



Conservation Journal

V&A

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V&A Conservation Journal No.51

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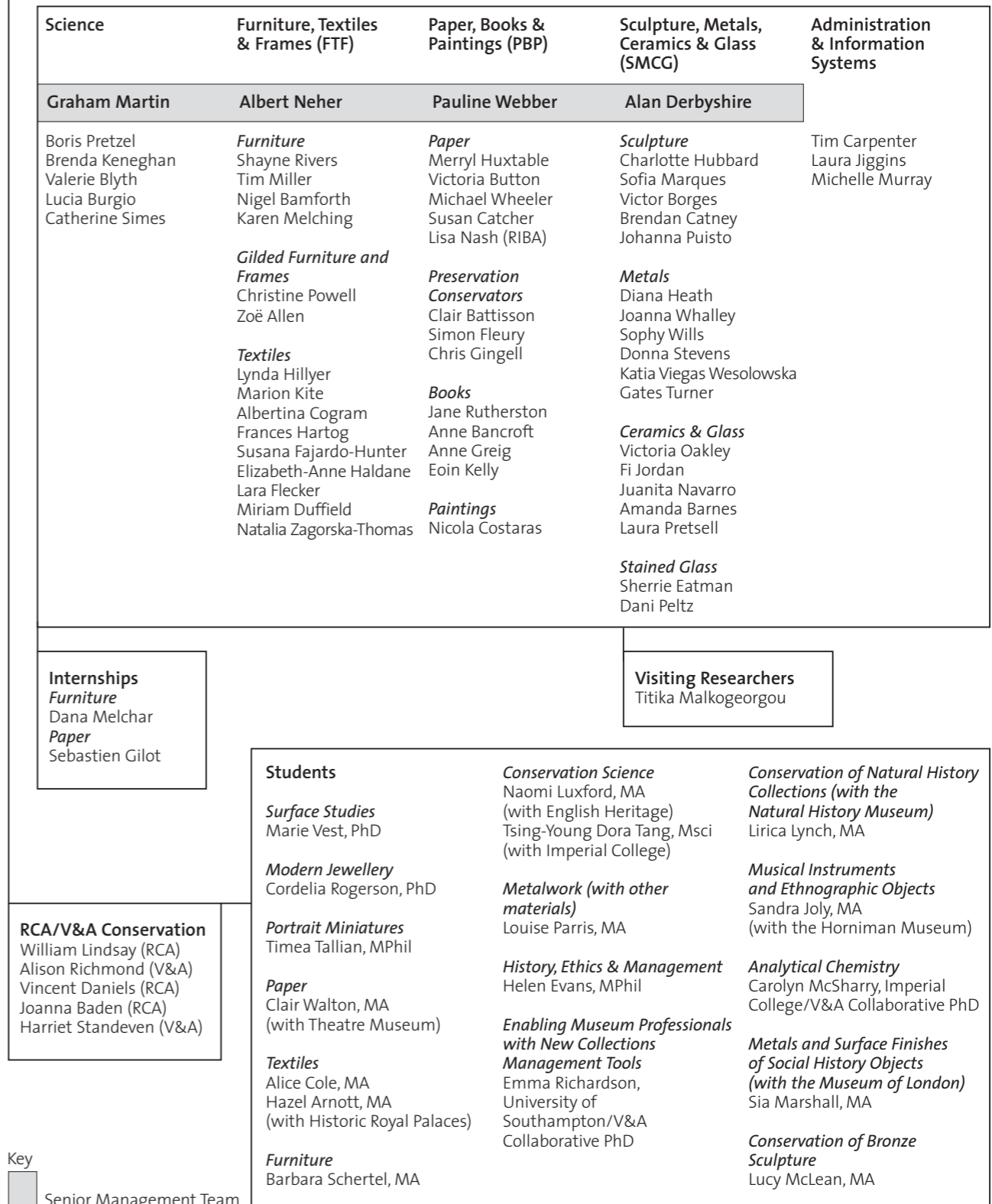
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Conservation Department

Staff Chart Autumn 2005



Key

Senior Management Team

Editorial

Sandra Smith

Head of Conservation

It was invigorating to see the Report of the Museums Association Inquiry into 'Collections for the Future' and the June 2005 *Museums Journal* explore and reconfirm that 'collections are central to everything that museums do and all that they might achieve'.¹ Whilst this is music to most curators and conservators ears, I was also pleased that the inquiry reinforced that 'on focussing on collections ... (This) does not represent a rejection of the current emphasis on the needs of the museum user'.² Museums have come so far in making themselves accessible, inclusive and diverse that this is an opportunity to extend the experience through creatively interpreting and presenting the collections. The acknowledgement 'that objects can change their meaning according to the needs of the viewer, altering their impact through time in a way that pure interpretation never can', highlights the need for the collections to be extensively researched and investigated.³ For many museums the traditional models of curatorial scholarship, where a curator had a deep and comprehensive knowledge of a specific collection have gone. The role of curators has changed, with excellence in communication vying strongly with excellence in scholarship and an acceptance that 'in many museums, conservators and those closely involved in education are likely to have a greater understanding of the potential of individual objects than the ostensible experts'.⁴ The skills and expertise required to meet the sophisticated and diverse needs of the museum visitor are now spread across a number of museum professions, and the 'new' museum team-based approach offers more potential to make different links and connections.

With this in mind I look at the articles in this edition of the *V&A Conservation Journal* and appreciate all the more just how conservation and conservation science make that difference by ensuring the visitor can interpret objects (Bamforth) and in presenting collections in more visitor friendly ways (Derbyshire). Articles exemplify how the Department continues to contribute to collaborative research (Dokos *et al*, Burgio *et al*), education (Luxford *et al*) and professional development (Rivers *et al*, Kite).

Collections for the Future highlighted that 'there are not enough staff in museums with a focus on developing collections' potential and many museums do not have access to the expertise they need.⁵ I was delighted therefore that the expertise of the Conservation staff was acknowledged in the recent round of promotion reviews, when Elizabeth-Anne Haldane (Textile Conservator) attained promotion to Senior Conservator (Band 4) and Mike Wheeler (Senior Paper Conservator) and Jane Rutherford (Head Book Conservator) both attained merit promotion on account of their international reputation, contribution to the profession and delivery of major Museum objectives.

The securing (subject to raising partnership funding) of £9.75m from the Heritage Lottery Fund for the Medieval & Renaissance Wing (due to open in 2009), £350,000 of which is ear-marked for conservation, will enable the Museum, and the Department, to continue to make a significant contribution to the visions embedded in the Collections of the Future.

Footnotes

1. Collections for the Future, Report of the Museums Association inquiry, Museums Association, 2005
2. Collections for the Future p.3
3. Jones, M., Show and Tell, *Museums Journal*, June 2005, p.24-27
4. Johnson, N., Wanted: new breed of curator, *Museums Journal*, June 2005, p.16-17
5. Collections for the Future p.5

The new Miniatures Gallery

Alan Derbyshire, Head of Sculpture, Metals, Ceramics and Glass Conservation, specialist in portrait miniature conservation

Timea Tallian, Miniature Conservator, MPhil student, RCA/V&A Conservation

The new Miniatures Gallery at the V&A opened to the public at the beginning of March 2005. This gallery tells the story of the portrait miniature in Britain from its first appearance at the court of Henry VIII in the 1520s to its decline with the emergence of photography in the 19th century. The new Miniatures Gallery continues on from the newly established paintings and watercolour galleries. The final stage in this suite of new galleries will be the new Jewellery Gallery due to open in 2008.

