

Gems & Jewellery

May 2006 Vol. 15 No.2



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

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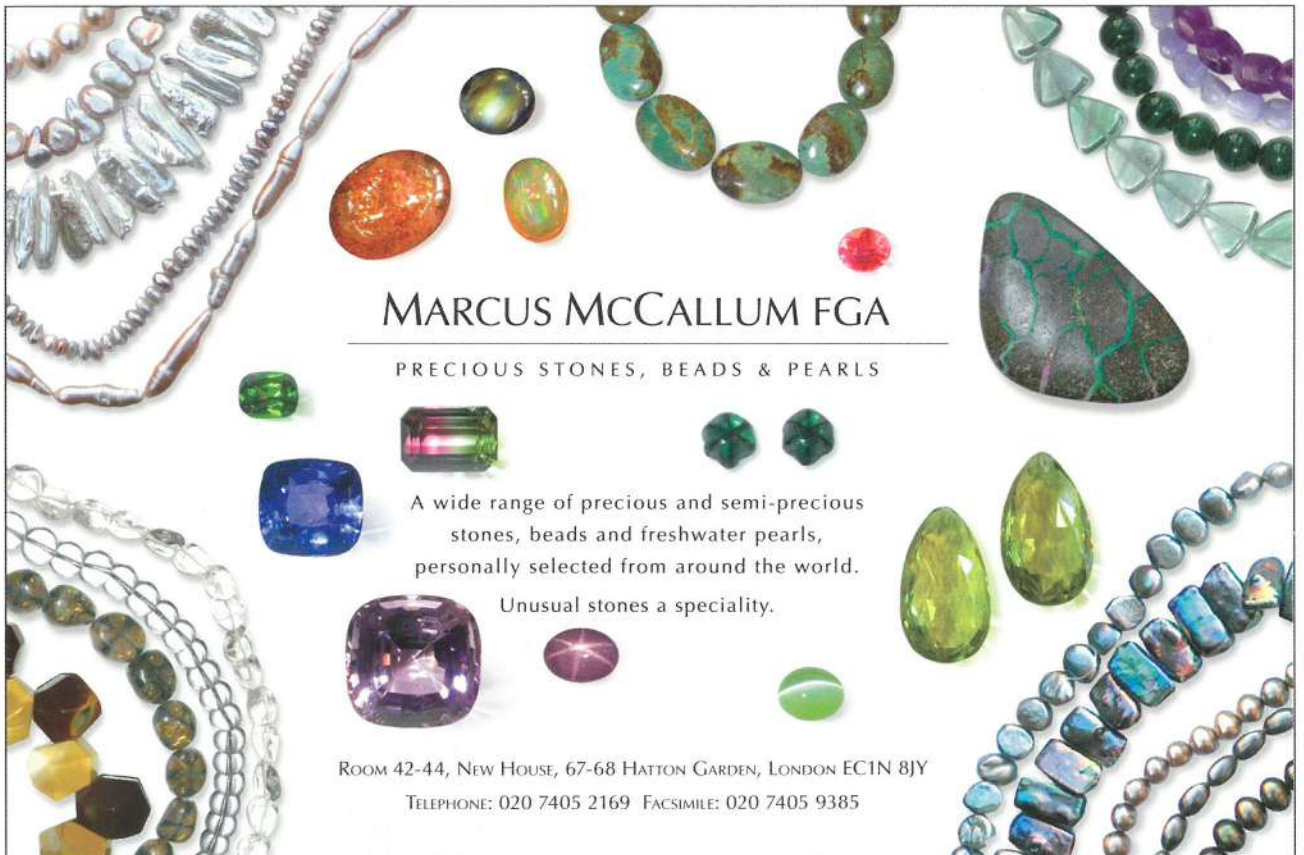
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Gem research

The art of gemmology – whether we are talking about researchers, instructors or a gemmological association – lies not simply in the lofty pinnacles of academic research, but in the ability to make such research accessible and relevant to those to whom it should be relevant and accessible. The publication of research that looks good on a scientist's CV, should also feed down to help those with a less-scientific connection with gems advance theirs. It is all about education and the transfer of knowledge.

The importance of this to Gem-A has been stressed very recently in several ways. First of all a year-long process – one might call it navel-gazing – to create a strategy and sustainable long-term plan for Gem-A has confirmed that gemmological education is our primary function. An accompanying consideration of our *Journal of Gemmology*, including feedback solicited from a cross-section of members, has confirmed that it is an important and very highly regarded international academic journal. But the *Journal* can only be of direct value to a larger proportion of our members if we can also make the research and information within its pages relevant and accessible.

And then there has been the recent Scottish Conference (see report on 48). It was noteworthy that the specialist researchers Karl Schmetzer and Mark Newton, who described their research into such erudite things as detecting beryllium treatment of corundum based on crystal morphology and the nature of lattice defects in diamonds, both explained how the treatments and synthetics they described, once characterized and understood, could often be detected with the most basic of gemmological equipment. Complex information was made relevant and useful.

And that is exactly where Gem-A fits in. Over the coming years we will continue to disseminate the results of gemmological research and, just as importantly, step up the ways in which we make that information relevant and accessible to all of you – members and students alike.

Jack Ogden
Chief Executive Officer, Gemmological Association

PUBLISHED BY
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DESIGN & PRODUCTION
Harley Marketing Communications, UK
Copyright 2006 ISSN 1746-8043
For mediapack and advertising rates contact
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Gems&Jewellery

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Brooch by G Paulding
Farnham, 1899. Gold,
platinum, enamel, Montana
sapphires, diamonds and
American fresh-water pearls.
Photo by Tiffany & Co.
See Jewellery, p.45.



Golden orange sapphire
checked for beryllium
treatment. Photo Grenville
Millington. See Hands-on
Gemmology, p.36.



Garnet crystals in schist.
See Gem-A Branch News,
p.49.

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The Society of Jewellery Historians was formed in 1977 with the aim of stimulating the growing international interest in jewellery of all ages and cultures by publishing new research and bringing together those seriously interested in the subject, whether in a professional or private capacity. The membership includes archaeologists, museum specialists, collectors, art historians, dealers, gemmologists, practising jewellers and designers, scientists and restorers, all united by their enthusiasm for the subject.

The Society holds eight evening lectures a year at the prestigious apartments of the Society of Antiquaries of London, as well as occasional symposia. The lectures cover all periods from ancient to modern, and a living jeweller is normally included each year. Refreshments are served after lectures, and this provides an opportunity for members to meet.

Jewellery Studies is published in colour on an occasional basis, and contains full length articles, book reviews and other information. Members also, of course, receive *Gems & Jewellery* quarterly. The current maximum annual subscription is twenty eight pounds.

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Opinion

How do treatments affect prices?

A recent question on MailTalk (Gem-A's email-based forum for communication between members) queried the effect of gemstone treatments on prices. Peter Grumitt, a gem dealer based in Surrey, responded with information based on his own experience. He stressed that prices are constantly changing, so it is not possible to give a fixed percentage on the difference between a treated and non-treated gemstone.

With Peter's permission, here is an edited version of his response:

The subject of ruby and sapphire pricing is very complex indeed and has been made even more so by the arrival of various new treatments. Probably the biggest recent effect on prices has been the beryllium treatment, which seems to have become more acceptable with some colours than others. The price of Be-treated stones was quite high when they first hit the market in 2002, but when it was discovered that the stones had been treated with beryllium additives the price crashed to a few dollars per carat. Today the price of these stones in some colours has recovered; bright, clean, Be-treated Songea orange/red corundums have climbed back to the prices they were in 2002 whereas yellow sapphires remain relatively cheap.

On a visit in March to Thailand looking mostly for Mogok stones, I discovered that the price of both treated and untreated stones were approximately 30% higher than they were on my previous visit just before Christmas. I was told that this was due to increased demand and lower production. I found that an untreated Mogok ruby is now roughly double the price of a comparable treated Mong Hsu ruby, with a treated Mogok ruby costing roughly 30% higher than a treated Mong Hsu ruby. Madagascan rubies are less expensive than Mong Hsu stones, but they tend to be a bit dark for my market so I don't buy them.

I was also buying untreated blue sapphires in March and again the price had climbed

from my previous visit, especially for Burmese stones. Sri Lankan sapphires tend to be 50-80% more for untreated compared to treated and the same goes for Madagascan blue sapphires. Whilst in Thailand there were reports of relatively new treatments being performed on blue sapphires, which caused jitters in the market. The first is a cobalt/magnesium/boron (and possibly beryllium) process, which is producing an almost electric blue colour. The trade associations in Chantaburi have placed a ban on the treatment and sale of these stones. Despite much effort, I was unable to purchase any of these sapphires even for research purposes. I was only able to find one dealer who was prepared to sell them but he was asking way too much money.



Crucible containing heat-treated sapphires using the traditional methods.

There are also some blue sapphires which recently have tested positive for beryllium-treatment. This has caused more jitters in the market, and the trade associations have again tried to ban the treatment and sale of these stones. Whether or not the bans are effective remains to be seen. What I do expect is that these treatments will affect the prices of both treated and untreated blue sapphires.

Then you have your 'pao mai' or lead glass fracture-filled rubies. These stones

have found their place in the market and prices range from a few dollars per carat upwards. Again, I do not buy these stones so I only have a vague idea of the pricing structure. I know they have increased in price over the last couple of years and again this is because there is demand for them – mostly in India and China. There used to be some huge stones up to 50 carats in size a year or so ago, but the biggest pieces I have seen recently have been no more than 15 carats.

The bottom line is that the prices of rubies and sapphires are affected by many different factors, which are constantly changing. It is the law of supply and demand. As always, the end price is mostly determined by one's skill at haggling.

Harry Levy, editor of this Around the Trade section comments: "There are as yet no widely available pricing guides or even universal colour descriptions for coloured gemstones and so the gem dealer is at a disadvantage compared to a diamond dealer who has access to relatively consistent grading descriptions and price lists. Peter is certainly right in saying that price can reflect buying ('haggling') skills as much as anything else, and that the market price of a gem will only reflect a new treatment once the market is aware that such a treatment exists. Even 'traditional' treatments raise problems. It is worth reminding readers that not all stone dealers consider that heating corundum is treatment – so that the description 'untreated' accompanying a ruby or sapphire might not mean exactly what you expect." □

MailTalk

To register for Gem-A MailTalk go to www.gem-a.info/information/mailTalk.htm or email contact Jamie Gould at jamie.gould@gem-a.info

Basel 2006

Historically inspired designs at 'The world's leading Watch and Jewellery show'

The BaselWorld 2006 Watch and Jewellery Show was held in Basel, Switzerland, from 30 March to 6 April. This year there were record visitor numbers, up 5% on 2005 to a total of 94,200.

BaselWorld is billed as 'The world's leading Watch and Jewellery Show' and, as a showcase for the latest designs, a visit provides the opportunity to ponder on the current trends and the state of industry.

Basel is an extraordinary jewellery show. Spread over six exhibition halls, most with several floors, it presents a vast array of jewellery and watches to international jewellers. The jewellery ranges from antique to highly contemporary and includes pieces set with some truly amazing gemstones. For those used to the security and often frustrations of registering to visit most jewellery trade shows around the world, the open-door policy of Basel can be a surprise. Anyone

who pays the entrance fee (CHF45 this year) can enter,



1
Diamond set necklace from Ericksen Beamon's Premier Collection.

regardless of whether they have a professional involvement in the gem and jewellery industry or not.

So what about defining trends? It is hard to appreciate art styles when you are in the middle of them – time-wise, I mean. Really only hindsight works. We can't necessarily recognize now the examples of today's jewellery that future generations will consider ground breaking or classic examples. In any case, is there a dominant jewellery style now? One by which this decade will be remembered and recognized? Fifty years from now, will early twenty-first century jewellery have a distinctive flavour like, say, art nouveau and art deco in the last century? Perhaps conformity is increasingly the antithesis of jewellery design. Certainly when exposed to the full range of styles in a show the size of Basel, we get the sense that designers around the world have ransacked influences from the entire world's jewellery heritage in a desperate attempt to find some 'unique selling point' and a brand image.

