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The Gemmological Association of Great Britain & The Society of Jewellery Historians

Gem-A and CIBJO

I'm writing this on the way back to the UK from the 2006 CIBJO Congress in Vancouver.

This year CIBJO, the World Jewellery Federation, celebrated its 80th birthday. From a relatively small European body that was initially intended to 'protect' the trade, it has become, under its president Dr Gaetano Cavalieri, a driving force to protect the consumer, recognizing that protecting the consumer is the only long-term way to protect the trade.

CIBJO's coming of age is perhaps best reflected in its newly granted official consultative status with the Economic and Social Council (ECOSOC) of the United Nations. This status, announced by a UN representative at the Congress, enables CIBJO to make a contribution to the programmes and goals of the United Nations by serving as a technical expert, adviser and consultant to governments and the UN Secretariat. CIBJO is the only jewellery organization to have received official consultative status.

CIBJO is working increasingly closely with a variety of NGOs as well as major diamond, precious metal and mining organizations. Of course, most of the CIBJO 'ethical' discussions revolved around diamonds and gold. The former involved issues including the soon-to-be-launched movie 'The Blood Diamond' which, although set in the 1990s before the industry established the remarkably successful Kimberley Process, will prompt media coverage and customer questions. The 'gold' issues discussed largely related to the 'Dirty Gold' campaigns that have made the jewellery trade and their customers far more aware of the mining practices that the jewellery industry cannot and should not accept.

The Congress noted that coloured gemstones and pearls had largely been ignored in the wider ethical discussions to date, not least due to the complexity and fragmentation of these areas. Gem-A, who has played a major role within CIBJO over much of its eighty-year history, has agreed to take a lead in investigating what ethical areas relating to the production and working of gems and pearls might be usefully brought within CIBJO for discussion and perhaps for eventual guidelines or recommendations.

In this and other areas CIBJO might well ponder the so-called serenity prayer: "God grant us the serenity to accept the things we cannot change, courage to change the things we can, and wisdom to know the difference." As befits CIBJO's international status, nobody really knows from which religion or philosophy that prayer derives. So, in both gemmology and philosophy, mystery and truth can coexist. With care, we can hope to eradicate bad practices in our industry without destroying its magic, beauty and allure.

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Contents

Cover:

The new Amber Room at Catherine Palace, Tsarskoye Selo, Russia. Photo courtesy of Olga Filimonova of the State Museum 'Tsarskoye Selo'. See The new Amber Room, p.74.

Fluorescence of a Tanzanian garnet under LWUV. Photo by Bear Williams. See Fluorescence observed in a Tanzanian garnet, p.65

Chalcedony scaraboid with a running Medusa. © The State Hermitage Museum. See The Road to Byzantium, p.71

Eighteenth-century blue paste pendant/brooch. Photo Christie's Images Ltd, 2006. See Antique paste jewellery, p.69

What's in a name?

HARRY LEVY looks at the practice of indicating the origin of gemstones

Bodies such a CIBJO have tried over the years to preserve consistent terminology in the gemstone trade. This is mainly to prevent people coming in with misleading (and possibly incorrect) terms to sell their products which in turn lead to confusion among the public.

CIBJO disapproves of indicating an origin or location when selling stones. Thus according to CIBJO one should not sell Burma rubies, Ceylon sapphires and Brazilian emeralds, but rather ruby, sapphire and emerald. These guidelines are by no means always followed. For example, auction Houses, who are not yet represented within CIBJO, regularly use country designations in their catalogues.

We also have examples of, say, tanzanite, andalusite and tsavorite, names which refer to the locality where the stones are mined and found. But these are exceptions rather than the rule.

Origin certificates are generally requested when there is a public perception that stones from one locality are worth more than those from another. Thus, for many years a ruby that can be said to come from Burma will fetch a much higher price than a stone of similar quality coming from Africa or Thailand.

The argument for discouraging origin certificates is that often the buyer is duped into paying a high price for a low quality stone, just because stones from one origin are deemed to be more valuable that those from another. One could argue that if many people seek a certain item, no matter how it looks, then this would be a criterion for the stone to be worth more. Further some argue that determining the origin is not an exact science and expert opinion is not always definitive. At present this is largely true, but new means of analysis may well make origin determination a more objective science in the future. The trade might not be entirely happy with this, but we cannot seek to halt such research or to prevent reputable gemmological laboratories from gaining commercial advantage once they consider the results reliable. Until CIBJO has decided how to proceed here, it is sensible to suggest that the trade should be very wary of using country of origin designations and certainly not unless they have the laboratory reports to support them. As with diamond grading reports, the trade knows which laboratories are reputable in this area.

Having said all that, I admit I talk about 'Burma rubies', 'Thai rubies', 'Malawi rubies' and so on, just like most other dealers. I do this to communicate some idea of colour. Such designations certainly shouldn't get on to any paperwork, but they are a convenient shorthand. Perhaps the answer here is to always talk about 'Burma type ruby', 'Kashmir type sapphire' and such like when we simply need a verbal colour description.

Paraíba tourmaline

A stone marketed since the late 1980s has been the Paraíba tourmaline. This is a tourmaline with a very characteristic blue colour caused by a small amount of copper in its composition. It was originally found in one mine in Brazil in the district of, yes, Paraíba. The trade did not object to a special name for this distinctive colour as the quantities available seemed small and they were marketed at very high prices. Most tourmalines are sold in the trade for tens of dollars, fine ones fetch low hundreds of dollars; the Paraíba stones were being sold in the range of thousands of dollar range per carat.

Quantities of stones then began to increase, but this was put down to new finds in the Rio Grande do Norte State, Brazil. These stones were all marketed as Paraíba tourmalines, nobody objected and the general understanding was that Paraíba tourmalines came from Brazil, and nowhere else. Then similar stones began to appear from Africa. Some of the more conscientious dealers, being aware of the trade practices marketed them as African Paraíba tourmalines, and soon many used the term 'Paraíba type'.

There are some colour variations in all these types, due to the different copper contents, and some dealers even began to differentiate between those coming from Nigeria and those from Mozambique.

The nomenclature was discussed in a detailed article on these stones in the Spring 2006 issue of *Gems & Gemology*. The Japanese would allow the use of the term 'Paraíba' for the blue-to-green 'neon' colour stones coming only from Brazil.

However, it is claimed that distinguishing between stones coming from Brazil, Nigeria and Mozambique is difficult using standard standard testing methods. The Laboratory Manual Harmonization Committee (LMHC), consisting of the main gemmological laboratories, met in Lucerne in October 2005 and again in Tucson in February 2006, and suggested that all such tourmalines can be marketed as Paraíba tourmalines, no matter where they come from.

This policy is consistent with current CIBJO practices, which defines 'Paraíba' tourmaline as having a "green to blue colour caused by copper", but no definition is made according to locality. Thus, as I write, CIBJO still considers 'Paraíba' tourmaline to be a general variety or trade name. The question now is which laboratories and gem dealers will follow the CIBJO and LMHC recommendations.

Price is very much dependent on the beauty and, more importantly, the quantity available. The quantity coming from Brazil seems to be less than 1000 grams per year; it is not known how much will become available from elsewhere, but if this quantity becomes large then prices will fall. Thus dealers and buyers would again demand a differential and ask laboratories for origin reports.

Then, no doubt, dealers will be offered 'Brazilian Paraíba tourmalines', so in a sense we are back where we started. Next it will be 'Paraíba tourmalines of Brazilian type'. The purists and most top-level gem dealers want to keep the name Paraíba for the 'real thing'. So what would they call the African stones? Some say they should simply be called by the mineralogical name for the gem varieties of tourmaline – elbaite tourmaline. Seems almost unfair to point out that elbaite is named after the island of Elba. If we are realistic we have to admit that eventually market pressures determine terminology and nomenclature. Things won't get any easier as more and more stones are mined and new varieties are found around the world. A gem-dealer's life is certainly colourful – and we learn a fair amount of geography along the way. ❑

Two types of turbidity in synthetic rubies

GRENVILLE MILLINGTON encounters synthetic rubies that could fool many jewellers

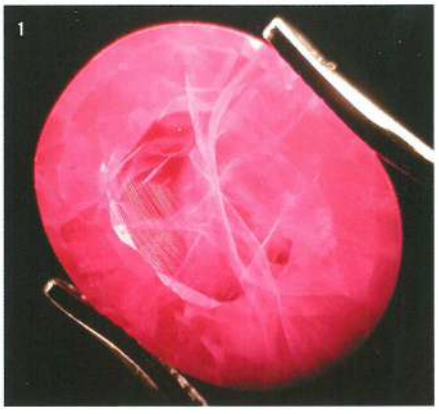
GRENVILLE MILLINGTON is an independent gemmologist who has provided a gem testing service in the Birmingham Jewellery Quarter for many years.

The standard flame-fusion (Verneuil) synthetic ruby is well known to all jewellers for being a low cost ruby imitation that can usually be recognized very quickly by its too-good appearance. The colour resembles the best Burmese ruby, the interior is clean without any inclusions, and nearly always the stones encountered are machine-cut. So, flame-fusion synthetic rubies that are hand-cut, full of inclusions and cloudy may well fool most jewellers. Two such stones appeared for testing. The turbid quality of the inclusions, giving a pink cloudiness, makes them resemble the majority of the Mong Hsu rubies which now form the backbone of the ruby trade.

A small parcel of seven red stones seemed to suggest 'synthetic ruby' by their bright red colour and relatively large size (all around 10 x 8 mm oval). On examining one of them under a 10x lens, veil-like feathers and planes similar to modern Mong Hsu rubies presented themselves. It was quickly determined that all stones had the same characteristics and all were hand faceted not machine cut. The chances that all were natural were slim, so a closer examination was called for.

A week or so later, from a different customer source, a similar stone that had been removed from a ring bought at auction also came across the counter for testing. This one showed similar inclusions to the first seven.

Another stone packet with gems for testing contained three red and two blue stones. The red stones were larger than those examined above, but were similarly cloudy in appearance and were hand faceted. No veils as such were visible, but it only took a change in viewing direction to show broad swathes of curved bands made up of millions of very small gas bubbles.



Quench-crackled flame-fusion synthetic rubies with healed fractures (1, 2 and 3). The original curved growth lines have been retained (1) and several stones show coarsely filled fractures (3).

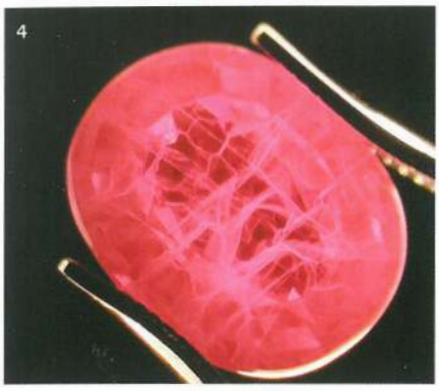
Examination

The first type

Although the veil-like inclusions are somewhat abundant, the areas between the veils were quite transparent and, on turning a stone to different angles, some of the transparent areas showed the familiar fine, curved lines of flame-fusion synthetic ruby. The curved lines were easier to spot in some stones than in others. Examination suggested that these manufactured stones had been quench-crackled to produce the fractures, which had then been 'healed' by a flux-growth technique (Harry Levy described the term 'quench-crackled' in *Gems & Jewellery* 2005, **14**(3), p.51). The healed fractures strongly resembled the veils seen in Chatham flux-fusion synthetic rubies and illustrated in articles by Koivula (1983) and by Schmetzer and Schupp (1994).

The whitish veils produced by the 'healing' process against the background of transparent ruby with curved lines typical of flame-fusion material are shown in (**1**. A second stone from the parcel is shown in **2**, and **3)** shows the back view of one of the stones that displayed large and coarsely-filled fractures.