There are approximately 150 portrait miniatures on display in the gallery in seventeen cases with two additional cases devoted to explaining the materials and techniques of portrait miniatures painted on vellum and on ivory.

Conservation's input to the gallery began in 2003, when the plan to move the miniatures from the Henry Cole Wing into the main body of the Museum was first suggested. A survey of the miniatures currently on display at the time - and from which the final selection would be made - was carried out. It was decided that most of the miniatures would benefit from some cleaning and that some 20% needed more intervention because of problems of flaking paint, warping ivory, glass disease etc. It was estimated that, on average, object related work (assessment, condition reporting, photography, treatment and installation) would take some six hours per object.

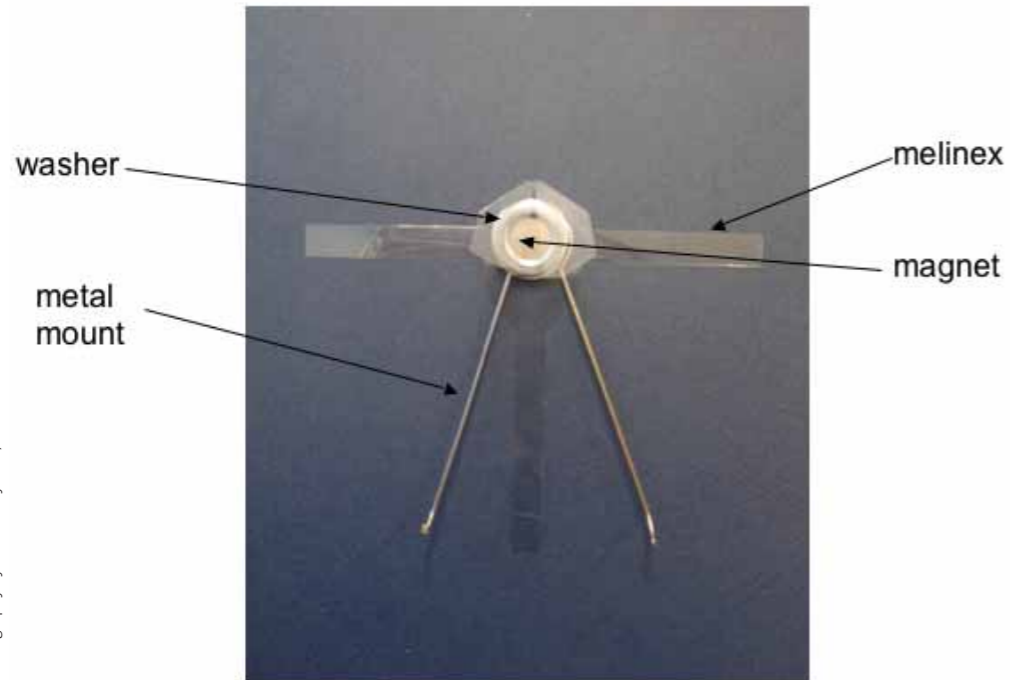
A project team was formed, which included representatives from Collections, Conservation, Learning & Interpretation, Visitor Services, Design and Projects & Estate. The first meeting was held in January 2004.

The cases, manufactured by Goppion of Italy, incorporate a pyramid-shaped glass top that allows an unhindered view of the miniatures. The support board for the miniatures is at the same angle as the sloping front of the glass case - again for ease of viewing. The cases are opened by mechanically

lifting the glass top using a hand-operated or electric drill. In hindsight this is not ideal as it involves using the drill while lying in a prone position underneath the case.

Portrait miniatures are painted in relatively thin layers of watercolour on vellum or on ivory. Consequently miniatures are particularly sensitive to light. From the outset Conservation was insistent on being able to control the total light exposure in order to limit fading and thereby preserve the miniatures for future generations. A similar protocol had been advanced and put into practice in the British Galleries. For the new Miniatures Gallery it was decided to use infra red sensors to operate the lighting only when the miniatures are being viewed. As space is limited in the gallery and the cases are close together, this was not easy to achieve. The sensors had to be customised to limit their peripheral sensitivity. When individual cases are approached by the visitor the lights slowly increase from a default level of 10 lux to a maximum level of 50 lux. After approximately four minutes the lights gradually dim back down to 10 lux. In addition there is down lighting around the edges of the gallery. This illuminates the walls without affecting the objects and 'welcomes' the visitor into the space. In the old Miniatures Gallery, once inside, visitors had to press a button to illuminate an individual case but the gallery itself was poorly lit and not particularly inviting.

The new visitor operated lighting is intended to achieve approximately 20% exposure. For a ten hour opening day this would equate to two hours per day in total. To monitor the actual exposure it is envisaged that radio telemetry voltage sensors will be placed in perhaps two of the cases which will be able to convert when the lights are switched on to a measure of cumulative exposure. At the time of writing these devices are still at the development stage. Magnifying glasses are also provided for the visitor to further enhance their experience.



(Photography by Alan Derbyshire)

Figure 1. Magnetic mount system

It was also decided to use a magnetic system for displaying the miniatures in the cases. The magnets used are made from neodymium and are described by the manufacturers as 'permanent' - they are guaranteed for 20 years. These magnets are available in many different shapes and sizes and from various suppliers. There are definite advantages to using magnets for display. Aesthetically it allows the use of a metal backboard with clean, sharp edges, which would be more difficult to achieve with a textile-covered support. Also by using magnets there is no need to pin into the backboard, a practice which can often leave unsightly holes if a mistake is made or if a change of display is required. The most significant efficiency with the magnets however was highlighted during installation, which went very quickly. Previous experience with the pinning method had proved to be extremely time consuming. It is also difficult to position the miniatures using pins as the curator may wish to try various options before settling on a final location. The magnetic system has no constraints and allows maximum flexibility. The miniatures can be slid around until a satisfactory arrangement is decided upon. The magnetic system is shown in detail in Figure 1.

Each miniature sits on a metal mount made of wire and coated at the ends in Paraloid B72 (ethyl methacrylate methyl acrylate copolymer). The metal mount hooks over a magnet and washer. The Melinex® sheet (polyester film) serves a dual purpose. It sits between the magnet and the backboard with four arms coming off it. These arms can be used to pull the magnet into the right position. This is necessary since the magnets are very strong and not easy to move without the smooth Melinex layer. Secondly the Melinex is folded over to sit between the magnet/washer and the back of the miniature. This ensures that there is no contact between object and system that could lead to adverse chemical reactions. The Melinex shapes were pre-cut and pre-creased using the mount-cutting machine. A further safety option was to tie a thin piece of thread between the miniature locket and the washer. This ensured that if the miniature was knocked during installation it could not fall more than a few centimetres.



