

# Gems & Jewellery

August 2008 / Volume 17 / No. 3

New jewellery  
gallery opens  
at the V&A

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Coated  
tanzanite

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Rubies from  
a new source  
in Tanzania

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Ancient  
granulation -  
a new theory

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Gems&amp;Jewellery

August  
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Contents



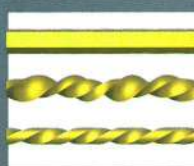
3

Gems and Minerals



10

Recent Events



13

Gem and Jewellery  
History

14

Hands-on Gemmology

Around the Trade	20
Museum News	22
Centenary	24
Shows and Exhibitions	26
Salesroom News	29
Stone Scoop	31
Events and Meetings	32

## What's new?

Celebrating one hundred years of gemmological education has made this a very special year for Gem-A. There is more to come in September with our Hong Kong Graduation and Award Dinner and in London in October with our Conference and our Graduation and Awards ceremony. And, of course, we are launching our fully updated and modernized Gemmology Foundation Course at IJL, the UK's premier fine jewellery show (Earl Court, London 31 August – 3 September). Our Gemmology Diploma Course relaunch will follow in January 2009 and our Diamond Diploma in the autumn of 2009.

Against this background of activity we must not forget that one of Gem-A's primary purposes is to support and promote our graduates who have been elected to FGA and DGA status. After all, our FGAs and DGAs are members of the only truly international professional gemmological association in the world.

So, beginning at the end of 2008, we will be rolling out what we have been calling our 'Gemmologist on Board' initiative. Companies that employ one or more of our FGAs or DGAs will be able to announce the fact by displaying our Coat of Arms. Initially, there will be no extra cost for this to members or their employers. We will be writing to all UK-based FGAs and DGAs later this year to give details and how this will be linked to our new website. Logistically this cannot be launched worldwide from the start, but our plan is to expand this initiative internationally over the next two years.

For FGAs who want to get their teeth into an academic project, we are also relaunching the Gem-A's prestigious Research Diploma. This was initially launched in 1945 and the select few of our Research Fellows include Robert Webster, Edward Gübelin and Jamie Nelson, the latter being our only surviving Research Fellow. Candidates, who may select their own subject, shall either have gained our Fellowship Diploma with distinction, or satisfy us that they possess the qualifications necessary for undertaking such work. Full details will be sent to FGAs later this year.

There is more on the cards, so join us at our reception at IJL on Sunday 31 August (see page 26) to learn more.

**Jack Ogden**

Chief Executive Officer

### Cover Picture

Orchid hair ornament, Belgian, 1905-07. Designed by Philippe Wolfers.  
Photo: Victoria and Albert Museum.

See Museum News, New jewellery gallery opens, page 22.



### Published by

The Gemmological Association  
of Great Britain  
27 Greville Street,  
London EC1N 8TN

t: +44 (0)20 7404 3334

f: +44 (0)20 7404 8843

e: info@gem-a.com

w: www.gem-a.com

Registered charity no. 1109555

### Editorial Board

Roger Harding, Harry Levy,  
Michael O'Donoghue,  
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**Managing Editor**  
Mary Burland

**Design and Production**  
Diversified Global  
Graphics Group – DG3

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For mediapack and advertising  
rates contact Mary Burland:  
mary.burland@gem-a.com

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## HONG KONG GRADUATION AND AWARDS DINNER

*In Celebration of One Hundred Years of Gemmological Education*

**To be held at the Royal Palace Chinese Restaurant  
1/F, China Hong Kong City, 33 Canton Road, Tsimshatsui, Kowloon  
on Tuesday 16 September 2008**

Organized by Gem-A in conjunction with its allied training centres:  
The Asian Gemmological Institute and Laboratory Limited (AGIL ATC)  
The Hong Kong Institute of Gemmology (HKIG ATC)

A special Dinner is to be held in Hong Kong this year to celebrate  
One Hundred Years of Gemmological Education.

Following the dinner, Gem-A awards will be presented to successful graduates of Gem-A teaching centres in Hong Kong, Taiwan, Mainland China and elsewhere in the Far East and Pacific area.

Perfectly timed for those visiting the Hong Kong Jewellery and Watch Fair (see below), the Hong Kong Graduation and Awards Dinner is a great opportunity for members and students to meet. Join Gem-A and its Asian teaching centres for this special centenary dinner.

**Tickets:** Non-member/non-student £36.00 each

Gem-A members, students and their guests £32.00 each

**Table Bookings:** £336.00 for a table of twelve

**Sponsorship opportunities:** Gem-A is inviting sponsorship of this important event. As a non-profit-making educational charity, Gem-A ploughs back any profits into the continued development of gem education, so your support would be very much welcomed.

To book tickets or for sponsorship information, contact Kehan Li on +44 (0)20 7404 3334  
email [kehan.li@gem-a.com](mailto:kehan.li@gem-a.com) or visit [www.gem-a.com](http://www.gem-a.com)

## HONG KONG JEWELLERY AND WATCH FAIR

Hong Kong Convention and Exhibition Centre — Wednesday 17 to Sunday 21 September 2008

Visit Gem-A at booth 2M49 where the newly developed Gemmology Foundation course can be viewed.

### Gem-A Seminars

Friday 19 September 2008 in Room 604, Level 6, Hong Kong Convention and Exhibition Centre

11:00 am to 12 noon: **Five Thousand Years of Gemmology** by Dr Jack Ogden, Chief Executive of Gem-A

12 noon to 1:00 pm: **Where do we go? Trends and Challenges in Gemmology Now and in the Future**  
by Dr Michael S. Krzemnicki, Deputy Director of the SSEF Swiss Gemmological Institute



# Gem alert

## Coated tanzanite circulating on the market

A recent topic of discussion on Gem-A's MailTalk was a large, top-colour tanzanite, purchased in Chanthaburi, Thailand, that had lost most of its colour when repolished. It was decided that this was probably one of the coated tanzanites currently circulating on the market.

Recently the American Gem Trade Association Gemological Testing Center (AGTA GTC) and American Gemological Laboratories (AGL) reported that they had examined a number of samples of faceted tanzanite that had suffered a noticeable loss of colour on repolishing.

"Although the coating was not immediately obvious, careful examination with a microscope and in immersion provided clear indications of the coating in most instances," stated Christopher P. Smith, Vice President and Chief Gemologist of AGL. "This was evidenced by abrasions along facet junctions and at the culet where the coating had worn off, as well as a subtle iridescence when viewing the surface with reflected light."

Advanced analytical testing using X-ray fluorescence spectroscopy indicated that the coating was composed, at least in part, of cobalt. Although the gemstone industry has become very familiar with the practice of heating zoisite to achieve the best violet to blue colour of tanzanite, this was the first time either lab had identified a coating on tanzanite to further improve its colour.

The majority of the tanzanite samples submitted to the AGTA

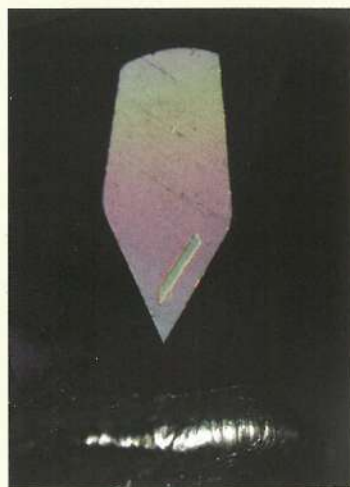


These two tanzanites were part of a group of stones recently examined at both the AGTA GTC and AGL laboratories in New York. Both were identified as having a thin coating layer to artificially improve their colour. Photograph by Fred Kahn and Sun Joo Chung.

GTC and the AGL were of small calibrated stones which would not normally be submitted to labs. "This is just a further reminder that each and every gemstone should be fully examined to determine whether or not it has been treated," Christopher Smith added.

In discussion about cobalt-coated tanzanite on Gem-A's MailTalk during June 2008, the question was raised by Michael Cowing as to whether the coated stones would be revealed by appearing red through a Chelsea Colour Filter. Antoinette Matlins replied that the Chelsea Colour Filter was not a reliable test because although not all uncoated tanzanite will show a reddish reaction through the Chelsea filter, those with 'purplish' or 'lilac' undertones to the colour will show a reddish reaction through the Chelsea Colour Filter.

The Gem-A Gem Testing Laboratory is keen to examine any examples of these coated stones that appear on the UK market.



Left: The cobalt coating produced a subtle iridescence that could be seen when observing the stone's surface in reflected light. The rectangular area near the point of this facet also highlights an area on the host tanzanite where the coating did not adhere.

Photomicrograph by Christopher P. Smith.

Right: In immersion it was noted that along facet junctions and at the culet the colour was lighter. This was a result of where the coating had been abraded away, revealing the lighter, inherent colour of the tanzanite.

Photomicrograph by Christopher P. Smith.



# The green amber story continues

**Maggie Campbell Pedersen** investigates the treatments used on ambers and copals, and urges openness to protect the public

We all know that amber with a green body colour has not been found in Nature and that it can only appear green as a result of fluorescence or treatment (**1** and **2**).

For a while we have been aware that copal – especially Colombian copal – can be treated in an autoclave with the result that it can turn green. According to Mr Hung Chi, General Manager of Palminic International Co. Ltd in Hong Kong (a company that produces the material), the colour deepens progressively with continued treatments, and the resulting material becomes harder and more stable, resulting in properties that resemble those of amber. (See 'Natural Green Caribbean Amber?' *Gems & Jewellery*, Vol. 17, No. 1, April 2008.)

The gemmological world has recently been surprised by a report by Dr Lore Kiefert, Laboratory Director, AGTA GTC, that Ukrainian amber was apparently now also being turned green by a company called Facett Art in Idar Oberstein, Germany. Subsequent tests run by AGTA in their laboratory on the material produced by Facett Art showed that it was not plastic, but the tests were otherwise somewhat inconclusive.

1. The illusion of green colouring in treated, backed Baltic amber.
2. Dominican amber fluorescing in sunlight.



Amongst amber dealers the story was received with some scepticism as it was felt that were it possible, it would already have been done. The countries producing Baltic amber (Poland, Russia and Lithuania especially) are constantly looking for ways of treating the material to enhance it. They produce so-called green amber by a combination of clarification, heat-treatment, polishing and backing, which gives an illusion of green material though the body colour of the amber remains golden (**1**). Any other attempts at making green amber have involved dye.

Having seen photographs of the 'new' green amber, I felt that it looked remarkably like the material produced by the company in Hong Kong using Colombian copal (**3**). I therefore contacted Mr Mueller, owner of Facett Art, and obtained two pieces of green, treated resin (**4** and **5**).

Examination and tests of the material seemed to confirm my suspicions. Samples of both resins, plus untreated Colombian copal, were tested by FTIR spectroscopy (at the Mineralogy Department of the Natural History Museum in London by Gary Jones). He comments that: "The material labelled 'Ukrainian' and Colombian green resins give very similar spectra. The only differences are that the Ukrainian spectrum is better resolved, i.e. sharper peaks and has a bigger peak at 887  $\text{cm}^{-1}$ . These differences could be due to differences in the degree of processing." (Dr Kiefert's original report had noted that the sharpness of the peaks in the FTIR spectrum were in inverse proportion to the intensity of the green colour in the samples tested.) In conclusion Gary Jones stated that: "The 'Ukrainian' green resin is derived from copal as is the Colombian – possibly even the same copal." I had to conclude that the material sent to me was not, after all, treated Ukrainian amber.

Mr Mueller started turning copal green some years ago, using a fifty year old German patent as a basis for his work, and refining the method. He then took the process to Hong Kong where it has been used, and further refined, by Palminic. Both companies informed me that they are now capable of turning almost any amber or copal green, regardless of its age, by varying the formula of heat, pressure and time. According to Mr Hung Chi, "The older amber does take longer and also doesn't become as intense green as younger ones."





3. Treated Colombian copal purchased from Hong Kong.  
4 and 5. Treated 'Ukrainian' amber.

He added that the experiments on a variety of resins are of purely academic interest as most would not be commercially viable to produce.

