Editorial

Nick Umney
Director of Collections Services

The articles forming this edition of the Journal arrived on my desk at the same time as a large number of applications for the post of Head of Conservation, a post that for close to twenty five years was filled by Jonathan Ashley Smith. During this time, through education, training and research, Jonathan has made a uniquely important and valuable contribution, giving conservators a consistent, rational and scientific basis from which to work. He has played a pivotal role in raising the professional standing of Conservation, both by his work inside the Department, and by his work with what are now recognised as the professional bodies of conservation. It is to Jonathan that we owe both the RCA/V&A Conservation Programme and this Journal. Jonathan has accumulated a vast amount of knowledge and experience in science and conservation and has published very extensively. Since the publication of his book Risk Assessment for Object Conservation he has had many requests, from within the UK and from overseas, to supervise the work of research students, and he is increasingly in demand as a consultant and teacher generally.

Jonathan's prediction in Issue 39 of this Journal, that the Department would probably never be the same again after the British Galleries project, has turned out to be more prophetic than perhaps even he realised. The successful delivery of the British Galleries project, in which the Conservation Department played a key part, has changed the way the Museum is perceived both from within and from outside. It has increased our confidence and is reshaping our ambitions to make objects and information about objects available to our audiences in new and exciting ways. Over the next four years, and beyond, the Museum will need a continued high level of delivery from the Conservation Department for projects within the Future Plan and for an expanded programme of exhibitions, loans, publications, web projects and small displays. At the same time the Collections Services Division will be reshaping to provide a more joined-up and proactive service to the Museum. While it appears that there are other potential leaders with proven track records to take us through this period, the pressures of reorganisation and project delivery would undoubtedly curtail those activities where Jonathan's skills are greatest.

Earlier this year, Jonathan submitted a proposal to give up his post as Head of Conservation and, with effect from August 2002, to become a senior member of the Research Department. For the next four years, until his due retirement date, he will teach, supervise research, publish, and seek partners and funding to create a centre of excellence. This last will concentrate on those research areas in which he and the RCA/V&A Conservation programme are at the forefront.

The RCA/ V&A Conservation programme of postgraduate vocational training (MA) and research (MPhil and PhD) provided jointly by the RCA Conservation Department and the Conservation Department of the V&A, gives novel and unparalleled opportunities for learning. The course, in association with Imperial College of Science, Technology and Medicine (ICSTM) and a host of collaborating museums and organisations, aligns with V&A and DCMS objectives and is very important to the museum community at large. In particular, it is through the course that skills shortages in the profession, for example in upholstery and stained glass, have been identified and addressed. In 2001 the excellence and innovation of the Course were recognised by the award to the RCA of the Queen's Award for Higher and Further Education. The course has just successfully completed an independent validation process. One of the strengths of the course is that it is able to address both mainstream and niche areas of conservation. Through an interdisciplinary approach of art and science, theory and practice, it is able to produce students of a very high calibre. Many of them are able in due course to become world leaders in their area of expertise. All of them are capable of continuous learning and professional development. In this issue we celebrate the achievements of four new MAs and two PhDs and welcome a new intake of students. Our thanks must go to all those who contribute to the success of the course but we must thank especially Helen Jones, Deputy Course Leader, who has now taken on the very different but equally demanding planning role for the Museum.

The theme of this issue is broadly that of finding out about objects. The course and the partnerships that have arisen or, more correctly, been developed by those involved in the participating institutions, have provided many fruitful collaborations. One example is the work on glass disease which has been the subject of collaboration with ICSTM since the early 1990's, intended to increase our ability to understand and prevent deterioration. Continued studies in the deterioration of glass are reported in this issue. Elsewhere, Alexandra Kosinova describes an example of the use of a rarely documented pigment, and Nanke Schellmann records the discovery of a previously unknown inscription on the Queen Elizabeth Virginals discovered during its conservation. Multiple strands of evidence point to the same conclusion (ie that the inscription dates from the time of manufacture). The scientific approach to conservation that Jonathan fostered over a generation is reflected in the examples of the use of techniques of examination and analysis described here. The importance of good record keeping also emerges at least implicitly in these articles. Comparing the real evidence of what is actually found on objects enables comparisons and correlation with evidence from manuals and treatises to be made. Investigation of a travelling altar also provides good illustration of what can be deduced by careful use of appropriate techniques of examination and analysis.

Understanding and finding out about objects goes right to the heart of what conservation is about. The conservator who understands what the object is about is more readily able to make more responsive, sensitive, intelligent, ethical and cost-effective treatments than one who merely knows about conservation. Understanding objects also enables value to be added to our displays and the ways that we inform and entertain our customers. It is important that we do not just accumulate stores of knowledge for ourselves and other conservators but that we actively identify opportunities to use this understanding directly to engage audiences in support of the aims of the institution as a whole.

Much attention has been focussed on the strategic importance to an organisation of its knowledge portfolio. What is it that we know or are able to do that will add value to what we have to offer to our customers? That knowledge is increasingly a vitally important intangible asset that needs to be managed to deliver added value for the community as a whole. Ikujiro Nonaka and Hirotaka Takeuchi in their book The Knowledge Creating Company, propose a model to represent how explicit knowledge (that which can easily be written down) and tacit knowledge (skills, experience, insights, judgements and know-how) interact through four conversion processes or patterns to create knowledge in an organisation. Taken together the course and the Journal serve well to illustrate these processes. The transfer of tacit knowledge from one person to another occurs in on-the-job training. Tacit knowledge is made explicit through tutorials, seminars and other person to person and group dialogue. Both explicit and tacit knowledge are also made explicit through the pages of this Journal. New knowledge and understanding occur when explicit knowledge is applied in new ways to unique situations to form new tacit knowledge.

The key question to ask is, "How can we use this knowledge to the best advantage for our customers?"

Travelling Altar: Investigating an Object

Donna Stevens
Metalwork Conservator

The travelling altar, museum number M.54-1930, was acquired by the Victoria and Albert Museum in 1930 for the sum of £1500. It was made in 1574 for the Delgado family in Milan and would have formed part of the fittings of a nobleman's private chapel. At this time a wealthy man with large estates would have spent a lot of time moving from one house to another and this altar would have travelled with him. The altar has its own case painted with the arms of the family, and it is lined inside with red velvet embroidered with gold and silver thread. It is currently being treated for display as part of the redevelopment of the Silver Galleries, due to open in November 2002.

The altar itself is made of steel damascened or inlaid with gold and silver, the bare steel then blackened to provide contrast. The steel provides a framework for the display of four *verre eglomisé* panels depicting the life of Christ. *Verre eglomisé* is a decorative technique where a thin sheet of gold is applied to the back of a glass panel with isinglass. A design is scratched through the gold, other areas are scraped away and colours are then applied in a transparent oil medium. The whole is backed with silver foil to add lustre. The panels of our altar are also backed with lead foil for extra protection.

Prior to any work being carried out the altar was photographed by the Museum photographic section in addition to the record shots taken by the Conservation Section. It was also examined by x-radiography to see if its construction could be more easily understood. The images revealed that the altar was made of several small panels held together with mortice and tenon joints.

Photography by V&A Photographic studio

Figure 1 Travelling altar M.541930 before conservation

The altar had previously been examined in 1977, when the condition of the *verre eglomisé* panels had been of concern. They were deemed 'untreatable' at that time, and re-examination during the current treatment proved that diagnosis to be correct for the following reasons. The lead foil on the back of the paintings is firmly adhered to the paint layer, the paint has also become detached in places from the glass leading to an opaque look in areas. Removal of the lead foil and attempting to re-adhere the paint layer would probably do more harm than good, as the paint layer would probably come away with the foil. The best course of action is to leave well alone, in the hope that, in the future, a treatment may be developed to re-adhere the paint layer.

