



# GLASS & CERAMICS CONSERVATION



**Newsletter of the ICOM Committee for Conservation, Issue 19, Summer 2010**  
**Working Group – “Glass and Ceramics”** **ISSN 0960-5657**

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## EDITORIAL

### Come to Corning!

I know, I know! You have all been waiting for news on our Interim Meeting in October in Corning. However, as you well know, 'Good things need time'. And now everything is ready and Corning is waiting for you! Please see the exciting programme and all the details in this newsletter (p. 2). Hannelore Roemich has successfully coordinated the editing of the Preprints (see cover on the right) which are about to go to the printers. And the best news is that if you register soon you still can take advantage of the early bird fee. Those of you who are also interested in enamel on metals can easily combine it with the 3<sup>rd</sup> ENAMEL meeting, which will this time take place at the Frick in NYC (p. 9).

Other members have organized conservation conferences (CONSIST, p.9) or are planning conferences in the future (GLASSAC11, p.12; AGG p.13). In the meantime, conservation work has continued. The V&A has just opened the new Ceramics Study Galleries (p.5) and Juanita Nav-

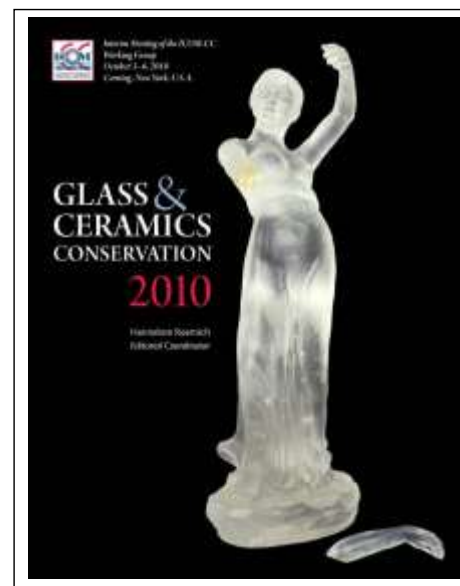
arro shares her experience with securing cracks in ceramics with us (p. 16). Tep Sokha is reporting from Cambodia (p. 18) and, last, but not least, there will be a glass exhibition involving input on conservation in the Pergamon Museum in Berlin (p.13).

Kate van Lookeren Campagne and I hope that this Glass & Ceramics Conservation Newsletter helps to keep you updated on what is going on in the field. The deadline for our next newsletter (already no. 20!) will be March 31th, 2011. You can rightly expect reports from the Corning meeting in that issue (for the few of you who could not go there ;-). There will also be a preview to the Glass & Ceramics session of the ICOM-CC Triennial Conference in Lisbon in September 2011 (p. 9). And if you forgot to submit something for this Newsletter, your story could still be read! Next newsletter, next chance!

CU in Corning,

**Gerhard Eggert**  
**Coordinator**

**ICOM-CC Glass & Ceramics WG**



# ICOM-Conservation Committee Glass & Ceramics Working Group Interim Meeting at the Corning Museum of Glass (Corning, NY)

Stephen P. Koob, Gerhard Eggert

## *Programme*

**SUNDAY, October 3, 2010**

1:00- 5:00 **On-Site Registration**  
for participants, museum open

**MONDAY, October 4**

9:00 – 9:05 **Welcome:** *David B. Whitehouse*,  
Executive Director, Corning Museum of Glass

9:05 – 9:15 **Introduction:**  
*Gerhard Eggert*, ICOM-CC G&C WG  
Coordinator

9:15 – 9:20 **Acknowledgements:**  
*Hannelore Roemich*, Acting Chairman,  
Conservation Center, Institute of Fine Arts, New  
York University

9:20 – 9:25 **Social announcements:**  
*Louise Maio*, Corning Museum of Glass Events  
Coordinator

9:25 -9:30 **Introduction to papers:**  
*Stephen P. Koob*, Chief Conservator, Corning  
Museum of Glass

## **Session I History, Technology and Training**

**Chair: Dr. Robert H. Brill, Research Scientist  
Emeritus, Corning Museum of Glass**

9:30 Recording Oral Memories in Fire Arts  
Conservation  
*Agnès Gall-Ortlík and Pau Maynés*

10:00 From Mender to Restorer: Some Aspects  
of the History of Ceramic Repair  
*Isabelle Garachon*

10:30 – 11:00 Coffee Break

11:00 What Colour Has Saffron? -  
understanding German Recipes for the Production  
of Coloured Glazes in the 16th Century  
*Helena Fuertes and Christoph Krekel*

11:30 Training of Ceramics and Glass  
Conservation Specialists at the Russian State

University for the Humanities  
*Ekaterina Stolyarova, Ekaterina Sharkova*

12:00 – 2:00 **LUNCH (Box lunch provided).**  
*Note: 1:30-2:00 Meeting of HISTORY Group*

## **Session II Special Collections**

**Chair: Hannelore Roemich**

2:00 Deterioration and Preservation of Blaschka  
Glass  
*Astrid van Giffen, Katherine Eremin, Susanna  
Kirk, Jim Tate, Richard Newman*

2:30 Classification and Preservation of Ancient  
Glass Beads from Ile-Ife, Southwestern Nigeria  
*Akin O. Ige*

3:00 The Museum of Antique Glass in Zadar  
*Šime Perović*

3:30 – 4:00 **Coffee Break**

4:00 The Production of Pottery Vessels from  
Peqi'in  
*Elisheva Kamaisky*

4:30 Discussion

5:00 – 6:00 Special Hot Glass Demonstration  
(Hot Glass Stage)

6:00 – 8:00 **Wine & Cheese Reception**  
(Admissions Lobby)

**TUESDAY, October 5**

## **Session III Treatments**

**Chair: Kate van Lookeren de Campagne**

9:00 Reattaching Paper Labels to Ceramics and  
Glass  
*Juanita Navarro*

9:30 An Assessment of Polymers Used in  
Conservation Treatments at The Corning Museum  
of Glass  
*Norman H. Tennent, Stephen P. Koob*

10:00 18 Tons of Roman Glass under the Sea: A  
Complex Conservation Puzzle  
*Paul Mardikian, Pascale Girard*

10:30 – 11:00 **Coffee Break**

11:00 In Situ Mosaic Preservation of Three Glass and Marble Opus Sectile Panels at the Roman Villa of Faragola (Ascoli Satriano, Italy)  
*Maria Concetta Laurenti, Elisabeth Huber, Antonella Martinelli*

11:30 An Experimental Treatment for Severely Crizzled Glasses  
*Stephen P. Koob*

12:00 – 2:00 **LUNCH (Box lunch provided).**  
*Note: 1:30-2:00 Meeting of GLASS DETERIORATION Group*