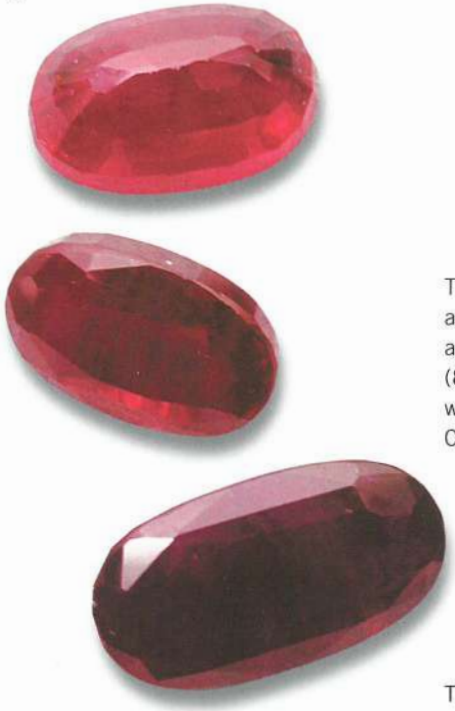
The single stone that was presented for testing a little while after the stones outlined above, showed similar veils except that for the most part the individual droplets composing the veils were extremely small and were only just resolved at 80x magnification. Also, the curved lines were less easy to find and the overall pattern of the veils viewed from above was of a roughly hexagonal appearance. These veils were filmy white and this modified the rather brash red colour typical of Verneuil synthetic rubies (**4**).



A quench-crackled flame-fusion syn-thetic ruby with healed fractures, (brought in for testing separately from the other stones), displaying a roughly hexagonal pattern to the veils.

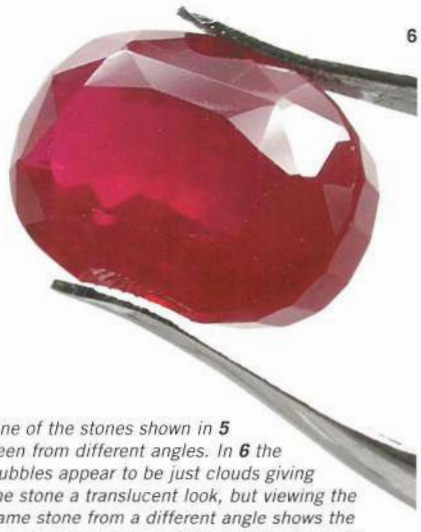
The second type

The three stones (**5**) that were presented for testing (along with two large synthetic sapphires) had a more general overall cloudiness than those of the first type. The smallest was 13.7 x 9.1 mm and weighed 8.73 ct; the second weighed 10.48 ct, and the third was 17.6 x 9.6 mm and weighed 11.05 ct.



***5.** Three large flame-fusion synthetic rubies (8.73, 10.48 and 11.05 ct) with easily visible bubble clouds.*

From some aspects they just looked cloudy which, with the hand faceting, made them look perfectly natural, but with a slight change of viewing angle it was apparent that the cloudiness can be seen to be confined to broad, curved zones (**6** and **7**).



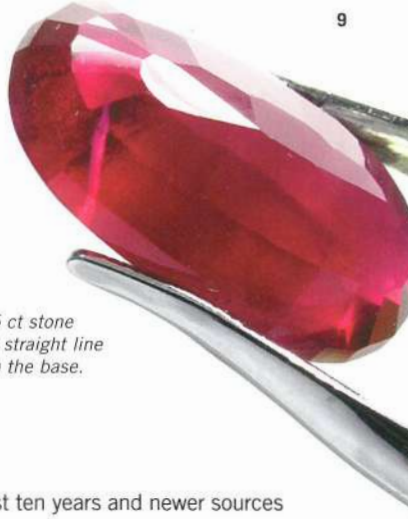
*One of the stones shown in **5** seen from different angles. In **6** the bubbles appear to be just clouds giving the stone a translucent look, but viewing the same stone from a different angle shows the broad, curved nature of the bubble clouds (**7**).*

The cloudiness consisted of a mass of very tiny bubbles with a few isolated bubbles of some size (**8**). Some curved lines were also visible, with the bubble zones following the curve. Curiously, each of the three stones had a single, relatively straight fracture, for which I can offer no explanation (**9**).

Conclusion

There is no way of knowing how old the stones included in this report might be. The first type described might have been produced at any time since the early 1980s and the second type at any time within the last 100 years. However, the idea of producing synthetic rubies with inclusions (as opposed to imitating only the finest of natural stones) is confined to the last 25 years or so, when rising prices have meant lower grade natural material being more commercially acceptable. The virtual takeover of the gem ruby trade by Mong Hsu heat-treated rubies

***8.** An example of the density of the bubble clouds in the stone shown in **6** and **7**.*



The 11.05 ct stone showing a straight line fracture in the base.

in the last ten years and newer sources offering similar looking material means that the more plausible synthetic ruby will need to show the current natural ruby's often turbid appearance. The above two types of synthetic flame-fusion rubies showed just that. Any jeweller who knows about curved lines in synthetics should be able to identify easily the second type, but the misty veils of the first type present a barrier through which few jewellers will penetrate to search for the more hidden curved lines within.

These stones may be remnants of previous attempts to deceive or examples of an upsurge of new attempts. ❑

Further reading

Koivula, J.I., 1983. Induced fingerprints. *Gems & Gemology*, **19**(4), 220

Schmetzer, K., and Schupp, F.-J., 1994. Flux-induced fingerprint patterns in synthetic ruby: an update. *Gems & Gemology*, **30**(1), 33

Bluish-green emerald – natural or synthetic?

DR KARL SCHMETZER and ALAN HODGKINSON examine an emerald with remarkable clarity

On the occasion of a presentation dealing with Zambian emeralds by Guy Clutterbuck at the Gem-A Scottish Branch meeting in Edinburgh, one of the authors (AH) was able to purchase a 1.85 ct sample for his research and teaching collection (**1**). A second sample of 0.95 ct was obtained by Scottish Branch Committee members John and Catriona McInnes.

1

Bluish-green Zambian emerald from the Kafubu mining area, 1.85 ct, 7.53 x 6.65 mm.

Both samples were said to have been cut from the same piece of rough originating from a mine in one of the major emerald-producing areas within the Kafubu mining region in Zambia (see Zwaan *et al.*, 2005). We were informed that the rough beryl crystal originally weighed 323 grams (1615 ct) and yielded 113 faceted gems of a total weight of 270 ct. One segment of this beryl crystal was blue aquamarine, one segment was yellow beryl, but the major part was bluish-green emerald.

A remarkably strong pleochroism was observed with a slightly greenish blue, almost blue colour, parallel to the *c*-axis and a greenish-yellow coloration perpendicular to the *c*-axis (**2 a, b**). Both samples were extremely clean and showed only a small healed fracture under the microscope. In addition, a somewhat wavy, irregular growth pattern was observed without a special orientation of the samples (**3 a,b**).

A similar pleochroism has already been mentioned for Zambian emeralds (Schmetzer and Bank, 1981), but is also typical for Russian hydrothermally-grown synthetic emerald with certain amounts of copper, nickel, chromium and iron as colour-causing trace elements (Schmetzer, 1988). In addition, the microscopic features closely resembled the textural pattern that is typically seen in hydrothermally-grown synthetic emerald. Consequently, these preliminary observations made us question whether the two emeralds were really natural stones.

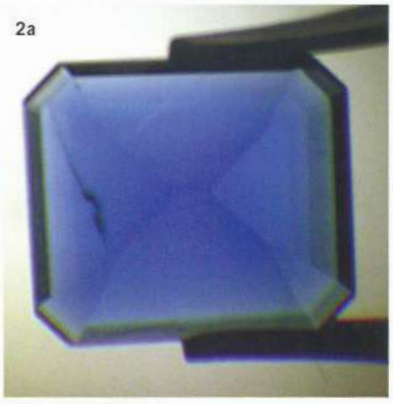
Gemmological data

The faceted stones revealed identical gemmological data which indicate that both samples might have been cut from the same crystal: n_o 1.590, n_e 1.583, SG 2.73, and both samples were inert to long- and short-wave ultraviolet light. The emeralds were dark green under the Chelsea filter.

Under the microscope

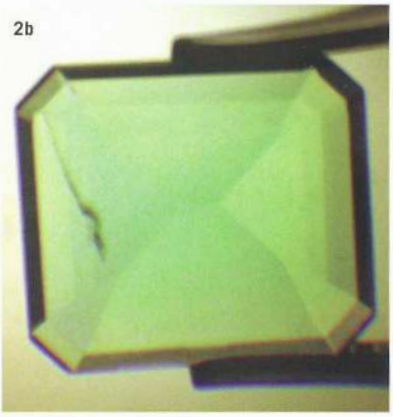
The samples were cut in different orientations, both showing identical microscopic growth features. The dominant growth pattern observed in immersion in both faceted emeralds was a distinct growth zoning parallel to the basal face of the emerald crystals, i.e. perpendicular to the optic axis. With an exact orientation of the samples, it was also observed that the different emerald layers parallel to the *c*-axis revealed a certain fine structure consisting of growth lines that were inclined to the *c*-axis (**4 a, b**), but not parallel to one of the major crystal faces of beryl.

2a

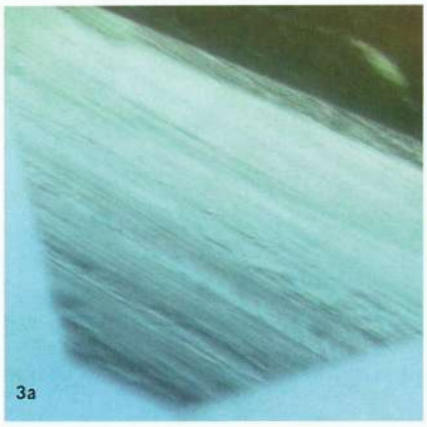


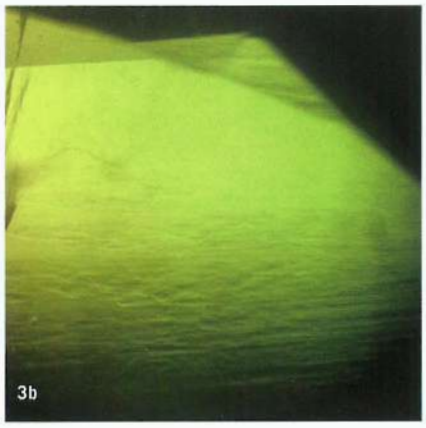
Pleochroism of the Zambian emerald of 1.85 ct pictured in 1 appearing greenish blue, almost blue, parallel to the c-axis (a) and greenish yellow perpendicular to the c-axis (b).

2b



This fine structure is responsible for the impression seen without an exact orientation of the samples (**3 a, b**) resembling the pattern frequently observed in synthetic samples. The pattern in our two samples is not understood in detail, but it is definitely different from the growth structures of hydrothermally-grown synthetic emerald. Due to the orientation of the seed plates used for crystal growth, the main growth layers seen in synthetics are inclined to the *c*-axis, in contrast to the dominant growth layers parallel to the basal face seen in our two Zambian emeralds.





Irregular, somewhat wavy growth pattern seen in Zambian emerald without special orientation of the sample. Magnified 25x.

In addition, the fine structure seen in hydrothermal synthetics, i.e. the step-like growth patterns within the layers inclined to the *c*-axis, is different.

Chemical and spectroscopic properties

To confirm the result of our microscopic examination, we also determined chemical and spectroscopic properties for both samples. The results of X-ray fluorescence spectroscopy (EDXRF) indicated the presence of high amounts of iron and smaller amounts of chromium, but no copper and nickel. In addition we observed the characteristic X-ray peaks assigned to sodium, magnesium and caesium. These data indicate natural emeralds, which is consistent with absorption spectroscopy. Polarized spectra of both samples showed relatively strong absorption bands of Fe^{3+} in the violet and ultraviolet range and strong bands of Fe^{2+} in the near infrared. In addition, the bands of the normal chromium absorption spectrum were seen in both samples. The complete spectrum is superimposed by a very broad, dominant absorption band in the red with a strong polarization parallel to the *c*-axis. No absorption bands of copper or nickel were detected. Thus, the spectroscopic properties are consistent with data of Zambian emeralds (Schmetzer and Bank, 1981; Schmetzer, 1988; Zwaan *et al.*, 2005) and give further support to the natural origin of both samples.

The strong and distinctly polarized absorption band in the red is the characteristic Fe^{2+}/Fe^{3+} absorption band normally seen in blue aquamarine. If this absorption is present in addition to the chromium absorption spectrum of 'normal' emeralds, this aquamarine component shifts the generally observed pleochroism of emerald (bluish green parallel to *c* and yellowish green perpendicular to *c*) to the blue and greenish-yellow pleochroism observed in our samples (see above).

Conclusions

The results of chemical and spectroscopic examination confirm the conclusions drawn according to the observed gemmological and microscopic properties. The two gemstones are natural emeralds with a strong aquamarine component. Synthetic emeralds with such growth properties, trace element chemistry and absorption spectra are unknown at present. All physical, chemical and spectroscopic data are consistent with properties of natural emeralds of Zambian origin (see Zwaan *et al.*, 2005).