The 1977 conservation report makes no mention of the condition of the metalwork, or any treatment carried out on it. Traditionally, the final surface finish for armour and damascened ware was a coat of oil applied with bread. Subsequent cleaning was also carried out by rubbing with bread. Although this may appear odd it would be quite effective, as the slightly sticky bread would remove dust and being soft there would be no danger of scratching the decorated surface. Any crumbs left behind could be brushed off. Examination of the metal surfaces under a low magnification stereo microscope showed that the surface was covered with a brown tar-like coating. A sample analysed by the V&A's Science Section revealed the presence of shellac. Shellac is a secretion from scale insects (Laccifer Lacca) cultivated mostly in India and Thailand. The secretion is produced primarily as a protective coating against predators and it takes approximately 300,000 insects to produce 1 kilo of shellac.

The presence of shellac in the brown coating would not be consistent with the original oil protection, since shellac itself is not mentioned in western literature until the late 16th century (when it was used for its colouring properties) at least 20 years after the altar was made. It was not used as a liquid protective coating (it was dissolved in alcohol), until the end of the 18th century.

It is reasonable therefore to assume that the brown shellac containing coating was applied well after the altar was made and before the altar was acquired by the museum, sometime in the 19th century. We do not know the precise makeup of the coating but an example of a typical 19th century lacquer recipe is shown in the box.

Plain Lacquer Varnish

40z sandrach, 120z button shellac, 2 quarts alcohol (methylated spirits) Churn for twelve hours, then strain and settle. Decant the clear liquid into jars and cork or secure them soundly.

Spon's Workshop Recipes for Manufacturers and Scientific Amateurs, vol. III page 35, Pub E & F N Spon, London 1909

A coat of shellac would have brightened the look of the altar and, as it dulled down over the years, it could have been 'revived' by another coat of shellac. This scenario would explain the quite thick layer of coating which was found in some of the crevices on the object.

As the coating was not original and was obscuring surface detail it was removed. This was completed in small areas under magnification using small swabs of Industrial Methylated Spirit (IMS) and acetone, taking great care that the solvent did not go near the remaining verre eglomisé panel which could not be removed. Removal of the coating revealed the presence of extensive silver inlay. This silver which had tarnished black and been hidden under the shellac is not mentioned in the 1930 original acquisition description in the museum files. This is another indication that the coating was applied and had darkened prior to the object being acquired by the V&A.

Photography by Donna Stevens

Figure 2 Detail of the altar, before conservation

Photography by Donna Stevens

Figure 3 Detail of the altar, after conservation, showing silver inlay

Removing the obscuring coating revealed the manufacturing process more clearly. The object was decorated with gold and silver patterns and figures, a processs known as damascening. There are two main methods of achieving this effect. One called inlay, is to cut the pattern into the iron or steel surface, and then to push gold or silver wires or pieces of sheet into the cuts. The cuts were made at an angle to the

surface, to create an undercut, so that the sheet or wire, once pushed in, would be held in place. The other method, used on the altar, is called overlay. Here, the iron or steel surface is first hatched with criss-cross lines and the gold or silver is then hammered onto the surface. The hatched lines provide a key to hold the precious metal in place; no solder or adhesive is used. The gold used in the case of the altar was a wire made of two strands twined around each other.

Unfortunately it was not possible to get to the back of the repousséed sections. However some copper corrosion products in the crevices indicates the presence of copper alloy solder compounds. These may show that the iron was not repousséed from several large sheets but may have been assembled from smaller sections joined together.

After treatment the metal was waxed with 'Renaissance' microcrystalline wax. However, as the work took several weeks, it was noted that the newly revealed silver areas treated first were beginning to tarnish again, so it was decided to lacquer the silver areas only using 'Frigilene' cellulose nitrate lacquer to provide a more protective coating.

At the time of writing, the object is still undergoing conservation treatment. It is hoped that future advances in conservation techniques will enable the verre eglomisé panels to be restored to their former appearance.

I am grateful to Raymond White of the National Gallery for information on shellac, and to Ceramics Conservation at the V&A for the re-examination of the glass panels.

From First Aid to Fluorite: Identification of a Rare Purple Pigment

Alexandra Kosinova
Senior Sculpture Conservator (now in private practice)

Introduction

The wooden polychrome panel, 260-1898, comprising the carved *Nativity* scene on the inside, and the panel painting *Mocking of Christ* on the outside, arrived in the Sculpture Conservation studio for first aid treatment. The polychromy of the panel painting was badly flaking and in urgent need of consolidation. The whole surface of the painting was also covered in a discoloured varnish and accumulated dirt, to the extent that the image was almost indistinguishable. The emergency treatment was followed by a decision to remove the discoloured varnish. As the varnish removal progressed it became apparent that, although severely damaged, the remaining polychromy of the panel painting was original with no overpaint. A thorough identification of the polychrome layer of the Nativity was undertaken, based on microscopic investigation of four cross sections and seventeen dispersed pigment samples. As a result of this analysis a rarely documented purple pigment, calcium fluoride, was found as one of the pigments used to render the colour of the Christ's robe. The article discusses the properties and known usage of the purple fluorite. The conservation treatment is also described, with emphasis on the *Mocking of Christ* panel painting where the conservation was far more involved than on the carved *Nativity* scene.

Figure 1. Panel painting Mocking of Christ, after conservation

Conservation treatment

The panel measuring 112 x 78 x 8 cm, would originally have formed one wing of a triptych. It dates to around 1500 and its provenance is Tyrol. The entire object is made of softwood. The polychrome carved panel on what originally would have been the inside of the wing depicts the Nativity scene. The badly damaged panel painting on the outside shows Mocking of Christ. Approximately one quarter of the polychromy on this panel is missing (Figure 1). The bottom right corner of the frame was loose and there was serious movement related to this damage. The pierced panel below the Nativity was also loose.

There is a record of a conservation treatment dating to 1955. The surviving documentation mentions the treatment of the Nativity only, which was at the time cleaned and consolidated. Overpaint was also removed from the architectural part of the carving. A detailed report on the recent conservation treatment and polychrome identification exists in the Sculpture Conservation files[1]. This article summarises the most relevant parts of the treatment of the *Mocking of Christ* only. The severe flaking of the entire surface was first consolidated with isinglass, using the tissue and heated spatula method. This was the first overall consolidation which enabled safer handling of the panel painting without losing any more flakes. Prior to varnish and dirt removal the second consolidation was carried out, using Primal WS24, an acrylic dispersion, and a heated spatula. The varnish and dirt removal was then started. The best method proved to be softening the very discoloured varnish with a gel (200 ml of ethanol, 50 ml of toluene, 50 ml of water, 10 ml of Ethomeen C25 and 6g of Carbopol ETD 2623). The gel was removed with a mixture of

50% white spirit and 50% ethanol, occasionally a small amount of acetone was added to this mixture. Further consolidation was carried out at this time in areas which required it, using the same consolidant. Where necessary, additional cleaning was done with triammonium citrate (5% in water). This was mainly used to remove or reduce a grey veil found on several areas of deteriorated pigment. These areas are primarily the dark shadows where madder, a red lake, was used in the form of a glaze. Generally, as is common with these types of panel paintings, the more lead white is present in the paint, the better preserved it is. Therefore, the areas of lighter hue are in a better condition than the darker, sometimes more thinly painted, parts of the painting. After consolidation and cleaning the painting was varnished with dammar resin in Shellsol A.

