

Tempera paints: their history of use and manufacture as alternatives to oil-based systems for easel painting, state of the research

Hosted by the *Akademie der Bildenden Künste*, Vienna, Saturday, 25 September 2010

A seminar organised by the *Schweizerisches Institut für Kunstwissenschaft (SIK_ISEA)*, Zurich and *Art Access & Research*, London

Planning

12:30 Meet

Please meet at the main entrance of the Academy of Fine Arts, Schillerplatz 3 at 12.30 (speakers and whom ever else would like to come then), or, proceed directly to the "Sitzungssaal". The "Sitzungssaal" is through the main entrance, then take a left, then right, walk down the long hallway, then take a left again and the room will be to your right. You may ask the doorman for help if you do not find it.

12.45 Welcome, Introduction

12.45-14.00 The International Context for the Use of Tempera

Karoline Beltinger (Head of Conservation, SIK, Zurich)
The use of non-oily binding media by Swiss artists around 1900

Prof.ssa Simone Rinaldi (Associate Professor, Faculty of Conservation, Università degli Studi della Tuscia, Viterbo)
Some notes on the use of tempera media in Italy in the 19th century

Eva Reinkowski (Conservator of Paintings and Sculpture, PhD Candidate, University Bamberg)
The reception of tempera painting in the 19th Century

DISCUSSION

14.00-15.15 The German Context for the Use of Tempera

Dr Albrecht Pohlmann (Head of Conservation, Moritzburg Foundation, The Art Museum of Saxony-Anhalt, Halle)
Source research on 19th century German tempera paint manufacture

Katherin Kinseher (Akademie der Bildenden Künste, Munich)
The institutional promotion of tempera as an alternative medium: the role of the "Deutsche Gesellschaft zur Beförderung rationeller Malverfahren" in Munich and Adolf Wilhelm Keim

Wibke Neugebauer (Paintings conservator, PhD Candidate and researcher, Doerner Institute, Munich),
From Böcklin to Kandinsky – art technological examinations and source research on "Tempera"- paintings around 1900 in Munich

DISCUSSION

15.15-15.45 Coffee

15.45-17.00 Possibilities and Limitations in the Analysis of Tempera Paints

Dr Ester Ferreira (Head of the Analytical Laboratory, Kunsttechnologie SIK, Zurich)
Cuno Amiet's tempera paints. Our research and analytical strategies

Simona Rinaldi

Some notes on the use of tempera media in Nineteenth-century Italy

The term “tempera” in Italy is used in a rather circumscribed meaning related to proteinaceous binding media, like egg, glue, gum.

Other different materials involve the “tempera grassa” : an emulsion of egg and siccative oils, to obtain a soft paste to work with final glazes, much employed in Renaissance painting, but very little used during XIX century Italy.

These binding media always remain sharply separated from wax, plant resins or their mixtures, that are gathered in encaustic techniques.

Tempera and encausto are two distinguished techniques for Italian painters, that study materials and methods in different times: since discovery of ancient mural painting at Pompei and Ercolano in the half of eighteenth-century, encausto has been practised in mural painting but also on canvas in 1785 by Agostino Gerli and Gaetano Callani at Parma, Rome and Florence.

The excellent preservation of ancient painting feeds the debate on fast deterioration of modern painting and gives rise to opposite reactions: the first want to recover the past through the reading of ancient sources (Pliny, Vitruvius, Cennini, Vasari) in order to learn the painting technique; the second gets up to date on the chemical processes and adopts new synthetic pigments proposing experimental technique.

Academic painters join generally to the first position, and following Romantic vision of Middle Ages and Renaissance, agree on proposal by Carlo Verri to return to past tradition of manufacturing own materials, or by Pietro Estense Selvatico to reform academic training introducing apprenticeship in painters workshop.

The second updated position is represented by Tuscan Macchiaioli painters (like Giovanni Fattori) in the half of the century and by Divisionist painters in the end of nineteenth century (like Gaetano Previati, Pellizza da Volpedo). Macchiaioli paint en plein air with new synthetic pigments in tin tubes; Divisionist painters study the science of colors on treatises by Chevreul and Rood employing Lefranc tin tubes.

Naturally the situation is much less schematic with continuous interferences. Divisionist painter Gaetano Previati writes in 1905 the treatise *The technique of Painting* where describes the tempera with animal glue:

«today it reappears frequently like media for true paintings, thanks to speed in working, the beautiful

matt which shows and that brightness in tone which many people esteem as brilliance” (pp. 134-5).

A significant example of painting with animal glue is “Allegory of Industry” (fig. 1), realized in 1867 by the academic painter Bartolomeo Giuliano (1825-1909) on canvas.



Fig. 1 The Allegory of Industry



Fig. 2 Vittorio Emanuele II Gallery in Milano

The painting pertained to a four canvas serie, representing the Allegories of Human Activity:

- *The Science* by Angelo Pietrasanta (1834-1876)
- *The Art* by Raffaele Casnedi (1822-1892)
- *The Agricolture* by Eleuterio Pagliani (1826-1903).

