ICOM Committee for Conservation
Comité de l'ICOM pour la conservation

Triennium 2008-2011
NEWSLETTER 1

SCULPTURE, POLYCHROMY, AND ARCHITECTURAL DECORATION

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From your Co-ordinators

Kate Seymour, Arnold Truyen, Line Bregnhøi and Jonathan Gration

Dear members and colleagues

The last fruitful Triennial period culminated with a successful meeting in New Delhi, but also saw a stimulating interim meeting in Brussels hosted by KIK-IRPA. Both meetings showed that the working group continues to be active and provides an appropriate platform for members to present not only completed projects but also queries on ongoing treatments. The working group has demonstrated over the last three years that the extension to include architectural decoration, ratified at the 2005 Den Haag ICOM Meeting, was justified. The broader focus has stressed the links and similarities in both materials and approaches between sculpture, polychromy and architectural decoration. However, the current co-ordinators would like to encourage all members to continue to contribute to the group ensuring that the multi-disciplinary approach developed over the last six years is maintained.

Special thanks must be extended to the previous co-ordinator Anne van Grevenstein for all her inspirational work over the last two Triennial periods in this working group. Gratitude must also be shown to the two assistant co-ordinators for the last triennial period, Erika Rabelo and Line Bregnhøi.

Introductions:

At this point it would be fitting to introduce the co-ordinator and assistant co-ordinators for the next triennial period:

The new co-ordinator is Kate Seymour. Kate was trained as a paintings conservator both in Italy and in Great Britain. She moved to the Netherlands in 1999 and is currently working at the Stichting Restauratie Atelier Limburg (SRAL) in Maastricht, the Netherlands where she is Coordinator for the Conservation of Easel Paintings post-graduate programme. She also lectures on the new Masters Conservation course at the University of Amsterdam. Kate has been involved in many of the multi-disciplinary projects carried out by SRAL conservators and expects that her experiences will allow her to play an active role in the Sculpture, Polychromy, and Architectural Decoration Working Group.

Arnold Truyen will join as assistant co-ordinator. Arnold has been the Head of Conservation for Polychrome Sculpture at SRAL since 1987. He has trained as a mural conservator in Germany at the Rheinisches Ambt für Denkmalpflege Bonn and as a sculpture conservator at KIK-IRPA in Brussels as well as in the studio of Eiche Oellermann in Nürnberg. Arnold has worked on many medieval sculptures held in collections throughout the Dutch province of Limburg and has been instrumental in the organisation of the Jan van Steffeswert exhibition held at the Bonnefantenmuseum, Maastricht in 2000. Arnold also supervises the training of students and interns within the institute and is responsible for the X-Radiography of artworks undergoing conservation at SRAL. Arnold hopes that his knowledge and experience with in the field of polychrome sculpture will bring great benefits to the working group. He will work closely with the co-ordinator of this working group over the next Triennial session.

Line Bregnhøi will continue in her role as assistant co-ordinator. Line was trained as a house painter before commencing her Masters degree in Paintings Conservation and Architectural Paint Research at the School of Conservation in Copenhagen, Denmark. Since 1986 she has been employed at the National Museum of Denmark, in the Department of Conservation, dealing with polychrome sculpture, architectural paint research and architectural conservation. She has been involved in many large conservation projects in Denmark and was instrumental in organising the APR-conference in Copenhagen 2005 together with Helen Hughes (UK), Tone Olstad (N) and Edwin Verweij (NL). Line is an external lecturer at the School of Conservation in Copenhagen, where she has run courses in Architectural Paint Research since 1993. Line hopes that her knowledge and experience in the fields covered by our working group will bring great benefit to the development of the group.

Jonathan Gration will join the team as student assistant co-ordinator. Jonathan is currently a first year Masters student in the Conservation and Restoration of Historic Interiors course at the University of Amsterdam. He initially trained as a goldsmith and has completed an Art History degree from the University of Leiden where he specialised in applied arts and the relationship and exchange of influences between east and west. Jonathan has worked for several cultural institutions in Amsterdam and has been the on-site coordinator for the SRAL Kasteel de Haar project between 2006-2008. He is now concentrating on his studies and will help maintain the membership database of the working group.

We hope that with our diverse knowledge and experiences that we can develop and stimulate an exciting and attractive programme for the following three years.

The next three years

The proposed programme for the following Triennial period 2008-2011 has been submitted to the ICOM-CC Directory Board in December 2008. The aims of the working group are as follows:

A. Update and widen the database of members through the new website.
B. To improve our communication with conservation professionals in Eastern Europe, Iberian Peninsula, Asia, Latin America, Australia.
C. To deliver at least one electronic email per year within the triennial period.
D. Continue to emphasise the link between the object and its environment.
E. Support sculpture conservators in tracing tool marks from carving benches and related tools.
F. Support the improvement of analytical techniques and paint research in architectural decoration leading to better interpretations of data.
G. To hold a joint interim meeting in 2010 with the following Working Groups: Textile; Leather; Wood, Furniture, and Lacquer; and Murals, Stone, and Rock Art.

Members are encouraged to contact the co-ordinators to further discuss these aims which will be posted on the website shortly.