Generally, the condition of the carved nativity was far better than that of the oil painting, probably due to the restoration carried out in 1955. The conservation methods were the same as on the other side of the panel but the extent of the treatment was far smaller. The consolidation of the loose corner of the frame was carried out with fish glue, a commercial product made in Canada. This also helped lock the pierced panel below the Nativity in its place. Two wooden pins were added to secure this panel further. The pins were put into the original holes, and the ends were retouched with acrylic paint. The numerous nail and screw holes in the frame were filled with pigmented beeswax.

Polychrome identification

The identification of the polychrome layer was concentrated mainly on the *Mocking of Christ* panel painting. The cross sections and dispersed pigment samples were examined under reflected and transmitted light, under UV light, and the dispersed pigment samples were further analysed using polarised light. The magnifications ranged from x90 to x400. Photomicrographs were taken of the cross sections only. No analysis of the medium was carried out, but it can be assumed that it is either oil tempera or drying oil on its own. Based on the samples examined and on a thorough stereo microscopic survey of the surface it can be deduced that there is only one polychrome scheme present on the panel painting, and that it is original. No overpaint has been found. It appears that an old oil varnish had been removed from the surface in the past. Traces of it are visible in the cross sections under the more recent varnish, which has been removed during this conservation treatment. The use of gypsum rather than calcium carbonate for gesso is noted. The selective deterioration of the madder found in the dark red shadows is irreversible but enough pigment survives to give an indication of the artist's intentions. The presence of madder was confirmed with ultraviolet light microscopy. It appears that the original decoration of the blue background to the Nativity may have been gilded and decorated with a strip of applique, but, unfortunately, not enough evidence has been found to ascertain this. The most interesting discovery proved to be the use of the purple pigment found in the Christ's robe. (Figure 2)

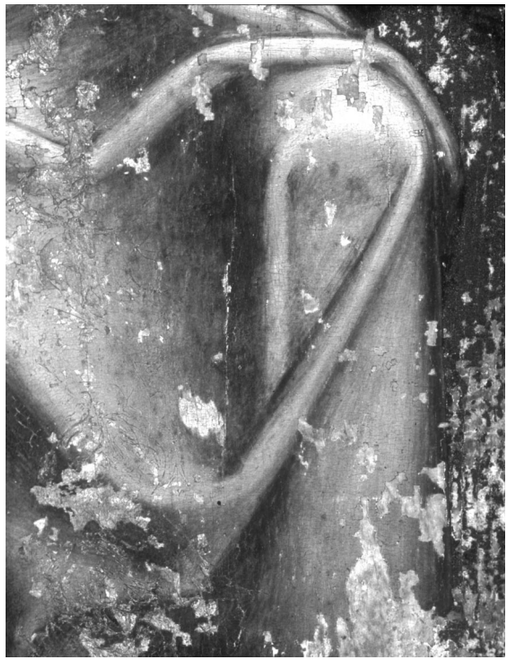


Figure 2. Detail of Christ's purple robe

Purple pigment

The purple pigment, clearly of mineral origin, was first noticed in a cross section taken from the Christ's robe. It was found in a layer mixed with lead white, vermilion and black, over a layer of gesso. A dispersed pigment sample was made from this layer, and the purple pigment was identified under transmitted and polarised light as calcium fluoride. This is a fairly uncommon, or rather rarely documented, pigment found in the mountain regions of central Europe. Its sources were located in Bavaria, Tyrol, Silesia and Bohemia. The mining of the mineral fluorite was associated with mining of lead, zinc, silver, copper and iron ores. The colour of fluorite can range from colourless to yellow, green, rose, blue and purple. Together with its almost perfect cleavage these qualities made it a useful pigment. Historically it was employed as an artists' pigment from about 1450 to 1520 in polychrome sculpture, panel and mural paintings, and in architectural polychromy. It was first identified as an artists' pigment in 1968 and has since been found in works of art originating from Germany, Switzerland, Poland, Hungary and the Czech Republic[2]. As in the case of the Christ's robe in the *Mocking of Christ,* where it was used in lead white together with vermilion and black, it is usually found in a mixture with other pigments to enhance a desired colour, as its tinting and hiding power is relatively low. In transmitted light some of the particles in our sample displayed typical purple, colourless and almost black banding, referred to as striations. It is hoped that further analysis of the fluorite pigment can be carried out by the Science Section at the V&A using Raman Spectroscopy, a non-destructive technique based on infrared laser[3].

Conclusion

The first aid treatment of the panel led to a more involved conservation than originally intended, which in turn resulted in microscopic identification of the original materials. The identification of the purple fluorite pigment in the Christ's robe in the *Mocking of Christ* panel painting represents a valuable addition to the relatively short list of European paintings where this pigment has been found. Another positive result of the recent conservation treatment is the fact that the panel has been moved into a more suitable storage space.

References

1. Alexandra Kosinova, conservation report, unpublished.

2. Mark Richter, Oliver Hahn and Robert Fuchs: *Purple fluorite: a little known artists' pigment and its use in late Gothic and early Renaissance painting in Northern Europe* Studies in Conservation 46 (2001) 1-13

3. Lucia Burgio, Science Section of the V&A Conservation Department, proposed analysis

The Queen Elizabeth's Virginal

Scribbles, Scratches and Sgraffito

Nanke Schellmann
Furniture Conservation, RCA/V&A MA Student

The recent completion of the British Galleries project has led to the redisplay of many of the Museum's most prestigious pieces. Among these is an early spinet known as Queen Elizabeth's Virginal (19-1887). During its conservation, a previously unseen inscription was discovered in the surface decoration. This article will discuss the decorative techniques used on the spinet and their importance in the interpretation of this new historical evidence.

The instrument is thought to be one of the few personal belongings, within the Museum's collection, of the 'Virgin Queen' Elizabeth I, who reigned from 1558 to 1603. With its variety of different decorative techniques and luxurious materials this instrument is a very fine example of high quality 16th century Venetian craftsmanship. The rich embellishment of the spinet includes magnificent ornamentation in red and blue glazes on gold, an elaborate laminated wood and parchment rosette set into the soundboard, keys inlayed with various woods, ivory or bone and metal and key fronts decorated with embossed and gilded paper (Figure 1).

The most striking and very unusual part of the spinet's decoration is the surface embellishment with its Moresque sgraffito design executed in blue and red on a lustrous gold ground, giving the illusion of solid gold onto which a delicate textile is stretched. This particularly detailed and complex decoration technique is rarely found on musical instruments.

Sgraffito comes from the Italian expression for 'scratchwork'. It is a decorative technique in which layers of contrasting colour are applied to a surface and a pattern is scratched through the upper layer to reveal the colour underneath. It is usually found in the rendering of textiles in panel paintings and painted sculpture, imitating fabrics figured or threaded with metal. In the Middle Ages sgraffito decoration was commonly found on altar pieces, where it was used to depict the richly decorated brocade clothing of saints. Later in the Renaissance, however, this technique was applied to luxury objects made for both the church and wealthy individuals.