2:00 – 3:00 **POSTER SESSION  
MEET THE AUTHORS/ DISCUSSION**

3:00 – 3:30 **Coffee Break**

#### **Session IV Science and Technology**

**Chair: Norman Tennent**

3:30 Archaeological Glass: The Surface and Beyond  
*Paul Bellendorf*

4:00 Characterization of Japanese Raku Ceramics Using XRF and FTIR  
*Raina Chao, Blythe McCarthy, Gail Yano*

4:30 Mercury Emissions from Historical Tin Amalgam Mirrors  
*Manfred Torge, Sonja Krug, Michael Buecker, Ines Feldmann, Holger Scharf, Heike Witthuhn, Christoph Sander, Kerstin Fraenkler-Balhorn*

5:00 – 6:00 Business Meeting (Conference Room)

7:00 – 9:00 **MEETING DINNER --  
AUDITORIUM**

#### **WEDNESDAY, October 6**

**Session IV Science and Technology  
(continued)**

**Chair: Norman Tennent**

9:00 When Glass and Metal Corrode Together, II: A Black Forest *Schäppel* and Further Occurrences of Socofarmacite  
*Gerhard Eggert, Anne Bühner, Bruno Barbier, Harald Euler*

9:30 Composition, Stability, and Storage of Imperial Qing-Dynasty Glass  
*Abigail Hykin, Katherine Eremin, Michele Derrick, Richard Newman, Hao Sheng, Kimberley Simpson, Sarah Fearn*

10:00 – 10:30 **Coffee Break**

**Session V Architectural glass, ceramics, tiles,  
and terracotta**

**Chair : Gerhard Eggert**

10:30 Keeping Out the Wind: Repair and Restoration History in Stained Glass Windows  
*Diane Roberts Rousseau*

11:00 The Use of Glass Bricks in Architecture in the 19th and 20th Centuries: A Case Study  
*K. De Vis, P. Jacobs, J. Caen, K. Janssens*

11:30 An Investigation and Assessment of Tile-Work on Nila Gumbad  
*Maninder S. Gill*

12:00 – 2:00 **LUNCH (Box lunch provided)**

2:00 Italian Renaissance Polychrome Terra-Cotta Sculpture in the Isabella Stewart Gardner Museum  
*Jessica Chloros, Valentine Talland, Holly Salmon, Craig Uram*

2:30 Hatching a Theory of Attribution: A 15th-Century Madonna and Child at the National Gallery of Art  
*Simona Cristanetti*

3:00 **Close of Meeting, Gerhard Eggert**

4:00 - 7:00 TOURS, TRIP Corning Community College for wood-fired glass production

#### **THURSDAY, October 7**

**9:00 – 2:00 OPTIONAL TOUR :** Curtis Museum, Hammondsport; Konstantine Franks Winery: Lunch (participants pay)

**3:00 BUS to NYC** Bus drops participants at 70<sup>th</sup> & Park Ave. (*FRICK MUSEUM*).  
Cost: ~ \$ 90.00/person

## LIST OF POSTERS

The Use of Fibrous Cellulose as a Mold Material in the Compensation of Large Losses in Ceramics  
*Paula Artal-Isbrand*

Conservation of Plaster Casts  
*Frederike Burghout, Renske Dooijes, Luc Megens, Ineke Joosten and Alberto de Tagle*

Historical Restorations in the National Museum of Antiquities, Leiden, The Netherlands  
*Renske Dooijes and Luc Megens*

A Hellenistic *Eshara* and Its Repair  
*Krassimira Frangova*

Thermovision Study of Heat Parameters in Museum Environments and Their Influence on Glass Corrosion  
*Elżbieta Greiner-Wronowa*

Glass Objects from Bandbhore, Sindh  
*Asma Ibrahim*

Protecting Art and Other Objects of Cultural Value from Photochemical Damage: The Possibilities of UV Protection on Glass  
*Anne Kaiser and Rolf Sandner*

The Preservation and Weathering of Second-Millennium B.C. Glass from the Hurrian City of Nuzi (Iraq)  
*Susanna Kirk, Andrew Shortland and Katherine Eremin*

William H. Grueby's Pottery Techniques and Glaze Compositions: Analysis of Two Tile Panels from The Collection of the City of New York  
*Sarah Nunberg and Eleonora Del Feredrico*

The Development of the Art of Stained Glass in Porto Alegre, Brazil  
*Mariana G. Wertheimer, Cristiane K. Santin and Raquel Alberti*

### How to register

All news on the conference can be found on the Corning website

<http://www.cmog.org/dynamic.aspx?id=11483>

There you will find a link to the registration form. Please print it, fill it in and send it back to Corning per normal mail. If you want to save money, do it as soon as possible!

## Conference Fees:

| Category          | Before August 15 | After August 15 |
|-------------------|------------------|-----------------|
| ICOM(-CC) Members | 250 US\$         | 300 US\$        |
| Non-members       | 300 US\$         | 350 US\$        |
| Students          | 150 US\$         | 250 US\$        |

Registration for the Meeting includes all lectures and receptions, the preprints, lunch boxes, the dinner on Tuesday (October 5), and one Make Your Own Glass experience.

### How to get to Corning

Please note that we offer an own bus from Corning back to New York on Thursday but not on Sunday to get to Corning. Please use public buses to Corning. See <http://www.coachusa.com/shortline/> for details.

There are 3 buses a day from New York City:

10:15 AM, arriving 3:50 PM (bus 103, changing in Binghamton to bus 130)

2:30 PM, arriving 7:55 PM (bus 111, changing in Binghamton to bus 118)

6:30 PM, arriving 11:55 PM (bus 119, changing in Binghamton to bus ? )

Buses leave from the PORT AUTHORITY BUS TERMINAL (corner of 41st & 8th Avenue in Manhattan).

Travelers should be there 1 hour in advance to purchase tickets or better buy there in advance.

It is also possible to fly to Corning, but connections are only available from Philadelphia on USAIR, or from Detroit (Delta/Northwest), so international flights should be connected through one of those 2 cities. There are no direct flights from New York or Newark to Corning.

### Where to stay

The link 'About Accommodation' on the conference page will lead you to a list of recommended hotels in and around Corning. Blocks of rooms at reduced rates have been reserved at these hotels in Corning and Painted Post (four miles west of Corning). Reservations must be made by calling the listed telephone numbers; do not call the toll-free numbers for the hotels' headquarters. When making a reservation, please specify that you are a participant from the The Corning Museum of Glass.

## NEW DEVELOPMENTS

### The Ceramics Study Galleries at the Victoria and Albert Museum

Juanita Navarro

The Ceramics Galleries Phase 1 project at the Victoria and Albert Museum (V&A), which opened to the public in September 2009, was described in issue 18 of this Newsletter (Winter 2009-10). Since then, Phase 2 has been completed and the **Ceramics Study Galleries**, four more rooms, opened to the public on the 10<sup>th</sup> of June 2010. This completes the five-year project to modernise the ceramics display at the V&A. [1]

The displays in Phase 1 tell the story of ceramics and the production processes. Phase 2 constitutes the main study resource. The objects on visible storage in the Study Galleries can be made available for examination by appointment in an adjoining study room [2]. One of the main aims of the two phases of the Ceramics Galleries project is to display as much of the ceramics collection as possible. An impressive 90% has been achieved - approximately 29,000 objects. The 10% that are not displayed consist mostly of shards and objects that are too delicate to handle. Every object on display in these newly opened galleries has been digitally photographed and will be accessible to view via the V&A website 'Search the Collections' [3].