Interim Meeting

During the New Delhi Triennial meeting it was proposed that a joint Interim Meeting be held with an number of other working groups under a general theme of “Multidisciplinary conservation: holistic view for historic interiors” in Rome in the late spring of 2010. This suggestion came after the very successful joint Interim Meeting was held between the Leather and Related Materials, the Wood, Furniture, and Lacquer and the Textiles Working Groups in Krakow, Poland 2007 with the theme of ‘Upholstery’.
A joint meeting would provide a wider platform for the dissemination of on-going and completed research, case studies and the development of techniques and methodologies. At present five Working Groups are interested in participating in the 2010 Interim Meeting; these include the three groups who joined together in Krakow with the addition of the newly amalgamated Murals, Stone, and Rock Art Working group and our own group. It is intended that the meeting will last for three days during which each group would have a half day session. A final half day session would be dedicated to Keynote presentations with specific relevance to the central theme.

A ‘call for papers’ will be advertised in the spring of this year. Papers will be selected according to relevance and will be issued as on-line pre-prints.

Newsletter:
This is the first Sculpture, Polychromy, and Architectural Decoration Working Group Newsletter for the Triennial Period 2008-2011. We hope to gather enough material for at least one Newsletter per year; however, with a little encouragement we hope members will contribute on a more regular basis and thus more issues can be published. The Newsletter will be distributed electronically to members and will be available on the ICOM website. Those members who have not used the new website to (re)join the Working Group are requested to email the co-ordinator for a copy.

Special thanks goes to our contributors for this issue. Submissions are welcome for the next issue.
Please contact: k.seymour@sral.nl

Conference Reviews:


Kate Seymour
Stichting Restauratie Atelier Limburg
Maastricht, the Netherlands

The 15th Triennial Conference took place in New Delhi between 22nd and 26th of September 2008. The five day conference was attended by well over 600 delegates many of which joining from the host nation. A total of 8 papers were presented in Sculpture, Polychromy, and Architectural Decoration working group sessions. The papers covered a wide variety of themes including the treatment of Asian art, two papers reporting on Indian conservation projects and a number dealing architectural decorations within historic buildings in China, the United Kingdom and the Netherlands.

It is hoped that more submissions dealing with polychrome sculptures will be submitted for the following Triennial Conference which will be held in Lisbon, September 2011. Cross-disciplinary collaboration was a common focus in most papers and the conference theme emphasising ‘Tradition, Innovation and Participation’ was stressed with speakers describing the use of traditional materials and techniques within current conservation projects.

Figure 1: Vigyan Bhavan Conference centre, New Delhi
Figure 2: Session two: the audience

The Sculpture, Polychromy, and Architectural Decoration Working Group sessions were well attended and produced some thoughtful and productive discussions which often spilled over into the coffee breaks. Abstracts of papers will be uploaded (at a future date) onto the new ICOM website with the intention that more discussion can be instigated via the ICOM Forum.

Much thanks must be extended to the hosts and organisers at the Vigyan Bhavan conference centre. Special thanks must be extended to the translators and of course to the speakers without whom the conference would not have been so successful.

More photos can be downloaded at: http://gallery.me.com/seymourkate#100007


Line Bregnhøj
National Museum of Denmark

The Architectural Paint Research Conference was held January 17-19 in New York City. It was hosted by the Historic Preservation Department in the School of Architecture at Columbia University. In charge of organizing the very fine conference was architectural conservation consultant, Adj. Prof. Mary Jablonski, New York.
What was started in UK and Denmark was continued in New York with a new series of very interesting presentations and discussions from our specific field in the world of conservation. We had three days of topics concerning architectural paint research and the problems we face in our daily work with research, analysis and conservation. Among other topics, we heard about problems concerning the availability of old pigments such as lead white; research on paint used in early America; painting materials for the 20th century; findings of wallpaper research; interpretation of research and its related problems; and, finally, painted architectural decorations in China and Israel.

Furthermore we were introduced to some of the specific conservation projects going on in New York, through tours to several places around town.

Speakers came from the USA, Denmark, UK, Latvia, Israel, Norway and China. The program from the conference can be found at: www.aprconference.us. Proceedings from the conference in New York will be published later this year. Proceedings from the Architectural Paint Research conference held in Copenhagen, Denmark 2005 are still available from Archetype, London: www.archetype.co.uk

Following the New York conference it was concluded that now we have really established a platform for paint researchers to meet worldwide to discuss our work and continue to make progress. We still have a lot of topics to discuss, and many ways that we can develop our profession. Topics for further discussions might be: standards for paint research, better methods for interpretation of findings, colour matching, training in paint research ...

Luckily some colleagues will continue the good work that we have started. Therefore the next APR conference will be held in Lincoln, UK, 2010. Information can be found at: www.cricksmith.co.uk

RACM symposium ‘About the Floor’ 2008
Anna Zwagerman
University of Amsterdam, the Netherlands

In his inaugural address, chairman Jan van ‘t Hof proudly announced that with 350 participants, the congress was completely sold out. The Hague academy of international law auditorium, situated in an annex of the Peace Palace, was completely packed. This was the third annual maintenance-symposium organized by the RACM (the Dutch National Service for Archaeology, Cultural Landscape and Built Heritage). Its topic was historic monumental floors, a severely undervalued subject in both the architectural world and the built heritage profession. The previous symposia were held on mills and concrete, respectively.

Speakers of diverse backgrounds gave lectures, from researchers to conservators, from experts on stone, ceramics and wood. Floors are made of many different kinds of materials, and because experts of most of these materials either gave a lecture or wrote an essay for the book accompanying the congress, the day turned out to be an interdisciplinary gathering of thought and ideas.