In the second half of the 16th century Queen Elizabeth I was one of the most powerful rulers in Europe. Like her father, Henry VIII, Elizabeth was extremely well educated and very musical. The Queen is known to have been an accomplished player on the virginal and, considering her position, it would have been appropriate to commission a musical instrument of the greatest extravagance from Venice, the centre of commerce and fashion at that time. "For with Elizabeth I, style was everything."[1]

Whilst the instrument is attributed to the Venetian harpsichord maker Giovanni Antonio Baffo[2], the artist who decorated this outstanding instrument remains unknown. It is unlikely that the spinet's maker and the artist of the decoration were the same person. The skills of making a high quality keyboard

Photo :V&A Photographic Studio

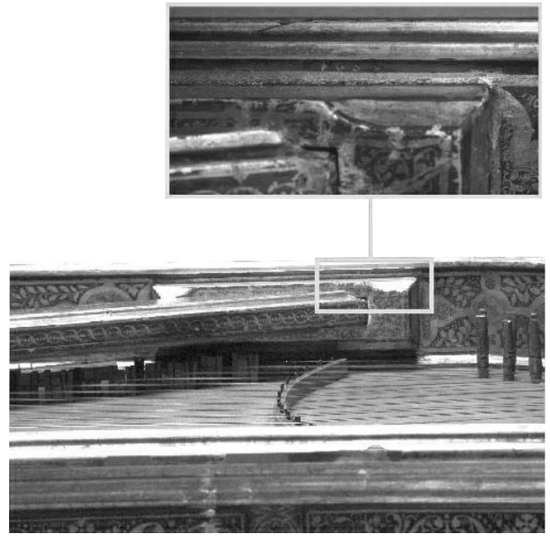
Figure 1: The Queen Elizabeth's Virginal (Mus.No. 19-1887)

instrument, and of executing such complex decoration draw on distinctly different training and trades. As the decoration has its roots in the panel painting tradition it was therefore most likely applied by a professional painter.

Sgraffito decoration was in general created in several stages. At first, the wooden carcase of the object was coated with animal glue size, primarily to seal the surface and prevent the adhesive of the later applied layers from being absorbed into the wood. Then, several layers of a mixture of slaked calcium sulphate and heated glue size, termed 'gesso', were applied. The gesso provided a surface that, after drying, could be abraded to a perfectly smooth finish.

When a gold brocade decoration was to be executed by the sgraffito technique, it was necessary to burnish the gold for two reasons. Firstly, the gold had to adhere well to its ground in order not to be scraped away during the scratching action. Secondly, burnished gold makes the surface appear much livelier, for it reflects light far better than unburnished gold would do. The gesso surface was coated with a layer of bole, a soft clay naturally pigmented by iron oxide. Bole produces a warm coloured ground which prevents the extremely thin and therefore slightly transparent sheet of gold from appearing cold and lifeless. Furthermore, it has a platelet structure which allows the gold to be burnished.

Once the gilding was complete, the next step in executing the sgraffito was the application of paint layers onto the gold surface. In the case of the spinet, paints based on red lake and blue azurite pigment were used, producing a contrasting effect which later would further be highlighted by the glittering gold of the sgraffito. Generally, egg tempera or resin was required as a binder for it adheres well to the metal ground. The colours were applied over the burnished gold and then the decorative design was scratched into the paint layer with a wooden stylus. It was essential that the paint had not dried completely, so that it could be neatly removed without damaging the delicate gold layer underneath.



Photos: Nanke Schellmann

Figure 2: View of the area above the jackrail where the inscription was found and detail

When the sgraffito decoration was complete and the paint dry, a hard resin-based varnish was applied. This not only protected the delicate paint layer on the spinet from dirt but also from wear caused by handling during every-day use of the musical instrument.

During conservation, in the careful examination of its surface decoration, a previously unknown inscription displaying the figure '1594' was discovered. (Figure 2). This tiny number, approximately 1.2 mm x 11 mm, is scratched into the blue paint layer above the far end of the jackrail on the inside back of the instrument and is upside down, from the point of view of someone playing the instrument. The inscription is not immediately visible, and it appears to have been intentionally hidden. Compared with the overall size of the instrument, the figures are minute and furthermore placed right below the raised moulding which is lining the instrument's edge. The fact that the numbers are inverted and sited in the shadow of the moulding makes them appear, at first sight, to be nothing more than meaningless marks or unintentional scratches.

However, the suggestion that it is original numbering is underlined by several observations. Firstly, the inscription is absolutely consistent in character and technique with the overall sgraffito design. The inscription has been scraped into the blue paint layer, whilst it was still soft, to reveal the gold beneath. If the inscription was done after paint and varnish had hardened, the edges of the figures would appear fractured and the delicate gold ground would most likely have been damaged – this is not the case. Also, the numbers are inscribed the 'right way' up from the artist's point of view, for he would have turned the spinet vertically on its back to be able to decorate the inside of the case above the soundboard while standing behind the instrument.

Secondly, the figures are typical of handwriting of the Middle Ages and the Renaissance. One reliable source for the depiction of numbers in contemporary writing and design is seen in the works of Albrecht Dürer. Many of his woodcuts and engravings are clearly dated. Adriano Capitelli's *Lexicon Abbreviaturarum* is a further source for the comparison of inscriptions.[3] This book lists a great variety of historic numbers in handwritings throughout the centuries and provides examples that match the inscription on the Virginals. Nicholas Hilliard's miniatures were consulted as interesting examples of similar writing. On some of his miniatures the dates shown have a striking resemblance with the virginal's inscription. Hilliard used gold paint to write the minute numbers on a bright blue background and although the techniques differ, the contrasting effect is very similar (Figure 3).

The spinet had previously been dated to about 1570 on the basis of the instrument's method of construction and the style of its characteristic decoration. Due to the consistency of technique and style, it can be inferred that the number is a date linked to the application of the decoration. The newly discovered figure '1594' is close to the attributed date of manufacture and it therefore, with fair certainty, refers to the specific year in which the decoration of the virginal was executed.

Photography: Nanke Schellmann, Nick Frayling (e-f)

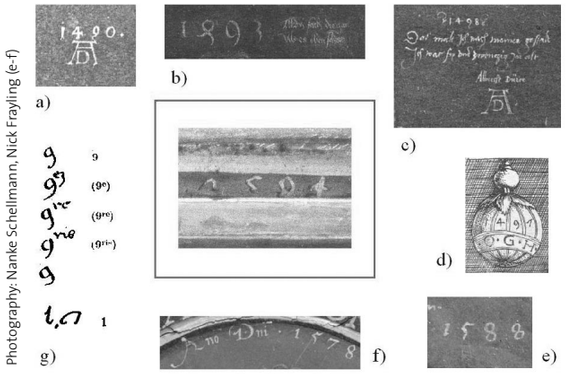


Figure 3: Comparison between the virginal's inscription and contemporary handwritings. Queen Elizabeth's Virginal (centre), Albrecht Dürer (a-d), Nicholas Hilliard (e-f) and Adriano Capitelli (g).

The discovery of the inscription contributes to the knowledge about the history of these keyboard instruments and their makers. So far, instruments by the Venetian artist Giovanni Antonio Baffo have been dated between 1570 and 1579.[4] The discovery of the date on Queen Elizabeth's virginal may extend Baffo's ascertained period of activity to twenty four years, until 1594. In addition, the association of a precise date with a specific instrument allows mouldings and other details on the instrument to be linked to a more specific period. This can be extremely helpful in providing the information which is required to identify musical instruments and the workshop from which they originate.

References

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2 Dr. Denzil Wraight, *The Stringing of Italian Keyboard Instruments c.1500 – c.1650,* PhD dissertation, Queen's University of Belfast, 1997, p.50

3 Adriano Capitelli, *Lexicon Abbreviaturarum,* zweite verbesserte Auflage, Leipzig 1928, pp.222-28

4 Dr. Denzil Wraight, ibid., p.49 ff

Continued Studies in the Deterioration of Glass

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It has been well documented over many years that certain types of glassware displayed within the glass collection at the V&A are susceptible to deterioration over time. Typically the group of artefacts particularly prone to this process is Venetian glassware of the 16th and 17th centuries. It has been suggested that the instability of glass from this period is due to the purification of the raw products, such as plant ashes, for obtaining 'a more clear and crystal glass'[1]. Refining the raw materials produced a clear glass that could be worked at lower temperatures, but the composition of the glass had been altered. The purification process led to a glass with a low calcium oxide (lime) content and a high sodium oxide (soda) or potassium oxide (potash) content.