Some basic trends are clear, though. There is ample evidence of a revival of more feminine – whatever that means today – diamond-set jewellery echoing the elegance of Belle Epoque and early twentieth-century 'Cartier' styles. We see sensuous strands of small diamonds like glittering waterfalls and floral tracery and fleurs de lys. But we can't simply see this as an artistic trend. Such jewellery with its delicacy and plethora of small diamonds has only recently become commercially viable again. Low labour costs, rapidly improving work quality and hi-tech production methods have interacted in various ways. Very low labour costs in some developing countries mean that small diamonds – sometimes little more than what some Americans dismiss as 'frozen spit' – can be accurately cut and cheaply



3
Art nouveau style enamelled brooch by Masiera.

set, whilst even cheap labour can be dispensed with using modern technology. This includes all types of computer-aided design and wax-production and, more and more, casting jewellery with diamonds *in situ* in the wax models (see page 31).

Among the proponents of the revised Belle Epoque and late Victorian forms is Ericksen Beamon with their Premier Collection (1). Ericksen Beamon, based in London, have stockists worldwide.

From Brazilian jewellers Brumani also comes a range that blends similar echoes of late nineteenth- and early twentieth-century forms with hints of Renaissance and Moghul forms (2).



2
Ruby and diamond Hera earrings by Brumani.

4



Black ebony and pink opal ring by Scheffel-Schmuck.

Among the many companies offering jewellery designs harkening back to art nouveau styles, it is sobering to encounter art nouveau jewellery still made by a company that was doing it a century ago (3). This is Masriera, based in Barcelona, a company founded in 1839. Lluís Masriera was one of the great designers of art nouveau jewellery – and the company still produces the jewellery from the original dies and based on the surviving design notebooks. (www.masriera.com). They are particularly proud of their enamelling.

Historical sources of inspiration don't stop with art nouveau. There is jewellery that reminds us of the art deco in its colour combinations and shapes. What has changed is the choice of materials. For example, we find diamonds, black ebony and Peruvian pink opal in the ring shown here from Scheffel-Schmuck of Munich (4). Eighty odd years ago, that would have been black onyx and coral. The use of black with pink and other pastel colours can also be seen in the jewellery by Ninetto Terzano of Valenza, such as the rings shown here from their Arlecchino collection (5) (www.ninettoterzano.it). These are in white gold set with diamonds and a variety of coloured gemstones. This move to pastel colours is taken to another level by Enrico Capra's backing of transparent gems, such as citrine, with mother-of-pearl to give a hazy, translucent glimmer (www.caprasrl.biz/home-e.htm).

A few years ago computer 3D design software and the rapid prototyping that followed on from it were fairly sparse on the ground, but now 3D design proliferates and

there were several exhibitors at Basel offering software, rapid prototyping and related products. We can even ponder on the extent to which software influences design. Indeed, we can almost date some classes of jewellery by the way in which they reflect the limits of the software available at the time they were made. As an example, the comfy, rounded forms reminiscent of some sort of 50s retro style that we have seen in recent years across all consumer products from radios to cars as well as jewellery, were made practicable by the increasing commercial availability of so-called NURBs 3D computer modelling from the mid 1990s onwards. (That's 'Non-Uniform Rational B-Splines' if you really want to know.) One of the software leaders in the field here are Rhino (www.rhinno3d.com) for which a huge variety of jewellery-related add-ons are available. Rhino also lies at the heart of the Gemvision's fully fledged jewellery design package Matrix (6) – Gemvision was one of the exhibitors at Basel (www.gemvision.com).

J.O.

The next BaselWorld will be held in Basel, Switzerland, from 12 to 19 April 2007 (www.baselworld.com). □

Diamond and pastel-coloured gemstone set rings from the Arlecchino collection of Ninetto Terzano.



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JewelResearch in the Gem-A Lab

Casting aseparations

An appraiser, or a dealer who buys and sells antique and period jewellery, needs expertise in recognizing the characteristics of modern manufacture or access to such expertise. Modern copies of what the Americans call 'Estate Jewellery' are proliferating and it is vital to be able to tell new from old. Today there are all manner of techniques at a laboratory's disposal to authenticate jewels – from trace element analysis to detailed microscopic study – but as with gemmology, a great deal can still be achieved with a 10x lens and experience.

A good example of this can be seen with a platinum and diamond line bracelet that recently came under our scrutiny. It had passed through an auction house described as dating from the 1930s. The pristine condition and the lack of the delicacy expected in a 1930s piece raised doubts; as they should, but such subjective reactions need to be confirmed by more objective examination. Sure enough, when the piece was examined under magnification it could be seen that each of the box-like links was indistinguishable



1 Three identical links from a cast platinum 1930s bracelet.

from the next – they were identical little castings. Three of the links are shown in side view in (1) above. The scroll decoration that would have been hand-engraved in the 1930s, is repeated from link to link. And not only in overall form. Each miniscule detail of the casting is replicated – such as the minute protrusions in the centre of each red circle. This is a type of high-definition, serial casting of identical components, using a casting procedure first introduced in the mid-1930s, but which found minimal use for gold and silver until post World War II, and far more recent employment for platinum jewellery components.

magnification, it was clear that the settings had been cast with the diamonds in place (2). The characteristics that reveal it to be a modern production, where the diamonds were set in the wax prior to casting, are not easy to explain in print, but the whole topography of the claws and setting edges, as well as the surface characteristics, reveal its mode of production. This tiara, as noted, has a silver front and a gold backing. This bi-metal construction might potentially complicate the casting process. We have an idea of the ingenious way in which this was accomplished; research is in progress.



Detail of rose-diamonds set in situ in a cast tiara set in silver on a gold backing.

At least with the bracelet the diamonds are hand set. The now prevalent practice of casting jewellery with the stones *in situ* (as noted in Stone Scoop on page 53) is increasingly met with in jewellery that is antique in style and which is sometimes mistaken for being genuinely old. An example of this we encountered recently was a rose diamond tiara set in silver with a gold backing. When examined under

Of course, there is nothing intrinsically wrong with casting jewellery, with or without stones *in situ*. But problems arise, as they do with treated or imitation gems, if purchasers are misled about what they are acquiring. If through ignorance or indifference there is a discrepancy between what customers think they are paying for and what they get, a variety of ethical if not legal factors arise. In some ways the situation can be even more complex with jewellery than with gemstone disclosure – and the legal aspects far more cut and dried. First of all there is question of date – is a piece really antique or period as described? Age can make a significant impact on value with jewellery, but is seldom an issue in gemstone disclosure. Then in some countries there is stringent marking legislation. In the UK, for example, a modern copy of a period piece should be hallmarked before being offered for sale. Few dealers or auctioneers would wish to run foul of UK Hallmarking Laws. □

J.O.

An alternative view of the Tucson Gem Fairs

MAGGIE CAMPBELL PEDERSEN looks at organics on offer at this year's Fair



Mammoth skeleton and tusks.

Most people visit the gem fairs in Tucson, Arizona, to see the amazing selections of jewellery and gemstones, or the mind-blowing quantities of rough material, rocks and huge geodes. But there is much more to these fairs than just the minerals.

There is, for example, an area devoted to sellers of healing crystals, herbs, tarot cards and such like. There are quantities of carved stone bowls and dishes, and modern shaman sculptures. And, for an 'organic nut' like myself, there are all the usual things such as shells, corals, ambers, fossilised ivories and pearls, plus lots of less usual things, from Georgian jet to 'oosik' (fossilized walrus baculum).

The fairs are spread over the whole city and it is impossible to visit them all, so when searching for the unusual there is a certain amount of pot-luck involved in finding them. And there can be delightful surprises, such as finding a tent full of mammoth tusks and carvings in the garden of a motel. At the back of the tent was a mammoth skeleton (1).

Another lucky find was a large piece of Baltic amber, exhibited in a glass display case in a motel room. The piece has been cut into seven sections; each section had been treated in a different way (not including reconstitution) and the piece re-assembled, thus showing very clearly the different effects of treatments that are possible on one piece of amber (2).

Except for a few carvings, I failed to find amber from the Dominican Republic, but one or two people were selling Mexican amber. It is very beautiful material and can be extremely clear. Much of it has a glorious fluorescence in sunlight (3).

Sadly, we know that a large percentage of amber from the Baltic region is now routinely ground down and reconstituted due to the mining methods used and to ease production. Worse, it is usually sold as natural amber as many of the countries exporting it do not follow CIBJO's advice on disclosure. Inevitably I found some being sold as natural amber in Tucson, and at a very high price.



Baltic amber slice in seven sections, showing the effects of different treatments:
 a. natural
 b. ground and polished
 c. clarified in autoclave
 d. clarified in autoclave and then heated and cooled fast
 e. clarified with a gas and then backed with a black material
 f. heated to more than 200°C
 g. clarified in an autoclave and heated to darken the surface.

This material is at least made of amber, albeit reconstructed. I also found yellow plastic beads being sold as amber and some red ones sold as coral, with prices starting at \$2 for each small bead. There was also plenty of dyed corals and pearls – not all of them declared as having been treated.



Mexican amber from the Chiapas region.



Scorpion in plastic imitating amber. Length of stone 12 cm.

One glorious fake, and sold as such, was a (real) scorpion in plastic imitating amber (4). Elsewhere I found 'amber' containing large frogs. The animals had been placed on a base of Baltic amber and capped with plastic. Unfortunately the exorbitant price



Parts of small nautilus shells, made into bracelets.

being asked for the frogs prevented me from buying one for my collection and no amount of haggling could get it down to a reasonable level.

I was pleased that I saw nothing on sale that is actually banned under the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) agreements. I saw only one stall selling blue coral beads (*Heliopora coerulea*), which is on CITES Appendix II (which means that it should only be traded under very strict control). The stallholder knew nothing of these regulations, nor where the coral came from, and was selling the beads as 'Blue Ridge Coral' – a name that I have not come across before.



Prairie dog. Although the pelts may have been used, it is unlikely that any other part of this endearing little animal has been turned into jewellery.

However, I was saddened to see small nautilus shells – or parts of them – being used in abundance in inexpensive silver jewellery. Nautilus have not yet been included in the CITES lists due to lack of data, but it is known that they are very slow growing and it is feared that they will soon be under threat of extinction (5).

Somewhat surprisingly, I found one stall selling elephant ivory. It seems that it was not illegal as all the ivory was old, consisting of off-cuts and unused piano key veneer. It was pre-trade-ban material, had come from an old factory in the UK, and had been imported to the US with all the appropriate paperwork and licences.

The interpretation of the laws governing the trade bans varies slightly from country to country. In the US the laws vary from state to state. Thus, even old 'legal' elephant ivory such as these off-cuts cannot be re-worked for re-sale in England. It is my understanding that this may be permitted in certain states in the US, and that such off-cuts could therefore be used.

Apart from perusing all the goods on offer at Tucson, the gem fairs offer a golden opportunity for renewing old acquaintances and for making new contacts. It is a mine of expert knowledge and information, just waiting to be gathered. And when it all gets too overwhelming due to its sheer size, there are the beautiful surrounding desert and the cacti-covered hills to explore (6).

The Plastics Historical Society

To the layman plastics are often regarded as an inferior material, not really worthy of much attention, while in truth they are today an essential part of our everyday life. Everything from parts for cars and aeroplanes, building materials and artificial heart valves, to sports equipment, kitchen utensils and CDs, are made of some form of these amazing materials.

The gemmologist or jeweller comes across plastics in their early forms, possibly as vulcanite imitating jet or cellulose nitrate imitating coral. Many modern amber imitations are made from plastics, or by mixing amber powder with synthetic polymers. And one or two materials such as horn and tortoiseshell may be termed 'natural plastics' because of their physical properties.

When trying to obtain information on these materials it can seem difficult to find knowledgeable people, but The Plastics Historical Society fills the gap. The society was founded in 1986 by a group of experts in the field of plastics, with the aim of preserving the history of early plastics, and as a base for exchanging information and knowledge. Today it counts amongst its members experts from the plastics industry, museum curators and conservators, art historians, collectors and enthusiasts.

The PHS arranges expeditions to places of interest and holds regular meetings, sometimes in conjunction with the Worshipful Company of Horners. A journal is published twice annually and a newsletter comes out six times a year. Its website www.plastiquarian.com has much useful information and is well worth browsing. □

Maggie Campbell Pedersen

'Bakelite' bangles – and correct terminology

In the December 2005 issue of *Gems & Jewellery* I wrote about 'Bakelite' bangles. I have since been corrected on two points in the article. I mentioned that the early 'Bakelite' bangles were never carved by hand, but that only the moulds were carved. This was incorrect. The bangles were indeed often hand finished and the material could be carved by hand.