#### Conservation

Before installation, the objects were stored in nearby closed galleries. A temporary conservation studio was set up in this area and most of the conservation was carried out there in order to avoid transporting objects to the main studio. More objects were gradually transferred from off-site storage as space became available during installation.

Due to the large number of objects involved (26,000) and a tight time frame (8 months), conservation was limited to essential treatments only. In the initial stage of the project the curators had been trained to assess the condition of the objects and carry out basic cleaning. A group of volunteers were also trained and a cleaning rota was established. Curators and conservators selected suitable objects for cleaning by the

volunteers. There would always be at least one conservator present to supervise and to answer questions. To save time, conservators also worked alongside the storage cases using trolleys.



*Fig. 1: Conservator with 'cleaning trolley' working between temporary storage cases.*

A large proportion of the objects in the new displays had been in storage for many years, even decades. This was sometimes reflected in the amount of surface dirt they had accumulated (Figs 2 and 3).



*Fig. 2: Surface dirt accumulated while objects were in storage.*

Besides cleaning, only a small amount of active conservation could be carried out in the time available. The most common treatment was a temporary first aid measure to secure unstable cracks in order to prevent further damage during future handling. This involved bonding small strips of thin polyester fabric across the breaks [See p. 16 of this newsletter 'Workshop Notes' for further details].



Fig. 3: A very porous fritware vase, had been used for the storage of greasy food. The dust settling on the glazed surface may have helped to extract some of the grease, which then became encrusted along the crazing pattern [right side]. The left side has been cleaned.

Other treatments included mechanical removal of excessive, discoloured and flaking retouching (with a scalpel). A few old joins gave way during handling, usually knobs or small parts which had been bonded with animal glue. These were re-bonded. Many old paper labels fell off and were re-attached.

The new galleries also include approximately 200 tile panels, mostly mounted on the walls above the display cases. The tiles were surface-cleaned, sometimes with additional removal of unsightly old retouching. These areas were then upgraded and in some cases damaged grouting was improved. Some tiles panels were treated in the main studio and remounted onto Hexlite board [4]. Apart from simple cleaning, all interventional treatments were individually documented in the electronic database. The cleaning of metals mounts was carried-out by metals conservators and some large objects were treated in the sculpture conservation department.

The Ceramics Study Galleries provide visible storage in large display cases (Fig. 4). It is possible to compare similar objects at a glance and to see objects from unexpected and unusual angles. Most importantly, the objects are now available for study.

People from all continents were involved in this project; very fitting for a collection from all over the world. This is a unique resource for everyone interested in any type, style or period in the history of ceramics.



Fig. 4: View of one of the two larger galleries showing one of the central dense displays.

### Acknowledgements

I am grateful to Victoria Oakley, Head of Sculpture, Metals and Ceramics & Glass Conservation Section, Victoria and Albert Museum, for comments to this text.

### References

1. [http://www.vam.ac.uk/collections/ceramics/new\\_ceramics\\_galleries](http://www.vam.ac.uk/collections/ceramics/new_ceramics_galleries)
2. [http://www.vam.ac.uk/resources/print\\_study\\_reading/index.html](http://www.vam.ac.uk/resources/print_study_reading/index.html) (accessed 12 Jun 10):  
**Ceramics Study Room:** objects from the ceramics study collection, displayed in rooms 136 to 139 on level 6, can be viewed close up in the Ceramics Study Room off room 139. This service is available by appointment only, from Monday to Friday each week between 10 am and 12 pm and between 2 pm and 4 pm. For further details or to make an appointment: +44 (0)20 7942 2073 (Western Ceramics) or +44 (0)20 7942 2244 (Asian Ceramics)  
Email: [ceramicsstudyroom@vam.ac.uk](mailto:ceramicsstudyroom@vam.ac.uk)
3. <http://collections.vam.ac.uk/>
4. Jordan, F., 'The mounting of decorative tile panels for display', *The Conservator*, 31, 2008.

### References

1. Three accounts of the Ceramics Galleries by Judith Crouch and Rowan Bain may be found in the V&A website:  
[http://www.vam.ac.uk/collections/ceramics/new\\_ceramics\\_galleries/](http://www.vam.ac.uk/collections/ceramics/new_ceramics_galleries/)
2. V&A website: <http://www.vam.ac.uk/futureplan/>

3. Oakley, V. and Jordan, F., 'Transforming the Ceramics galleries: an exercise in restraint', **V&A Conservation Journal**, Spring 2009, No. 57. (The Journal will be available online in the autumn 2009)

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## Joint Glass/Metal Corrosion: (Re-)Search Goes on, More Samples Needed !

Gerhard Eggert

Corrosion products on historic objects have been studied for centuries. Nevertheless, there are still new compounds to be detected contributing to our knowledge what may happen to artifacts under poor environmental conditions. At the ICOM-CC Triennial Conference in New Delhi 2008, two examples of socoformacite (**sodium copper formate acetate**) have been reported as a joint corrosion product of soda glass and copper exposed to acid emissions from wood. At the Interim Meeting in Corning 2010 further examples will be presented (Fig. 1), see programme (p. 3).

In air that is not too dry, corroding soda glass produces alkaline sodium carbonate surface films which give rise to special corrosion products on copper alloys (including debased silver) when in direct contact. At present four different compounds have been identified (Table 1, [1]). These compounds either contain sodium from the glass and/or hydroxide as a result of the high pH ( $\text{Cu}_2(\text{OH})_3\text{HCOO}$ ). Powder diffraction data and the crystal structure of the latter compound (now found in 5 objects!) have recently been determined [2].

Samples from contact corrosion have been found on a number of different objects where glass and metal corrode together in direct contact: enamel on copper, silver alloy mounted glass (a glass flute, a glass cabochon, a ruby glass box), a glass framed daguerreotype with brass mat, glass beads or balls in contact with wire, and glass figures with interior wire.



