

# Gems & Jewellery

Aug/Sept 2014 / Volume 23 / No. 7

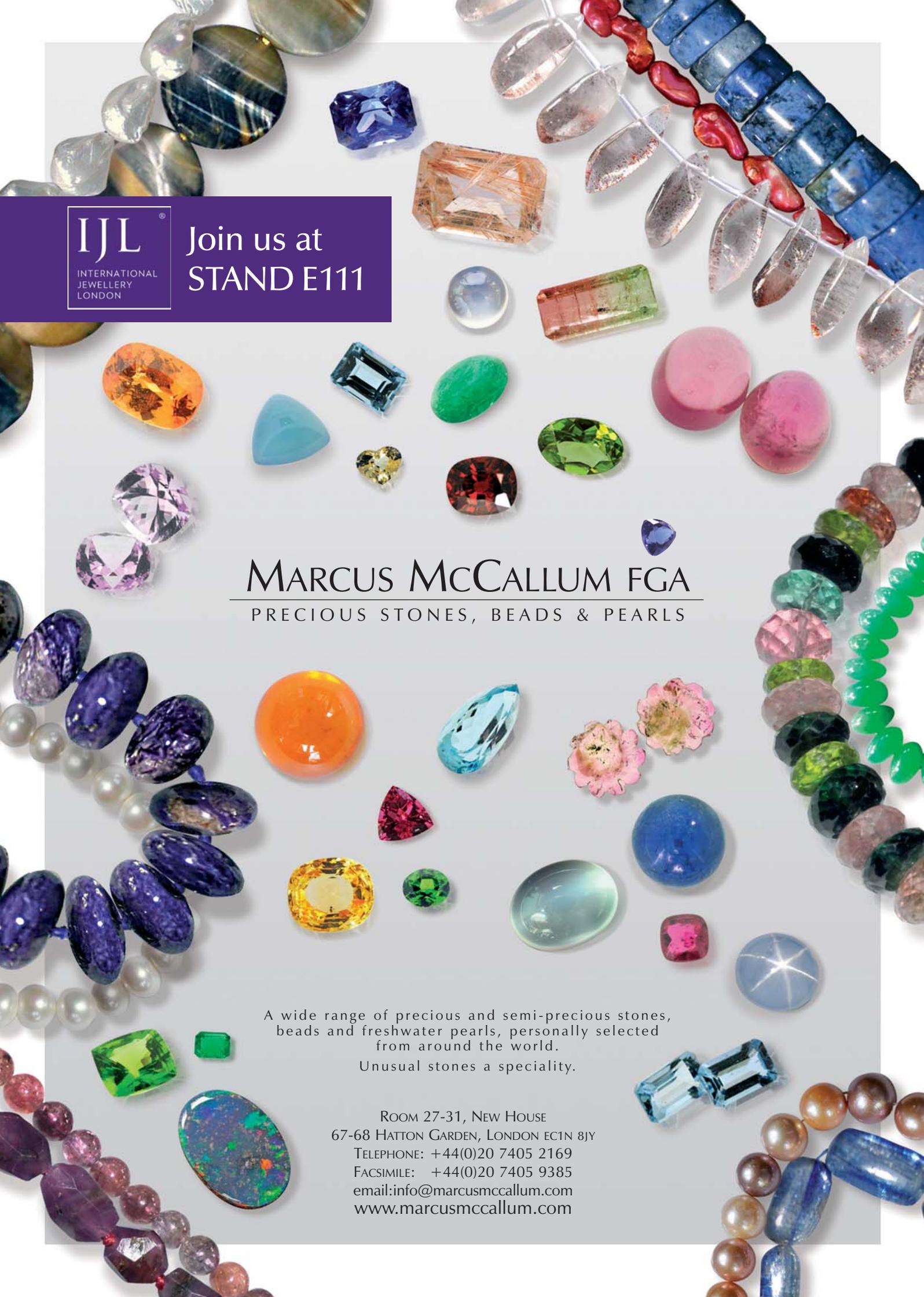
Gem-A at IJL

Idar-Oberstein  
field trip

The mystery of  
the Nur-al-Ayn



**Gem-A**  
THE GEMMOLOGICAL ASSOCIATION  
OF GREAT BRITAIN

The background of the advertisement is a collection of various gemstones and jewelry. There are several necklaces: one with large blue beads, one with red and clear beads, one with green beads, one with purple beads, and one with pearls. Scattered around are numerous individual stones in various colors (blue, green, orange, pink, purple, yellow, red, brown) and shapes (round, oval, rectangular, triangular, heart-shaped, pear-shaped, square, and irregular). Some stones are faceted, while others are smooth or have a specific cut like a cabochon or a star. The overall theme is high-quality, diverse jewelry materials.

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## Gem and Jewellery History

Any opinions expressed in *Gems&Jewellery* are understood to be the views of the contributors and not necessarily those of the publishers.

The global nature of our Association never ceases to amaze or disappoint me. I have recently returned from the Gemmological Association of Australia (GAA) conference in Adelaide, where I was made most welcome by our Australian colleagues. Travelling right now is not the most enjoyable experience with heightened security, etc... but there is still nothing like face-to-face contact. It's only by meeting and sharing ideas and concerns that our business can evolve and develop for the benefit of all.

The Middle East situation continues to bubble away and there are attempts for this to now impact our trade. I'm sure you will join me in hoping that mediation and sitting down around a table will prevail over rockets and bullets. There are those who sympathize with the plight of the Palestinians who would have us boycott Israeli goods on principle. Naturally that is a personal choice but perhaps more worrying are protests to jewellers about diamonds, claiming that Israeli diamonds are blood diamonds and, indeed, conflict diamonds.

To be clear, Israel trades around 30% of the world's polished diamonds but is *not* a diamond-producing country. Conflict diamonds refer to rough diamonds, not polished — the proceeds from which have been used to fund illegal activities, specifically for armed rebellion, civil war and persecution of innocent people including women and children. Israeli dealers pay their taxes in a democratic country and yes, it is true that these monies fund (amongst other things such as healthcare and education) the Israeli military. The same as in the UK actually.

Israeli diamond merchants are simply making a living in the global diamond market and abiding by the laws of their country. Gem-A believes that we do not have the right to sanction them for doing this. However, there may be a case against both Israel *and* Hamas for governments to instigate sanctions, but until that happens, as a trade we should not be boycotting Israel. Individuals may have their own personal views and as most jewellers will have diamonds in their stock that have passed through Israel it is important that owners and employees have a policy and a stated position. This highlights the need for a clear supply chain and is exactly the reason why the UK Jewellery Ethics Committee (JEC-UK) is preparing a diamond paper. Gem-A supports our members in Israel and our friends at the Israel Diamond Exchange and defends their right to make an honest living.

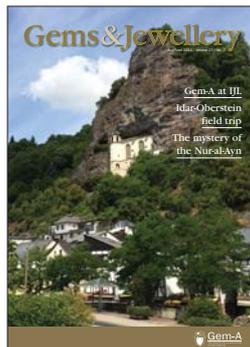
Recent scurrilous articles have suggested that our own president Harry Levy is somehow in favour of the conflict and desires to see the Palestinians overwhelmed by Israel. In fact what we all want is a peaceful solution where all parties can live in peace and harmony, and I'm sure all of you would support that. There are those who would seek to damage our business through libellous untruths and deliberate misquoting of the facts in return for publicizing their own position. These people are dangerous and must not be allowed to hijack our trade for their own personal aggrandizement.

As we start to ramp up the year with the pre-Christmas trade shows, one always has that feeling of trepidation. It is a busy time of year for traders. Will retailers fill their windows — do they need to? For us it is the start of the academic year and the build up to our annual conference. I hope to see many of you over the coming months, starting at IJL at Olympia, and to be able to welcome you to our conference at the Royal Agricultural Hall — the site of the main UK trade show in days gone by. *Plus ça change...?*

**James Riley**  
Chief Executive Officer

## Cover Picture

The *Felsenkirche* (Crag Church), one of Idar-Oberstein's defining landmarks. See our Idar-Oberstein Field Trip report on page 9. Photo: Gem-A.



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The Gemmological Association  
of Great Britain (Gem-A)  
21 Ely Place, London EC1N 6TD  
t: +44 (0)20 7404 3334  
f: +44 (0)20 7404 8843  
e: editor@gem-a.com  
w: www.gem-a.com  
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**Editor**  
James Riley

**Production Editor**  
Georgina Brown

**Advisory Board**  
Mary Burland, Harry Levy

**Design and Production**  
Zest Design +44 (0)20 7864 1504

## Advertising

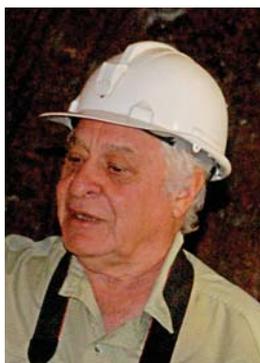
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# Gem news

## Terry Coldham becomes GAA patron

Terry Coldham FGAA, a past federal president of the Gemmological Association of Australia, was honoured at last month's GAA Conference in Adelaide by being made a patron of the Association. In 2012 Terry, who sold his business Sapphex in 2010, was presented with an award by the Gold & Silversmiths Guild of Australia in recognition of his lifelong achievements in the industry.

Terry will be speaking at the Gem-A Conference (1–2 November 2014) on the subject of Australian sapphire — 'a forgotten foundation stone of Thailand's gemstone industry'.