However, I was correct in stating that 'Bakelite' was never carved. These old bangles and other jewellery made from the same resin are popularly called 'Bakelite' items, but they are made from 'cast phenolic' resin – a polymer closely related to, but not the same as, Bakelite.

Incorrect terminology is often used by the jewellery trade and collectors. Many items, especially amongst the early plastics, are inappropriately named. A well-known example of this is 'gutta percha' which actually refers to just one type of natural rubber but is generically, and incorrectly, used to describe many different black materials – especially in the United States.



Modern cast phenolic bangles.

True Bakelite is a phenol formaldehyde, patented by Leo Baekeland in 1907. Cast phenolic was developed later in Austria, and uses a higher ratio of formaldehyde in the mixture. More importantly, the manufacturing processes are different. Bakelite must be compression moulded, using heat and high pressure. Cast phenolic items are cast in moulds at lower temperature, and require no pressure.

The early bangles that are popular collectors' items are therefore made of *cast phenolic* and, though moulded in hand carved forms, are frequently also hand finished.

Although the name 'Bakelite' is used so freely today (there are whole books about 'Bakelite' jewellery), perhaps it would be a good idea to try to use the correct terms for the various plastics, just as we do with organics or minerals, so that we know exactly what we are dealing with? This would eliminate confusion and also act as a safeguard against fraud and imitations. □

Maggie Campbell Pedersen

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Is it or isn't it?

GRENVILLE MILLINGTON checks a brightly-coloured orange sapphire and a distinctly scarlet ruby for beryllium treatment

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

A golden orange sapphire and a scarlet ruby were brought in for testing a few days apart by different dealers, but the question was similar in both cases: do you think the colour is due to beryllium treatment? The sapphire was a good golden colour with orangey overtones across the centre. The ruby was almost vivid in tone, and what could be described as bright scarlet (that is red but on the orange side). The cut and finish on both stones were excellent, and both presented a quite splendid appearance.



The orangey-yellow sapphire, 3.03 ct, and the deeply-cut pavilion (1) and showing orange centre reflections (2).

Golden orange sapphire

The sapphire weighed 3.03 ct and measured 8.3 x 6.9 mm; it was rather deeply cut (1,2). The RIs were typical of corundum and inside, under the microscope, dot-like silk was evident, suggesting that the stone had been heat treated. Everything was right for natural sapphire, so the next critical test was to immerse the stone. Immersion showed that both areas around the two ends were absolutely colourless, with a large yellow central area. There was no chance, therefore, that this stone had been subject to beryllium treatment. Not all beryllium-treated stones now show characteristic yellowish to orange outer zones when immersed (see the summary of Karl Schmetzer's talk at the recent Scottish Branch Conference in Perth on page 48) but the yellow central zone seen here would be inconsistent with such treatment. The stone immersed in methylene iodide from three different angles is shown in (3), (4) and (5), which also show the streaky parallel zoning of the yellow area. For comparison, (6) and (7) show the same stone immersed in toluene (RI 1.49), which still clearly shows the colourless parts of the sapphire. The orangey central tones of the face-up sapphire were due to the depth of the stone, which allowed internal cross-reflections to give an increased richness of colour.

The sapphire immersed in toluene (RI 1.49).

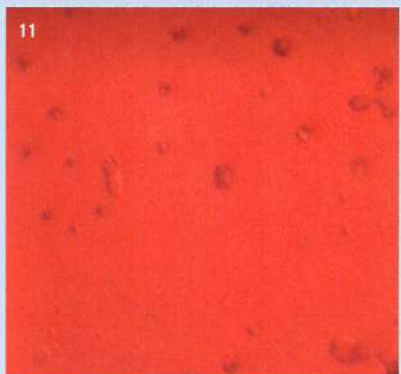


Scarlet ruby

The ruby was a pear-shaped stone of brilliant scarlet (8), so when I saw it on the counter in its clear plastic bag I at once thought of natural red spinel. It weighed 2.04 ct and measured 8.7 x 6.7 mm, of excellent cut and proportion. Intriguingly, it was accompanied by a tiny, laminated report stating that it was 'natural ruby', 'orangey red' and the request 'For

The sapphire immersed in methylene iodide showing three different positions.





Altered crystal (9, 10) and small two-phase inclusions (11).

enhancement/treatment details of the described item, please contact below: There then followed a Japanese gem laboratory name and telephone number.

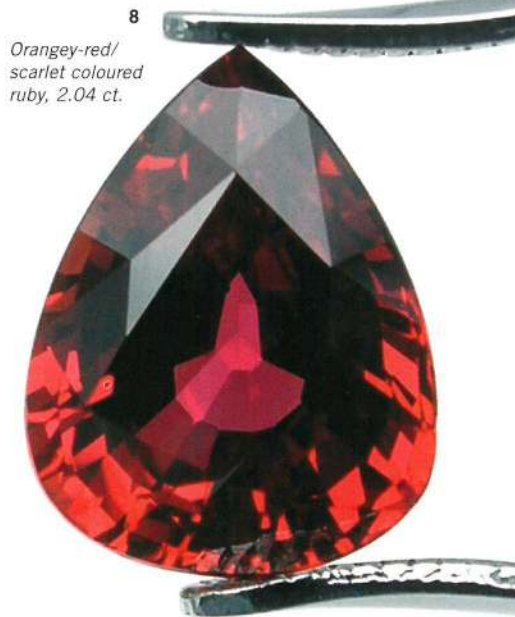
The RIs were typical of corundum, and the stone had a strong ruby spectrum. The microscope showed the type of veil inclusion that is seen in various rubies, especially heat-treated ones. However, associated with one of the veils was a crystal inclusion (9, 10) that had a distinctive zoning pattern. Photographs showing similar features appear in an article on beryllium diffusion of sapphire and ruby by Emmett *et al.* (2003, p.118), who described the crystals as zircon, with altered appearance following very high-temperature treatment (such as in beryllium diffusion treatment). There were also very small two-phase inclusions (11).

Immersion in methylene iodide showed a bluish-pink central core with broad orange perimeter areas, following the shape of the stone (12). The stone was turned to three-quarter view to confirm that the orange area kept to the stone's outer limits (13). Immersion in toluene (14) and water (15) still showed the orange border quite well, and these immersion tests proved very positive and satisfying.

Conclusion

Both the bright yellow-orange sapphire and the scarlet ruby showed colours that can be seen in natural stones (usually of African origin and albeit probably heat treated) and also in beryllium diffused corundum. It is not possible to distinguish one from the other on colour appearance alone. Immersion of the stones in methylene iodide proved conclusive in both of these examples, indicating that the sapphire was not beryllium treated, while the ruby was.

It was interesting to see that immersion in lower RI liquids still showed the colour differences although not quite so clearly. Most of the easily obtainable oils, such as baby oil, will have a refractive index just under that of toluene used here, so could be useful (and cheaper) for those without the 'proper' liquid. (Almond oil and clove oil often have a brownish colour so probably are not as useful for the beryllium diffusion colour.) □

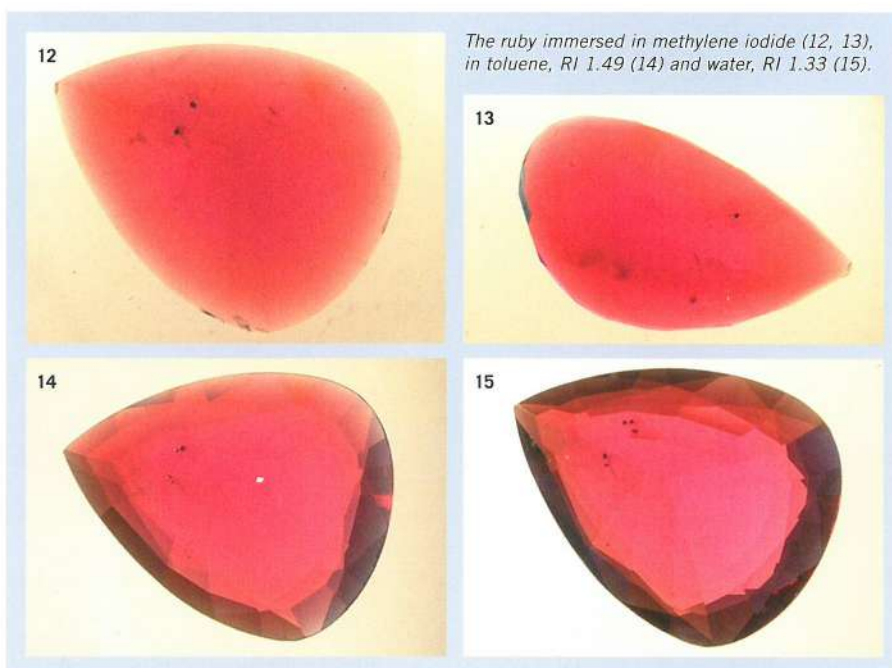


8
Orangey-red/
scarlet coloured
ruby, 2.04 ct.

Further reading

J.L. Emmett, K. Scarratt, S.F. McClure, T. Moses, T.R. Douthit, R.W. Hughes, S. Novak, J.E. Shigley, Wuyi Wang, O. Bordelon and R.E. Kane, 2003. Beryllium diffusion of ruby and sapphire. *Gems & Gemology*, **39**(2), 84-135

K.Schmetzer and D. Schwarz, 2005. A microscopy-based screening system to identify natural and treated sapphires in the yellow to reddish-orange colour range. *The Journal of Gemmology*, **29**(7/8), 407-49.



The ruby immersed in methylene iodide (12, 13), in toluene, RI 1.49 (14) and water, RI 1.33 (15).

Fake 'ruby' and 'emerald' crystals

Following Ian Mercer's description of fake rough* GRENVILLE MILLINGTON recalls similar material he has encountered

I remember seeing fake ruby and emerald crystals in the early 1990s, possibly more green ones than red. Then nothing until about two years ago when I was being presented with these items to test on a fairly regular basis. This time it is the red 'ruby' versions that are the most prolific.

There is no problem in identifying these items; they are either quartz crystal pieces or colourless glass pieces, coloured red. Much of the outside of the 'ruby' is then covered in very convincing rock dust and fragments, leaving just enough of the quartz/glass visible and transmitting red light (1).



Glass 'ruby' and 'emerald' crystals. The 'ruby' sample appears to have brick dust particles in the coating.

After examining a few of these, I worked out the method of production. The original fakes would have been clear quartz crystals, showing enough suitable crystal faces, especially a six-sided prism. The crystal was carefully broken into two or three pieces and the internal surfaces of the fractures coloured with waterproof felt tip pens – green for emerald, red for ruby. The pieces were then glued back into one piece. The bordering areas of the fracture joints were then coated with epoxy resin and the whole rolled around in a container of pulverised rock, possibly granite as

some of the black specks are mica, and also sand. After the resin was set, the joints were completely covered, leaving perhaps a quarter to a half of the piece to show what now appeared to be a dark red or green precious stone, just mined and smuggled out of Africa. This scam obviously worked so well that suitable quartz crystals possibly became scarce and they decided to use glass. Maybe they were unaware that red glass existed or maybe they could only obtain colourless glass, but the manufacturing process remained the same – a colourless glass piece or block, broken into two or three parts, the inside surfaces coloured by felt-tip pen and the joins covered over. Some of the exposed surfaces often have excellent conchoidal markings which actually look quite convincing. How do I know epoxy resin is used? Some of the 'crystals' have been so recently produced that the smell has not had time to clear!



Also, one of the 'emeralds' shows a well-formed glue teardrop (2). The 'emerald' is possibly the better imitation in that some of them show red under the Chelsea colour filter.

The biggest problem I have is convincing the owners of such pieces, who are adamant that these are genuine and natural, that they are indeed fake. It was as a means of aiding my defensive argument that I started to take photographs when I had the opportunity (which was not always possible as some

of the owners would not let go of such valuable crystals!). By showing future 'ruby crystal' owners photographs of other similar 'crystals' with the words 'glass' or 'fake' printed next to them, I hoped to reduce the amount of time I was spending with them waiting for the penny to drop that they had indeed been duped into purchasing worthless items.