The first lecture from the interior specialist of the RACM was divided into two parts. The first half consisted of a bird’s-eye view of floors throughout history and a few open questions about the (ethical aspects of) conservation and restoration of historical floors. The second half questioned what we could learn from floors in 17th and 18th-century doll houses and from the few remaining monumental floors of that period.

Next was Veerle Meul, advisor interiors with the Flanders’ Monument-watch. She talked about the basic principles of preventative conservation, which types of damages can occur and what to do about them. One issue she discussed was the use of mats to protect floors. A bad mat can do more damage to a floor than no mat at all. In many cases preventing degradation of materials and thus the need for frequent conservation can be very simple, for example a UV-filter on the window will prevent a lot of possible light-damage to floors.

A lecture entitled Hygienic floors: Floor-taxonomy 1850-1965 was, besides an interesting overview of modern seamless floors such as linoleum, cork, rubber and vinyl, a plea for the documentation of those modern floors that are still around. By making known what still exists, there is hope of preserving some of these rare floors for the future. A similar project was started by the ICN (The Netherlands Institute for Cultural Heritage) for Monumental wall-art (1946-1965) in May 2007. These little known works of art / historical documents are disappearing rapidly because they are immovable parts of buildings that are subjected to increasing degrees of renovation or demolition. Some specialists have begun to notice the disappearance of these vital parts of our history and culture, and have sounded the alarm. They call for the preservation of modern floors and wall paintings for future generations, which means there will be a new area of expertise open to the conservator, working in different settings with new materials.

Next years maintenance-symposium will be about stucco.

More information regarding the programme can be found online at: http://www.racm.nl/content/documenten%5C2008_over_de_vloer.pdf

Anna Zwagerman is a student of Conservation and Restoration of Historic Interiors at the University of Amsterdam.
Current Projects:

Conservation of a 19th century Indian Processional Lion

Nicola Newman
Department of Conservation and Scientific Research, the British Museum

Introduction
This article describes the conservation treatment applied to an Indian, 19th century, processional lion sculpture. The lion was in a very poor condition and required extensive treatment in order to stabilize its damaged surface. Relevant issues included: the relationship between the originally intended use of the object and the precepts of long-term conservation within the collections at the British Museum; the technical problems of conserving multi-layered surfaces; and the evaluation of treatment options.

Figure 1. The lion in the conservation studio before treatment.

The Object – History and Cultural Significance
The lion was originally used as part of the Durga Puja celebrations. This is an annual Bengali festival in celebration of the Hindu goddess Durga, the ‘inaccessible’ or ‘invincible’ one. She is the embodiment of female force and is depicted as a ten-armed deity, often seated upon a lion. At the end of the celebrations an image of Durga is submered in a river’. Research showed that the decorative surface of the lion and possibly the lion itself was sacrificial and was not intended to survive beyond the length of the festival.

Once accessioned into the collections of the British Museum the lion was subject to the same conservation principles that govern the care of all other objects in the collections, which seek to ensure the long-term preservation of objects.

Condition
The lion is approximately 2.5 m tall and is a three-dimensional sculpture made of joined and carved timber sections. The decorative surface is formed from a textile layer covered with incomplete areas of red and green paint. This in turn is covered with a later application of yellow paint (Fig. 1). After discussion about the lion with Richard Blurton, curator in the Asia Department, and an external expert in Indian arts, A.L Dallapiccola, it was learned that the yellow paint used was normally made from ground sandalwood and was thought to have religious properties. However, no analyses were undertaken so this cannot be confirmed at this point. When the lion was first assessed, it was observed that all the layers (the earlier red and green and the later yellow paint) were lifting and there were large amounts of yellow paint lying on the base of the sculpture. The lion was stored in a basement store with an uncontrolled environment. The friable surface required some form of facing support or temporary consolidation before it could be moved to the conservation studios. The lion is mounted on a rough timber carrying structure, the weight and size of which made the sculpture difficult to handle without incurring further loss to the surface.

Figure 2. Detail of lifting paint on the forearm.

Conservation treatment
The original use of the lion and the level of conservation that should be undertaken were discussed and that raised the differences between local Indian traditions and the principles of Western conservation theory and practice. Should, for example, the very friable and flaking yellow paint surface be preserved, or be sacrificed in order to reveal the red and green paint surface beneath? The discussions indicated that there was no religious significance attached to either paint layer once the festival was concluded and that any decision about conservation could be based on the needs of the object and the Museum. It was, therefore, decided to preserve the lion with its last-applied paint layer intact.

In-depth experimentation and discussion were needed to find the best way to move the lion from the basement store to the conservation studio, a journey that necessitated taking the lion outside. Various methods of securing the paint layer during this move were reviewed. Traditional facing methods using tissue and adhesive were unsuccessful as all the materials tested caused staining of the paint surface. Another method tested was the application of cyclododecane as a temporary consolidant, since this material has been found useful for consolidating fragile surfaces (Bruckle et al, 1999). In trials, cyclododecane was dissolved in heated white spirits and applied with a brush to a test area. Cyclododecane worked well as it temporarily secured the surface preventing further loss, sublimed completely after one month and left no visible staining or residue. Unfortunately the size of the lion would have necessitated the use of a large quantity of the cyclododecane and heated white spirit. There is, at present and certainly at the time the treatment was undertaken, inadequate information about the health and safety effects of using cyclododecane in large quantities without fume extraction. Also the use of heated solvent in an enclosed store was considered a health and safety issue. Accordingly,
it was judged that it could not be safely used on the scale required and a ‘low-tech’ solution was finally used. This involved temporarily bandaging the object with small strips of ‘cling film’. These were taped with adhesive tape at intervals to allow the paint layer to be supported and any losses to be relocated easily.