## New staff at Gem-A

Gem-A welcomes two new staff members to the team: Kim Foxwell MA Cert. GA, who joins us as receptionist and administrator, and Elaine Ruddle MSc Cert. GA, our new Marketing and Events Manager. Kim began her career in the jewellery industry training under established designer-maker Barbara Bertagnolli, before taking Holts' Level 3 Manufacturing course. Kim is currently enrolled on the Gemmology Diploma course. Elaine has an integrated marketing background; she has worked in experiential marketing for Nintendo, on-site at events for Twitter and most recently at Nude Jewellery in Mayfair where she was responsible for marketing and PR. The team is delighted to have Kim and Elaine on board.

We also announce the retirement of staff member Alan Clark FGA DGA, who has retired after 34 years of dedicated service.

## Illicit trafficking of CAR diamonds monitored

Participants and observers to the Kimberley Process Certification Scheme (KPCS) Intersessional meeting held in Shanghai on 9–12 June 2014, devoted special attention to illicit trafficking of diamonds from the Central African Republic (CAR).

Concern was expressed about production of diamonds continuing in CAR, and that in spite of the temporary suspension of CAR

via the Administrative Decision on CAR of 23 May 2013, information presented at the intersessional indicates that there have been cases of international shipments containing diamonds of CAR origin.

It was agreed that the possible introduction of rough diamonds produced in CAR into the legitimate diamond trade threatens the integrity and credibility of the KPCS and that the KP should make major efforts to assist CAR and other participants — notably those in the region most exposed to possible illicit trafficking of rough diamonds from CAR — to ensure that such diamonds don't reach the legitimate trade.

In June 2014 officials in Belgium seized a parcel of rough diamonds with the characteristics of rough diamonds originating from CAR. The KPCS Working Group of Diamond Experts provides a report on the characteristics of diamond production from CAR's eastern region. The Government Diamond Office requests that traders be vigilant and report any suspicious parcels of diamonds with the characteristics outlined in the report.

## Gübelin offers 'next generation' gem reports

A joint initiative between Gübelin Gem Lab and Gemfields will see the laboratory offering clients the choice of whether to have their names included on Gübelin's

gemstone certificates. Traditionally, gemstone certificates have been issued without disclosing the identity of the party presenting the gemstone to the laboratory. As such, the owner of the gemstone at that point has remained anonymous.

Ian Harebottle, Gemfields CEO said: "Gemfields believes that the more information we can share about a gemstone's journey, the better. This innovation will improve the resolution of the chain-of-custody picture available to consumers and industry participants. We hope, as the global gem industry marches toward greater transparency and disclosure, that it will also be adopted by our colleagues in the diamond business, where it would be equally beneficial."

Although new to Gübelin, the practice of allowing clients to opt in or out of disclosure on a certificate is not without precedent. For some years GIA lab reports have featured tear-off slips so that clients can choose whether or not to be revealed on a report.

## Antwerp fair date

The Antwerp Diamond Trade Fair, an event solely dedicated to loose diamond business, will be held from 1–3 February 2015. The by-invitation only event, a joint initiative of the Antwerp Diamond Bourse, the Diamond Club of Antwerp and the Antwerp Diamond Ring exchanges, is held on the bourse's diamond trading floors.

## Diamond theft averted

A parcel of Zimbabwe diamonds, worth 'millions of dollars' from the Jinan diamond mine, was reportedly stolen at an auction last month at the Dubai Diamond Exchange. A buyer of Lebanese descent swapped one of the two Jinan gem parcels containing rough diamonds worth millions of dollars with a parcel valued at \$10,000.

Jinan company officials discovered the theft of the diamonds when they saw discrepancies on the weights of the swapped parcels. Security video footage was used to identify the alleged thief who confessed to stealing the 54 pieces of diamonds, which were all recovered.

# Gem-A events

## Gem-A Conference 2014

1-4 November

*Business Design Centre, Islington.*

Gem-A will host its internationally-acclaimed annual conference on the 1 and 2 November at the Business Design Centre, Islington.

This year features talks from Edward Boehm GG CG, Bruce Bridges, Dr Laurent Cartier FGA, Terry Coldham FGAA, Brian Cook, Dr Thomas Hainschwang FGA, Alan Hart FGA DGA, Dr Ulrich Henn, Richard Hughes FGA, Craig Lynch GG, Vincent Pardieu GG, Dr Menahem Sevdemish FGA and Chris Smith FGA.

Contact [events@gem-a.com](mailto:events@gem-a.com) for a booking form.

## Gem Central evenings

Gem Central evenings take place at the Gem-A headquarters from 18:00–19:30. Gem Central will be held on the following evenings: 6 October, 10 November and 16 December.

## Gem-A Workshops

Our range of introductory 'Understanding' workshops are ideal for jewellers with no gemmological background, or for anyone who needs a refresher. The intermediate 'Investigating' workshops are for gemmologists and jewellers with gemmological knowledge.

### Workshop prices:

Gem-A/NAG/BJA Members and Gem-A Students: £100, Non-members: £120

### Understanding diamond grading

25 September 2014

*Gem-A headquarters, London*

This specialist workshop focuses on the key aspects of diamond grading, giving a unique insight into the 4Cs and their impact on value. Led by Gem-A's experienced diamond tutor (with prior retail experience), Claire Mitchell FGA DGA, participants will be guided through the underlying theory before seeing

the practical side of cut, colour, clarity and carat weight on both loose and mounted diamonds. This course provides the perfect foundations for those wanting to either go forward to study the full Diamond Diploma course, or to embark upon a career in the retail diamond market.

### Understanding diamond simulants

26 September 2014

*Gem-A headquarters, London*

An important practical workshop for those working, or considering working, in the diamond market. Andrew Fellows FGA DGA explains the key differences between diamond and its simulants, and how to recognize them both as loose stones, and in set or mounted jewellery. Using basic observation techniques and readily available instruments, such as diamond and combination testers, participants will be taught to quickly and effectively separate diamonds from all other imitations, thus preventing costly purchasing errors, and allowing informed buying decisions to be made. The two main commercially available simulants (synthetic moissanite and CZ) will be available for testing throughout the day, along with lesser-seen stones that have been used predominantly in antique jewellery, such as colourless sapphire, zircon, synthetic spinel and paste.

### Investigating gemstone treatments

3 October 2014

*Gem-A headquarters, London*

This one-day specialist workshop focuses on the common treatments currently seen in the gemstone industry, and their detection using readily available instruments and techniques. Treatments covered will include glass-filling and heat-treatment of corundum (ruby and sapphire), laser-drilling and/or fracture-filling of diamonds and diffusion treatments, amongst others.

## Show Dates

Gem-A will be exhibiting at the following shows:

### International Jewellery London (IJL)

*Stand J31, Olympia London*

*31 August – 2 September*

### Hong Kong Jewellery & Gem Fair

*Booth 3M046, Hong Kong Convention and Exhibition Centre*

*15 – 21 September*

## Other events and conferences

### IRV Loughborough Conference 2014

13 September 2014

*Burleigh Court Conference Centre, Loughborough University*

Gem-A will be joining the Institute of Registered Valuers for its annual Loughborough Conference. As one of the highlights of the UK's trade-show calendar, the IRV Conference gives valuers, jewellers and gemmologists the chance to come together and share knowledge, tips and advice about their areas of expertise. The three-day conference comprises a number of feature lectures, supported by workshops and evening social events.

### GemWorld: World of Gems Conference

20–21 September 2014

*Chicago, USA*

Gem-A is proud to be Gold Plus Gala Sponsor for GemWorld's World of Gems Conference 2014. The World of Gems Conferences are highly-acclaimed global events with top international speakers and include networking and social events, and of course gemmological information, pricing and marketing information. New this year will be the opportunity to stay an additional two days for the National Association of Jewelry Appraisers Mid-Year Conference, to be held following the World of Gems Conference.

## Hands-on gemmology

# Call my bluff

Grenville Millington FGA looks at an unusual red stone sent in for testing.

Amongst half a dozen stones sent to me for testing was a pinkish red gem of unusual cut (1). The cut style was octagon/scissor cut but with larger 'corners', making it far more of an octagon than the standard cut-cornered style that is generally referred to as 'octagon' in the trade. The facet placement and symmetry were all very regular, and it appeared to be clean inside but had a somewhat bluish or greyish haze. The stone was sent in as a 'ruby' and was in contrast to another in the batch, also labelled ruby, which was dark red and more irregular in its oval form.



1: Pinkish red stone weighing 1.23 ct.

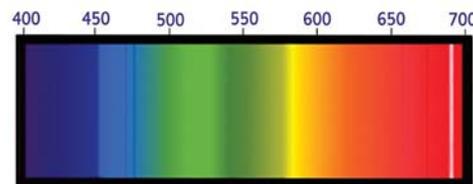
After a few seconds of examination this stone had already notched up a few (what could be termed) 'non-ruby' attributes: it was quite pink with a hazy look, of an unusual, fully symmetrical cut, and to the eye was inclusion-free (if we ignore the hazy character, which is nearly always due to light-scattering from microscopic inclusions). None of what has been mentioned so far rules out anything as far as identification is concerned, but we are all probably guilty of

forming some sort of opinion as to a stone's identity before getting down to using any of the standard gem testing instruments.

The gem weighed 1.23 ct and measured  $7.0 \times 6.2 \times 2.8$  mm. A spectroscope was the first instrument used and this gave the result shown in 2a. The spectrum was unmistakably ruby, although the lines in the red and blue were faint and the general absorption area across the green was lighter in tone and narrower than usual, but this can be attributed to the light red residual colour. Only the fluorescent emission doublet was strong. It was interesting to compare this spectrum of a pinkish ruby to the other accompanying ruby for testing, which was a dark, full red. This second ruby can be seen in 2b, with its spectrum shown in 2c.