**Fig. 1:** Socoformacite efflorescence from cracks in the arm of a glass figure armed with an interior copper wire (Photo: Wibke Bernhard)

**Table 1:**  
Joint soda glass/copper alloy corrosion products

| Name                          | Formula  |
|-------------------------------|--|
| chalconatronite               | $\text{Na}_2[\text{Cu}(\text{CO}_3)_2] \cdot 3\text{H}_2\text{O}$              |
| basic sodium copper carbonate | $\text{Na}_3[\text{Cu}_2(\text{CO}_3)_3(\text{OH})] \cdot 4\text{H}_2\text{O}$ |
| sodium copper formate acetate | $\text{NaCu}(\text{HCOO})_{1+x}(\text{CH}_3\text{COO})_{2-x}$                  |
| basic copper formate          | $\text{Cu}_2(\text{OH})_3\text{HCOO}$  |

But the search goes on! Unidentified crystalline corrosion products are still found. Elemental information from SEM-EDX and Raman microscopy will help in their identification. From a chemical point of view many more ions can be expected in joint corrosion products (Table 2, [1]), e.g. sulphates or calcium (known, for example, from corrosion products of stained glass windows).

Recently, the first potassium compound was identified from a silver mounted ruby glass cup of the Green Vault Dresden (Fig. 2). The compound matches with the powder diffraction data published by Scott [3] for a sample from the Kelvingrove collection in Glasgow taken by Norman Tennent. Its formula and the anions present need further study.

| Source           | Agents  | Cations   | Anions  |
|------------------|---|---|---|
| Copper alloys    |   | $\text{Cu}^{2+}$<br>( $\text{Cu}^+$ )   |   |
| Glass            |   | $\text{Na}^+$<br>$\text{K}^+$<br>( $\text{Ca}^{2+}$ )<br>( $\text{Mg}^{2+}$ ) | $\text{OH}^-$<br>( $\text{O}^{2-}$ )                                |
| Wood, glues etc. | $\text{H}_2\text{CO}$<br>$\text{HCOOH}$ ,<br>$\text{CH}_3\text{COOH}$                         | ( $\text{H}^+$ )  | $\text{HCOO}^-$<br>$\text{CH}_3\text{COO}^-$                        |
| Air              | $\text{O}_2$ , $\text{H}_2\text{O}$ , $\text{CO}_2$<br>( $\text{SO}_2$ )<br>( $\text{NO}_x$ ) |   | $\text{CO}_3^{2-}$<br>( $\text{SO}_4^{2-}$ )<br>( $\text{NO}_3^-$ ) |

( ) = hitherto not observed in products

Table 2:  
Possible ions and their sources in joint glass/copper alloy corrosion products

Fig. 2: Copper ruby glass cup munted with gilded silver with potassium containing corrosion in the contact zone (Photo: Rainer Richter)



But are such joint corrosion products only found on copper alloys? Initial corrosion tests with lead in contact with a diluted soda solution precipitated a basic sodium lead carbonate, not basic lead carbonate (lead white, hydrocerussite) as one would expect [1]. A long term corrosion experiment with lead foil in contact with a soda glass sheet and a drop of water in between is currently running in our laboratory. Similar conditions could exist on leaded soda glass windows where there is a tiny gap between the metal and the glass. Any observations, analyses, or samples from historic leaded windows would be very helpful to my research!

The striking contact corrosion of metals in contact with corroding glass has hitherto been almost totally neglected. Progress could only be made because many colleagues and students have kept an eye open for me and made samples available. This is the only way such rare phenomena can be studied. Please have a look at your collection and send any observations by e-mail!

These compounds need to be studied further: they tell us about the (storage) history of an object and may add to our general knowledge and result in improvements in preventive conservation.

Gerhard Eggert  
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## References

[1] Eggert, G., Corroding glass, corroding metals: A survey of joint metal/glass corrosion products on historic objects. *Corr. Engin. Sci.&Techn.*, in print.

[2] Euler, H. et al., Crystal structure of trihydroxycopper formate,  $\text{Cu}_2(\text{OH})_3(\text{HCOO})$ . *Z. Kristallogr. NCS* 224 (2009) 609-610. Online: <ftp://ftp.oldenbourg.de/pub/download/frei/ncs/224-4/1267-2726.pdf>

[3] Scott, D.A., *Copper and Bronze in Art*, Los Angeles 2002, p. 301 and App. 21

## G & C GROUP NEWS: Corning 2010, Lisbon 2011

Coordinator: Gerhard Eggert

Our Interim Meeting in Corning focused the group's work in the year 2010. Hannelore Roemich as Editorial Coordinator successfully managed to convince the peer reviewers and the authors of the preprints to deliver in time, a real feat! Rick Price was extremely helpful to the contributors in finding the right words for they meant to say. Jaci Saunders' cover and layout for the book is really looking good. And Steve Koob was busy in getting all the other details of the conference organised. So we are ready for the conference to be held!



Next year's main theme will be ICOM-CC's 16<sup>th</sup> Triennial Conference in Lisbon, September 19 to 23, 2011 (for details see: <http://www.icom-cc2011.org>). In its triennial programme, our working group promised to work for a significant contribution to this conference. And so we did: A record of 8 papers were accepted preliminarily for oral presentations by the Editorial Committee plus 4 posters. Unfortunately, there was not enough space for all the good quality papers. I do hope that there will be other opportunities for their presentation. This fate happened to the other working groups as well as a record number of 700 (!) abstracts have been submitted. ICOM-CC reacted by increasing the space for oral presentations by 50%. Because of costs involved the publication plans had to be changed to CD only; an unavoidable, but saddening farewell to the printed 2 volumes preprints we all are so familiar with.

The rich Portuguese tradition in ceramics and glass will make this meeting highly interesting for our working group. A variety of important conservation research is going on at the Universidade Nova in Lisbon and elsewhere in the country. And there will be so much to see for us in Portugal, so mark the date in your calendar!

## SPECIALIST GROUPS

### ENAMEL

#### 3<sup>rd</sup> Meeting at the Frick

Coordinator: Agnès Gall Ortlik



After Chateau de Germolles 2006 and the Villa Medici in Rome 2008 it's now the Frick Collection in New York: The third conference of our ENAMEL specialist group will take part on October 8 and 9, 2010, shortly after our Interim Meeting in Corning. All conservators, collectors, students, artists, and scholars interested in techniques and conservation of enamel on metals are invited to attend. During this two-day event, a wide range of papers will be delivered by a group of international specialists (see <http://www.frick.org/conservation/symposia.htm> for a list of speakers).

The 2010 meeting is a day and a half of lectures including a panel discussion and a half-day to visit enamel collections in New York. The event is coordinated by The Frick Collection's Assistant Conservator, Julia Day, and our Assistant Coordinator, Agnès Gall-Ortlik.

The lectures will cover issues related to the preservation of enamels, new scientific research, and technical and art historical studies. The panel discussion will feature experts who will discuss the conservation and analysis of enamels. The results from this discussion will be reviewed at the end of the meeting and will create a foundation for current methodology in these areas. A reception, coffee breaks, self-guided tour, and extended abstracts will be included in the event. Early registration through the website is advised (100 US\$, 50 US\$ for students) as the number of places is limited.