Glass 'emerald' showing epoxy resin teardrop.

The average size of these 'ruby' crystals is about that of a golf ball, sometimes a little smaller. Although generally dark, they show brilliant red when a high intensity light or torch is shone through them. The more squarish examples often have one direction that shows up the colourless nature of the main material and bubbles in the internal glue areas will often be visible under a 10x lens. Most of the red glass examples have fluoresced blue under longwave ultraviolet and one showed reddish under LWUV and yellowy green under SWUV

I should ideally like to have one of these so that when someone turns up at the door to have their valuable ruby looked at, I can say "'Snap"! But, nobody will let me have one (for a small consideration), so at some stage I will have to make a 'crystal' myself. □

* Fake Rough, *Gems & Jewellery*, March 2006, p. 11

'Golite' and 'stoplite'

Fakes seen by DUNCAN MILLER of Claremont, South Africa

Ian Mercer's article about fake 'ruby' rough reminded me of a parcel of 'emerald' rough I was offered several years ago by a woman who claimed to have smuggled it out of Zambia at great risk. At the sight of thumb-sized crystals with fabulous colour, greed widened my eyes (1). Fortunately, caution prevailed when I noticed that some crystals had indented basal pinacoids and most had only five prism faces. They were mica-coated with vertical striations on the prism faces, so to the naive they might have been pretty convincing. I persuaded the seller to allow me to polish a window on one of them, which revealed copious internal bubbles and swirl marks. It was probably melted and cast green

coated to simulate rough garnet. These were the size of hens' eggs, with very obvious internal swirl marks seen through broken 'faces'. They had been sold to local Cape Town jewellers as garnet/ ruby rough, supposedly from Nigeria. They looked very similar to those illustrated in *Gems & Jewellery*, but were definitely glass, not quartz.

Other fake rough specimens I have seen locally are green bottle glass prisms simulating tourmaline crystals, and purple fluorite ground to points to simulate amethyst. Both are offered by informal traders in central Namibia, and sometimes find their way to street markets in South Africa. Of course, diamond



1 Samples of the 'golite' and 'emerald' roughs.

traffic light glass – 'golite'. The disappointed seller, who herself had been conned in Zambia, then gave me the parcel as specimen. The largest 'crystal' is 18 mm long.

In the past two years I have also seen large irregular globs of red glass ('stoplite' no doubt), mica-

scams involving quartz and topaz crystals, and even alum octahedra, are legendary in this part of the world. Tourists should be warned not to buy rough diamonds here anyway. Trade in rough diamonds by those without a licence is illegal and prosecution is vigorous in South Africa. □

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CZ cutting in China

Jason Williams, of G.F. Williams & Co, of Hatton Garden, talked to Gem-A Gem Discovery Club members on 4 April about the cutting of Synthetic Gemstones in Southern China. During autumn 2005 Jason had visited a synthetic cutting city in Guangxi Province, Southern China, and gathered information concerning synthetic stone cutting, pricing, handling and distribution.



Rough Grade A cubic zirconia.

Jason reported that rough cubic zirconia generally imported from America (this is still better quality than the Chinese) is in four grades, A, B, C and D. With grade A, each trimmed crystal is clear, crack- and inclusion-free, and weighs a minimum of 300 grams. The rough can be purchased in minimum quantities of 50 kilo and the price is US\$130 per kilo. Grade B is in trimmed crystals weighing between 100 and 300 grams and is also clear, crack- and inclusion-free. This is US\$110 per kilo. Grade C consists of crystals of 50

grams and up and may have cracks and inclusions. The price is US\$50 per kilo. Grade D is of 20 grams and up and is US\$20 per kilo.

To put this in context, it is worth noting that in the region the average office worker earns \$120 a month and a preform cutter \$100 to \$120 a month. This works out at about \$0.57 per hour, and even this is an increase of 100% from three years ago. In comparison similar workers in Thailand receive about US\$200 a month. The Chinese cutters work at least six eight-hour days and most do overtime whenever they can. Overtime is paid at the same rates as day work. With overtime they can work from 8 a.m. to 12 midnight (socialising seems to happen solely on Sundays) and the midnight end was only recently changed from 2 a.m. when the local Government received complaints about noise.

Free accommodation and food is provided on-site for workers and costs the factory about US\$1 per day per worker. They are given a 30 minute break for lunch which is provided in three shifts by three different chefs according to the region the workers come from. The dormitory building on site has 100 sleeping spaces and separate male and female floors.

The factories Jason visited consumed about 4 tons of rough material per month

and produced from this about 1000 kg polished stones. The waste is returned to the producer and recycled.

The rough is first sawn into strips and then into pinacoids which are ground into calibrated preforms. The pieces of CZ glow white hot as they are ground and water cooling is essential. For polishing, the stones are bonded into holders and polished using an octagon frame and platform cutter.



The CZ glows white hot as it is sawn.

An average worker may produce 300 pieces of 5 mm round per day, but actual output varies hugely according to the size, shape and cut. A yield target minimum is set for each batch of rough (e.g. 80 pieces per kg) and higher than this yield is paid as a by-piece supplement. □



Faceting the CZ.

Gem Discovery Club

Gem-A's popular Gem Discovery Club meets every Tuesday from 6:00 to 8:00 p.m. at Gem-A's headquarters in London. These hands-on evenings are run by Michael O'Donoghue who never fails to bring along specimens to intrigue and often perplex participants. 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 specialist.

For further details visits www.gem-a.info/membership/gemclub.htm or call Jamie on 0207 404 3334.

Sales at Sotheby's

JOANNA HARDY, Director of Sotheby's London Jewellery Department, reports on jewellery market trends during the last year

The last twelve months have been a very exciting period for Sotheby's jewellery auctions worldwide where the sales have continued to show buoyancy in the jewellery market. Signed pieces are going from strength to strength which is a reflection of continued appreciation in good quality craftsmanship.

One of the champions in jewellery design is undoubtedly René Lalique who during the art nouveau movement brought to the goldsmith's art an extraordinary uniqueness in design. He was constantly pushing the boundaries creating metamorphoses and transgressions between the animal and plant kingdom. To achieve the required effect he was never afraid to use new materials such as horn and iridescent glass. In June 2005 London Sotheby's sold a rare corsage ornament by René Lalique depicting pairs of dragonflies with plique-à-jour enamel wings centring an oval topaz for £84,000. Sotheby's New York in December 2005 also sold a superb collection of Lalique jewellery which again achieved record prices.



Corsage Ornament, circa 1900. René Lalique. Sold in London £84,000.

In November 2005 Sotheby's Geneva had a truly magnificent sale. Included in the sale were a highly important pair of 1926/1928 Van Cleef and Arpels emerald and diamond bracelets from the collection of Daisy Fellowes which could convert into a necklace. Movement in jewellery is very important and these bracelets were

no exception. Each were designed as an articulated flexible cuff of open work geometric design centring on six step-cut diamonds within a surround of circular, step-cut and baguette cut diamonds supporting a fringe of emerald drops mounted in platinum. These sold for a record CHF 3,380,000.

Emerald and Diamond Bracelets Van Cleef & Arpels, 1926 and 1928. From the Collection of Daisy Fellowes. Sold in Geneva CHF 3,380,000.



If that was not exciting enough there was also the sale of an impressive and highly important diamond ornament from the collection of the Russian Imperial Family dated second half of the eighteenth century which went for CHF 2,036,000 (see *Gems & Jewellery*, December 2005, p.95).

The Garland style and art deco have always been very popular with collectors and still remain so, especially if signed by one of the established jewellery houses such as Cartier, Boucheron, Van Cleef & Arpels, Lacluche and Chaumet. Diamonds continue to be a favourite and their prices have remained firm over the last year at auction with high



Diamond Ornament from the collection of the Russian Imperial Family, eighteenth century. Sold in Geneva CHF 2,036,000.

demand for good colour and clarity. But what has emerged as the up and coming styles and designers in the last year are from the later decades. We are seeing popularity returning for coloured gemstones and daring colour combinations, replacing the 'millennium' minimalist white metal diamond set jewels. Buccellati, Charles de Temple, Grima and Bulgari to name but a few continue to achieve strong prices, and stones such as peridot, rubellite, kunzite, pink sapphire and aquamarine are standing out from the crowd.

Antique jewellery in good condition is getting harder to come by and when it is offered on to the market the prices are very competitive. This is also true of natural pearls which are a rare commodity, and this is being reflected in the very strong prices that are being achieved at auction.

We have enjoyed a buoyant and successful twelve months at Sotheby's and have sold jewels that have been a privilege to work with, but more importantly it is encouraging to see the market's continued appreciation. With an exciting Magnificent Jewels sale in Geneva on 18 May and a Fine Jewellery sale in London on 29 June* we can hopefully continue to enjoy a successful year ahead. □

* Sotheby's have kindly arranged a Private Viewing of the June sale for Gem-A members on 27 June, following the AGM. See p.56 for further details.

Jewellery of The Princess Margaret

Jewellery and works of art from the collection of Her Royal Highness The Princess Margaret, Countess of Snowdon, will be sold at Christie's King Street, London, on 13 and 14 June, comprising over 800 items with estimates ranging from under £100 to over £500,000.

Princess Margaret's beauty, style and taste are legendary, but here we focus on her appreciation and knowledge of gemstones – natural and man-made – and jewellery design. This aspect was emphasized by Helen Molesworth, a specialist in Christie's Jewellery Department, speaking at the Gem-A Scottish Branch Conference on 28 April (see p.48).



Burma ruby ring. Rubies approx. 2.00, 3.30 and 1.80 ct. © Christie's, 2006

Rubies featured dominantly in the Collection. Fine Burma rubies are mounted in a pair of floral clips by Cartier and an art deco bracelet set with diamonds and calibre cut rubies. Also three important Burma rubies given to her by Queen Elizabeth The Queen Mother were later mounted as a ring personally designed by the Princess. A ruby and diamond clip given to Princess Margaret in 1948 was later converted to a brooch by the addition of a pin fitting; although no signature remained, Cartier have confirmed that the original clip was made by Cartier London. She also chose a pair of particularly pretty ruby and diamond earrings to wear for her 26th birthday portrait by Cecil Beaton.

The Princess Margaret's love of horticulture is reflected throughout the collection adding emotional significance to the floral designs in the collection, particularly marguerite and rose jewels inspired by her name, Margaret Rose. Whether an important diamond rose brooch by Cartier dating from 1938 or a simple 9 ct gold and cultured pearl daisy pin presented to commemorate

the anniversary of Saint Margaret, The Princess Margaret wore each jewel with equal affection and panache.

Demonstrating the Princess's sense of style for unique and technically ingenious creations are examples from the workshops of British 'craftsmen-jewellers' dating from the 1960s and the 1970s such as Andrew Grima and John Donald.

The Princess became very much involved in the design and creation of many of her jewels. The emphasis was on beauty, form and technical excellence rather than the intrinsic value of the components. Helen Molesworth said that Princess Margaret's introduction to John Donald in 1960 marked the beginning of a long and close professional relationship. John Donald was already involved with Pierre Gilson and his work on synthetics, and Princess Margaret soon became intrigued by man-made stones and their production, incorporating them into many designs. One example is a particularly interesting flux fusion synthetic emerald crystal group which was used to form the basis of a design for a brooch. Another example of the use of synthetics is a boxed set of jewellery set with synthetic rubies and sapphires, mounted in platinum. The fitted case containing the jewellery has a printed label inside which reads: "Given by Salford Electrical Instruments Limited" and states



John Donald brooch with synthetic emerald crystal group. © Christie's, 2006.

that the gemstones are synthetics. Helen Molesworth stressed that the Princess was aware of the nature of the stones and appreciated them as examples of early synthetics.

The collection is enhanced by important and historic pieces including an antique diamond rivièrè, c. 1900, given to the Princess by her grandmother Her Majesty Queen Mary. The collection also includes the cherished five-row art deco pearl and diamond necklace which Princess Margaret wore in many famous portraits from 1948 onwards, including



Pearl and diamond art deco necklace. Pearls graduated from 3.2 to 8.3 mm. © Christie's, 2006.

her sittings for Baron and Cecil Beaton for her 19th, 20th and 21st birthday portraits, and a 5.16 ct marquise-cut, F colour, internally flawless diamond mounted as a ring by John Donald. The Princess – like her grandmother – valued the work of Fabergé and there are several wonderful pieces in the sale.