(Photography by Timea Tallian)

Figure 2. Testing the magnetic system in the Studio

Another feature into which Conservation had a large input are the two materials and techniques cases. One deals with miniatures on vellum (miniatures painted from the 1520s to 1700) and the other with miniatures painted on ivory (miniatures painted after 1700). These cases explore the pigments, tools and supports etc., used to create portrait miniatures and include examples of unfinished miniatures from the collection. In addition there is a video, playing in the gallery, showing the making of a Tudor miniature.

A study day was held on 21 May 2005 to further advertise the gallery. This included several lectures about the history, materials and techniques and conservation of portrait miniatures. Over 170 people attended the study day which, from the very positive feedback, was a definite success.

Fur trade legacy

Marion Kite

Senior Textile Conservator

Since the 1970s hard-hitting publicity campaigns by LYNX and PETA, furs have been unfashionable in the UK, a controversial subject in most UK museums, and are rarely acquired by the V&A dress collection. However, since the mid 1990s a number of international designers have been using fur and it was a prominent feature on the catwalks for the winter season of 2004. In December 2004 The Costume Institute, Metropolitan Museum New York held a major and high profile exhibition *Wild, Fashion Untamed* presenting a historical overview of skins, furs, feathers, snakeskin and animal prints used to create costume objects. Fur is again in focus in the museum world and in fashion!

Fur is a fundamental part of collections in Canada, and the fur trappers and fur traders history, establishment of Forts/Trading posts, and the founding of The Hudson's Bay Company, are acknowledged as important elements in the exploration of North America, of Canadian history and the building of the Canadian economy. All aspects of the natural world, and fur in particular, have been an area of study for me for 20 years so I was delighted to accept an invitation to speak at a

two-day Workshop on Fur organised as part of the Canadian Conservation Association 31st Annual Conference and Workshop held in Jasper, Alberta May 17th-21st 2005.

Occasionally a conservator is fortunate to attend a conference which is particularly significant and becomes a marker in the development of the conservation profession and/or the conservators own chosen career path. Sometimes this is because of the papers presented and other times it is combination of the participants, papers, the networking, and the venue which make it an outstanding experience. For me, the IIC Paris Conference of 1984 was such an event as was the ICOM-CC Dresden Triennial and the AICCM Annual Conference on Rottneest Island, W.A. 1997. The CAC Jasper Conference proved to be another for all the above reasons. This was the first international meeting devoted primarily to the history and study of the conservation of fur and also of feathers and was set in the rustic setting of the Palisades Environmental Centre (log cabins and woodland) in the heart of the Canadian Rocky Mountains (Figure 1). This was fur trapping country and an inspired choice.



Figure 1. Image from promotional material for the Canadian Conservation Association 31st Annual Conference and Workshop held in Jasper, Alberta May 17th - 21st 2005. Photo courtesy of Jasper-Yellowhead Museum and Archives

Jasper is situated a four hour drive from Edmonton which provided a chance to see some of the impressive landscape and wildlife; 2 osprey nests (females sitting), a golden eagle, a coyote, 4 beaver lodges (no beavers), and several elk.

Delegates' first instruction was H&S related telling us what to do if we met a bear. An informal evening reception at Jasper and Yellowhead Museum brought all the delegates together for the first time, and a great deal of discussion took place before the conference and workshop started. The Museum shop remained open so I bought *Exploring the Fur Trade Routes of North America* by Barbara Huck *et al.* which gives a broad insight into the native North American trappers, traders, trade goods, canoes, waterways, portage, journeys and hardships which were all part of the story of fur.

The Conference programme was full but a prompt 8.30am start, good timekeeping and excellent Chairmen for each session kept it running effortlessly and at an unhurried pace leaving good time at the end of the morning for a useful panel discussion.

Following an introduction to Jasper National Park and welcoming address, the first formal talk was by Dr Heinz Pyszczyk who explored some of the trends in the fur trade in the Athabasca and Saskatchewan districts. Excessive trapping in the 18th and 19th centuries, to meet the demand of European markets, led to depletion of fur bearing mammals which necessitated forts being moved to new territories causing strife between the aboriginal populations and the trading companies.

My first paper followed, describing the history of the European fur trade and how sumptuary legislation and the dictates of fashion impacted on the use of certain species at particular dates. The active collecting initiative at The Museum of Leathercraft in Northampton was then discussed together with its role as a resource for study. I appealed for help and contacts to aid this initiative.

Chris Paulocik, always a good speaker, gave a conservators overview of staging the *Wild: Fashion Untamed* exhibition, showing images of 'fantastic' garments. Of particular note was her comment that furriers involved with preparing skins for the contemporary objects shown do not expect the items to have the longevity of skins prepared before mid 20th century. This is an area for more research.

My second paper described in detail the historic techniques of fur dressing, dying, cutting and making up which are essential knowledge for any conservator treating fashion furs, followed by some case histories of treatments.



photography by Marion Kite

Figure 2. Dior multicoloured mink coat, worked in sunflower design (T.732-1997), 1986



Figure 3. Detail from Dior multicoloured mink coat, worked in sunflower design (T.732-1997), 1986

A different slant and well organised response to pest management strategies was given in a paper by Cathy Ritchie and Valerie Monahan relating to museums of the Yukon and Northern Canada which have large collections and displays of hides, furs, stuffed mounts and smoke tanned objects. These are also community museums and have high numbers of commercial functions with hospitality. Tom Strang from The CCI then focused on moths.

The influence of cleaning methods on feather structure by Effrosyni Karantoni and Ektarini Malea, a review of cleaning techniques by Janet Mason and Fiona Graham and a paper on Yag Laser cleaning of feathers by Carole Dignard et al. from the CCI explored feather structure and the effects of established and new methods of cleaning. The laser cleaning paper was of particular interest as an experiment undertaken to laser clean degraded dyed

ostrich feathers at the V&A a couple of years ago was less than convincing. Clearly, the technique has been advanced and refined but is still limited to naturally coloured examples. There is still work to be done on its effects for cleaning dyed and degraded feathers.

The final paper for the day was by Jocelyn Hudon looking at the complex micro and macro structures of feathers, the biochemistry of pigments in these and their responses to light. This is a paper which every conservator should read before treating furs and feathers and should become a standard reference. This talk provided an excellent introduction for the feather workshop of the following day.

Day two provided two hands-on workshop sessions so we were divided into two groups to keep the numbers manageable and allow everyone to go to both. I attended the Identification of Hair and Feathers Workshop run by Bob McClymont, Forensic Biologist of the Alberta Fish and Wildlife Division, assisted by Nancy Kerr. Each person had a light transmission microscope and a prepared set of 20 identified fur fibre samples. We were taught how to prepare whole mounts of hairs for microscopic examination and a simple method for taking scale patterns. We looked at the internal structure of the hairs and used published reference material to assist in identifying morphological features relevant to species type. A wonderful selection of fur skins were also provided for handling and examination. Feather samples were available and instruction given on how to use the above methods for bird species identification. Sadly there was little time to practice this and I wanted to stay there all day. This workshop was superb as an introduction and certainly gave everyone enough to go back to their studios and practice. The informal but structured programme also allowed for a lot of diverse discussion and sharing of experience and information amongst the group.