Under longwave UV the pinkish stone showed a bright red fluorescence. The stone was therefore ruby (corundum) material, which left three options: ruby of natural origin (we can leave out the question of any treatments for now), synthetic ruby, or a composite stone containing at least one of the preceding two.

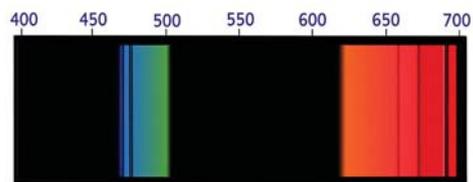
To determine which one of the options this stone was, recourse was made to the microscope. Very soon into the examination something resembling a bubble was seen (3a), and then others were found (3b).



2a: Spectrum of 1.23 ct stone, typical for pinkish rubies.



Dark red stone weighing 2.08 ct.

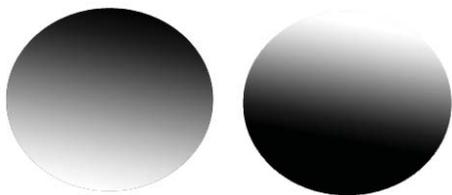


2c: Spectrum of 2.08 ct stone

The spectrum had already indicated that the stone was ruby material and so glass could be ruled out, as could natural ruby, which left synthetic ruby or a composite. Immediately the hazy look put me in mind of a pinkish red synthetic star stone from Kyocera, one of which I have in my general collection. Another look seemed to suggest that these 'inclusions' were actually at



3a,b: What appears to be 'bubbles' seen in the 1.23 ct stone.

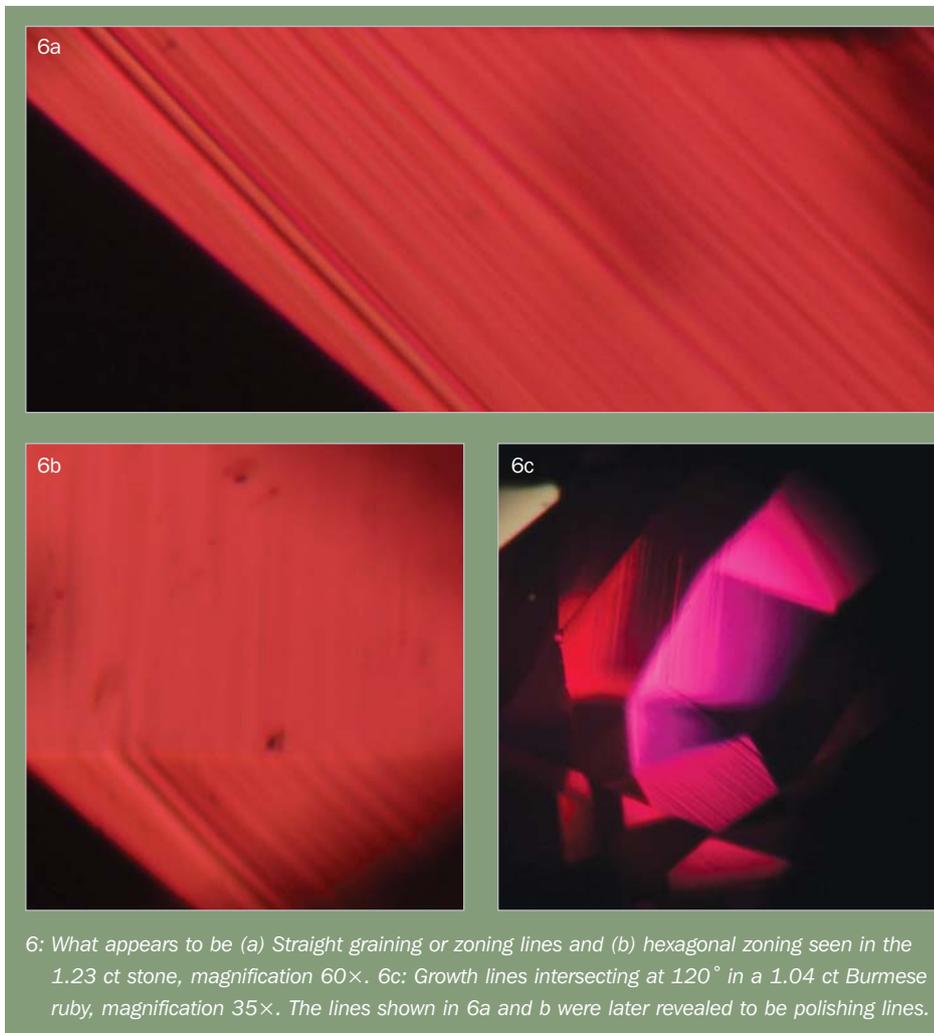


4a,b 4a,b: Light and shade effect on a hemispherical cavity (left) and on a raised spot (right).

the surface. It is quite common to find bubbles that have been cut through by a polished facet, leaving a hemispherical cavity. However, I was puzzled that there were so many and that there was no sign of a bubble within the body of the stone. Upon a second look I realized that the general view of the 'cavity' was not quite right. Taking into account the direction of the overhead light, the view should appear as shown in **4a**, but instead looked like **4b**. This suggested it was a raised spot on the surface, in which case the stone needed to be wiped with a cloth. Once wiped however, I noticed the spots were still there. Another vigorous wipe and a clean failed to change the appearance under the microscope; the spots were there to stay. Many of them were on the table of the stone, as shown in **5a**. Altering the angle of incident light, so that it just grazed the table surface,



5a,b: Raised spots on the table of the stone.



6: What appears to be (a) straight graining or zoning lines and (b) hexagonal zoning seen in the 1.23 ct stone, magnification 60×. 6c: Growth lines intersecting at 120° in a 1.04 ct Burmese ruby, magnification 35×. The lines shown in 6a and b were later revealed to be polishing lines.

produced a more recognizable picture of the spots (**5b**).

I've seen gems set in jewellery, especially brooches or necklace snaps, that had spots of hair lacquer etc, but the ones on our test stone were immovable (without the right solvent) and were very small. I could only assume they were epoxy resin or similar, but there was no sign of fractures or cavity filling in this stone. So, the 'bubbles' were a bluff, and natural ruby was back on the possibilities list.

Focusing below the surface, two other scenes looked familiar; straight graining or zoning lines (**6a**) and hexagonal zoning (**6b**). Something very similar to **6b** can be seen in **6c**, which is hexagonal linear zoning in a Burmese ruby.

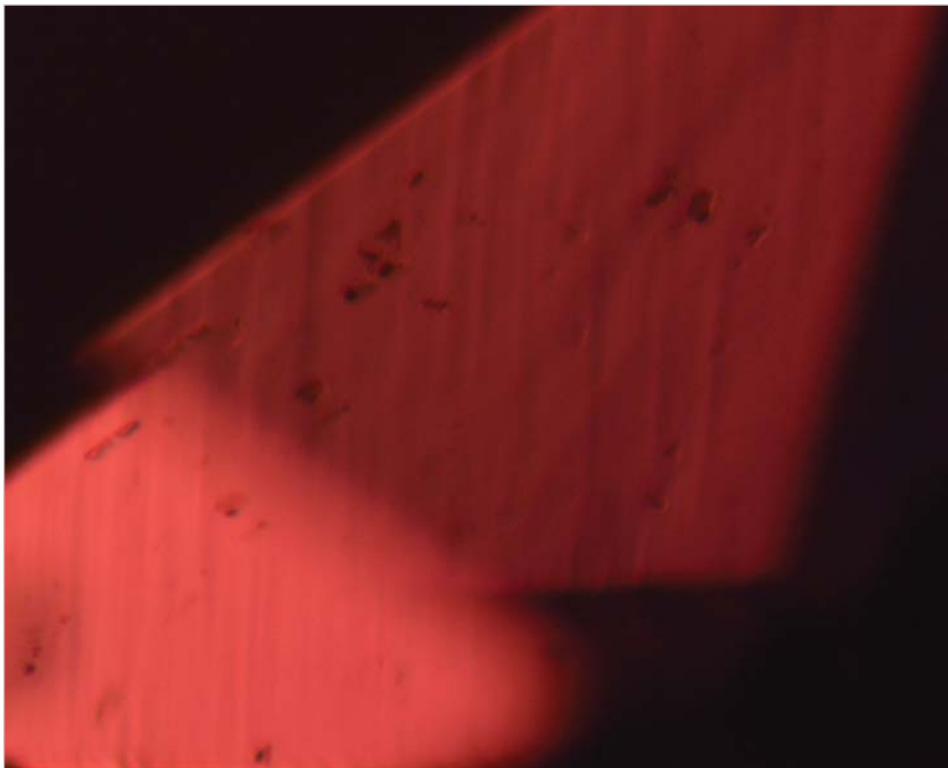
However, the lines and zones in this test stone changed course at every facet junction: they were polishing lines and **6b** shows a facet edge. When such polishing striations are a little out of focus, as here, it is not always readily apparent that they are surface marks only. Another bluff!

Whilst looking for something that was definitely inside this stone I did find some tiny inclusions that were too small to resolve themselves into anything recognizable under the lighting conditions (**7**).

You will notice that **7** also displays a heat-haze effect, as expected in hydrothermal synthetic stones, but once again this effect is produced in this stone by out-of-focus polishing lines.