Acknowledgement

We are grateful to Dr D. Schwarz of the Gübelin GemLab, Lucerne, Switzerland, who performed the X-ray fluorescence analyses of our samples. The natural origin of one of the samples was also independently confirmed by Prof. H.A. Hänni at the SSEF laboratory in Basel, Switzerland, which is also acknowledged. ❑

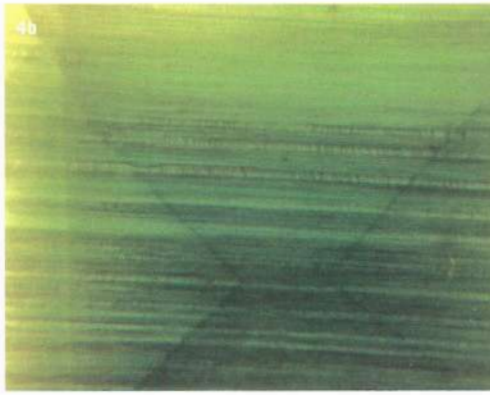
Further reading

Schmetzer, K., 1988. Characterization of Russian hydrothermally-grown synthetic emeralds. *Journal of Gemmology*, **21**(3), 145-64

Schmetzer, K., and Bank, H., 1981. An unusual pleochroism in Zambian emeralds. *Journal of Gemmology*, **17**(7), 443-6

Zwaan, J.C., Seifert, A.V., Vrána, S., Laurs, B.M., Anckar, B., Simmons, W.B., Falster, A.U., Lustenhouwer, W.J., Muhlmeister, S., Koivula, J.I., and Garcia-Guillerminet, H., 2005. Emeralds from the Kafubu area, Zambia. *Gems & Gemology*, **41**(2), 116-48.

Growth zoning in Zambian emerald revealing distinct growth planes parallel to the basal face and a fine structure within these basal emerald layers; immersion; (a) sample of 0.95 ct, magnified 50x, (b) sample of 1.85 ct, magnified 70x.



The authors

Dr Karl Schmetzer is from Petershausen, Germany, and Alan Hodgkinson from West Kilbride, Scotland.

Diasterism in rose quartz

Star effects continue to fascinate HAROLD KILLINGBACK

The inclusions in rose quartz may be considered in two categories;

- random, e.g. fissures
- ordered, e.g. fine needles of rutile orientated in three directions determined by the crystal structure of the quartz.

The random inclusions are often numerous, thus scattering incident light and rendering the material opaque. If ordered inclusions are present, a six-ray star can be observed when the light source is behind the viewer. It is due to reflection (or is it refraction?) by sub-microscopic needles of rutile. It is not significantly affected by scattering because reflection from needles close to the surface is sufficient. The effect, epiasterism, is shown in **1** and **2**.

Sphere showing epiasterism.

If the random inclusions are few, and ordered inclusions are also present, light can pass through the quartz without the scattering entirely dispersing the light reflected by the rutile needles. A six-ray star can then be observed from the other side of the piece of quartz. This is diasterism.

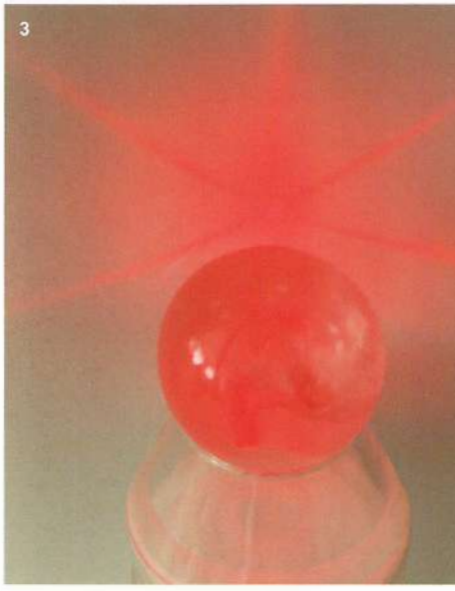
Examples of diasterism

A sphere of star rose quartz on a mirror is shown in **(2)**. Some of the sun's rays pass through the sphere, being refracted both on entry and on exit and being formed by the effect of the rutile needles within the sphere into a six-ray star. The lower image is the reflection of the same sphere, but not of the same star. The stars have been formed as the result of different light paths through the sphere, and it will be seen that the stars are not similarly aligned.

The result of shining a laser pointer through the same sphere is shown in **(3)**. Its beam is only 4 x 2 mm approximately. Nevertheless, there are enough random inclusions for the whole sphere to light up due to scattering. Light affected by the ordered inclusions is focussed by the curvature of the sphere onto a white card and appears as a red six-ray star.

Light reflected back from a different sphere which is virtually free of random inclusions is shown in **(4a** and **4b)**. By contrast with **1**, there are now two stars. The whiter one is epiasterism, while the pinker one is diasterism. How can both phenomena be observed in one view? I believe the pinker star is formed by light being reflected from the rear surface of the sphere and formed into the star as it comes up through the ball, to be refracted at the top surface on leaving.

If the ball is rotated slightly, as between **(4a** and **4b)**, the epiasterism moves (as with any reflection, at double the angle of movement of the reflector), but the centre point of the diasterism stays in the same place because 'the rear surface of the sphere' looks just the same when the ball is rotated. The arms of the star will, however, be different, because the rutile needles will be at different angles to the light path. With a small rotation, as here, the change in shape may not be obvious. ❑



Laser pointer shone through the sphere pictured in 2.

Sphere on a mirror showing an unusual effect.

Different views of the same sphere.

Further reading

1. Killingback, H., 2005. *The Journal of Gemmology*, **29** (5/6), 312-15

2. Killingback, H., 2005. *The Journal of Gemmology*, **29** (7/8), 482

Fluorescence observed in a Tanzanian garnet

CARA and BEAR WILLIAMS report on interesting results obtained testing these newly marketed garnets under UV light

Pyrope spessartine garnet is reported as having been mined in the Lindi region of southern Tanzania. Introduced on the market in late 2005, it has typically been marketed as 'Imperial' and/or 'champagne' garnet.

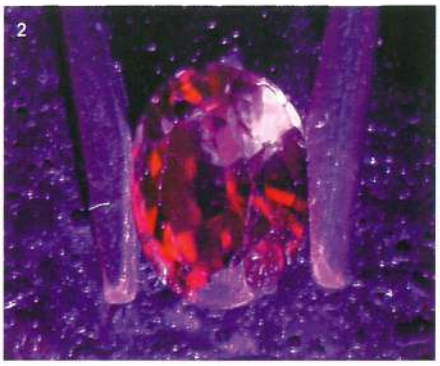
1

Pyrope spessartine garnet weighing 2.82 ct. Photo Bear Williams.

The sample illustrated (**1**) weighed 2.82 ct. Of immediate note was the colour shift from a cinnamon brown in incandescent light, to a pinkish champagne brown under fluorescent light.

According to the gemmological literature to date, garnets are inert to both long- and short-wave ultraviolet (UV) light. Occasionally a new material or technology will come along that causes us to rethink our assumptions. Historically, the large and varied garnet family has produced many such surprises. The colour shift prompted us to test UV excitation reactions (**2**). Although very weak, fluorescence under long-wave excitation was definitely visible with the naked eye. Fluorescence was slightly more pronounced in digital photos.

Next we ran a UV fluorescence spectrum that showed a significant emission peak at 685 nm (**3**). While not visible with a conventional (analogue) spectroscope, it is readily visible with a UV-NIR spectrophotometer. All indications point to Cr as the cause of the fluorescence and the emission spectrum, but further research and testing may need to be done to confirm that other elements are not responsible.

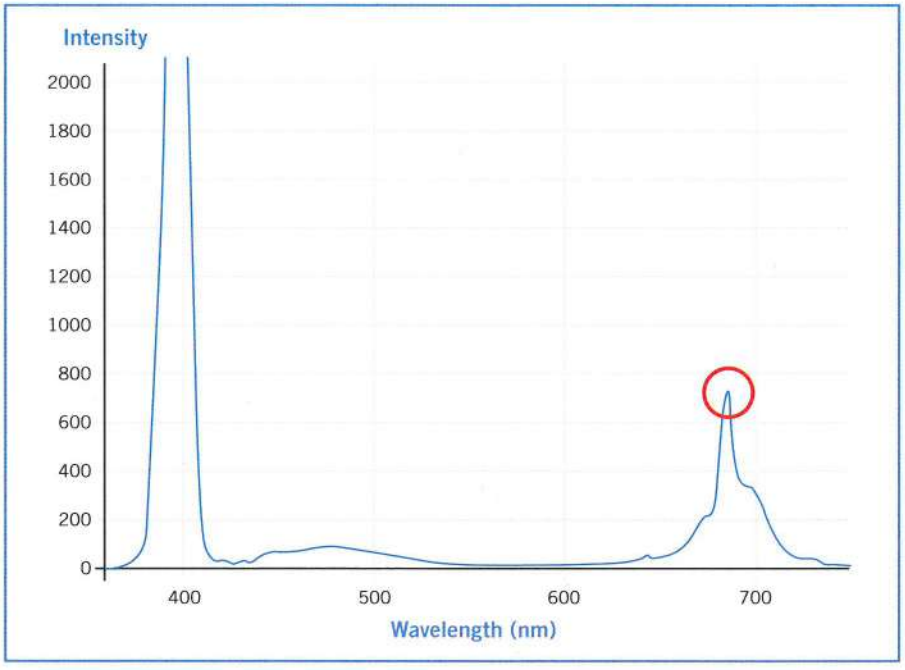


Fluorescence of the garnet under long-wave UV. Photo Bear Williams.

Other gemmological properties are as follows: RI 1.756, SG 3.82. Spectroscopic tests revealed a typical spessartine spectrum with strong 432 nm absorption (manganese). Properties are similar to other colour-change garnets, but the quantity of iron to fully quench the fluorescence is lacking.

The polariscope indicated anomalous birefringence. Microscopic examination exhibited straight needles and a birefringent subhedral crystal inclusion. Of particular interest was the high magnetic susceptibility, in that it could be dragged across a surface with a small hand magnet. ❑

Editors' note: We usually avoid graphs in Gems & Jewellery *but, as noted, the slight fluorescence was not observed with the more familiar prism or diffraction grating spectroscope. Besides, simple and relatively inexpensive spectrophotometers that are no larger than a packet of cigarettes and which plug into the USB socket of a computer are no longer just the preserve of professional laboratories.*



3. *UV fluorescence spectrum of the pyrope spessartine garnet showing emission peak at 685 nm (circled in red).*

Contributing authors are Cara Williams FGA and Bear Williams CG. Their company, Bear Essentials, is a wholesale coloured stone house operating alongside their laboratory, Stone Group Labs, in Jefferson City, Missouri. They are a Gem-A Allied Gem Tutorial Centre for practical training and Cara is also a Gem-A correspondence course tutor.

Gem Discovery Club

RICHARD DIGBY gives a 'Cameo Performance'

Richard Digby has developed a wealth of experience as a jewellery dealer over his 35 years of business. He has specialized in dealing cameos and intaglios, buying and selling around the world. At the Specialist Evening in June, Club members were able to benefit from his work during his presentation on cameos and intaglios.

Richard began with an introduction to the materials commonly used for the carving of cameos and intaglios, and described the more usual methods of enhancement and simulation.

Richard explained how to identify damage and assess how this could affect value. For example, small chips around the edge of a cameo, commonly incurred during removal from a mount, ought not to affect the value. Cracks, such as the shrinkage cracks found in some shell cameos, may greatly reduce value. The condition of any setting is also an important factor; dealers and many collectors prefer to see a light, even patina. This is lost with over-zealous cleaning. Should a setting be heavily tarnished, helpful advice was offered: metal surfaces can be gently cleaned to the desired level using whiting (powdered chalk [calcium carbonate]), the powder can be dusted off and the surface may then be rinsed with water and dried thoroughly using a paper towel. As always, great care should be taken to avoid the introduction of any fluid where a gem is set in a closed back setting.

The quality of engraving, the signature and the provenance are all important factors in assessing value but, as Richard explained, the form and subject matter play an integral part in assessment. Currently round brooches are unpopular, as are male portraits (though there are exceptions to this rule, one of which is illustrated above).