Not all resins can turn green. Madagascan copal evidently does not, yet the FTIR spectra of Colombian copal and Madagascan copal (from known sources) are almost identical. Resins that can change include Kauri gum, Baltic amber, Dominican and Mexican ambers, and many others from around the world, but, as far as I can gather, it is not yet known why some resins turn green while others do not. It is my understanding that a paper on the subject of 'green amber' will soon be published by Dr Ahmadjan Abduriyim of the Gemmological Association of All Japan (GAAJ). He confirms the facts as given by Mr Hung Chi, and has personally processed ambers to turn them green. He has also run extensive tests on the materials in the laboratory at GAAJ-ZENHOKYO.

With the possibility of turning many resins into an attractive green gem, and also the simpler, and now commonplace, treatment of turning copals into a golden material closely resembling Baltic amber (6), we must be prepared to see a lot more of these resins on the market. However, none of it is *natural* amber and this should be

brought to the attention of the general public, who are being persuaded to pay higher prices in the belief that they are purchasing something rare. Totally incorrect descriptions such as 'Rare green Baltic amber' and 'Natural green Caribbean amber' are common.

Further, the process of treating copal again raises the old question:

6. Treated copal resembling Baltic amber.

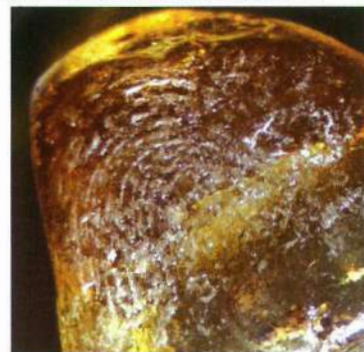


"What is copal and what is amber?" We are constantly hearing Colombian copal referred to as amber, not only by those wishing to sell it, but also by gemmologists. Yet many papers have been written on the subject over the years. David Grimaldi wrote in his book *Amber, Window to the Past* that Colombian copal is often sold as 'Pliocene amber' which would mean that it is about two million years old. He states that carbon-14 dating gives its age in hundreds of years. George Poinar wrote in the *Lapidary Journal* (January 1996) that he had undertaken carbon-14 tests on several pieces from different Colombian sources, all of which had proved to be copal, indeed the oldest proved to be only 310 years old. Amber, on the other hand, is too old to be carbon dated.

Copal is an immature resin which is not fully polymerized and cross-linked. It still contains a sufficient level of volatiles to be regarded as unstable, but the definition is arbitrary. There is no clear demarcation between sub-fossilized and fully fossilized resin, and no definitive chemical test. The process, copal to amber, is a continuum. We generally use the reactions to two simple tests to decide the answer, namely the hot point test and the solvent test:

- A hot point will burn the surface of amber, whereas with copal it will melt the material and make a hole in it — the younger the copal, the larger the hole.
- When a drop of alcohol or a solvent such as acetone, ether or methylated spirits is put on the surface of copal, it will soften it. A mature copal such as kauri gum softens in thirty seconds. Some resins will go slightly dull in thirty seconds but not soften, and amber generally remains inert. Untreated Colombian copal softens in about six seconds (7). And yet the myth that Colombian copal is amber continues.

However, the autoclave



7. Fingerprint in the surface of polished Colombian copal, after softening with methylated spirits for six seconds.

treatment given to copal resin to (as it was originally described) 'turn it into amber' — both of the golden variety and the green — drives off the volatiles, making it more stable and much harder. It reacts to these simple tests in ways almost like amber. Is it therefore amber?

There are so many amber treatments on the market today, of which these are simply the latest. Names such as 'new amber' and 'modified amber' have been suggested, and most of the manufacturers disclose that the material is treated, but unfortunately subsequent sellers often do not, indeed, very little information is given about any amber treatments. It is time the subject was addressed, especially now as, with treated copal being sold as a natural green amber, the public is truly being cheated.

A slightly extended version of this article originally appeared in *Organic Gems*, the online organics archive and information centre, at [www.maggiyecp.com](http://www.maggiyecp.com).

All photographs © Maggie Campbell Pedersen



# Loughborough 2008

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# Rough justice

Thinking of buying rough diamonds? **Alan Clark FGA DGA** of Gem-A advises on precautions you should take

In the article 'Rough diamond imitations on the market' (*Gems & Jewellery*, June 2008, p.3) and in recent discussions on Gem-A's MailTalk, mention was made that rough diamond imitations which had recently appeared on the market had tested as diamond when checked with thermal probes.

I was surprised at these results so carried out tests on a number of gemstone species including those mentioned in the article to see if lowering the temperature of the stone could fool the standard thermal tester.

Two thermal probes were used for the testing. The first was the Gem-A Thermal Diamond Tester which is recommended particularly for testing rough stones. Unlike other such instruments, it can be adjusted for high and low temperature situations, plus the approximate weight of the stone. The second was the Presidium Multi Moissanite Tester.

Samples of cassiterite, corundum, glass, moonstone, quartz, periclase, phenakite, scapolite, scheelite, spinel, tourmaline, topaz and zircon were tested, first with the stones at room temperature and then with the temperature individually lowered using liquid nitrogen to blow cold air over the stone.

Testing with the Gem-A Thermal Diamond Tester, all stones gave a negative reading (i.e. not diamond) when tested at room temperature. When the temperature of the stones was lowered, the following tested positive (i.e. indicating diamond): cassiterite, corundum, periclase, phenakite and topaz. The remainder continued to give negative readings.

Testing the stones at room temperature with the Presidium Multi Tester, all gave negative readings except for the phenakite, which gave a positive reading in certain directions of the crystal only. I found that the crystal also showed slight electrical conductivity. When the temperature was lowered, all the stones tested positive with the phenakite giving a variety of readings – diamond, moissanite and simulant.

Further tests are being carried out on a number of phenakite crystals to investigate why they give these readings.

I noted that in neither the discussions on Gem-A MailTalk nor in the article in *Gems & Jewellery* was there any mention of a Kimberley certificate with the parcel of rough 'diamonds'. The Kimberley certificate was introduced to provide proof that diamonds had been legally mined and exported from the country of origin. Only when all the necessary documentation has been produced (originals, not copies) should a trader consider buying rough diamonds.



Both thermal probes used for these tests are available from Gem-A (listed in the Gem-A shop catalogue at [www.gem-a.com](http://www.gem-a.com))  
 Top: The Gem-A Thermal Tester (DIT 0011 £60.00 plus VAT)  
 Bottom: Presidium Multi Tester (DIT £199.00 plus VAT).

## Before buying rough diamonds:

- Check that the stones have a Kimberley certificate. Most reputable diamond companies will not deal without the relevant paperwork in place.
- Take a rough diamond course; like any business, lack of product knowledge could prove very expensive.
- Research the current prices.
- Make sure your thermal tester is working properly. Read the instructions fully and practise using it. Remember, it should be used only to *confirm* your identification.
- Beware of cold stones. Always allow stones to acclimatize to the surrounding temperature before testing.
- If you are not an expert in looking at rough diamonds, find someone who is.



# New rubies from Tanzania

**Professor Henry Hänni and Dr Michael Krzemnicki** of the SSEF Swiss Gemmological Institute report on a new source of ruby currently on the market

During this year's Basel World, the spring jewellery fair in Switzerland, the SSEF Swiss Gemmological Institute received a number of rubies from several dealers (1) that showed some new features.

These new rubies have high transparency and a rather saturated red and showed no indications of heating. An absolutely striking stone of 10.5 ct was submitted to the SSEF laboratory for a gemstone report with origin indication (2). Two weeks later, during SSEF off-premise testing in Bangkok, we saw more of this beautiful ruby material, including two more stones over 10 ct. We also saw some rough pieces of deep blue and purple from the same locality in Tanzania.

## Microscopic features

The internal features of the new material includes specifically bent fibres (3), identified as hollow channels with a polycrystalline filling of probably secondary minerals. Also straight lines representing twin lamellae intersections are often present. Naturally healed fissures are charged with negative crystals containing a polyphase solid filling consisting of white and often black grains (4). Blue colour zones, often occurring as thin stripes (5) or in growth sectors, are another characteristic feature. Typical mineral inclusions for rubies from other Tanzanian deposits, such as zircon as single inclusions or clusters have so far not been seen.

## Chemical analysis

When the chemical composition was tested with ED-XRF, Cr and Fe were found as main traces while Ga was low and Ti and V were below the detection limit of the method.



2: An excellent ruby of 10.75 ct originating from the new source at Winza, Tanzania. The stone has no fissures and shows no indications of heating. Characteristic inclusions consist of fine bent fibres. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute

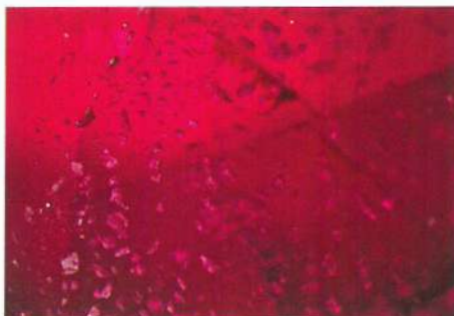
## Rough material

Some months before, Werner Spaltenstein, a rough gemstone buyer in East Africa, had submitted a number of rough crystals and fragments that strongly resembled Mong Hsu ruby. The origin was indicated as Winza, Morogoro area, central Tanzania. Reports from Chantaburi had indicated that heat treatment experiments to remove the blue colour zones in the Winza ruby had not met with success.

1: Unheated rubies (2.2 to 3.6 ct) from the new source at Winza, Tanzania. Courtesy Gemburi Co. Ltd. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute







Ruby from Winza, Tanzania:

3. Characteristic inclusions consist in fine bent fibres with a polycrystalline filling of probably secondary minerals. 4. A healing fissure charged with multiphase inclusions. 5. Characteristic blue colour zoning as thin parallel stripes. Photos © H.A. Hänni, SSEF Swiss Gemmological Institute

Characteristics of the faceted stones were very similar to those observed in the rough samples. It was therefore possible to attach the origin tag 'Winza Tanzanian ruby' on the new cut material. The stones may contain blue patches that are confined to crystallographically controlled areas. The crystals and fragments expose different crystal habits and faces (6). The most surprising is an octahedron-like variation of the rhombohedral shape. Many of the ruby crystals strikingly resemble spinel octahedra. The angles between the ruby faces are however different, and twin lines are common. With magnification, one can discover on the triangular faces traces of surfacing twin lamellae, visible as sets of parallel fine lines. The cut gems we have seen so far from this deposit suggest that

there is a potential for high-grade rubies that do not need any treatment. But as in all deposits, the lower qualities will surely be subjected to heat treatment, to remove the blue spots and to lessen the conspicuousness of the fractures.

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[Note: Gem-A have received the unsubstantiated report that some so-called Tanzanian rubies being offered for sale in South Africa have proved to be synthetics – the sellers cashing in on buyers' unfamiliarity with the new Tanzanian material.]

Fig. 6: Ruby crystals of rhombohedral to prismatic habit from Winza, Morogoro Area, Central Tanzania. The largest stone is 25 mm across and 88 ct. Photo © H.A. Hänni, SSEF Swiss Gemmological Institute





## Recent Events

# Gem-A Centenary Dinner

### A memorable evening at the Goldsmiths' Company

One hundred and twenty members and supporters of the Gemmological Association of Great Britain gathered at the Goldsmiths' Company in the City of London on 3 July to celebrate the centenary of the establishment of the first-ever gemmological education course in 1908.

The evening commenced with a champagne reception in the setting of the Goldsmiths' Company's exhibition 'Treasures of the English Church'. This was followed by a livery-style dinner with a contemporary twist, modern flower arrangements, exciting raffle prizes and a magical interlude when all the electric lights were switched off to leave a stunning display of candlelight reflected in the chandeliers — an effect only rarely seen in the Livery Hall.



Candlelight completes a truly magical evening.

Those attending included representatives of international gem laboratories and institutes, and members of the British gem trade and auction houses. After dinner they were regaled with a brilliant speech by John Benjamin FGA DGA, valuer and jewellery consultant with considerable experience of the gem and auction trade both in the UK and overseas.

