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ARCHAEOLOGICAL, STYLISTIC AND SCIENTIFIC RESEARCH ON 11TH–13TH CENTURY AD PAINTED FRAGMENTS FROM THE *SAN GIOVANNI BATTISTA* CHURCH IN CEVIO (SWITZERLAND)*

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The painted fragments collected during the archaeological excavation campaign in the San Giovanni Battista *church in Cevio represent a unique patrimony of Romanesque wall painting in Tessin, Switzerland, having a strong stylistic linkage with the Lombardic art of the same period. The archaeological and stylistic research allowed the fragments to be dated between the 11th and 13th centuries* AD *and to group them in three chronological phases. The scientific research (p-XRF, OM, SEM–EDS, FTIR and XRD) was aimed at characterizing the pigments and the pictorial techniques used. Important changes occurred in terms of some pigments used during the 11th and 12th centuries: in particular, azurite was used to decorate the earlier wall paintings while lapis lazuli was used for the 12th-century ones. During the second period, lead-based pigments (lead white and minium) were introduced into the palette. The use of natural yellow and red ochres and green earth was common for the three periods. The* fresco *technique was generally used, except for the application of azurite and lead-based pigments, where the* a secco *technique was adopted. The integrated research is a contribution to the knowledge of Romanesque art in the Insubric Region.*

KEYWORDS: ROMANESQUE ART, WALL PAINTING, CEVIO

INTRODUCTION

The *San Giovanni Battista* church is located at the northern entrance to the village of Cevio (*Vallemaggia*, Tessin, Switzerland) and has been documented since 1253 (Gilardoni 1967). The present building is cross-shaped, embedding part of the oldest structures.

Two archaeological excavation campaigns under the direction of the Cultural Heritage Office in Tessin Canton (UBC), the former (1999) in front of the external façade corresponding to the 15th-century apse and the latter (2008) in part of the present nave, allowed the identification of masonry and wall paintings belonging to three churches and to a pre-existing structure, datable to a period between the 11th and 15th centuries AD (Fig. 1).

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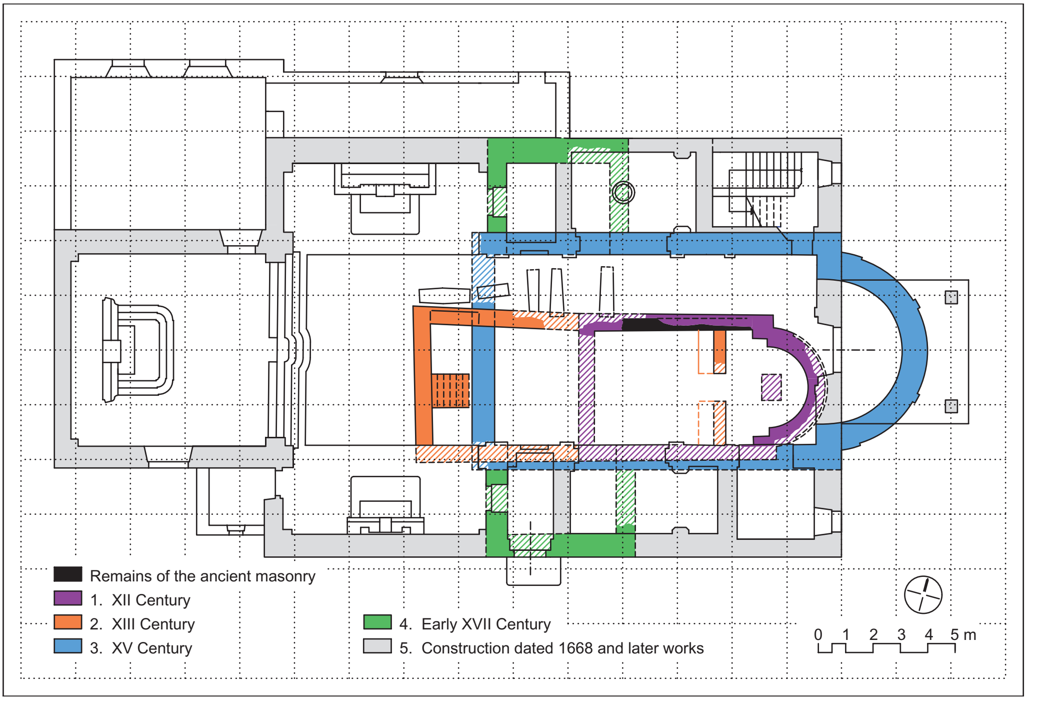

Figure 1 *The plan of the* San Giovanni Battista *church in Cevio, showing the different architectural structures from the original construction up to the present day.*

The discovery of a large number of painted fragments, about 30% of the original decoration, is exceptional because of the total absence of similar findings in *Vallemaggia* and in the Tessin area. Furthermore, the painted decoration preserves unaltered the original characteristics, allowing a clear identification of the original materials and pictorial technique, also with regard to the archaeological and stylistic contextualization.

