambras Castle. Although the history of the goblet can be largely traced,

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[14] Awad-Konrad 2012: 112-114, cat. no. 200-209, tab. 33.
[15] Putzgruber 2016: 152-163.
[16] Zecchin 2019: 207-208.
[17] Zecchin 2010: 51-52.
[18] Archduke Ferdinand II of Tyrol 1578.
[19] Lhotsky 1941-1945a: 288-289.
[20] Inventory 1663: 13r-13v; Primisser and Primisser 1788: 222-223.
[21] Lhotsky 1941-1945b: 511-514.
[22] Ilg 1880a: 284r-284v, cat. no. 119.
[23] Ilg 1880b: 316v-317r.
[24] Werkstättebuch 1908-1959: 19, 59, 68.

the available research shows the complexity of identifying the attribution of Renaissance glasses. The collection of Archduke Ferdinand II included glass from Venice as well as glass from Hall and Innsbruck, all of which produced glass in Venetian manner. Moreover, it is very likely there was an artistic and technological exchange between the two Tyrolean glassworks. Research into diamond-point engraving is also only just beginning. Only a few diamond-point engraved glasses could be clearly assigned to a glass centre so far. The same is true of lampworking, the reappraisal of which is slowly moving into the focus of glass research. The covered goblet with crucifixion group also shows how essential an examination of restoration history can be for the reprocessing of glass objects. This article is intended to serve as a basis for further research on this object, which can be described as a masterpiece of Renaissance glass art.

REFERENCES

Archduke Ferdinand II of Tyrol. 1578. *Letter to the imperial envoy in Venice, Veit von Dornberg*, on 11th of May. Tyrolean State Archive. Kunstsachen. III/46. Series III.

Awad-Konrad, Anna-Elisabeth. 2012. *Der Befund 137 aus der Glashütte Hall in Tirol, eine Bruchgrube des 16./17. Jahrhunderts? Auswertung der Glasfunde*. Dipl. thesis. Leopold-Franzens University Innsbruck.

Barovier Mentasti, Rosa and Christina Tonini. 2014. Tools to study glass: inventories, paintings and graphic works of the 16th century. In *Study Days on Venetian glass. Approximately 1600's*, edited by R. Barovier Mentasti and C. Tonini. Venice: Istituto Veneto di Scienze, Lettere ed Arti: 3-41 (*Atti dell'IVSLA* 172/1, 2013-2014, classe di scienze fisiche, matematiche, naturali).

Braun, Joseph. 1940. *Die Reliquiare des christlichen Kultes und ihre Entwicklung*. Freiburg im Breisgau: Herder.

Egg, Erich. 1962. *Die Glashütten zu Hall und Innsbruck im 16. Jahrhundert.* Innsbruck: Universitätsverlag Wagner.

Ilg, Albert. 1880a. *Report to the Oberstkämmereramt on the works of art transported from Ambras castle to Vienna on 16th of July*. Austrian State Archives. Haus- Hof- und Staatsarchiv. Oberstkämmereramt. D88. 2/III. 639.

Ilg, Albert. 1880b. *Report to the Oberstkämmereramt on the restoration work in the Ambras collection on 14th of December*. Austrian State Archives. Haus-, Hof- und Staatsarchiv. Oberstkämmereramt. D88. 2/III. 1146.

Inventory 1596: *Inventory of the estate of Archduke Ferdinand II of Tyrol*. 1596. Kunsthistorisches Museum Vienna. Kunstkammer Vienna. KK_6652.

Inventory 1621: *Inventory of Ambras Castle*. 1621. Kunsthistorisches Museum Vienna. Kunstkammer Vienna. KK_6654.

Inventory 1663: *Inventory of the Kunstkammer at Ambras Castle*. 1663. Austrian National Library. Department of Manuscripts and Rare Books. 7999.

Laube, Stefan. 2011. *Von der Reliquie zum Ding. Heiliger Ort - Wunderkammer - Museum*. Berlin: Akademie Verlag.

Lhotsky, Alphons. 1941-1945a. *Festschrift des Kunsthistorischen Museums zur Feier des fünfzigjährigen Bestandes. Die Geschichte der Sammlungen. Von den Anfängen bis zum Tode Kaiser Karls VI*. 1740. Vol. 2/1. Vienna: Berger.

Lhotsky, Alphons. 1941-1945b. *Festschrift des Kunsthistorischen Museums zur Feier des fünfzigjährigen Bestandes. Die Geschichte der Sammlungen. Von Maria Theresia bis zum Ende der Monarchie*. Vol. 2/2. Vienna: Berger.

Lierke, Rosemarie. 1990. Early history of lampwork - some facts, findings and theories. Part 1. Kunckel's description of lampworking in the "Ars vitraria experimentalis". *Glastechnische Berichte* 63: 363-369.

Primisser, Johann Baptist and Alois Primisser. 1788. *Inventory of Ambras Castle. The Treasury*. Vol. II. Kunsthistorisches Museum Vienna. Kunstkammer Vienna. KK_6661.

Putzgruber, Eva. 2016. *Die vor der Lampe gearbeitete Glassammlung Erzherzog Ferdinands II. von Tirol. Untersuchungen zur Geschichte der Sammlung und zur Entwicklung der Lampenarbeit im 16. Jahrhundert*. PhD. diss. University of Applied Arts Vienna.

Verità, Marco. 1985. L' invenzione del cristallo muranese: una verifica analitica delle fonti storiche. *Rivista Stazione Sperimentale del Vetro* 15: 17-29.

Von Strasser, Rudolf und Sabine Baumgärtner. 2002. *Licht und Farbe.*

Dekoriertes Glas - Renaissance, Barock, Biedermeier. Die Sammlung Rudolf von Strasser. Schriftenreihe des Kunsthistorischen Museums, edited by W. Seipel. Vienna-Milan: Skira editore.

Werkstättebuch Kunstindustrielle Sammlung. 1908-1959. Kunsthistorisches Museum Vienna. Kunstkammer Vienna.

Zecchin, Sandro. 2010. La lavorazione a lume di oggettistica di vetro in Europa fino all'Ottocento. In *L'avventura del vetro: dal Rinascimento al Novecento tra Venezia e mondi lontani*, edited by A. Bova. Milan: Skira editore.

Zecchin, Paolo. 2019. I reliquiari dei vetrai muranesi del ’500. In *Journal of Glass Studies* 61: 197-208.

Fig. 1 - *Covered goblet with crucifixion group*, front side. KK_3314 (© KHM-Museumsverband).

Fig. 2 - *Covered goblet with crucifixion group*, reverse side. KK_3314 (© KHM-Museumsverband).

Alice Fuin

REVERSE COLD-PAINTED RENAISSANCE GLASS:
THE RELATIONSHIP WITH PRINTS AND THE IMPORTANCE OF ICONOGRAPHIC RECOGNITION FOR CHRONOLOGICAL HYPOTHESES. SOME CASE STUDIES FROM THE MURANO GLASS MUSEUM COLLECTION

Introduction

Our present knowledge of the reverse cold-painting technique is quite limited and approximate, and the reasons of that are to be found in several aspects. First of all, in the almost total lack of sources and historical documents to reconstruct the origins and the subsequent developments of this kind of decoration, especially in the context of the Venetian glass production[1]. Second of all, very small is the number of cold-painted objects that have been preserved over the time or that still show legible paintings. These and further elements have led to a great confusion in the use of the specific terminology around this topic, as we can notice in the most of specialized texts, where there is a tendency to equate artistic techniques such as gilding, enamelling and cold-painting on glass. However, it is really important and necessary to distinguish between them.

We know that the gilding on glass is an ancient type of decoration, already present in glass finds of Roman and late Roman times[2]. With many

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[1] A first generic reference to cold-painting appears in the *Libro dell'arte* by Cennino Cennini, where in the chapter CLXXI entitled *Come si lavorano in vetro, finestre*, he writes: «E se t'avvenissi avere a fare figurette piccole, o arme o divise sì piccole, che i vetri non si potesser tagliare; aombrato che hai col predetto colore, tu puoi colorire alcuni vestimenti, e tratteggiare di colore ad olio: e questo non fa luogo ricuocere, né non si vuol fare, perché non faresti niente. Lascialo pur seccare al sole, come a lui piace».

[2] Gilding is documented starting from the 3rd century AD in the glass found in the Roman catacombs, but there are also examples of pre-Christian times (from the 3rd century BC onwards). The surviving objects consist mostly of fragments of cups and plates with convivial mottoes intended to be donated on the occasion of feasts

variations and modifications over the centuries, this technique essentially consists in engraving a gold leaf by tracing with a metal point the outline of the figures and often in applying colored or black painting to highlight the details. The whole process can be concluded with a second layer of glass to ensure the decoration a protection from wear and shock[3]. Very well-known and well documented is then the enamel painting on glass, studied and treated in depth in various articles and texts of glass history, so much so that it is not considered necessary to treat it in this short paper[4]. What finally distinguishes and characterizes the reverse cold-painting from the other techniques and in particular from enamel painting, is that all the steps are carried out totally cold without reannealing and, although it can also include the use of gold leaf, this procedure is distinguished from gilding because the drawing is painted directly on the glass surface without the need to be engraved. The lack of firing, prevents the pictorial film from adhering perfectly to the glass wall, which is why most of the specimens preserved today are extremely damaged and incomplete. While on one hand the front of the glass acts as a protective layer to the painted decoration, on the other, the back remains totally exposed to atmospheric agents (humidity in the first place) and other factors of degradation. Are precisely these differences and peculiarities of cold-painting, that lead us to put forward some hypotheses about the birth and spread of this technique in the Venetian productive environment, especially starting from the second half of the 16th century.

The fact that cold-painting on glass could be performed in the absence of annealing ovens, suggests a domestic production, far from the furnaces and production centers. It cannot be excluded, in fact, that the famous *super vitris* works executed by Elena Lando on behalf of Salvatore Barovier around 1440 and 1446, were not enamel paintings

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and ceremonies, but also glasses with subjects from the classical and religious tradition. Pettenati 1978: XVI.

[3] References to gilding on glass can be found in the third book of Heraclius, called *De coloribus et artibus Romanorum,* but the first real procedural description is provided by Theophilus in the first half of the 12th century AD, in the second book of his treatise *De diversis artibus*.

[4] See Barovier Mentasti and Carboni 2007. See also Barovier Mentasti and Tonini 2020.

or wicker weaves as supposed by Luigi Zecchin and other glass scholars, but actually cold-paintings on glass[5].

Among the causes of the possible exit of painters from the factories and the development of such activity of cold-painting, could be the rigid regulations that followed in Murano from around the second half of the 15th century and that continued throughout the following centuries, limiting the freedom of these craftsmen. We can find a proof of this in the ducal letter dated 6th of March 1469, which presented new provisions on the discipline of the art of glassmaking, including a ban on selling glass of any kind to be decorated and reannealed outside the furnaces that effectively produced it[6]. To be affected by this regulation were many glass painters and masters of furnace, as witnessed in several podestary acts of Murano[7]. It seems clear that it was no longer possible to freely exercise the decorative activity outside the furnaces and it was perhaps the lack of sufficient work and commissions to encourage a part of such decorators to seek their 'clandestine' production inside their own properties.