This centenary year also marks the launch of Gem-A's new Foundation in Gemmology course which will be implemented in the Autumn. Jack Ogden, CEO of the Association, announced that there is now a major push to strengthen the sponsorship base for Gem-A's education and training courses. This has now had a splendid launch at the Centenary Dinner and special thanks are due to the Major Sponsors, the Programme Sponsors and Raffle Sponsors who have helped ensure such a positive start to our second century.

Olga Gonzalez

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# London Jewellery Week

Dr Jack Ogden presented two public lectures on Friday 13 June as Gem-A's contribution to the recent London Jewellery Week, an event celebrating the excellence of the city's talent. Passionate jewellers, stylish designs and inspirational people were all part of the first ever event of its kind in the capital.

Jack's first talk, entitled 'Treasure, traditions and tricksters: A history of gems', looked at some 5000 years of the colourful history of gems, how they had been admired, traded, fought over and imitated. During the times of the great early Old World civilizations, in Egypt and elsewhere in the Near East, the gems employed were primarily opaque, but strongly coloured — such as lapis lazuli and carnelian. After about 300 BC, and linked with Alexander the Great's eastern conquests, transparent stones, such as emerald and, after a few centuries, diamond and sapphire, are seen in jewellery. The later Medieval period saw increasing trade between East and West, culminating in the opening up of direct sea trade with the East, and what is now South America. Side by side with the growth in the gem trade came imitations of gems and Jack illustrated surviving examples from the ancient world (illustrated) — and some ancient comments on them.

The second presentation was 'The Gem Detective' and this explained how over the last hundred years, gemmology had advanced as a science in its own right. Jack explained the observation and detection involved in modern gemmology, highlighting the importance of gemmological qualifications for serious players in the industry and showing why gemmology is also an increasingly popular hobby.



In Roman times emeralds, mainly from the mines in Egypt, were employed in their hexagonal crystal form. Usually they were simply pierced longitudinally, sometimes superficially polished. The Roman emerald bead shown here (left) is next to a Roman imitation made of rock crystal cut into a hexagonal form and then 'crackled' and dyed. The original organic dye has decomposed leaving nothing but a yellowish stain. This crackling and dyeing of rock crystal to imitate various coloured gemstones is described in Roman period texts.

The gemmologist understands gems and how to distinguish real from imitations; 'enhanced' stones from the truly natural. Such skills provide the background know-how that best ensures that jewellers and their customers can buy with confidence.

Jack will be giving another presentation about gem history at the Gem-A Conference in October (see page 18), but this time in the context of the development of gemmological understanding during the passing millennia.



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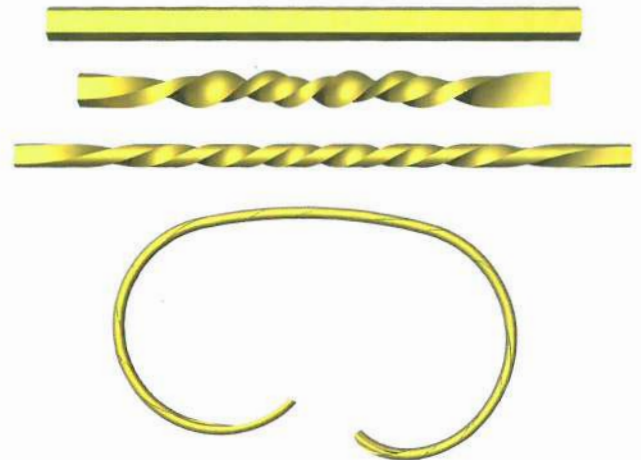
# Granulation: gold, bronze and iron

Ancient granulation is one of the most alluring of ancient jewellery technologies and Alessandro Castellani's enthusiastic search in the nineteenth century to determine how it was achieved is well known. The basics of the technology are simple enough — minute gold spheres are attached to a sheet gold background — and the process by which this was done has been discussed at considerable lengths in numerous publications. However, there are still some questions to be answered.

The modern jewellery historian is no longer content to ask where and when something was made or, if more technically tuned in, how it was made and what of; we also need to ask why was it made in that way or what other technical processes are linked to it? Trying to answer such questions does lead to some very useful insights into the development of jewellery technology and its relationship to the general technological development of the society that produced it. The links can be revealing and interesting. For example, diamond polishing on any sophisticated scale had to await the introduction of craft machinery which, however simple, produced continual rotary motion (in Europe, probably late fifteenth century); the rise of the whaling industry in eighteenth-century Europe impacted on jewellery by making available much cleaner oils (i.e. soot free) for providing the heat for soldering.

A curious feature of early granulation is its close association with gold wire produced by what is called the 'strip twist' process. A strip of gold cut from the edge of a piece of hammered gold sheet is twisted and rolled until compacted into circular section wire (illustrated). The technique lasted into the eighth or ninth century AD, when it was superseded by wire drawing. However, it first appears around 2000 BC (some of the earliest examples are from Troy) in intimate association with granulation, and this pair of technologies then seem to disseminate around the ancient old world in unison. Why?

Nobody can answer a question about something going on 4000 odd years ago with certainty, but I can propose a theory. Granules, those minute spheres of gold, were produced by fusing little clippings of gold over charcoal or in a small furnace. When they melt, they roll up into little balls, a result of surface tension not human skill. Strip twist wire and granules presuppose the ability to produce little strips and clippings of gold sheet. Cutting on a small scale and with any reasonable degree of accuracy required metal tools — you try cutting gold accurately with a piece of flint. And not just metal tools in general. Such cutting required small-scale tools with edges that were



The strip twist process.

sharp but not brittle. From what we know about the development of metal production and working technology, the presence of small, sharp and non-brittle tools points to copper-tin alloys ('bronzes'), which in date terms means around 2000 BC in the ancient Near East — in line with granulation's appearance at Troy. So perhaps granulation and strip twist wire manufacture then spread in the wake of bronze technology?

The next main change in granulation came just over a thousand years later. Granulation and gold wires could now be produced on a far smaller scale — as witness the extraordinary granulation and filigree of the ancient Etruscans. Can it be coincidence that this reduction in scale — requiring even smaller, sharper tools — ties in chronologically with the spread of iron production and the availability of iron tools to craftsmen?

Jack Ogden

The author first proposed this theory in a paper entitled 'Technology, Craft, and Context: New Thoughts on Old Gold' presented at the conference held in conjunction with the exhibition 'Wine, Worship, and Sacrifice: The Golden Graves of Ancient Vani' at the Institute for the Study of the Ancient World (ISAW), New York, 16 and 17 May 2008. The Exhibition is now at The Museum of Fine Arts, Houston, until 1 September 2008.



# Multi-coloured synthetic quartz

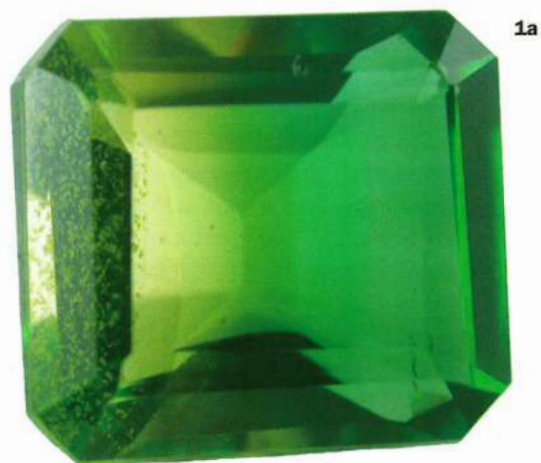
**Gagan Choudhary FGA** of the Gem Testing Laboratory, Jaipur, India, reports on some identifying features of these synthetics

Quartz is one of the most popular groups of gemstones because of its range of colours and range of prices. The colour varieties include violet-purple amethyst, yellow citrine, parti-colour ametrine, green prasiolite, pink rose quartz and colourless rock crystal. Some of these colours are found naturally (e.g. amethyst and rose quartz) while the majority of other colours on the market such as citrine and prasiolite are natural stones that have been treated. Due to this popularity, all these various colour varieties are imitated in synthetic quartz and have been widely available in the gem trade for years.

Recently, two specimens of quartz represented as natural quartz from Pakistan were studied at the Gem Testing Laboratory of Jaipur, India. One of the specimens was multi-coloured with bands of green and yellow as its two main components (**1a**), while the other was green with triangular patches of yellow (**1b**). Quartz with similar patches of colour has been reported previously (see e.g. Johnson and Koivula, 1996) which proved to be synthetic. Other reported combinations of colour in synthetic quartz include violet and yellow ametrine (Balitsky *et al.*, 1999), blue (Koivula *et al.*, 1993) and orange yellow/ yellow green (Johnson *et al.*, 1995). The triangular colour pattern however does not seem to have been reported so far.

## Materials and methods

Refractive index (RI) readings were taken on the largest polished facet (see table). Specific gravity (SG) was determined hydrostatically. A binocular microscope, incorporating fibre-optic and other forms of lighting, was used to document the microscopic features. Internal growth structure, colour zoning, and some other magnification features were observed with the stones immersed in liquid. Reaction to UV radiation was viewed in a darkened cabinet with long-wave (366 nm) and short-wave (254 nm) ultraviolet lamps. Absorption spectra were observed with a desk-model GIA Prism 1000 spectroscope. Infrared (IR) spectra (in the 6000-400  $\text{cm}^{-1}$  range) were recorded using a Nicolet Avatar 360 FTIR spectrophotometer at room temperature with a transmission accessory. Two spectra were taken for each stone, one parallel and the other perpendicular to the optic axis. Qualitative EDXRF analyses were performed using a PANalytical Minipal 2 instrument



1: Colour zoning (a) and approximately triangular patches of yellow (b) in two stones of synthetic quartz. The stones weigh 5.48 ct and 2.39 ct respectively. Photos by G. Choudhary

under two different operating conditions; elements with low atomic number (e.g. Si) were measured at 4 kV tube voltage, 0.850 mA tube current, and transition or heavier elements were measured at 15 kV tube voltage, 0.016 mA tube current.

## Results and discussion

Both samples were readily identified as quartz on the basis of 'bull's-eye' optic figures which were obtained under crossed polars. Their gemmological properties are consistent with those reported in the literature and are described in Table I. As such, however, these properties do not indicate whether the stones are natural or synthetic.



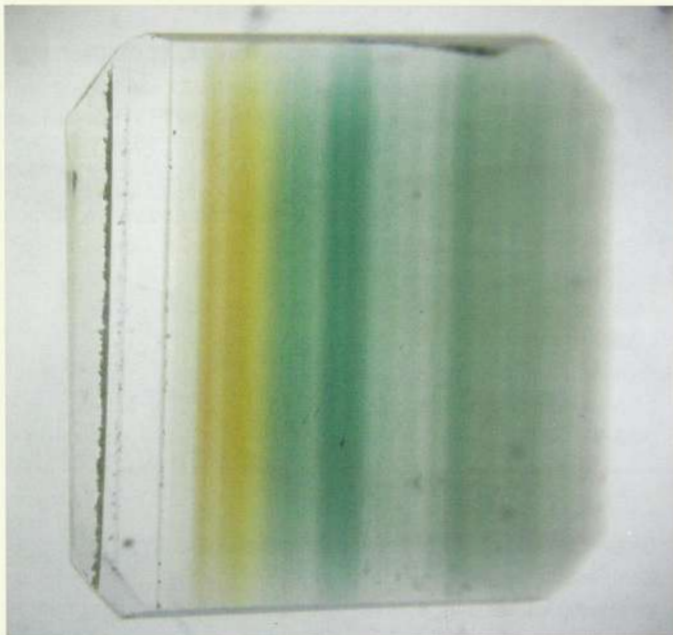
Table 1: Gemmological properties of two synthetic quartz specimens.