The painted fragments that have come from the demolition of the original masonry have been moved to the UBC offices for storage and conservation.

ARCHAEOLOGICAL RESEARCH

The church

The most ancient wall, which is partially recognizable, corresponds to the 12th-century north wall of the church (see Fig. 2).

A rectangular nave, with the addition of a semicircular choir and a chancel arch, corresponds to the Romanesque building. The painted fragments found during the archaeological excavations can be related to the Romanesque church and are the object of this research.

Before the 13th century, the first construction was extended towards the east, with the addition of a structure serving as a porch or double nave. The new western wall, in a position slightly asymmetric to the opposite façade, shows a large basement and traces of a stairway in contact with the external space, where the ground level was higher. Contemporary to the enlargement,

Figure 2 *The* San Giovanni Battista *church in Cevio: a general view of the archaeological excavation undertaken in 2008.*

wall paintings were executed on the lower part of the eastern wall (scenes representing a grape harvest and wine-making), on the northern wall (scenes inspired by Christology), on the dadoes and on the rear side of the choir (scenes with figures).

The third church was probably built during the 15th century, changing the Romanesque architectural structure; the size was doubled, conserving the architectural conformation and orientation.

As stated by the pastoral visits, two lateral chapels were added to the main building, and later embedded into the new church built in 1668, and the orientation was inverted.

The wall paintings: iconography

The excavated painted fragments date back mainly to a period between the 11th century and the 12th century. We can suppose that figures and saints were painted in the apse and the upper part of the lateral walls of the nave, considering the correlation observed from the majority of the fragments. At the base of the north chancel arch, it is possible to observe a small figure drawn using a brush on the plaster; the execution is rapid—just a sketch, weakly painted. Similar characteristics can be observed at the base of the arch on the southern side, where a rider is sketched (Fig. 3). In the remaining parts of the arch, the paintings are completely lost; two large panels with the ground in gilded ochre and surrounded with red ochre lines were perhaps worked using the *marmorino* technique.

The Cycle of the Months (*Ciclo dei Mesi*) is datable to the 13th century, being co-eval with the extension of the church; the scenes of September (Fig. 4) and October (Fig. 5), the Vintage and the Wine-making, are in the rear façade. The eight months before September should have been painted on the southern wall, whilst November and December concluded the Cycle on the western sector of the northern wall, as attested by traces of plaster. The most ancient citations of the Cycle of the Months are reported in Carolingian miniatures; this type of decoration flourished during the 11th century; and this ornamental motif becomes very common during the 12th century, attesting the social rise of the rural classes. The iconography of the St Mesmin's Calendar, a manuscript conserved in the Vatican Library, represents a good parallel with the painted Cycle in Cevio (Frugoni 1980).

Concerning the painted allegorical figure located in the middle part of the northern wall and referring to the medieval bestiaries, a terrestrial animal with a fish's tail is assumed (Fig. 6); a similar representation is found on the ceiling of the St Martino Church at Zillis, Grison Canton, Switzerland (Rudloff 1989). The iconographic interpretations of the rider on the springer of the arch in the apse, datable to the 12th century, as well as that of the lower part of the figure dressed in elegant clothing, are still open questions.

Figure 3 *The sketch representing a rider.*

Figure 4 *The wall painting representing the Cycle of the Months: September.*

Figure 5 *The wall painting representing the Cycle of the Months: October.*

Figure 6 *The wall painting representing allegorical figures referable to medieval bestiaries.*

STYLISTIC RESEARCH

In-situ *wall paintings: the apse*

A single layer of plaster was applied directly on to the masonry, irrespective of the fact that the surface was perfectly flat. No traces of previous coatings have been detected, which suggests that this is the original plaster, datable to the 12th century. The painted figure in the north part and the rider in the south part were executed on a thin limewash and exhibit similar graphic characteristics: the brushwork and the use of colour is unskilled—many details overload the picture, and the stroke of the brush is irregular and repeated. In contrast, the outline of the leg shows different characteristics in terms of stylistic and technical procedure, being a drawing done by a steady hand—the outline is continuous and regular, and the use of colour is perfectly balanced.