![Figure 3. Detail of the forearm during application of the adhesive and clamping the treated area.](image)

The next task was to find a suitable adhesive to secure the flaking surface. The adhesives currently used for the consolidation of matt paint all proved to stain either the paint surface or the exposed timber. Discussion with colleagues brought to our attention an adhesive designed by Hedlund Johansson and produced by Lascaux called 4176 or ‘medium for consolidation’ (Hedlund and Johansson, 2005). Initial trials of this adhesive proved very successful; it did not stain and had a very low viscosity even when undiluted. Tests conducted by scientists within the Department showed that this adhesive had good reversibility and aging properties (Parker, 2005). On the basis of these findings, it was decided to continue its use and the results for this object proved to be excellent (Fig. 2-4).

![Figure 4. Detail of the forearm after treatment](image)

The final part of the treatment was to make a purpose-built trolley for the lion, to permit its safe handling and movement in the future.

Conclusion
Working with this object has highlighted that it is essential to understand fully the religious and cultural significance of the objects with which we work as well as satisfying institutional policies on the long-term preservation of collections. It is also important to encourage the participation both of colleagues in the Museum and relevant specialists with an understanding of the care of objects associated with religious or cultural practices outside our experience.

The very poorly bound paint surface and the large, three-dimensional nature of the object precluded the use of familiar materials and treatments and required research into new methods and techniques that made use of less familiar materials.

Notes:

References:


Parker, J. 2005 Testing of Lascaux Medium for Consolidation and Plextol 498, Internal Report, Department of Conservation and Scientific Research, British Museum

Acknowledgements
Thanks to Lynne Harrison, Richard Burton and A.L Dallapiccola for their help with this project.

**Carving-bench tool marks on medieval sculptures**

*Arnold Truyen*

*SRAL, Maastricht*

In the late nineties I restored four statues from the Aldenhoven retable: the figures of Christ, the Penitent and Impenitent Thieves and a King. On top of the heads of Christ, the King and one of the Thieves I discovered hallmarks, a burnt hand, which was used in Antwerp as a legal requirement since the ordinances of 1470 and 1472. The ordinances decreed that used wood had to be tested and certified. After testing the wood a small hand was branded onto the sculpture after woodcarving. The sizes of the hallmarks (hands) of the examined sculptures on the Aldenhoven retable varied. It is generally known that on the same altarpiece various sizes of hands have been found. We wonder whether this has to do with the fact that individual *waardeermeesters* (sort of inspectors) used different irons? Or did they use another iron after cooling down the first one. These suppositions leave us only with more questions rather than providing answers. The only thing we only can prove is that the hallmarks were branded into the wood before the white ground layer was applied.
The sculptures:
Christ on the crucifix: the body and the legs are made of one block and originally the arms were attached to the central section with wooden pegs and animal glue. Both the reverse of Christ's back and head are flattened off, while the arms, the waist and the legs were carved in the round. Tool traces show that gouges were used. The cross consists of two long wooden sections joined together with wooden pegs in a centre-lap joint where half the thickness, but the full width of the horizontal member is removed from the vertical section allowing horizontal strip to fit flush. The Two Thieves: these sculptures are realistically carved on the front while the reverse is untouched. One block of wood has been used for both statues; this incorporates the cross, as well as the figures. The King: this sculpture is also flattened on the reverse. Tool marks from a saw are still visible. The underside is sawn off at a 60° angle, after which two little wooden cubes were fixed to make it stand independently. There are some holes on the reverse of all of the sculptures, which exist possibly to fix the sculptures to the relatable. The sculptures are carved very realistically in spite of their size (approx. 40-50 cm in height); even small details such as teeth, crow's-feet at the site of the eyes, bruises and injuries are shown. Several decorative motives are punched in the gold layer, mostly invisible from a distance. Nevertheless the decorator finished his work very accurately.

Construction process:
How the sculpture was carved can be investigated by means of material-technical research. Sculptures are examined from all sides and angles, even the top and the bottom as traces left here very often give specific information about the use of a carving-bench. However in many cases these traces have completely disappeared. The sculptor himself may cause this while finishing the object or it may have occurred later as a result of damage. Historic illustrations very often show the sculptor with his carving-bench in order to show how the sculptures were made. In these pictures it is very difficult to see how the bench really functions. We can only observe that the sculpture is fixed on the bench. In some cases the sculpture is shown held on the bottom and the top between two long pins as if it were floating above the table. In other cases it is fixed between two standing supports (bolsters) on the table. None of the examined sculptures from the Aldenhoven relatable show traces of the use of a bench. There is still the possibility that the sculptures were carved freehand. Although this scenario is not impossible, it would certainly not easy to carry out: oak wood is tough and difficult to cut / carve. It is more logical to assume that a bench was used to hold the wood securely while leaving the sculptor’s hands free to use a chisel or gouge.