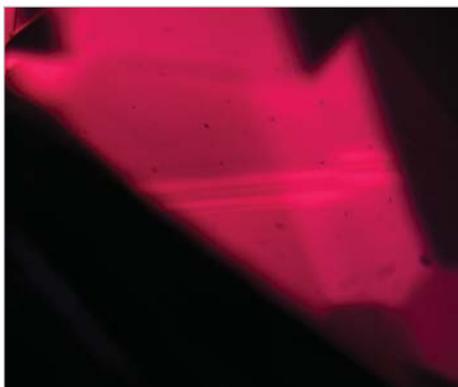
## Hands-on gemmology

### Call my bluff (cont.)



7: What appears to be the heat-haze effect, as expected in hydrothermal synthetic stones. Magnification 80×.

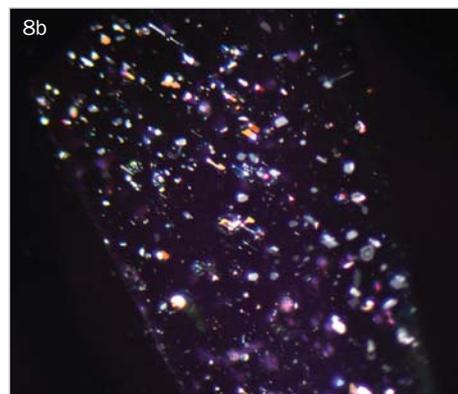
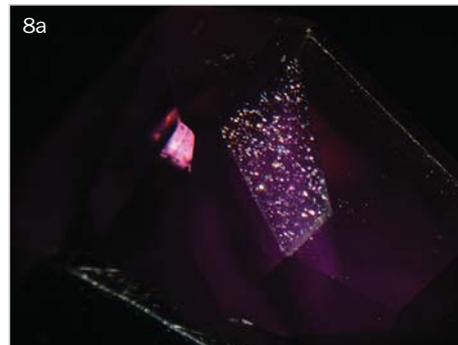
I now needed to ascertain whether the test stone was natural or synthetic. There was no evidence to show it was a composite; there were no junction edges, flattened bubbles or 'dust' particles at the junction interface. I examined the gem again but with a 10× lens, and on turning it through various angles, under the girdle there was a sudden flash of light, which then disappeared. A tiny fraction of a second was all that was necessary, as it



9: The narrow section of parallel colour zoning.

had given me the clue as to which direction to look. The gem was returned to the microscope, placed under an overhead light and turned to show the underside, just below the girdle. After some minute changes of position one facet lit up (8a). A closer look is shown in 8b. What was seen were extremely thin, transparent films or discs, some of irregular hexagons and rhombus shapes, and all arranged in parallel planes. These were only visible in reflected light at precisely the correct viewing angle to the incident light (you will notice there are none visible outside the facet area in 8a). These were obviously tiny epigenetic exsolution crystals of rutile, typical of those seen in natural rubies.

This was final proof that the stone was natural and also that no high temperature heat treatment had been applied, as these discs would have been reduced to specks. They were also the probable cause of the haziness in the gem if they occurred throughout the stone. Another feature that required precise lining up of the viewing



8a,b: The facet of the 1.23 ct stone showing extremely thin, transparent films or discs.

angle was a narrow section of parallel colour zoning (9). Submerging the gem in water showed only vague colour areas to the eye (10).

In the end all the bluffs were called and the gem finally revealed itself as a natural ruby.

And what about the refractive index, just to wrap it up? It was 1.763–1.771 (birefringence 0.008).



10: The stone immersed in water.

# From source to sale: the Gem-A field trip to Idar-Oberstein

Olga Gonzalez FGA takes us on the Gem-A field trip to Idar-Oberstein — the excursion of a gemmologist's lifetime.

Steeped in over 400 years of gem history and with a name that evokes wonder within the trade, the small German town of Idar-Oberstein was chosen as the location for Gem-A's return to providing field trips for gemmologists. Gem-A members, GIA alumni and gem and jewellery enthusiasts came together for a fascinating eight-day excursion to this historical region, with a hands-on opportunity to meet key players in the trade whose talents range from gemstone cutting, cameo carving, diamond cutting and synthetic gemstone development, to curating museum collections. Historically, Idar and

Oberstein, two municipalities now combined into one, were dependent on farming. Geological finds provided farmers with additional means of support and mining became an integral part of life there, particularly during the winter. The introduction of better machinery and mining techniques made it possible to extract and utilize quartz, including agate, amethyst, jasper, rock crystal and smoky quartz.

The topography of the region gave the valley towns access to the water that drove the mills and turned huge sandstone wheels to cut and carve the raw materials.



A delicious spießbraten at Constantin Wild's.  
Photo Deborah Mazza.

The Felsenkirche (Crag Church), one of the town's defining landmarks.



These workshops were family-owned, and many of these names are still synonymous with the trade in Idar-Oberstein. Building upon this heritage, the master craftsmen of Idar-Oberstein today are known for their advanced lapidary techniques and are the first destination for anyone looking for *objets d'art* of unsurpassed excellence and quality.

Bright and early at 5:30 am on Saturday 21 June 2014, 16 travelling companions met at the Gem-A headquarters. After a cozy journey across the English Channel and through France, Belgium and Germany, we arrived in Idar-Oberstein at suppertime. Our first treat was *spießbraten*. The traditional way of barbecuing meat, *spießbraten* consists of a tripod structure with a rotating hanging pan, atop a hardwood fire. *Spießbraten* became the introductory conversation for many visits, where hosts expressed their 'other talent' for the grill. An entertaining and culinary treat, hotel staff

## Field Trips

### Field trip to Idar-Oberstein (cont.)



The group outside the Edelsteinminen. Photo Deborah Mazza.

at the beautiful ParkHotel demonstrated *spießbraten* to trip participants, and the evening allowed us all the opportunity to bond as a group.

We set out early on a gorgeous Sunday morning to the **Edelsteinminen** — the old agate mines in Algenrodt. A scenic walk to the mine took us past a clearing where once upon a time they would hang anyone caught stealing from the mine. Of course, this then became the first of many 'gemology' photo opportunities. Group pictures were taken after the donning of fancy yellow mining helmets, and we then learned about the formation of quartz, agate and jasper, which forms as highly mineralized 'pockets' trapped in the molten host. We also saw some beautiful sights



Erwin Pauly, Master Craftsman, carving.

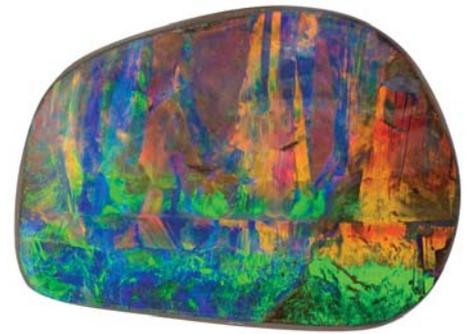
within the mine, including an underground river. After the mines there was a spontaneous (and very generous) visit to **Erwin Pauly** and **Frau Pauly**, as Erwin, master carver and developer of the free-form cameos that became popular in the 1970s, was so keen for everyone to get an opportunity to carve a cameo, that he was afraid we wouldn't have time during our visit scheduled for Monday, and he wanted to give us more time and also share lunch with us.

Next on the agenda was a visit to the **Kupferbergwerk** mine: the copper mountain works. These were extremely impressive due to the sheer size of the mines and the extensive information the tour guide gave regarding the physically arduous life of miners. It could sometimes take the miners up to four hours to crawl into the mines, only to then work a 12-hour shift. Miners were also exposed to large amounts of sulphur that stunted their growth and severely decreased their life expectancy. The miners would then give their findings to the King and in turn were granted a stipend. Despite these hardships the miners were still the envy of the local farmers.

The last visit on Sunday included the **Deutsches Mineralienmuseum**, set in the

gorgeous centre of Oberstein, where we learned about the early water-powered equipment used for cutting and polishing stones, whereby workers would operate mills lying flat on their stomachs. The museum, spread over four floors, is packed with stunning examples of gems and minerals from around the world, including a room full of fluorescent samples. The museum also features examples of craftsmanship from the local area, including the smallest cameo in the world and a cabinet of agate cameos featuring the faces of every American president. This delightful start to the trip culminated in a visit (the first of many) to an ice-creamery that, dare I say it, had it licked!

Monday began with an engaging visit to **Emil Weis**, an opal cutter in Kirschweiler who thrilled all with his selection of opals. Herr Schütz showed us all the rough material and then demonstrated the machinery used... even letting us try it out! It was my



Boulder opals from Queensland, Australia.

Top: 16.93 ct from Franklin Station, measuring 22.9 x 16.7 x 5mm.

Bottom: 9.8 ct from Winton, measuring 22 x 11 x 5.3 mm.

Photos by Emil Weis.



Carole Spooner and Jim Johnson behind the polishing wheel at Emil Weis.

first time behind a polishing wheel, which was brilliant. Two members, Jim Johnson and Carole Spooner (pictured), produced the group's best efforts at a cabochon. Emil Weis was also the first of many trade opportunities that we encountered and he allowed us to purchase gems for our own jewellery designs, retail stores or personal collections.

**Wild & Petsch**, stonecutters par excellence in Kirschweiler, were the next stop. They captivated all with a first-hand, step-by-step demonstration of how to start with rough, doing the pre-forming and ending with a cut and polished gemstone. For those who have not seen this process before it was a wonderful insight into a modern lapidary. This high-end business demonstrated that it was possible for a large workshop to look as pristine as a hospital laboratory. Upstairs the trade showroom gave us the opportunity to see the largest collection (and widest variety) of the finest cut stones any of us had ever seen.