Since this is a subject on which there are many more questions than answers, it is extremely important to focus our attention on some more scientific elements, such as the iconography of paintings, which has proved to be the most effective tool to try to trace the history of this artistic production and advance hypotheses of dating and provenance. The iconographic analysis consists on the accurate observation of the reverse-painted images and on the comparison with prints and other artistic products, such as majolica, tapestries, metals and much more. In some cases, such comparisons and stylistic similarities, have proved the existence of schools and production centers during the Renaissance and late Renaissance period, not only in Venice, but also in Veneto and other parts of Italy.

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[5] Archivio di Stato di Venezia (ASVe), Podestà di Murano (PDM), b. 19; Zecchin 1989: 219; Zecchin 2020: 108.

[6] Venice, Museo Correr, Ms. IV, 26; Zecchin 1990: 109.

[7] It is the example of Pietro di Giorgio Cortiner, glass painter from Venice, that was denounced the 27th of July 1469 for having his glasses annealed at a furnace close to the one in which he worked; ASVe, PDM, b. 27, fasc. 3.

New dating hypotheses and attributions: some examples

The evidence that a greater and more targeted attention to the iconography of the cold-painted glasses and panels is the most efficient tool to set new hypotheses of dating and provenance, is given by some examples that have been the subject of recent studies[8]. It is the case of two glass panels that are part of the collection of the House-Museum Rodolfo Siviero of Florence, first published by Silvia Ciappi in 2018, in an article called *Quattro lastre per un percorso tra arte rinascimentale, tecnica vetraria e devozione*[9]. Originally dated at the mid-16th century, the two panels show a «Jerome meditating on the Final Judgment» (Fig. 1) and an «Adoration of Shepherds» (Fig. 2). Carefully observing the various details of the images, now we can identify two figurative models: for the Saint Jerome, a print by the Dalmatian engraver Martino Rota (1520-1583) after invention by Michiel Coxcie I, dated between 1548 and 1570[10] and for the Adoration of Shepherds, an engraving by the Master S with the anchor, realized in 1538 by invention of Girolamo De Grandi and printed in Venice by Niccolò Zoppino in 1540[11]. A method of this kind allows to establish a *post quem* for both the painted objects and in the second case to advance a possible Venetian production and decoration.

Other examples come from the collection of the Murano Glass Museum. The first one is a goblet with a figured cup (Figs. 3a-3b), which was believed to represent the «Chariot of Love or Mars» and that was dated around the mid-16th century. However, we can correctly identify the subject in the «Punishment of Love» thanks to the comparison with a print attributed to Aegidius or Justus Sadeler II, datable at the end of the 16th century or at the beginning of the 17th century[12]. Consequently,

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[8] The theme was the subject of a master's degree thesis by the author in 2020 at Ca' Foscari University of Venice.

[9] Ciappi 2018: 40-43, 48-51, no. 2, 4.

[10] Bartsch 1803-1821: 26, vol. XXXIII.

[11] Passavant 1860-1864: 228, vol. VI, no. 29.

[12] De Grazia Bohlin 1979: 306-309, no. 191-2. The print is taken from a series of four allegorical scenes showing the *Four Ages of Love* after paintings by Pauwels Frank (also known as Paolo Fiammingo), which are preserved at the Kunsthistorisches Museum of Vienna.

we can postpone the execution of the cold-painting at least towards the end of the 16th century. The second one, consist of two glass panels, mirror-painted with the same subject (Figs. 4a-4b), where are depicted a tangle of acanthus circles in which are grafted a series of mythological figures. Because of the subject, the panels were originally recorded as the «Labour of Hercules», but looking attentively at the iconography, we can recognize a figurative model in an etching by the Bolognese Odoardo Faietti, part of a collection of drawings by the Venetian Polifilo Zancarli dating around 1625, dedicated by his uncle Tasio Zancarli to the Flemish merchant and print estimator Daniel Nis[13]. The chronological attribution of the print to about 1625 therefore suggests a more precise dating of the two panels around 1630 and 1650, demonstrating that the taste for this kind of gilded and cold-painted glass with mythological themes, continued throughout the centuries. In reference to the origin of the objects, it is possible to believe in a Venetian production, as the original drawing is strongly linked to the cultural environment of Venice. As to why the existence of two identical mirror-painted panels, it is likely that this was due to the executive needs of the painter on glass, who perhaps intended to apply improvements or bring the scene in the same sense of reading of the original drawing. If instead we assume that the two panels were not painted by the same hand, this would more supports the theory that this type of cold-painted glass was produced in series, presumably in specialized workshops.

Case study: the Piersanti Basin from the Murano Glass Museum Collection

The Murano Glass Museum houses one of the most unique reverse cold-painted glass artefacts: a thin crystal basin with a curved edge, entirely figured in its outer surface, so clearly legible from the inside (Figs. 5a-5b). The iconographic layout is structured as follows: on the bottom there is an angel bearing on the left hand a palm branch and on the right hand an olive branch; on its side there is a large heraldic coat of arms. Then follows the classic motif of gold intertwined racemes and a frame with a three-dimensional effect, that can remind us of some

[13] Guilmard 1880: 313.

frescoed and stuccoed ceilings, in which masks and fruit compositions alternate. Four squares with curled elements and medallions with profiles of warriors, not unlike those present in the Burano reliquary of the Murano Glass Museum, connect vertically the bottom of the basin with the upper edge, delimiting four oval-shaped areas painted with mythological scenes. It is specifically four episodes, unfortunately incomplete and in very bad conservative conditions, representing Neptune, nereids, sea centaurs and other fantastic creatures. Studying these scenes in detail, it was possible to determined that the subject corresponds to a «Triumph of Neptune», finding out two different prototypes. The first one is an etching datable to the second half of the 16th century and signed by «Marco Angolo V.F.» [14], which is Marco Angolo or Torbido Dal Moro (1537-1586 ca.), a Veronese painter and engraver son of Battista del Moro. From this etching three scenes of the basin are derived: the first one shows Neptune standing on a seashell/chariot pulled by hippocamps, the second one a nereid on the back of a centaur and the third a crowd of nereids and centaurs, some intent on playing wind musical instruments. The fourth scene, consisting of a female figure with shoulders embraced by a centaur, is instead taken from a print attributed to Angelo (or Angiolo) Falconetto (1507-1567 ca.)[15], painter and engraver from Rovereto but active in Verona and Venice, and linked by historical sources to Battista and Marco Angolo del Moro.

The curious aspect is that somehow the two prints used as a reference to paint the basin are strongly connected with each other, not only on a thematic aspect, but above all because both engravers come from the same cultural environment of Verona. In the case of Marco Angolo del Moro we know he was in Murano in two different occasions: firstly, in 1557 to help his father in the realization of the lost frescoes of the inner courtyard of Palazzo Trevisan, cited by Giorgio Vasari in the life of Michele San Michele[16]; secondly, as reported by Moschini, in 1585,

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[14] *Illustrated Bartsch* 1978: 207, vol. VII.

[15] Bartsch 1803-1821, 107, vol. XX, n. 17 (as "Falcone"); *Illustrated Bartsch* 1978: 305, vol. 44, no. 17. It is an etching with elements made in *puntasecca*, known in two states and perhaps derived from a drawing of Parmigianino.

[16] «[A] Camillo Trivisano dipinse la facciata della sua casa a Murano, et insieme con Marco suo figliuolo dipinse il cortile di dentro d'istorie di chiaro scuro bellissime; et a

when he received a fee for seven canvases with prophets performed for the School of San Giovanni dei Battuti and in 1586, when he obtains a further compensation for three other canvases that he painted for the same school[17].

Another detail to be investigated is the coat of arms depicted on the glass basin bottom, supported by an angel in classical dress. The coat of arms features a rampant lion with a paw resting on three mountains and the snout facing a star that is positioned in front of him. Heraldic coats of arms of this kind were quite common in Italy, reason why tracing to which family was connected has been a very articulated process. We know that this glass vessel was bought in Matelica in the province of Macerata in the Marche by an antique dealer and donated in 1888 to the Italian Ministry of Education and immediately entered in the Murano Glass Museum collection[18]. In fact, is to one of the richest and most influential families of Matelica to which this coat of arms belongs, that of the Piersanti.

The Piersanti family is mentioned in local Matelica's documents since the 17th century. From its amazing palace an important art museum was erected at the beginning of the 20th century, which contains the collections of paintings and furnishings collected by Venanzio Filippo Piersanti, certainly one of the most prestigious members of this family. Venanzio Filippo was born in Matelica in 1688 and he moved to Rome when he was only four years old to follow the ecclesiastical career. In 1718 he was appointed Master of Ceremonies of the Pontifical Chapel in Rome by Pope Clement XI and he also obtained other positions of great prestige within the Roman Catholic Church[19]. He was such a great art estimator and he collected precious artistic furnishings such as paintings, tapestries, furniture and objects of various kinds.

According to Matelica's expert Professor Antonio Trecciola, it is only the name of Venanzio Filippo that connects the emblem concerned, not transmissible to relatives and heirs, that he would have acquired during

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concorrenza di Paulo Veronese dipinse nella medesima casa un camerone»; Vasari 1966-1987, *Life of Michele San Michele*, ed. giuntina: 521, vol. II.

[17] Moschini 1815: 609, vol. II.

[18] Zecchin 2009: 89, figs. 2-3.

[19] Trecciola 2008: 27.

his ecclesiastic career in Rome. This consideration has aroused many questions because, although there are no doubts about the coincidence of the cold-painted coat of arms of the Muranese basin with that of the Piersanti Family, the quality of the glass and of the decorations seem more datable to the late 16th century rather than the mid-18th century when Venanzio Filippo lived. Anyway, we can be certain that this beautiful glass vessel is connected to the Piersanti family as mentioned as «*un catino con suo bocale di cristallo tutto dipinto, e dorato*» in the inventory drawn up in Matelica after the death of Venanzio Filippo on the 8th of April 1763 by the notary Nicola Sereni[20]. So, the inventory of Nicola Sereni also informs us about the presence of a glass ewer (*«con suo bocale»*) combined with the basin, that has been recently recognized by the author in an amazing cold-painted and gilded jug preserved in the collection of the North Bohemian Museum of Liberec (Figs. 6a-6b). The jug of Liberec also shows the same gold intertwined racemes and fruit compositions that delimit sea mythological scenes, but above all, it shows in two sides the same emblem of the Piersanti. Studying the cold-painted images, it was possible to assume that the prototypes might also corresponds to late 16th century prints. In fact, one scene represents a sea thiasos and was probably derived from an engraving attributed to René Boyvin (1525-1598) that represents two designs for ewers after Rosso Fiorentino, dated around 1550 or 1560[21]. The other scene shows instead three putti with dolphins and was probably taken from an engraving from the series of *Antique Cameos and Gems* by Enea Vico (1523-1567), also dated around the mid-16th century[22]. Again, both the iconographical aspect and also the shape of the glass ewer, strongly urge us to hypothesize a dating towards the second half of the 16th century for both the cold-painted glass objects with the Piersanti emblem.