Carving-bench mark traces:

Examples can be found on the sculpture group from the Passion altarpiece from the Munsterkerk in Roermond and also on the Adoration of the Magi relatable from a convent in Simpelveld. The relatable from Roermond was restored in the 19th century. In those days sculpture groups with missing elements were re-completed with contemporary sculptures. During current conservation some of the (original) sculpture groups could be dismantled from their surrounding niche in the relatable and were examined. We found, in addition to holes, corresponding to the attachment system, small rectangular cracks at the bottom of the group "Circumcision".

Figure 2: Top of the group “Ox and Mule” with traces of a clamping system

The rectangular cracks are 12 mm long and appear in pairs. Small holes with a diameter of 3 mm were also found at the top (upper) side of the group “Ox and Mule”. Similar traces have been found on the Antwerp relatable from Simpelveld: on the statues of “Melchior” and “Virgin and child”. These traces originated from a metal object shaped like a fork with which the wooden block must have been attached to the bench. The statues must have been treated on a surface that could support the weight of the wood such as a table. The clamping system saw to it that the block of wood could not be pushed away.

Carving-bench reconstruction:
It is not easy to make an accurate reconstruction of a table (carving-bench) such as that used for the Antwerp sculptures. There is however an illustration from 1505 of a bench that was possibly closely connected with the one the carvers from Antwerp must have used.

Figure 3: Illustration of a Carving-Bench from 1505 (left) and a modern reconstruction of same bench (right).

It depicts a table that consisted of four legs, of which the top was equipped with several holes which were placed at a regular distances from one to another. At the top of the table there was a rectangular gap into which one could move a hook shaped like a fork by means of a screwing system. A clamp could be placed vertically in the various gaps on the table top. A block of wood could be placed between these two clamps; it could be held by moving a horizontal moving clamp in the direction of the fixed clamp at the opposite end.

Figure 1: Bottom of the group “Circumcision” with traces of a clamping system

Small holes or different layers are found in the wood on the top or bottom of many Antwerp sculptures; at times small rectangular grooves are found which often occur in pairs.
of the table. The imprints these clamps left on the wood can be compared with the imprints found on the sculpture groups. The clamps could be moved or replaced in a simple manner. Other benches with different shaped hooks could also be used as a clamping system. Thus the great diversity of bench marks on the bottom and the topside of the sculptures can be explained.

![Figure 4: Tool marks made during a reconstruction](image)

It is my opinion that a carving-bench should be easily constructed or taken apart by the master carver of his pupil. A table similar to that depicted in the 1505 illustration was constructed in the studio of the Stichting Restauratie Atelier Limburg for the Jan van Steffenswert exhibition at the Bonnefantenmuseum, Maastricht in 2001. The construction of this reconstructed table took roughly four hours.

Sculptures showing traces on the top and/or bottom should be meticulously documented by means of photography, measuring and registration. The collection of these data will give us more insight into the carving process of sculptures and the preservation of bench marks on sculptures. Possibly the comparison and similarities of these data can be an aid to the attribution of sculptures to certain studios.

![Figure 5: Illustration of a Carving-Bench from 1531 (left) and a modern reconstruction of a similar bench (right)](image)

It is hoped that those active in the field will contact me with images, measurements and details of these marks that are found on medieval sculptures. I can be contacted at the following email address: truyen@eral.nl

**Notes:**
1. Only a few sculptures from the Aldenhoven retable remain. These are housed in the Bonnefantenmuseum in Maastricht.
2. This bench is published in: Heine, G. (1990), Das Werkzeug des Schreiners und Drechslers. Hannover, Verlag Th. Schäfer, p. 34.

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**Graduate Research:**

**The Polychromy of the Mosan Wooden Sculpture of the 13th century**

*Emmanuelle Mercier*

*KIK-IRPA, Brussels*

This article is based on the content of a Ph-D thesis presented by the author at the University of Liège, the 8th of December 2008. The members of the jury were J. Nadolny, L. Masschelein-Kleiner, D. Allard, B. Van den Bossch, A. Lemeunier (supervisor). The research was performed at the Royal Institute for Cultural Heritage (IRPA, Brussels).

The wooden Mosan sculpture of the 13th century assembles an important number of works of art well documented by art historians and for which a relative chronology has been established. The approach of the present study is based on their technological study. In this field, the research has been preceded by the in depth study of the Sedes of the Church Saint-Jean of Liège and of Vivegnis by Myriam Serck-Dewaide (1978-79, 1988-89).

The present research is based on the elaboration of a catalogue, which presents the results of the technological study relative to 82 sculptures, of which 26 sculptures have been examined either at IRPA or in workshop conditions (under magnification). About fifty sculptures have been observed in situ and archival documentation held at IRPA has been essential for the study of some.

The sculptures are mostly housed in Belgian churches and museums: Musée d’Art Religieux et d’Art Mosan; Musée Curtius and Treasure of the Cathédrale in Liège; Musées Royaux d’Art et d’Histoire in Brussels; Musée Provincial des Arts Anciens du Namurois and Musée Diocésain in Namur; Musée en Piconrue à Bastogne and Catharjine convent-museum in Utrecht (NL).

The work is divided into three distinct parts:
- The first part is the elaboration of the research (historiography, status of the research, and methodology).
- The second part deals with the analyses of the technological data.
- In the last part, the appearance of the polychromed sculptures is considered in its historical context.