More personal items of jewellery include a Victorian bee brooch accompanied by a note in the Princess's hand: "Almost the first bit of jewellery given to Mum, given to me 10 Feb 1945" and an art deco sapphire and diamond bar brooch personally annotated by Queen Mary: "For darling Margaret on her confirmation day from her loving Grannie Mary R God bless you April 15th 1946."

To order a special tribute catalogue of the sale and for all enquiries visit www.christies.com or call +44 (0)20 7389 2486.

Public exhibitions will be held from 27- 31 May at Christie's Hong Kong, from 3-7 June at Christie's New York, and from 9 to 13 June at Christie's King Street, London. The Jewellery and Fabergé auction will be held at Christie's King Street, London, on 13 June, followed on 14 June by the Furniture, Silver and Works of Art Sale.

Important Jewellery

A sale of important and historic jewellery is to be held at Christie's King Street, London, on 15 June. The sale will include a selection of historic jewels formerly from the collections of Queen Alexandra, Catherine the Great of Russia, Empress Eugenie of France, Queen Amelia of Portugal, The Dowager Duchess of Manchester, The Duchess of Fernan Nunez and many other titled families. Featuring over 200 lots of stylish and historic

jewellery, the sale is estimated to fetch in excess of £4 million.

Of particular interest is a medieval diamond-set ring recently found in Britain. The use of a diamond marks this ring as an important and significant object. Historically, a valuable ring may have been given as a token of love or as a sign of allegiance. It has been noted that the ring bears three 'E' initials between stars and dates to the time of Edward III during the Hundred Years War. Various theories regarding the origin of this ring have been proposed. Helen Molesworth points out that a wealthy Flemish weaving merchant, Jacob van Artevelde, emerged as a political leader against the French forming the



Fourteenth-century diamond set ring, probably of historical significance. © Christie's, 2006.

League of Flemish Towns in 1336 who supported Edward's claim to the title of King of France. Van Artevelde was assassinated in 1345, leaving a son, Philip Van Artevelde. Philip continued the Flemish fight in his allegiance to the English King and Queen. Helen suggests that the motto reading across both sides of the hoop, 'loyauté sans fin', indicates an

eternal dedication of loyalty, and together with the initials 'V' and 'A' either side of the bezel would be an appropriate dedication between the King of England and his closest Flemish supporter within the political climate of the mid fourteenth century. □

UK Auctions – Summer 2006

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Montpelier Street, Knightsbridge (t: 020 7393 3900)

Jewellery: 7 June, 28 June

Edinburgh (t: 0131 225 2266)

Jewellery: 8 June

Oxford (t: 01865 73252)

Jewellery: 13 June, 11 July, 22 August

Leeds (t: 0113 244 8011)

Jewellery: 27 June

CHRISTIE'S

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South Kensington, London (t: 020 7930 6074)

Antique and collectable jewellery: 1 June

Fine jewellery and rings: 27 June

Jewellery: 25 July

King Street, London (t: 020 7839 9060)

The Collection of HRH The Princess Margaret, Countess of Snowdon: 13 and 14 June

Important Jewellery: 15 June

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Donnington, Newbury, Berkshire (t: 01635 553553)

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Apsley Road, Bristol (t: 0117 973 7201)

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Godalming (t: 01483 423567)

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Jewellery and silver: 1 August

Neales, Nottingham (t: 0115 962 4141)

Jewellery and silver: 19 June, 6 July

FELLOWS & SONS

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New Bond Street (t: 020 7293 5000)

Jewels: Antique, Period and Contemporary: 29 June

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Salisbury, Wiltshire (t: 01722 424500)

Jewellery: 27 July

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

TIFFANY 1837–1900

CLARE PHILLIPS reviews the ‘profoundly American style’ of Tiffany jewellery of this period

Tiffany & Co., whose jewellery is to be celebrated in the exhibition ‘Bejewelled by Tiffany 1837-1987’ which opens at the Gilbert Collection next month, originated as a fancy goods store on Broadway, New York, in 1837. Despite this early foundation, it is often perceived in Europe as a rather ‘modern’ brand name, and many are unaware that by the 1860s and 1890s it had flourishing branches in Paris and London respectively, and was a major prize winner at the great international exhibitions. This article gives an introduction to Tiffany’s nineteenth-century history and its development from supplying New York with the latest European jewellery fashions to having its own design studio and workshops – steadily reversing the pattern of import to export as America’s jewellery manufacturing developed.

A glance through Tiffany’s first sales catalogue published in 1845, reveals a very diverse stock made up largely of imported goods – Chinese lacquered tables, Bohemian glass, French porcelain,

Cesnola Bracelet, circa 1878. A copy of an ancient bracelet discovered in Cyprus in 1875 by General Louis Palma di Cesnola (1832-1904) and acquired by the Metropolitan Museum of Art, New York. Photo Tiffany & Co.



fine writing paper, soaps and perfumes, fans, gloves and artificial flowers. Tucked in at the back of the catalogue, after French sugar plums and board games, was a modest selection of French jewellery: “a limited number of every *new style* of Bracelets, Hair Pins, Dress Combs, Head Ornaments, Chatelaines, Scarf pins, Brooches, Shawl Pins, Chains &c., &c., *in gold and imitation.*” The company could have had no idea that its stated determination “to pay special attention to this branch of their business” would so rapidly result in it becoming one of its dominant aspects. In the Tiffany & Co. archives is preserved the ‘*Memos and Wants Book*’ in which were noted lists and reminders of what should be ordered from Europe, maintained between 1842 and 1865. Most of the jewellery came from Paris and London, although the fashion for coral and cameos prompted Italian contacts, with micromosaic jewellery being imported by at least 1854. It gives style notes too with insights like “something ‘*très jolie*’ in the way of sleeve buttons will sell readily” (1853) and “vest buttons are worn here a little larger than those normally sent” (1854), as well as an idea of the frustrations and the time delay when dealing with distant suppliers.

A reputation for distinctive and original work was first achieved by Tiffany’s silver workshop which had won a medal at the Paris Exposition in 1867 – the first non-French silversmith to do so. Eleven years later the first jewellery to win Tiffany international praise and a gold medal was made of gold and mixed metals



Brooch by Bapst, 1864, for Empress Eugénie, wife of Napoleon III (1808-73). Gold, silver, diamonds, pearls, emerald. Purchased by Tiffany and Co. at the sale of the French Crown Jewels 1887. Photo Tiffany & Co.

of contrasting colours, with inspiration drawn – in accordance with contemporary design theory – from exotic cultures and ancient gold. Tiffany demonstrated an exceptional sensitivity to Japanese design and metalworking techniques, prompting a Japanese journalist to write that it was “very pleasing to see, but at the same time it is to be feared most”. Recent acquisitions by the Metropolitan Museum – who generously allowed Tiffany to borrow the originals – enabled Tiffany’s designers to contribute an American version of the archaeological style. Although no gem-set work featured in the collection exhibited in Paris in 1878, the firm’s fascination with fine gems was asserted that same year with the acquisition of the Tiffany diamond – one of the largest and finest yellow diamonds in the world (pictured in the March 2006 issue of *Gems & Jewellery*, p.7).

American society’s hunger for jewellery and the phenomenal spending power of its wealthiest citizens in the later nineteenth century, enabled Tiffany to expand at an accelerated rate. At the auction of the French Crown Jewels in 1887, Tiffany bought more than a third of the items sold, spending nine times the amount of the next highest bidder. These jewels, either adapted into smaller more affordable jewels

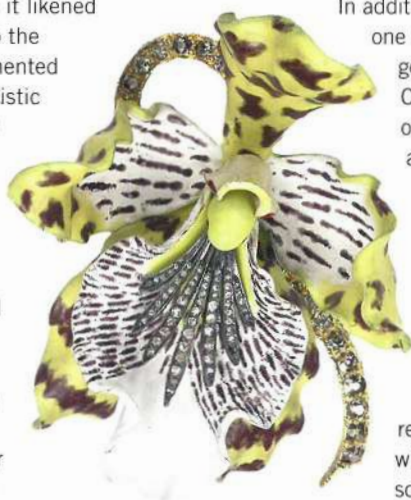


'Aztec' Collar, by G. Paulding Farnham, circa 1900. Gold, diamonds, Mexican fire opals, rubies, zircons, peridots, tourmalines. Exhibited at the 1900 Exposition Universelle, Paris. Photo: Kenru Izu.

or in their full glory, were eagerly snapped up by Tiffany's American customers.

The Paris Exposition of 1889 was a landmark in Tiffany's history. The reviews in the French press convey the excitement its display inspired in Paris, from the *Gazette des Beaux Arts*, in which three engravings of Tiffany & Co.'s pieces were the only non-French jewellery illustrated, to *Le Figaro* which warned that those who suffer from dizziness had best avoid Tiffany's display which it likened to being transported to the Milky Way. Most commented on were the 24 naturalistic enamelled orchids of a combined delicacy and life-like quality unlike anything seen before in jewellery. *Le Figaro* considered these the most original jewels of the entire exhibition. Also much admired by the French were Tiffany's rock crystal flasks with their elaborate jewelled and enamelled mounts, carved in quartz from North Carolina. Tiffany's particular delight in American materials added a subtle yet defiantly patriotic note and a wealth of colour. American yellow, green and blue beryls, tourmalines from Maine, and magnificent freshwater pearls all contributed to its jewellery and accessories, as did the less exuberant wood agate from Arizona's petrified forest. The knowledge and

enthusiasm of Tiffany's gemmologist George Frederick Kunz was crucial in the development of Tiffany's flamboyant style during the 1880s and 1890s, and it is testament to how seriously the company took its commitment to fine stones that in addition to the gold medal won for its jewellery, Tiffany was also awarded two gold medals for its displays of North American gemstones and North American pearls with their shells.



Orchid Brooch, by G Paulding Farnham, current scholarship identifies the flower as an *Odontoglossum wyattianum*, native to mountainous regions of Ecuador and Peru. Gold, diamonds and enamel. Photo: Jan Van Pak.

In addition to the skills of one of the world's great gemmologists, Tiffany & Co. had built up workshops of highly skilled craftsmen and had pioneered its own system of design education which was modelled on European lines. The great jewellery designer, G. Paulding Farnham, who was responsible for the enamelled orchids, received his training within the company at the so-called 'Tiffany School' with its extensive design library and museum-like collection of artefacts. Farnham's exceptional talent and inspired design sense refined Tiffany's jewellery style and defined the firm's

international profile, winning for it in 1900 what I believe was the first Grand Prix to be awarded to a non-French jeweller at a Paris Exposition. Again Tiffany's pieces stood out as different to the work of its European competitors. The forms of European jewellery were immediately recognizable as



Brooch, 1899, by G Paulding Farnham. Gold, platinum, enamel, Montana sapphires, diamonds, American fresh-water pearls. Exhibited at the 1900 Exposition Universelle, Paris. Photo Tiffany & Co.

was the consummate craftsmanship, but the colour combinations which flew in the face of accepted practice, the dull rather than polished gold, the subtle integration of native American themes and even the lavish scale of Tiffany's work, marked it out amongst its contemporaries as different and exciting.

After decades of dependence on Europe, Tiffany could now bring together American materials, American design and American craftsmanship – and they were united with great sophistication. It was recognized at the time as being a different aesthetic, one that owed nothing to imitation or foreign collaboration, a purely and profoundly American style.

The exhibition 'Bejewelled by Tiffany, 1837-1987' will be held at the Gilbert Collection, Somerset House, London WC2, from 24 June to 26 November 2006. Further information at www.gilbert-collection.co.uk. □

Biojewellery

A bone of contention?

The production in recent years of synthetic diamonds from the ashes of cremated loved ones has elicited a wide range of responses, not the least being considerable press coverage. Now there is a project to take such use of the human body even further, by using biotechnology and producing jewellery made from laboratory-grown human bone tissue. This will undoubtedly prompt debate about both medical ethics and the nature of jewellery. But that, as NIKKI STOTT explains, is the idea.

Biojewellery started life as a short project entitled 'Consuming Monsters' which brought about a collaboration between Goldsmithing, Silversmithing, Metalwork and Jewellery and Interaction Design departments at the Royal College of Art. The project encouraged students to produce provocative objects that would generate debates about the boundaries of the body and definitions of identity in relation to recent biotechnological advances.