As a result, the possibilities regarding these two glass specimens can be multiple. The first hypothesis is that they were both commissioned

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[20] Sereni, Nicola. *Archivio Domestico Casa Piersanti* (ADCP). *Nota delle cose che si conservano dentro lo scarabattolo sopra descritto, esistente nell'altra camera contigua alla Sacristia*, 8 aprile 1763, n. 20.

[21] Dumesnil 1835-1871: 76, vol. VIII. A copy of this engraving is at the British Museum (no. 1887,1010.14.1).

[22] Bartsch 1803-1821: 127, 323, vol. XV.

in Murano during Late Renaissance by some nobles unknown to us and later, through various transfers of ownership were purchased by Venanzio Filippo Piersanti, who would have placed his coat of arms, reproducing the original colours and pictorial style. The second hypothesis is that the two artefacts were ordered in the 16th century by some members of the Piersanti, which according to sources were not nobles before the 19th century, but that were engaged in important commercial activities. In fact, it is not possible to rule out at all the possibility, for now not supported by archive sources, that already in the 16th century a Piersanti or a branch of the family had assumed such heraldic coat of arms, even temporarily, then taken up by Venanzio Filippo and from which he would also have inherited the two glass vessels. A third possibility consists in the fact that the basin and the ewer were painted or repainted during the 18th century, perhaps on the basis of a pre-existing design corrupted by the wear of time. Anyway, only a very rich and wealthy person could have commissioned glass objects of such complexity and workmanship. Similar to the Murano basin had to be also «*due grandi bacili figuradi*» and «*due bacili de vedro grandi lavoradi e miniadi a figure*» that Salvatore Savonetti sold in 1590 to 120 ducats, an incredible amount for the time, corresponding to about two years of salary of a Muranese glass master[23].

Unfortunately, at present these are only conjectures and just an in-depth research both scientifical and archival could perhaps clarify the doubts about the origins and developments of these unique glass objects. The problem of the rapid deterioration of these paintings, however, makes it impossible to carry out this type of investigation over time. The precarious conditions of these pieces urge, therefore, the need to implement more effective conservation strategies in order to preserve as long as possible the memory of these wonderful objects and of the cold-painting technique.

[23] ASVe, PDM, 24 settembre 1590, b. 104. Atti Civili; Zecchin 2009: 89.

REFERENCES

Barovier Mentasti, Rosa and Stefano Carboni. 2007. Il vetro smaltato tra l'Oriente mediterraneo e Venezia. In *Venezia e l'Islam 828-1797*, edited by S. Carboni. Paris: Gallimard.

Barovier Mentasti, Rosa and Cristina Tonini. 2020. *Study days on venetian glass. Enamelled and Gilded Glass of the Renaissance,* edited by R. Barovier Mentasti and C. Tonini. Venice: Istituto Veneto di Scienze, Lettere ed Arti (*Atti dell'IVSLA* 178/2,3, 2019-2020, classe di scienze fisiche, matematiche, naturali).

Bartsch, Adam. 1803-1821. *Le Peintre graveur.* 21 voll. Wien: J.V. Degen.

Ciappi, Silvia. 2018. Quattro lastre per un percorso tra arte rinascimentale, tecnica vetraria e devozione. In *Inediti vetri del Rinascimento*. Firenze: Museo Casa Rodolfo Siviero, Regione Toscana.

De Grazia Bohlin, Diane. 1979. *Prints and related drawings by the Carracci family*. Washington: National Gallery of Art.

Dumesnil, Robert. 1835-1871. *Le peintre graveur français.* Paris: Warée et Huzard.

Guilmard, Désiré. 1880-1881. *Les Maitres ornemanistes. Écoles Française, Italienne, Allemande et des Pays-Bas (Flamande et Hollandaise).* Paris: E Pron et Cie.

Illustrated Bartsch. 1974 - ongoing. New York: Abaris Books.

Moschini, Giannantonio. 1815. *Guida per la città di Venezia all'amico delle belle arti opera di Giannantonio Moschini*. 2 vols. Venezia: Alvisopoli.

Passavant, Johann David. 1860-1864. *Le peintre graveur*. 3 vols. Leipsic: Rudolph Weigel.

Pettenati, Silvana. 1978. *Vetri dorati e graffiti.* Torino: Museo Civico di Torino.

Trecciola, Antonio. 2008. *Dalla casa al museo. Nascita del Museo Piersanti*. Matelica: Museo Piersanti.

Zecchin, Luigi. 1989, 1990. *Vetro e vetrai di Murano*. Vols. 2, 3. Venezia: Arsenale Editrice.

Zecchin, Paolo. 2009. Il vetro decorato veneziano nel '500. In *Journal of glass studies* 51: 86-94.

Zecchin, Paolo. 2020. Barovier: la più grande dinastia di vetrai muranesi. In *Journal of glass studies* 62: 105-126.

Fig. 1 - *Cold-painted glass panel with* The meditation of Saint Jerome on the final Judgement, Italy (?), second half of the 16th century. Florence, Museo-Casa Rodolfo Siviero, inv. pret. 5A; 204 Imelde; printed inv. 274 (photo by Daniele Angellotto).

Fig. 2 - *Cold-painted glass panel with* Adoration of the shepherds, Italy (?), second half of the 16th century. Florence, Museo-Casa Rodolfo Siviero, inv. pret. 6A; 204 Imelde; printed inv. 275 (photo by Daniele Angellotto).

Figs. 3 a, b - *Cold-painted goblet with the* Punishment of Love, Venice (?), end of the 16th century or beginning of the 17th century. Murano, Museo del Vetro, inv. Cl. VI, n. 00533.

Figs. 4 a, b - *Two cold-painted glass panels with mythological figures*, Venice (?), first half of the 17th century. Murano, Museo del Vetro, inv. Cl. VI, n. 00052,00053.

Figs. 5 a, b - *"Piersanti" glass basin*, Venice or Italy, end of 16th century or first half of the 18th century. Murano, Museo del Vetro, inv. Cl. VI, n. 01009.

Figs. 6 a, b, c - *"Piersanti" glass ewer*, Venice or Italy, end of the 16th century or first half of the 18th century. Liberec, North Bohemian Museum, inv. N. S0049.

Mauro Stocco

THE RELIQUARY OF BURANO IN THE MUSEO DEL VETRO OF MURANO

The wide-ranging collections of the Museo del Vetro of Murano include a great number of vases and goblets that can be identified as reliquaries. For some of them the provenance is known. This is the case of seventeen glass reliquaries, which were found by Vincenzo Zanetti (1824-1883), founder of the Museo Vetrario (the original name of the Museo del Vetro), in a dusty closet in the church of San Pietro Martire in Murano and then added to the newly created glass collection in 1861, while continuing to be property of the Fabbriceria di San Pietro Martire. The pieces date back from about 1500 to the 17th century[1]. The so-called *Reliquary of Burano* (Fig. 1) also has a documented Venetian provenance: it comes from St. Martin church in Burano, an island in the Venetian lagoon, only a few kilometers away from Murano[2]. The reliquary contained the relics of Saint Heliodorus and of the Holy Innocents[3]. The venetian historian Flaminio Corner (1693-1778) in his book *Notizie storiche delle chiese e monasteri di Venezia, e di Torcello tratte dalle chiese veneziane e torcellane*, published in 1758, reported that in one altar of St. Martin Church «*si conservano alcune ossa de' Santi Innocenti Martiri trucidati in Betlemme, delle quali è fama, che tradotte fossero a Chiesa dall'antico Monastero di Sant'Adriano di Costanziaco*» (there are some bones of the Holy Innocents slain in Bethlehem, of which it is known

[1] Zecchin 2019: 197-200.

[2] Nr. Inv. Classe VI, n. 1124. Barovier Mentasti 1982: 103, fig. 91; Zecchin 2009a: 28, fig. 1; Zecchin 2009b: 94, figs. 6-7.

[3] Saint Heliodorus was the first bishop of Altino, near the lagoon, in the 4th century and his relics are still today kept in the Cathedral of Santa Maria Assunta in Torcello, very close to Burano. The Holy Innocents were the male children of Bethlehem and its vicinity, two years old and under, whose slaughter was ordered by Herod the Great after Christ's birth, according to Matthew's Gospel.

that they were translated to this Church from the ancient Monastery of Sant'Adriano of Costanziaco)[4]. Bones of the Holy Innocents were very widespread in the churches of Venice and in 1422 and 1466 the Venetian Senate ordered that their relics had no longer to be sold to people of any rank[5].

The details of the acquisition of our reliquary by the Museo Vetrario can be found in some letters kept in the Archivio storico del Patriarcato di Venezia and in the letter dated 31 July 1880 addressed to the Murano municipal council by the director of the Museo Vetrario Vincenzo Zanetti, which is now preserved in the Glass Museum archive[6]. The reliquary was bought in 1880 for the Glass Museum by the Muranese Angelo Barbini, a member of one of the most important families of the island especially related to the production of mirrors. Barbini saw «*per combinazione*» (by chance) the reliquary in the Curia Patriarcale in Venice, as it was there for a new authentication of the bones contained inside. He wrote a letter to the parish priest of St. Martin, arguing that «*quel vetro per il museo di Murano è interessante*» (that glass is interesting for the Museum of Murano). In return, he would have offered to St. Martin church a copy of the reliquary, identical to the original one, and 75 lire. The parish priest of Burano, Father Giacomo Comin (1837-1903), obtained by the Patriarch of Venice, Mgr. Domenico Agostini (1825-1891), the permission to sell the precious reliquary. The amount of money given to St. Martin church would be used to buy a new white chasuble that the parish needed. From the letter written by Vincenzo Zanetti to the municipal council we learn

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[4] Corner 1758: 601.

[5] Niero 1965: 190-191. These relics were preserved in different Venetian churches: *S. Moisè, S. Fantino, S. Marina, S. Maria Nova, S. Giovanni Crisostomo, i Crocigeri, S. Gerolamo, i Miracoli, S. Aponal, S. Giovanni Decollato, S. Giovanni in Olio, i Servi, Corpus Domini, S. Marco*. Bodies of the Holy Innocents were also venerated in the church of Saint Stephen in Murano where they were found on the occasion of the restoration works of the church in 1372. The more than 200 skeletons of children found inside a wooden box were immediately considered as the remains of the Holy Innocents. Indeed, as pointed out by the Venetian historian Emmanuele Antonio Cicogna, they were more likely bodies of young Muranese children, whose death could be related to the plague that affected the entire Europe a few decades before the discovery (Corner 1758: 620; Cicogna 1853: 459).

[6] Archivio Diocesano di Venezia, Curia, Sez. moderna, Parrocchie, b. 44/2; Archivio del Museo del Vetro di Murano b.39.

that the copy was realized free of charge by the Compagnia di Venezia e Murano glassworks. The museum gave the 75 lire to the parish priest of Burano and paid a sum of 11 lire to Angelo Barbini, as reported in the list of expenses incurred by the Museo Vetrario in 1880[7].