It has to be stressed that in Belgium, it is often not possible to directly observe original paint layers on early sculptures. Indeed, the original polychromy layers remain present to a greater degree on only eight sculptures in the catalogue. In the other cases, the original polychromy is either covered by many layers of overpaints, or almost completely removed, or entirely repainted in the neo-gothic style. As a result of these various states of conservation, only scientific examination makes it possible to document the traces of older paint layers.

The research profited from the collaboration with our colleagues from the laboratory at IRPA specialised in dendrochronology and in the scientific identification of the paint materials (analyses were carried out with SEM-EDX, GC-MS, MRS, HPLC instrumentation).
From a technological point of view, the information collected on materials match the results of recent analyses carried out on objects from the 13th century in the north of Europe. The palette comprises seventeen pigments from which the most frequently used are vermilion, azurite, vert-de-gris, lead white, red lead and lac lake for the deep red glazes. Yellow as a colour, frequent in the 11th and 12th centuries, is supplanted by gold of a high degree of purity.

In conclusion, the polychromy layers observed do not oppose the placement of a glossy surface of a polished gliding on a garment next to the matt blue tone of its lining, as these juxtapositions will be used in the 15th and 16th centuries. The only contrasts observed are the effects of thickness carried out with lead white for the imitation of pearls and furs. For the latter, the traces left by the passage of the brush have been exploited.

Considering the overall aspect of the polychrome sculptures in the historical, sociological and spiritual context, it was possible to put forward various typologies of polychromy which contribute to the stylistic evolution of the development of the Mosan sculptures. These styles are distributed according to three chronological phases. In the first phase (1190-1240) two styles of polychromy developed in parallel. A “style with gold prominence” and a style dominated by colours named by the author “enamelled style” (fig. 1). The coexistence of these two types of polychromy has already been highlighted in Sweden and in Norway (P. Tängeberg 1986, U. Plahter 1990). The first style is characterized by gilded garments punctuated with coloured accents such as the red of the lining. The enamel style can be distinguished by sculptures whose clothing is entirely coloured with bright colours: red, blue and green. In this period, the conciliation of two opposite realities - one of a supernatural nature, the other of a natural nature - appears through the polychromy.

In addition, the large variety of techniques and the complex layered structures observed illustrate the technical knowledge of the painters. The pictorial layers are usually composed of one or two pigments, the nuances resulting from mixtures being rare. The variety of techniques also relates to gilding methods. Thus, parallel to aqueous gilding with gold leaf applied directly to the white chalk ground, a type of matt mordant gilding is observed in six cases. This technique has not been discussed before in the context of this period in Belgium and corroborates Peter Tängeberg’s thesis that it is a Northern European tradition.

The study of the materials and their application makes it possible to propose that the Mosan sculptures of the 13th century are characterized by a taste for luminous materials resulting in the use of smooth and glossy surfaces, whether these be coloured or metallic (fig 1). These effects are achieved by various technical means: under layers with white or red lead pigments, glazes, varnish, yellow glazes over gilding, oil as a binding media. The use of oil as a medium also concerns layers made of azurite, which offers a deep and dark tonality and a smooth and glossy appearance (fig. 2).

Figure 1: Saint Gertrude from Kuringen, beginning of the 13th century (left). A hypothesis of the original polychromy (right).

Figure 2: Example of a layer of azurite with oil as a medium (analysed by GC-MS and FTIR).

Figure 3: Virgin from the béguinage of Saint-Trond, second half of the 13th century, original polychromy.

In the second period (1240-1280) two typologies of polychromy were highlighted: “heroic” and “humble”. These designations are borrowed from the Poetria of Jean de Garlande (1250) and have been associated to French sculpture by Roland Recht (1999). In the “heroic style” gilded garments are found as in the preceding period, but the spirit has changed as they are decorated with the imitation of fur in the garment’s linings and rich free-hand relief decorations (pastiglia) with the inclusion of pieces of coloured glass or cabochons on the borders (fig. 3). By contrast, coloured and gilded garments are associated with the “humble style”, in which no attributes of aristocratic luxury, fur nor sumptuous relief borders are presented. These styles reflect two fundamental aspects of the society of the second half of the 13th century: on the one hand an increase in laic patronage and in the number of parishes, while on the other hand, an intensification of devotion practice encouraging the faithful to become closer to the humanity of Christ and holy characters. In this context, the polychromy exhibits the inclusion of secular values in the garments of religious sculptures.
The last period (1280-1330) overlaps the development of the empathic function of the images in the pratice of devotion. Polychrome sculptures from this period, a “manner style”, exhibit a mixture of gilded and coloured garments, gilded and coloured patterns, imitation of fur and richly decorated relief borders (fig. 4). The soft and pleasant faces of the preceding period evolve to more animated expressions translated by a graphical treatment of the flesh.

Figure 4: Virgin from the Catharijneconvent-museum in Utrecht (NL), end of the 13th century: original polychromy

Finally a last style, which one believed for a long time characteristic of the 14th century, has been highlighted and crosses the three stylistic phases quoted above. In this « ideal style » (« Idealfassung ») which characterizes Mosan sculptures already since 1230, gilding covers the inside and outside of the garments and only the flesh areas are painted.