In-situ *wall paintings: the nave, corresponding to the extension of the church dated to the 13th century*

A single layer of plaster was applied directly on to the masonry. The thickness is irregular, ranging between 2 and 30 mm; it is a lime-based mortar with grey river sands, worked with iron tools following the masonry irregularities. The painting was executed on a dense limewash, sieved coarsely, applied on to the plaster in incompletely carbonated form; drippings are evident. A large brush was used to outline the pictures with yellow ochre or vegetal black; the final painting was executed using a thin brush by a steady hand, in black tints. The pictorial layers exhibit good adhesion and cohesion; the cohesion with the underlying plaster is also good, apart from some localized detachments; small lacunae due to the demolition are visible.

Figure 7 *A painted fragment attributed to the 11th century.*

Painted fragments from the waste material

Group A: fragments attributed to the 11th century The waste material (see Fig. 7) has been recovered from the nave along the northern wall and within the superficial layer. It is a lime-based plaster, exhibiting good cohesion, grey in colour and with a thickness that varies between 5 and 20 mm, applied *fresco* over *fresco* on a similar plaster.

The following technical pictorial phases have been identified: plaster preparation using water; the general outline of the pictures, using red ochre; the background of the Incarnate, using yellow ochre; shading using green earth; nuances in red ochre; highlights in white; drawing in red–brown with lightening; and finishing using black (pupils and eyebrows). After the preparatory drawing in red ochre and the filling with flat tints, which serve as the ground for the graphic construction of the figures and of the composition, the lines of the drawing and the lights and shades were added.

Some fragments exhibit a remarkable technical processing that proves the existence of fixed models related to the miniatures laboratories that were typical of the monastic communities. Other fragments exhibit a rapid processing that perhaps proves the co-existence of many artists and the division of labour.

Group B: fragments attributed to the 12th century The waste material (see Fig. 8) has been recovered from the northern part of the apse. It is a lime-based plaster with good cohesion, the surface is weakly curved and the thickness ranges between 2 and 6 mm; the *rinzaffo* is similar. The colour used for the Incarnate ground is variable, from white to pinkish; the lines of the face are green; a red circle, which represents the cheeks, is typical of ancient decoration, and is weakly tinted with pink; highlights are white; and the final drawing is

Figure 8 *A painted fragment attributed to the 12th century.*

completed using black or green. The technical processing exhibits poor control of the brush, with examination of the ornamental details denoting a lower-quality decoration with respect to the fragments belonging to group A.

Group C: fragments attributed to the 13th century The paintings show graphical characteristics (see Fig. 9); the pictures are drawn using two tints on a white limewash ground.

SCIENTIFIC EXAMINATION OF THE PAINTED FRAGMENTS

Materials and methods

The identification of the pigment used in the different epochs, the pictorial technique adopted, the nature and composition of the plaster and their state of conservation are the main topics of the scientific examination of the painted fragments. Considering the huge number of fragments and the methodology already used for other similar studies, the research configuration has been an integrated approach, based on the application of non-invasive and micro-invasive investigation methods (UNI 2001; Bruni *et al*. 2002; Bonizzoni *et al*. 2007; Parazzoli 2007; Cavallo *et al*. 2008).

The qualitative elemental chemical analysis has been carried out by means of a hand-held portable Niton Xl3t X-ray spectrometer (p-XRF); a maximum-power X-ray tube, 50 kV; an Ag anode, 40 μA max.; and an X-ray detector, Si Pin diode, resolution 195 eV. The composition of the plaster was investigated by petrographic examination (UNI 2000); the stratigraphic

Figure 9 *A painted fragment attributed to the 13th century.*

succession was analysed in cross-section (Plesters 1956). A Zeiss Aksiotop polarizing microscope was used for the analyses, made in transmitted and incident light (OM). The chemical composition of selected cross-sections was studied by means of a scanning electron microscope coupled to an EDS detector (SEM–EDS). A Jeol JSM-5910LV was used for the BSE images and X-ray maps, operating under the following conditions: 20 kV, vacuum mode HV, working distance 9 mm, spot size 43. The application of X-ray diffraction (XRD) was required for two samples. A D8 Bruker diffractometer was used: X-ray tube with Cu anti-cathode; Ni filter ($Cu–K_\alpha = 1.5418$ Å); generator settings 40 kV and 40 mA. The analysis of the organic compounds eventually used for the *a secco* pictorial techniques was carried out by means of infrared spectroscopy (FTIR); an ATR PerkinElmer Spectrum One BM was used; the measurements were taken in the range 4000–600 cm^{-1}.