As reported by Vincenzo Zanetti in his 1881 guide *Il Museo civico-vetrario di Murano*, the piece was immediately exposed inside the Museum, in room number Four, together with the reliquaries coming from the church of San Pietro Martire[8]. In the catalogue written in 1888 by Giuseppe Marino Urbani de Gheltof, director of the museum from 1883 to 1892, it is listed as «*Reliquiere in vetro bianco con ornato di graffiti e dorature; nel corpo ha due medaglioni dipinti a mordente (acq. 1880 dalla Chiesa di S. Martino di Burano). Conteneva le ossa di S. Eliodoro e dei Ss. Innocenti*» [Reliquary in colorless glass decorated with diamond-point engravings and gilding; in the body it has two mordant painted medallions (acquired in 1880 from the Church of Saint Martin in Burano). It contained the bones of S. Eliodoro and the Holy Innocents][9].

This reliquary belongs to a group of vase-shaped vessels with covers known as *Vasenpokal*, dated by scholars to the second half of the 16th century, characterized by a hemispherical body, a tall and large neck and a knop or lion-mask stem (or in a few cases a balauster stem) that connects the bowl to the spreading foot. They are generally decorated with diamond-point engravings, gilding and cold-painting. Engraved decorations include stylized vegetal scrolls, mostly in the shape of a heart pattern, palmettes, lilies, drops and chain patterns, while the cold-painted motifs in red and green pigments and gold usually are profile busts of warriors *all'antica* and oval panels with floral ornaments and emblems. As regards our reliquary, the main decoration of the body consists in two medallions, each with a portrait of a warrior and two panels with a ray pattern. Unfortunately the painted decoration is very damaged and in two fields almost completely lost. These fields are flanked by panels of diamond-point engraved foliate scrolls forming a sort of heart-shape pattern.

The shape of the reliquary seems to have some connections with glasses

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[7] Archivio del Museo del Vetro di Murano b.39.

[8] Zanetti 1881: 57. The reliquary is depicted in the cover of Zanetti's guide together with other glasses of the Museum.

[9] Inventario del Museo del Vetro Urbani de Gheltoff 1888: 23, Classe IV, no. 27.

of Roman antiquity[10]. A transparent glass vase with a hemispherical body and a tall cylindrical neck, half full of water, is depicted in a fresco coming from the Casa dei Cervi in Ercolano and today kept in the National Archaeological Museum of Naples. Another scene from the same place, still in its original location, shows the same kind of glass vase. The two frescoes belong to a group of still lifes of very high quality that come under the so-called Fourth Pompeian Style (from 50 AD)[11]. During the Renaissance Venice was a very important center for collecting antiquities: sculptures, gems, coins and certainly glasses too, which probably also were found in the nearby archeological sites, Altino in particular[12]. This reawakened interest in the ancient world surely involved glass masters and decorators, updated on the latest innovations concerning the cultural and artistic world. An elegant metal vase with a cover, whose shape can be compared to that of our reliquary, is part of a still life painted by Giovanni da Udine (1487-1564) in the Camerino di Apollo in the Grimani Palace of Santa Maria Formosa in Venice, between January and August 1540[13]. Giovanni da Udine was passionate about antiquity and was a specialist in fresco and stucco grotesque decorations and still lifes scenes[14].

Vases with a cover of this shape were certainly used as reliquaries, as documented by our piece[15]. In two paintings by El Greco (1541-1614) depicting The Penitent Magdalen, that can be dated between 1575 and 1577, such a covered vessel is used as container for the ointment that she used to perfume Jesus' feet[16]. Some paintings of the early 17th century depict vessels of similar shape being used as goblets or as containers for serving wine. One example is the *Niche with fruit and flowers* by George Flegel

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[10] Barovier Mentasti and Tonini 2013: no. 41. Vases of this shape were also realized in the second half of the XIXth century by the Salviati & Company and the Compagnia di Venezia e Murano glassworks, in imitation of the ancient prototypes.

[11] *La natura morta* 2001: 68, fig. 45; 70, fig. 47.

[12] Barovier Mentasti 2019: 332-333.

[13] Bristot 2008: 79; Barovier Mentasti and Tonini 2013: no. 41; Barovier Mentasti 2019: 327-330.

[14] Barovier Mentasti and Tonini 2013: no. 41.

[15] A reliquary of this shape, without decoration, is kept in Santa Maria Assunta church at Cassano Murge (Bari), strangely ascribed to a southern Italy glassworks of the first quarter of the 20th century (https://www.beweb.chiesacattolica.it/benistorici/bene/3304021/). I thank Rosa Barovier Mentasti and Cristina Tonini for this information.

[16] Puppi 2015: 118-119, nos. 52-53. The two paintings are kept in the Museu de Montserrat in Barcelona and in the Szépművészeti Múzeum in Budapest.

(1566-1638), painted between 1610 and 1620 and kept in the National Gallery of Prague[17]. Two vessels with cover of this kind are depicted in a *Still life with fruits and glassware* by Juan van der Hamen Léon (1596-1631) dated 1626 and kept in the Museum of Fine Arts of Houston[18].

These vase-shaped vessels, with a diamond-point engraving and a gilt, cold-painted decoration, have been traditionally attributed by many glass scholars to the glasshouses of Hall and Innsbruck in Tyrol, as other glass objects with the same type of engraved and cold-painted decoration[19]. The Reliquary of Burano itself, despite its certain provenance, was attributed to the court glasshouse in Innsbruck by Enrich Egg[20]. In 1534 a glasshouse producing glasses in Venetian style was founded in Hall in Tyrol by the Augsburg entrepreneur and patrician Wolfgang Vittl (1495-1540), with the young Sebastian Höchstetter (1511-1569) as financier. The latter ruled the glasshouse following Vittl's death in 1540 until 1569, constantly trying to solve the problem of the supply of raw materials. In 1570 Archduke Ferdinand II (1525-1595) founded a court glasshouse in Innsbruck, because of the continuing difficulties with Venetian glass orders and of the poor quality of the glasses blown in Hall. Here different Venetian glassmakers worked until 1591, bringing moulds and raw materials from Venice. The court glasshouse was established specifically to satisfy the needs of the court and only worked for several months each year. As regards Hall, the glasshouse continued its production not without difficulties and closed permanently in 1636[21].

Engraved and eventually cold-painted *Vasenpokal*, closely comparable to the Reliquary of Burano both for the shape and the decoration, are kept in different public collections. The comparison with two pieces in particular is very useful to reconstruct the original aspect of our reliquary, whose applied, hollow handles are lacking the upper extremity[22]. One is kept in the Wallace Collection in London and has been attributed «probably Venice,

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[17] Barovier Mentasti 2006: 177, fig. 6.

[18] Theuerkauff-Liederwald 1994: 241, fig. 38.

[19] See for example: Egg 1962; Page 2004.

[20] Egg 1962: pl. XV, fig. 30.

[21] Page 2004: 31-59; Barovier Mentasti 2006: 172-174.

[22] The applied handles are gilded and decorated with two raspberry prunts (*pronti*), as in other similar pieces. The handles were most likely already damaged when the reliquary was bought for the museum in 1880. Indeed Vincenzo Zanetti in his 1881 guide reported these lacks.

possibly Innsbruck (*façon de Venise*)» and dated about 1560 - about 1590[23]. It also presents an almost identical diamond-point engraved decoration, specifically in the foliate scrolls forming a heart-shaped pattern. Then a similar piece is housed in the Metropolitan Museum of Art, attributed to Hall. It is diamond-point engraved and cold-painted with the Barberini arms; it comes from an Italian collection, that of Giuseppe Salvadori in Florence[24]. Both, as our reliquary, are characterized by a stem composed of a hollow, mould-blown knop connected to the foot. Some vessels present a lion-mask stem instead of the knop. Two covered vases of this type, whose surface is only filled with diamond-point engraving, are preserved in the Corning Museum of Glass and in the Tiroler Landesmuseum in Innsbruck and have been ascribed to Tyrol, the court glasshouse in Innsbruck. Both have no handles and are decorated with applied raspberry prunts[25]. Another piece with lion-mask stem and handles, diamond-point engraved and cold painted, is kept in the Kunstsammlungen der Veste Coburg and has been attributed to Venice or to Innsbruck and dated 1570-1590[26]. Lion-mask stems are a typical Venetian glassmaking element, also used in the glassworks that specialized in production *à la façon de Venise*. They often occur in Venetian glasses of the second half of the XVIth century and were found in a very large number during the excavations in the venetian lagoon. Many of them are kept in the Museo del Vetro in Murano[27].

Diamond-point engraved and cold painted decorations similar to the ones of our reliquary – and of other covered vessels – characterize some pieces that can be accepted as Venetian, as some scholars have recently argued[28]. It is the case with two cylindrical-shaped reliquaries with lion stem kept in San Damiano's convent in Assisi, a place closely linked to the life of Saint Francis[29]. The diamond-point engraved and cold painted decorations are similar to those of the Burano reliquary. In particular, in one of them the ornamental fields of the central part of

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[23] Higgott 2011: 90-93, no. 18.

[24] Higgott 2011: 93, note 21.

[25] Page 2004: 74-75, no. 6; *Recent Important acquisitions* 1980: 90, no. 13.

[26] Theuerkauff-Liederwald 1994: 240-243, no. 220.

[27] Barovier Mentasti and Tonini 2019: 62, no. 23.

[28] Barovier Mentasti and Tonini 2013: no. 43; Barovier Mentasti and Tonini 2014: 18; Zecchin 2019: 208.

[29] Barovier Mentasti and Tonini 2014: 18; 39, figs. 6-7; Tonini 2015: 85-89.

the body are filled with an engraved heart-shaped symmetrical pattern consisting of foliate scrolls forming central palmettes and with two cold-painted portraits of armigers[30]. A similar engraved decoration of foliate scrolls and leaves appears on some fragments recovered from the wreck of a Venetian ship, the *Gagiana*, discovered in the summer of 1967 near the islet of Gnalić, not far from the city of Zadar. The glasses recovered – more than 5000 fragmentary pieces – were probably destined to the Levant and have been reasonably dated 1580-1583, because of the date reported on two bronze guns, which were part of the armaments of the ship[31]. The closest comparison is with a large vase with three hollow handles and a spout. The body is decorated with similar diamond-point engravings, including a heart pattern[32].

As for the painted portrait of an armiger, it is a decorative motif that occurs on a range of objects generally attributed to the glasshouses of Hall and Innsbruck and has been associated with the passion for armor of Archduke Ferdinand II[33]. Profile busts of warriors all'*antica* are cold painted in other covered vase-shaped vessels besides the reliquary of Burano. They include some pieces known to have come from Schloss Ambras, the residence of Archduke Ferdinand II and now housed in the Kunsthistorisches Museum in Wien[34]. Another covered vase in the Kunsthistorisches Museum was formerly in the Toso collection in Venice[35]. Helmeted warriors could also be diamond-point engraved on simpler beakers, as in a covered beaker attributed to Hall and dated about 1580, also kept in the Kunsthistorisches Museum[36]. However, the warrior *all'antica* is an iconographic theme that was very widespread in the Italian artistic culture of the XVIth century, especially in majolica pieces. Some interesting majolica examples are kept in important international public collections, such as a drug vase kept in the Victoria and Albert Museum, or an apothecary jar or *albarello* in the Metropolitan Museum of Art of New York, both made in Faenza

[30] Tonini 2015: 86, figs. 1-1a.
[31] Lazar and Willmott 2006: 117-123.
[32] Lazar and Willmott 2006: 123.
[33] Page 2004: 73.
[34] Egg 1962: pl. XIV, figs. 27-28.
[35] Strasser and Baumgärtner 2002: 33-34, no. 8.
[36] Page 2004: 48, fig. 17.