Tobie Kerridge and I, design researchers based at the Royal College of Art, together with Dr Ian Thompson, a bioengineer at Kings College London, will make a pair of rings. These rings will incorporate precious metals, but will also include laboratory-



Wedding rings set with bone.

grown bone from two donors selected from the public. The rings are to be exchanged by the couple as a symbol of their commitment.

The project began with an investigation of implantable technologies. We discovered that scientists were not only using metals and bioplastics to repair damaged bone tissue but developing a method of growing bone outside the body for transplant into patients. Tissue engineering is beginning to have a profound effect on how disease and physical disorders are treated. What are the implications of medical research and how do we introduce the issues surrounding them? Such potentially controversial propositions from within the scientific community, which may have far-

reaching ethical implications for many people, are rarely challenged in the public domain.

Biojewellery uses a familiar social custom – the exchange of rings – to open a debate about new medical technology. By situating bone tissue engineering within the framework of

a human relationship, the Biojewellery project will hopefully encourage ethical debate, and raise important and constructive questions over how advancements in science relate to our identities and desires.

We could not introduce Biojewellery without referring to other science and art partnerships such as the ongoing 'Tissue Culture and Art Project' produced by Oron Catts, and Ionat Zurr was the first to propose the idea of using living tissue for purposes other than medicine and agriculture. By culturing and growing animal tissue in a laboratory environment, they created living sculptures, which would confront the issues of man's treatment of animals and the ethical issues of biotechnology. They were granted a one-year residency as research fellows at Harvard University Medical School – an indication that scientists are beginning to accept that art has a valid and necessary contribution to make to scientific progress, as does science to creative endeavour.

My involvement in Biojewellery has allowed me to continue to explore the social and philosophical implications of biotechnology, using jewellery and its associations with recognized social rituals as a context. If we examine how ordinary, mass-produced jewellery objects have profound meanings of connection for wearers we can begin to understand the possible value of jewellery made from the body of a partner or family member. What characterizes this specific form of creative



Carving the bioglass into a ring shape.

production is its scale – tiny objects are loaded with huge importance and complex meaning.

Jewellers are constantly appropriating new materials and technologies from unexpected sources. Combining jewellery with biotechnology ensures that the body is no longer merely a site for displaying ideas; it becomes the material of production. How do we then locate and define the status of this biotechnical artefact? Has the symbolic value been altered because of the material it is created from?

As the project has developed we have documented each phase of the design process, including the initial models, the methods of shaping different types of bioengineered bone, testing its potential strength and limitations when used in conjunction with other more traditional materials. The process of procuring a small sample of bone tissue begins with the removal of a wisdom tooth, bone tissue is extracted from the jaw through the resultant cavity. Individual cells from this sample are cultured in a temporary scaffold of bioglass which mimics the natural pattern of bone growth. The unpredictability of living, growing organisms must be taken into account when designing the rings. The outcome of the cell growth over the scaffold is unknown, it may be that we have a substantial piece of bone to work with or it could be a thin surface deposit.

By using an invasive medical procedure to procure cells we are then manipulating these living organisms to produce designed objects. Using a piece of the body for ritualistic purposes is obviously not a new idea. In many ancient cultures both human and animal bone were used to represent fertility and status. Amulets made from bone provided protection and evoked a connection to the past. Our project is following a tradition within jewellery of carrying a memento from the body of a loved one.

Biojewellery is funded by the Engineering and Physical Sciences Research Council, through its 'Partnership for Public Awareness' award scheme.

For more detailed information: www.biojewellery.com. Tobie and I may be contacted at: info@biojewellery.com. □

In the Picture

For many years Gem-A ran an annual photo competition and printed a selection of the winners as a wall calendar. As you will have noticed, we held the competition last year, but did not print a calendar. There were two reasons for this change.

First of all, enquiries revealed that although a fair proportion of Members liked and used the calendar, there were many who had no use for it. In part, of course, this was due to the increasing use of electronic and computer based diaries and schedulers. Similarly, fewer and fewer people are using traditional diaries these days. Anyhow, we have to watch all expenditure, especially now that we are a registered charity, and we must channel our resources into the areas that best fulfil our educational mission and serve our members. For almost the same cost as producing the calendar, we could produce an extra issue of *Gems & Jewellery* – we judged that a better use of funds and so you will get five issues this year.

This is not the end of photography and Gem-A, though. Judging a gemmology-related photo competition has never been easy. Even we are often unsure of whether we are really looking for gemmological

interest, aesthetic beauty or even weirdness. So from now on we will not hold a competition as such, but encourage you all to submit gem-related photographs that you are proud of. The editorial team will choose one or more to include in each issue of *Gems & Jewellery* and, as part of the updating of our web site this year, we will make a selection of the photos available there and downloadable as 'desktops' for your computers. Some submission guidelines are given below.

Photo Submissions

Photos should be of gem-related subjects and provided as prints (we will keep these on file, so cannot return them), on CDs or emailed to us (editor@gem-a.info). Digital photos must be of high resolution – 300 dpi with a minimum width 21 cm. With each photo you must provide your name, membership number and some details of what is shown, maybe a bit of background, and a statement that you transfer copyright to Gem-A. Each image will have the note 'Photographed by YOUR NAME' added on one lower corner before it is posted on our web site. □

J.O.



Coral Buddha brooch by Stephen Webster. Photo by Bob Maurer FGA DGA, London. Awarded First Prize in the 1998 Photo Competition.

The Scottish Conference

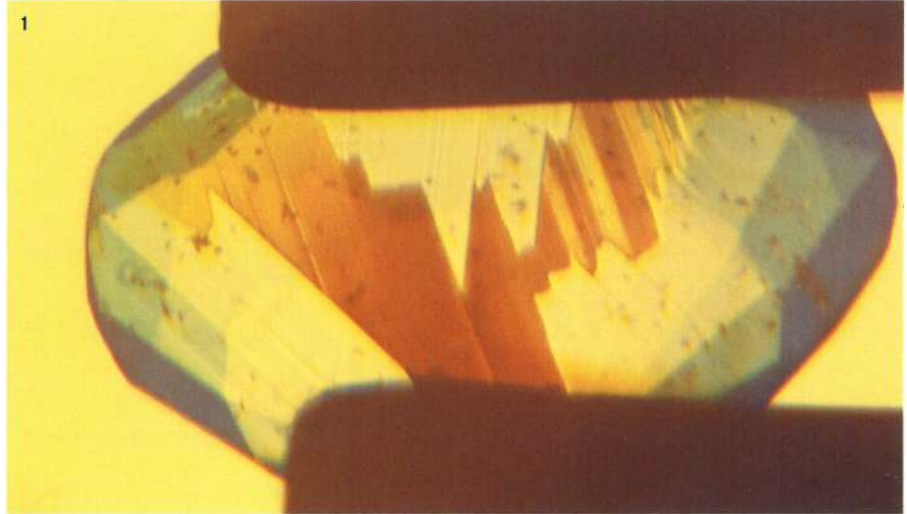
From synthetics to reels

The Scottish Branch of the Gemmological Association held its annual Conference on 28 April to 1 May this year at the Lovat Hotel in Perth, Scotland. The conference was very well attended and speakers and participants hailed from many corners of the world.

Social events were held on each of the three nights of the conference in addition to the presentations described in brief below. The Saturday night event was the Ceilidh (dinner dance) that has become a very popular tradition at the Scottish Conference. What other major Gemmological Conference can boast that it has some of the world's foremost gemmologists dancing Scottish reels together?

The introductory presentation was made on the Friday evening when Helen Molesworth of Christie's, London, talked about the styles of twentieth-century jewellery, with particular reference to items to be included in forthcoming sales. She made special mention of the jewellery of Her Royal Highness The Princess Margaret, Countess of Snowdon, to be auctioned at Christie's on 13 June (see report on p.42)

On the Saturday morning Karl Schmetzer of Petershausen, Germany, discussed 'Screening Red to Yellow Sapphires'. Beryllium treated corundum could be detected by such advanced equipment as laser-induced breakdown spectroscopy (LIBS) but this was not an option for most gemmologists. The detection of the coloured rims of some beryllium-treated stones as revealed by immersion was a simple technique, but many beryllium-treated corundums were now of homogeneous colour and thus without visible rims. However, an experienced gemmologist could use a combination of inclusion morphology and the form and orientation of growth structures and colour zoning to come to a conclusion about the likely presence of beryllium treatment (1). Karl also explained the way in which the relative proportions of iron, magnesium and titanium affect the colour of corundum and how beryllium additions influenced this. He noted that the ubiquitous



Growth structures and colour zoning in heat treated padparadscha from Sri Lanka. Photo by Karl Schmetzer.

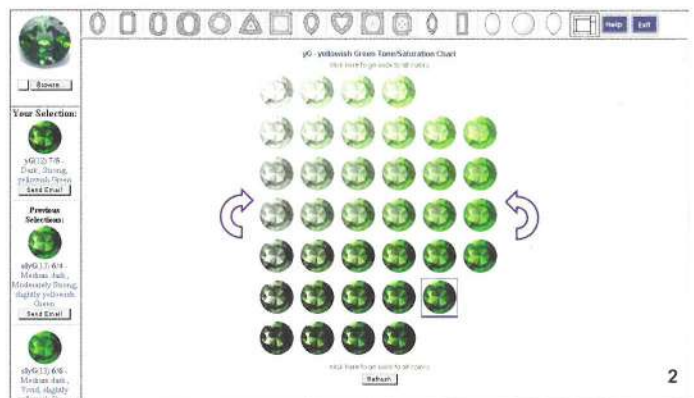
use of beryllium treatment had resulted in a glut of orange-coloured sapphires on the market, so some beryllium-treated orange stones were being treated again to turn them pink. Hitherto pink sapphires have been assumed to be untreated or heat treated only. (Karl Schmetzer's research on these beryllium treated corundums was published in *The Journal of Gemmology*, 2005, 29(7/8), 407-49.)

The next speaker was Thom Underwood of San Diego who provided a clear and entertaining history of colour, its perception and description, and a critique of the various colour comparison techniques that have been employed for gemstones over the last generation. He then introduced and demonstrated the 'GemeWizard Colour Grading System' a computer-based colour comparison technique that provides a rapid and easy way in which a gemmologist or

appraiser can describe the colour of a gem (2). The GemeWizard was developed by Menahem Sevdemish and is currently being assessed for use in Gem-A courses. In the past, colour comparisons using computers have been blighted by the huge variations in monitors. However, the type of screen in a modern laptop or flat screen is far more consistent.

After Lunch, Mark Newton of the Department of Physics, University of Warwick, discussed the 'Detection of Diamond Treatments'. He explained the development of diamond treatments and

Screen shot of the GemeWizard in use. The digital photo of the peridot top left is being compared with the GemeWizard colour comparisons. Actual gems can be compared with the comparisons by holding them up to the screen.



synthesis, the HPHT and CVD production methods, and the nature of the lattice modification within treated diamonds. Mark explained that the elements nitrogen and boron are closest to carbon in the Periodic Chart, and how their presence could affect diamonds. One nitrogen atom, for example, will substitute for one carbon atom, but because it has one additional electron it creates a defect in the diamond crystal lattice. All diamonds contain some nitrogen, although this is at very low levels in Type Ila diamonds. HPHT treatments can modify the lattice structure and thus modify the colour of diamonds. The solvent for carbon as used in the HPHT synthesis of diamonds was generally molten iron-cobalt or iron-nickel alloys and these left recognizable characteristics, such as inclusions and magnetic properties. A variety of high tech methods can be used to distinguish between natural, synthetic and treated diamonds, but an experienced gemmologist can also generally separate these using such simple equipment as a loupe, a magnet and UV light. Mark demonstrated some striking fluorescence and phosphorescence effects under UV light. As he explained: "Diamonds are like people, it is the defects that make them interesting."