The last stop of the day was to revisit **Erwin Pauly**, who greeted us like old friends, and who let everyone try a hand at carving cameos. Erwin and his equally-talented son Gerhard Pauly, assisted each one of us with cheerfully patient encouragement, despite us probably being the worst pupils he has ever had! Let's just say my 'Manhattan skyline' cameo couldn't be helped much — carving a straight line into agate is harder than it looks! While we waited our turns, the ever-patient Frau Erna Pauly entertained us with anecdotes and produced ever more amazing examples of Pauly talent. It was touching and



One of Manfred Wild's famous eggs, created from the world's largest garnet. Photo Deborah Mazza.

humbling to be treated with such courtesy and kindness by this great family.

Tuesday was another thrilling day, with a visit to **Hermann Petry** in Herborn, who has a fascinating collection of rough material, including massive crates of local agate filling his garden, and where he graciously let members choose a piece. This was another friendly source that enabled us to increase our personal stone collections, as well as make another valuable contact. Next on the agenda was a visit to **Friedrich August Becker**, another renowned gemstone cutter. With their Idar premises laid out like a museum, each room brought hushed gasps and excited whispers. Every item, whether rough, cut or carved stood out like a piece in a personal collection — selected with care, displayed with pride and sold with a story. With total trust we were allowed to roam free, losing ourselves in this wonderful maze.

The true fellowship of the gemmological world peaked with our visit to the Gem-A's



Foods carved from gemstones, including biscuits, jelly sweets and nuts. Photo Deborah Mazza.

counterpart — the **Deutsche Gemmologische Gesellschaft (DGemG —German Gemmological Association)**, where we were afforded the privilege of a guided tour of its wonderful facility by Dr Ulrich Henn, managing director of the DGemG. We began with the in-house exhibition featuring chemically-grouped gemstones, the order getting approving nods from all of us who could recall our classroom theory. Nowhere was out of bounds; we gatecrashed a diamond class and tried to pose intelligently as the head of the laboratory Dr Claudio Milisenda and his enthusiastic assistant Dr Klaus Schollenbruch ran through the services and the equipment that DGemG offer to the trade.

Next, a short stroll along the hillside took us to **Harald Schneider**. Schneider Gemmological Equipment is a fascinating business that grew out of a close historical association between the optical excellence of Zeiss, the exacting specifications and requirements of the DGemG, and the



Manfred Wild's replica schooner, carved from rock crystal and gold.

## Field Trips

### Field trip to Idar-Oberstein (cont.)



Toad carved from jasper and bloodstone, exhibited at the Deutsches Edelsteinmuseum.

genius of another of Idar-Oberstein's great families. Schneider was at the forefront of many key developments in making gemmological instruments more accurate and user-friendly. His dichroscope has a 3x lens to augment the two-field polarizer, while his desk polariscope is an item of engineering beauty, and the immersion microscope with Zeiss-Stemi optics is the stuff of lab fantasies. We all witnessed firsthand that there truly is a huge leap in the clarity and quality between a premium loupe of €160 and one of €290, if anyone wants ideas for a little stocking filler...



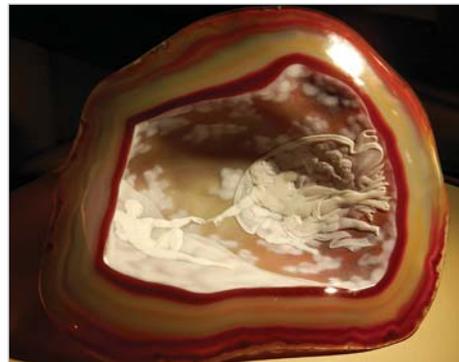
Delicate and fine carved gem feathers, just some of the many wonderful carved pieces shown to us at Herbert Klein's. Photo Deborah Mazza.

Harald's optical products ooze quality in a world easily seduced by the cheap and nasty.

Kevin, our long-suffering coach driver, stopped next at an unassuming suburban house that contained gem treasures that would have made all the treasures of the Raj look dull. Carvings of incredible perfection and artistic flair left us speechless. Like a magician with an audience of goggle-eyed five-year olds, **Manfred Wild** plucked *objets d'art* from his wondrous studio collection and beguiled us with the creative journey that led to the treasure in his hands. We were the first to view his latest creation and one of his specialities — an egg to rival Fabergé's best, but this one carved from the world's largest garnet. We were spell-bound while gazing at a replica schooner carved from rock crystal and gold, and food items of such a delectable perfection that to have been both hungry and wealthy at that moment would have been a danger to one's teeth.

Wednesday began with a visit to the famous **Deutsches Edelsteinmuseum**, where a superior collection of gems and minerals has been developed and curated by many of the same hosts we had visited, and who had actively donated their art, time and resources to building one of the most

incredible collections in the world. Our gracious guide was none other than Manfred Wild. After hearing the remarkable history of the building we were taken on a trip through the region's history; the birth of the workshops and on through to the wonders of the rock and gem world. The 'Dilemma of the Master Craftsman' was presented to us again and again; after creating a work of superlative beauty and perfection from the finest materials, so often the creator hesitates when the prospect of their work being sold is contemplated. The thought of their masterpiece disappearing to only ever be seen by a select few becomes a travesty in their eyes. It was our good fortune that the museum is blessed with many of these masterpieces, saved from a lonely existence in a distant palace, and instead standing proud amongst peers, to be appreciated by many — to the financial detriment, yet spiritual fulfilment, of their creator.



'The Creation of Adam' by Richard Hahn is a Brazilian agate piece based on the famous work by Michelangelo, exhibited at the Deutsches Edelsteinmuseum. Photo Deborah Mazza.

By this Wednesday afternoon we were all sitting with our heads in our hands in awe. The glorious view from **Herbert Klein's** workshop of the manicured grounds and the buildings in the Idar valley was not sufficient distraction. We gazed in wonder as tray after tray was placed in front of us, all containing beautifully carved gems: the classic and the quirky, the whimsical and the cheeky; these little objects could make the shortest arms find a wallet in the deepest sporrán. There were rabbits and bears, irises



Some of the chains made by Jakob Bengel.  
Photo Olga Gonzalez.

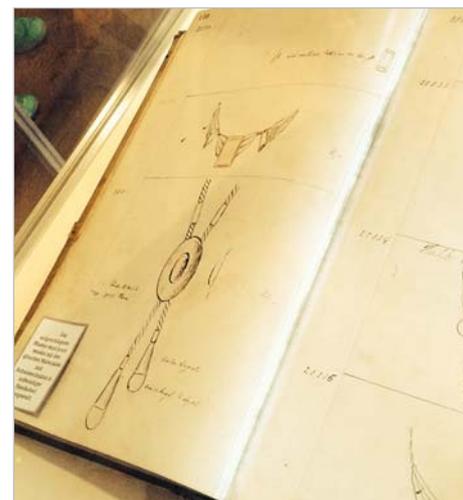
and roses, kittens and scarabs... all making best advantage of the tourmaline, ruby, sapphire, garnet and quartzes from which they were carved. Unfazed by the gawping group that cluttered their lovely workshop, Stefan Klein let his carvers demonstrate their remarkable talent to us. We watched as a lump of rock crystal, looking like a blob of candle wax, was transformed into a flower, with its delicate petals arching back. Perfect placement of grooves and cuts gave the suggestion of frilly edges and fragile form. The reality, of course, is that the material would be far more durable than any plastic or glass.

**Phillip Hahn** was the last stop of the day and this was our opportunity to see a pristine and fascinating diamond-cutting outfit — the only one in Idar-Oberstein. This would be the first stop for anyone looking for diamonds with that ‘special touch’ from a family-run and community-integrated business, able to offer some truly special options — it owns the rights to Gabi Tolkowsky’s designs. It was an extraordinary privilege to see, and like all our hosts Herr Hahn had gone to great lengths to give us unfettered access to his business and to make our visit as interesting and educational as possible.

Thursday morning was a real treat with a visit to the **Jakob Bengel Foundation**, which had some of the most incredible machines custom-built for chain making. With catalogues containing thousands of unique designs it brought jewellery to the masses, or, more specifically, encouraged jewellery as a fashion accessory, because for the first time many could afford to own a wide variety of jewellery pieces due to the use of galalith as a ‘stone’, and chains from common metals, plated to look like gold or silver. In a fashion world that was in love with art deco and wildly excited about Coco Chanel’s designs, and with a magazine like *Vogue* delivering succour to a Europe traumatized first by the Great War and then by the Depression, Bengel provided access to objects of great style and beauty.

Next we were shown through a facility struggling to secure itself after a flood that

submerged whole floors of machinery over 100 years old. As a testament to the skills of the machinists who had built much of the equipment all those years ago, not only did all the machines just need a good clean and some oil to become fully operational again, but those machines can still be entrusted to slog, unattended through the night, with a roll of wire to produce a small mountain of chain for the morning. A very interesting point made was that Bengel gets no business from the high-end luxury goods manufacturers (some of whose styles they aspired to bring to the masses 90 years ago), because its quality is too high. In the words of our guide “The luxury market



One of the catalogues at the Jakob Bengel Foundation containing thousands of designs for chains and fashion jewellery. Photo Olga Gonzalez.