(photography by Marion Kite)

Figure 4. A selection of mink jewellery from The Museum of Leathercraft Fur Collection Northampton. Pair of mink earrings and 4 brooches c.1960s

The second workshop was run by Theo Sturge and focused on problems encountered when treating upholstery leather. Mechanisms of degradation were discussed, suitable materials for repair and consolidation and conservation techniques practiced. I did not attend this workshop but spent the afternoon in Jasper Museum with the curator Val Delill looking at a range of European costume, first nation beaded items and a stunning collection of fur objects and mounts.

I would like to thank the CAC for inviting me to be part of this memorable meeting and all those who worked so hard to make it a success and so enjoyable. This was a very special event.

Into battle: The conservation of a Venetian shield

Nigel Bamforth

Senior Furniture Conservator

The treatment of the reverse side of a gilt and glazed leather Venetian parade shield (24-1881) that was probably made for Wolf Dietrich von Raitenau, Prince Bishop of Salzburg (1587-1611) around 1600 posed numerous problems due to the instability of the leather. The shield had, until recently, been displayed in the Jones Galleries at the V&A. The outer side of the shield, of glazed, painted and gilt decoration on the leather is adhered to a double timber substrate constructed of timber boards, laid in opposing directions. The reverse or back side of the shield is lined with leather on a gesso ground, the leather polychromed to affect a mottled appearance. The leather arm and handle grip are attached to a padded leather support with iron rivets. The timber cross frame support on the reverse of the shield has restricted any environmental movement of the wood (Figure 1). The environmental effects upon the leather lining are evidence that the leather within the bowl has distorted due to internal stresses caused by the hygroscopic nature both of the timber and leather, visible as splits and general degradation.



Figure 1. Cross frame on reverse side of shield

The exterior is stable, minor timber fractures and old woodworm infestation boreholes are visible but do not generally affect the overall exterior appearance of the object. This is in contrast to the verso that has suffered major losses, tears, lifting and curling of the leather and fractured timber around the inner rim. Old remedial conservation treatment is evident where a paper support adhered to the leather and overlapping the rim has clearly failed, leaving leather losses and intruding upon the aesthetic appearance of the object. The hand grip and padded support are discoloured with white salts.

The reverse of the shield was noted, the object then supported on Plastazote wedges and the timber cross frame removed, allowing the object to relax. The R.H. in the Furniture Studio was monitored and found to fluctuate between 15 and 78%. The environmental monitoring of Gallery 1C, from where the object was previously located, was also noted. A reading was taken from the V&A OCEAN monitoring system recording the same previous nine months as R.H. fluctuations of between 15 and 64%. The temperature registered similar fields, confirming that the effect of moving the object to the studio was not detrimental to its stability.

Conservation treatment proceeded with the removal of remnants of the paper support around the rim. Methyl cellulose and Klucel G (hydroxypropyl cellulose) gel soluble in water was applied, the latter being selected and left to impregnate the paper for approximately three minutes (Figure 2). This allowed the paper to be lifted from the leather without causing undue surface instability. Any adhesive residue left on the surface was easily removed with acetone applied on cotton swabs. A rewarding factor was the revealing of a broad yellow polychromed band around the inner rim.



Figure 2. Removal of old paper support



Figure 3. Fillets of balsa wood inserted between the boards

Due to the fractured and curled state of the leather, humidification was required to flatten the leather prior to conservation and consolidation. A technique developed by Alan Derbyshire, Head of Sculpture, Metals, Ceramics and Glass, for flattening ivory miniatures was employed. A Goretex pad was laid upon the distorted leather, moistened blotting paper laid on to the Goretex and a barrier film of Melinex placed over the paper. This was gently weighted with small lead shot contained within specimen bags, allowing the bag to take the form of the distorted leather. The procedure was repeated until satisfactory results were achieved. The blotting paper was finally removed and the object allowed to gain equilibrium with the environment, whilst still being gently weighted. Areas of timber fractures surrounding the shield edges were glued with Canadian fish glue, care being taken to re-enforce any fragile timber due to old infestation. The de-lamination of the carcase boards was problematic; the tension within the timber did not allow the boards to be re-glued together, as this would induce further problems to the substrate. To overcome the instability of the outer rim and act as a support for the overhanging leather, fillets of balsa wood were inserted and glued in place with Canadian fish glue (Figure 3).

To address the needs of the fragmented and torn leather, experiments were conducted to find suitable materials to support the tears. A combination of Lascaux 498HV & 360HV (50:50) (butyl acrylate) were selected, offering both weight and flexibility. A medium weight Japanese paper would allow the leather to flex and the paper to give way if the occasion arose, alleviating any stress on the leather. The Japanese paper was torn to the required shapes and adhesive applied to the upper face only. The support was then eased under the leather with a spatula until satisfactorily placed. The adhered leather was then weighted with the lead shot bags placed upon a barrier of Melinex film, and formed to

apply pressure to the areas of adhesion. This paper support system was satisfactory for all the areas of leather tears and was also used to act as a bridging material between losses of leather. When dry a water colour paint application toned the visible paper to the colour of the leather surface. A pH measurement of 5.5 confirmed the general stability of the leather, although conservation of small areas of friable leather was undertaken with Pliantex (ethyl acrylate) in toluene (2-10%) where necessary, and applied by brush. At this stage it was now possible to undertake surface cleaning on areas of the polychrome stippling, these were merely dusted with a small paint brush into a netted vacuum in preference to the use of a chemical sponge or solvent. The handgrip and padded arm support were cleaned with Stoddard solvent (white spirit) applied on cotton swabs to remove the white film impregnating the leather.

The conservation project was successful. Although the losses intrude upon the look of the object, but the fragmented leather is now sufficiently stable to be redisplayed.

Suppliers

Plastazote: Polyform Ltd., Cherry Ct Way, Stanbridge Road, Leyton Buzzard, Beds. Tel 01525 852 4444

Melinex: Polyester Converters, Polymex House, 49-53 Glengall Rd, London SE15 6NF. Tel 020 7740 9740

Methyl cellulose, Klucel G, Goretex, Lascaux 4989HV, Lascaux 360HV and Pliantex: Conservation Resources UK, Unit 2, Ashville Way, Off Watlington Road, Cowley, Oxford, OX4 6TU

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Derbyshire, Alan. *The use of Goretex in the Flattening of Miniatures on Ivory*, Paper Conservation News, Number 63, September 1992.

Smart and techno fabrics: fundamental properties of new fibres and their future

Leonidas Dokos, Research Fellow, Textile Conservation Centre, Winchester School of Art, University of Southampton

Mary M. Brooks, Senior Lecturer, Textile Conservation Centre, Winchester School of Art, University of Southampton

This collaborative project, funded by an Arts and Humanities Research Board (AHRB) Innovations Award, brought together the Textile Conservation Centre, University of Southampton (TCC) and the Victoria and Albert Museum (V&A) to explore fundamental issues in the understanding of the long-term behaviour of smart and techno-textiles in a museum context. A clear definition of smart and techno-textiles encompassing design and technology does not exist. Smart and techno-textiles can respond to environmental changes, like any other textile. However, specific responses can be built into them, allowing them some 'initiative' so that the textiles can react to external stimuli and can change their own state and functionality. For example, the material used to make the outfit by Owen Gaster shown in Figure 1 is made of thermochromic polyvinylchloride (PVA) fabric.