Better quality cameos and intaglios make the best use of natural coloured layers and bands in the material being carved,

Portrait cameo of Sir Henry Cole, founder of the Victoria & Albert Museum. Photo Richard Digby.

such as a blush to a cheek or a coloured wreath in the hair. The carving itself should be fine with good attention to detail. The point was made that the iris of the eyes in good quality portraits are drilled and are generally much deeper than those of lesser quality cameos. Cameos and intaglios can be traced with careful research, and Richard kindly gave the names of his most useful references, such as the *Biographical dictionary of medallists: coin, gem, and seal engravers, mint-masters, &c., ancient and modern, with references to their works, 500 BC – AD 1900* by L Forrer, 1904 (reprinted, Franklin, New York 1970). Richard identified the cameo illustrated left with a visit to the National Portrait Gallery. Research there indicated that the portrait was that of Sir Henry Cole, organizer of the Great Exhibition of 1851, Prince Albert's chief adviser and the founder of the Victoria & Albert Museum.

Gem Club members were grateful to be given the opportunity to handle a number of cameos and intaglios after the talk. These had been carefully selected from Richard's own collection in order to illustrate the various points which had been made through the evening. ❑

Fake rough diamonds

ROY HUDDLESTONE reports on some very convincing fakes

I was recently asked to confirm that nine rough crystals were diamonds. The shapes were octahedron and dodecahedron (with variations between the two), the colours varied and the weights ranged from 1 to 6 ct.

The few inclusions that could be seen under the microscope were not typical of diamond, and the Presidium thermal tester confirmed my suspicions that the crystals were white sapphire. The surfaces had been cut to imitate stepped octahedral faces with triangular effects. These were some of the best fashioned fakes I have seen.

The deterioration of glass in jewellery

What is the cause of this problem? Can it be prevented? How should it be treated? Specialist conservator VICTORIA OAKLEY offers an insight

Glass is usually regarded as a reliable material with good resistance to use, including chemical and environmental attack. It is generally assumed that the only risk to this transparent, hard, brittle, resilient material might be the possibility of breaking it. In fact, glass can possess an inherent instability making it vulnerable to factors in the surrounding environment, and threatening those qualities that are synonymous with glass materials.

Although glass is prone to various different types of deterioration, this article considers chemical deterioration. The phenomenon has sometimes been likened to a disease or sickness, due to the insidious nature of the condition. There is no cure, nor is it infectious. It is caused by the chemistry of the glass and the relationship of the ingredients from which it is made.

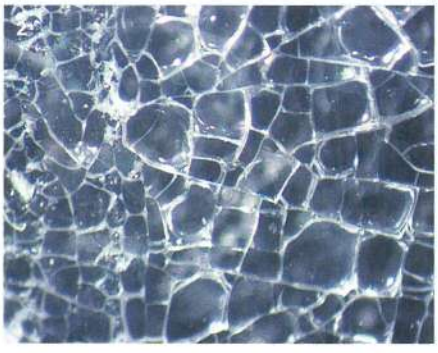
Glass deterioration has been a source of concern for collectors and curators for hundreds of years. Although it primarily affects vessel glass, it can also be observed in other groups of objects, for example jewellery with glass components, such as 'paste' stones, the glasses in lockets or watches, or beads. Even enamel, which is a type of glass, can succumb to the same type of decay. The problem can be complicated by the presence of the metal components which have deterioration issues of their own.

What is glass deterioration?

The visual appearance of objects suffering from glass deterioration can vary considerably, although similarities can be observed in the progress of the decay. The surface of vulnerable glass objects may initially acquire a dull and fogged appearance as alkalis from the glass accumulate as salt deposits (**1**). In dry conditions, the salt deposits may be visible as patterns of white crystals. Under humid conditions, droplets of moisture can

Dull misty surface of unstable glass. Photo Victoria Oakley

appear as the salts attract moisture, making the glass feel damp and slippery to the touch. This is the stage sometimes referred to as *weeping*. Later, as the deterioration progresses, tiny cracks appear in the surface which mark the start of a process known as *crizzling*. This can continue to such an extent that the network of fine cracks becomes increasingly obvious leading to flaking and pitting of the surface (**2**).



Crizzled glass surface with fine cracks. Photo Victoria Oakley

The processes that bring about these changes are complex. Glass is usually formed of silica mixed with alkali metal oxides (sodium or potassium), together with alkaline earth oxides (such as calcium or magnesium). Other elements may be present in smaller amounts. The variations that can occur in the proportions of the various ingredients are responsible for altering the properties of the glass, including its stability.

The alkali metal oxides are added to reduce the melting point of silica, making it possible to work the glass at lower temperatures. The alkaline earths stabilize the glass and increase its resistance to moisture.

When glass of unstable composition comes into contact with high levels of moisture in the surrounding air, chemical and physical changes take place at the surface bringing about the deterioration. In the early stages, an exchange reaction occurs between hydrogen from the water molecules in the atmosphere and alkali ions in the surface of the glass. As the hydrogen swaps places with the alkali, the surface layer becomes increasingly alkali-deficient and hydrated. The substitution of the alkali ions by smaller hydrogen ions puts the surface under tensile stress leading to the development of micro-cracks. This process continues, causing the cracks to enlarge so that they become visible to the naked eye as *crizzles*. It seems that glass containing potassium is more susceptible to deterioration than sodium. In general, lead glass appears to have better durability than potash or soda glass, although it is very dependent on the particular composition.

How glass deterioration affects jewellery

The versatility of glass as a material has meant that it has frequently been used as a component in jewellery. It can be coloured, cut and moulded to imitate gemstones; it can also be formed into beads and used to protect the delicate parts of lockets and watches. Depending on its composition and environmental history, the glass used in such items can also be vulnerable to deterioration. The complexity of such objects, which may consist of several different materials in close association, adds to the potential problems. In the case of lockets and watches, the cover glasses create

small sealed chambers with their own microclimates, where deterioration may continue unchecked. As alkali salts gradually accumulate on the surface of the unstable glass, they may contaminate adjacent metal components and cause unsightly and damaging corrosion (**3** and **4**).

Pocket watch (Josuè Panier, Paris, c. 1705) with unstable cover glass that has become dull and misty. The alkali salts from glass have reacted with the metal causing corrosion. V&A Images, Victoria & Albert Museum.

3

4

Clasp (West European, late eighteenth century) with unstable glass cover. Deterioration on the inside surface of the glass has led to further damage of the decorative elements inside. Note the corrosion of the twisted copper alloy wire border and the state of the pearls which have started to crumble as a result of the aggressive alkaline environment. The enlarged section (above left) highlights the droplets of hydrated alkaline salts which have developed on the underside of the glass. V&A Images, Victoria & Albert Museum.

Conservation and preservation

Research has shown that it is not possible to reverse the deterioration of glass. The options are either to stabilise (or at least slow down) the decay by controlling the local environment or, by using more interventive approaches, to treat the surface of susceptible glasses to protect them from further decay.

When glass deteriorates, a series of interdependent simultaneous reactions takes place involving the gradual loss of the alkali content as the glass slowly dissolves. The rate of deterioration is affected by the amount of moisture in the surrounding environment. At high levels of relative humidity, the decay (which is measured by the leaching of the alkali from the glass) is faster. By reducing the relative humidity, it is possible to slow down the rate of decay. If the moisture in contact with the surface of the glass and held within the cracks is very alkaline, this can also significantly affect the rate of decay. The rate of reaction is also temperature dependent, so at low

Cleaning and care of glass in jewellery

Glass should be cleaned on a regular basis in order to remove the build-up of alkali salts. In the case of jewellery items with metal components, particular care needs to be taken to avoid placing the metal at risk. Cotton wool swabs, slightly dampened with deionised or distilled water, should be used for both cleaning and rinsing, taking great care to avoid the metal parts. Adding a drop of non-ionic detergent such as Synperonic A7* to the cleaning water, helps remove the dirt and grease. Objects should be thoroughly dried afterwards, either by gentle blotting with paper towels, or using an air-blower on a cool setting.

Particular care should be taken with antique paste jewellery with enclosed settings; if moisture gets behind the pastes it can cause considerable damage.

Alcohols, while effective for removing dirt and grease, have been shown to displace surface water held in pores and cracks and dehydrate the glass emphasising the crizzles more. Great care is needed when cleaning objects in the advanced stages of deterioration. After cleaning, gloves should be worn to avoid the transfer to the object of salts and acids that are present on the skin.

Particular problems may be presented in the case of complex jewellery with parts that are inaccessible to cleaning. If they are particularly disfigured it may be necessary to dismantle and release the glass so that it can be cleaned as necessary. Obviously removing cover glasses from pendants and watches can be an extremely delicate operation, and should only be carried out by a professional with the appropriate skills. In some instances it may prove necessary to replace the glass, although there are various ethical issues to be considered before taking such action. If the glass is in early stages of instability, with no corrosion to the metal surround, it will usually be sufficient to clean the glass and check periodically for salts. However, when the glass cover is visibly unstable with some corrosion to the metal surround, it may be worth considering changing the glass. Where the glass has obvious instability, with visible crizzling and corrosion to the metal components, the glass should be replaced. Once removed, old unstable glass covers should be carefully stored for future reference.

* Synperonic A7 is available from Conservation Resources (UK) Ltd., Unit 2, Ashville Way, off Watlington Road, Cowley, Oxford OX4 6TU.
tel: 01865 747755
fax: 01865 747035
e-mail: 100436.3447@compuserve.com

temperatures the decay process is slower. There is some evidence that a flowing atmosphere may reduce the deterioration process. This has some credibility when one considers the anecdotal evidence of collections that have been kept in draughty cupboards for years which suddenly appear to decay more rapidly when moved to 'better' cases.

Protecting the surface of the glass with a coating might seem like an obvious answer to the problem. However, finding a suitable one that fulfils the essential criteria is challenging. For such a coating to be effective, it would need to cause no change in the appearance of the glass; be chemically inert and resistant to ageing and wear; have excellent adherence; be reversible with solvents; and easy and safe to apply. Unfortunately the bond between unstable glass and synthetic resins tends to be weak, eventually resulting in separation and peeling. Moisture can then penetrate the gap, producing a microclimate containing a highly alkaline corrosive solution which can attack the silica network. Removal of the coating at a later stage can also cause damage, particularly where the surface is already disrupted.

Conclusions

Although glass deterioration affects many glass objects including jewellery, there is widespread ignorance about the chemical processes involved. A clearer understanding of the condition will ensure that the option exists of doing something to slow down the inevitable decay through the correct care. It is hoped that research will provide us with more conclusive answers that will assist in the long term preservation of such objects. ❑

Further reading:

Sandra Davison, 2002. *Conservation and Restoration of Glass* (2nd edn). Butterworth Heinemann, Oxford.

Useful contacts:

Institute for Conservation, 3rd Floor, Downstream Building, 1 London Bridge, London SE1 9BG. (tel: 020 7785 3805) www.icon.org.uk

To find an accredited specialist conservator: Conservation Register (tel: 020 7785 3804) www.conservationregister.com

VICTORIA OAKLEY is Head of Sculpture, Metals, Ceramics and Glass, in the Conservation Department at the Victoria & Albert Museum, South Kensington.

Antique paste jewellery

Antique paste jewellery is highly collectable, and featured strongly in an auction at Christie's at the beginning of June. Included in the sale was the Clifford Collection, the jewellery of collector Anne Clifford. Although she originally collected cut steel and Berlin Iron jewellery, Anne's real love was eighteenth-century paste. In this period the decorative arts reached a peak of perfection, and paste-set jewellery was designed to the same high standards as diamond and precious stone jewels of the time.

One of the items from Anne Clifford's collection is the eighteenth-century blue paste pendant/brooch pictured, which was known as 'The Wartski Ribbon Bow and Tassel'. The articulated bows and tassel terminal are set with cobalt blue pastes in silver mounts with coloured foil backs. The gold beadwork detail is characteristic of Portuguese jewellery of the second half of the eighteenth century. The pendant/brooch in a nineteenth-century fitted case realized £4560 in the June sale, well in excess of the estimate of £2000-£3000. ❑

Eighteenth-century blue paste pendant/brooch. Photo Christie's Images Ltd, 2006.

Medieval Love Jewellery: including recent finds under the *Treasure Act*

JAMES ROBINSON summarizes a lecture he presented to the Society of Jewellery Historians in May 2006

As May is the traditional month for lovers in the medieval calendar it seemed timely to highlight some of the recent discoveries under the *Treasure Act* of jewels produced in the period to provoke romantic feelings. The *Treasure Act* was introduced in 1996 and represents a revision of the ancient law of Treasure Trove which stated that items of gold or silver, deliberately concealed, fell to the Crown. The legislation of Treasure Trove did not cover accidental losses, such as isolated finds of brooches or rings. The *Treasure Act*, however, now takes these random finds into its remit.