## Galalith

‘Galalith’ or ‘erinoid’ is a type of synthetic plastic material which is manufactured in the interaction of casein protein (found in milk) and formaldehyde. Developed by Wilhelm Kricheldorf and Friedrich Adolph Spitteler in 1897, the material could be easily dyed, cut and embossed. In addition to this it is odourless, non-flammable, biodegradable and has a hardness of 2.5 on Mohs’ scale, making it perfect for use in cheap jewellery. Due to its low production costs, galalith was used in the design and production of inexpensive striking fashion jewellery by artists such as Jacob Bengel and Auguste Bonaz, during the rise of affordable costume jewellery and the art deco style of the 1920s.



Necklaces made using dyed galalith in the Art Deco style. Photo Deborah Mazza.

knows that someone who can spend hundreds or thousands on a handbag will already have many to choose from, and so their product will not be extensively used and does not need to be made from the highest quality components. They know it is being bought for the name and it will be out of fashion in a year. Our chains and components are too well made for them”. With tours run by passionate volunteers such as our guide Herr Karl-Dieter Braun, it was evident that the community wanted to keep the innovation and quality of Bengel alive, even with limited staff and production runs on the current premises.

## Field Trips

### Field trip to Idar-Oberstein (cont.)



Left and above: synthetic boules created at the *Forschungsinstitut*. The rods are cut from the boules and used in various laser applications. Images Olga Gonzalez.

Thursday afternoon was a blast and indeed went through to the wee hours with the gracious **Constantin Wild**, a gemstone cutter in Idar who is also renowned for his *spiessbraten* skills and the ability to throw an amazing party in his garden! Constantin treated us to a tour of his cutting facilities and an incredible custom-designed studio, where we saw wooden trays full of raw stones ready for cutting and polishing, as well as his 'Gem Room', packed with breathtakingly beautiful, rare stones. After the tour we enjoyed music, delicious food, dancing and his mysterious peach schnapps. Check out [www.constantinwild.com/blog/visit-from-great-britain](http://www.constantinwild.com/blog/visit-from-great-britain) for Constantin's review of the day.

The final day started with a visit to the **Forschungsinstitut** in Oberstein Struth to learn about synthetics and to see them being grown. During a fascinating excursion, the group saw gems in all stages of the process, and learned about many industrial and alternative laser applications (such as tattoo removal and the treatment of kidney stones) from the distinguished Professor Ackermann. The *Forschungsinstitut* was the most commercial outfit we visited. The application of physics, chemistry and heavy investment in technology did not isolate them from the Idar-Oberstein spirit of community. While the gem market is of relatively minor significance to them, the staff

are supported and encouraged to participate and strive for excellence as cutters. A wall of awards, photographs and certificates testifies to their success and showcases displayed their outstanding products cut to full advantage. It might be synthetic, but a 50 ct ruby is still quite breathtaking to behold.

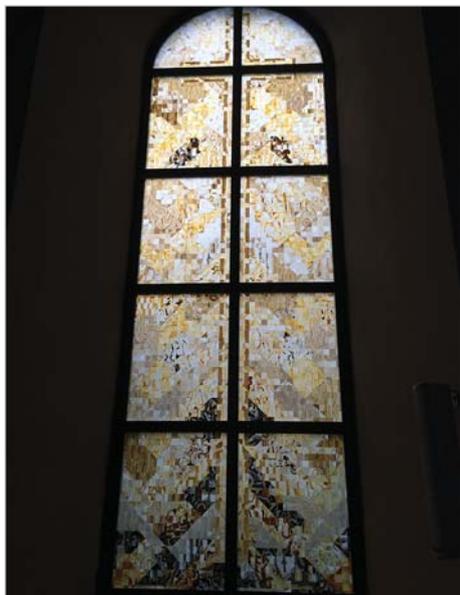
After lunch we moved on to **Groh & Ripp**, gemstone cutters in Tiefenstein. Shaking hands with Jürgen Brust, someone must have said 'open sesame', for Aladdin would have been amazed at what filled the basement. Our affable host led us past rows of pallets, shelves, old oil drums and into strong rooms. Like small children we picked things out and, despite our best efforts as gemmologists, the refrain "What's this?" echoed back and forth among us as Jürgen patiently responded with names such as Peruvian opal, Namibian tiger's-eye,



Constantin Wild's stock of raw materials. Photo Olga Gonzalez.

Arizona Sleeping Beauty turquoise and New Zealand kauri. We passed boxes, crates and tubs of raw material and finally emerged, bewildered, in the sterile surrounds of an ultra-modern factory floor where huge, gleaming precision CNC machines hummed busily away, attended by a team of friendly operators. Here the lumps of rock from the cellars were turned into the tiniest of components for an incredible array of applications in watches, pens, clocks and various laser components. Not forgotten in another airy studio, bathed in natural light, a team of faceters turned the finer materials into the finest of their wares.

For those who know my personal style and my obsession for contemporary jewellery and free-form cuts, the icing on the cake was the visit to **Atelier Munsteiner** in Stipshausen, where a third-generation family business has made a name for itself internationally as one of the stars of the trade, and for good reason. Each year the company introduces a limited edition of loose gemstones with fabulous cuts, as well as a selection of gorgeous jewellery. Its studio is beautifully designed and gemstone art is prevalent throughout, such as the project containing 160 natural-colour citrine stones. Bernd Munsteiner then took us to the church in Stipshausen, where the Munsteiner family have donated two stunning agate windows, using 10,000 to 20,000 pieces of agate, as well as a carved quartz cross and two beautiful candlesticks for the altar.



One of the agate windows donated to the church in Stipshausen (Left) and the quartz cross and candlesticks on the altar (above), donated by the Munsteiner family.

One of the pieces of art decorating Atelier Munsteiner (right), made from 160 natural-colour citrine, rock crystal and smoky quartz. Photo Olga Gonzalez.



The windows certainly give any stained glasses creation a run for its money, and in my opinion, nothing is more gorgeous than a gem mosaic window with light coming through.

Kevin had become an integral part of the group from the very first morning, and on the final Saturday when he whisked us safely home on the coach, paid a bonus visit to a Belgian chocolate factory en route.

It would be an understatement to say the field trip was a success — every participant came away with glowing reviews of their experiences. Everyone we met treated us with patience, kindness and courtesy as we fumbled with unfamiliar money, made dreadful assumptions that they could all speak English (they could) and supported different teams at the World Cup. Deborah Mazza, organizer of the trip, summed it up well: “Gemmologists rediscover the ancient art of stone cutting, carving and engraving in the old German town; they refresh their inspiration through this unique insight into the exceptional craftsmanship and experience hands-on that which can only usually be read in text books.” Sarah Steele of Ebor Jetworks in Whitby also said: “The art of lapidary is usually a closed shop, and yet the Gem-A trip to Idar-Oberstein has given me, as a British stone cutter,

an unprecedented behind-the-scenes tour of some of the world’s finest lapidary works. I consider the knowledge I have gained personally and professionally to be priceless.”

To be kept up-to-date with the latest about the next field trip, email your details to [events@gem-a.com](mailto:events@gem-a.com) to be added to the mailing list.

Gem-A would like to thank **Deborah Mazza**, **Amandine Rongy** and **Charles Evans** for the outstanding job they all did in planning, organizing and executing the fantastic week. Gem-A would also like to thank all of our welcoming hosts, who showed unfaltering kindness, warmth and trust by opening their doors to us, and who gave us the trip of a lifetime: **Herr and Frau Schütz** of Emil Weis ([www.emilweisopals.com](http://www.emilweisopals.com)), **Ralf Neumann** of Wild & Petsch ([www.wildpetsch.com](http://www.wildpetsch.com)), **Herr and Frau Pauly** ([www.erwin-pauly.de](http://www.erwin-pauly.de)), **Thorsten Petry** of Hermann Petry ([www.edelstein-design.eu](http://www.edelstein-design.eu)), **Andreas and Friedrich Becker** of Friedrich August Becker ([www.becker-edelsteine.de](http://www.becker-edelsteine.de)), **Dr Ulrich Henn and Dr Claudio Milisenda** of the Deutsche Gemmologische Gesellschaft ([www.dgemg.com/en/](http://www.dgemg.com/en/)), **Harald Schneider** of Schneider Gemmologische Geräte ([www.gemmologie-schneider.de](http://www.gemmologie-schneider.de)), **Manfred Wild** of Emil Becker ([www.emil-becker.de](http://www.emil-becker.de)), **Stefan and Gaby Klein** of Herbert Klein ([www.herbert-klein.de](http://www.herbert-klein.de)), **Dieter Hahn** of Philipp Hahn Söhne ([www.diamantschleiferei.de](http://www.diamantschleiferei.de)), **Constantin Wild** and **Alessandro Milisenda** of Constantin Wild ([www.gemstone.de/](http://www.gemstone.de/) [www.constantinwild.com](http://www.constantinwild.com)), **Dr Lothar Ackermann** of Forschungsinstitut für mineralische und metallische Werkstoffe — Edelsteine/Edelmetalle ([www.fee-io.de](http://www.fee-io.de)), **Jürgen Brust** of Groh & Ripp ([www.groh-ripp.de](http://www.groh-ripp.de)), **Bernd and Tom Munsteiner** of Atelier Munsteiner ([www.munsteiner-cut.de](http://www.munsteiner-cut.de)), **Karl-Dieter Braun and Frau Hartenberger** of Jakob Bengel Stiftung ([www.jakob-bengel.de](http://www.jakob-bengel.de)).

Thanks also to **The ParkHotel**, a wonderful place to retire to each evening. The rooms provided comfortable surroundings for our sore-footed group and every morning the delicious breakfast fuelled us for another busy day.