In all glasses, sodium and potassium oxides are hygroscopic and therefore attract water. The surface of the glass therefore, absorbs moisture from the air. It is this interaction between the glass surface and atmospheric water that starts the deterioration of the glass. This deterioration manifests itself in a number of ways. In the early stages a glass object may initially acquire a dull foggy appearance. Under humid conditions, droplets of moisture appear on the surface, as the hygroscopic alkali salts delliquesce[2], a condition referred to as 'weeping'. As the deterioration progresses a series of fine microcracks start to become visible. This stage is known as 'crizzling' and can eventually lead to the formation of flakes and pits on the surface; an example of this is shown in the electron micrograph of Figure 1. With continued leaching of the alkalis to the surface of the glass, it becomes increasingly alkaline. Once the alkalinity of the surface reaches a pH of 9 and above, dissolution of the strong silica network occurs and the glass object will lose much of its mechanical strength and collapse.

In addition to degrading the visual appearance of the glass artefact, the corrosion process has some more subtle effects. As a result of the changes at the surface of the glass due to the corrosion process the surface composition is not representative of the bulk composition of the glass.

Photography by Sarah Fearn

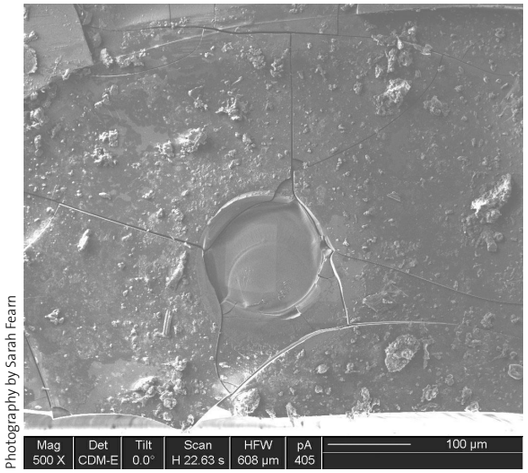

Figure 1 An electron image of a severely crizzled surface on a Venetian goblet.

Much work has been carried out into the corrosion and deterioration of glass in an effort to identify what environmental conditions should be applied for the storage and display of these vulnerable glasses. In 1959 workers at the British Museum recommended that unstable glasses be kept at relative humidities below a value of 42%[3]. It was reasoned that at relative humidities below 42% potassium is not leached out, and remains in situ. However more extensive studies by Brill, based at the Corning Museum of Glass, New York, suggested that lower humidity values could be just as problematic as the glass surfaces become dehydrated. Brill suggested therefore that a range of 40-60% relative humidity was a safe range for storing glass objects[4]. From these two examples alone it can be seen that the conditions for storing glass has not been clarified, and poses a problem for curators and conservators wanting to display vulnerable objects without compromising their longevity.

With the problem of displaying glass artefacts briefly outlined above in mind, the V&A, in collaboration with the Materials Department of Imperial College, instigated a series of research programmes concerning the conservation of glass. Through this collaboration, the V&A is able to access surface-

analytical techniques which would not normally be available to the Museum's Conservation Department. It also has the advantage that studies dedicated to one problem over a period of time can be carried out.

The first such collaboration concluded in 1996 when Ryan completed a three-year PhD study in to the atmospheric deterioration of glass[5]. In this study replica materials, of a low lime high soda or potash content, were fabricated and aged under a variety of temperatures and relative humidities. These samples were then analysed using a surface analysis technique called SIMS (secondary ion mass spectrometry). This technique enables the researcher to follow the diffusion of elements through a material. With relation to the corrosion of glass, therefore, it is possible to detect very small changes in composition at the surface of the glass in relation to the bulk material. This enabled a more accurate assessment of the appropriate relative humidity at which to store and display unstable glass and a value of 38% ± 3% was suggested. However, this research was limited to one group of glasses and the humidity value may not be pertinent for other glass compositions.

Further to this work a second collaborative study was carried out between Imperial College and the V&A Conservation Department to look into the possibility of active conservation procedures. In this case, Hogg investigated the possible application of silanes to the surface of the glass[6]. By applying a single atomic layer of molecules to the surface it is possible to turn the hygroscopic glass surface hydrophobic. This work was again carried out on replica materials and found to repel water. It was also noted that the surface treatment did not alter the appearance of the glass surface to the human eye, and remained smooth. The application of surface treatments does, however, pose an ethical dilemma in that these treatments are not reversible.

Recently, through gaining funding for a further three year project from the Leverhulme Trust, the research has resumed between the Materials Department at Imperial College and the V&A's Ceramics and Glass Conservation Section. Since these collaborative projects first started there have been some major advances within the field of surface analysis. These will be applied to investigate more the effects of the environment on unstable materials, and clarify some of the mechanisms at work during the corrosion process. Another aim will also be to investigate further the potential use of surface treatments to halt the deterioration process that are acceptable to the conservator from an ethical and practical point of view. Finally, work will be conducted to identify any effects that cleaning may have on these objects.

If this work is successful it could hopefully extend the lifetime of many unstable historical glass artefacts for years to come.

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Tethering the Cow – Treatment and Display of the Sackville Pedigree – a large 16th century Heraldic Parchment Manuscript.

Merryl Huxtable

Senior Paper Conservator

This manuscript (MSL.41-1981) was selected for display in the British Galleries – it is a large, showy object which demands to be read. It required a specific display method and a protective environment because of its size and the nature of the material it is made of (parchment). The display also had to be easy to maintain and allow the object to be viewed closely.

The Pedigree is a two-metre high object composed of six sheets of parchment[1] joined together, onto which has been painted a heraldic tree design in water-based pigments, including shell gold and silver. It was made in 1599 to celebrate the marriage in 1580 of Robert Sackville to Margaret Howard. Also it was designed to impress and illustrate the Sackville Family's connection with the Royal Family through the marriage of Anne Boleyn to Henry VIII. (Figure 1) Most of the key figures are represented by portrait miniatures. Although there is no firm attribution, the miniature portrait of Robert Sackville is painted in a similar style to those painted by Isaac Oliver – pupil of Hillyard; seventeen years later Oliver painted a large impressive full length miniature portrait of Robert's son Richard which is also displayed in the British Galleries.

As a manuscript, the Pedigree is an impressive survivor of four hundred years of probable open display, although during that time the once flamboyant silver and white pigments have tarnished to black and some other pigments have faded or flaked away. Paper Conservation in collaboration with University College London, carried out analysis of a selection of pigments using Raman Spectroscopy. The results confirmed the presence of lead white and silver throughout the design. The tarnishing of the pigments is extensive, many of the now black areas would have once been white or silver. For example the whole coat of arms of the Hoo Family – normally described as 'Quartered silver, white and black' is totally black – both silver and the lead white have been blackened. Results of analysis of some of the pigments and the colour descriptions used by the College of Arms give a clearer picture of how the Pedigree would have originally looked. There is sufficient information to create a virtual restoration, in the future.