Property	Specimen 1	Specimen 2
Colour	green and yellow in different zones	green
Weight	5.48 ct	2.39 ct
Cut style	octagon step	rectangular step
Optic character	anisotropic, bull's-eye optic figure visible through the pavilion	anisotropic, bull's-eye optic figure visible through the crown, table facet
RI	1.540 - 1.548	1.540 - 1.548
SG	2.64	2.65
Pleochroism	green zone: strong dichroism, bluish green and yellowish green yellow zone: weak dichroism, light and dark yellow	strong dichroism: bluish green and yellowish green
Absorption spectrum	none	none
UV fluorescence	LWUV inert SWUV inert	inert inert

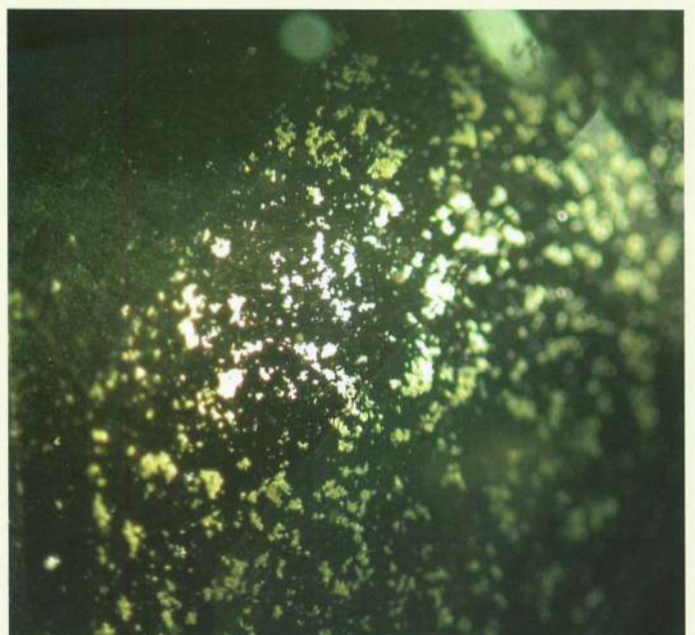
**Specimen 1: parti-colour quartz**

The parti-coloured specimen showed obvious colour zoning with green and yellow as dominant zones (**1a**). This kind of pattern is more often encountered in fluorites, although similar patterns in synthetic quartz have been reported previously by Johnson and Koivula (1996). On immersion, these zones became even more prominent and exhibited green of varied tone and saturation, and yellow and colourless with sharp boundaries (**2**); in some directions, they appeared to be wavy. These colour zones are also oriented perpendicular to the optic axis as determined under crossed polars; this pattern of colour zoning is typically associated with synthetic quartz (Balitsky *et al.*, 1998). In addition, at the edge of the stone there is a colourless seed plate with pale yellow 'breadcrumb' inclusions oriented parallel to the colour zones (**2** and **3**). More pale yellow 'breadcrumb' inclusions are scattered throughout the stone. All these factors indicated the stone to be synthetic quartz.

2: On immersion, the colour-zoned stone shows more detail in the multi-colour zones which are oriented perpendicular to the optic axis and parallel to the colourless seed plate. Photo by G.Choudhary



3: White and pale yellow 'breadcrumb' inclusions concentrated along the seed plate margin of the stone shown in 1a and 2. Dark-field, fibre optic illumination, magnified 35x. Photomicrograph by G. Choudhary



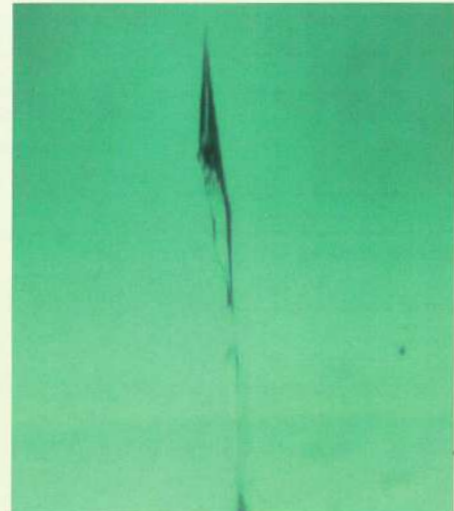
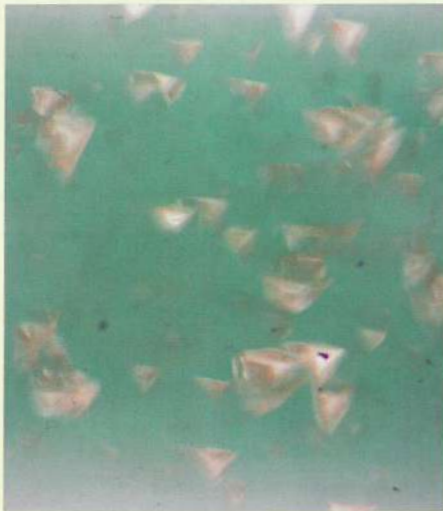


# Hands-on Gemmology

## Multicoloured synthetic quartz (Cont.)

### Specimen 2: green quartz with triangular patches

The face-up view of the green specimen exhibited yellow triangular patches (**1b**). On magnification, the colour patches were confirmed to be triangular (**4**), and in a view parallel to the table facet, they appeared as zonal columns along the optic axis direction as indicated by the bull's-eye optic figure. The triangular cross section is consistent with the three-fold symmetry of quartz but the yellow zones are not evenly formed throughout their length. At angles, these zones appear wavy, flame-like or feathery (**5**), features that have been reported previously in quartz of synthetic origin (Balitsky *et al.*, 1998). In addition, the specimen also has spicule-like cavities with two-phase inclusions oriented along the optic axis direction (**6**).



4: Triangular patches in the 2.38 ct stone mentioned in 1b. These are cross sections of columns of colour oriented along the optic axis and are consistent with the three-fold symmetry of quartz. Immersion, bright-field illumination, magnified 25x.

5: At some angles the yellow columnar patches of the 2.38 ct stone have wavy or 'feathery' margins. Immersion, bright-field illumination, magnified 15x.

6: Numerous spicule-like cavities with two-phase inclusions are present with their long axes oriented parallel to the optic axis. Dark-field illumination, magnified 60x. Photomicrographs by G. Choudhary

IR spectra of the two stones taken in two directions exhibited complete absorption between 400 and approximately 3600  $\text{cm}^{-1}$ . This pattern of IR absorption is typically associated with synthetic quartz (Jianjun *et al.*, 2007).

Qualitative EDXRF analyses of the two stones indicated major silicon and traces of calcium and iron but no other elements were detected.

### Conclusion

Although multi-coloured stones were represented as natural quartz of Pakistani origin, internal features clearly indicated them to be synthetics. Characteristic features like the 'breadcrumbs' inclusions, a seed plate or pattern of zoning are fortunately present in our two stones but if such features are absent, it is much more difficult to decide whether a quartz is natural or synthetic.

### Acknowledgement

The author is grateful to Mrs Shyamala Fernandes, Jaipur, for providing the synthetic quartz for study and analysis.

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### About the Author

Gagan Choudhary MDGI FGA has been the Assistant Director of the Gem Testing Laboratory in Jaipur, India, since 2001. Currently he is involved in educational, certification and research activities of the laboratory.



# Gem Discovery Club

## Emerald mines of the Urals

On 6 May the guest specialist at Gem-A's Gem Discovery Club was Anton Vasiliev of Moscow, who was visiting London whilst in the UK to speak at the Scottish Branch Conference. His main topic was the emerald mines of the Urals, which was followed by a brief presentation on his Facet Designer Software that he had originally developed to help design new, optimum forms for faceted gemstones other than diamond (see *Gems & Jewellery*, June 2008, p.12, for further information on the software).

Anton's talk on the emeralds of the Urals was lavishly illustrated, giving a pictorial account covering the landscape of the mining area, an historical record of the mines and miners, extraction processes, the cutting and polishing of the emeralds and alexandrites. He also described the colour grading system used for emeralds in Russia.

The first Russian emeralds were discovered in the Ural mountains in 1830. According to legend, Maxim Koghevnikov found the first crystals in the root of a fallen tree in a swamped forest north-west of Yekaterinburg. Emerald was mined from 1831 to 1930 for use in Russian jewellery, but from 1931 mainly beryllium ore was extracted which was used for the nuclear and defence industries. The biggest production of beryl was at the Malyshevo mine, where the extraction of emeralds had resumed during the last few years, only to cease again this year because of safety problems at the mine.

Photographs by Anton Vasiliev.



Emerald crystals in the matrix.



The Malyshevo mine.

Faceted emeralds from the Urals:  
a square emerald cut (right) and a  
parti-coloured stone (below).



Extracting emeralds from the ore by hand.





## Gem-A Centenary Conference and The 2nd European Gemmological Symposium

Saturday 25 – Sunday 26 October 2008

The Hilton London Kensington

**Gem-A is proud to be hosting this year's European Gemmological Symposium in conjunction with our centenary celebrations. This dynamic two-day conference will highlight both the history of gemmology and the jewellery trade, and will discuss tips and new technologies that are relevant to today's gemmologists. Our gathering of international speakers and members promises to make this an historic event.**

### Day 1: The Foundations of Gemmology

There will be a range of papers reviewing the history of gemmology from many perspectives, including the history of diamonds, Portuguese gems, the history of inclusions, the life of George Frederick Kunz and the gems in the Swedish Crown Jewels. *Speakers:* Sandra Brauns, Rui Galopim de Carvalho, Al Gilbertson, John Koivula, Yvonne Markowitz and Jack Ogden.

### Day 2: Practical Gemmology in the Modern World

Papers will discuss the practical use of gemmological instruments which are significant to gemmologists today and the analysis of certain gem materials, as well as new developments and discoveries. *Speakers:* Emmanuel Fritsch, Henry Hänni, Ulrich Henn, Alan Hodgkinson, Michael Krzemnicki, Duncan Parker and Brad Wilson.

### Conference Dinner/Dance

A Conference Dinner/Dance will be held at the Hilton London Kensington on the Saturday evening.

### Conference Events

#### Monday, 27 October

- 8:45 to 10:00 Private viewing of The William and Judith Bollinger Jewellery Gallery at the Victoria and Albert Museum, South Kensington, with an introduction by Richard Edgcombe. £15.00 + VAT.
- 14:00 to 16:30 New Approach to the Teaching and the Use of the Refractometer. A practical session with demonstrations by Darko Sturman and Duncan Parker. £20.00 + VAT.
- 18:30 to 21:00 Graduation Ceremony at Goldsmiths' Hall in the City of London. The ceremony will be followed by a reception. £10.00 + VAT.

#### Tuesday 28 October

- 10:00 to 16:30 Precious Metal Clay Workshop with Helen O'Neill of the PMC Studio. £40.00 + VAT.
- 16:45 to 18:00 Private viewing of the Crown Jewels with a guided tour by David Thomas. £40.00 + VAT.

### Fees and booking details

The fee for the Conference, to include lunch, is £135.00 plus VAT for one day, or £255.00 plus VAT for two days. An early-bird discount of £10.00 per day may be deducted by those booking by 31 August. Tickets for the Dinner/Dance are £35.00 plus VAT.

For full details of the event, how to register and how book a room at the Hilton, visit our website at [www.gem-a.com](http://www.gem-a.com) or contact Olga Gonzalez at [Olga.Gonzalez@gem-a.com](mailto:Olga.Gonzalez@gem-a.com) or tel: +44 (0)20 7404 3334. Details of sponsorship are available on request.



# Gem notes

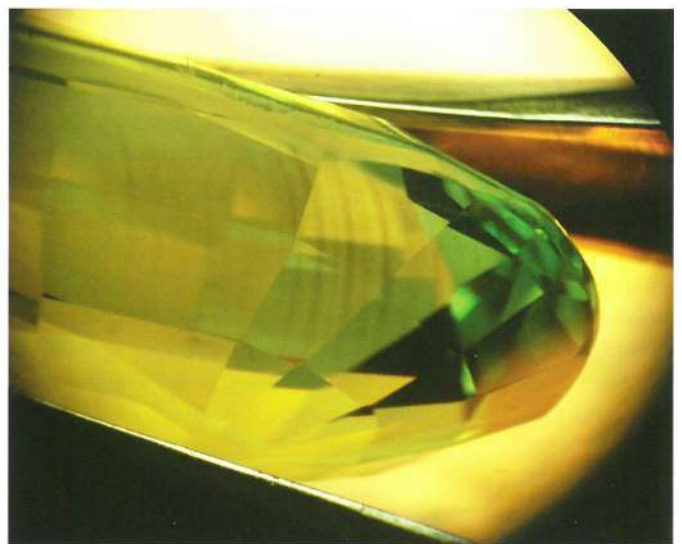
**Bear and Cara Williams** report on a stone purchased as a peridot and a new find in Brazil



1. The 11.57 ct oval synthetic corundum with a 14.75 ct cushion Burmese peridot.

Recently seen in our lab was a 11.57 carat, oval peridot. Suspicions were raised based on its below-market price. The stone was purchased in Thailand. The purity of colour and bright lustre was a bit above what is normally seen in peridot. The impression however, was that one could easily believe it to be peridot (1). The client suspected there might be a new treatment for peridot on the market. The eye-prism/distant vision method showed the birefringence too low, and upon further testing an RI of 1.76–1.77 confirmed it as corundum. We had not previously seen this particular hue of green in synthetic sapphire, and it shows that anything can be imitated with the most convincing of colours. Evidence of its flame-fusion origin became apparent under magnification with the appearance of curved striae (2) seen at oblique angles.