*West Gallery of the Frick Collection*

## GLASS DETERIORATION

Coordinator: Laurianne Robinet

Our specialist group GLASS DETERIORATION aims to network all those interested in the corrosion of historic glasses. A number of new members joined the group in the last 12 months. An updated directory of members and their activities is available to all group members. Group coordinator Laurianne Robinet will soon publish an updated version of the literature survey on glass deterioration, and she still needs your input !

Please continue to e-mail all information regarding new papers, thesis, reports or conference proceedings related to glass alteration to [laurianne.robinet@synchrotron-soleil.fr](mailto:laurianne.robinet@synchrotron-soleil.fr).



*Scanning Electron Micrograph of a dried out gel layer, photo taken from [www.glassac.eu](http://www.glassac.eu)*

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## CONFERENCE REPORTS

### CONSTGLASS – Conservation materials for stained glass windows International Conference, May 27-28 2010

S.Trümppler, K.Wittstadt, P.Bellendorf

Stained glass windows together with their restoration history, their preservation and state of deterioration have been the focus of the European CONSTGLASS project.

The project's research activities have dealt mainly with the screening of restoration treatments and how they have performed in previous decades on important European stained glass windows of medieval origin and from the 19th/20th century.



The state of preservation of the artworks and the potential risks caused by former restoration campaigns were examined. Aspects considered included stability vs. degradation behaviour of conservation materials and original substrates. Stained glass windows from Cologne Cathedral (D), Canterbury (UK), Chartres, Bourges, Le Mans (all F) and others have been identified as pilot objects.

Selected samples representing typical damage phenomena of bulk stained glass and conservation resins were examined by means of highly sophisticated analytical tools such as nano-Computed Tomography (CT), phase-contrast CT, Raman and FTIR spectroscopy, SEM / EDX etc. After adaptation and improvement it was possible via non-destructive CT investigations to clearly visualize and identify different consolidants, microscopic damage and deterioration effects.

To validate the reversibility properties of resins and solvents, a questionnaire or benchmark system for the assessment of solvents depending on the resins applied was established. Reversibility and re-treatability workshop trials on restoration materials were performed as well as the identification of risk potential, caused by microbial impact (bio-corrosion) on glass and conservation materials.

In addition, a pure inorganic so-called glass-in-glass consolidant has been developed for a controlled but effective stabilization of porous, internally fractured and brittle glasses and glass paints.

In order to communicate the results from the CONSTGLASS EU-project to the public, an international conference was held from May 27-28, 2010 in Romont (Switzerland). This conference was organized by the project partner Vitrocentre Romont in collaboration with the project coordinator and the Vitromusée Romont / Swiss Museum for Stained Glass and Glass Art.

The conference opened on Thursday afternoon with a welcome address by the vice syndic of the town of Romont and a highly instructive overview of EU programs and projects dealing with cultural heritage by Ms. Astrid Brand-Grau, national expert to the EU commission. This was followed by an introduction on the CONSTGLASS project by the consortium leader. The first part of the meeting was dedicated to the pilot objects/case studies. The meetings first day ended with two context presentations. Sebastian Strobl's "History of stained glass conservation" set out the methodological framework of the questions and periods the projects are dealing with. Adriana Bernardi recalled the main results of the EU-project VIDRIO which turned out to be of particular interest for CONSTGLASS, as protective glazing has a central role in the choice of using conservation materials on stained glass.

On Friday it was the turn of the scientific partners to present the research and visualization methods used in the project. A newly developed glass conservation material for effective stabilization of porous, internally fractured and brittle glasses and glass paint was introduced. The session was completed by an overview on microbiology on glass and glass conservation products.

Some fundamental concerns and objectives of the CONSTGLASS project were emphasized in the final session:

- Interdisciplinary research and co-operative work during treatments leads to better conservation, in opposition to unilateral or multidisciplinary research.
- CONSTGLASS has proven to realize an important "added value" concerning the assessment of recent conservation materials and techniques.
- The role of architects and official bodies concerning conservation specifications has been questioned, but CONSTGLASS has proven that by the collaboration and networking between conservation specialists and scientists essential "messages" and knowledge can be achieved to the benefit of this cultural heritage.
- Money invested in appropriate interdisciplinary research and evaluation can often result in a better

use of resources and lead especially to far less interventional conservation-restoration programs.

The meeting closed with guided visits to the Vitromusée Romont, Swiss museum for stained glass and glass art. Besides its permanent collections of stained glass/glass art from the Early middle ages until today's artists works and a fine, unique collection of reverse paintings on glass, the Museum and the Vitrocentre prepared a particular temporary exhibition also in view of the final congress of CONSTGLASS: Important stained glass from the 14<sup>th</sup> and 15<sup>th</sup> centuries from the Romont collegiate church is on show at the occasion of its upcoming restoration in the Museum's studio.

More information about the CONSTGLASS project (among others a full list of the project participants) and about the final conference can be found at the official website:

<http://www.constglass.fraunhofer.de>.

The photos and text of the following case study was taken from the CONSTGLASS website.



Fig 1: Swiss roundel: repaired with leads  
© Glasgow Museums

Here shown before and after restoration, involving epoxy resin to replace old strap lead repairs.

Note: These restorations using epoxy resin were carried out about 30 years ago and so are a valuable indicator of the effects of constant museum display in an artificially-lit display gallery on the long-term ageing of epoxy polymers. (Courtesy of Glasgow Museums)



Fig 2: Swiss roundel: repaired with adhesive  
© Glasgow Museums

The figures show a Swiss roundel, 1671, with scenes from the Life of St Francis (Burrell Collection, Reg N°. 45/530).

A video from Euronews about the project can be found at the following link:

<http://www.euronews.net/2009/09/23/a-faded-past-but-a-bright-future-for-stained-glass/>

## FUTURE CONFERENCES

### GLASSAC 11: Glass Science in Art and Conservation

May 10th – 12th, 2011, Bronnbach Monastery, Germany



Bronnbach Monastery

The third “Glass Science in Art and Conservation” congress is an international

meeting that tries to involve the chemical, physical and biological sciences with art, archaeology and history of glass artefacts. The congress theme is: “Innovative technologies in glass art, design and conservation from the 19th to the 21st century – the role of the science”. GLASSAC congress will provide an opportunity to discuss practical problems of intervention facing conservators and it will examine significant developments in the science of glass that can show artists and the conservation community innovative possibilities. An International Advisory Committee is coordinating the programme, among them many members of our Ceramic and Glass WG.