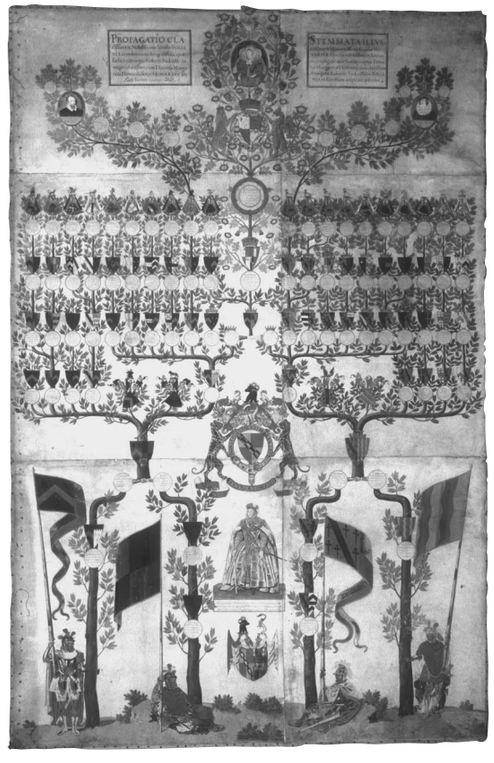


Photo :V&A Photographic Studio

Unlike individual framed portrait miniatures which are more protected, the unglazed portraits on the Pedigree have been damaged through exposure to light, flaking, attrition, tarnishing and over-painting. The portrait in the top right is of Margaret Howard who had died before this Pedigree was made. The pattern of damage to this portrait indicates that another portrait of her had been stuck over the top at one time. As she was not around to paint a good likeness, perhaps the family asked for another of her portraits to be used – it would be interesting, if having fallen off, it is found in some other collection.

Figure 1. The Pedigree after conservation and mounted on its new support. Note the blackened heraldic shields and flag for the Hoo family second from left at the bottom.

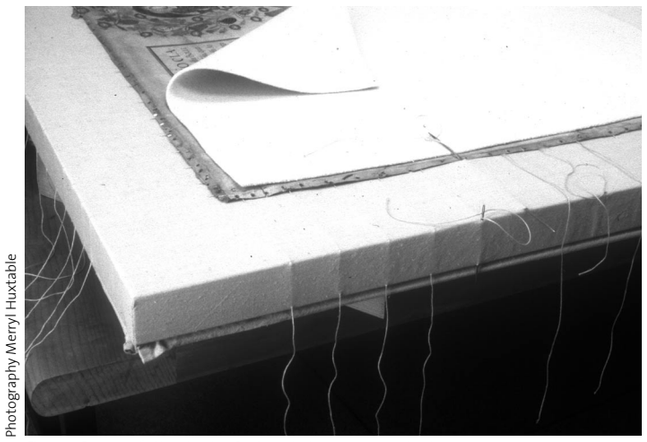
Dirt visually disturbed the design especially where trapped in the smears of excess glue along the joins in the parchment. The parchment appears to have been given an overall ingrained dressing of white chalk; this was often done to prepare parchment for painting. It was important not to disturb this, so most of the surface cleaning was done with small pieces of a soft latex sponge.[2] This was used with a small rolling action, which effectively lifted away any loose dirt but did not abrade the surface. In reducing heavier deposits of dirt, the cleaning process involved the minimal use of moisture. This was introduced using pieces of a highly absorbent, fine-textured sponge[3] which when at the right saturation, released just the correct dampness to loosen the dirt, allowing it to be rolled away on a tight, dry cotton-wool swab.

The case for moderate restraint.
The cow-skin parchment has fought against attempts to restrain it – much like the tethered cow it once was. The nature of the beast continues in parchment and much like living skin, it is still very reactive to changes in moisture – perhaps more so because in the parchment-making process the skin's natural oils and fats were removed to make it more receptive to inks and pigments. The Pedigree was drum tight across its support (– a 20th century textile covered wooden stretcher screwed to a plywood board). It was so tight that it had broken the stretcher at two points, had pulled away from edge nails in several places and had torn in some corners. Clearly previous owners had found it a material reluctant to being secured flat to any structure. There is evidence of at least three –possibly four mountings onto supports. The earliest are lines of stitching holes, then subsequent lines of nail holes. More recent knife cuts around the edge indicate a crude attempt to ease the strain on the parchment to allow the stretcher to lie flat. Copper green had been used extensively to paint the foliage in the design. Both the parchment and the textile lining show areas which have been degraded by the action of acid in the pigment and they were at risk of splitting when the parchment was under tension. Parchment is known to be an enduring manuscript material, yet it can become seriously distorted if stored unrestrained and exposed to constant changes in relative humidity. It will always want to move around and in some way attempt to revert to its original animal shape and this of course presents specific display problems.

Photography by Merryl Huxtable

Figure 2. Detail of the back of the stretcher showing:
- the linen threads attached to the steel rods housed in polyester.
- a corner of the Artsorb quilt sewn to the perforated aluminium
- part of one aluminium split batten used to hang the strtcher in the display case

The new support.
The proposed treatment of the Pedigree included the removal of the 20th century wooden structure and the mounting onto a new support. This allows it some leeway to move while still keeping it flat but not over tensioned. The Pedigree also needs to be stored in an environment which reduces the rates of moisture absorption and de-sorption and which contains no materials that could further tarnish the pigments. To achieve this, the relatively inert materials, aluminium and polyester, were chosen for the support stretcher and a specification for a shallow microclimate display case was also drawn up. The stretcher was constructed from 'u' sectioned aluminium bars around a panel of perforated aluminium sheeting. One side was covered with a linen-coloured, polyester fabric cover which was specially constructed and fitted in Textile Conservation. To help buffer the parchment against changes in relative humidity, a conditioning 'quilt' was made and sewn to the back of the perforated aluminium. This was made by sprinkling Artsorb Beads ™ [4] on to one side of a split layer of polyester wadding. This sandwich was then closed by sewing and ultra-sonically welding the wadding quilt-fashion, into an outer cover of polyester gauze to trap the beads in pockets. (Figure 2)



Photography Merryl Huxtable

Figure 3. Process of attaching the Pedigree to the new support using long needles to pass the linen threads under the textile

A consultant, Matthew Hatton, specialist conservator of parchment manuscripts at Trinity College Library in Dublin, was invited to advise on and to help with the mounting of the Pedigree onto its new support. The mounting method we chose was developed from a technique designed by the book conservator Christopher Clarkson. It involves holding down the parchment edges with many lengths of twisted linen thread–much as Gulliver was held down by the Lilliputians. When there is an increase in relative humidity the parchment softens and sags a little but the linen threads act in the opposite way; they plump up and the twist tightens, shortening the thread slightly thereby keeping the parchment under gentle tension all round. The opposite happens when the humidity level drops.