(in the Romagna Region), about the middle of the XVIth century[37]. As regards Venice, a considerable number of pieces attributed to Maestro Domenico da Venezia or his workshop present medallions with portraits of warriors. Maestro Domenico was a famous ceramist and majolica decorator active in Venice between the fifth and seventh decades of the XVIth century[38]. Moreover, the portrait of an armiger decorates a find from the Venetian lagoon, dated to the XVIth century, and a square tile of the majolica pavement of the Annunciation Chapel in St. Sebastiano church in Venice, while another tile presents a spiral helmet with a visor that reveals a partial male profile[39]. The tiles may have been placed between 1531 and 1542, when the chapel belonged to the Lando family, but they date back to 1510, because of the date painted on two of them. These tiles were probably realized in Faenza or Pesaro, in the Marche region, but the hypothesis of the collaboration of a Venetian workshop has also been advanced by scholars[40].

A valid comparison for the two pieces of Assisi is the cylindric goblet or reliquary, with a lion stem, housed in the venetian church of Santa Maria Gloriosa dei Frari, a Franciscan convent. It is diamond-point engraved with a checkerboard pattern and gilt, cold-painted with two circular medallions with roses[41]. An identical goblet in shape and in the decoration formerly belonged to the Toso collection in Venice[42]. The checkerboard pattern is not uncommon in the Italian decorative arts of the 16th century. A terracotta pavement tile with this kind of decoration, for example, is kept in Palazzo Schifanoia in Ferrara[43]. The reliquary in the Frari church is certainly Venetian, on the ground of its provenance,

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[37] Sani 2010: 7, no. 17; Rasmussen 1989: 50-51, n. 31.

[38] Alverà Bortolotto 1988: 82.

[39] Conton 1940: 82; Perissa Torrini and Saccardo 2002: 43, no. 9; 55, no. 32.

[40] Perissa Torrini and Saccardo 2002: 17; 32-34. The tiles do not appear to have been commissioned specifically for this chapel, but probably reused from one or more floors of a previous period and of unknown locations. Only the largest piece situated in the center of the composition, bearing the coat of arms of the Lando family, seems to have been realized and added in the occasion of the placement of the tiles on the chapel.

[41] Barovier Mentasti and Tonini 2013: cat. 43; Zecchin 2019: 202.

[42] Dreier 1981: 158, no. 664. The piece was auctioned at Bonhams (London) in 2013 (https://www.bonhams.com/auctions/21116/lot/5/).

[43] Visser Travagli 1990: 74, no. 44.

and the same attribution can be accepted for the two pieces in San Damiano's Convent, significantly another Franciscan church. A piece strictly connected, both for shape and decoration, with the two reliquaries of Assisi and the one in the Frari church in Venice is a glass kept in the Kunstsammlungen der Veste Coburg, which has been attributed to the court glasshouse in Innsbruck and dated 1570-1590[44]. Very similar to the Coburg reliquary is a reliquary kept in the Museo del Vetro of Murano, part of the Vito Manca collection donated to the Museum in 2004 (Fig. 3), attributed to Venice or tentatively to the Tyrol[45]. Also for these two pieces a Venetian provenance is the most likely.

The two reliquaries of Assisi and the other pieces above-mentioned are also characterized by a cold-painted frieze in red, green and gold, a decorative motif that is also found on the Reliquary of Burano, on the lower part of the neck, between two rows of engraved vertical ovals, although very few traces have remained[46]. A similar frieze can be also found in other covered vessels similar to our reliquary, including the one in the Kunstsammlungen der Veste Coburg[47].

The upper part of the neck and the shoulder of the hemispherical bowl of the Reliquary of Burano, as well as the cover, are diamond-point engraved with a frieze of stylized lilies, another decorative element that occurs in several blown objects ascribed to the Venetian glass production of the second half of the 16th century, like in a blue flask kept in the Museo Civico of Torino, which also shares with our piece a very similar heart pattern[48]. This frieze is also a very common motif on diamond-point engraved and cold-painted glasses, including the *Vasenpokal*, generally ascribed to the production of the glasshouses of Hall or Innsbruck of the second half of the 16th century.

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[44] Theuerkauff-Liederwald 1994: 247-248, no. 224.

[45] Mariacher 1971: 42-43, no. 70.

[46] This frieze also decorates a crystal beaker kept in the Galleria Regionale della Sicilia in Palermo (Barovier Mentasti 2001: 251-252, no. II.75) and a blue beaker housed in the Corning Museum of Glass (Tonini 2014: 87, fig. 5). Both are diamond-point engraved with vegetal scrolls forming a heart pattern and with a freeze of lillies and cold-painted with two medallions.

[47] Egg 1962: pl. XIV, fig. 27; pl. XV, fig. 32; pl. XVII, fig. 35. A similar piece is kept in the Museo di Capodimonte in Naples and is part of the De Ciccio collection (Inv. DC 691).

[48] Mallè 1971: fig. 34; Barovier Mentasti 1982: 104, fig. 92.

The question about the accurate attribution of this type of glasses either to Venice or to a *Façon de Venise* glasswork in the Tyrol is still discussed, as in many cases no stylistic distinction can be made. The attribution of diamond-point engraved and cold painted glasses exclusively to Hall or Innsbruck glasshouses has to be revised, first of all on the basis of the comparison with the pieces with a certain Venetian provenance, such as the Reliquary of Burano and the goblet in the Frari church[49]. In the second half of the 16th century Murano was still the most important and organized glass center in Europe. The production capability of Murano glassworks was far superior to that of specific foreign glasshouses working *à la façon de Venise*. The majority of vessels made in Murano were for export and the shape and decoration were adapted to the taste of the different foreign markets[50]. Moreover, artistic and commercial relations between the Venetian Republic and Tyrol were strong and well documented during the 16th century. Archduke Ferdinand II was passionate about Italian art and Venetian glass and he was not satisfied with the quality of the glass produced in Hall and in the court glasshouse in Innsbruck, that he founded in 1570. He ordered glass from Venice in 1568, 1570, 1575 and 1580. In particular, in 1575 he bought 10 «*vergoldete Deckelpokale*» (10 gold painted covered goblets)[51]. Furthermore, engraved and gilded glasses are listed in some Venetian inventories of the second half of the 16th century. Some glasses with specific shapes and decorations were clearly produced for the German market, as the 5 «*lavori todeschi intagiadi*» (5 diamond-point engraved pieces sent to Germany) quoted in the inventory, dated November 1569, of goods found in the glassworks of Bortolo d'Alvise, who left Murano some months before to work in the Medici's glassfurnace. The same inventory lists 4 «*vasi grandi indoradi con aquile dentro*» (4 gilt big vases with eagles inside)[52]. In another inventory related to Bortolo's goods, which were sold by public authorities in Murano

[49] Baumgartner 1995; 99, no. 183; Higgott 2011: 92; Barovier Mentasti and Tonini 2014: 18.

[50] Barovier Mentasti and Tonini 2021: 47-48.

[51] Baumgartner 1995: 88, no. 183. Higgott 2011: 90.

[52] Zecchin 2009a: 33.

in 1570, there are still mentioned 3 «*vasi doradi con le aquile, roti neli coverchi*» (3 gilt vases with eagles, broken in the covers)[53]. Among the glasses quoted in the inventory, dated January 1578, of Giovanni Antonio Zanchi dal Castello, there are 6 «*goti intagiadi con aquile*» (diamond-point engraved goblets with eagles) and different kinds of vases gilded with the double-headed eagle[54]. Reliquaries are also listed in these inventories and they are called *tabernacoli*[55]. Another document containing precious information about diamond-point engraved and cold-painted reliquaries is the report *Memorie di vetrerie che si cava di Venezia*, written by a Tuscan resident in Venice and found among the correspondence of the Medici's secretary, Lorenzo Usinbardi, and now kept at the Archivio di Stato di Firenze. It can be dated 1592. The *Memoria* contains a list of the glass vessels produced in Murano's glassworks together with their prices and the countries to which they were exported. In particular, some glasses «*in modo di tabernacoli, alcuni messi a oro*» (in reliquary-shape, some gilt) were sent to Germany[56].

In conclusion, it is reasonable to state that diamond-point engraved and cold-painted glasses similar in shape and/or decoration to the reliquary of Burano can be considered Venetian products or realized in Tyrol by Venetian glassmakers and decorators working *à la façon de Venise*, in a style fashionable in Venice. However, it is more likely that many of these pieces, today generally attributed to Tyrol, were made in Venice, where glass production was much more relevant in terms of quantity than in Tyrol. This is even a more realistic statement if we consider that most of them formerly belonged to Italian collections.

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[53] Zecchin 2009a: 30, note 3. The double-headed eagle symbolized the Holy Roman Empire and was the emblem of the Habsburg.

[54] Zecchin 2009a: 34. These glasses decorated with eagles recall a covered goblet with gilt eagles kept in the Bayerisches Nationalmuseum in Munich, attributed (probably) to the court glasshouse in Innsbruck (Page 2004: 47, fig. 16), as well as other goblets, known as *Deckelpokal*, some of which kept in the Kunsthistorisches Museum (Egg 1962: pl. XVIII, fig. 37; pl. XIX, fig. 40). Furthermore, some pieces have diamond-point engraved eagles, that recall the *goti intagiadi con aquile* listed in the inventory of Giovanni Antonio Zanchi dal Castello (Egg 1962: pl. XVIII, figs. 38-39, pl. XXVIII, fig. 65; pl. XXIX, fig. 68).

[55] Zecchin 2009a: 33-34.

[56] Barovier Mentasti and Tonini 2014: 3-4, 17-18; Zecchin 2019: 206.

REFERENCES

Manuscripts sources

Archivio Diocesano di Venezia, *Curia*, Sez. moderna, Parrocchie, b. 44/2.

Archivio del Museo del Vetro di Murano, b.39.

Printed sources

Alverà Bortolotto, Angelica. 1988. *Maiolica a Venezia nel Rinascimento*. Bergamo: Bolis.

Barovier Mentasti, Rosa. 1982. *Il vetro veneziano*. Milano: Electa.

Barovier Mentasti, Rosa. 2001. I Vetri. In *Wunderkammer siciliana alle origini del museo perduto*, edited by V. Abbate. Napoli: Electa Napoli: 249-262.

Barovier Mentasti, Rosa, ed. 2006. *Trasparenze e riflessi: il vetro italiano nella pittura*. Verona: Banca Popolare di Verona e Novara.

Barovier Mentasti, Rosa. 2019. "La foggia de l'antiquità". Vetri del Rinascimento veneziano. In *Il dono di Altino. Scritti di archeologia in onore di Margherita Tirelli*, edited by G. Cresci Marrone, G. Gambacurta and A. Marinetti. Venezia: Edizioni Ca' Foscari: 327-347.

Barovier Mentasti, Rosa and Cristina Tonini. 2013. *Fragile. Murano, chefs-d'œuvre de verre de la Renaissance au XXIe siècle*. Paris: Gallimard.