### REGISTRATION

For registration, please fill in the registration form, which is available on [www.glassac.eu](http://www.glassac.eu) and send it by e-mail to [registration@glassac.eu](mailto:registration@glassac.eu) or by fax to +49 9342 9221-799

### Registration Fees

| Category               | Before Feb. 28th | After Feb. 28th |
|------------------------|------------------|-----------------|
| Symposium Participants | 300 €            | 350 €           |
| Student Participants * | 200 €            | 250 €           |
| Accompanying Person ** | 300 €            | 325 €           |

\* Prove of student status is required

\*\* Subject to 15 people minimum. See program on web site [www.glassac.eu](http://www.glassac.eu)

Registration fees for participants include attendance to the conference working sessions, conference documentation, refreshments during coffee breaks, lunch on May 10th and 11th, 2011, conference dinner, tourist tour of Wuerzburg, and shuttle service from Wuerzburg to the Monastery. Location

The Bronnbach Monastery, near Wuerzburg is a former Cistercian abbey. Since 1995 the Fraunhofer Institute for Silicate Research ISC is settled there. In 2008 the International Convention Centre for Cultural Heritage Preservation IZKK was founded.

### Dates

October 31st, 2010: Deadline for submission of abstracts

November 2010: Notification of acceptance by the Advisory Committee

February 28th, 2011: Deadline for submission of extended abstracts

March 25th, 2011: Deadline for hotel reservation  
March 2011: Final announcement of programme

Scientific and Technical Secretariat  
Internationales Zentrum für Kulturgüterschutz und  
Konservierungsforschung IZKK  
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## The American Glass Guild (AGG) 2011 Asheville Conference July 22 - 24, 2011

### CALL FOR PAPERS

The American Glass Guild's Board of Directors is seeking proposals for lectures and panels from artists, craftspeople, studios, conservators and historians for the group's sixth annual meeting to be held July 22 - 24, 2011, in Asheville, North Carolina. We are also interested in proposals for workshops for the day before the meeting. Please consider sharing your work, insights, and interesting projects with your colleagues!

The conference will present papers on the many different aspects those working in the field are faced with, including: new design, technique, conservation, history of the medium and its practitioners, related materials, and business practices. The deadline for proposal submissions is October 1, 2010. Proposed presentations should be 20 or 40 minutes in length with additional time for questions. Submit abstracts and workshop proposals via email to: [info@americanglassguild.org](mailto:info@americanglassguild.org) for the attention of Asheville Program Chair, by October 1, 2010. They should include a title and be no longer than 300 words. Authors should include a biography and full contact information for themselves (name/company, mailing address, phone, fax, website, and email address) and if a panel is proposed, for the other panel members. The program committee will send notification of acceptance by November 15, 2010. We will publish a Pre-print of the presentations that will be available at the conference.

If your proposal is accepted, those giving 40-minute talks receive one free registration for the conference (to be split if there are two presenters) and those giving 20-minute talks receive one free half-registration. Those organizing and leading panel discussions receive one half-registration. The panellists receive Conference Pre-prints and T-shirt. To receive these benefits, presenter(s) must register for the conference. Those giving workshops will receive fees for the workshop, but no reduction in conference fees. All travel and hotel expenses are the responsibility of the presenter(s).

The mission of the AGG is to provide a forum for the open exchange of information on stained, leaded and decorative glass and its creation, preservation, restoration, and history. Our intention is to work toward building an environment within the field that both cultivates novices and facilitates experienced artists and craftspeople to attain a higher level of expertise. Our well-received conferences include presentations, round-table discussions, and demonstrations by notable national and international experts. Information on past conferences is available at [:http://www.americanglassguild.org](http://www.americanglassguild.org)

Questions or comments should be emailed to the attention of Asheville Program Chair at [info@americanglassguild.org](mailto:info@americanglassguild.org). We also welcome suggestions for topics on which you would like to hear presentations. Please feel free to distribute this announcement to any interested colleagues. We look forward to seeing you in Asheville!

*From ConsDistList*

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### EXHIBITIONS

#### Temporary Exhibition: “Vorsicht Glas!”

[Pergamon Museum, Staatliche Museen zu Berlin. September 10, 2010 – January 9, 2011](#)

Glass can be fascinating through its transparency, variety of colour and shape, lustre, fragility, sharpness and durability.

Since the invention of glass in the Middle East 4,000 years ago, glassmakers of this region played a crucial role in capitalizing on its material qualities. After the Arabic conquest in the 7<sup>th</sup>

century they preserved the manufacturing and decoration techniques of the past, but also incorporated significant artistic and technical innovations of their own.

The temporary exhibition “Vorsicht Glas!” at the Museum of Islamic Art in Berlin focuses on the traditions and innovations of glassmakers and artists of the Middle East. The exhibition presents the artistic diversity of glass in form, colour, and decoration and their underlying manufacturing techniques. To accomplish this, sixty glass objects from the collection of the Museum of Islamic Art will be displayed alongside ten contemporary works from the partner gallery New Glass Art & Photography.



*Fig. 1: Perfume flask, cut glass, Iran, 9<sup>th</sup> – 10<sup>th</sup> century, Museum of Islamic Art, Berlin, Inv. No. I. 49/63, © Staatliche Museen zu Berlin – Preußischer Kulturbesitz, photographer: G. Niedermeiser.*

“Vorsicht Glas!” not only launches the immediate visual appeal of glass from the Middle East but also conveys its appreciation down to the present day. On the one hand, the exhibition communicates, through the biographies of individual glass objects from the museum collection, the path from production, to conservation, and finally to exhibition. On the other hand, contemporary glass artists savour the inherited production techniques and stylistic elements by innovative interpretations.



*Fig. 2: Felekshan Onar: Derwish, hot glass, Turkey, 2008, © artist.*

#### Participating artists:

Scott Chaseling, Australia

Marya Kazoun, Lebanon

Felekshan Onar, Turkey

Boyd Sugiki, USA

The Bee Kingdom, Canada (Ryan Marsh Fairweather, Timothy Belliveau, Phillip Bandura)

Under the patronage of the German Commission for UNESCO “Vorsicht Glas!” is presented and organized by the Museum of Islamic Art, Berlin  
[http://www.smb.museum/smb/sammlungen/detail\\_s.php?lang=en&objID=12&n=11](http://www.smb.museum/smb/sammlungen/detail_s.php?lang=en&objID=12&n=11)

In cooperation with the Gallery New Glass Art & Photography, Berlin  
<http://www.nadaism.de/>

#### Catalogue

A two-part, fully illustrated catalogue containing latest research on Islamic glass art as well as detailed object descriptions will be available for purchase to accompany the exhibition.

#### Visitor Entrance

Pergamonmuseum  
Am Kupfergraben 5  
10117 Berlin

## Information Museum Island Berlin

+49(0)30 - 2090-5577

<http://www.smb.spk-berlin.de>

### Opening Hours

Mon – Wed, Fri – Sun: 10:00 a.m. - 6:00 p.m.

Thu: 10:00 a.m. - 10:00 p.m.