Love culture was a vital part of medieval life and love jewellery provides glittering evidence of its popularity among the wealthy. One of the most splendid medieval finds to come up through the process of the *Treasure Act* is undoubtedly a gold and diamond ring found in Manley, Cheshire, in 2002*. The ring probably dates from the late fourteenth or early fifteenth century. It is a complex ring with decorative elements which undoubtedly had greater significance for the original owner than is apparent to us today **(1)**. It is inscribed on the top *'sans fin'* and on the bottom *'loiauté'* meaning 'ceaseless loyalty'. At the back of the hoop is a central, openwork band with three letters 'E' juxtaposed with three stars. The inscription is sufficiently chivalric in sentiment to have been passed between men and the allure of this very high-status jewel has led to some tentative historic associations being made. The repetition of three letters 'E' with three stars convinced the finder that the ring was associated with Edward III. He felt that the black diamond signified the Black Prince and that the ring passed between father and son. However there is no supporting evidence for a royal association either through heraldry (which is absent from the design), a known use of the motto 'sans fin loiauté' by Edward III or any documented allusion to Edward signifying his royal status by the use of stars.

The Manley ring, with detail of the inscriptions. © Christie's, 2006.

The fifteenth-century Kirkham ring.

A more recent speculative line of argument associates the ring with Edward III and Jacob van Artevelde on the assumption that the two openwork letters on the shoulders of the ring, 'V' and 'A', stand for 'van' and 'Artevelde', but there is no substantive reason why this should be the case. A more convincing use of initial letters is their well documented place in courtship. The crowned heart placed beneath the diamond amplifies the notion that this might be a romantic love ring. A ring at the British Museum almost identical in construction with open-work shoulders containing individual letters spelling 'AMOURS' suggests that the Manley ring belongs to a wider repertoire of love jewellery produced by the same goldsmith.

The initials of a lover or a pair of lovers are included on a fifteenth-century ring **(2)** found at Kirkham in Lancashire in 2005 and acquired by the British Museum earlier this year. Its three bezels take the form of open books. Each small panel between each book carries part of an inscription which reads 'C'est mon decir' (it is my desire). The letters on the open pages of the book are upside down and read *'PO YR E C'* (*pour EC* meaning 'for EC'). EC are presumably the initials of a lover (and not those of Edmund Chadderton, treasurer of the chamber to Richard III!).

The Bury St Edmunds girdle terminal

Rings and brooches form the most numerous category of medieval find under the Treasure Act, but other potential love gifts take a more unusual form. A pendant found close to Bury St Edmunds **(3)** in 2004 most probably formed the terminal to a lady's girdle. A similar terminal decorated with tears and found close to Kings Lynn in 1984, is at the British Museum along with a third acquired last year and decorated with fleur-de-lys. The findspots seem to indicate that they are a feature of East Anglia and they seem not to have turned up elsewhere. A lady's girdle was not without its sexual connotations. The receipt of a gift of a girdle or a girdle pendant, like this one, was suggestive of intimacy and favour. Brooches, rings and pendants that comprise accidental losses rather than hoarded wealth are a valuable record of the past at its most intimate. It is a sobering thought that each find of love jewellery represents a loss more poignant and personal than almost any other type of object found. ❑

(Editor's note: the newspaper reports relating to valuation of the medieval diamond ring following its declaration as 'Treasure' under the UK Treasure Act 1996, demonstrate some lack of understanding of the Treasure Valuation process. There will be a brief explanation in the next Gems & Jewellery.) ❑

* The Manley ring sold for £84,000 at Christie's sale on 15 June (see report in the May 2006 issue of *Gems & Jewellery*, p. 43).

The Road to Byzantium

SUE LA NIECE reviews the exhibition at the Hermitage Rooms, Somerset House

The title of this exhibition does not fully convey the scope of the material in this the latest of the displays from the State Hermitage Museum to be shown at Somerset House. The pieces have been selected to demonstrate the extraordinary longevity and geographical diffusion of classical Greek styles and imagery over the course of a millennium and more.

The earliest pieces in the show are fine Attic red-figure vases dating to the fifth and sixth centuries BC, the latest are lead seals from tenth- and eleventh-century Byzantium, and in between are items of Scythian gold, Roman sculpture, well-preserved textiles from Coptic Egypt, and a lavish selection of silver plate and gold gifts to Byzantium's allies in the northern Black Sea region.

Figurative imagery is one of the linking themes of the exhibition beginning with some fine Attic red-figure vases depicting scenes from Greek mythology, with men and gods in complex poses and perspectives. Classical culture spread east into Asia Minor partly as a result of Alexander's exploits and the few beautiful items from the rich burial mounds of Kerch and the Bosporus are a reminder of that. The cultures of this area would merit a future exhibition from the extensive Hermitage collections. In the second room the Roman portraits in marble and bronze continue the theme of classical idealism and naturalistic representation of the human figure, particularly in the beautiful head of Antinous, the youthful favourite of Hadrian who came to an early and possibly suspicious end in the Tiber, here portrayed as the god Dionysus. The fascination with classical mythology, the representation of the gods of the classical pantheon and their adventures continued in spite of the official adoption of Christianity and apart from a couple of periods of iconoclasm, these myths seem to be comfortably absorbed. They appear on Coptic Christian textiles, silver plate and on one of the latest items in the exhibition, the mid-tenth-century AD bone and ivory Veroli Casket (lent from the Victoria & Albert Museum), probably from Constantinople. The finely carved figures depict a diverse range of myths including the rape of Europa, the sacrifice of Ipigenia and Dionysiac revelry, interspersed with random figures such as the winged Pegasus and a group of stone-throwing youths. This has apparently exerted the ingenuity of some scholars in looking for deep meanings, but perhaps it was simply been the possession of a wealthy owner who saw the classical style as an indication of his position in society, without any deep understanding of the myths portrayed. A display of familiarity with classical culture was seen as a mark of status and education, even in tenth-century Christian Byzantium.

There are jewels to be found in all four of the rooms. The highlights include an exquisite fourth-century BC gold and enamel pendant from excavations of Bolshaya Bliznitsa Barrow, Taman Peninsula, engraved gems and cameos such as the fifth century BC scaraboid with a running Medusa (**1**) and a first-century BC cameo from Alexandria depicting Victory in flight. A Hellenistic necklace with multi-coloured stones and a third-century gold and garnet openwork bracelet (**2**) were both excavated from Kerch, and an imposingly large gold buckle and belt-end was presented to Kuvrat, Khan of Great Bulgaria, by the Byzantine emperor Heraclius, for services rendered against the nomadic Avars in the mid-seventh century AD.

Fifth-century BC chalcedony and gold scaraboid with a running Medusa. © The State Hermitage Museum.

1

Third-century gold and hessonite bracelet. © The State Hermitage Museum.

The exhibition is small, but displays luxury items from a wide range of date and geographical origin, though with a clear theme linking them together. The catalogue includes essays on aspects of the exhibition as well as the usual descriptive entries for the objects, and is reasonable value though the photographs of some of the items would have benefited from being larger. As always with the Hermitage exhibitions at Somerset House, it is a rare opportunity to view some very remarkable pieces without the expense of going to St Petersburg. ❑

The collection will be on display at the Hermitage Rooms, Somerset House, London W1, until 3 September 2006.

The art of the replicators

Over the last year the exhibition rooms at Somerset House have had the unusual distinction of displaying two masterpieces of south Russian goldsmiths' work of the early Hellenistic Greek period and the superlative copies of them made in the Castellani workshops (**1**). I am talking about the gold discs depicting a Nereid riding a hippocamp. The original pair (on loan from the Hermitage, St Petersburg), excavated in the burial mound Great Bliznitsza on the northern Black Sea coast in what is now the Ukraine in 1864, are exhibited in the current exhibition The Road to Byzantium (see p.71). The Castellani copies, from the collections of the Victoria & Albert Museum, were exhibited in the Castellani and Italian Archaeological Jewellery exhibition held from May to September 2005.

I have been lucky enough to have had the opportunity to examine both the originals and the Castellani copies under the microscope. The originals I saw in St Petersburg during the research for the Greek Gold Exhibition held in London and New York in 1994 – 95 and the Castellani copies during research for my contribution to the volume that accompanied the Castellani exhibition.

A comparison between the ancient and the nineteenth-century copies reveals the differences between the old and the newer in technical terms, but more interestingly show just how well, and in what detail, the nineteenth-century replicators did manage to copy some of the characteristics of the old. The details from the disc at the Victoria & Albert Museum show the Castellani double C monogram (**2**) on the reverse and some of the filigree on the front (**3**). The filigree is interesting. The rosette shows the typical and repetitive Castellani twisted rope filigree that we see on most Castellani work, but the stylised acanthus leaf decoration is in a particularly fine-gauge beaded wire that closely copies that seen on some of the original Greek examples. Such detail on some work from the Castellani workshops suggests three things. Firstly, there was a major distinction between the more run-of-the mill and often rather mechanical commercial Castellani wares and their finer exhibition pieces.

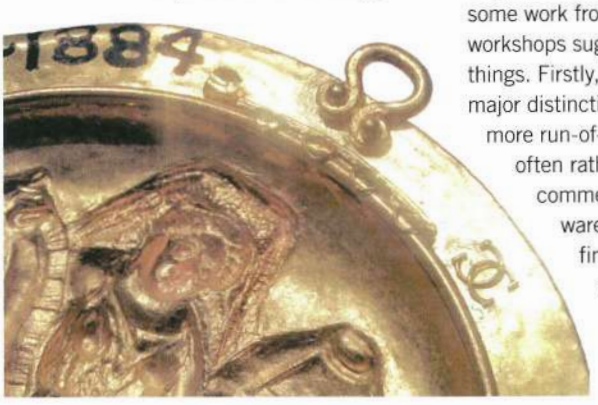
1

Pendant on a relief disc depicting Nereid on a hippocamp; on the left the Russian original (© The State Hermitage Museum) and on the right the Castellani replica (photo V&A Images, Victoria & Albert Museum).

Secondly we might assume that even in the exhibition pieces, standard components – such as the ubiquitous rosettes – could be made by the general workmen who produced the commercial pieces. There may even have been a stockpile of 'standard components' such as rosettes.

Thirdly, the quality of the copies of ancient technology observed when some of the finest 'exhibition pieces' are closely examined suggests that other pieces from the Castellani workshops may still exist in museums misdescribed as Greek or Etruscan originals. This is not to suggest that the Castellani workshops deliberately produced and marketed fakes – the jury is still out on that one – but simply to say that certain of the best goldsmiths employed by the Castellani workshops would have had more than sufficient skill to produce fakes had they wished to. We are reminded that Fabergé craftsmen appear to have been behind some of the late nineteenth-century fakes of medieval Byzantine and Georgian enamels – probably unbeknownst to Fabergé – and it has been said that at least some of the post Second World War fakes of Greek gold that swamped the collectors' market and blighted the 1960s Greek Gold Exhibition in several USA centres, were produced by the workshop foreman of a well-known Athens' jewellery business (and not Lalaounis, before you ask). ❑

Jack Ogden



2

The double C monogram on the reverse of the Castellani replica disc. Photo Jack Ogden reproduced courtesy of the V&A Museum.

3

Detail of the filigree work on the front of the Castellani replica disc. Photo Jack Ogden reproduced courtesy of the V&A Museum.

IJL celebrates 50th Anniversary

International Jewellery London (IJL), the premier UK jewellery event, celebrates its 50th Anniversary this September. The event offers discerning jewellery and gift buyers the opportunity to keep abreast of innovative trends and quality products.

A new IJL team at Reed Exhibitions promises an outstanding show. The Design Pavilion will be larger than ever and a historical feature will look back at jewellery production over the past fifty years.

Bright Young Gems, launched at last year's show, returns to showcase the best of British up and coming jewellery designers as nominated by Hilary Alexander (*The Daily Telegraph*), Kate Reardon (*Vanity Fair* and *The Times*), Carol Woolton (*Vogue*) and Stacey Duguid (*Elle*).