The goals of this collaborative pilot project were to develop a framework for the preservation of these innovative fabrics by conservators for long-term public access and benefit, and to enhance their interpretation by museum curators. As well as informing current practice through enhanced knowledge and understanding, the project is intended to act as a springboard for further projects and research grants.

Dr. Capucine Korenberg (Figure 2) was the project's first Research Fellow. She undertook analytical research into a range of smart and techno-textiles including untreated, treated, spattered and 'shibori' permanently pleated polyester¹ which is very stretchy and very small when not worn, thermochromic coated polyvinyl chloride (PVC) and polyester, treated silk and polylactic acid fibre, a new fibre designed to be biodegradable. Dr Brenda Keneghan,

Polymer Scientist from the V&A Science Conservation Section, and Marion Kite, Senior Conservator from the V&A Textile Conservation Section, were directly involved in the research. The resources of the Textile Conservation Centre, University of Southampton, the V&A, the British Museum and Imperial College were used for the analytical phase of the project. Techniques such as Fourier-transform infrared spectroscopy (FTIR), energy-dispersive X-ray fluorescence (EDXRF) and mechanical testing were employed to analyse the behaviour of light and heat-aged samples. Given the complexity of smart and techno-textiles, which may incorporate electronic components and sensing elements, it was decided to focus the initial analytical phase of the work on a limited number of polyester-based fabrics with relatively limited smart and techno capabilities, but representative of the V&As textile and

dress collection. Comparable examples were sought rather than sampling accessioned items. This proved difficult and the Executive Committee of the project is most grateful to Nuno Corp, the Japanese firm renowned for its innovative textiles, for providing samples for analysis.

Following Dr Korenberg's appointment as a Conservation Scientist at the British Museum, Dr. Leonidas Dokos was appointed as the new project's Research Fellow with the brief of developing a conceptual and analytical categorisation of smart and techno-textiles in a museum and conservation context. His aim was to identify and define the broader context in which these materials belong and to situate their relationship to conservation science and practices. The resulting framework consists of three elements:



Figure 1. Thermofabric outfit by Owen Gaster (V&A Museum, T.23.2-1997)

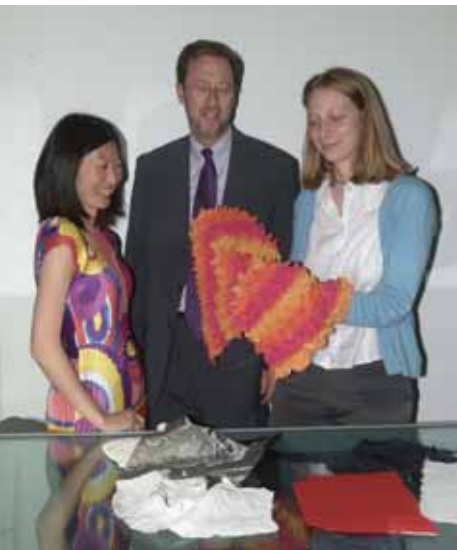


Figure 2. From right to left: Dr. Capucine Korenberg, Professor Graham Martin and Makiko Matsumara, an MA textile conservation student at the TCC with a range of smart and techno fabrics (reproduced courtesy of the Textile Conservation Centre, University of Southampton)

- identification of types and subcategories of smart and techno-textiles
- understanding their technologies, properties and functionality
- identification of suitable conservation practices taking into consideration the acquired information

The project was successful in bringing together the expertise of museum specialists, conservators, conservation scientists, material scientists and engineers to develop a body of knowledge about smart and techno-textiles. A genuine interdisciplinary network has been developed which will enable the development of future project proposals to further research in this new and complex area.

Dr. Korenberg's analytical research indicated that the current preventive conservation regimes used for clean and unused polyester-based, new and artificially aged smart and techno-textiles are appropriate. The analytical regime developed provides a framework for further characterisation of the long-term behaviour of more complex smart and techno-textiles as well as, critically, for the worn and soiled examples which are usually encountered by curators and conservators. A conceptual framework for approaching museological, conservation and ethical issues presented by smart and techno-textiles was also developed. Dissemination to both specialist and general audiences has drawn attention to issues involved in the collection and preservation of these innovative textiles.

The completion of this pilot project is best to be considered as the basis for future investigation. Further research is required into the effect of a museum environment on these innovative textiles, covering all their various types and subcategories.

Acknowledgements

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References

1. *Shibori* is the collective term in Japanese for tie-dye, stitch-dye, fold-dye, pole wrap-dye, etc. It is best translated into English as "shaped-resist dyeing" (see also <http://www.shibori.org/home.htm>, last checked on 2/6/2005).

Further reading

1. C. Korenberg and M.M. Brooks, 'Tackling the Conservation Issues Posed by Tomorrow's Fabrics', Proceedings of the First International Textile Design and Engineering Conference, Edinburgh, U.K., 2003.
2. L. Dokos and M.M. Brooks, 'Smart and Techno Fabrics: a framework for conservation analysis and decision making', Proceedings of the 11th International Conference on Composite/Nano Engineering (ICCE11), Hilton-Head Island, SC, USA, 2004.
3. L. Dokos, M.M. Brooks, Brenda Keneghan, Marion Kite, Capucine Korenberg and Graham Martin, 'Smart and Techno Fabrics: the effect of a museum environment on their mechanical properties', Poster in Proceedings of the 11th International Conference on Composite/Nano Engineering (ICCE11), Hilton-Head Island, SC, USA, 2004.
4. C. Korenberg, 'How fast do polyester fabrics age in the museum environment?', *V&A Conservation Journal*, vol. 44, pp.6-8, 2003.

RCA/V&A Conservation: Study trip to Rome, April 2005

Naomi Luxford, Hazel Arnott, Alice Cole, Louise Parris, Barbara Schertel
MA Students

The choice for the 2005 RCA/V&A Conservation study trip was between Rome and Warsaw. Rome was the winner, but the timing of our visit would have made either a memorable trip. We arrived in Rome late on Monday 4th April, remarkable only for the fact that the Pope had died three days earlier. The trip was memorable for other reasons too. It included Hazel's first flight, fantastic ice cream and some fascinating conservation visits.

Our first visit was to the Capitoline Museums to learn more about the recent restoration of the sculpture of Pope Urban VIII by Gian Lorenzo Bernini. Dottoressa Elena Bianca Di Gioia, the curator in charge of the project, provided us with the context for the statue both within the Palazzo dei Conservatori and Bernini's work. We then heard from Tuccio Sante Guido, a freelance conservator, on his work to locate and reveal the original surface of the sculpture. Coloured glazes thought to have originated in the studio of Bernini had been identified through analysis. The final decision not to apply a protective coating to the surface seemed strange at first, but was justified when it was explained that any solvents used in the future to remove such a protective layer would also be likely to remove the coloured glazes in the process. As well as explaining the conservation work and tests undertaken he also demonstrated how repairs are made to blend in with the original while still being able to be identified as additions. The visit also included an opportunity to see the statue of Marcus Aurelius - both the original, now removed from the piazza and behind glass for conservation reasons and the facsimile in the piazza.