Barovier Mentasti, Rosa and Cristina Tonini. 2014. Tools to Study Glass: Inventories, Paintings and Graphic Works of the 16th. In *Study Days on Venetian Glass. Approximately 1600's*, edited by R. Barovier Mentasti and C. Tonini. Venezia: Istituto Veneto di Scienze, Lettere ed Arti: 3-41 (*Atti dell'IVSLA* 172/1, 2013-2014, Classe di scienze fisiche, matematiche e naturali).

Barovier Mentasti, Rosa and Cristina Tonini. 2019. Venetian Renaissance Vessels: Mould Decorations and Applied Bosses. In *Study Days on Venetian Glass. Moulding and Applying Hot Glass*, edited by R. Barovier Mentasti and C. Tonini. Venezia: Istituto Veneto di Scienze, Lettere ed Arti: 1-73 (*Atti dell'IVSLA* 177/2-3, 2018-2019, Classe di scienze fisiche, matematiche e naturali).

Barovier Mentasti, Rosa and Cristina Tonini. 2021. Vetri per un Museo della Laguna. In *Larici amicae in silva humanitatis. Scritti di archeologia per Annamaria Larese*, edited by L. Fozzati, L. Sperti and M. Tirelli. Bologna: Ante Quem: 47-55.

Baumgartner, Erwin. 1995. *Verre de Venise. Trèsors inédits*. Geneva: Musée Ariana.

Bristot, Annalisa. 2008. «Saloni, portici e stanze splendidamente ornati». In *Palazzo Grimani a Santa Maria Formosa. Storia, arte, restauri*, edited by Annalisa Bristot. Verona: Scripta edizioni: 61-126.

Cicogna, Emmanuele Antonio. 1853. *Delle inscrizioni veneziane raccolte ed illustrate da Emmanuele Antonio Cicogna di Venezia*, VI. Venezia: Tipografia Andreola.

Conton, Luigi. 1940. *Le antiche ceramiche veneziane scoperte nella laguna*. Venezia: Editori Fantoni.

Corner, Flaminio. 1758. *Notizie storiche delle chiese e monasteri di Venezia, e di Torcello tratte dalle chiese veneziane, e torcellane illustrate da Flaminio Corner senator veneziano*. Padova: Stamperia del Seminario.

Dreier, Franz Adrian, ed. 1981. *3000 Jahre Glaskunst von der Antike bis zum Jugendstil*. Luzern: Kunstmuseum Luzern.

Dreier, Franz Adrian. 1989. *Venezianische Gläser, und Façon de Venise, Kunstgewerbemuseum Berlin*. Berlin: Staatliche Museen Preußischer Kulturbesitz.

Egg, Erich. 1962. Die Glashütten zu Hall und Innsbruck im 16. Jahrhundert. *Tiroler Wirtschaftsstudien* 15: 1-100.

Higgott, Suzanne. 2011. *Catalogue of Glass and Limoges Painted Enamels*. London: Trustees of the Wallace Collection.

La natura morta nelle pitture e nei mosaici delle città vesuviane. 2001. Napoli: Electa Napoli.

Lazar, Irena and Hugh Willmott. 2006. *The Glass From The Gnalić Wreck.* Koper: Annales Mediterranea.

Mallé, Luigi, ed. 1971. *Vetri, vetrate, giade, cristalli di rocca, pietre dure*. Torino: Museo Civico di Torino.

Mariacher, Giovanni, ed. 1971. *Vetri della collezione Vito Manca*. Perugia: Grafica.

Niero, Antonio. 1965. Reliquie e corpi di santi. In *Culto dei santi a Venezia*, edited by S. Tramontin, A. Niero, G. Musolino, C. Candiani. Venezia: Edizioni Studium cattolico veneziano, pp. 181-208.

Page, Jutta-Annette. 2004. *Beyond Venice. Glass in Venetian Style 1500-1750.* With contributions by Ignasi Doménech, Alexandra Gaba-Van Dongen, Reino Liefkes, Marie-Laure de Rochebrune, Hugh Willmott. Corning (N.Y.): Corning Museum of Glass.

Perissa Torrini, Annalisa and Francesco Saccardo. 2002. Maiolica *a Venezia. Un pavimento rinascimentale nella chiesa di San Sebastiano*. Venezia: Marsilio.

Puppi, Lionello, ed. 2015. *El Greco in Italia. Metamorfosi di un genio*. Milano: Skira.

Rasmussen, Jörg. 1989. *Italian Majolica in the Robert Lehman Collection*. New York: The Metropolitan Museum of Art.

Ravanelli Guidotti, Carmen. 1998. *Thesaurus di opere della tradizione di Faenza nelle raccolte del Museo Internazionale delle Ceramiche in Faenza*. Faenza: Agenzia Polo Ceramico.

Recent Important Acquisitions made by public and private collections in the United States and abroad. 1980. *Journal of Glass Studies* 22: 88-102.

Sani, Elisa. 2010. 'Not in Rackham' - Italian Renaissance maiolica in the Victoria and Albert Museum - Part I. *Keramos* 210: 1-30.

Theuerkauff-Liederwald, Anna-Elisabeth. 1994. *Venezianisches Glas der Veste Coburg*. Lingen: Luca Verlag.

Tonini, Cristina. Reliquiari del convento di San Damiano, Assisi. 2015. In *Il vetro in Italia centrale dall'antichità al contemporaneo. Atti*, edited by L. Mandruzzato, T. Medici and M. Uboldi. Venice: AIHV Comitato Italiano: 85-89.

Urbani de Gheltof, Giuseppe Marino. 1888. *Catalogo del Museo Civico di Murano.* Venezia: Stabilimento Antonelli.

Visser Travigli, Anna Maria. 1990. *Ceramiche a Ferrara in età estense dalla collezione Pasetti*. Firenze: Centro Di.

Von Strasser, Rudolf and Sabine Baumgärtner. 2002. *Licht und Farbe. Dekoriertes Glas - Renaissance, Barock, Biedermeier. Die Sammlung Rudolf von Strasser*. Wien: Skira.

Zanetti, Vincenzo. 1881. *Il Museo Civico-Vetrario di Murano. Monografia del direttore Vincenzo Zanetti*. Venezia: Longo.

Zecchin, Paolo. 2003. Prodotti vetrari muranesi alla fine del Cinquecento. *Rivista della Stazione Sperimentale del Vetro* 33, no. 3: 23-32.

Zecchin, Paolo. 2009a. Due importanti inventari muranesi del Cinquecento. *Rivista della Stazione Sperimentale del Vetro* 39, no. 5: 27-34.

Zecchin, Paolo. 2009b. Il vetro decorato veneziano nel Cinquecento. *Journal of Glass Studies* 51: 86-94.

Zecchin, Paolo. 2019. I reliquiari dei vetrai muranesi del '500. *Journal of Glass Studies* 61: 197-208.

Fig. 1 - *Reliquary coming from St. Martin church in Burano*, Venice, second half of 16th century. Murano, Museo del Vetro.

Fig. 2 - *Particular of the cold-painted decoration of fig. 1 with a warrior portrait.*

Fig. 3 - *Reliquary from the Vito Manca collection*, Venice (?), second half of 16th century. Murano, Museo del Vetro.

Atti dell'Istituto Veneto di Scienze, Lettere ed Arti
Tomo CLXXXI (2022-2023) - Classe di scienze fisiche, matematiche e naturali

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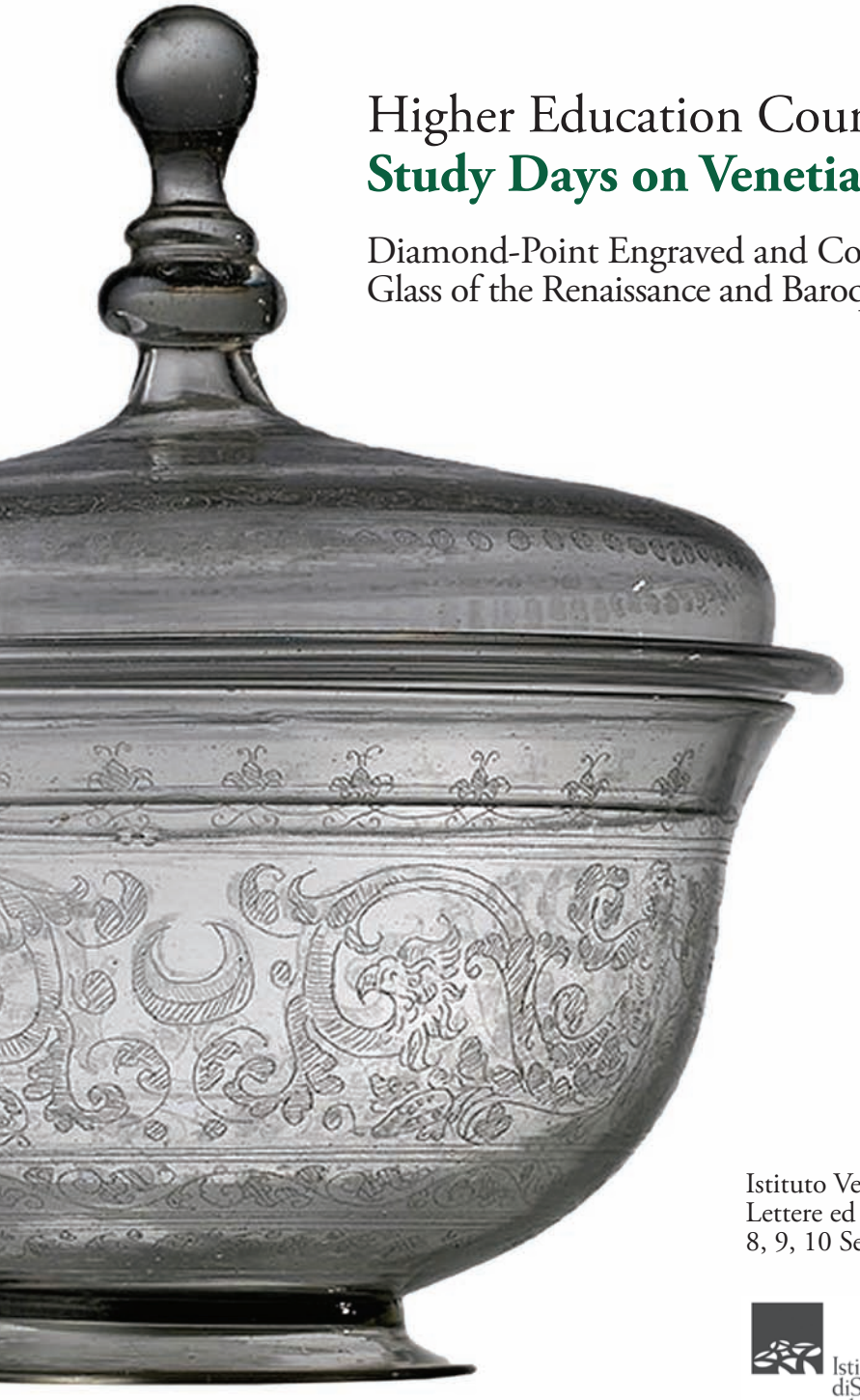

Higher Education Course
Study Days on Venetian Glass

Diamond-Point Engraved and Cold-Painted Glass of the Renaissance and Baroque Periods

Istituto Veneto di Scienze,
Lettere ed Arti
8, 9, 10 September 2021

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The Study Days on Venetian Glass 2021, in its ninth edition, takes place in the context of The Venice Glass Week and registers the presence of thirty or so glass experts from all over Europe and the United States, including museum curators, scholars, collectors, restorers and glass artists. In three Study Days a rich programme features seminars, lessons, visits and practical demonstrations of the ancient techniques, with papers and communications by scholars, all specialists in the field, making this event one of the most important of its kind organized on an international level.