The Pedigree was centred face–up on the polyester covered surface of the stretcher. Threads were attached to the verso edges of the parchment at about two centimetre intervals. The other ends of the threads were led under the textile with a long upholstery needle and secured at the back of the stretcher to thin stainless steel rods which lay in long sewn pockets in the textile. These rods were designed to even out the 'pull' from the contracting Pedigree and to avoid unsightly puckering of the textile. In the final display the strings are just visible disappearing under the textile around the edge of the Pedigree. Aluminium split battens were used to hang the stretcher inside the display case so that the micro-action of the threads around the edges of the stretcher was not impeded by any fixing mechanisms. (Figure 3)

The low maintenance display environment.
The display case was designed as a low maintenance microclimate. In order to periodically monitor the relative humidity in the case without actually opening it, a capped probe port was included mid-way down one side with the facility to hide a connecting data logger behind the case. To alter the relative

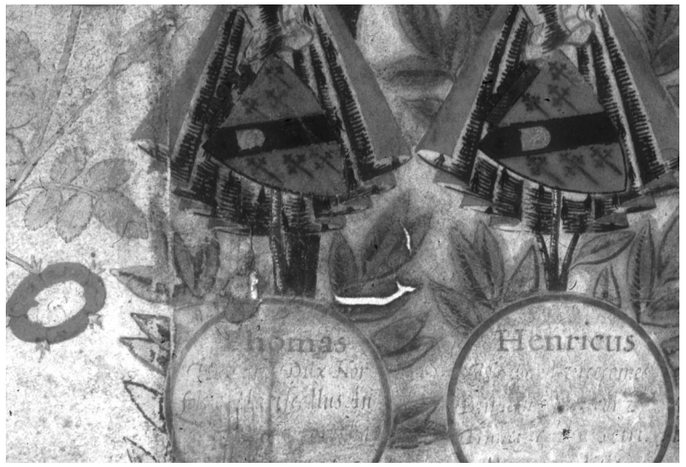


Figure 4. Detail of the coat of arm of Thomas Howard, Duke of Norfolk showing six crosses on a red shield which have tarnished from silver-white to a metalic grey. The acid copper green in the leaves has weakened the parchment causing holes.

humidity inside the case, a small hatch has been included just above the probe port, through which a narrow conditioning panel can be accessed from behind the stretcher. This panel is of Perspex™ covered in a mini version of the Artsorb quilt. It can be removed and conditioned appropriately before being reinserted into the case to introduce or take-up humidity in the case. The shallow case design also allows close inspection of the written surface of the Pedigree.

ACKNOWLEDGMENTS:
My thanks to colleagues in the V&A especially Bill Johnson, Technical Services, Graham Martin Head of Conservation Science, Albertina Cogram,Textile Conservation and Paul Robbins, V&A Photo Studio. Also to Matthew Hatton, Conservation Department at Trinity College Library, and colleagues in the British Library and Public Record Office for their advice on the display of parchment.

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Tel 01865 747755, Fax 01865 747035.

News from RCA/V&A Conservation

Helen Jones
Deputy Head, RCA/V&A Conservation

RCA/V&A Conservation is the Programme of specialist postgraduate training and research run jointly by the V&A and the Royal College of Art, in association with Imperial College of Science, Technology and Medicine. However, the network contributing to the considerable success of the programme is considerably wider than this and encompasses several other museums, galleries and heritage organisations. This is amply illustrated by the graduating students of 2002, whose practical work, projects and research will advance the field of conservation and contribute to the nation's cultural life.

Six students received their degrees from the Provost of the RCA, Lord Snowdon, in a ceremony at the Albert Hall. Dr. Thanasis Velios was based in the Sculpture Conservation Section of the V&A Conservation Department and was supervised by Dr. John Harrison of the Rock Mechanics Department of Imperial College and Professor Alan Cummings of the RCA. Thanasis' research concerned the reconstruction of fragmented objects with the aid of three-dimensional computer models. He developed
a new methodology to address the problems encountered when many heavy and/or fragile fragments of an object have to be manipulated in order to find joints; the broken surfaces are first matched digitally, thereby minimising risk to the actual fragments.

A second PhD student, Dr. Francesca Cappitelli, based at Tate and supervised by Dr. Tom Learner and Alan Cummings, investigated the chemical characterisation of binding media in 20th century art. Artists' uses of non-traditional paints, including house paints, create problems of identification and a need to develop new analytical techniques. Francesca's study of thermally assisted hydrolysis and methylation – gas chromatography/mass spectrometry developed an approach applicable to both natural and synthetic binders.

RCA/V&A Conservation's MA courses offer vocational conservation education in a range of highly specialised areas. Where there is a need for such training that cannot be met within the V&A or where another institution offers particular expertise, we collaborate to provide tailor-made opportunities. Unusually, all four graduating MA students this year were in such a situation.
The MA graduates of 2002 are:

- Kathryn Hallett MA, Conservation Science with The British Museum
- Hannele Hentula MA, Conservation of Ethnographic Materials and Musical Instruments with the Horniman Museum
- Kirsten Kruse MA, Conservation of Social History Objects with the Museum of London
- Neil Wressell MA, Conservation of Modern Sculpture with Tate

MA students work on the collections of the host institutions in a real, professional environment supervised by senior staff. They also undertake a busy academic programme. The high standards achieved by our students are reflected by the fact that two of them are among the three shortlisted candidates for Student Conservator of the Year in the Pilgrim Trust Conservation Awards 2002, the profession's top award scheme. One, Kathryn Hallett, submitted her project on the effects of light on cellulosic materials such as fabrics and paper. The other, Annie Hall MA, graduated in 2001 and studied with the V&A Metals Conservation section. Her project concerned the conservation of a gilded 14th century Tibetan sculpture of Buddha, particularly the ethical issues surrounding the removal of its sacred contents. We wish them good luck and look forward to the announcement of the winner at the awards ceremony at the British Library in November.

Visit the RCA/V&A Conservation Programme at
http://www.conservation.rca.ac.uk/

or contact Joanna Baden, Department Administrator
joanna.baden@rca.ac.uk

David Cowl

Aged 27, British

Sculpture Conservation
(2 year Mphil)

BA(Hons) in packaging and communication design, Sheffield Hallam University

MA in packaging and communication design, Sheffield Hallam University

David has a design background, originally doing a BA in packaging and communication design at Sheffield Hallam University. He then went on to do a masters degree in packaging and communication design, where he focused upon issues concerning the packaging, transportation and conservation of large vertebrael fossilized material.

His research is focused upon the packaging, handling and transportation of sculptural works and he will be based within the V&A. His supervisors will be Professor Jonathan Ashley-Smith, V&A, and William Lindsay RCA.

Konstantinos Ntanos

3 Year MA

BA Conservation of Antiquities and Works of Art, Technological Educational Institution of Athens 2000

In 1999 Konstantinos spent three months in Sinai working on every-day use objects at Saint Catherine AEs Monastery and afterwards came to London to spend the summer working at the Natural History Museum as part of his practical training.

In 1997, as a student, he worked during the summer at the archaeological investigation in the Roman Agora of Thessaloniki. In 1998 he worked on moulding and casting of carved marbles on Tinos island and with the conservation team at the First Cemetery of Athens. His dissertation was on mechanical preparation and conservation of fossils from the valley surrounding Axios river.

The variety of materials and objects that he has worked on so far has increased his interest in the deeper mechanisms of deterioration and the possible solutions conservation provides. He trusts that conservation science will help him, besides everything else, to become a better conservator.

RCA/V&A **CONSERVATION**

Katja Gruber

3 Year MA

Katya's three years of apprenticeship in furniture carpentry provided her with an opportunity to gain extensive experience of wood, including working and treatment.

She felt that she also wanted to find out more about traditional materials, techniques and old ways of manufacturing, and so started work in a small conservation workshop in southern Germany.

From September 2000 Katja worked for one year as a practical intern in the furniture conservation workshop at Charlottenburg Castle in Berlin.

In order to broaden her experience, Katja knew she wanted to work at a museum in a foreign country. She spent four months at the Historic Museum in Basle and seven months at the Arthistoric Museum in Vienna.

Katja enjoys the combination of practical work on wooden objects, research and the possibility to work and exchange with conservators worldwide. She is very pleased to have the opportunity to work at the V&A, with its impressive collections, for the next few years.