Richard Digby rounded off the day by giving participants an insight into 'Cameos and Intaglios'

Richard is a well known and highly respected specialist in this field. He is based in London, but buys and sells around the world. He explained various changes with time, in such things as choice of materials for cameos, and the importance of condition – of any original mount as well as the engraved stone itself. He also made a heartfelt plea to dealers not to destroy the original surface finish of the mount. Damage to a cameo could be detected by rubbing a thumb across its surface, something that could be done easily and unobtrusively at, say, an auction viewing. Richard stressed the need to be able to recognize quality and to have access to information about well-known engravers, and he placed this in context by providing examples of signed intaglios

and the sort of price ranges these could command. Modern taste and fashion were important and, for example, cameo portraits of females were usually more desirable than those of males. The identification of the subject in a portrait cameo could greatly affect price. As an example, he showed a high quality but rather unappealing cameo portrait of a man that then became far more marketable when the sitter was identified as Henry Cole – the founder of the Victoria and Albert Museum in London.

On Sunday morning Karl Schmetzer gave a second presentation, this time on the subject of 'Different Types of Synthetic Emerald'. He gave an overview of the development of emerald synthesis and then described the latest type of synthetic emerald developed by Taurus in Novosibirsk, Russia, and first



Small but well formed garnet crystals in schist from the shores of Lochan na Lairige.

seen in 2004. The new Taurus synthetic emerald was a hydrothermal synthetic and the colouring agents were vanadium and copper. There is no chromium added, and thus they do not appear bright red under the Chelsea Filter. However, the raw material for the new synthetics was natural beryl from the Urals and traces of chromium in this could pass into the synthetics in minute amounts. The new Taurus synthetic emeralds do not appear to have entered the market in commercial quantities so far. The stones were very clean, but there were small but distinctive inclusions that had proved to be crystals of pure copper. These copper inclusions could not be identified by Raman, but their nature was confirmed by microprobe analysis. Karl also described

the detection of synthetic emeralds using infrared spectroscopy. For example, some types of synthetics show several peaks due to chlorine that is absent in natural material. (Karl Schmetzer's research on these emeralds has been published in *The Journal of Gemmology*, 2006, 30(1/2), 59-74.)

The final paper of the morning was by Alan Hodgkinson, Honorary President of Gem-A's Scottish Branch, entitled: 'Pushing the Refractometer'. As gemmologists have come to expect from Alan, his presentation demonstrated what an inventive and probing mind combined with a desire for simplicity can accomplish. Alan began by describing different types of refractometer and the errors that can occur, not least because refractometer scales, filters, lights and the human eye can all vary. Alan introduced a

simple, graphical way to record refractometer readings that can greatly help a gemmologist or gemmology student to understand such aspects as the features of uniaxial and biaxial stones, and to measure what he or she was seeing. Alan demonstrated how this simple form of graphical representation, in combination with a Polaroid filter, can be used to characterize gemstones that may be very tricky to differentiate otherwise – such as tourmaline and actinolite. His

approach removed many of the difficulties encountered when taking refractometer readings and in interpreting readings with gems cut in unusual orientations relative to the crystal axes.

The Sunday events continued with a variety of displays, workshops and demonstrations. Particularly notable was a display of Scottish gemstones by Gordon Todd and Basil Dunlop. Also the winners of the Scottish Branch Design Awards for gem-set jewellery displayed the winning entries and were presented with their prizes (see p.51).

Many delegates stayed to take part in the Monday field trip to Lochan na Lairige, above Loch Tay. The primary target was

smoky quartz. Good examples of this proved somewhat elusive for the less experienced participants, but the profusion of small garnet crystals in the schist provided some compensation (3). The Scottish weather brought a somewhat erratic combination of rain and sun, but the scenery was spectacular. A great day and a wonderful finale to the Conference.

The Scottish Branch held their 11th Annual General Meeting during the Conference, on 29 April. Following a welcome by the Chairman, Brian Jackson, the business included the adoption of the accounts and the re-election of the Officers. Brian remains as Chairman, Gillian O'Brien as Treasurer and Catriona McInnes continues her consummate work as Secretary. An important topic of discussion was the venue for the 2007 Conference. It was unanimously agreed that the Lovat Hotel in Perth provided the best combination of facilities, accessibility and price, and will therefore be retained as the venue for 2007.

So, make a note – Perth 4 to 7 May 2007 for the next Gem-A Scottish Branch Conference. For the non-Scots, don't worry too much about brushing up on your Scottish dancing first, the locals are keen to teach and very forgiving. Besides, after sampling the local whiskies... ☐

J.O.

Thank you...

The Scottish Branch Committee would like to take this opportunity to give very sincere thanks to:

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National Association of Goldsmiths,
Perthshire Jewellery Company
and TJW Diamonds

Loupe and Lamp Day

Members of the Gem-A Midlands' Branch had a challenging day on 19 March when they had to identify gems using only a lamp and a 10x loupe.

Working in pairs, they had 60 stones to identify during the morning session, including crystals and rough materials, composite and imitation gems, synthetic and treated materials, faceted stones, cabochons and carvings. Each stone had either diagnostic features, such as inclusions or optical effects, or a dramatically characteristic appearance.



The topaz cleavage surface showing the stepped terraces and interference colours.

Apart from unusual ornamental materials, one of the stones that proved particularly difficult to identify was a large seemingly colourless topaz. The stone had originally been about 40 mm in diameter which when faceted by Doug Morgan had cleaved at 90° to the table facet. Most participants misidentified this stone as calcite because of obvious doubling of a line or dot placed beneath the stone (either table or cleavage face down) and evidence of the cleavage plane with very shallow stepped terraces. Observations which together clearly indicated topaz were the extremely slippery feel to the stone, left indicating a reasonably dense material and a definite blue tint parallel to the table facet. Although there were many conchoidal chips along the edge of the cleavage plane, there was no suggestion of another direction of cleavage within the stone, which would normally have been the case with calcite.

Following lunch, Gwyn Green gave an illustrated review of the stones seen during the morning, identifying the main observation features for each gem.



The topaz showing the chips along the cleavage plane and a hint of blue.

The day ended with tea and cakes, and the plea from those present for similar Loupe and Lamp days to be held in the future. ☐

Chairman retires



Gwyn Green retired as Chairman of the Midlands Branch at their AGM held on 27 January. Gwyn joined the Branch Committee in 1987 and had been Chairman since 1995. Branch President David Larcher, pictured above with Gwyn, congratulated her on her ten years in office and thanked her for her enthusiasm and hard work, as a result of which the Branch had flourished and gained in reputation. Gwyn's editorship of the Branch magazine *Midland Focus* had attracted articles from many experts. David presented Gwyn with a bouquet and a book about wine and opera – two of her favourite subjects.

Paul Phillips has been appointed the new Chairman of the Branch. Paul, who has a degree in geology and a keen interest in gemmology, was a prime mover in the Midlands Gem Club since its inception, and has participated in all branch activities. ☐

North West Branch celebrates 30 years

The North West Branch held a special anniversary event in the magnificent Liverpool Anglican Cathedral in February. Following a private tour of the cathedral and a reception, Branch Chairman Deanna Brady welcomed members and gave a brief history of the Branch.

Secretary Ray Rimmer introduced the guest speaker, Maria Alferova of the Moscow State University, who gave a presentation on the Gems of Russia. Maria



2. Rough gem-quality aquamarine and heliodor from Sherlovaya Gora.



3. Faceted aquamarine 14.91 ct (above) and topaz 9.34 and 10 ct (below) from Sherlovaya Gora.



1. Sherlovaya Gora beryl and topaz mine.

began by explaining the law in Russia governing the gem trade, before giving a whistle-stop tour of the most prolific gemstone regions of Russia: the 'Gem Belt' of the Urals with its wide diversity of gemstones, the diamond mines of Yakutia with information on current production, and the Baikal and Transbaikalia regions. Particularly interesting was her description of the mining of beryl and topaz in Sherlovaya Gora (Schorl Mountain). Old methods are used and shown is a typical quarry or hole, complete with homemade ladders (1). Some shafts may only be worked in the winter months, when the sandy rocks are solid due to frozen water in the pores. Samples of rough gem-quality aquamarine and heliodor (2), faceted aquamarine and topaz (3) from these mines are also illustrated.



Maria concluded her presentation with information on the synthetics currently produced in Russia. □

The North West Branch Committee is most grateful to the following for generously sponsoring this event:

Connards Jewellers, Southport
Eric G. Milton Jewellers/Pawnbrokers, Liverpool

Design Award

This year the Scottish Branch competition was open to any student of jewellery design or manufacture in Scotland to promote interest in gemstones and their use in jewellery. Entrants had to design and make a piece of jewellery and to encourage them to integrate gemstones into their designs each applicant received a set of six synthetic stones. The pieces were judged on three criteria: aesthetic design, quality of construction and finish, and innovative use of stone setting techniques.

Said Chairman, Brian Jackson: "We were delighted that the competition attracted over 60 entries. It was very difficult to judge as some colleges concentrate on design and others on technique. The overall standard was so high that the judges also issued Highly Commended Certificates."

Elizabeth Kirkby, studying at North Glasgow College, was awarded the first prize, a collection of gemstones to the value of £300. The second prize was awarded to Jo Pudelko, and joint



The winning entry by Elizabeth Kirkby.

Third Prizes were awarded to Kirsty Eaglesfield and Jonathan Clifton-Sprigg. The prize winners displayed their winning designs at the Scottish Conference, when they were presented with the prizes by Scottish Branch President Alan Hodgkinson. Each of the prize winners received a collection of natural gemstones. □

Scholarships for Design Award Winners

In 1908 the Goldsmiths' Craft and Design Council was founded to promote excellence in craftsmanship and design in UK jewellery and allied crafts. Within the grand opulence of London's Goldsmiths' Hall, the Council's prestigious *Goldsmiths' Craftsmanship and Design Awards* and exhibitions look very much towards the future in every aspect of the UK industry's craft and design activity. Gem-A is pleased to continue its support for the future of the industry by awarding Practical Diamond Certificate courses as *Gem-A Diamond Scholarships* for two Awards recipients for 2006.



The prize winners' entries: Ai Morita's bar brooch (above) and bangle by Vicki Purnell.



Two jewellery designers were given a pleasant surprise when they learned of their Scholarship award at the Council's annual awards presentation in March. Out of a good number of applications for 2006, written submissions from Vicki Purnell and Ai Morita have convinced the panel that they understand the usefulness of the Gem-A approach to practical matters and how this can help their design work. Ai Morita, Artist in Residence at Glasgow's School of Art, explained: "As a jewellery designer and maker, this Scholarship could

be a trigger for me to broaden my horizon towards not only diamond but a whole new world of gemmology." Vicki Purnell is a keen gemmologist who is already taking the Gem-A Foundation Certificate course as well as being in her third year

Jewellery and Silversmithing BA at London Metropolitan University. Already passionate about diamonds having been a sorter for De Beers and on placement with the Fine Jewellery Department at Christie's, Vicki explains: "This course would be an invaluable addition to my previous work experience and should help me define my career within the jewellery trade. I am extremely passionate about jewellery design and gemmology and this opportunity would help me to develop as a designer and a gemmologist."



Ian Mercer with Scholarship winners Ai Morita (left) and Vicki Purnell at the Ceremony.

I am delighted to see the high quality and enthusiasm in the work shown by our Scholarship students; their comments emphasize the need for Gem-A's style of training in the art of observation and in reporting those observations to others. Such is the basis of all Gem-A courses and our sound training is helping people in so many gem-related activities worldwide, not least in the areas of jewellery design so well supported and promoted by the Goldsmiths' Craft and Design Council. □

Ian Mercer

Diploma success for 2005 Scholarship winner

Monika Kuchard, the 2005 Gem-A Diamond Scholarship winner, was at the Goldsmiths' Craftsmanship and Design Awards ceremony and again received a jewellery prize.

Monika completed her Gem Diamond course in January and was successful in gaining her Gem Diamond Diploma. Just after receiving her exam result from Gem-A recently, Monika told us that she feels so much more confident when she talks with customers about diamonds and in offering advice to help them to make a choice when they buy loose stones: "I feel honoured and proud. It is to me a real accomplishment, a credibility in the eyes of the public that I have a firm foundation on diamonds. All that fascinating and valuable information ...

I can use this in my day-to-day life as a jewellery designer and maker." Monika's success in the examination entitled her to apply for Diamond Membership of the Association, enabling her to use the letters DGA after her name, joining with all those members worldwide who can share that same confidence and pride. □



18ct gold diamond set necklace designed and made by Monika.