The samples collected after the p-XRF analysis, with an indication of the analytical technique used, are reported in Table 1. The relationship between the samples and the p-XRF reading points are also reported (Table 2).

Portable X-ray fluorescence (p-XRF)

The analyses were carried out in the storerooms of the Tessin Archaeological Department. The use of p-XRF allowed rapid identification of the class of pigments used on a great number of fragments, and adequate selection of samples for in-depth micro-invasive analysis. The main results are summarized in Table 2 where, for each detected element, the number of counts per second, corresponding to the highest keV peak intensity, is reported.

The green, red, yellow, orange and brown colours show Fe as the characteristic and predominant chemical element, indicating the use of natural colouring earths (ochres and green earth). This is true for all the examined fragments belonging to the different periods, except for the orange colour used to decorate details on the 12th-century fragments; Pb was detected, suggesting the use of Pb-based pigments such as red lead and lead white, even if a mixture of the two pigments cannot be excluded, in addition a mixture with red ochres and red lead can also be considered as suggested by readings 28 and 32 (Table 2).

The blue areas are of relevant interest. The 11th-century fragments show the presence of Cu, indicating the use of a Cu-based blue pigment—most probably azurite. The analysis carried out on the 12th-century fragments does not reveal any characteristic chemical element for the blue colour.

The presence of Mn in very low quantities, as reported in Table 2, is attributable to impurities associated with the colouring earths, while the Sr is due to the composition of the plaster (Seccaroni and Moioli 2002). The results were very useful for devising a micro-sampling strategy and for in-depth analytical research.

Petrographic examination

Petrographic examination was carried out on samples M1, M2 and M3 to check for possible analogies and differences between the three examined periods and to determine the composition of the plaster. We are aware that many characteristics linked with the work-site practices, such as the preparation of the substrate, the protection of the render after its application from the action of direct solar radiation and the final treatments of the surface, are undetectable under the microscope (Cavallo *et al*. 2010). Samples were chosen after accurate visual examination and are representative of the chronological phases investigated.

The material used for preparing the mixes in the three periods exhibits the same mineralogical composition. A lime-based mortar was used, with the addition of siliceous fluvial sands that were generally sub-rounded in shape and had a high degree of sphericity. The mineralogical composition of the aggregates reflects the paragenesis of the granitoid and metamorphic source rocks, being represented—in order of relative abundance—by metamorphic quartz, generally as individual crystals and subordinately in association with feldspars and biotite, biotite and muscovite. Garnets, amphiboles, plagioclases, epidotes and calcite are accessory minerals, which occur in more or less all of the examined samples. The aggregate : binder ratio (UNI 2000) is about 2:1 by volume.

The microstructure is homogeneous and sometimes broken off by millimetre-scale cracked lime lumps, and the texture is generally microsparitic. The macro-porosity (air voids), represented by cavities that are irregular in shape, is about 2–5% by volume. All of the samples have

Table 1 *Samples and analysis*

Sample number	*Description*	*Analysis**					
		OMTL	*OMIL*	*FTIR*	*SEM–EDS*	*XRD*	*p-XRF*†
1	Eleventh-century fragment representing a face; green layer on a yellow background		+	+	+		15, 16, 17
2	Eleventh-century fragment representing a decoration; blue pigment		+	+	+	+	18, 19
3	Twelfth-century fragment representing a face; green layer on a yellow background		+		+		27, 28, 29, 30
4	Twelfth-century fragment representing a decoration; blue pigment		+		+	+	24
5	Twelfth-century fragment representing a decoration; orange colour.		+	+	+		25, 31
M1	Eleventh-century painted plaster (yellow)	+		+			–
M2	Twelfth-century painted plaster (green)	+		+			26
M3	Thirteenth-century painted plaster (yellow and brown)	+	+	+			37, 38

*OMTL, optical microscopy in transmitted light; OMIL, optical microscopy in incident light; FTIR, infrared spectroscopy; SEM–EDS, scanning electron microscopy coupled with energy-dispersive detector; XRD, X-ray diffraction; p-XRF, portable X-ray fluorescence.

†In this column, the reading points by p-XRF on the corresponding samples are reported, as in Table 2.