Also of interest is a new find of transparent rhodonite from Brazil. Discovered as a by-product of large-scale manganese mining, this beautiful watermelon-coloured gem (3) can easily be mistaken for fine rhodochrosite if identified by sight alone. These particular gems display strong manganese absorption spectra, with a distinct line seen in the green (502 nm) and a broader band in the green centred at ~542 nm. Of the two stones tested in our lab, no treatments have been detected. Due to numerous inclusions and surface fissures, we would expect to see Opticon and other similar treatments applied in the future. With a hardness of 6 and beautiful colours, this gem could become very popular.



2. Curved banding (15 x).



3. Two rhodonites: the faceted stone weighs 9.25 ct and the cabochon 13.40 ct.

Photos courtesy of Bear Williams.

## About the Authors

Bear and Cara Williams operate Bear Essentials. For further information contact them at [bear@stonegroup labs.com](mailto:bear@stonegroup labs.com)



# Culture clash and price lists

Harry Levy reports on the diamond market

Two important international congresses took place recently — CIBJO in Dubai in April, and the combined Congress of the World Federation of Diamond Bourses (WFDB) and the International Diamond Manufacturers Association (IDMA) in Shanghai in May.

At CIBJO, one of the main items on the agenda was a new constitution for the organization. CIBJO began as an organization of European countries to bring about some harmony in nomenclature and trading rules. They produced several books to help the industry, a *Diamond Book*, a *Gemstone Book* and finally a *Pearl Book*, jointly known as the *Blue Book* (the cover of the printed version was blue). Over the years CIBJO expanded and soon became truly international.

## The growth of CIBJO

CIBJO was established as a confederation of national trade organizations, but other organizations with an international remit, such as De Beers, inevitably became involved and were eventually admitted as Associate Members of CIBJO, without voting rights. When Dr Gaetano Cavalieri became the President of CIBJO in 2000, his dynamic leadership brought other countries into CIBJO membership, and further private international jewellery industry organizations were admitted as Associate Members.

As CIBJO has grown, it has become increasingly financially reliant on its Associate Members. We can see a Hegelian principal at play here. Hegel stated that an organism changes through growth, but eventually the quantitative change becomes a qualitative one. CIBJO has acknowledged this change by putting representatives of the Associate Members onto its committees and councils, but now, naturally, Associate Members consider that they too should have voting powers. The obvious need for a new CIBJO constitution was agreed at the Congress in Cape Town in 2007, but with many different interests and approaches to accommodate, this has not been easy to draft. The first draft was discussed in Dubai this year, but not agreed. The Council has been instructed to produce a second draft.

## Diamond prices

The Shanghai Congress was a more straightforward affair, despite the momentous changes through which the diamond industry is going. The distribution of rough is no longer controlled by the Diamond Trading Company (DTC) — De Beers. They have reduced



The signing of the joint declaration of WFDB, IDMA and CIBJO regarding the new diamond nomenclature introduced by the IDC. From left: Moti Ganz, president of the IDMA; Gaetano Cavalieri, president of CIBJO; Avi Paz, WFDB president. Standing behind them are Dieter Hahn, WFDB Treasurer General who has been on the IDC since its inception in 1975 and IDC Chairman Stephane Fischler. Photo courtesy of the MDBC

their sight holders numerically and geographically so that many members of IDMA lack a secure basis for buying rough diamonds and have to shop on an open market. As a result, the stability of diamond prices is now affected. The prices of polished stones have been steadily increasing, especially in the larger better-quality stones those over three carats. These increases in price have now affected smaller stones.

The first effect was to reduce the discounts offered between dealers on the prices given in the *Rapaport* price list. Some stones even went to a premium over the 'Rap' price. *Rapaport* tried to redress the situation by making sufficiently large changes in the list prices so that the older discounts could still be applied. However, dealers then used these higher prices with the smaller discounts, so the prices of polished goods are still rising. The Shanghai Congress did not tackle this problem and so at the time of writing confusion continues.

## Synthetic diamonds

The other pertinent challenge discussed in both Dubai and Shanghai was that of gem-quality synthetic diamonds. Trade



regulations had hitherto insisted that all man-made diamonds were to be designated as 'synthetic diamonds'. In contrast, the producers of man-made diamond have claimed that the term 'synthetic' is derogatory and confused by the public with the term 'artificial'.

New rules have now been agreed by the International Diamond Council (IDC), the technical arm of the WFDB and IDMA. According to these, gem-quality diamonds created in a laboratory or factory can now be described as 'synthetic', 'laboratory-grown', 'laboratory-created' or 'man-made', but the descriptor must always be followed by the word 'diamond' or 'diamonds'. The term 'cultured' must not be used to describe gem-quality synthetic diamonds.

At the Dubai Congress there were advocates for a similar approach by CIBJO, but during long debate in the CIBJO Diamond Commission meeting, it was pointed out that the *Blue Book* in its preamble, effectively allowed stone dealers and jewellers to use terms that were not illegal in their countries, just as long as buyers were in no doubt as to what they were buying. So, after a close vote, it was agreed that CIBJO need not alter the existing *Diamond Book* clause, in effect a recommendation, which consented only to the term 'synthetic'.

#### Joint statement

CIBJO and the IDC signed an agreement a couple of years ago to work towards a single publication for the diamond trade, replacing

the CIBJO *Diamond Book* and the IDC *Rule Book*. The differences between the new IDC and the traditional CIBJO approach to the terminology of synthetic diamonds might be seen as a barrier to such unity, but discussion within CIBJO is by no means over. On 23 May a joint statement was issued by CIBJO, IDMA and WFDB which said "CIBJO recognizes and respects the revised IDC Rules" that included this broader range of terms for synthetic diamonds.

In any case, to date, the synthetic diamonds on the market are mainly yellow, green and brown, with a few pinks and blues. White synthetics are still uncommon, but some small white synthetic diamonds, perhaps from Russia, are appearing in India and perhaps Hong Kong. Some, and perhaps most, of these are correctly described as 'synthetic' when they enter the market, but the assumption must be that some small, white synthetic diamonds will soon be passing along the distribution chain undisclosed, if they are not already. Recent questioning of the effectiveness of the Kimberley Process has provided some support to the NGOs and synthetic diamond producers who point out that synthetic diamonds are guaranteed 'conflict free'.

The jewellery industry is currently facing problems with drops in sales in many parts of the world. Economic conditions are one thing, but the industry must avoid a situation that makes this worse and resolve the ethical issues and clarify the language of disclosure for the general public.

## Treatment after report

A 3.01 carat ruby submitted to Bauer Gemmological Laboratories in Melbourne, Australia, already had a report from a major international laboratory noting that it had been heat treated. Examination at Bauer Gemmological Laboratories revealed four areas in the stone with fracture filling and the likelihood is that the ruby was 'glass filled' after the original report had been produced. (*The Australian Gemmologist*, 2008, **23**(6), pp 284-5.)

## Follow up

Following the article about irradiated gemstones in the June 2008 issue of *Gems & Jewellery*, we have been reminded that the Chelsea Colour Filter can differentiate between quartz coloured green by heat treatment and by irradiation. The heated green quartz remains green through the Chelsea Colour Filter, while the irradiated green quartz shows reddish. See Hiroshi Kitawaki (GAAJ Research Laboratory) Report 'Green Quartz' <http://tinyurl.com/2ko3dv>

The heated green quartz has often been referred to as 'Green amethyst' or, more accurately, 'Greened Amethyst' by sellers in recent years. This terminology is frowned on by most in the industry, but we can note that its use is not without precedence. There are various earlier twentieth century uses of the term and 'a green amethyst cut in the form of a dragon' is mentioned in John Linneaus Edward Whitridge Shecut's *Ish-noo-ju-lut-sche: Or, The Eagle of the Mohawks of 1841*. Incidentally, the term 'white amethyst' was very commonly used in the 19th century in every thing from scientific papers to lists of jewellery.

## New colouring process for cultured pearls

A new type of colour 'treated' Akoya cultured pearl has been developed in Japan by the Tanabe pearl farm and is now entering the market. The process is being termed 'pre-harvest colour treatment' and involves injecting a colouring solution into the oysters after the 'bead' nuclei have been introduced. The oysters secrete coloured nacre, thus creating cultured pearls in a variety of hues. The numbers of cultured pearls of this type being produced is still very small, but the company is concentrating on sizes of 8 mm and larger. There are still terminology considerations — Tanabe considers the colour 'natural' as it is different from the long practice of dyeing pearls after harvest — and long-term colour durability has yet to be ascertained. Gem-A advises buyers of cultured pearls always to request proper descriptions on invoices. (Source *Jewellery News Asia*, May 2008, 285, pages 60 and 62.)

## GIA Lab receives CVD synthetic diamond for grading

The Spring 2008 issue of GIA's *Gems & Gemology* noted that the first CVD synthetic diamond had been submitted to their Carlsbad lab for grading. The GIA lab had examined many CVD diamonds prior to this, but in all these cases the diamonds had been received from the producers for research purposes. (Source *Gems & Gemology*, **44**(1), Spring 2008.)

Jack Ogden



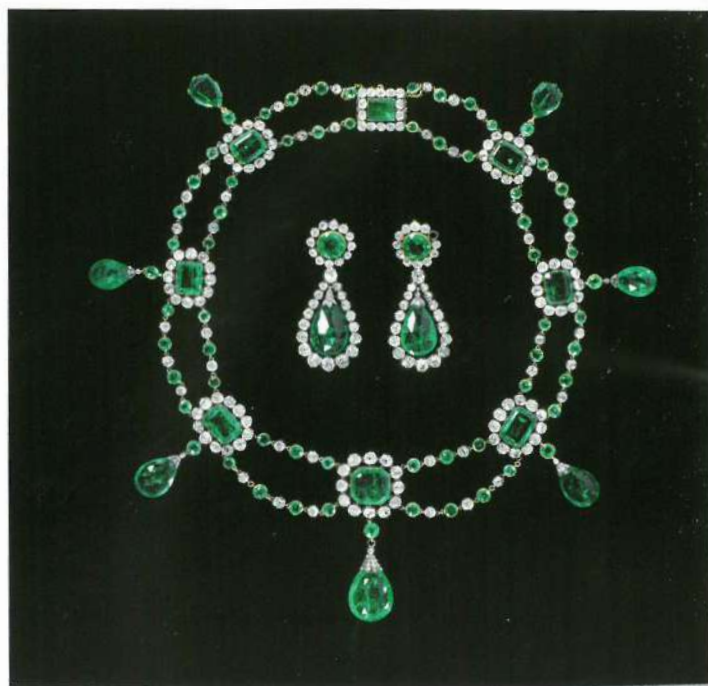
# New jewellery gallery opens

**Olga Gonzalez** reviews the William and Judith Bollinger Jewellery Gallery at the V&A, South Kensington



William and Judith Bollinger Jewellery Gallery. Photo: Edina van der Wyck.