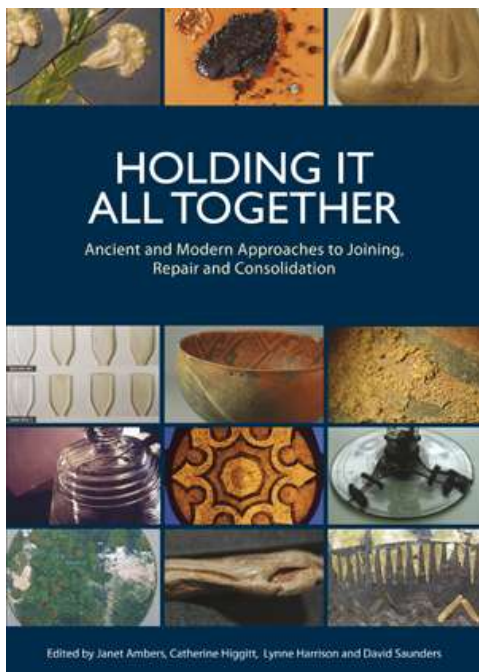
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## BOOK ANNOUNCEMENT

### Holding It All Together: Ancient & Modern Approaches to Joining, Repair and Consolidation

Postprints of The British Museum conference held 21-22 February 2008

Edited by Janet Ambers, Catherine Higgitt, Lynne Harrison and David Saunders



This volume contains written versions of presentations given at a two-day meeting entitled 'Holding it all together: ancient and modern approaches to joining, repair and consolidation.' This topic was deliberately chosen to be wide ranging; in an era of escalating specialisation, it is

felt that there are increasingly few opportunities for a wide range of professionals with an interest in the conservation and technical study of the cultural heritage to come together. The papers are divided into three groups: ancient and traditional joins and repairs, modern joins and repairs and case studies on subjects as diverse as the Caergwrle bowl, a Bronze Age shale bowl apparently depicting a boat, and the types of conservation materials used in early twentieth century Mexico.

An overview of the articles related to ceramics and Glass:

#### **Ancient glass gluing recipes**

*Gerhard Eggert and Daniela Simone Straub*

#### **Ancient repairs in archaeological research - a Near Eastern perspective**

*Renske Dooijes and Olivier Peter Nieuwenhuys*

#### **Joining clay: a comparison of modern and ancient techniques**

*Dean E. Arnold*

#### **Prehistoric and ethnographic repair techniques and materials on Southwestern Native American pottery**

*Chris White, Nancy Odegaard and Arianna Lea Shackle*

#### **The use of ethnographic and scientific knowledge to explore creosote lac repairs on pottery vessels at the Arizona State Museum**

*Arianna Lea Shackle, Dean Sully, Renata Peters and Chris White*

#### **A history of joining glass fragments**

*Sandra Davison*

#### **Paraloid B-72®: twenty-five years of use as a consolidant and adhesive for ceramics and glass**

*Stephen P. Koob*

#### **Internal fractures on stained glass windows: a conservation study**

*Katrin Wittstadt and Peter Mottner*

#### **Studies of the degradation of epoxy resins used for the conservation of glass**

*Inês Coutinho, Ana Maria Ramos, Augusta M. Lima and Francisco Braz Fernandes*

ISBN: 9781904982470

Available from Archetype books. £45.00 / \$90.00

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## WORKSHOP NOTES

### Securing Cracks in Ceramics

Juanita Navarro

A method which relies on attaching ‘tapes’ with epoxy resin across cracks was used at the Victoria and Albert Museum (V&A) on a very large ceramic jug travelling on loan [1]. Although on this occasion the cracks had been cleaned and consolidated, it was felt that the cracks needed further strengthening as a preventive measure. Sometimes a variation of this technique has been used as a temporary first aid measure, for example a large mirror with some cracks which had to be stabilised prior to being moved from storage. This technique is not suitable for porous bodies (such as earthenware or delaminating glass) as the adhesive would consolidate the substrate.

A simple version of the tape technique was used as a temporary first aid measure during preparation of a large number of objects for display in the Ceramics Study Galleries at the V&A. The first technique described here was used on glazed objects which were judged too vulnerable and likely to be damaged during handling and was used for glazed ceramics as a temporary means to enable safer handling. This technique is not proposed as a permanent method, but may be useful when vulnerable objects need to be moved. However, the second method described may be suitable as a long-term solution for certain unglazed ceramics and soft bodies. As a precaution a small test on an unobtrusive area is recommended.

#### Glazed ceramics

The first technique consists of placing a ‘tape’ across an unstable crack using an adhesive to bond the tape to the glazed surface. It is important to prevent the adhesive from entering the crack. The conservator needs to judge how much strengthening is required for the object and to try to apply the minimum number and size of tapes. For instance, a long crack to one side of a small cup would probably need only one small tape inside, near the rim, whereas a large thick maiolica tazza might need more and slightly larger tapes, perhaps on the back and front.

The materials used were thin Bondina (non-woven polyester fabric) [2] and Paraloid B-72 (ethyl methacrylate methyl acrylate copolymer) in acetone, ca. 20% (w/w) [3]. The glazed surface

should be clean and dry and the object should be well supported and secure on the working surface since both hands will be needed to carry out the procedure.

Each conservator found their preferred method to apply the tapes. Figure 1 shows the conservator placing the thin strip of Bondina over the crack after the tape has been dipped in the Paraloid B-72 solution. An alternative is to hold the clean Bondina over the crack and to paint the Paraloid B-72 solution onto the Bondina with a soft brush.



*Fig. 1: Tweezers in right hand hold Bondina dipped in Paraloid B-72 solution. Scalpel in left hand to help place Bondina and then hold it down while the tweezers are pulled off.*

The rapid evaporation of the acetone helps to prevent any solution entering the crack. The tape can be wetted with acetone if the adhesive dries too quickly. It is important to the success of this technique that tweezers and blade tips are cleaned by dipping in acetone and wiping with absorbent paper between applications. Ideally, the tape should be transparent and unobtrusive when dry. However, if the adhesive solution is too thin, lighter areas may appear after drying and adhesion can be compromised. If the adhesive is too thick bubbles appear after drying and the tape appears thick and unsightly. The tapes can be easily removed by local fuming with a solvent, such as acetone.

## Adapting the technique

The concept described above was adapted for a tall medieval jug [4] which had been excavated in fragments (V&A No. C.10-1965, Fig. 2). The body was very soft and porous and the fragments had been bonded, possibly with animal glue. The adhesive had shrunk on drying, pulling away from the break edges. Further the joins produced gave a very unsatisfactory hollow sound when tapped indicating poor join strength. The main structural support appeared to be provided by several plaster fills.



*Fig. 2: Medieval jug showing break edges and fills.*

Because the jug had such a soft body, dismantling and cleaning the fragments would have caused more damage, including loss to the powdery surface. After several trials, the following method was devised which gave the jug sufficient strength to allow careful handling. The adhesive used was isinglass (animal glue made from sturgeon swimbladder) because of its purity, strength and future solubility [5]. Paraloid B-72 was not appropriate as it would have darkened the substrate and it would have been impossible to remove from the porous body.