Iwona Jurkiewicz-Gotch

British

Paper Conservation: Architectural Works
(2 year MA)

BA/MA in English, Jagiellonian University, Krakow, Poland, 1984;

MA (Distinction) History in Education, University of London, Institute of Education, 1999;

Postgraduate Diploma in Paper Conservation, Camberwell College of Arts, 2002

Iwona moved to Britain in 1987 and worked as a primary school teacher for a number of years, whilst also completing her MA degree. Her interest in history and art led to a change of career in 2001 when she started postgraduate studies in paper conservation at Camberwell College of Arts. In addition to that, she attended a book binding course in the London college of Printing, completed a short course on printmaking and worked voluntarily in a conservation studio in Camden Local Studies and Archives in order to gain more 'hands on' experience.

She will now be continuing her studies in paper conservation at the RCA/V&A two year MA course specialising in Architectural Works.

Clair Walton

Aged 41, British

Paper Conservation
(2 years MA)
Theatre Collections and Archives

Clair has been working as an Archives Conservator since 1979. She trained at Warwickshire Record Office and with the Society of Archivists.

After qualifying she took up senior posts, as Senior Conservator at Devon Record Office and Coventry City Record Office. In 1987 she moved to Stratford upon Avon with the Shakespeare Birthplace Trust where she stayed for twelve years, establishing Archives Conservation within the organisation.

Working with large collections with minimum conservation resources, throughout her career, she developed an interest and drive towards prevention and minimum intervention with particular attention to environment, storage and retrieval systems.

In recent years she relocated to London, worked for the London Borough of Sutton as well as a freelance conservator.

Clair is looking forward to studying at the V&A/RCA, in particular being enriched by the professional contact in a diverse conservation environment.

Cordelia Rogerson

Aged 30, British

The use and deterioration of plastics in jewellery
4 year Mphil, part-time

BA(Hons) History of Art, University of Manchester

Post Graduate Diploma in Textile Conservation, Textile Conservation Centre, University of London

Cordelia gained her first degree in art history during which time she developed a particular bias towards decorative arts. She trained in textile conservation at the Textile Conservation Centre (TCC) between 1994 – 1997, gaining the Woolmen Prize, and was employed as a teaching assistant upon graduating. From 1998 – 2000 she worked within the Conservation Services Department of the TCC gaining practical experience before transferring back to the Studies and Research Department to continue her interest in conservation education. She is currently assistant lecturer.

Throughout her career, Cordelia has fostered a fascination for jewellery and in particular the use of plastics in jewellery making. She is therefore pursuing this interest through her research. The project seeks to determine the extent and nature of plastics used within jewellery making and the consequences of their use for preservation. The aim is to inform and advise conservators, collectors and jewellery artists.

RCA/V&A **CONSERVATION**

Emma Schmuecker

Aged 24, British

Conservation of Social History and Applied Art
(2 year MA)

BA(Hons) Conservation and Restoration De Montfort University, Lincoln 1999

Emma specialised in the conservation of ethnography and gilding. During university, she gained work experience with the Ipswich Museum and the Royal Collection and research on leather wall hangings for her dissertation was carried out at the Whitworth Art Gallery.

Work in a gilding restoration workshop in London was followed by a three year contract with Manchester City Galleries as a frames conservator. During this time Emma gained a wealth of experiences, not solely related to frames conservation.

Emma also worked for Manchester College of Arts and Technology for two years teaching a gilding conservation module for their BA(hons) Furniture Restoration and Conservation course.

Emma has always been interested in decorative arts and mixed media objects and upon nearing completion of her contract found an opportunity to study this subject through the RCA/V&A, to help direct future employment.

Heidrun Gassner

Aged 24, Austrian

Conservation of Ethnographic Materials
(3 year MA)

MA in Social and Cultural Anthropology, University of Vienna, 2002

As artefacts were always her special area of interest, Heidrun worked intensively with ethnographic objects during three years of voluntary and paid work in the Anthropology museums of Vienna, Berlin and Zurich, where she learned many practical skills in preventive and active conservation of ethnographic materials.

For her master thesis she developed an exhibition concept for the Naga collection of Christoph von Furer-Haimendorf for the Anthropology Museum, Vienna. The work with more than 800 Naga artefacts focused on a detailed analysis and interpretation of the artefacts' material, ornamentation and cultural background. In this research the ethnographic objects were a unique vehicle in understanding foreign ways of life.

Studies at the V&A will enable her to meet her strong interest in and enthusiasm for the conservation of ethnographic materials, thereby enhancing her previous qualifications.

New Staff

Lara Flecker

Seamstress/Textile Conservation

After finishing a practical degree in Theatrical Costume Making at Wimbledon School of Art, I spent several years working as a freelance costume maker in London. This involved working in a number of different studio's making anything from dinosaur costumes for a Macdonald's advert, to helping make hand finished historical costumes for films like 'The Madness of King George'. After a glamorous six week contract working on Gladiator, producing loin cloths for eleven hours a day in one of Shepperton's freezing studios, I decided that it was time for a change.

Having undertaken some volunteer work and a couple of short-term contracts for the Textile Conservation Studio at Hampton Court, I was fortunate to be taken on permanently by the Historic Royal Palaces Agency. Continuing to use my practical experience, my main role was to help with the display of costume at Kensington Palace. As the dress collection there is principally Royal, I spent two happy years working with clothes that had been worn by a variety of different royal personalities. The exhibitions included dress from the wardrobes of Queen Victoria down to Princess Diana, with occasional reproduction additions made by me when things were missing.

I am very pleased to be joining the V&A to help with the display of textiles in the Textile Conservation section. My job title is Seamstress and although I have spent most of my working career (along with every other costume maker) avoiding the opacity of this title, I am now very happy to announce that this is officially what I am.

Maria Walklin

Conservation Administrator

I started my career in the Civil Service in Swansea, South Wales. I continued my education part time but, as there were limited opportunities to progress in the area, was lured by a promotion to the Home Office in London. From the Home Office I moved to London Transport Advertising, where I ran the advertising accounts department.

During a sabbatical to raise my two children, I took up a part-time apprenticeship in a picture framing gallery, and eventually built a successful picture framing business working from home. Through this work I developed an interest in the arts.

In 1998 I decided that it was time to move back into full time employment and started work in the Human Resources department of a large pensions and investment company. I studied part-time, successfully completed my CIPD Certificate in Personnel Practice and in 2000 moved to the V&A, working as the Administration Manager for one of the Museum's contracting companies. This position gave me the opportunity to spend some time exploring the museum and a determination to work for the V&A Museum itself.

After a while the right opportunity came along. I am now looking forward to my position as Conservation Administrator as it combines my interest in the arts, my administrative experience and working with people in a fascinating and interesting department.

New Staff

Helen Bower

Stained Glass Conservator

My introduction to a career in glass began as a student at the University of Wolverhampton where I gained a degree in Glass Design. There, I developed an interest in the ancient techniques of kilnworking and 2D glass.

My first 'real' job was at Norgrove Studios, in Worcestershire, where I worked on mainly Victorian ecclesiastical glass, for seven years. During this time I also worked in a number of glass studios, where the main focus was on new design, either stained, leaded and painted glass, or fused glass panels for a more secular environment. This work was particularly useful in widening my field of experience.

In 2001 I took part in the Society for the Protection of Ancient Buildings (SPAB) William Morris Travelling Fellowship. This was very important so that I could put my own discipline into context and have a greater understanding of how all the crafts fit together. We visited sites throughout the country (which included the Hereford Screen and The British Galleries) and saw a wide range of traditional crafts. During the last two months of the course I did six one week work placements specialising in stained glass, including one at the V&A.

In the next two years I will be working mainly on the stained glass collection to be re-ordered and displayed in Gallery 83. I am excited at the prospect of working on a whole variety of different periods and styles of glass.