These paintings decorated the Gallery of King Vittorio Emanuele II in Milano, built in 1878 like place of walks and meeting for the citizens, on the model of other european towns, and it intended



to celebrate with the cover on iron and glass the modernity of Milan like industrial capital of Italy. In 1921 the canvas were replaced with mosaics (fig. 2) and forgotten in municipal warehouse, where they have been found 5 years ago, still rolled together (fig. 3).



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All four paintings are executed with same materials and technique: in particular *The Industry* has a support composed with two linen canvas, in diagonal weave (4/1) and normal density (10 x 10 cmq). (Fig.

Fig. 3 Painting rolled

Fig. 4 Canvas support

composed by a mixture of gypsum, barium sulphate is animal glue that forms also the priming applied to

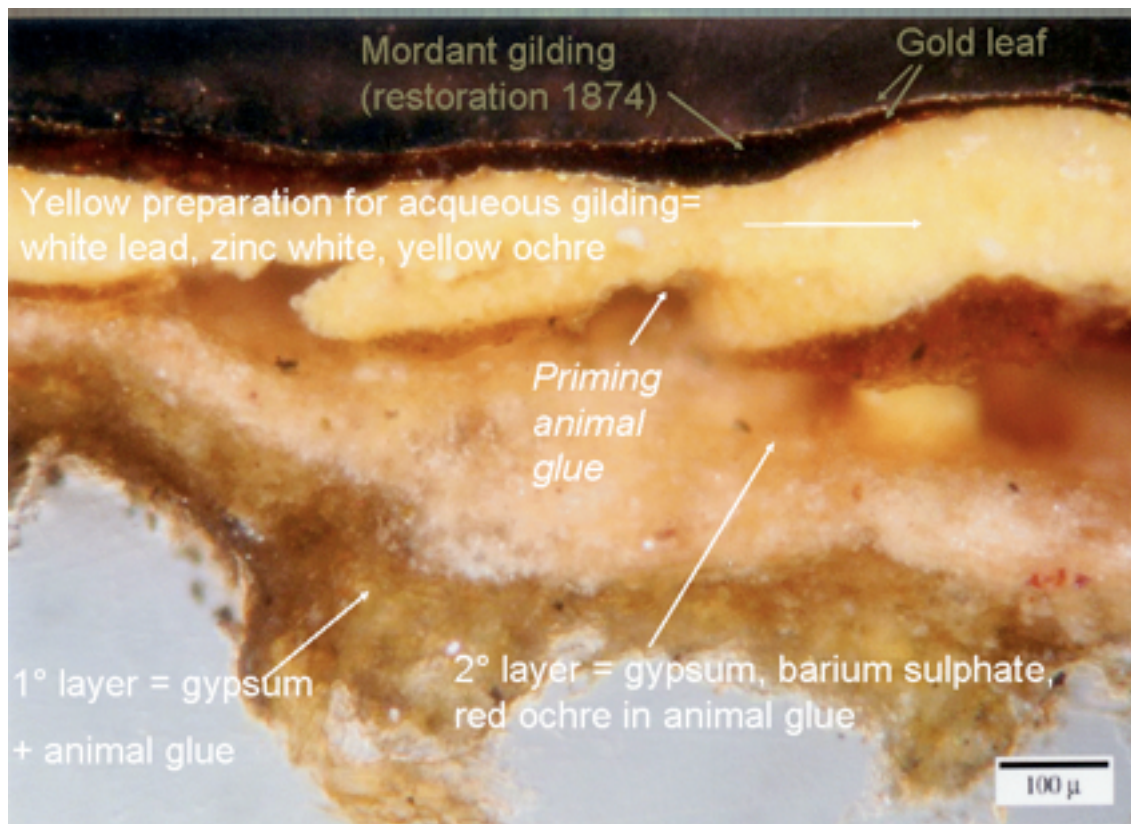


Fig. 5

Paint layer are rather thin and identified in flesh paints with a single layer of barium sulphate and red ochre, while in green background near the painter's inscription, are present two layers: the first with zinc white, yellow ochre and charcoal black; and the second with green earth, charcoal black, red ochre and white lead.

The paint film is always bound with animal glue that is also the binder for gilding in gold leaf, applied on a yellow layer composed by white lead, zinc white and yellow ochre.

In the cross-section of gilding it is observed a new gold leaf applied with resinous material during restoration dated 1874, when the canvas was damaged by a violent thunderstorm that broke the glass covering the Gallery.

Scientific analyses have been addressed to understand conservation problems of canvas in order to send the painting in a temporary exhibition, and solutions adopted do not involved relining, but only the reinforcement of perimetral edge with tetrex and BEVA 371 and a kevlar net applied on the back, waiting for a complete conservation campaign.

Scientific analysis on Nineteenth century Italian painting are deficient in general sense, and only during last ten years are began some researches, concerning particularly synthetics pigments and preparatory components of support ready for use, following the international literature on most famous Impressionists to study Italian Divisionism or Macchiaioli, but failing attention on binding media (believed always in oil), et also academic painting.