Very thin Japanese mulberry tissue (ca. 10-15 gsm) was used for the tapes instead of Bondina. The mulberry fibres are quite strong and the open structure would conform better than Bondina to

the curved surfaces; it would also be less noticeable. In order to achieve a soft edge, the tissue was cut to the required shape by drawing the 'cutting' line with a fine sable brush dipped in water and teasing out the two pieces along the wet line, so that the fibres would be spread out at the edges. Such diffused edges blend in better with the background than a sharp blade cut, but, more importantly, the bonded area is effectively larger. Strategic places were chosen that would give the most support, including corners of several fragments, in order to keep the number and size of the tapes to the minimum.



*Fig. 3: Close-up of tissue over a join, before retouching to blend-in*

After cutting the tissue to the required shape, it was placed over the chosen place and a dilute solution of isinglass, ca. 10-15%, was painted over the main area of the tissue with a sable brush. A different concentration may be required depending on the porosity of the substrate. Finally, the fibres around the periphery were bonded by stippling/brushing outwards from the centre with the same brush barely dampened with the adhesive solution (Fig. 3).

Once the tissue was dry, it was visually blended in by retouching very lightly with powder pigments in ca. 5% solution of isinglass. It was important to use a very small amount of moisture to prevent the tissue softening and lifting. After final drying

the pieces of tissue blended in with the background (Fig.4) and provided enough strength to allow handling.



Fig. 4: Stick pointing to tissue over break edge, after blending-in

Using Bondina tapes to secure cracks provided a quick solution to an urgent problem and is not proposed as a permanent solution. On the other hand, Japanese mulberry tissue with isinglass helped to strengthen cracks in the long term when other treatments or adhesives were not appropriate. The techniques described provide a flexible method that may be adapted to other situations.

### Acknowledgements

I am grateful to Victoria Oakley, Head of Sculpture, Metals and Ceramics & Glass Conservation Section, Victoria and Albert Museum, for comments to this text.

### Notes

1. Navarro, J., 'Preparing a Large Jug for Loan', *Conservation News* 61, November 1996, pp. 42-44.
2. All materials mentioned are available from conservation suppliers and can be found online. If only available to buy in large amounts, a friendly paper or books conservator may be able to supply smaller amounts of Bondina or dry isinglass.
3. Health & Safety: Manufacturer's safety data sheets should be consulted before use of the materials mentioned and their recommendations followed.
4. 'Jug. H.15 in. [38 cm] made in Laverstock, Wiltshire, late 13th century. Buff earthenware with applied and brushed slip decoration and traces of lead glaze.'

(<http://collections.vam.ac.uk/item/O149878/jug/>, accessed 26 June 2010).

5. Petukhova, T., 'Potential Applications of Isinglass Adhesive for Paper Conservation', *The Book and Paper Group Annual*, Vol. 8, 1989, pp. 58-61. <http://cool.conservations-us.org/coolaic/sg/bpg/annual/v08/bp08-06.html>

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## Conservation of Archaeological Ceramics from Koh Ta Meas Human Burial Sites

Tep Sokha,

The ceramics conservation lab at the Royal University of Fine Arts in Cambodia was established by the American ceramics conservator, Bonnie Baskin in 2003. I was one of three archaeological graduates from the Faculty of Archaeology to be taught by her. The training we received in the conservation of archaeological ceramics continued for three years. Since 2007 we have carried-on working in the field and have gained much experience in the reconstruction of prehistoric, pre-Angkorian and Angkorian ceramics.

Ceramics have been conserved from many sites throughout Cambodia due to the many research projects at present excavating on archaeological sites. In this piece I will discuss the Koh Ta Meas site, located in the West Baray in the Angkor area, Siem Reap province. This excavation, carried out from 2005 to 2006, was a collaboration between the École Française D'Extrême Orient and The APSARA Authority.

Ceramics were found as grave offering in human burials dating from 1,800 - 1,000 BC. Unfortunately, the compression of the earth caused the ceramics to break into many pieces.

Reconstructing over a hundred pieces of a jar is difficult work (see fig. 1). Ceramics recovered from excavation sites are normally covered with dirt, dry mud and tree roots. When treating these ceramics it is important to first take a small sample of the surrounding material.



*Fig 1 : A pot in 644 pieces (KTM05.10362, 10334)*

Once a ceramic object has been cleaned, the information that this material can provide is lost. Ceramics from the Koh Ta Meas site are decorated with a red slip and a painted white stripe design. We tested the hardness of the ceramics by scratching the surface with a coin and could determine that they were made of under-fired earthenware and stoneware. Because of the red slip and white stripe design, we had to consider the most suitable cleaning technique before continuing.



*Fig. 2: Sherds before cleaning*

Ceramics from archaeological sites where there are high levels of sodium chloride in the ground should be tested for soluble salts. Ceramics with a high soluble salt content are desalinated by immersion in de-ionized water, the water being changed one to three times. After the ceramics have been cleaned, it is necessary to consolidate the edges of the sherds before reconstruction. This is done by diluting adhesive in conservation grade acetone and applying it onto the edges. Two or three applications are made. This strengthens the sherds, and prevents damage during assembly.



*Fig. 3: After cleaning, red slip and white painted lines on the pot neck become visible*

The Koh Ta Meas ceramics were broken into many pieces and we had to think very carefully about how to reconstruct them. One option was to join the sherds piece by piece into sections and then section by section. In this way one has to envisage the form while one is working. A better solution is to first match all the pieces before putting them together. Once this has been done it is possible to join sections. If the assembly does not fit well or a section is not in the right place it is possible to use a hair dryer to soften the glue and readjust the pieces.

After the reconstruction of the pot, sections need to be stabilized and gaps filled. This was done with plaster (dental plaster). In general, the philosophy of ceramics conservation is to reproduce the shape of the complete pot, but in a way that the restoration remains visible. The newly reconstructed pots are now on display in the National Museum, Phnom Penh.

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## C & G WG CALENDAR

For news and updates see our WG website at <http://www.icom-cc.org/27/working-groups/glass-and-ceramics/>

### October 3<sup>rd</sup> to 6<sup>th</sup>, 2010

'Glass and Ceramics Conservation 2010', ICOM-CC WG 'Glass & Ceramics Meeting at Corning (NY).

### October 8<sup>th</sup> to 9<sup>th</sup>, 2010

3<sup>rd</sup> Experts' Meeting on Enamel on Metals Conservation at the Frick, New York (NY).

### October 11<sup>th</sup> to 15<sup>th</sup>, 2010

'Metals 2010', ICOM-CC WG 'Metals' Interim Meeting in Charleston (SC)

### March 31st, 2011

**Deadline for the next Newsletter**

### September 19<sup>th</sup> to 23<sup>rd</sup>, 2011

16<sup>th</sup> Triennial Conference of ICOM-CC in Lisbon with Glass&Ceramics Conservation session and business meeting of our WG

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