Our aim is again to offer an opportunity for in-depth study and encounters, with an ample exchange of knowledge and experience, to glass historians. Thanks to this initiative, started in 2012, Venice may become the world centre for the study of antique and contemporary glass and at the same time an outstanding meeting place for scholars, artists and collectors.

Higher Education Course

Study Days on Venetian Glass

Diamond-Point Engraved and Cold-Painted Glass of the Renaissance and Baroque Periods

Istituto Veneto di Scienze, Lettere ed Arti
September 8-10, 2021

With the support of
CORNING MUSEUM OF GLASS
ECOLE DU LOUVRE
FONDAZIONE MUSEI CIVICI VENEZIA
LE STANZE DEL VETRO
VENICE FOUNDATION
VICTORIA & ALBERT MUSEUM

Organized with the collaboration of
AIHV- Association Internationale pour l'Histoire du Verre- Comitato Nazionale Italiano
LAMA – Laboratorio Analisi Materiali Antichi dell'Università Iuav
Museo del Vetro-Fondazione Musei Civici Venezia

The "Study Days on Venetian Glass" are an opportunity for in-depth study on Venetian glass and are tuned to an audience of glass scholars, museum curators, conservators, scientists and collectors.
The programme includes lectures by art historians and glass experts. All the participants are invited to present the results of their studies and research about a chosen subject. Every lecture is followed by a discussion. Lectures and discussions are held in English.
The theme of 2021's edition is: *Diamond-Point Engraved and Cold-Painted Glass of the Renaissance and Baroque Periods*.
Diamond-point engraving on glass was applied, at Murano, by Vincenzo d'Angelo dal Gallo who first used it to decorate mirrors (about 1535). Then, in 1549, he obtained from the Venetian government a ten-year patent for decorating blown glass vessels with this technique.
Diamond-point engraving is sometimes combined with cold-painted ornamentation on Renaissance glass vessels. Engraved decorative motifs changed from the Renaissance to the Baroque period.
The Venetian production of diamond-point engraved glass is far more important and wider than is generally accepted. That of the *Façon de Venise* one had a consistent and important development after the diffusion of this Venetian technique in European countries.
The production of Renaissance glass also includes a series of cold-painted vessels some of which took inspiration from prints.

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WEDNESDAY, 8th SEPTEMBER

Session I Chairperson **Rosa Barovier Mentasti**

8.45 a.m. **Registration and Payment**

9.30 a.m. **Rosa Barovier Mentasti**
Opening remarks

10.00 a.m. **Nicole Riegel-Satzinger**
Cultural gradients - the dynamics of artistic exchange between Renaissance Venice and Germany.
Abstract - In the decades around and after 1500, the cultural exchange between Venice and Germany experienced an enormous acceleration, promoted by an increased volume of trade, higher mobility and a changed, humanistically conditioned perception of Italian Renaissance cultural achievements. The lecture illuminates media, forms and motivations of artistic engagement and interchange in both directions. Phenomena of competition and cooperation, of demarcation, of preeminence and delayed reception will be discussed. The factors of luxury and transferability as criteria relevant to reception and import are taken into view, the role of visual habits and changing taste, of style, virtuosity, inventiveness and technical know-how is examined. Consideration will also be given to the artist's different social prestige in the north and south, the role of the itinerant court artists and German patronage activities, in which the authentic experience of Venice represented a significant mark of distinction.

11.00 a.m. **Coffee Break**

11.30 a.m. **Rosa Barovier Mentasti and Cristina Tonini**
Venetian diamond-point engraved and gilt glasses of the Renaissance and late Baroque.
Abstract - The lecture will focus on the stylistic evolution of Venetian Renaissance diamond-point engraving on glass vessels. The first examples, at the middle of the 16th century, the Medici - Orsini dishes and other blown vessels, show a highly refined decoration. On the contrary more conventional ornamentation characterizes some diamond-point engraved glasses, such as bouquetières, housed in public collections or recovered in Italian archeological finds, produced a few decades later. Reliquaries, still kept or coming from Italian and Venetian religious buildings, vases and dishes combine the engraved technique with gilding and cold painting. Some reliquaries were also exported to Germany. Diamond-point engraved and gilt glasses are

widely documented in some Murano glassworks inventories and large assortments of them were also sent to Constantinople, frequently as gifts for the Sultan's court where they were highly appreciated. In the late baroque period, decorative motifs changed and naturalistic and floral patterns became dominant. A certain group of them, which show diamond-point engraved dedications with the names, mainly Venetian, of the owners, will be taken into consideration.

12.30 p.m. **Lunch**

Session II Chairperson **Cristina Tonini**

2.30 p.m. **Speeches or Comments by Participants**

Reino Liefkes
Diamond-point engraved glass at the Victoria and Albert Museum in London.
Abstract - This paper explores the holdings of Venetian diamond-point engraved glass and related pieces. It looks at the stylistic development of glass and engraving and discusses attribution and dating. It shows how some Venetian engraved glass of the 17th century has been mis-attributed to the Netherlands in the past.

3.00 p.m. **Angelo Agostino**
The secret under glass.
Abstract - Graffito and painted background glasses, in their various expressions, represent an interesting chapter of Venetian (and not only) glass art. The difficulty to obtain information on the chemical composition about the constituent parts of these works becomes almost impossible if one only approaches it with non-invasive methods. Hence the need to use combined analysis methodologies interfacing with data series treated with machine learning methods. Thus, even partial information can be assembled in order to offer a complete analytical investigation of these artworks. Non-invasive (X-ray fluorescence, Fiber Optic Reflectance Spectroscopy, Optical microscopy) and micro-invasive experimental methods were combined with literature data using unsupervised classification methods to obtain descriptors and metadata.

3.30 p.m. **Coffee Break**

4.00 p.m. **Marco Verità**
Scientific investigations of Medieval glass objects decorated with cut and/or engraved gold leaf.
Abstract - In the Museo Diocesano in Recanati (Macerata, Italy) a number of glass objects are preserved that are decorated with cut and/or

engraved gold leaf dating to the 14th century, probably manufactured in Umbria. Before submitting these items to restoration at the Istituto Centrale per il Restauro in Rome1, archaeometric analyses with different methods were performed in order to study the materials used (gold leaf, glass support, pigments and binders). The results supply useful data for the identification of such materials used and the manufacturing techniques, as well as of the deterioration processes.

[1]Radeglia D., Huber E., Artioli D., Santopadre P., Sidoti G., Verità M., Il restauro dei vetri dorati e graffiti del Museo Diocesano di Recanati, Bollettino ICR, 13 (2006), pp. 73-91.

4.45 p.m. **Palazzo Polignac**

(*The Palace is situated just across Palazzo Franchetti - 874 Dorsoduro*)

Conferences on Murano-Istanbul: A Glass Making Journey IV

This year's fourth edition of "Murano-Istanbul: A Glass Making Journey" will be in the footsteps of the conferences initiated in 2018 and will explore diamond-point engraved glass, including pitttura a freddo/foglia d'oro a freddo techniques of the Renaissance and Baroque. In addition, it will also focus on the recently inaugurated Beykoz Crystal and Glass Museum in Istanbul, a brand-new museum featuring historical artifacts, objects and products that tell the history of the art of glass from the Seljuks onwards, including Murano examples produced for the Ottoman market.
The conference will be curated by Dr. Sema Postacioglu and among the speakers there will be Prof. Dr. Üzlifat Özgümüs of Istanbul University-Cerrahpasa. Although the diamond-point engraving technique was introduced to Murano in the early XVIth century, and despite the presence of IXth-century Islamic examples (probably) from Syria, this technique was curiously not taken up by the Ottomans, nor was it commissioned or imported as a Turquerie for the European market, notes Prof. Üzlifat, expert on Ottoman and Anatolian glass and adviser to the Beykoz Glass Museum, based on her research on Marmaray excavations and after her meticulous study, in 2019, of the glass archives of the Topkapi Museum and Dolmabahce Palace, now held at Beykoz Crystal and Glass Museum. From that collection, further attention will be given to the two mosque lamps in gilding and five lamps in cold painting and cold gilding techniques commissioned for Sokullu Mehmed Pasha Mosque in the XVIth century. The final list of speakers will be announced later.

Beykoz Glass and Crystal Museum
Sokollu Mehmet Pasha Mosque Lamp; mold-blown and gilded, second half of the XVIth century.
Sokollu Mehmet Pasha Mosque Lamp; vetro filigranato, cold painted and cold gilding, second half of the XVIth century.

THURSDAY, 9th SEPTEMBER

Session III Chairperson **Marco Veritàà**

10.00 a.m. **Speeches or Comments by Participants**

Rainald Franz
Diamond-point engraved and cold-painted glass decoration in Austrian glass from the 16th to the 17th century: from Hall to Ambras to Vienna.
Abstract - The glass decoration technique of diamond-point engraving and the use of cold enamel painting have a long tradition in Austrian artistic glass, dating back to the Renaissance. Venetian glass objects imported for the noble courts and the Emperor made the techniques familiar. Diamond-point engraving served as the alternative for Northern cutting techniques. It was taken over from the decoration on rock crystal objects, meant to fill Kunstkammer collections. Cold enamel painting was used to copy pictures and graphics on glass. For diamond-point engraving and cold enamel painting, patterns from ornamental prints were taken over in order to follow the taste. From the 16th until the 20th century, diamond-point engraving and cold enamel painting decoration were taken up again in order to simulate Venetian glass and to compete with Venetian products. The lecture shows examples from the MAKCollection and Austrian private collections.

10.30 a.m. **Hedvika Sedlackova and Dana Rohanova'**
Renaissance diamond-point engraved glass in Central Europe.
Abstract - In the number of finds of Renaissance glass from archaeological excavations in the lands of the Czech Crown (Bohemia, Moravia, Silesia) and also from Austria and the western part of Hungary, diamond-point engraved glass forms a numerically small but interesting group. The inspiration for this type of decor came from Venice, but in our findings (ca. 1550-1620) only regional products are represented, with a few exceptions. Cups and humpens, occasionally lids, table bottles, tankards, and tazze are represented in shape. The decor is mostly formed of arabesques, often complemented by gold. Inscriptions were also recorded, and from localities, in western Hungary, we also know vessels with the names of people, probably members of the Stubengesselschaft societies. Most of the specimens were made of colorless (greyish shade) calcium-potassium glass using beech ash. In terms of color, light green, blue, purple, and deep green vessels are represented here.

11.00 a.m. **Coffee Break**

11.30 a.m. **Eva Lenhart**

Lampwork and diamond-point engraving. A covered goblet with a crucifixion scene from the glass collection of Archduke Ferdinand II of Tyrol.