IJL offers the opportunity to learn about industry issues from key speakers taking part in the IJL seminar programme, covering both Jewellery Trends and Retail Business. As well as Gem-A's **Doug Garrod** who will give presentations on coloured gemstones and inclusions, the high profile list of speakers includes such names as:

- **Vivienne Becker – a journalist, jewellery consultant, jewellery historian and author of several books;**
- **Shaun Leane – a jewellery designer who regularly collaborates with Alexander McQueen;**
- **Paola de Luca – Creative Director/Trends Forecaster for the TJF Group;**
- **Avril Groom – freelance fashion editor and writer;**
- **Eric Emms – former Director of the Gem-A Gem Testing Laboratory and now Director of the AnchorCert Gemmological Office, London;**
- **Becky Currant – CAD CAM tutor, Holts Gem and Jewellery School;**
- **Rizwan Nayeem – Bluestreams Ltd.** ❑

Gem-A at IJL

This year Gem-A will have a stronger presence at IJL than ever before. New products and services will be displayed at our stand (G49), presentations by Doug Garrod will be included in the Seminar Programme and 'Gem-Empathy' – the new Gem-A award – will be introduced.

System Eickhorst

We are delighted to announce that Gem-A Instruments are now stockists for System Eickhorst who are renowned for their quality lighting systems and instruments. Illustrated below is the Gemmaster microscope with Zeiss trinocular optics;

The Gemmaster microscope with trinocular optics

the instrument has spectrolight dark-field illumination which ensures that the microscope stage remains cool, even after hours of work. Not only will we have a range of their products at IJL but also System Eickhorst Export Manager Heike Biebrach will be at the Gem-A stand with Alan Clark to answer any questions and advise on purchases of new equipment.

Seminars

As part of the full and varied seminar programme, Doug Garrod, one of Gem-A's senior tutors, will give two separate presentations, one on coloured gemstones and the other concentrating on their inclusions. Doug's presentations will be on Sunday 3 and Tuesday 5 September; the times of the seminars will be published in the show guide, but do arrive at the seminar theatre early to ensure that you get a seat – Doug always attracts a full house!

Gem-Empathy award

Gem-A has always advocated that gem-set jewellery should be designed to show the gemstones to their best advantage. So when we were approached by IJL to sponsor an award for this year's show, it was decided that it should be named the 'Gem-Empathy Award' and be given for the single piece or collection of jewellery that makes particularly captivating use of one or more coloured gemstones. Gem-A's criteria for the award will include accurate and ethical descriptions as well as overall attractiveness.

The winning exhibitor will be given a free full-page advertisement (usual price £400) in *Gems & Jewellery* plus a £100 voucher towards the cost of one of Gem-A's wide range of workshops on gemmology and gem-related subjects.

The Award will be judged on Sunday 3 September and winner announced at the Show on the Monday.

Gem-A members interested in attending the Show may contact Mary Burland at mary.burland@gem-a.info or call on 020 7404 3334 for ticket information.

The new Amber Room

MAGGIE CAMPBELL PEDERSEN reports on the problems that arose in producing an authentic replica of this famous room

1. *Catherine Palace, Tsarskoye Selo.*

A little south of St Petersburg in Russia lies the town of Tsarskoye Selo (now also called Pushkin), where can be found the Catherine Palace (**1**). Originally built as a small summer palace for Peter the Great's wife, Catherine I, it was enlarged and rebuilt over the years until it reached the massive 740 m in length that can be seen today. It was badly damaged in 1945, but it has been restored to its former glory in blue, white and gold colours, though admittedly most of the gold on the exterior of the building is now paint rather than gold leaf.

It is here that the new Amber Room has been constructed and installed (see cover picture), as a true and faithful replica of the one that disappeared in 1945. (The mystery of the whereabouts of the original Amber Room has apparently recently been solved, as anyone who attended the talk by Adrian Levy at the Gem-A annual conference in 2004 will remember. Adrian is co-author of the book *The Amber Room – the Untold Story of the Greatest Hoax of the Twentieth Century.*)

The original Amber Room underwent many changes, and at each step the design had to be modified. It was originally intended as decoration in a study in Frederik I of Prussia's Berlin palace. After his death his son, preferring to spend money on armies rather than on amber, gave it to Peter the Great and it was sent to Russia. For a while it was installed in the Winter Palace in St Petersburg before finally being moved to the Catherine Palace at Tsarskoye Selo by Empress Elizabeth. The Amber Room that disappeared was an integral part of the design by Bartolomeo Rastrelli for the renovated palace and, although it underwent several restorations, was basically unchanged since its completion in 1775.

And in 1945 it disappeared...

A decision was made in 1979 to re-create the Amber Room, and much research needed to be carried out. Experts from various areas were called in to help and to give advice. There were some archived details of the original construction, but these were not complete and some experimentation was necessary. Also some modifications were advised.

2

Selecting pieces of dyed amber.

An example of the problems faced was in the choice of colour of the amber to be used (**2**). Although there were many black and white photographs of the room, there was only one single colour photograph in existence. As the wall coverings are made of mosaics of different coloured Baltic amber and in different opacities, it was necessary to try to work out which colour was appropriate to each section and piece of ornamentation. This was accomplished by photographing, on black and white film, old items of amber (such as caskets) from the collection that had survived, and comparing the grey tones in the resulting photographs with those in the old photographs.

Information was found in the archives on the methods used to clarify and colour the amber for the original room, but in some cases it was decided to use more modern techniques to get a longer-lasting and satisfactory result that would need less restoration in times to come.

Slivers of amber on wooden frame.

A light-weight wood was chosen as the base on which to mount the 4 mm thick slivers of amber, and the adhesive used was based on the original recipe of part beeswax and part resin (**3**).

Another problem arose when it was realized that photographs are two-dimensional, so the actual depth of each piece of ornamentation or carving could only be guessed at. As a result every piece to be carved was first made in plaster and then copied (**4**).

This was especially true of the four frames which form part of the design, and in which are placed the four Florentine mosaics (**5**). These allegorical picture mosaics, made in the mid eighteenth century and depicting the five senses, are cut from a variety of stones sourced from many different places, and chosen for their colour or pattern. A fifth mosaic, depicting the Port of Livorno, was still in the Hermitage Museum and by studying this and other old Florentine mosaics, guide lines were obtained for re-creating the four missing mosaics. Whilst this process was under way it transpired that one of the originals had been stolen and was not lost. It reappeared at an auction in Germany, and was donated to the Catherine Palace.

A staggering six tonnes of raw Baltic amber was needed to complete the re-created Amber Room, although only 13% was actually used. Much was discarded as being of inferior quality and there was also a huge amount of wastage due to the shapes used (the mosaics have rounded edges and must fit like a jigsaw puzzle). Some pieces simply disintegrated when sliced or carved. The waste material was recycled and used as reconstituted amber in the jewellery trade.

Not surprisingly, the Amber Room project ran out of money before it was finished but, thanks to donations (by far the largest being from the German company Ruhrgas who donated US$3.5 million), it was completed and officially opened in 2003 during the tercentenary celebrations of the founding of the city of St Petersburg.

I had expected to find the room overwhelming and garish. It is not – it is beautiful. Rastrelli's designs with the cherubs, female busts, candelabra and scrolls covered in gold leaf simply add to the stunning golden effect, which is awesome in the true meaning of the word.

The new Amber Room is an almost exact replica of the one that was taken down, packed into crates and sent to Königsberg in 1941 but, ironically, because it is new and the amber is not in any way degraded or damaged, it is more perfect than the room that was lost.

Plaster model and amber ready to be carved.

Today the Amber Room workshops in Tsarskoye Selo produce picture frames, little boxes and small carvings which are sold in the museum shop. On commission they make replicas of the panels in the Amber Room for private collectors. ❑

Amber carver (left) with a replica of one of the four frames in the Amber Room. Detail of the frame (above) and near-completed re-creation of Florentine mosaic to be placed in the frame (right).

Carved diamond

Gem carver UTE KLEIN BERNHARDT develops a technique for intaglio carving on diamond

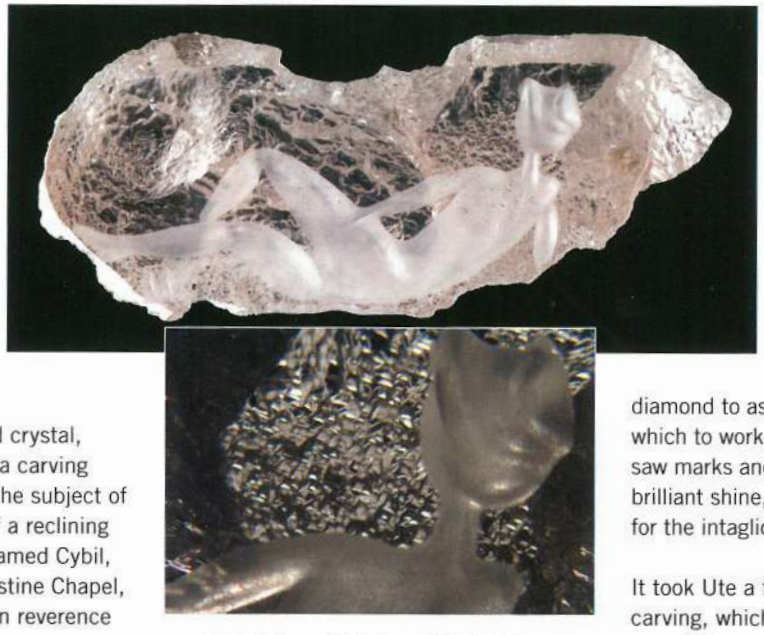
The original stone before Ute started her work.

Not since the early nineteenth century had anyone attempted to carve images on diamond. This fact intrigued Ute Klein Bernhardt and prompted her to experiment with a variety of methods for nearly a year until she saw her efforts bear fruit in completion of an intaglio carving.

Ute, now based in Wausau, Wisconsin, USA, grew up in Idar-Oberstein, the German gem cutting and carving centre. Said Ute: "I had absolutely no idea how to carve diamond. I had seen the intaglio portrait of Willem III carved in diamond by DeVrees at the Field Museum, Chicago, but he had not written down how he did the carving."

The 7 ct pink/cognac diamond crystal, sawn from a larger stone, has a carving surface of 23 mm x 10 mm. The subject of the carving is the back view of a reclining nude. The intaglio has been named Cybil, "after the four Sybils in the Sistine Chapel, but with a change of spelling in reverence to their mystery", said Ute.

The rotating burs Ute used for carving the intaglio had to be very fine and of various shapes. Ute had to search for perfectly-shaped diamond octahedra which she had set in dopsticks to use as hand engraving tools to scratch the reverse form into the flat diamond surface. She opted for the hardest preground industrial diamond powder and a variety of cutting liquids, which she used not only to keep the diamond cool but also to wash away any clogging debris and to keep the diamond sharp.



The finished diamond intaglio and detail of the surface.

Saw marks which had been made when the diamond was cut from the larger stone had to be removed from the flat surface. But the irregular thickness meant that there was a high risk of the stone shattering if the marks were removed with a cutter's scaife. Ute had steel discs specially made for her hand piece and used very slow, careful manoeuvres, repeatedly checking the internal structure of the diamond to assess the correct angle at which to work. This method removed the saw marks and polished the surface to a brilliant shine, creating the desired contrast for the intaglio.

It took Ute a full year to complete the carving, which she finished in October 2005. ❑

M.B.

UK Auctions – Summer 2006

BONHAMS www.bonhams.com

New Bond Street, London W1 (t: 020 7447 7447)
Fine Jewellery: 28 September

Edinburgh (t: 0131 225 2266)
Jewellery: 14 September

Leeds (t: 0113 244 8011)
Jewellery and Silver: 19 September

Oxford (t: 01865 73252)
Jewellery: 22 August, 26 September

CHRISTIE'S www.christies.com

South Kensington, London (t: 020 7930 6074)
Jewellery: 12 September
Jewellery and Pawnbrokers: 22 September

DREWEATT NEATE www.dnfa.com

Donnington, Newbury, Berkshire (t: 01635 553553)
Affordable Jewellery and Silver: 5 September

Neales, Nottingham (t: 0115 962 4141)
Jewellery and Silver: 4 September

FELLOWS & SONS www.fellows.co.uk

Birmingham (t: 0121 212 2131)
Second-hand Jewellery and Watches (by Direction of Pawnbrokers Nationwide): 10, 24 August; 14, 28 September
Antique and Modern Jewellery and Silver: 7 September

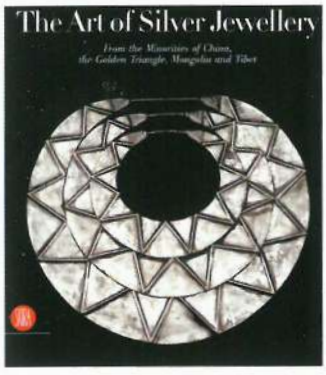
SOTHEBY'S www.sothebys.com

Edinburgh, Scotland (t: 0131 558 7799)
Ceramics and Jewellery: 29 August

Dates correct at time of going to press but may be subject to alteration.