**Kevin Johns**, our coach driver of Travelstar Gatwick, also deserves special thanks for getting us there and back safely. He integrated well with the group, was ever helpful and courteous, and his decades of experience with larger groups on far more challenging trips meant that he always had the perfect suggestion for minimizing the walking and maximizing the ‘Gem Time’. We hope to have him as the first name on the list for our next trip!



# Gem-A

THE GEMMOLOGICAL ASSOCIATION  
OF GREAT BRITAIN

## Gem-A Conference 2014

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Gem-A will host its internationally acclaimed annual conference from Saturday 1 – Tuesday 4 November. Welcoming a host of world-renowned speakers and delegates from across the globe, and with a reputation for tackling the most innovative and contemporary gem-related topics in the trade, this event is not to be missed!



SATURDAY 1 AND SUNDAY 2 NOVEMBER

### Gem-A Conference

**Business Design Centre, Islington, London**

After a century-long absence, Gem-A returns to the former Royal Agricultural Hall, today known as the Business Design Centre, and the site of the first ever Gem-A Graduation Ceremony in 1913.

Registration and tea and coffee will commence at 08:45 on both days, and the Conference will close at 17:45 on Saturday and 17:00 on Sunday.

#### Saturday 1 November speakers

- 🕒 **Bruce Bridges**  
The history of Tsavorite and legacy of Campbell Bridges
- 🕒 **Edward Boehm GG CG**  
Analyzing gems on the go: tips from the field
- 🕒 **Dr Thomas Hainschwang FGA**  
The challenges faced by green to greenish blue diamonds coloured by natural or artificial irradiation
- 🕒 **Alan Hart FGA DGA**  
Gems at the Natural History Museum: a review and a forward look
- 🕒 **Dr Ulrich Henn**  
The different types of moonstone
- 🕒 **Brian Cook**  
Paraíba tourmaline: an update  
Bahia golden rutiled quartz: an introduction
- 🕒 **Vincent Pardieu GG**  
From Jedi to Windex: a quest to the origins of the ultimate red and blue spinels

#### Sunday 2 November speakers

- 🕒 **Craig Lynch GG**  
The recovered jewellery of *RMS Titanic*
  - 🕒 **Dr Laurent Cartier FGA**  
An update on worldwide cultured pearl production
  - 🕒 **Chris Smith FGA**  
Ruby and sapphire source – type classification: an objective approach to help make country of origin determinations more consistent
  - 🕒 **Dr Menahem Sevdemish FGA**  
Further developments into digital colour analysis, grading, pricing and trading of gems
  - 🕒 **Terry Coldham FGAA**  
Australian sapphire – a forgotten foundation stone of Thailand's gemstone industry
  - 🕒 **Richard Hughes FGA**  
Heretical gemmology
-

SATURDAY 1 NOVEMBER (EVENING)

## Gem-A Conference Dinner

**Business Design Centre, Islington, London**

Saturday's programme will be followed by a drinks reception commencing at 18:45. Delegates will then be seated at 19:30 for a delicious three-course dinner. Relax and enjoy the company of friends old and new. Dress code is smart/casual.

MONDAY 3 NOVEMBER

## Seminars

**Gem-A Headquarters, Ely Place, London**

Two practical seminars will take place at Gem-A Headquarters in London.

**Guest seminar hosts:**

- **Richard Drucker FGA CG, President of GemWorld International Inc.**  
Coloured stone grading and pricing workshop
- **Mikko Åström FGA and Alberto Scarani CG, GemmoRaman**  
Gemmological applications of Raman and photoluminescence spectroscopy

MONDAY 3 NOVEMBER (EVENING)

## Graduation Ceremony and Presentation of Awards

**Goldsmiths' Hall, London, 18:30 – 21:00 (Registration opens from 18:00)**

Graduates of the Gemmology Diploma and Diamond Diploma and their family and/or friends are invited to attend the 2014 Graduation Ceremony and Presentation of Awards.

**Guest speaker:**

Tim Matthews FGA DGA CEO of Jewelry Television (JTV)

TUESDAY 4 NOVEMBER

## Private visit to the mineral collection at the Natural History Museum

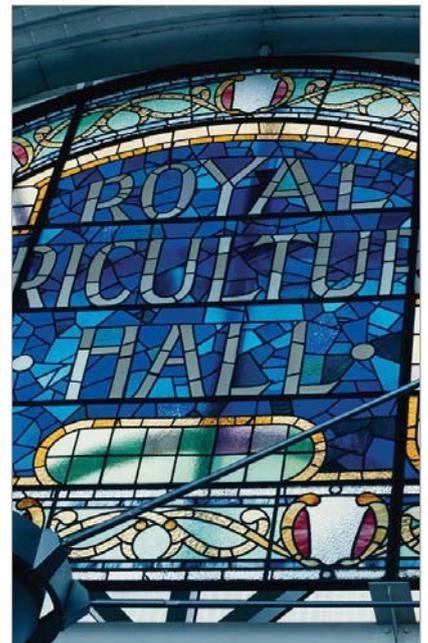
**Natural History Museum, London**

Hosted by Alan Hart FGA DGA, Head of Collections and Mineralogy Collections

## Global ethical challenges within the industry

**Gem-A Headquarters, Ely Place, London**

Seminar with Greg Valerio, founder of CRED Jewellery and co-founder of Fair Jewellery Action, Vivien Johnston, trained goldsmith and founder of Fifi Bijoux and Dana Schorr, Schorr Marketing and Sales.



Images (opposite page and top) courtesy of Business Design Centre.

To book contact [events@gem-a.com](mailto:events@gem-a.com) or visit our website at [www.gem-a.com/news--events/gem-a-conference-2014.aspx](http://www.gem-a.com/news--events/gem-a-conference-2014.aspx)

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# IJL 2014

Now in its new venue at Olympia, IJL 2014 is sure to get attendees talking. As proud supporters of the show, Gem-A will be joining a host of manufacturers, suppliers, associations and trade bodies for a three-day jewellery extravaganza in the famous London landmark from 31 August – 2 September 2014.



## Gem-A at IJL

As in previous years, Gem-A will offer two free hands-on seminars (this year's ones entitled 'Spectacular Spectrums' and 'Fifty Shades of Colour' to excite your taste for gemstones. The team will be on hand at **stand J31** to discuss our world-class education and membership services. Gem-A Instruments will also be available for visitors to purchase instruments and books. We will also be searching for the next winner of our Gem Empathy Award — presented to a company or individual demonstrating knowledge, enthusiasm and flare for coloured gems, and whose jewellery shows captivating use of them.

## Gem-A Seminars

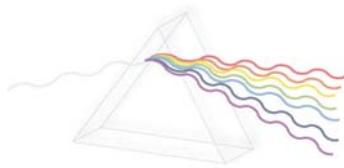
### 'Spectacular Spectrums'

31 August 2014 11:00 – 12:00, London Room

With Andrew Fellows  
FGA DGA and Claire  
Mitchell FGA DGA.

From the common  
to the unusual, you  
will be guided

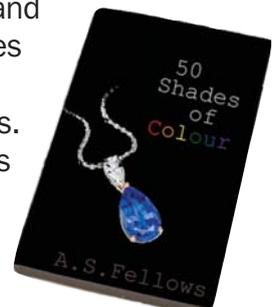
through the correct techniques for successful absorption spectra observation, as well as associated problems and pitfalls. This hands-on workshop will cover spectroscope models, best practices with correct illumination, use of additional filters and successful interpretation of results.



### 'Fifty Shades of Colour'

2 September 2014, 13:00 – 14:00,  
London Room

With Andrew Fellows FGA DGA and Lizzie Gleave FGA DGA. The highly popular seminar is back: discover the hidden world of colour within gemstones. Prepare yourself for a colourful time testing gemstones, and seeing the range of shades and tones of colour that exist within everyday gems. Come and see the colours your brain doesn't want you to see!



## Gem Empathy Award

### Do you have what it takes to win?

The Gem Empathy Award is 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. Gem-A's criteria for the award includes accurate and honest descriptions and disclosure, as well as creativity, imagination and attractiveness. To be considered for the Gem Empathy Award please email your company name and stand number to: [elaine@gem-a.com](mailto:elaine@gem-a.com)

The winning exhibitor will receive:

- A free full-page advertisement in *Gems&Jewellery* magazine (included in *The Jeweller* magazine)
- A free place on a Gem-A one-day workshop or free attendance at the 2014 Gem-A Conference to be held on Saturday 1 and Sunday 2 November at the Business Design Centre, Islington.

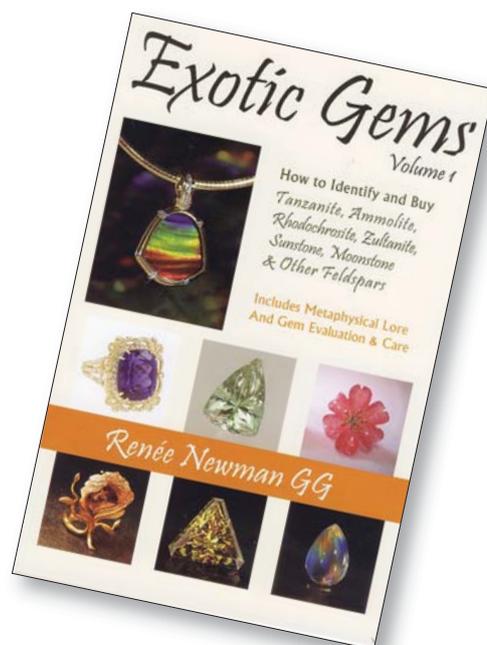
# Exclusive IJL offers

**Gem-A Instruments offers two exclusive discounts at IJL this year.**

## **15% off all Renee Newman books**

Renee's *Exotic Gems* series are useful guides for all gemmologists, covering history, lore, geographic sources, and identifying properties of lesser-known gems.