The afternoon included a visit to see the spectacular mosaics at Basilica di Santa Maria in Trastevere. This was followed by a steep hill climb to an amazing view from the pretty Chiesa di San Pietro in Montorio, where the group photo (Figure 1) was taken. Although we had a busy itinerary, our afternoons were free to explore what Rome had to offer. Our first full day included an introduction to crossing roads roman style. (The guide book recommended crossing with Romans or nuns if you wanted to get across in one piece!)



(photography by Alison Richmond)

Figure 1. Group outside Church of San Pietro in Montorio overlooking the city of Rome

The second day's visit was to ICCROM and included talks from Dr. Nicholas Stanley-Price, Director-General, and Catherine Antomarchi, Head of Collections, on the projects and policies of ICCROM, and the courses and internships available. This was followed by an overview by Dottoressa Rosalia Varoli-Piazza, Senior Programme Co-ordinator, of the interesting work at Villa Farnesina. This highlighted the conservation work recently undertaken and the problems a series of previous restorations can cause. Of particular interest was the campaign during the 1930s to remove 17th century restorations of the damaged azurite of Raphael's studio. We were then given a tour of the Science Laboratories and their work by Dr. Ernesto Borrelli. This was followed by an introduction to the library from Paul Arenson, including the facilities and how to use the search engine. This introduction was useful as the search engine is not straightforward and - we were delighted to find out - photocopies of articles can be ordered from anywhere in the world.

The funeral of Pope John Paul II on Friday meant all of Rome's cultural institutions were going to be closed, so we opted to split into smaller groups that afternoon. Louise and Barbara managed to see the Pope lying in state, with some very kind assistance from the Vatican security guards. This also allowed the unusual opportunity to take photographs of the interior of St. Peter's Basilica, including the Pope! Helen and Alice decided to visit the Pantheon and managed to see the laser cleaning of the ceiling in action. Harriet and Hazel went looking for Gladiators at the Colosseum. Alison and I visited the Villa Borghese and enjoyed the chance to see the completed restoration.

A visit to the Vatican had originally been planned for Thursday, including a chance to visit the Tapestry Conservation Laboratories. Unfortunately the Vatican (understandably), could not receive us but as most institutions were to close for the funeral it gave us an opportunity to see other things that day. The first visit was to the Villa Farnesina to see the work we had been told about at ICCROM. This included an opportunity to see traditional retouching methods called *tratteggio* (also known as a *rigatino*) *in situ*. This technique uses dots or lines to fill the gap where restoration has occurred, without trying to recreate what might have been there before.

At the Istituto Centrale per il Restauro we heard about the restoration work of the school from Beatrice Provinciali Rinaldi, Head Restorer Panel Paintings and her colleague Albertina Soavi. Marisol Valenzuela, Head Restorer Polychrome Sculpture, told us about the conservation of some beautiful costumed wooden figures from a nativity crib. We were also given talks about ceramics, glass and metals and it was interesting to learn about the archaeological approach taken with these materials. The course at the Istituto is particularly interesting as it is one of only two in the whole of Italy whose graduates are allowed to work on state-funded projects, including museums and churches.

After lunch there was a long walk across the city and a very steep hill climb to the Villa Poniatowski and Villa Giulia. At Villa Poniatowski we were given a guided tour of the excavations and restoration of the house and gardens by Dottoressa Francesca Boitani, Director of the National Museum of Etruscan Art at Villa Giulia, and her colleagues. This was followed by a talk about the restoration of the Etruscan sculpture of Apollo de Veio, a major conservation project, both privately and state sponsored, which is on open display in the grotto in the grounds of Villa Giulia. The talk showed how a sympathetic earlier restoration could be preserved in a contemporary conservation project. Dottoressa Boitani then kindly showed us sculptures from the same group currently in the process of conservation.

Friday was Pope John Paul II's funeral and Alice was up at 5.30am to get a prime viewing spot; everyone else decided to see what was open on this day. The strangest site was the eerie silence provided by the empty streets - Rome without cars, a rarity. In the afternoon we managed to find one of my personal highlights of the trip - the Capuchin Ossuary at Chiesa di Santa Maria della Concezione. This macabre display includes the bones of monks arranged into intricate decorative patterns in a number of chapels. It certainly started some interesting discussions on the ethics of such a display, as well as the levels of dust!

We departed on Saturday morning, delayed by numerous dignitaries flying home after the funeral and poor visibility on the runway. Despite not seeing the Vatican everyone thoroughly enjoyed the visit. The opportunity to see so many different institutions, museums and churches, not to mention such a beautiful city was particularly special. Also a quick word of advice: in order to see so many sites walking is essential; you could never get through all the traffic in time otherwise and map reading is a vital skill.

We are very grateful to the staff at ICCROM for helping us with the organisation of our visit. In particular, many thanks must go to Elisa Ortiz, Geraldine Fructuoso, and Dottoressa Rosalia Varoli-Piazza.

Presentations involving V&A staff accepted for the 14th Triennial Meeting held from 12 – 16 September 2005 in The Hague (The Netherlands)

Conservation of Japanese lacquer in Western collections - conserving meaning and substance

Shayne Rivers, Senior Furniture Conservator, V&A

Accepted for the ICOM-CC Working Group: Wood, furniture and lacquer

Whilst outstanding examples of Japanese lacquer are highly valued in both Japan and the West, the cultural beliefs that impart value to these artefacts differ. It is essential to understand these cultural beliefs and values so that on completion of a conservation treatment the underlying significance of the object is enhanced rather than diminished.

Conservation practice seeks to understand and preserve tangible cultural property, whilst conservation ethics seek to understand and preserve intangible cultural property. Conservation ethics provide a framework that can allow conservators to balance the many intangible values associated with an object.

The development of a cross-cultural discipline of urushi conservation that is relevant and applicable in both Japan and the West would help ensure that the full meaning of Japanese lacquer in Western collections is conserved.

LightCheck, new disposable indicators for monitoring lighting conditions in museums

Mauro Bacci & Costanza Cucci, Istituto di Fisica Applicata - 'Nello Carrara' (IFAC-CNR), Firenze, Italy

Anne-Laurence Dupont, Bertrand Lavédrine & Claudine Loisel, Centre de Recherches sur la Conservation des Documents Graphiques (CRCDG-CNRS), Paris, France

Sandra Gerlach & Hannelore Roemich, Fraunhofer-Institut für Silicatforschung (ISC), Wertheim-Bronnbach, Germany

Graham Martin, Head of Science, V&A

Accepted for ICOM-CC Working Group, Preventive Conservation

Extensive exposure to light may cause irreversible damage to valuable heritage objects, such as fading or brittleness. It is known that the damage increases with both the length of exposure and the irradiance. Rather than limiting the time of exposure for each object, it is advisable to monitor the lighting conditions on site. A continuous monitoring program for various objects with data loggers would be rather expensive and applicable only for selected examples. As an alternative for extensive measurements, new lighting indicators have been developed and are proposed as an early warning system for light damage.

The RIBA project: a climate strategy for paper based archives at the V&A

Boris Pretzel, Materials Scientist, V&A

Accepted for ICOM-CC Working Group, Preventive Conservation

A climate control strategy for paper based collections is presented. The strategy was devised for the collections of the Royal Institute of British Architects (RIBA) being re-housed at the V&A. Permanence calculations, based on the combined effect temperature and relative humidity, are used to identify the most cost effective control options for maintaining the collections at any given point in time. As these collections are relatively insensitive to climatic fluctuations, particular benefits arise by reducing heating outside of opening hours. In the interests of economy, greater weight is given to conditions of equal relative permanence that minimize dehumidification requirements.