The Art of Silver Jewellery

The Art of Silver Jewellery from the Minorities of China, the Golden Triangle, Mongolia and Tibet: The René van der Star Collection



Essays by John Berigen, Hugo E. Kreijger, Ien Rappoldt and René van der Star. Skira, Italy, 2006. 240 pp. ISBN 8876243836. £34.95.

Based on René van der Star's impressive collection and as its title indicates, *The Art of Silver Jewellery* features accessories crafted by the minority people groups from remote regions in China, Southeast Asia, Mongolia and Tibet. The collection is the fruit of 30 years of travel and research carried out by its owner. This compilation is not restricted to metal accessories: there is also a short section of costumes worn by the minority peoples of Southeast Asia.

The catalogue seeks to place the jewellery in the context of the ethnography of the various minority people groups featured here. As van der Star's insightful introduction and Hugo Kreijger's essay demonstrate, the cultural context is helpful for the reader to begin to appreciate the significance of silver jewellery to these ethnic groups, as well as the impact of social change on them, and the content and design of their accessories.

However, the ambitious ethnographic discussion of Ien Rappoldt's 'The Ancient Peoples of Southwest China and Beyond' is in danger of overwhelming the main focus of the book. This essay is somewhat conflicting in the ethnography it presents: while overall there is an attempt to present the minority peoples as a people adapting to change ("straw sandals have transmogrified into sneakers...", p.19), it seems at the same time to romanticize 'the ancient peoples' for their traditions and to consign them to an immemorial past. The chapter also begs the question, where does 'Beyond' begin and end? For example, Tibet, which has at least geographical (and controversially, political) proximity to the Southwest of China, is omitted from this chapter. More direct connection of the silver jewellery to costume, especially in relation to motifs would have been welcome.

There is a striking contrast in this book between the first essays on the jewellery of the minority peoples of South West China and the Golden Triangle and those dealing with Mongolia and Tibet. While the discussion of the former displays a considerable in-depth knowledge of those peoples and their jewellery as living and evolving contemporary traditions, the following discussions on Mongolia and Tibet say little about what jewellery is made or worn today. This historical perspective is reinforced by the use of black and white photographs, interesting in themselves, that date mostly from the first half of the twentieth century. The chapter on Mongolia does, however, provide a balanced introduction to the sweep of Mongolian history and deals more fully with its jewellery, including symbolism and the use of stones and coral.

The final chapter on the history of gold and silver in Asia provides a good introduction to the history of the European trade in bullion to south east Asia and China and its relationship to the spice and textile trade. This is one of the few jewellery catalogues to include scientific analysis of the alloys used in the production of the pieces.

Taken all in all, one cannot help thinking that the book would have been improved if it had concentrated on the jewellery of the minority peoples of south west China. This is the subject about which René van der Star is evidently highly knowledgeable. This combined with the chapters on the history of gold and silver in Asia would have produced a much stronger work. ❑

Yueh-Siang Chang and John Clarke

Sotheby's host Gem-A AGM

The Annual General Meeting of the Gemmological Association and Gem Testing Laboratory of Great Britain (Gem-A) took place on the 27 June 2006 at Sotheby's, New Bond Street, London W1.

The Gem-A Chief Executive, Dr Jack Ogden, welcomed those attending and thanked the Gem-A staff and the Council for all their hard work. He explained that many organizations are rather like icebergs, with a huge and unseen infrastructure supporting a small public face. Gem-A was almost the opposite. A small staff with limited resources worked miracles. Gem-A courses are taught in some 28 countries, but the administrative staff dealing with all this, including the examinations, number just three full-time and one part-time. Gem-A's world class publications, *The Journal of Gemmology* and *Gems & Jewellery*, are produced by just one full-time member of staff and a consultant. As the Association grows – and it is growing, the 2006 education intake is 12% up in total on 2005 – it needs to keep a clear focus on what it wishes to achieve, its priorities and its resources. Hence the importance of the strategic plan currently being drawn up by the Council and the Chief Executive.

Gem-A Chairman, Professor Alan Collins, then made a brief presentation in which he thanked the staff and the Council, and explained how the strategic plan will set out the key aims, objectives and policies of Gem-A. These will be defined in the context of financial plans, budgets and targets, and include criteria by which financial and operating performance may be monitored. Also, it was vital that the strategic plan identified any potential risks to Gem-A activities and sustainability. The Chairman stressed that Gem-A was a long-established and prestigious organization, and that it was essential that all involved help capitalize on this reputation by seeking ways to expand Gem-A's activities and increase its membership.

The annual accounts (which are available to members on the Gem-A website at http://www.gem-a.info/ membership/ agm/index.htm or, on request, by mail) showed a healthy surplus for the year. The 2005 financial year, however, had been of nine months only, the year-end being moved forward to bring the financial and subscriptions years into line with each other. The Gem-A annual accounts and Directors' Report, including the report for Gemmological Instruments Ltd, were unanimously adopted by the meeting. Alan Jobbins was re-elected as President of the Association for the term 2006-2008. Alan Collins, Alan Jobbins and Michael O'Donoghue retired from the Council in rotation and, being eligible, Alan Collins and Michael O'Donoghue were re-elected. Alan Jobbins did not seek re-election to the Council. Tony Allnutt and Peter Dwyer-Hickey retired in rotation from the Members' Audit Committee and being eligible were re-elected to the Committee. Hazlems Fenton were reappointed as auditors for the year.

Following the business part of the evening, attendees were generously entertained with wine at a private view of Sotheby's 'Jewels: antique, collectable and contemporary' sale*. This was hosted by Daniela Mascetti, Alexandra Rhodes and Joanna Hardy of Sotheby's Jewellery Department, all Fellows of the Gemmological Association.

The Association is very grateful to Sotheby's for hosting the evening, particularly to the Directors and staff in the Jewellery Department for their hospitality and for the fascinating talks about some highlights of the jewellery on show. ❑

* The results of the sale may be viewed on Sotheby's website at http://search.sothebys.com/jsps/live/event/EventDetail.jsp?event_id=27790.

Gem-A Conference 2006

Sunday 5 November, Renaissance London Heathrow Hotel

The panel of speakers, carefully selected for this year's event, will present a full and varied programme of talks to appeal to all Gem-A members and students. The speakers will include:

Dr Ahmadjan Abduriyim of the Gemmological Association of All Japan, research gemmologist and contributor to the *Journal of Gemmology*.

Victoria Finlay, author of the acclaimed *Buried Treasure: Travels Through the Jewel Box*.

Doug Garrod, Gem-A Senior Instructor.

Dr Jack Ogden, Gem-A CEO and author of, and contributor to, several books on the history of jewellery materials and techniques.

Dr Jayshree Panjikar and **K.T. Ramchandran**, Research Gemmologist and Director (respectively) of the Gemmological Institute of India.

Benjamin Zucker, author of *Gems and Jewels* and *How to Buy and Sell Gems* and contributor to many others, including *A Green Diamond: A Study in Chameleonism*.

As in previous years, exciting events and short courses have been arranged to coincide with the Conference, including the **Graduation Ceremony** at Goldsmiths' Hall, a **private viewing of the Crown Jewels**, a visit to the **Tiffany exhibition** at Somerset House, a six-day **Diamond Practical Course** and a three-day **Rough Diamond Assessment Course**.

For further details of the 2006 Conference visit our website at **www.gem-a.info/membership/conferences.htm**

Fabergé and the Russian Jewellers

I am writing to thank the members of Gem-A and the SJH who visited the exhibition 'Fabergé and the Russian Jewellers' held at Wartski in May. The exhibition, devoted to Russian jewellery, was composed of 280 pieces drawn from private collections. Wartski's premises were full to capacity with queues stretching down to Bond Street every day.

The exhibition raised almost £40,000 for the Samaritans, who are obviously delighted. I am most grateful to all those who supported the exhibition.

Katherine Purcell
Wartski, London W1

Raman Course

At the beginning of June I attended the User School on Laser Raman Microspectroscopy at Kingston University and would like to express my thanks to the Gemmological Association and the University for arranging such a useful one-day seminar. It provided a clearly structured overview on the theory behind Raman spectroscopy and on the instrumentation itself, to which participants were introduced – with the possibility of hands-on practical experience. Limiting the number of participants proved an advantage as it allowed time for better understanding and discussions. Participants were allowed to bring (and brought) their own samples – and as each of them followed up a different purpose they all profited from their individual interests. The practical session showed the amount of knowledge, careful observation and experience that is required, and where the limitations lie.

Although most gemmologists will not be able, if alone for the high price of the instrumentation, to work on their own with the Raman method; they will certainly profit from a user school like the one described. It provides a deeper insight into the possibilities of science and it enables participants to better understand and appreciate articles in gemmological journals that refer to Raman spectroscopy.

Kingston upon Thames is easy to reach from abroad, as it takes only about an hour by bus from Heathrow airport. And it is a pleasant place to retreat for a day or two and devote time to the increasingly scientific and fascinating aspects of gemmology.

Elisabeth Strack
Hamburg, Germany

Addenda and Comments

Kurt Nassau has kindly pointed out that the white glow seen during the grinding of CZ (see CZ cutting in China, May issue of *Gems & Jewellery*, p.40) is white triboluminescence. The stone is not actually white hot. Also, the use of natural Urals emerald as a raw material in synthesis (see comments on the Tairus synthetic emerald, The Scottish Conference, p.49) is doubted by some workers who believe that such emeralds are too impure to use as reagents in what has to be a very carefully controlled chemical and temperature environment.

Stone Scoop

Heating Rubies

The heat treatment of ruby is a long established trade practice. The earliest reference quoted by Richard Hughes in his *Ruby and Sapphire* (1997) is medieval Islamic and the earliest European mention, as Hughes notes, seems to be in the account of the voyages of the Portuguese Duarte Barbosa, written in about 1515. Barbosa describes the rubies of Ceylon. These, he says – and I'm following Henry Stanley's translation published in 1866 – "... are not of so brilliant colour as those which grow in Ava or Capelam [Burma]." However: "In order to make them of a deeper colour they put them into the fire. These lapidaries whom the king has near him on seeing a stone before it is cut, say: 'This ruby will endure so many hours of fire, and it will remain good'. And the king risks it, and orders it to be put in a very strong charcoal fire for that space of time which the lapidary has mentioned to him: and if it endures it without danger, it come out more perfect in colour, and is worth very much."

There are other sixteenth-century mentions of the practice in Ceylon, but there seems to have been very little discussion of the practice of heat treatment again until relatively recent times. Even nineteenth-century comments are rare. However, in a letter written to Henry Stanley commenting on various gem-related matters in Barbosa's book, the Geneva jeweller and watchmaker Henry Capt noted: "Experiments similar to those described here [i.e. the heat treatment of rubies] have been made in Europe, and chiefly in Germany, to heighten the colour of gems, rubies especially, by exposing them to fire, but their success has been so hazardous, nay costly, that speculation has been unwilling to expose itself to so much risk."

Raising Cane

At a jewellery show recently I noticed a simple silver key ring threaded with what looked at a distance like coral beads.

On enquiring, I was told it was 'Taiwanese coral'. It took some persistence to learn what 'Taiwanese coral' really was – stained bamboo.

Two seventeenth-century recipes for imitation amber

There is an interesting and, as far as I am aware, unpublished manuscript in the British Library (Stowe 1071) entitled '*The Goulden Arte or Jewell House of Gems*' written in about 1609 by a William Heth (=Heath) who was "Clarke of his majesties store for the Navy at Portsmouth for the

goods of his country." It discusses gemstones at length (a full transcription and commentary is planned), from valuing diamonds to pearl fishing in Scotland, mostly derived from other sources, but there are many interesting snippets. For example, two types of imitation amber are mentioned. The first was made by heating turpentine and cotton, stirring until it was thick and then casting it into moulds and allowing it to harden for eight days. In this way you might cast "beads and haftes of knives or any other things what you will" and once set "they will be very fair and clear".