The contents (table des matières) of the thesis will be available in the on-line library of the University of Liège: http://bibtel.ulg.ac.be/ETD-db/collection/available/ULgetd-12042008-151316/

The author would be very pleased to collaborate and provide further information from this research. Author’s email address: emmanuelle.mercier@kikirpa.be

mural paintings using four principal colors: black, white, red and yellow (Figure 1). The main interest of the investigation was the funerary practices made in the Regional Classic period (1-900 A.C.), the time in which the funerary centers were built. These consist of artificial mounts, tombs, templates and large sculptures.

Finally, the colouring of these mural paintings is of particular interest. It is made of minerals and is usually lost during the process of conservation. In order to evaluate the technology used in the mural paintings, the study was made to analyse the pigments used in the mural paintings (Figure 2) and understand the procedures that were used to make them. The funerary centers and their art are studied in order to better understand the social structures of the people who lived in these regions and how their beliefs and practices were reflected in their art.

Aiming to contribute to the knowledge of the social structures from the Regional Classic period, my purpose was to evaluate if the technological differences in the polychromy of the funerary monuments could be an indicator of the differences between the chiefs, for whom these tombs were made. If the monuments were built as part of the individual legitimization, then part of those differences must be evident inside the monument itself. This supposes that the existence of individual stylistic and technologic characteristics can be determined by employing exclusive materials, specialized methods of material transformation or individual designs.

The color of the monuments of the archaeological park of San Augusín, Colombia

Catalina Bateman Vargas
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This article is the result of my master degree thesis in archaeology. For this reason it has a strong focus on archaeology but has methodological aspects common to heritage conservation. In this article I will concentrate on the result of the technological analysis in relation to pigment investigations. The project was carried out at the south high Magdalena, a region found in the south west of Colombia, department of Huila. This place is known for its funerary centers and, in particular for the monumental stone sculptures and tombs decorated with spectacular interior

Figure 1: A “Purutal” sculpture. This image shows the style of most of the sculptures. It is one in which the colors have been best conserved.

Figure 2: Alto de los Idolos, Tomb N°2. The interiors of the tombs contain amazing designs such as that shown in the photograph.

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How the color was obtained? Polychrome techniques:
The investigation took a group of 20 monuments of the archaeological park of San Agustín. From each monument there were took samples of the four colors mentioned and they were tested through various analyses, including careful observation under magnification, stratigraphic cross-sections, scanning electronic microscopy, and X ray diffraction. The analyses indicated that the technique for the ornamentation was made basically with a mixture of clays, water and a mineral responsible for the color. The pigments identified were easily obtainable in the region, and correspond to iron oxides such as calcite, kaolinite, charcoal and manganese oxide (Figure 2). From these materials it was possible to obtain a wide range of tonalities of red, yellow, white and black hues. The main purpose of mixing the minerals with clays is to give the mixture a plasticity and consistence necessary for application as a color. The clays allow the surfaces to be polished because they have a lamellar structure, which gives a slippery quality. The amount of time polishing will confer to the pictorial layer a particular uniformity and brightness. The craftsmen of the south high Magdalena region knew these properties and used them efficiently.

Figure 3: A detail of the “Purutal” sculpture. There are two tones of red in the face of the child. The first, a light red is applied externally around the face. The second, a dark red is applied like a mask around the nose and the eyes.

The differences in the polychrome technique include: if there was a specific planning of the work, the knowledge of the physical characteristics of the pigments, the manipulation and application of them and the ability to obtain tones and textures from an initial mixture, adding more or less materials. For example, to adding more calcite or kaolinite (white clays) could lighten the color, but contrarily, adding pigments such as charcoal or manganese oxide could darken the color.

The red mineral used was hematite. A darker red color could be obtained adding large particles of black (which could be charcoal or manganese oxide) to the mixture. However this possibility does not exclude that the craftsmen searched for a darker type of red obtained directly from other minerals in the available in the region. The light red color was made by superimposing a red layer over a white color base allowing the white to shine through the top layer (Figure 3). The superimposing of the color layers suggest that the craftsmen knew his trade because it is necessary to know the correct moment to apply the top layer while allowing enough time for the lower layer to dry, thus avoiding the mixing of the two colors. It is evidence too, that the design was established before painting started.

Figure 4: A stratigraphic cross-section of the mound Nº 5 of the Alto de los Idolos. This shows the grey obtained from a thin white layer applied over a black base.

The light yellow corresponds to an iron oxide (goethite) finely selected to obtain the best quantity of yellow particles without including impurities such as other red or black oxides. This careful selection necessitated that the raw material was finely ground, and then other particles that might change the tone were extracted. The reddish yellow tone is obtained by using the same goethite, but with the addition of the red particles. The dark yellow was obtained adding black particles to the initial yellow tone. The knowledge of the technique allowed the craftsman to play with the tones and contrast of the color. In places where a brighter color was needed, for example the light yellow, it was applied directly over the stone. On the other hand, in areas where a dark but intense yellow was needed, there were two possibilities. One was applying it over a black layer. The second one was using a previous mixture with the addition of another material, such as the pigment charcoal, to make it darker.

In the white range there was three tones found. Pure white tones were obtained from kaolinite and calcite. While finally grey colors were composed by layering. We know that it is grey and not a deteriorated black because it was the color is achieved by applying a very thin white layer over a black base (Figure 4).

Figure 5: Alto de los Idolos sculpture. A detail of the stepped design face.

Most of the colors were applied using fingers. However in some of decorations, such as the stepped design face of one of the sculptures, there is evidence of brushwork (Figure 5). Threads or templates were probably used which allowed the application of precise straight lines, and also proportional figures.