Lustre ceramics analysis using the MOLAB facilities

Lucia Burgio, Object Analysis Scientist, Science Section

Bruno Brunetti, Prof. of General and Inorganic Chemistry, University of Perugia, Italy

Lustre is one of the most important decorative techniques of Medieval and Renaissance pottery in the Mediterranean basin. It is manufactured by depositing a metal on a tin-opacified lead glaze, producing brilliant metallic reflections of different colour and iridescence (see cover image).¹

Historically, lustre was first used during the 9th century AD to decorate pottery in Mesopotamia, and it spread throughout the Mediterranean basin together with the diffusion of Islamic culture (10th-14th centuries). Lustre decorations reached new heights between the 15th and the 16th centuries in Italy with manufacturing based in Deruta and Gubbio, where lustre was used to decorate the finest polychrome pottery of the Italian Renaissance. Many examples of lustre pottery from Deruta and Gubbio are now housed at the V&A in London.

In order to investigate and better understand the manufacturing technology, the V&A collaborated with the University of Perugia under the European-funded MOLAB access programme within EU-Artech.² The uniqueness of this programme lies in the fact that the scientific instrumentation to be used in the study travelled with the operators to the V&A. In March 2005 the MOLAB research team from Perugia visited the V&A (Figure 1) with their mobile analytical equipment in order to characterise a selected number of lustre dishes signed by the renowned Italian Renaissance potter Mastro Giorgio Andreoli that were held in the collection at the V&A. The MOLAB (MObile LABoratory) consists of portable, non-destructive, non-intrusive, scientific equipment that travels across Europe, allowing scientists and conservators to carry out *in-situ* measurements directly in a museum, a conservation studio or an archaeological site, thus avoiding all the risks and costs associated with the transportation of valuable works of art

to a laboratory. The data collected are still being analysed, and are expected to allow us to correlate composition, structure and colour of the lustre on the plates that were examined.

The origin of the lustre decoration technique is one of the most complex and at the same time fascinating issues in the history of ceramics. Lustre preparation is described by Cipriano Piccolpasso in the second book of "*Li tre libri dell'arte del vasaio*"³: a mixture of silver, copper and iron salts or oxides, together with red ochre and vinegar, was applied onto the surface of the glaze, the kiln's temperature was raised to approximately 600°C, and smoking organic substances were added to create a reducing atmosphere in the kiln. Surprisingly, recent works⁴ demonstrated that lustre consists of a heterogeneous metal-glass composite film, some hundreds of nanometres⁵ thick, analogous to that present in the modern metal-glass nanostructured composites synthesized for high technology applications. In lustre, separate silver and copper nanoparticles appear dispersed within the outer layers of the glaze.



Figure 1. The scientists involved in this study: from left to right L. Burgio (V&A), C. Miliani, B. Brunetti, F. Presciutti, F. Rosi, A. Sgamellotti (MOLAB)

(photography by Lucia Burgio)

The dimensions and density of the nanoparticles can be locally homogeneous. However, going across the glaze layer towards the ceramic support, the dimensions of the nanoparticles decrease from tens of nanometres to a few nanometres. Although the mechanism leading to nanocluster formation in a glassy matrix is still debated, it is reasonable to assume that the first step of lustre formation consists of silver and copper ions penetrating into the glaze. This occurs through an ion exchange between the alkali ions present in the glaze and silver and copper ions present in the mixture of the lustre recipe. However, an extended study on the original lustre wares executed by the ancient masters has not been attempted to date. All the studies carried out so far have been done on a few small fragments, which cannot be considered as representative of a larger number of cases. The collaboration between the V&A and the University of Perugia represents the first step within a campaign of measurements to be carried out on a large number of original (and in some cases signed) wares, in order to compare data among a large number of cases of great historical and artistic relevance.

Three techniques were used during this project, energy dispersive X-ray fluorescence (EDXRF), Raman spectroscopy and visible and near-infrared spectroscopy (VIS-NIR). The use of a portable EDXRF spectrometer allowed the detection of the presence of copper and silver, which can be related to the colour of the decoration. Portable fibre-optic VIS-NIR spectroscopy equipment allowed the quantification of colour and, at the same time, the qualitative detection of copper and silver nanoparticles. This identification was carried out by measuring the surface plasmon resonances typical of nanoparticles dispersed in a transparent medium. Finally, the glassy network of the glaze was studied by portable micro-Raman spectroscopy. Raman spectra from many different areas of the lustre decoration were recorded, making it possible to compare spectra taken from different decorations of the same dish or analogous decorations in different dishes.

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2. <http://www.eu-artech.org/> (last accessed 10/05/2005).
3. Piccolpasso, C., 'Li Tre Libri dell'Arte del Vasaiò', 1557 (Edizioni all'Insegna del Giglio, Firenze, 1976).
4. Borgia, I., et al., *Appl. Phys. A* 79, 257 (2004).
5. A nanometre is one millionth of a millimetre. Accordingly, a nanoparticle is a particle whose size is of the order of nanometres, a nanocluster is a cluster of atoms or molecules whose characteristic dimensions are few nanometres.

RCA/V&A CONSERVATION

Postgraduate Conservation Programme

Alison Richmond

Deputy Head, RCA/V&A Conservation

Taking stock of a year in the life of RCA/V&A Conservation is always a pleasurable task. Beginning with the latest news, we are delighted to congratulate the following students on the occasion of their graduation:

- Melissa Gunter, MA Natural History Conservation (with the Natural History Museum)
- Anna Kagiadaki, MA Sculpture Conservation, V&A (supported by the Friends of the V&A)
- Katja Tovar (née Gruber), MA Furniture Conservation, V&A
- Heidrun Gassner, MA Ethnographic Material (with the Horniman Museum)
- Konstantinos Ntanos, MA Conservation Science (with the British Museum)
- Charis Theodorakopoulos, PhD Laser-cleaning of organic surfaces (with FORTH-IESL, Crete)
- Maria Troupkou, MPhil An application of risk analysis for the conservation management of photographic archives

It is always gratifying when our students are offered positions on or even before(!) graduation. Kostas Ntanos has taken up a post in Research at The National Archives.

This year also saw another of our students short-listed for the Pilgrim Trust Student Conservator of the Year Award. Emma Schmueker's submission for the award was based on her research at the Museum of London under the supervision of Rob Payton into the corrosion of iron. This included a survey of approaches taken by metalwork conservators and interviews on public perceptions of metal surfaces.

We are, as always, indebted to all the staff, supervisors and sponsors in all of our collaborating institutions who enabled us to deliver such rich and varied experiences to our students. We would like to take this opportunity to extend a warm thank you to all.

Two of our new students for 2005/2006 are introduced here, but more will appear in the next issue.