Table 2 *p-XRF analysis*

Measurement reference	*Visible colour*	*Elemental chemical analysis (counts/s)*					
		Ca	*Mn*	*Fe*	*Cu*	*Sr*	*Pb*
Eleventh century							
15	Green	55.89	0.83	17.63	–	11.40	–
16	Red	36.61	1.27	59.81	–	7.68	–
17	Red	39.55	0.45	33.31	–	9.14	–
18	Blue	29.77	–	19.33	170.39	6.04	–
19	Yellow	37.56	0.45	38.16	–	5.05	–
20	Green	46.39	–	13.78	–	14.74	–
21	Red	43.13	0.74	35.71	–	5.64	–
22	Green	38.08	0.22	9.59	–	10.48	–
23	Red	27.31	0.30	24.70	–	11.34	–
Twelfth century							
24	Blue	21.67	–	6.47	–	9.22	1.39
25	Orange	2.73	0.19	2.17	–	–	272.79
26	Green	15.47	0.90	62.26	–	8.30	0.90
27	Green	38.95	0.52	20.30	–	8.54	4.64
28	Red	33.23	0.45	43.22	–	7.38	8.94
29	Blue	20.81	0.30	21.70	–	10.04	0.52
30	Blue	29.43	0.45	30.33	–	7.36	3.68
31	Orange	27.24	0.33	44.29	–	6.20	83.77
32	Red	18.78	0.38	48.01	–	6.46	5.94
33	Blue	18.13	0.45	13.66	–	9.48	1.19
34	Blue	30.76	0.37	20.36	–	7.56	1.20
35	Brown	23.23	0.89	48.03	–	7.37	11.32
36	Yellow	18.09	0.59	82.87	–	9.01	2.58
Thirteenth century							
37	Yellow	28.52	–	8.16	–	27.92	–
38	Brown	41.21	0.37	24.81	–	16.17	–

a ground layer with aggregates ranging mainly between the fine and medium sands (0.125–0.500 mm); the lower and upper fractions are, however, present.

The sample representing the 13th century exhibits two final limewashes (total thickness 0.16 mm), whilst the sample from the 12th century exhibits a typical succession: a lime-based *intonachino* (thickness 2.5 mm), with the addition of siliceous sands with a prevailing grain-size distribution referable to fine sands (0.125–0.250 mm); over a final thin (0.3 mm) lime-based layer, with the addition of siliceous sands with a grain size < 0.0625 mm, concluding the succession.

Incident-light microscopy on cross-sections (OM) and micro-analysis (SEM-EDS)

Selected micro-samples have been chosen in order to understand the materials and techniques adopted for the pictorial decoration. The stratigraphic succession of each sample recognized under the optical microscope in incident light and the corresponding micro-analysis are reported in Table 3.

Combining the observations, the following conclusions can be made. The binder used for the pictorial preparation layer (*intonachino*) and for the plaster is a magnesian lime, as confirmed by

Table 3 *Stratigraphy (OM) and micro-analysis (SEM-EDS)*

Sample	*Layers*	*Optical microscopy (incident light)*	*Micro-analysis (SEM–EDS)*
1	0	Lime-based plaster	Ca, Si, Mg, Al, Na, K
	1	Red layer, thickness ranging between 20 and 40 μm, obtained using red colouring earths; *a fresco*; the layer exhibits irregular continuity	Fe, Ca, Mg, Si, Al, K
	2	Yellow layer, thickness ranging between 25 and 150 μm, obtained using yellow colouring earths; *a fresco*; the thickness variability is due to the irregularity of the plaster surface	Ca, Mg, Fe, Si, Al, K
	3	Green layer, medium thickness 10 μm, obtained using green colouring earths; possibly *a secco*	Ca, Mg, Fe, K
2	0	Lime-based plaster	–
	1	Grey layer, medium thickness 25 μm, obtained using charcoal black and red colouring earths; *a fresco*	Fe, Ca, Mg
	2	Blue layer, thickness ranging between 40 and 50 μm, obtained using azurite; *a secco*, with the addition of an organic binder	Cu, Fe
3	0	Lime-based plaster	Ca, Si, Mg, Al, Na, K, Fe
	1	Yellow layer, medium thickness 25 μm, obtained using yellow colouring earth; *a fresco*; the distribution of the pigment is not uniform	Ca, Mg, Si, Fe
	2	Pale blue layer, medium thickness 50 μm, obtained with natural ultramarine mixed with lime	Ca, Mg, Si Al, Na, S
4	0	Lime-based plaster	Ca, Si, Mg, Al, Na, K
	1	Grey layer, thickness ranging between 10 and 25 μm, obtained with charcoal black and yellow–orange colouring earths; *a fresco*	Ca, Si, Mg, Fe
	2	Pale blue layer, medium thickness 50 μm, obtained with natural ultramarine mixed with lime	Ca, Si, Al, Na, S
5	1	Trace of a yellow ground layer, thickness 30 μm, obtained with yellow colouring earths	Ca, Si, Mg, Ca, Fe
	2	Orange layer, thickness ranging between 0.3 and 0.4 mm, obtained using minium and lead white; *a secco*	Pb, Si, Ca, Fe