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2 The archaeological park of San Agustín is formed by 4 areas called “Alto de los Idolos”, “Alto de las Piedras”, “Purutal” and “San Agustín”.

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Finally, the technical analysis allowed us to recognize particular processes in the manipulation of the materials. Also we had the possibility to say that the color elaboration requires a specialized knowledge and its sophistication suggests that a special group of people carried out this labor. These craftsmen also knew the material characteristics, its manipulation, and were able to manage themes such as design, composition, proportion and contrast.

Exhibitions

Les premiers retables: (XIIᵉ siècle-début du XVᵉ siècle)
Une mise en scène du sacré

Exposition au Musée du Louvre (espace Richelieu, 10 avril-6 juillet 2009)
Pierre-Yves Le Pogam, avec la collaboration de Christine Vivet-Peclet

Élément central du décor du culte chrétien, puisqu’il surmonte l’autel, le retable nous apparaît comme un type d’œuvre traditionnel et dont le sens ne devrait guère poser de problème. De fait, la définition en est simple : il s’agit d’un élément placé à l’arrière et au-dessus de l’autel, au départ en forme de rectangle allongé, réalisé dans les matériaux et grâce aux techniques les plus variés (orfèvrerie, sculpture sur pierre, marbre, albâtre, bois, ivoire, peinture sur pierre ou sur bois, etc.). Pourtant, le retable est né seulement au cœur de la période médiévale, après l’an mille, et sa fonction n’a rien d’évident. Pour comprendre sa signification, il faut donc retourner aux origines du type et en suivre les premiers développements, jusqu’au début du XVᵉ siècle où le retable prend des formes mieux connues.

Figure 1: La Fuite en Egypte, deuxième quart du XIVᵉ siècle, Anvers, musée Mayer van den Bergh

Le musée du Louvre possède dans ses collections des exemplaires remarquables de ces premiers retables, qui seront complétés par des œuvres venues d’autres musées et d’églises. Il s’agit surtout de retables français, ce qui reflète peut-être l’importance de la France (et notamment de Paris et Saint-Denis) dans la genèse de cette histoire.

Une cinquantaine d’œuvres seront présentées dans l’exposition, principalement des retables et des éléments de retables sculptés et polychromés.

Posted by: Sophie Guillot de Suduiraut, Musée du Louvre

ICOM-CC On-Line: www.icom-cc.org

The new ICOM-CC website is now up and running. Members are encouraged to visit the website and their relevant working group home pages. Members can log-in to the website and are able to access a wider range of relevant documents unavailable to the general public. Passwords and log-in data are available from the secretariat. The website also provides a new system for managing and updating working group membership. Please remember to click on the blue button “Join this working group” when visiting the Sculpture, Polychromy, and Architectural Decoration home pages.

ICOM Forum

The ICOM-CC Forum gives ICOM-CC members the unique opportunity to start discussions on subjects that benefit from an interdisciplinary approach. Instructions are clearly laid out on the relevant webpage. It is hoped that the following posting by Aleth Lorne will instigate the Forum for the Sculpture, Polychromy, and Architectural Decoration Working Group.

Please post any comments on the forum:
www.icom-cc.org/forums/

Research on chalk ground layers

Aleth Lorne
Private Conservator of Sculptures
The Hague, the Netherlands

Most of the research and publications about polychrome technique focus on the study of the pigments and binding media of the paint layers and neglect the study of the ground layer. I believe that chalk ground layers deserve more attention since they are a kind of ‘hard disc’ of the material history of the sculpture: its provenance, the technique, foreign
impregnations, compressions and other stresses are all registered in the ground layers.

In addition, the examination of the ground layers is a very useful tool when carrying out a stratigraphic study. A ground layer showing easily recognizable visual characteristics can indeed be an excellent marker to trace a given polychrome layer on the surface of a sculpture. The conservator works empirically under stereo-microscope, comparing fragments of ground layers applied at different periods on different parts of the sculpture. However the method cannot always be trusted and, in some acute situations, the support of scientific research is required.

My own experience is that the possibilities of significant scientific research for the comparative study of ground layers made of chalk and animal glue are very limited. The identification of materials gives identical results and the presence of foreign substances or elements cannot deliver significant information since this substance could be a local pollution.

It seems that the most relevant method to compare two samples of chalk ground layers and to find out if they are contemporary or not, is the observation of the size of their particles and the eventual identification of shell fragments. Chalk is formed as a result of slow sedimentation processes of very tiny shells on the bottom of the sea: cocoolithes, forams.... Chalk from different provenance contains different shell fossils, but chalk grounded in a given workshop at a given period is likely to contain the same fossils and particles of a comparative size.

This method has its limits and can only be applied to early ground layers, especially Late Gothic layers. At later periods the chalk is applied thinner and the identification of the shell fragments or fossils is impossible. Further, the examination method requires sophisticated technology: electronic microscopy or SEM, methods that are not easily affordable.

Therefore, I am very interested to know if some colleagues have experienced any other scientific method allowing the characterisation of ground layers? Has recent and significant research been carried out recently in some part of the world? I can be contacted at: aleth.lorne@ziggo.nl

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**Membership information**

**ICOM Membership Application forms**
The application forms to join the International Committees and Affiliated Organisations are now available on the ICOM Website at:
http://icom.museum/membership.html
http://www.icom.org/affiliates.html