Rushing to the Victoria and Albert Museum with the aim of avoiding the potentially long jewellery preview queue, my head was spinning before I attempted to climb the staircase leading to the gallery. Luckily, my anxiety was halted when I took my first sneak peak inside the space – it was truly a contemporary masterpiece, worthy of its collection. The William and Judith Bollinger Jewellery Gallery opened to the public on 24 May, the effect of a generous £7 million gift which enabled a four-year renovation of the V&A's jewellery gallery. The architect, Eva Jiricna, designed a space with sinuous glass cases, curving to show the collection highlights, a central glass spiral staircase rising to a new mezzanine floor, and a well designed chronology for the jewels which easily moves the viewer through the space while providing an 'accident free' quick tour route through the best of the collection – an essential for those with time constraints on a sightseeing day.



The Beauharnais Emeralds, French, 1806. Probably made by Nitot et Fils of Paris. Photo: Victoria and Albert Museum.





The Shannongrove Gorget. Irish, about 700 BC. Photo: Victoria and Albert Museum

The striking 3500 jewels on display centre on the story of European jewellery during the last 800 years. Collection highlights include the Beauharnais Emeralds (a gift from Napoleon to his adopted daughter), tiaras and ornaments worn by Empress Josephine, jewelled pendants given by Elizabeth I to her courtiers and diamonds worn by Catherine the Great of Russia. Interactives and videos explore 7000 images of jewels, and the techniques and history surrounding the jewellery. One of the earliest pieces is the Shannongrove Gorget, a Late Bronze Age collar which was found in a bog in Shannongrove, Co. Limerick, sometime before 1783.

Two of my favourite highlights were the interactive touch screen of a spectacular cut steel chatelaine by Joseph Banks Durham, which opens at the touch of a finger to reveal a hidden tweezer, ear scoop, awl, tambour hook and penknife among other objects, as well as the two elongated and delicate poissarde earrings, a reminder of the recently discussed hot topic on Gem-A's MailTalk.

My particular interest in art nouveau and art deco jewellery instinctively led me to the collection of Lalique jewellery on the far left end of the gallery, and drew me to my favourite piece – a handsome piqué-du-jour orchid hair ornament by Philippe Wolfers (pictured on the front cover) which epitomized the exceptional craftsmanship and focus on organic beauty associated with the time.

The initiative that the V&A took to incorporate an extensive collection of contemporary jewellery in the gallery is very commendable, as well as its incorporation of the jewellery in the gallery with the new product lines sold in the shop. In an attempt to bring together the museum collections with today's designs and designers, the Cherry on the Cake designer collection, V&A Select and the V&A Collection, are three shop ranges sold to provide everything from affordable contemporary jewellery to wearable



Brooch in the form of a basket of flowers. Cartier, USA, 1930. Platinum with rock crystal, moonstone and baguette- and brilliant-cut diamonds. Given by the American Friends of the V&A through the generosity of Patricia V. Goldstein. Photo: Victoria and Albert Museum.



Bracelet, French, circa 1925–30. Lent through the generosity of William and Judith Bollinger. Photo: Victoria and Albert Museum.

replicas of jewellery in the V&A jewellery collection. The 140 living goldsmiths and jewellers represented in the William and Judith Bollinger Jewellery Gallery encouragingly have pieces represented in the same glass cases that hold some of the finest jewels throughout the ages, making a refreshing and continuing legacy for jewellery at the V&A and a delightful experience for visitors.



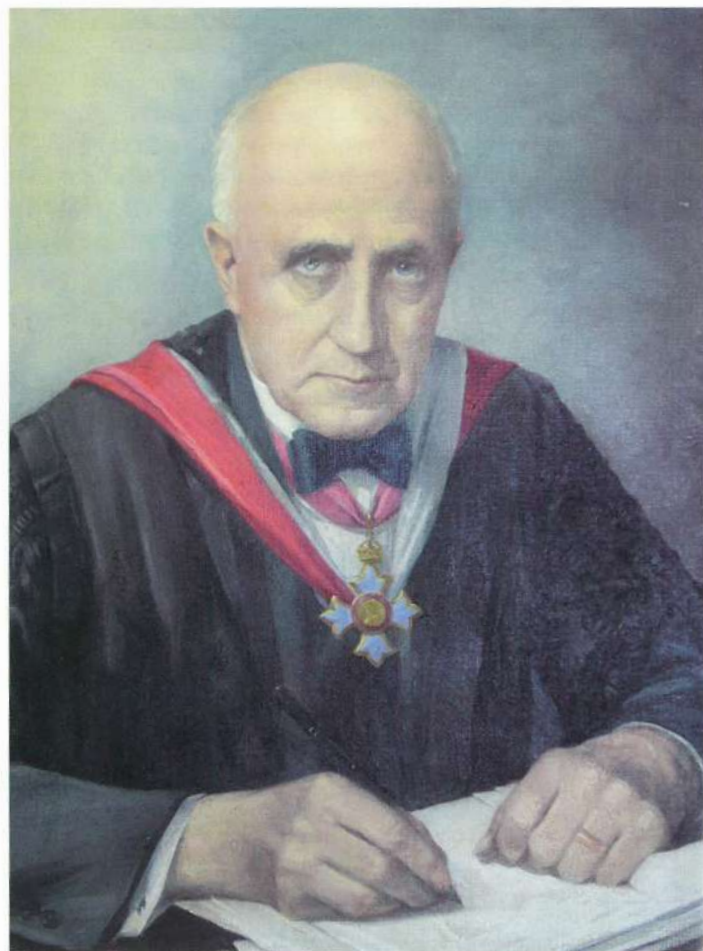
# The First Exams

The gemmological committee of the National Association of Goldsmiths of Great Britain, which grew into the Gemmological Association, was instigated in 1908, but the first exams were not held until April 1913. There were two levels – Preliminary and Diploma – and these were open to ‘any member of the trade’. The questions in that Diploma Examination are set out opposite.

Eight candidates sat this Diploma exam of whom six passed and the examiners reported that: “The candidates on the whole displayed considerable knowledge of the subject, and evinced some skill in identifying stones and in applying the needful physical tests.” Those taking the Preliminary level exam that year numbered twelve of whom seven passed, but “the standard of the work was less satisfactory”. The examiners were the gemmologist G. F.

Herbert Smith of what was then the Natural History Department of the British Museum, and Edward Hopkins described as ‘Lapidary, dealer and premier trade gemmologist’. J. Tully (inventor of the Tully refractometer) and Edward Hopkins loaned equipment and the necessary stones for examination. One of the diploma graduates that year was Samuel Barnett, the man who had first proposed gemmological examinations at the National Association of Goldsmiths meeting in 1908. He was awarded Diploma number 1, which is now in the possession of the National Association of Goldsmiths.

*The British Jeweller*, commenting on the 1913 exams, noted that “With the great increase in the use of gems in articles of jewellery, and the increase in the number of the varieties of the gems



The examiners of the first exam: Edward Hopkins (left) and G.F. Herbert Smith.



themselves so used, not forgetting the varieties of imitation and synthetic stones which are now so common, a thorough theoretical and practical knowledge of gem stones is necessary for the properly equipped jeweller." This statement is just as valid today.

Nevertheless, despite the importance of Samuel Barnett's original 1908 proposal for a gemmology exam and qualification, and the

recognized success of the first exams in 1913, the years between had not been all smooth sailing. Deciding the syllabus and getting the balance right between academia and trade realities took much discussion. We will look at this in our next issue of *Gems & Jewellery*.

Jack Ogden

## Diploma Examination 1913

### Theoretical Section (3 hours allowed)

- Q1 To what mineral species do the following stones belong: Alexandrite, Cape-ruby\*, bloodstone, cat's-eye, jacinth\*, kunzite? What do jewellers mean by 'olivine'?
- Q2 Describe the brilliant form of cutting diamond. What are the principles governing its shape and what are the effects of neglecting them?
- Q3 What is the specific gravity of a stone? Describe fully the various means of determining it.
- Q4 What species might be represented in a parcel of red stones? State clearly the characters upon which you would rely in distinguishing between them.
- Q5 Define refractive index, and give a full description of a method of measuring it. In what way does the double refraction of a stone affect the observations? How would you explain appreciable differences between the values obtained for different specimens of the same species?
- Q6 Discuss the method by which gem-stones and pearls have been artificially reproduced or imitated, and point out how such may be distinguished from the corresponding natural substances.
- Q7 Describe fully the following species, so far as they are used in jewellery, giving their physical properties and chemical composition: Beryl, corundum, diamond, garnet, opal, peridot, quartz, turquoise.
- Q8 Describe the principal gem-stones found in Brazil and in California, and mention the more important localities.
- Q9 What is the orient of pearls? Explain to what peculiarity of structure it is due. Describe briefly the principal pearl fisheries.

### Practical Section (4 hours allowed):

- Q1 Determine as far as you can the physical characters – including the hardness, specific gravity, refractive indices, and the double refraction and dichroism (if any) – of the specimens set before you; find the weight in each case. Identify the specimens.
- Q2 Identify the mounted stones set before you, in each case describing the cutting and estimating the weight.
- Q3 Calculate the value of a bunch of 19,558 pearls as under at 8s. 6d.\*\* the base: 1,478 pearls weighing 220 carats, 2,974 pearls weighing 271 carats, 3,778 pearls weighing 652 carats, 4868 pearls weighing 229 carats, and 6,640 pearls weighing 222 carats.

\* 'Cape ruby' was a name for pyrope garnet and jacinth was orange zircon.

\*\* 8s. 6d. (eight shillings and six pence) in today's money is 42.5p.



## Shows and Exhibitions

# Gem-A goes knee-deep in the IJL pool

# IJL

INTERNATIONAL  
JEWELLERY  
LONDON 2008

31 August – 3 September  
EARLS COURT LONDON  
[www.jewellerylondon.com](http://www.jewellerylondon.com)

## BE PART OF IT

International Jewellery London, the UK's only dedicated trade jewellery event, where the most talented, cutting edge British designers and innovative international collections are hand selected to create a showcase of inspiring jewellery, contemporary and classic. IJL's first class education programme unveils future trends, retail strategies for success and exposes buyers to the latest merchandising techniques.

Visit Gem-A at stand G400

**Register online and save the £50 entry fee**

Get free admission by registering at:  
[www.jewellerylondon.com/register](http://www.jewellerylondon.com/register)



As the excitement builds for International Jewellery London (IJL), the Gemmological Association of Great Britain looks forward to a stunning show, full of industry connoisseurs, enthusiasts and prospective students eager to see the latest in gems, jewellery and design. An event coinciding with Gem-A's centenary celebrations, IJL is an ideal location for the Association's latest announcements.

## Champagne Reception

On Sunday 31 August, Gem-A will be hosting a champagne reception at the Gladstone Jewellery Bar for current members where Jack Ogden will be announcing some of the exciting initiatives to be rolled out in the coming months, including the launch of the new Gem-A website, the updated Foundation in Gemmology course commencing this autumn, and the relaunching of the research diploma.

Exhibiting at stand G400 in the Fine

Jewellery area across from the Gems Plaza, Gem-A will have the new course notes on display, and IJL attendees will have the opportunity to browse the new company website.

## Timeline

Another Gem-A highlight will be their timeline feature in the seating area, which will focus on important historical events in the last one hundred years of gemmology, and surely give show-goers a helping of interesting knowledge to ponder as they walk around.

International Jewellery London has been expanding and becoming even more exciting each year. With the impressive layout and boulevard, attendees who come back year after year, and growing interactive and varied events, IJL has proven itself to be the ticket for the London trade – an annual event that all look forward to.

Olga Gonzalez



## Shows and Exhibitions

### Seminars at IJL

The Jewellery Trends and Retail Business seminars at IJL are a fantastic opportunity to discover and learn. These popular IJL seminars are free to attend and do not require booking. However, please arrive in plenty of time to make sure you don't miss out as seats are limited and allocated on a first come first served basis.

Highly anticipated as always, Doug Garrod will be giving two one-hour talks at the show which are not to be missed. The first entitled 'Dolled up gemstones', to be held at 11:00 a.m. on Sunday 31 August, will discuss gemstone treatments, and the second 'When gems are not what they appear', at 3:00 p.m. on Tuesday 2 September, will be a discussion about gemstone imitations. Both of Doug's presentations will be given in the Hampton Room, 1st Floor, Earls Court Two.