Sandra Joly

Musical Instruments and Ethnographic Objects (with the Horniman Museum)

2 year MA

Originally graduating with a degree in Agriculture my passion for film led me in quite a different direction. I joined the BBC, training and working in film editing for several years before volunteering to work as an Audio-Visual specialist within the Ministry of Education in Grenada. On returning to the UK I studied precious metal jewellery at the Kent Institute of Art and Design and London Guildhall University where I obtained an MA (with distinction) in Applied Art and Visual Culture. My interest in the visual arts and education led me into teaching and after training I taught Art and Design at secondary schools in Botswana and Thailand.

I completed a Postgraduate Diploma in the Conservation and Restoration of Fine Metalwork at West Dean College in July 2005 and was awarded the BADA Harold Davies prize for the student making the most progress.

Specialising in the conservation of ethnographic materials will allow me to extend my practical skills and bring me into contact with new materials combining my interest in science, the visual arts and material cultures. I am excited about the possibilities and challenges of what lies ahead.

RCA/V&A CONSERVATION



Sia Marshall

Metals and Surface Finishes of Social History Objects (with the Museum Of London)

2 year MA

My first degree was in Biochemistry after which I taught Chemistry for several years. Always interested in the Arts as well as Sciences I decided that I wanted to work in a field that combined these disciplines. After two very happy years working in the Conservation and Collections Care department of Historic Royal Palaces, first as a volunteer then as a conservation scientist, I am now delighted to be an MA student on the RCA/V&A Conservation course.

Imperial College/V&A Collaborative PhD



Mazarin Chest Project

Carolyn McSharry

Conserving Tangible and Intangible Cultural Heritage: Investigating the Removal of Degraded Western Varnish from Japanese Lacquer (provisional title)

3 year PhD

I obtained my bachelors degree in Environmental Chemistry in 2000 and since then, I have worked at the Royal Society of Chemistry as a technical editor on analytical chemistry literature and databases. Whilst working there, I obtained a Masters degree in Science Communication from the Open University.

During my PhD, I will be working jointly with the Conservation Department at the V&A and the Department of Chemistry at Imperial College on a research project that investigates the removal of degraded western varnishes from Japanese lacquered artefacts. This project is concerned with conserving both tangible and intangible cultural property, therefore combining analytical chemistry with art history and museological aspects.

University of Southampton/V&A Collaborative PhD



Emma Richardson

Enabling Museum Professionals with New Collections Management Tools

3 year PhD

I have had a strong appreciation for the arts, sciences and cultural heritage since a young age. Therefore, it was natural progression to move into the area of conservation science. I graduated from De Montfort University in 2001 with a BA Honours degree in Conservation and Restoration; my specialism being frames conservation. From this, I went on to study part-time for my Masters degree in Analytical Sciences at Sheffield Hallam University, graduating in November 2004. During this time I had the opportunity to work along side The National Gallery, London, studying metal soap formation in oil paintings.

When I begin work in the Museum in October 2005, it is intended that research protocols will be developed to facilitate the identification and condition of various organic artefacts in the field of textile conservation. These will be selected from various natural and manmade fibres of both historical and modern origin. The investigative

techniques to be used will be of a non-destructive nature, such as infrared spectroscopy and allied methods, and will allow examination of fragile materials *in situ*. It is proposed to establish the assessment tools that can be applied within the museum environment, to enable conservators to make informed decisions regarding the condition of their collections.

New Staff



Anne Greig

Paper & Books Conservator

After years of looking after my family and working at various jobs, in 1997, I started the MA Paper Conservation Course at Camberwell College of Art. After graduating I was fortunate to work with Alan Buchanan in his private studio and be offered contracts with MoDA (Museum of Design and Architecture), *The conservation of the Silver Studio Correspondence and Ephemera* and the V&A, the conservation of *Sir Michael Redgrave Archive*, *D'Oyly Carte Archive* and *Agatha Christie's The Mousetrap prompt book*. From 2004 to 2005 I worked for the RIBA on The Dove Brother Collection of Architectural drawings.

At the V&A I will be working as Conservator of the Oliver Messel Archive part of the Theatre Museum for a fixed term of 12 months. The post is partly sponsored by the Friends of the V&A and the Heritage Lottery Fund. It consists of carrying out practical conservation and advising colleagues on the storage, display and transport of the works on paper, sketches, costume and set designs, books and photographs, and other mixed media 3D material such as masks and theatre sets.

The archive catalogue, once conserved and re-housed will be made accessible to schools, students, researchers and the members of the public. A total of 500 key objects will also be digitised and published on the V&A website.



Anne Bancroft

Books & Paper Conservator

After completing a BA in Fine Arts in Barbados, I wanted to use my degree and not fall into the starving artist category. I was fortunate enough to work cataloguing the Barbados National Art Gallery's Collection and then came to London to undertake an MA in Art Conservation. I completed internships at Tate Britain and The Wellcome Trust which lead to jobs at various institutions such as Lambeth Palace Library, London Metropolitan Archives and The Wellcome Trust. I have always been spoilt with working on a variety of material books and works of art on paper. My areas of interest are Eastern material, ephemera, parchment rolls and screen prints.

I am currently preparing books and book related material for internal and external exhibitions and providing preservation/conservation support within the Museum and its outstations. I am also responsible for the box-making programme and assisting the National Art Library with the move of some of their collections.

Interns



Dana Melchar

Furniture Conservation Intern

My love of furniture began during my childhood at the side of my grandfather, an upholsterer in Newport, Rhode Island. Although I grew up around a workshop environment, I formally studied furniture making for two years at the North Bennet Street School in Boston, Massachusetts. In addition, I completed evening and summer coursework in chemistry, art history and studio art to complement my undergraduate degree in English Literature, satisfying prerequisites for the Winterthur/University of Delaware Program in Art Conservation. I have gained conservation experience at Robert Mussey Associates in Boston and at the Philadelphia Museum of Art. Currently, I am in my third year at Winterthur and will be interning here, as well as the Metropolitan Museum of Art in New York City, and at Colonial Williamsburg in Virginia.

My five-month internship will be focused on several different projects and will cover a variety of materials. They include conservation treatments of a china cabinet made by George Jack and painted by his daughter, a diminutive eighteenth century red japanned desk and bookcase, and an Asian lacquer chest. Nigel Bamforth and Shayne Rivers are generously sharing their conservation expertise, along with the rest of the furniture and gliding conservators.



Sebastien Gilot

Paper Conservation Intern

After graduating from five years of study in cellular biology, I heard of a school for conservators that was open to all applicants, including those with a scientific background. Paper and paper artworks have always fascinated me, so after serious thought I applied to the school and here I am now, in my forth and final year as a student in paper conservation at the University of La Sorbonne in Paris. This year is entirely dedicated to internships and I have tried to use it in order to gain the broadest experience possible in the different areas of paper conservation and in different working environments (public institutions in France and abroad as well as the private studio).

As I am very interested in the conservation of Japanese prints, I chose to come to the V&A which has an important collection and well known specialized conservators. During my four-month internship I have been working on different types of objects, some very new for me (such as tri-D objects), taking on lots of information from others and trying to adapt my treatments to the requisitions of the Museum.

The past four months have been both a thinking and practical experience, keeping me alert, vigilant and much more aware of the needs, environment and levels of restoration and techniques involved in working on a public collection. I will apply what I have learnt to my work when I return to France.