the co-presence of Ca and Mg. This characteristic is very typical in Tessin, due to the easy availability of dolomitic limestones as raw materials. The preparatory drawing for the figurative fragment (sample 1) was executed using a Fe-based pigment (natural red colouring earth) on the fresh *intonachino* (*a fresco* technique). The Incarnate, yellow in colour, was obtained by mixing Mg-lime with a Fe-based pigment (natural yellow colouring earth), and the flashes using green earth, as confirmed by the presence of Fe. The blue layers for the first and second chronological phases differ in terms of the nature of the pigment and the technique used: a Cu-based pigment was used on *veneda* (charcoal black mixed with natural colouring earths) for the 11th-century decorations (sample 2) and a silico-aluminate pigment containing S and Na over a yellowish layer (Table 3) was used for the 12th-century decorations (samples 3 and 4).

The orange layer (sample 5) was made using Pb-based pigments, confirming the introduction of this type of pigment during the second cycle of the decorations.

Infrared spectroscopy (FTIR)

Except for sample 5, where traces of organic compounds are marked by C–H stretching at 2920 and 2850 cm^{-1} and the carbonyl absorption band at 1730 cm^{-1}, the remaining samples do not

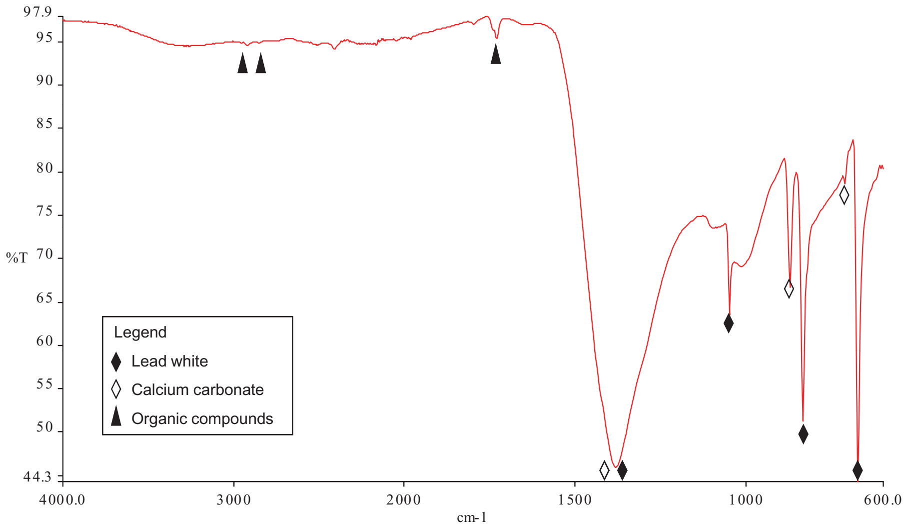

Figure 10 *FTIR of sample 5.*

exhibit characteristic absorption bands due to organic matter. Lead white has been clearly detected in sample 5, as confirmed by the vibrations at 1384, 1051, 837 and 675 cm^{-1} (Fig. 10). Celadonite has been detected in sample M2; and hydroxyl stretching at 3600, 3556 and 3534 cm^{-1}, hydroxyl bending at 1640 cm^{-1}, Si–O stretching at 1110, 1071, 968 and 956 cm^{-1} and R–O–H bending (R octahedral ion) at 846, 798, 745 and 676 cm^{-1} are characteristic for this pigment (Grissom 1986). The weak vibrations in samples M1 and M3 at 3660 and 3484 cm^{-1} (O–H stretching), the O–H bending at 796 cm^{-1} and the Fe–O stretching at 625 cm^{-1} can be referred to goethite (Cornell and Schwertmann 1996); the O–H bending at 892 cm^{-1} is masked by the strong and sharp peak at 872 cm^{-1} due to the high quantity of calcite in both samples.

X-ray diffraction (XRD)

Powder X-ray diffraction was carried out on the blue colours used for the 11th-century fragment (sample 2) and the 12th-century fragment (sample 5), the former corresponding to azurite (Fig. 11) and the latter to lapis lazuli (Fig. 12).