### Latest books and instruments

Gem-A will be featuring a wide selection of gem testing instruments and books on gems and jewellery at IJL. Our team at stand G400 will include gemmologists to answer and advise on the purchase and use of equipment.

Come along and take the opportunity to browse through the latest books and equipment.

### Show Special

Essential to anyone examining coloured gems and diamonds is good lighting. So it is not surprising that our range of mains-operated Daylight Lamps proved to be our best sellers in 2007. The bright 13 watt lamp (75 watt equivalent) is ideal for colour grading diamonds and for coloured stones.

We are delighted to announce that our Show Special this year is to be the latest Ultimate Daylight Lamp offering all the features of the standard lamp but with the option to operate on rechargeable batteries. This gives the flexibility to use the lamp wherever you go – ideal particularly for valuers and stone dealers while travelling. The rechargeable batteries give three hours of use. Offered in our shop at £68.00 plus VAT, you may purchase the Ultimate Daylight Lamp plus a free carry case at our stand for only £60.00 plus VAT.



**SHOW SPECIAL:**  
The Ultimate Rechargeable  
Daylight Lamp

Usual price: £68.00 + VAT  
Show price: £60.00 + VAT

### Gem-Empathy Award

Gem-A is proud to sponsor the 2008 Gem-Empathy Award, as the Association has always advocated that gem-set jewellery should be designed to show the gemstones to their best advantage. The Gem-Empathy Award for 2008 will be presented to the IJL exhibitor displaying, in the opinion of the judges, a single piece or collection of jewellery that makes captivating use of one or more gemstones. The criteria for the award will include accurate ethical descriptions as well as creativity, imagination and attractiveness.

The winner of this year's award will receive publicity in *Gems & Jewellery* as well as a free full-page advertisement. The winner will also be offered a free place on a Gem-A one-day workshop of their choice or free attendance at the 2008 Gem-A Conference.

The Gem-Empathy Award 2007 was presented to C.W. Sellors for their high standard and creative use of gemstones in jewellery. Said Chris Sellors: "We were very excited and encouraged to receive the Award. It was a great acknowledgement of the hard work our team have put in over the years developing our gemstone jewellery designs and techniques. The encouragement it gave the company inspired us to move forward and hopefully again impress the judging panel in 2008."



2007 Gem Empathy Award winners C.W. Sellors. From left: James and Chris Sellors, and Jack Ogden and Olga Gonzalez of Gem-A.





# ROCK 'n' GEM SHOWS



From sparkling crystals & spectacular minerals to ancient fossils, jewellery & gemstones in a whole spectrum of colours

## NEWTON ABBOT RACECOURSE

Newton Abbot, Devon  
6 and 7 September

## NEWARK SHOWGROUND

Winthorpe, Newark, Notts  
13 and 14 September

## BATH AND WEST SHOWGROUND

Shepton Mallet, Somerset  
27 and 28 September

## MARGAM PARK

Margam Country Park, Neath, Port Talbot  
18 and 19 October

## CHELTENHAM RACECOURSE

Prestbury Park, Cheltenham, Glos  
25 and 26 October

## KEMPTON PARK RACECOURSE

Staines Road East (A308)  
Sunbury on Thames, West London  
1 and 2 November

All shows are open from 10am  
Admission charges apply - see website for details


All shows are indoors  
with free car parking,  
disabled access and refreshments

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**Tel: 01628 621 697**

For a full list of shows, directions  
from your postcode, and a list of exhibitors  
attending each show please visit:

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Maidenhead, SL6 7GB



## UNITED KINGDOM FACET CUTTERS' GUILD

(A non-profit making Organisation)

Interested in cutting gemstones  
yourself?

If so, then you would benefit from  
membership of the **UKFCG**.

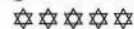
Free help, advice and six regular  
information packed newsletters per year.



For more information Contact:

Membership Secretary  
UKFCG  
P.O. Box 2480  
Stoke on Trent  
ST7 2WT

Website: [http:// www.ukfcg.org](http://www.ukfcg.org)



## ORGANIC GEMS

The website devoted to gem materials of  
plant and animal origin

*congratulates*

## Gem-A

*on the first 100 years of  
gemmological education,  
and wishes them well for  
the next 100!*

[www.maggiecp.com](http://www.maggiecp.com)



# Sah Oved cuff

An impressive gold diamond and gem-set bangle by Sah Oved is to be included in Christie's South Kensington, London, jewellery sale on 7 October. The cuff is of sleeve form with a cabochon-sapphire-set hinged strap or hasp fitting, which can be seen in the photograph. It has a circular motif set with vari-cut brown and pale yellow diamonds, a ruby and an emerald, and has emerald, sapphire and ruby rim detail. Engraved on the inside of the bangle are the words: "Nancy Cunard devised me Moysheh Oved gathered my gold and jewels, Sah made me GOD is my Father, 1929."

Sah Oved was the partner of jeweller and sculptor Mosheh Oved who owned the famous antique emporium Cameo Corner in Bloomsbury. Born Gwendolyn Ethel Rendle, she was a student of John Paul Cooper until 1923 and specialized in designs of medieval inspiration. In 1927 she met Mosheh Oved and changed her name to Sah. The majority of her creations were produced prior to 1938 and these took the form of private commissions.

The diamond and gem-set cuff, estimated at £7,000 – £10,000. © Christie's Images Ltd 2008.



## Auction Houses

Listed is a selection of auction houses specializing in jewellery. Visit their websites for details of forthcoming sales.

**Bonhams** [www.bonhams.com](http://www.bonhams.com)  
 London, Knightsbridge t: 020 7393 3900  
 London, New Bond Street t: 020 7447 7447  
 Edinburgh t: 0131 225 2266  
 Los Angeles t: +1 323 850-7500  
 New York t: +1 212 644 9001  
 San Francisco t: +1 415 861-7500

**Lyon & Turnbull** [www.lyonandturnbull.com](http://www.lyonandturnbull.com)  
 Edinburgh t: 0131 557 8844  
 Glasgow t: 0141 333 1992  
 London t: 020 7930 9115

**Christie's** [www.christies.com](http://www.christies.com)  
 London, South Kensington t: 020 7930 6074  
 London, King Street t: 020 7839 9060  
 Amsterdam t: +31 (0)20 575 5255  
 Dubai t: +971 (0)4 425 5629  
 Geneva t: +41 (0)22 319 1766  
 Hong Kong t: +852 2521 5396  
 Milan t: +39 02 303 2831  
 Beverly Hills t: +1 310 385 2600  
 New York t: +1 212 636 2000

**Fellows & Sons** [www.fellows.co.uk](http://www.fellows.co.uk)  
 Birmingham t: 0121 212 2131

**Sotheby's** [www.sothebys.com](http://www.sothebys.com)  
 London, New Bond Street t: 020 7293 5000  
 Geneva t: +41 (0)22 908 4800  
 Milan t: +39 02 295 001  
 New York t: +1 212 606-7000  
 Hong Kong t: +852 2524 8121

**Woolley & Wallis** [www.woolleyandwallis.co.uk](http://www.woolleyandwallis.co.uk)  
 Salisbury, Wiltshire t: 01722 424500



# NATURE'S TREASURES: Minerals and Gems



**Natural History Museum, London**

**Sunday 7 December 10:00 a.m. – 4:00 p.m.**

Organized jointly by The Mineralogical Society, The Russell Society and Gem-A

A day of short talks for anyone with an interest in minerals and gemstones, including members of all three organizations. Students from schools and universities are welcome to attend. There will also be an exhibition by mineral dealers.

Range of exciting talks including:

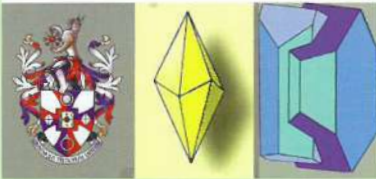
- Minerals and their growth, shapes and colours
- Minerals to gems and ancient uses
- Smashing diamonds
- Fluid and solid inclusions in minerals and gems; guide to their origin
- Mapping and mineral exploration in Africa
- Environmental mineralogy
- Industrial applications of minerals
- Minerals in the field: where to find them and how to collect responsibly
- Agates
- Analysis of minerals and what they can tell us about formation, age and climate

**Cost: £12.00 including lunch**

For full details and to register:

[www.minersoc.org/pages/meetings/nature/nature.html](http://www.minersoc.org/pages/meetings/nature/nature.html)

Contact Kevin Murphy for information on 020 8891 6600, email [Kevin@minersoc.org](mailto:Kevin@minersoc.org)



## A NEW SOURCE OF RUBY ON THE HORIZON



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# The nacred and the dyed

Recent years have seen the increasing presence of cultured pearls that have been treated by irradiation, heat, dyes and various chemical treatments, to change their colour. Such colour treatment is neither new nor limited to cultured pearls. As an example we can quote a UK patent of 1877 (number 3223). This was for 'Decolorizing and colouring pearl to produce fancy pearls'. The pearls were first washed in alcohol, then bleached with a solution of sodium bisulphide in tartaric acid. After drying and washing again in alcohol or ether, they were placed in the dye bath in a vacuum or under pressure. Aniline salts or solutions of a wide range of other colouring agents were employed, from organic ones such as turmeric and indigo, to compounds of metals including silver, gold, copper, iron and even uranium. The pearls then received a final washing.

The potential presence of certain foreign substances, such as uranium, on older natural pearls is worth bearing in mind when fluorescence is used in testing.

**Jack Ogden**

## Another British Centenary

In 1908 the British jewellery industry adopted the metric carat, defined as 0.2 grams. The carat was a very ancient weight unit, traceable back before the Greek keration, but over the centuries it had developed to different weights in different countries. The *British Jeweller* magazine of July 1908 commented: "These divergent values of the carat have been regarded with some tolerance owing to the fact that the size of a precious stones is only one of the factors which determine its value", but the increasing globalization of the jewellery trade in the late nineteenth century and the near universal adoption of the kilogram weight standard as internationally defined in 1899, demanded standardization. Lists had long been produced that defined the numerous local carats, but while differences between far-flung countries — such as Brazil (carat of 192.2 mg) and Turkey (carat of 205.5 mg.) — might almost be acceptable, the continued use of the Bologna carat at 188.5 mg and the Turin carat at 213.5 mg, cities just 184 miles (297 kilometres) apart, in the early twentieth century, hardly facilitated trade.

A universal 'metric carat' of 0.2 gram was proposed by George Frederick Kunz at the International Congress of Weights and Measures that was held at the World's Fair in Chicago in 1893. Its adoption was agreed by the British jewellery industry in 1908, although resolutions to support the adoption of the metric carat had been made by the relevant trade bodies in Belgium, Denmark, France and Germany in 1906, and in Australia in 1907. In most countries legal adoption of the metric carat followed some years later.\*

\* See G. Lenzen, 1970. *The history of diamond production and the diamond trade*. Barrie & Jenkins, London, pp 100-2.

## Jewel Dual

Disputes over the delivery or price of an article of jewellery are nothing new, but a particularly curious example was played out in Madras (now Chennai) in June 1676.

The jeweller was Nathaniel Keeble. He had been sent to India with the East India Company to be employed in the mint there, but in 1675 had been described as "unserviceable in the Mint". He had pursued the trade of jeweller and had agreed to make a diamond-set jewel for Edward Herrys, an East India Company warehouse keeper and a member of its Council. However Keeble, after initially refusing

to produce the jewel, did eventually bring it forth, but there must have been some unrecorded dispute over his charge for making the piece since he and Herrys agreed to "Refer the price of ye workmanship to the arbitration of Friends". Herry's deposited the money pending the agreement, and also even agreed for interest to be paid. We don't know exactly what happened next, but Keeble challenged Herry's to a duel the following morning. Keeble next expressed "some provocative words" concerning Herry's wife and a fight broke out. The Governor and council members broke up the fight and the two men were commanded to keep the peace. Herry's consented, but Keeble "His hankercher blooded from his nose" threatened to be revenged even "though he were hanged for it". Not surprisingly, and to Herry's relief, Keeble was confined to his chamber. However, that same night Keeble escaped and "leaped over ye ffort Walls", but thus doing sprained his leg and he was recaptured. A worried Herry's "assuming some evell intentions" and well aware of Keeble's "known Activity in climbing walls" was no doubt reassured when Keeble was properly imprisoned pending being shipped back to England.