A must for any professional gemmologist's library.



## **Gem-A Rechargeable LED 10× Loupe**



- This handy instrument is perfect for use in the office or out and about at trade shows.
- Portable; one hour of charge gives 30 mins of light
- Can be used in the office — gives continuous light when plugged in via mains or USB

**Price: Normally £45 + VAT**

**Show special only £36 + VAT**

## **Education offers**

Students signing up at IJL for any Daytime\* Gemmology course will receive the Gem-A LED Travelgem Microscope for **ONLY £225 (usually £426, excluding P&P)**.

\*Daytime courses include: Blended Learning, Daytime Gemmology Foundation, Daytime Gemmology Diploma



*Offers only available during IJL, 31 August – 2 September.  
For more information on IJL 2014 you can visit the IJL Website (<http://www.jewellerylondon.com>). Alternatively you can keep tabs on the lead-up to the show via the IJL hashtag: #IJL2014.*

Come and visit us  
on our stand at IJL!

# J31

# The mystery of the Nur al-'Ayn diamond

The Nur al-'Ayn is one of the most important and mysterious gems in the crown jewels of Iran. With no historical accounts of the stone in existence, its story is a mystery. Anna Malecka investigates whether the stone really was cut and polished in Persia during the Qajar dynasty, and traces its route through history.

The Nur al-'Ayn (also written as Noor-ul-Ain), or 'The Light of the Eye', is an oval pink brilliant-cut diamond of approximately 60 ct (the weight of the stone is impossible to calculate exactly without removing it from its holder), making it one of the largest pink diamonds in the world, and is one of the most important gems among the crown jewels of Iran. It is set in a platinum tiara adorned with white, yellow and pink diamonds, which is housed in the Treasury of National Jewels in Tehran, Iran. This is a modern creation, made by the famous American jeweller Harry Winston in 1958 for the wedding of Mohammad Reza Shah Pahlavi and Farah Diba. The Nur al-'Ayn first ignited the interest of Western researchers

in the 1960s. According to V.B. Meen and A. Douglas Tushingham, the Canadian gemmologists who analyzed the gem at the time, the stone is part of the famous historic diamond which appeared on the market in Golconda, India, in 1642. This stone, known as the 'Great Table', was described in the work of Jean-Baptiste Tavernier, the famous French diamantaire and explorer of India. Tavernier described the weight of the Table as  $176 \frac{1}{8}$  of a *mangelin*, which is around 248 metric ct (Tavernier, 1681). In fact, according to credible accounts by gemmologists, the gem weighed over 300 ct. A second, much larger fragment of the Table is the Darya-ye Nur, or 'Sea of Light' diamond, weighing

around 185 ct, which also currently resides in the Treasury of National Jewels, Tehran.

Having established the origin of both stones, Meen and Tushingham set to wondering what circumstances may have led to the Great Table being divided (Meen and Tushingham, 1968). They speculated that it may have been in Iran shortly before 1834, when the Darya-ye Nur was inscribed with the name of Persia's ruler, Fath Ali Shah. They also accepted that the Light of the Eye may have been created many years later.

The cutting of this gem also bothered Lord Ian Balfour, the famous writer on historic diamonds, who maintained that this stone may have been prepared during the reign of Naser-al-din Shah of Persia. Balfour did not offer anything to back up this assumption, other than mentioning that during the reign of this ruler there were cutting workshops at court, where the stones he acquired in Europe were processed (Balfour, 2009).

Comments which appear in literature concerning the creation of the Nur al-'Ayn are therefore based on speculation, which as far as I know has not been scrutinized on the basis of primary sources. My aim here is to verify these views and establish the true circumstances of the cutting of this diamond, one of the most important in the Persian treasury.

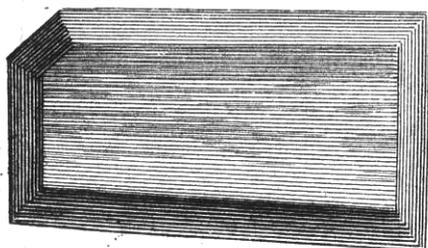
It is highly probable that the Great Table, from which the Nur al-'Ayn gem was taken, came into the possession of the Indian rulers of the Great Mughal dynasty as



The Nur al-'Ayn set in a platinum tiara with white, yellow and pink diamonds, housed in the Treasury of National Jewels in Tehran, Iran. Photo copyright The Royal Ontario Museum.

early as the seventeenth century. In 1739, the Indian subcontinent was invaded by Persia's Nader Shah, who transported the contents of Delhi's treasury back to the 'Land of the Aryans'. Contrary to the version of events accepted in some works on the topic, the Great Table was not among the valuables (Lee, 2006).

Tehrani, an eighteenth-century Persian author, supports this by stating that the king's loot included a diamond called Nur al-'Uyun, or the 'Light of the Eyes' (Tehrani, AH 1349). This opinion was shared by nineteenth-century Turkish chronicler Ahmed Cevdet Pasa who claimed, on the basis of



*Drawing of the Great Table  
by Jean-Baptiste Tavernier.*

testament by a historian from the previous century, that Nader Shah brought the Nur al-'Ayn diamond from India, weighing almost 60 ct, and that it then served to decorate his dagger (Cevdet Pasa, 1972-1974; Kesbî, 2002). This would suggest that the Great Table must have been divided up at the Mughal court even before the Persians invaded.

It is also probable that the Mughal lapidaries had cut the major part of the Great Table, Darya-ye Nur. During the two-month Persian occupation of Delhi, the separation of the gem in question would not be possible since it would have required at least 12 weeks of work.

In 1747, the Shah (the then new owner of the Light of the Eye) was murdered. According to Cevdet Pasa, at the moment Nader was killed, the stone was under the supervision of the royal treasurer, after whose death it passed into the possession of various Persian nobles. One of them informed a visiting merchant from Istanbul that the diamond's current owner, who had taken possession of it by

violent means, intended to sell the stone. However, due to the nobles' opposition to such valuable items being taken out of Persia, these plans were kept secret. The Istanbulite informed the officials of the Ottoman court about the opportunity to acquire the stone, and they took the decision to have it brought to their capital where it was presented to Sultan Selim III for inspection. The monarch ordered the purchase of the diamond, which involved five months of negotiations resulting in the initial price being reduced from around 4.1 to 1.6 tonnes of pure silver, or 1500 and 600 purses of *akçe* respectively — the chief monetary unit of the Ottoman Empire. The stone was then worked on in the brilliant-cut fashionable among the Ottoman elites of the time.

I have not found any mention of the gem in texts referring to the Turkish treasury during the reign of Selim III. Since it is certain that in 1834 the Nur al-'Ayn belonged to Fath Ali Shah (the earliest information I have found about it in Qajar sources), then at some point between the end of the eighteenth century and that date it must have returned, possibly as a gift, from the Ottoman court to Persia (Rida Quli Mirza, AH 1373).

It is worth mentioning that the craftsmen who Selim III employed as diamond cutters to prepare the stone in question were Westerners (Cevdet Pasa, 1972–1974). As Europeans and thus the inventors of the art of diamond cutting, they were considered by the entire Islamic world to be the greatest specialists in the industry. They were operating in Muslim courts from the first quarter of the sixteenth century at the latest. However, due to the policy conducted by western commercial companies to protect the mass export of European-cut diamonds eastwards, attempts by oriental royals to employ such specialists were generally extremely difficult and painstaking, and not always successful (Uzunçarsili, 1981; Heeringa, 1910–1952).

Similar problems were encountered by the envoys of Selim III, who were entrusted with employing European diamond workers. After a long search, these emissaries

managed to engage two French experts; a certain Monsieur Lison, a Parisian, as well as an unnamed cutter (Jamgocyan, 1990). As there were no other 'Frankish' cutters working at that court, it must have been these men who cut the Light of the Eye in the 1790s.

However, it is worth noting that according to Cevdet Pasa, the Nur al-'Ayn weighed about 60 ct before the processing, whereas the titular gem reached this weight only after its cutting. The same author also mentioned that the stone in question was to be "pyramid-shaped in the uncut form". This, to put it mildly, is not the most precise term to describe the shape of the fragment left after cutting off the Darya from the Great Table. We should also add that the seller of the Light of the Eye bought another rough diamond in Iran which, after cutting in Holland, weighed 20 ct and was also purchased by Selim III.

The Nur al-'Ayn diamond, then, was not cut in Persia around 1834, but at the Ottoman court approximately 40 years earlier. As far as I know, this stone, which has belonged to the Iranian treasury continuously since the first half of the nineteenth century, is the only surviving and documented evidence of the 400 years of Western diamond cutters' presence at Muslim courts.



*Portrait of Selim III by John Young, 1815.*

## Gem and Jewellery History

### The mystery of the Nur al-'Ayn diamond (cont.)

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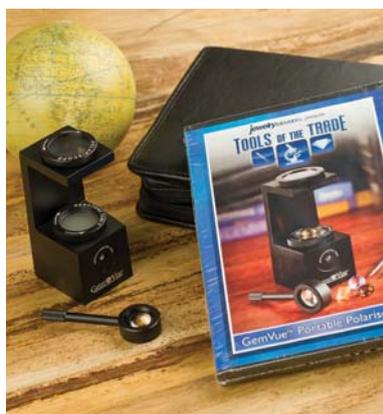
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