Abstract - The Kunstkammer of Archduke Ferdinand II of Tyrol at Ambras Castle near Innsbruck attracted sovereigns and scholars already in the archduke's lifetime. The collection included outstanding works of art, among these a large collection of lampworked glass objects. Today the extraordinarily rare Renaissance items belong to the Kunsthistorisches Museum in Vienna. Among them is an elaborate covered goblet with a lampworked crucifixion scene and diamond-point engraved decoration. The paper at hand focuses on the design and function of the goblet. Emphasis is put on the unique diamondpoint engraved decoration. The manufacturing techniques point to the Innsbruck court glasshouse as the production center of the goblet. It was operated by Venetian glassmakers and produced glass exclusively for the court. Research on the object's history reveals how severely its appearance is affected by later modifications. However the covered goblet holds an exceptional place in the lampworked glass collection for its remarkable quality and delicate workmanship.

12.00 p.m. **Alice Fuin**

Reverse Cold-Painted Renaissance Glass: the relationship with prints and the importance of iconographic recognition for chronological hypotheses. Some case studies from the Murano Glass Museum.

Abstract - The history and origins of the reverse coldpainting technique are still partially shrouded in mystery. It becomes even more complicated if one tries to concentrate one's attention on Venetian glass production. When did the Venetian glass painters begin do use this decorative technique? Who introduced it in Venice? Was it practiced in the factories? Why did they decide to use cold-painting, which is surely faster but at the same time more ephemeral, instead of that of enamel? All these questions are still open. Official Murano documents between the 13th and 16th centuries make reference in a generic way to glass painters, without ever mentioning in specific detail any decorative technique. However, there are some cold-painted glasses (plates, cups, small and medium size panels, etc.) which show legible and well-preserved images derived for the most part from Italian engravings of the Renaissance and Late Renaissance. Studies conducted on some cold-painted objects in the Murano Glass Museum have amply demonstrated the effectiveness of iconographic research in the attempt to put forward hypotheses of provenance and dating, in some cases corroborating the hypothesis of a Venetian production. The problem of the rapid deterioration of these paintings, however, makes it impossible to carry out this type of investigation over time. The need is urgent, therefore, to implement more effective conservation strategies, and above all to carry out more research, both scientific and archival.

12.30 p.m. **Sylvie Lhermite King**

Cold painting on a Renaissance glass.

13.00 p.m. **Lunch**

Session IV Chairperson **Reino Liefkes**

Speeches or Comments by Participants

2.30 p.m. **Maria João Burnay**

The finest glassware for the big occasions: the table services of Queen Maria Pia.

Abstract - In the context of King Carlos I's policy of active diplomacy, various mutual visits were held between the King of Portugal and other foreign heads of state during his reign. At a time when the monarch wished to consolidate friendly relations with his British and German counterparts, Portugal thus welcomed in 1905, amongst other illustrious visitors, the Dukes of Connaught in January and Queen Alexandra of the United Kingdom, her daughters, the princesses Maud and Victoria, and her son-in-law, Prince Carl of Denmark, from 22nd to 25th March. Just a few days later Kaiser Wilhelm II of Germany followed.

During the course of these visits, the royal palaces of Ajuda, Belém, Necessidades and Sintra were readied to receive and accommodate the heads of state and their interiors prepared. The Magpies Room at the Sintra Town Palace was chosen for several formal luncheons. The preparations caused great commotion. Everything had to be perfect. For these occasions, several pieces were brought from the Palace of Ajuda to the Palace of Sintra. Lists of objects were compiled for the ceremonies and for the personal use of the guests. These lists were altered as the requirements changed, not only in terms of the meals but also the needs of the hosts and guests. In a list from 16th March 1905, in addition to extremely valuable silver services, one can see other less valuable objects, some of which were utilitarian, and, finally, an Alcântara china service, Her Majesty's No. 4 China service, and the most elegant glassware: the so-called No. 2 and No. 27 services. These services were acquired by Queen Maria Pia in Vienna, at J&L Lobmeyr, and in Murano, at Compagnia di Venezia e Murano, respectively. The introduction of "service à la russe" into the norms of table etiquette as a daily habit in bourgeois and aristocratic homes led to the creation of a great diversity of objects, each with its own specific function. Furthermore, it was necessary to fully furnish the dining room, a new and recent late-18th-century bourgeois creation which reached its apogee of sophistication in the early 20th century. In this presentation we remember the days of sovereigns' visits and how the glasses were used on the table according to the court ceremonial.

3.00 p.m. **Mauro Stocco**

The Reliquary of Burano in the collection of the Museo del Vetro.

Abstract - The Museo del Vetro of Murano holds a great number of reliquaries, including a XVIth-century lidded bulbshaped piece, gilt, cold-painted and diamond-point engraved, which comes from St. Martin's church in Burano. This piece belongs to a group of glasses which were attributed in the past to Hall or to Innsbruck in Tyrol, but its provenance is almost certainly Venetian, as the comparison with the decoration of other reliquaries and objects kept in churches and in public collections demonstrates.

6.00 p.m. **Istituto Veneto Di Scienze Lettere Ed Arti**

The prize-giving ceremony for the Glass in Venice Prize

FRIDAY, 10th SEPTEMBER

10.30 a.m. **Visit To Balboni-Lucatello's House, Palazzo Mainella**

The house was designed by Carlo Scarpa and here there are very important works of art.

12.30 p.m. **Lunch in Murano**

2.00 p.m. **Visit to the Venini Glass Factory in Murano**

The visit will take place in 3 rounds and we will visit the showroom, the historical collection and the glass processing.

Teaching Staff

Rosa Barovier Mentasti

Descending from one of Venice's ancient glass making families, Rosa Barovier Mentasti was awarded a degree in Ancient Literature by the University of Padua in 1973 with a thesis on antique glass. Since then, she has been dedicated to studying the history of both ancient and modern Venetian glass. In addition to many articles and publications, including Il Vetro Veneziano dal Medioevo ad oggi, published in 1982, she has curated several international exhibitions of ancient and contemporary glass, including Vetri. Nel Mondo. Oggi, hosted by the Istituto Veneto di Scienze, Lettere ed Arti in Venice in 2004.

William Gudenrath

As resident advisor for the Studio of the Corning Museum of Glass, he teaches introductory and advanced courses in Venetian techniques. A glassblower, scholar, lecturer and teacher of glassblowing, he is an authority on historical hot glassworking techniques from ancient Egypt through the Renaissance and has presented lectures and demonstrations throughout the world. He demonstrates techniques he believes to have been employed by glassmakers of the past and these are described in a number of books and video segments including: Chronicle: the Portland Vase, Five Thousand Year of Glass, Journey through Glass: A Tour of the Corning Museum Collection and MasterClass Series II: Introduction to Venetian Techniques, Glass Masters at Work: William Gudenrath, Glassworking Processes and Properties.
Mr. Gudenrath's most recent major publication is The Techniques of Renaissance Venetian Glassworking, available free of charge on the Corning Museum of Glass website, or renvenetian.cmog.org. His numerous glassworking videos have a world – wide audience with viewings currently well over 50 million in number. Mr. Gudenrath's next ebook, The Techniques of Renaissance Venetian-Style Glassworking, was published in 2019.

Nicole Riegel-Satzinger

After university studies in Mainz, Berlin, Würzburg and a scholarship from the Bibliotheca Hertziana in Rome (Max-Planck-Institut) she graduated in History of Art (PhD).
Her dissertation on Renaissance architecture in Milan (S. Maria presso S. Celso) was awarded the Hans Janssen Prize by the Göttingen Academy of Sciences in 1998. She has held research fellowships at the Bibliotheca Hertziana (MPI) and the University of Würzburg (JMU). In 2007 she completed her postdoctoral lecture qualification and since 2014 she has been Associate Professor of History of Art at the University
of Würzburg. Her main research interests lie in architecture and decorative arts of the Italian and German Renaissance, in art patronage and cultural transfer, with publications on the patronship of Kardinal Matthäus Lang von Wellenburg, on Medaillen für Kardinäle, the castle of Hohensalzburg ca 1500, Schloss Neuburg am Inn and the Innsbrucker Hofburg during the reign of Maximilian I, as well as Figurale Stützen in der deutschen Renaissancearchitektur.

Lino Tagliapietra

Exceptional glass master and well-known world-round glass artist. He was born in Murano and was just a young man when he first entered a glass-maker's shop: he became a glass maestro in the 1950's and has worked for some of the most prestigious glass-makers on the island. Since the late sixties his creativity has resulted in models of great quality, both from the point of view of technique and beauty, that were a clear success on the market. He has been an independent glass artist since 1990 and is now committed to creating unique pieces that are exhibited in the most prestigious private collections and museums worldwide. In 2009, the Tacoma Art Museum dedicated a retrospective to his works with an exhibition that was then lent to other US museums. In 2011, the Istituto Veneto dedicated to him the exhibition Lino Tagliapietra, da Murano allo Studio Glass.

Cristina Tonini

Degree in History of Art awarded by the State University of Milan; curator of the Bagatti Valsecchi Museum in Milan.
She is author of museums glass catalog: Pavia Musei Civici; Pinacoteca Ambrosiana, Milan; Museo Pogliaghi, Varese; Museo Bagatti Valsecchi; she co-curated several exhibitions on Renaissance and contemporary glass: Artisti e designer del vetro 1960-2010; I fiori di Murano; Miniature di vetro. La bomboniera d'artista, 2012; Fragile, chefs-d'oeuvre de verre de la Renaissance au XXI siècle, Maillol Musée Paris, 2013 ; Contemporary glasses. The Bellini Pezzoli collection, Castello Sforzesco,2017. She is one of the curators of European Glass Context Bornholm, Royal Danish Academy School of Design (2021); editorial advisor of the Journal of Glass Studies of the Corning Museum of Glass; member of the committee on Cristallo at Musée de Louvre; member board committee AIHV, Italy.

Marco Verità

Holding a degree in Chemistry, he worked for over thirty years in the Stazione Sperimentale del Vetro in Venice-Murano, performing research and assessments on glass materials, both modern and ancient, the latter for archeometric purposes and also to assess issues relating to conservation and restoration.
Member of numerous international organisations, since 2009 he has been working with the Laboratory for the Assessment of Ancient Materials (LAMA) of the Iuav University of Venice.

List of Participants

Shirin Afra
Angelo Agostino
Marta Bagnasco
Maria João Burnay
Reinald Franz
Alice Fuin
Chiara Gabbriellini
Suzanne Higgott
Keith King
Gabriela Krist
David Landau
Eva Lenhart
Sylvie Lhermite King
Reino Liefkes
Christopher Luke Maxwell
Paola Pisani
Dana Rohanova'
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Diamond-point engraved bowl,
Venice, 1560 ca.
Brescia, Civici Musei di Arte e Storia

ATTI

TOMO 181 (2022-2023)

INDICE GENERALE DELLA

CLASSE DI SCIENZE FISICHE, MATEMATICHE E NATURALI

Fascicolo I-II-III

ATTI

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The "Study Days on Venetian Glass" are an opportunity for in-depth study on Venetian glass and are tuned to an audience of Museum conservators, collectors and experts.
The programme includes lessons by experts who, after a general overview, will guide participants through the direct study of methods and pieces, encouraging participants to actively take part, also through presentations.

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