DISCUSSION AND CONCLUSIONS

The research developed following three different contributions (archaeological, stylistic and scientific research), allowing a clear definition of the artistic context between the 11th and the 13th centuries in the studied area, and allowing us to establish correlations with similar wall paintings in the Insubric area (corresponding to the Tessin Canton and northern Lombardy). The composition of the plasters does not reveal any difference between the analysed chronological phases, attesting to the use of local resources; the main observed differences are due to the technical procedures required for the application: the number of the layers and, consequently, the grain-size distribution; and the presence or absence of final coatings, as also pointed out by

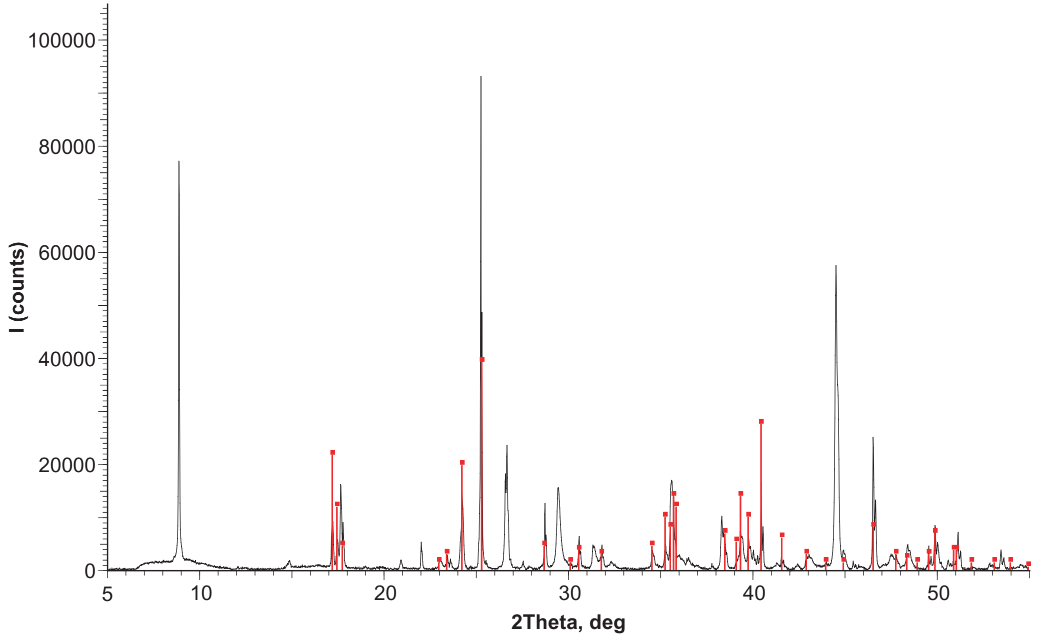

Figure 11 *XRD of the blue pigment (sample 2): the vertical lines correspond to azurite.*