The next day, however, Keeble begged pardon "for his miscarryages" and promised good behaviour in the future. Perhaps surprisingly, the Council freed him, noting that this will "be a warning to him for the future".

## Detroitus

'Fordite', an ornamental material made by polishing concretions of automobile paint from the spraying shops of Detroit, was briefly mentioned in the April 2008 issue of *Gems & Jewellery*. There is a British equivalent — so-called Dagenham agate (Dagenham being the UK's automobile manufacturing centre equivalent to Detroit). This material is usually sold in polished flats and cabochons, but two of the three specimens we've looked at are actually quite thin polished films of paint 'consolidated' by being enclosed in some type of colourless epoxy material.



'Dagenham agate'



## Events and Meetings

### Hong Kong Graduation and Awards Dinner

**Tuesday 16 September**

*Royal Palace Chinese Restaurant, Kowloon*

Timed to coincide with the Hong Kong Jewellery and Watch Fair.

Details of the Dinner and Gem-A seminars to be held during the Hong Kong Fair are given on page 2.

### Gem-A Centenary Conference and Second European Gemmological Symposium

**Saturday and Sunday, 25 and 26 October**

*The Hilton London Kensington*

Details of the Conference and Conference events are given on page 18.

### Gem-A Graduation Ceremony

**Monday 27 October**

*Goldsmiths' Hall, London*

(See note below)

### Nature's Treasures: Minerals and Gems

**Sunday 7 December**

*The Flett Theatre, The Natural History Museum, London*

A one-day seminar organized jointly by Gem-A, The Mineralogical Society and The Russell Society. Further details given on page 30.

### Graduation Ceremony

Presentation of Diplomas to those who qualified prior to 2008

To be presented with your Gemmology or Diamond Diploma at Goldsmiths' Hall is a memorable occasion. Unfortunately, because of the locality or the timing of the event, over the years many of our graduates have been unable to attend.

To mark the celebration of One Hundred Years of Gemmological Education, Gem-A is inviting current Fellow and Diamond members who were unable to join us at the Graduation Ceremony in the year in which they qualified, to attend the 2008 event at Goldsmiths' Hall on Monday 27 October for the formal presentation of their Diplomas.

Those who would like to take advantage of this invitation should contact Lucy on +44 (0)20 7404 3334 email [lucy.dean@gem-a.com](mailto:lucy.dean@gem-a.com) no later than 30 September, giving their full name (as it appeared on their Diploma) and the year in which they qualified.

### Gem-A Branch Events

#### Midlands Branch

**Contact: Paul Phillips**

**02476 758940**

**email:**

[pp.bscfgadga@ntlworld.com](mailto:pp.bscfgadga@ntlworld.com)

Friday meetings will be held at the Earth Sciences Building, University of Birmingham, Edgbaston.

**Friday 26 September**

**Reflections on Gem Cutting**

**DOUG MORGAN**

**Friday 31 October**

**British and European**

**Hallmarking, Birmingham Silver and the Influence of Matthew**

**Boulton**

**DR SALLY BAGGOTT**

**Friday 28 November**

**Eighteenth-Century Jewellery:**

**Buttons, Bows and Bones**

**JOHN BENJAMIN**

**Saturday 29 November**

**ANNIVERSARY DINNER**

**and**

**Sunday 30 November**

**MIDLANDS BRANCH CENTENARY CONFERENCE**

Menzies Strathallan Hotel, Birmingham

Speakers will include:

**DOUG GARROD**

**GWYN GREEN**

**PROFESSOR HENRY HÄNNI**

**E. ALAN JOBBINS**

**SHENA MASON**

**VANESSA PATERSON**

#### North East Branch

**Contact: Mark Houghton**

**01904 639761**

**email:**

[markhoughton@hotmail.co.uk](mailto:markhoughton@hotmail.co.uk)

Meeting to be held at the Ramada Jarvis Hotel, Wetherby.

**Thursday 23 October**

**Identification of Colourless**

**Gems in Jewellery**

**GWYN GREEN**

#### North West Branch

**Contact: Deanna Brady**

**0151 648 4266**

Meetings will be held at YHA Liverpool International, Wapping, Liverpool

**Thursday 18 September**

**Fakes and Forgeries in the Silver Markets**

**ANDREW SPICER**

**Thursday 16 October**

**Branch AGM followed by**

**Gems in Archaeology**

**JO JONES**

#### Scottish Branch

**Contact: Catriona McInnes**

**0131 667 2199**

**e-mail:**

[scotgem@blueyonder.co.uk](mailto:scotgem@blueyonder.co.uk)

**website: [www.scotgem.demon.co.uk](http://www.scotgem.demon.co.uk)**

Meetings are held at the British Geological Survey, Edinburgh, unless otherwise stated.

**Wednesday 17 September**

**Amber and its Inclusions**

**ANDREW ROSS**

**Thursday 16 October**

**Gemmology in the Business World**

**CIGDEM LULE WHIPP**

**Tuesday 11 November**

**The Challenge of Valuing One of the World's Largest Diamonds:**

**Appraiser's Dream or Nightmare?**

**PETER BUCKIE**

#### South East Branch

**Contact: Liz Taylor**

**07733 112849**

**email: [liz@ga.seb.org](mailto:liz@ga.seb.org)**

Meeting to be held in Central London.

**Wednesday 22 October**

**An Informal Chat with a Travelling**

**Gem Dealer**

**MARCUS McCALLUM**

**For the latest information on Gem-A events visit our website at [www.gem-a.com](http://www.gem-a.com)**



# Gem-A Diploma in Gemmology

## EIGHT-MONTH LONDON DAYTIME COURSE

- This eight month course includes both the Foundation and Diploma sections of the gemmology course, and enables students to see and test a wide range of gem materials under the supervision of experienced Gem-A tutors.
- Classes are held at Gem-A's London headquarters from 10:00 am to 5:00 pm on Tuesday, Wednesday and Thursday\* each week.

\* Supported study

**The course fee of £6895** (payable in five monthly instalments of £1379 commencing July) includes tuition and practical classes, access to study stones, course materials, the Foundation and Diploma examination fees, and a one-year subscription to *Gems & Jewellery*.

Start date for the next course: **30 September 2008**

For further information contact Gem-A Education on **+44 (0)20 7404 3334** email [education@gem-a.com](mailto:education@gem-a.com)

Details of this and other gemmology and diamond courses run by Gem-A are given on our website at [www.gem-a.com](http://www.gem-a.com)

## Gem-A One-Day Workshops

### Bead Stringing Workshops

Bead stringing is one of the most popular forms of jewellery making. Whether you are wondering where to begin or want to refresh existing skills, join our guest expert, Beatrice Gimpel, to learn the techniques required for successful stringing. All materials needed for the day will be provided.

Wednesday 17 September Fee: £160.00\*

Wednesday 22 October Fee: £160.00\*

### Diamond Buying Guide

An introduction to the 4 Cs – carat weight, clarity, colour and cut – this course provides the practical information required to enable you to make informed choices when purchasing a diamond or to improve your sales knowledge.

Thursday 9 October Fee: £138.00\*

### Introduction to Practical Gemmology

A practical day to help you understand the principles required for effective gemstone identification. After an introduction to the equipment, you will have the opportunity to try gem testing for yourself with the guidance of a Gem-A tutor. No previous experience is required.

Thursday 16 October Fee: £138.00\*

### Diamonds Today

This course will look at the processes required to identify and differentiate between the numerous diamond simulants, synthetics and treatments available today. You will also learn about the advances being made in the synthetic diamond industry such as CVD diamonds. There will be an opportunity to examine the treated stones, synthetics and simulants during the day.

Thursday 23 October Fee: £160.00\*

\* Inclusive of VAT

The One-Day Workshops are held at Gem-A's London Headquarters at 27 Greville Street, London EC1N 8TN.

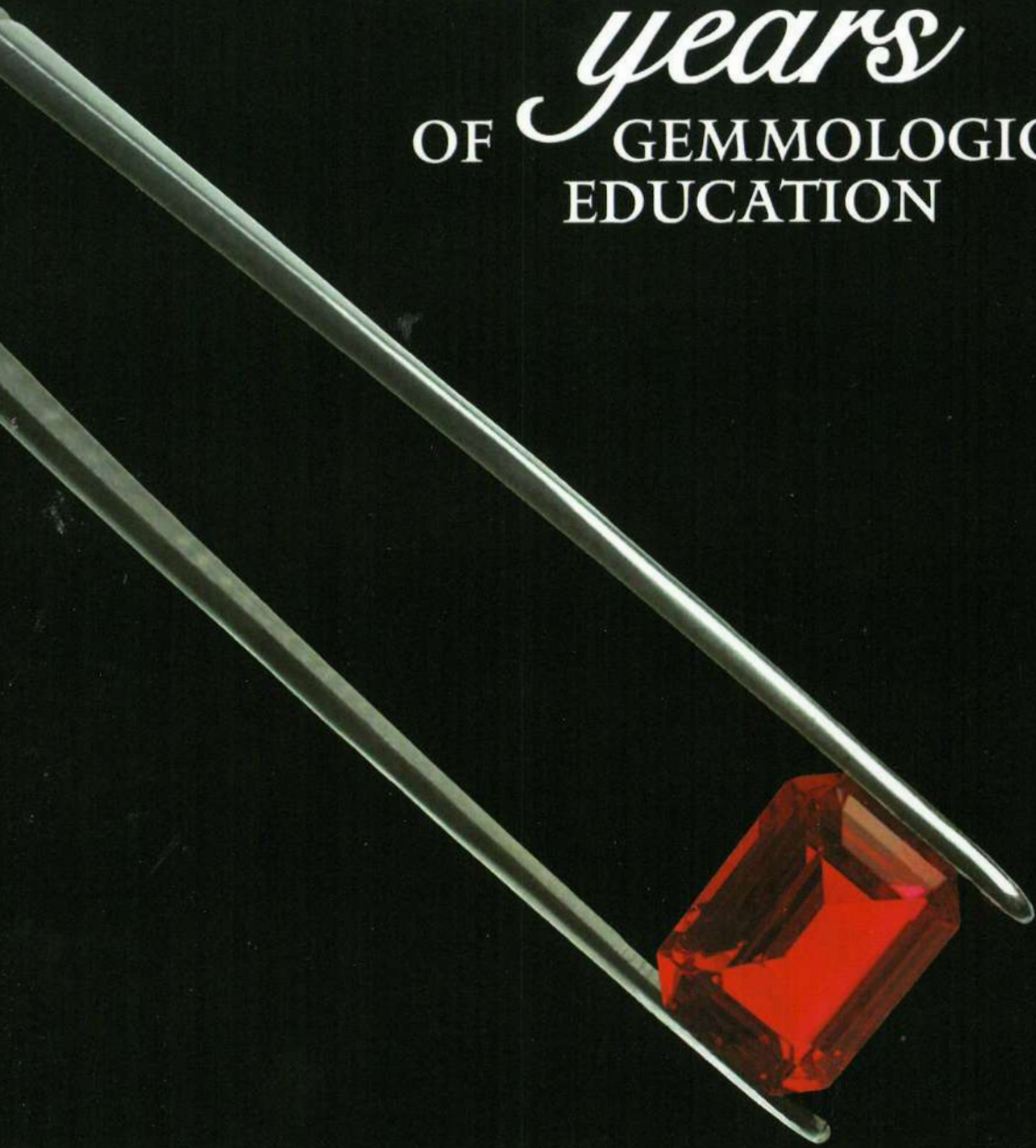
To book, contact Gem-A Education on 020 7404 3334 email [info@gem-a.com](mailto:info@gem-a.com)

Visit [www.gem-a.com](http://www.gem-a.com) for details of our latest workshops and short courses





*One* 1908 / 2008  
*hundred*  
*years*  
OF GEMMOLOGICAL  
EDUCATION



# Gem-A

THE GEMMOLOGICAL ASSOCIATION  
OF GREAT BRITAIN