Stone Scoop

A gemiscellany

Casting doubts

The production of jewellery cast with the gemstones *in situ* (see p. 31) is not new, there are patents dating back to the 1930s, but the procedure has become common in recent years in the wake of the huge growth in silver jewellery set with small CZs.

Silver and gold alloys, and now even platinum, can be cast with gems *in situ* including diamonds, rubies and sapphires, or even emeralds if care is taken. The trick is careful heat control – nothing that will cause thermal shock to the gem. There is now some fine jewellery being produced in this way, and the quality is such that it can be hard to recognize without experience.

But gemstones, if cast *in situ*, will have been subjected to temperatures equivalent to those used in deliberate heat treatment.



So what about disclosure?

Does the fact that heating is part of the manufacturing process and not deliberately intended to 'improve' any gem that happens to be present make a difference? I am reminded of the seventeenth-century chemist Robert Boyle's opinion that a thing can only be described as artificial if its manufacture was intended. In his view, something that occurred as a result of man's intervention, but was not intended or foreseen, should be classed as natural because nature rather than man had created it. As far as I am aware, that is not an argument ever proposed within CIBJO.

Exploding a myth

As one century passed into the next, the

spectre of synthetic diamonds entering the market became an issue of increasing anxiety to the jewellery trade. It thus was reassuring to read in the trade press that such worry was ill founded and synthetic diamonds were never likely to be a threat.

But that was a century ago. An article in *The British Jeweller* in September 1908 explained that the natural creation of diamonds required high temperatures, high pressure and long, long periods of time. Time was the factor impossible to replicate. In a confusion between the cooling of cast metals and the growth of a single crystal, the article notes: "...the gem is produced under immense pressure, but as the outside solidifies first, and carbon has the abnormal property of expanding instead of contracting on solidification, there is generally a condition of strain in the interior of the crystal which sooner or later, but usually very soon, causes the stone to burst its skin and explode." The writer adds: "No reputable firm would dream of selling jewels which might explode even before the customer got home." □

J.O.

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A DIAMOND IS FOREVER

A Sense of Place

CYNTHIA COUSENS gives a synopsis of her presentation to the Society of Jewellery Historians in January 2006

The lecture 'A sense of place: the inspiration behind the jewellery' set out to trace both the inspiration behind the jewellery and to chart the development of my work across the 30 year span of my career as a jeweller. The title 'A Sense of Place' refers not only to the influence of landscape, which is present throughout the work from early beginnings, but also to the method of working through Artist-in-Residence schemes and the constant shifting to new environments.

The images accompanying the lecture traced the chronological order of the work starting in the mid seventies with pieces made as a student at Loughborough College of Art and Design and the Royal College of Art. This early work explored a perceived dichotomy in the role of jewellery between the decorative and the symbolic, stemming from an introduction to German figurative work in the exhibition 'European Jewellery' at the V&A in 1976.

Throughout the 1980s a series of brooches explored hollow form and concepts of containment and boundaries with imagery drawn from the natural world (1).



Silver curved slice brooch, 1989. From the collection at the Musée de l'Horlogerie, Geneva. Photo: Paul Sehault.

At first these were worked in combinations of precious and base metals and then, increasingly, entirely in silver. Simple hand processes such as texturing, filigree and raising, reliant on skill and inventive use, were combined to form rhythmic tubular forms.

This work can be placed within a movement that followed the great 'redefining' work in the late 'seventies of jewellers such as Caroline Broadhead and Pierre Degen and in contrast returned to the use of metal in innovative and expressive ways. Two influential figures in this genre taught at this time at the RCA: Michael Rowe, who was researching his book *The Colouration, Bronzing and Patination of Metals*, and Jacqueline Mina.

A seminal project that marked a radical change in the work was the Necklace Project, which was supported by a South East Arts Major Award in Crafts in 1995. It began a more direct relationship with landscape, working from the South Downs to provide research for new ideas. Walking and experiencing the harsh winter weather conditions and recording this initially in small pencil drawings and then more expressively in sparse linear three-dimensional forms. Landscape now became a vehicle for echoing emotions by providing the language to translate them into visual statements.

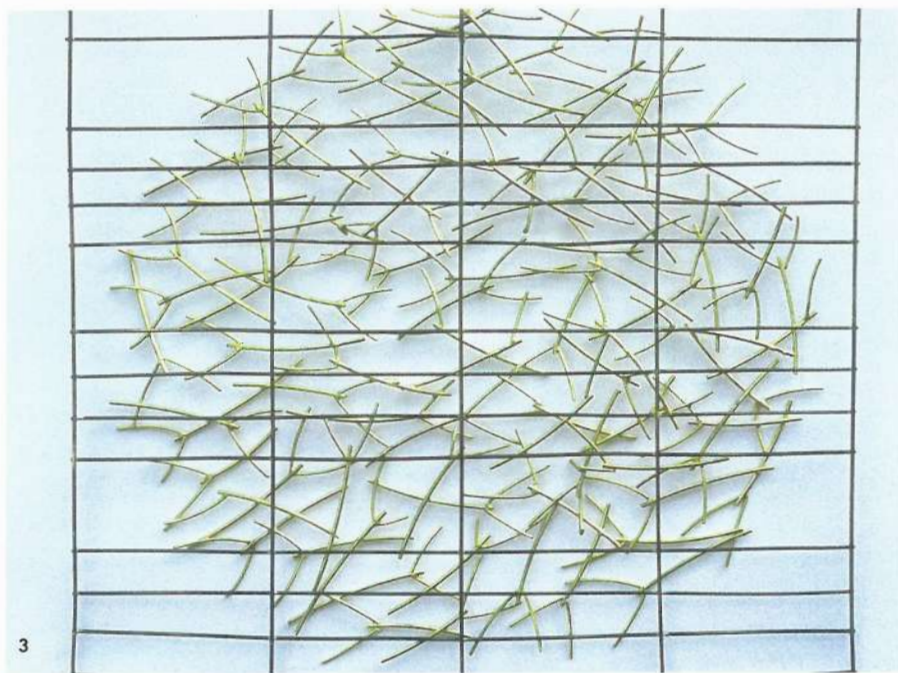
This initial period of research led to a group of approximately 20 oxidized silver necklaces (2) made in the following three years, which included purchases and commissions for the Victoria



Oxidized silver necklaces, 1996. ©V&A Images/Victoria and Albert Museum.

and Albert Museum, National Museums of Scotland and Birmingham Museum. Secondly, it marked a growing emphasis on the process of creativity alongside the finished pieces of jewellery. Developmental work such as drawings, three dimensional studies and photographs began to be recognized in their own right through exhibition and museum purchase.

This approach to work was reinforced with the Welbeck project where the role of Artist-in-Residence required continual communication with the public about the process of creating and developing work. The project itself was to work with the agricultural community of The Welbeck Estate, Nottinghamshire and to explore the patterns and order used in working the land especially through the more repetitive processes such as ploughing, drilling, etc. The concluding exhibition held at the Harley Gallery in 2001 included all of the research: photographs, collections of soil samples exploring texture and colour, historical research into implements, visual notes of discussions about agricultural processes, as well as the gold wire grid brooches (3).

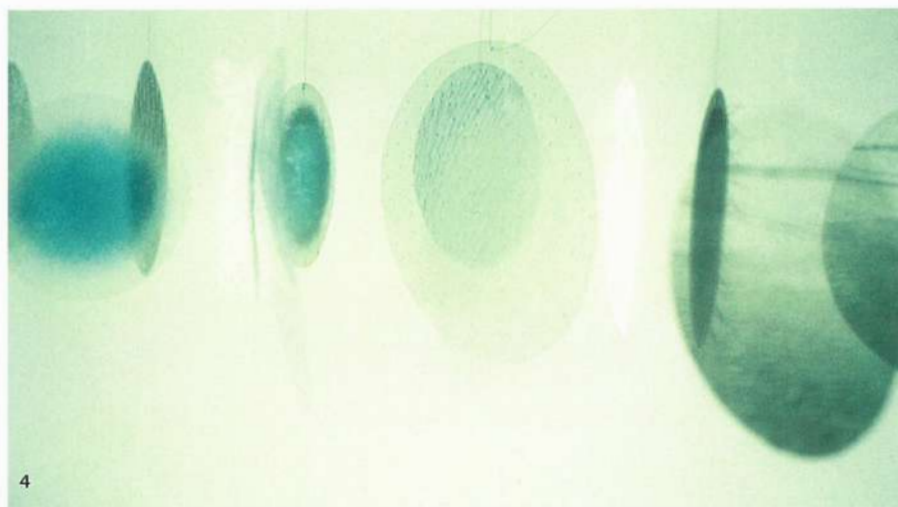


Brooch 'Crossings', oxidized gold, 2001. Photo Cynthia Cousens.

By now residencies had become an intrinsic part of my working process, enabling extensive research to take place. Four months in New Zealand, studying the West coast, formed the inspiration for a body of work exploring transience and qualities of light (4). A major piece made in 2000 – *The Waves* – used dyed printed and stitched acetate, projected light and the body's shadow to question permanence and materiality, concepts that are traditionally deeply connected to the subject of jewellery. This body of work was exhibited in the retrospective solo exhibition 'Cynthia Cousens: Shift' shown at Hove Museum and touring in 2003.

The final group of work illustrated was a simple statement about jewellery's role as a communicator and as a gift. It took the form of a series of necklaces made daily from found objects whilst travelling to and around Australia. These were posted home to a friend and acted as postcards recording experience and places visited.

As was shown in the lecture, landscape has played a key role in the development of my jewellery. It has helped to find a poetic visual language to frame the constant questioning and exploration of jewellery issues and as a base for exploring more personal issues. □



The Waves. Acetate, projected light, shadow and body, 2000. Crafts Council Collection. Photo Sara Morris.

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 the wine to comply with our charity status. Contact details are given on p.25 should you require further information.

Tuesday 27 June

CLARE PHILLIPS

From Fancy Goods to a Palace of Jewels: the Early Decades of Tiffany & Co.

Tuesday 25 July

An evening view of 'Bejewelled by Tiffany', an exhibition in the Gilbert Collection Galleries at Somerset House (see pp 44 and 45). The curator of the exhibition (and SJH Committee member) Clare Phillips of the V&A, will give a short introductory talk, and be available to discuss pieces with members.

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. The jewellery includes the most famous and historic pieces in Her Majesty's collection, many of them rarely shown in public. Sir Hugh Roberts, Director of the Royal Collections and Keeper of the Queen's Works of Art, will introduce the collection, and members will be able to discuss pieces with him.

Tuesday 26 September

WALTRAUD GANGULY

Highlights of Indian Ear Ornaments, their Historical and Mythological Background.

Members' meetings

London

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 Period and Contemporary'

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 and Alexandra Rhodes of Sotheby's
 Jewellery Department will speak
 about selected items from the sale.

Gem-A members only.

Wednesday 11 October

CLARE PHILLIPS

**American Glamour: 150 years of Tiffany
 Jewellery**

Talk and 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,
 pp.bscfgadga@ntlworld.com

Saturday 17 June

SUMMER SUPPER PARTY

North East Branch

For information call Mark Houghton on
 01904 639761 or Sara North email
 sara_e_north@hotmail.com

Thursday 13 July

BRIAN DUNN

The Naughty Nineties

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.

Wednesday 19 July

TRACEY JUKES

**Thoughts from 'a broad' – a trip around the
 world of coloured gemstones**

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 13 June

BRIAN JACKSON

Gems of Russia: from Karelia to Transbaikal

Tuesday 12 September

NIGEL ISRAEL

**A history of gemmology through the
 literature**

Tuesday 24 October

MARTIN VAINER

All the colours of diamond

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Thursday 21 September or

Wednesday 22 November

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Emeralds – The inside story

Tuesday 26 September

£150 (Gem-A Members £140)

Diamond Buying Guide

Wednesday 18 October

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All about Pearls

Thursday 19 October

£160 (Gem-A Members £145)

Natural History of Gems

Monday 23 October

£138 (Gem-A Members £125)

An Introduction to Gemmology

Tuesday 24 October

£138 (Gem-A Members £125)

Bead-Stringing II

Wednesday 25 October

£168 (Gem-A Members £157)

Valuing Antique Jewellery

Monday 30 October

£160 (Gem-A Member £145)

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