The second imitation amber recipe begins: "Take the yoke of egg and beat well with a spoon then take two ounces of gum Arabic and one ounce of the gum of cherry tree make these gums into powder and mix them well with the yokes of the eggs." After five days in the fire this mixture could be cast into the desired forms and "will become hard and shine like glass". The writer adds reassuringly: "When they be dry [set] and polished if you rub them on any woollen cloth that be a little warm it will take up straws as your natural amber will." ❑

J.O.

Quotes

Gem-A's MailTalk serves as an information link between members and subjects range from hot gemmological topics – Paraíba tourmaline and new corundum treatments have been filling the airways lately – to the more general, and sometimes even quirky. Over the last couple of years, MailTalk has also passed on a few relevant quotes that have raised a smile at Gem-A. I was going to repeat a couple of recent ones in this column, and then thought, why not reprint a selection of earlier ones too? So, here are some of the Gem-A MailTalk 'Quotes of the Week':

"First ever Dubai pavilion at JCK Las Vegas registers record orders." *AME Info*, United Arab Emirates, June 12, 2006.

"The most dangerous place to be on Christmas Eve is between a desperate husband and a jewelry counter." *Washington Times*, December 19 2005.

"They're not expensive, but they're supposed to do incredible things for your sex drive. Forget about the Viagra; get into the carnelian." Actor Nicolas Cage quoted in *The Herald*, Scotland December 9 2004.

"Princess Margaret's jewellery sells for a hundred times its value." *Daily Mail*, 14 June 2006.

"If you give a woman a choice between a two-carat stone and a one-carat stone and everything else is the same, including the price, what's she gonna choose? Does she care if it's synthetic or not? Is anybody at a party going to walk up to her and ask: 'Is that synthetic?' There's no way in hell. I'll bite your ass if she chooses the smaller one." Carter Clarke, founder of Gemesis, quoted in *Evening News*, Scotland 26 April, 2004

Herbert Tillander in Memoriam 1909 - 2006

Herbert Erik Tillander of Helsinki, Finland, died peacefully on 30 April 2006 at the age of 97.

Herbert Tillander had an exceptional life. He was born and spent his early childhood in St. Petersburg, where his grandfather, Alexander Edvard Tillander, had founded A. Tillander Jewellers in 1860. The jewellery store soon became a supplier to the Russian Crown and served two Tsars, Alexander III and Nicholas II.

After the Revolution and the First World War, A. Tillander Jewellers was relocated to Finland. Herbert Tillander graduated from high school in 1927 and went on to do his National Service in the Finnish Navy, where he served as a clerical officer. In 1929, instead of going to University he obeyed his father's wishes and worked with many fine jewellers all over Europe before studying in London and in the USA. In 1931 Herbert Tillander was granted the title of Goldsmith and was certified as a Master Goldsmith. In 1935 he took the Diploma examination of the Gemmological Association of Great Britain, winning the Tully medal, its highest award, and became a Fellow of the Association (FGA). Also, he was the twenty-fourth person to gain the Graduate Gemologist designation from the Gemological Institute of America.

In 1939 the world was in turmoil. People began to invest in gold and jewellery all over the world, as they have always done before a crisis. At A. Tillander Jewellers, which was now located in Helsinki, Finland, this was a busy time. Goldsmiths were working around the clock and everything they produced was immediately sold. This was the overture for the Second World War, which in Finland started in November 1939. Herbert Tillander was commanded to join the famous Ace-regiment. His task was to ensure that the postal service functioned during the war.

Alexander Theodor Tillander passed away in 1943 and Herbert Tillander eventually took over the family business. In 1943 he also became the Crown Jeweller to the King of Sweden.

Herbert Tillander's numerous articles were widely published in trade journals and he was an excellent presenter being fluent in Swedish, Russian, French, German, English and Finnish. He organized the first FGA gemmologist courses in Finland in 1959 and founded the Gemmological Association of Finland in 1960. Herbert Tillander is best known for his major contribution to the creation of Scandinavian

Herbert Tillander

Diamond Nomenclature (Scan.D.N), an internationally recognized diamond grading system. He devoted a great part of his life to the study of the evolution of diamonds in jewellery. His passion and inspiration was researching diamond, and as a result of his lifelong studies, he published the book *Diamond Cuts in Historic Jewellery 1381-1910* in 1995.

Herbert Tillander received many honours and awards, including being made an Honorary Associate of the Worshipful Company of Goldsmiths in London, and an Honorary Life member of the Gemmological Association of Great Britain.

During his long career, spanning 76 years, Herbert Tillander visited some world famous treasuries as an invited gemmologist and had the opportunity to study some of the world's best-known diamonds such as the two Sancys, Regent, Dresden Green, Tiffany and the Hope. He also had unique access to some of the European dynasties, being granted the privilege to examine their great jewels, often free of their settings, and to study their documentation.

Herbert Tillander was a father, gemmologist, goldsmith, businessman and jeweller of the third generation. He experienced things that most ordinary people can only read about in books and see in the movies.

He was a great personality, very charismatic and had a great sense of humour. He was the perfect Old World Gentleman. He always raised his hat when meeting somebody. Ladies would be greeted with a perfectly placed kiss on the hand. Herbert Tillander was a great entertainer and a storyteller. Listening to him made us 'youngsters' wish we had been born 50 years earlier.

Sailing was a traditional hobby in the Tillander family. Herbert Tillander sailed all his life, first with his father, then with his two brothers and later with his wife and his own family. The gorgeous Archipelago of the Baltic Sea was the perfect environment for the experienced sailor.

Herbert Tillander and his wife Dolly, the love of his life, had two children, five grandchildren and ten great grandchildren. Herbert Tillander's daughter, Dr Ulla Tillander-Godenhielm PhD, continues the Tillander family tradition in the fourth generation; her doctoral dissertation was 'Russian Imperial Award System' in the field of art history in October 2005.

Herbert Tillander will be sadly missed, but never forgotten by his family, friends and the gemmological world. ❑

Leeni A. Vilpas

Precious Statements

ELENI BIDE reports on an SJH visit to the recent exhibition at Goldsmiths' Hall

On Wednesday 31 May members of the Society of Jewellery Historians combined with the Silver Society for a private evening viewing of Precious Statements, an exhibition of the work of John Donald and Malcolm Appleby. These distinguished craftsmen have both gained an international reputation for their silver and jewellery. To allow visitors to appreciate the development of their work they each displayed a different genre, with John Donald's glittering jewellery filling the downstairs cabinets and Appleby's intricately engraved silver housed above in an atmospheric hessian-lined installation.

Dr Beatriz Chadour-Sampson gave a perceptive introductory talk on the work of John Donald, who was amongst the1960s' most radical artist-jewellers and has only recently closed his shop after half a century in the business. He was one of the first to use uncut crystals in jewellery, often combining them with gold geometric shapes designed to echo their natural form. Sadly John Donald could not be present, but Malcolm Appleby's unique style of engraving was explained by the man himself, who regaled his audience with a characteristically rumbustious account of his career.
He described the process of engraving as a 'performance', before adding that the key to his success lay in "... over the years, refining the good and weeding out the incredibly awful." The exhibition proved that the process has worked exceptionally well. Appleby's legendary jumper, a lifelong collage of multi-coloured darning, was shown in its own vitrine nearby.

About 60 people attended, evenly split between the two Societies, and cordial contacts were made between members of each. ❑

Court wine cup by Malcolm Appleby, 1987, engraved with iconography relating to the patron's family and interests. Photo The Goldsmiths' Company.

Gold tube brooch by John Donald, 1965, set with amethyst and turquoise. Photo The Goldsmiths' Company.

SJH Meetings

Unless otherwise stated, all lectures are held at the Society of Antiquaries, Burlington House, London W1, and start at 6:00 p.m. sharp. Lectures are followed by an informal reception with wine. Meetings are open only to SJH members and their guests. A nominal charge is made for wine to comply with our charity status.

Thursday 14 September
A private visit to the State Rooms of Buckingham Palace to view the 80th Birthday Exhibition of Her Majesty's evening dresses and personal jewellery. FULLY BOOKED.

Tuesday 26 September
WALTRAUD GANGULY
Highlights of Indian Ear Ornaments, their Historical and Mythological Background
Dr Ganguly will examine the significance of the many traditional jewellery forms worn by Indian men and women, and their roots in the history, religion and mythology of the people.

Tuesday 24 October
DAVID MITCHELL
The jewellery trade in Restoration London
An examination from written sources of the jewellery trade in London during the second half of the seventeenth century. This will include innovations in design and manufacture, the roles of London goldsmith-bankers, and French goldsmiths and gem cutters residing in the City, together with the impact of the burgeoning diamond trade through Fort St George, India.

Tuesday 28 November
MARC BASCOU
A collection of rings bequeathed in 1906 by Baron Arthur de Rothschild
A little-known bequest by Baron Arthur de Rothschild to the Musée de Cluny in Paris in 1906, consisting of rings mainly from the eighteenth century, but not on display for a considerable time. Marc Bascou was formerly a curator of the jewellery collections at the Musée des Arts Décoratifs in Paris.

For those requiring further information on SJH events, contact details for the Society of Jewellery Historians are given on p.58.

Members' meetings

Gem-A Conference
Sunday 5 November 2006
Renaissance London Heathrow Hotel.
Further details given on p.78.

London

Wednesday 11 October
CLARE PHILLIPS
American Glamour: 150 years of Tiffany Jewellery
Talk and sandwich lunch followed by an optional group visit to the Tiffany exhibition.

Midlands Branch

Friday meetings will be held at the Earth Sciences Building, University of Birmingham, Edgbaston. For information contact Paul Phillips on 02476 758940 email pp.bscfgadga@ntlworld.com.

Friday 29 September
KEITH BAKER
Arts and Crafts Jewellery

Friday 27 October
PROFESSOR DR HENRY HÄNNI
Gemstones A-Z

North East Branch

For information call Mark Houghton on 01904 639761 email Mark at markhoughton@hotmail.co.uk or Sara North email Sara_e_north@hotmail.com

Wednesday 1 November
BRIAN JACKSON
Gem collecting in Russia

North West Branch

Meetings will be held at YHA Liverpool International, Wapping, Liverpool L1 8EE. For further details contact Deanna Brady on 0151 648 4266 or Ray Rimmer email rrrr001c8559@blueyonder.co.uk.

Wednesday 20 September
PROFESSOR ALAN COLLINS
Colour enhancement of diamond and how it may be detected

Wednesday 18 October
DOUG MORGAN
Some gemmological and lapidary diversions

Scottish Branch

For information call Catriona McInnes on 0131 667 2199, e-mail scotgem@blueyonder.co.uk
website www.scotgem.demon.co.uk

Tuesday 12 September
NIGEL ISRAEL
A history of gemmology through the literature

Tuesday 24 October
MARTIN VAINER
All the colours of diamond

South East Branch

For information contact Peter Wates at peter.wates@dsl.pipex.com.

Sunday 29 October
Jem Jumble

South West Branch

For information contact Richard Slater on 01635 553572 email rslater@dnfa.com

Sunday 8 October
DOUG GARROD
The colours of gemstones and how we see them

Gem Discovery Club

The Gem Club meets every Tuesday evening when we examine the widest possible variety of stones. Once a month Club members have the opportunity to examine items from the collections of gem and mineral specialists. Short introductory talks are followed by hands-on sessions under the guidance of the guest specialist.

Tuesday 5 September
ROSAMOND CLAYTON
Jade

Hong Kong Dinner and Presentation of Awards

Sunday 17 September
The Salisbury, Tsimshatsui, Kowloon

We are delighted to announce that this year, for the first time, a special event is being held for Gem-A members and students in East Asia.

A buffet dinner will be followed by the presentation of certificates and diplomas gained in the 2006 Gem-A examinations. This will be an ideal opportunity for members and students to meet, and for old friends to get together.

The event is planned to coincide with the Hong Kong Jewellery and Watch Fair to be held from 19 to 23 September at the Hong Kong Convention and Exhibition Centre. Gem-A will again be exhibiting at booth 2M49, so if you are visiting the Fair do come along to meet us.

Tickets for the Dinner and Presentation are £30.00 or £27.00 for members, students and their guests. Alternatively you may book a table of ten for £255.00.

For further information and a booking form visit our website at www.gem-a.info/information/noticeBoard.cfm or contact Lorne Stather on +44 (0)20 7404 3334 email lorne@gem-a.info.

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