Instead more backward academic painting becomes interesting in technical framework, with all its discrepancies: in 1833 the apothecary Lorenzo Marcucci become member distinguished of roman Academy for his studies on Colors Chemistry; since 1821 the systematic reference to Cennini's treatise published by Giuseppe Tambroni is translated together with the Lives by Giorgio Vasari in a painting technique where is absent the ancient materials' knowledge of Pre-Raphaelites or german Nazzareni. Modern materials and ancient techniques are bound together and always re-elaborated. The ceiling painted on canvas by Giuseppe Cammarano in San Carlo Theatre in Naples is another example of this interpretation of two historical techniques: fresco painting and socalled Venetian teleri, painting on very large canvas to simulate a mural painting.

Also Cammarano uses animal glue as binder.

Another example for the use of tempera is the landscape painting where Giovanni Costa plays a important role between past and present. Costa is a close friend of some English painters like Charles Coleman, George Heming Mason and Frederic Leighton, known between 1850 and 1853 while he painted *Donne che imbarcano legna al Porto di Anzio* [*Women embarking woods in Anzio Harbour*] (today in National Gallery of Modern and Contemporary Art in Rome (fig. 6) where all works by Nino Costa are classified as Oil. But some paintings like *Verso Ardea* and *Ripa Grande* painted on wood, show a very absorbent surface, where brushstrokes are totally flat and these observations make doubtfull to see an oil painting (fig. 7).



Fig. 6

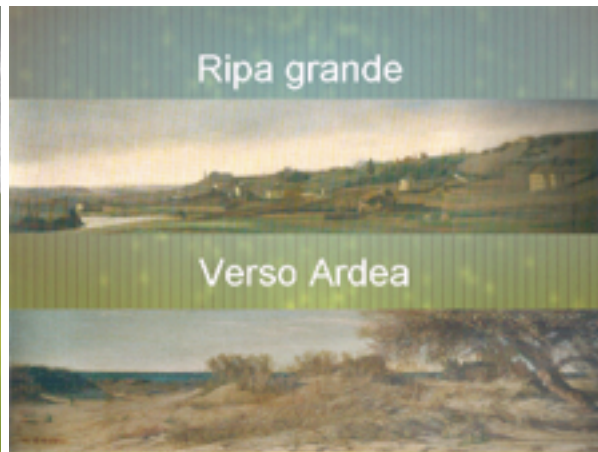


Fig. 7

A more careful study (also with scientific instruments) is needed, because historically we know that Costa and Leighton were keen on Venetian painting and they believed following Pietro Estense Selvatico that Tiziano, Veronese and Tintoretto sketched their paintings with tempera and finished them with glazes in oil.

No specific documentation has been found on binders by Costa, but only his vague answer to a question on “What is the greatest enemy of the oil painter?” and he answered was: “The Oil”.

If Italian technical literature is disappointing in nineteenth-century, some information can be found in painters' correspondence.

The letters written by Frederic Leighton contain several technical references: in 1889 he writes to Arthur Herbert Church, prominent author of the *Chemistry of Paints and Painting* (1890) and Professor of Chemistry in the Royal Academy of Art where Leighton was President from 1878 to death in 1896:

«I have got a recipe ... from a friend of mine in Italy, who paints a good deal in distemper ... In this recipe he mentions what he calls ‘gum damar’ ... which he .. writes with an apostrophe D’amar. Now I presume he means ‘gum Dammar’ (I believe there is such a thing, is there not?)» (Carlisle 2001, p. 86).

Also the letters written by Giovanni Costa are important and still scarcely examined: in 3-12-1895 Costa answered to young painter Adolfo de Carolis

“I do not believe that with oil painting you will be able to obtain the quality of tempera painting, neither on the canvas to have the quality of easel painting, which could be prepared how it must be gilded. And then: silver, red lead, gold, purple, lapis-lazuli”.

Adolfo de Carolis takes part of painters group *In Arte Libertas* founded (1887) by Giovanni Costa

which also Giulio Aristide Sartorio joins, to rediscover the methods of the great masters of the past. But the past seems undefined, and it alternatively concerns Middle Ages, Renaissance, Ancient Rome or Greek and also Etruscan age.

In 1908 Sartorio was entrusted to execute the Parliament's Frieze (fig. 8) in a time much restricted of ten months. The artist paints 50 canvasses to obtain the breadth of one hundred and seven meters, and he used the ancient technique of encausto by mixing to pigments in powder with beeswax purified, poppy oil and turpentine (fig. 9), following Boecklin's studies carried out in Italy on this subject, until his death at Fiesole in 1901.



Fig. 8



Fig. 9

Now the ancient technique to imitate pass from tempera to encausto, thanks the researches developed in Munich Academy, that became the main technical reference until the second world war and it was fundamental for Giorgio de Chirico, author in 1920 of “Pro Tempera Oratio”, devoted to rediscovery of tempera grassa (fig. 10).

In 1920 e 1930 the revival is the Renaissance painting and the emulsion of egg and oil.