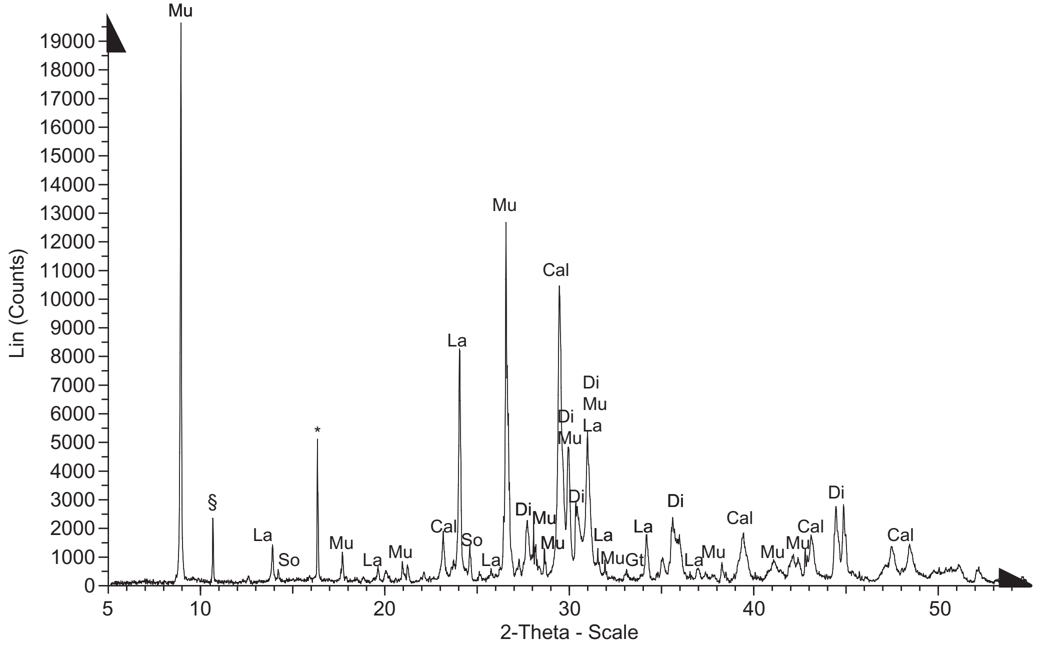

Figure 12 *XRD of the blue pigment (sample 4). Mineralogical phases: Mu, muscovite; Cal, calcite; La, lazurite; Di, diopside; So, sodalite; Gt, goethite. *, An unknown inosilicate; §, a multiple reflection from a single-crystal quartz sample-holder.*

the stylistic analysis. The microstructure does not exhibit defects, attesting to the use of a careful procedure for the preparation of the mixes (good aggregate/binder adhesion, good cohesion of the binder and the absence of cracks).

Concerning the pigments, p-XRF allowed an immediate classification of the material used, leaving, however, open questions due to the intrinsic limits of the technique itself, which were solved with complementary techniques. Natural colouring earths such as goethite, red ochre and celadonite have been identified. The use of these pigments is very typical for the historical context. The blue pigment identified as characteristic of the 11th-century fragments is a Cu-based pigment. The morphology of the individual grains under incident light, the micro-analysis and XRD confirm that it is azurite, applied *a secco* on a preparatory layer, as is common for this type of pigment, which is well known for its possible alteration in basic conditions. This pigment was used extensively in European painting during the Middle Ages (Gettens and Fitzhugh 1997). Another example of the use of azurite, in this case on a white layer, was found at St Ambrogio in Cademario (Tessin) on fragments of the same age (Parazzoli 2007). According to Bensi (1990), azurite was not introduced into Italy prior to the 13th century; therefore, the introduction of azurite in the Insubric region should be one of the early examples of the use of this pigment.

In the 12th century, the introduction of Pb-based pigments in the form of lead white and minium is characteristic. The orange colour found on decorations is due to a mixture of these two pigments. Characteristic of this phase is also the use of natural ultramarine, as confirmed by micro-analysis and XRD. The pigment contains lazurite, sodalite, diopside, muscovite and calcite (Fig. 12). This pigment was used extensively in Europe between the 14th century and the mid-15th century (Plesters 1997). Natural ultramarine has been used mixed with lime. The introduction of lapis lazuli, a pigment noteworthy for its high cost, is indicative of a prestigious commitment.

Concerning the pictorial technique, the analyses confirm the visual examination with regard to the adoption of the *a fresco* technique except for azurite, since this pigment is incompatible with basic systems such as lime, and for some details executed with very thin strokes of the brush. Also, the decorations made with Pb-based pigments have been executed using a dry technique, as suggested by the presence of traces of organic compounds. With regard to the opportunity to exhibit the fragments after accurate reconstruction, some considerations are important in terms of conservation. The microstructure of the plaster indicates good characteristics, so no conservation treatments are required. Also, the pictorial layers—both *a fresco* and *a secco*—do not require any specific procedures in terms of conservation, because the layers are well preserved.

The physical and chemical integrity of the painted samples and the absence of any past conservation treatments allowed us to study original works of art and to have stylistic elements for a certain relative dating. Furthermore, in the past 5 years, painted fragments from archaeological excavations have been treated in Tessin Canton in the same way as archaeological objects, receiving the correct attention in terms of examination and research.

The fragments from the *San Giovanni Battista* church are the first findings in *Vallemaggia* and allow a wider reading of the Romanesque paintings in the Tessin and Lombardic contexts. The style of the surfaces is relatable to important wall painting decorations in the Lombardy area, such as the *Santi Pietro and Paolo* church at Agliate (Pertot *et al*. 2001), *San Calocero* at Civate, *San Martino* at Carugo (Alfani 2000) and *San Vincenzo di Galliano* at Cantù (Gregori 1993; Bianchi *et al*. 2007). The fragments become a relevant part of the body of Romanesque art, which is the most significant expression of medieval monastic spirituality (Sala 2010).

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