

# Gems & Jewellery

July 2014 / Volume 23 / No. 6

Did Orlov buy the Orlov?

JCK Las Vegas

Gem-A AGM



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# Gems&Jewellery July 14

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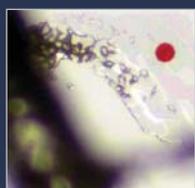
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Any opinions expressed in *Gems&Jewellery* are understood to be the views of the contributors and not necessarily those of the publishers.

Of all the tasks that come with my position, nothing is more pleasurable than signing diplomas. The knowledge of the pride and sense of achievement that the individual will feel is, for us as a gemmological organization, what it's all about. Watching students troop in and out of the building this week for their exams and seeing the nerves, the relief or the disappointment — depending on how it went for them — is another key stage in the process. Of course I am going to say that education in our trade is absolutely essential, but the phrase 'knowledge is power' has never been more apt. If you have the knowledge you can translate that into your buying and selling and use it to build a rapport with your customers and suppliers, and tailor your business to the best possible advantage. Our qualifications give credibility to you as an individual and no one can take your diploma away. I know most of you treasure your diplomas and certificates and, as time progresses, are even proud of the person who signed them. My grandfather's diploma was signed by BJ Tully and FH Knowles Brown, while my mother's was signed by Basil Anderson. I somehow think that by comparison, being a minor league player, the current crop of graduates are being short changed having me sign their diplomas, but perhaps when I'm six feet under, someone might say: "I wonder who that chap was?"

Of course getting a diploma is just the start of the journey and in order use the letters FGA or DGA you need to become, and remain, a member of the Association. Those of you reading already know this, but it's sad how many either forget or don't want to remain part of the family. Hopefully we give good value and provide a point of reference, not just for our graduates but for the trade in general. We want to encourage people to join and that's where you come in. Do tell people about us. I know that most of you are very proud to be FGAs or DGAs, or both. It is galling to see those who aren't members still claiming the distinction. You can help stop this by applying peer pressure and, for our part, there will be a list of all graduates, together with the names of current FGAs and DGAs, available on our new website which will be launched in September. This will be available to the public to check up on the person they are dealing with, to find out if they are bona fide. It's amazing the complaints we get about 'members' who it transpires are not members at all.

It was a pleasure to see many of you at the AGM on 12 June, as well as others at the N.A.G. AGM. At our AGM, the chairman Jason Williams asked those present if they had any questions or comments on how the Association is run, and if they would like to see anything done differently. While it's always nice to imagine that everything is fine when there are very few questions, the only way we can move forward is by you sharing with us your ideas. We do have constraints as a charity, but you as members of the Association have a say in what you would like to see us doing. Our chairman, Board, senior staff and myself would like to hear your views and thoughts. There's no guarantee we can wave a magic wand... but we'll try!

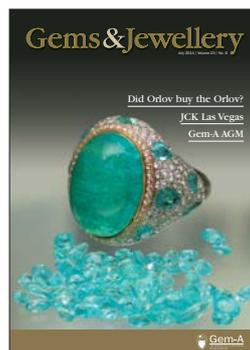
Over the last couple of months you might have seen me mention the Precious Stone Multi-Stakeholder Working Group, a self-appointed body of people seeking to implement their rules and ideas on our trade. Following the CIBJO congress in Moscow and the World Diamond Council congress in Antwerp, I am delighted that the true leaders of our trade have got together so that our voice is heard (see Gem News, page 4). We are a conduit to the success of this by feeding in relevant information from you as members so, again, feel free to contact me at james@gem-a.com.

**James Riley**  
Chief Executive Officer

### Cover Picture

A Paraíba tourmaline from Brazil on display at JCK Las Vegas.

Photo courtesy of Joe Gil at Akiva Gil, New York. See Shows and Exhibitions, page 16.



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# Gem news



## Four industry bodies create joint committee

The Presidents of The World Jewellery Confederation (CIBJO), World Federation of Diamond Bourses (WFDB), International Diamond Manufacturers Association (IDMA) and World Diamond Council (WDC) met during the World Diamond Congress in Antwerp last month to establish 'The Presidents' Forum', the aim of which is to coordinate strategies on issues of common interest.

The heads of the jewellery and diamond industry's four leading international representative bodies have agreed to come together to discuss and formulate coordinated strategies and policies for the industry on important issues of common interest.

Hosted by Dr Gaetano Cavaliere, President of CIBJO, the meeting on 17 June included Ernest Blom, president of the WFDB; Maxim Shkadov, president of the IDMA and Edward Asscher, president of the WDC. It was chaired by Eli Izhakoff, honorary life president of CIBJO, WFDB and WDC.

Following the meeting, The Presidents' Forum issued the following statement: "The objective of The Presidents' Forum is to reflect the interests of all participants and stakeholders in the industry through discussion and coordination. Among our first order of business the presidents of

CIBJO, WFDB and IDMA will engage with the Precious Stones Multi-Stakeholder Working Group to discuss the creation of acceptable due diligence guidelines to defend the integrity of the supply chain. The President of the WDC will be consulted."

At the close of the World Diamond Congress, which saw the attendance of representatives of 30 bourses affiliated to the WFDB, Blom said: "At the heart of our discussions were the sustainability and reputation of the diamond industry and trade at large. Among others, the WFDB resolved to build on its communications strategy and to expedite communications on a global level."

Talking of the discussions between IDMA members and the WFDB, Shkadov added: "We talked at length about issues such as financing and the manufacturers' relationships with the banks and other financial institutions active in the diamond industry and trade. In addition, we expressed our concern regarding the significant diversities of laboratory diamond grading standards and their impact on consumer confidence in diamonds; spoke about the DDI and the necessity of promoting advances in social and economic conditions throughout the diamond mining sector worldwide; and reviewed the FATF report about money laundering."

## New staff join Gem-A

Gem-A would like to welcome two new members to the team: Natalie Harris FGA, who joins us as Membership Secretary, and Vivien Johnston, who joins us as Ethics Manager. Natalie, a current student of Gem-A, has worked at an independent jewellers in Surrey for the past six years and is currently studying for the Diamond Diploma.

Vivien Johnston is a trained goldsmith, design graduate and Fellow of the Royal Society of Arts. Since 2011, she has been appointed by the National Association of Goldsmiths (N.A.G.), The British Jewellers Association (BJA) and Gem-A to chair the Jewellery Ethics UK committee. Vivien authored *The Gold Paper*, in association with the N.A.G. and BJA, which was published in February 2013. She supports the development of new standards of best practice and is an active stakeholder within processes being developed to improve the industry's practice.

## GIA gifts DiamondCheck to London Diamond Bourse

The great and the good of the UK diamond industry descended on Hatton Garden on Thursday 22 May, to witness the presentation of GIA's brand new DiamondCheck machine to the London Diamond Bourse (LDB), following an agreement between GIA and the WFDB. The event, hosted by the LDB, gave members of the wider industry a chance to learn more about the new device through a talk from GIA Research Scientist Dr Ulrika D'Haenens-Johansson, and address questions about the new arrangement to GIA and LDB staff.

Victoria McKay, chief operating officer at the LDB, noted how "the device itself hopes to assist the LDB with two critical elements when it comes to synthetics: detection and disclosure". She went on to say, "The DiamondCheck will help prevent synthetic diamonds from entering the market as natural diamonds through easier detection. It will also help maintain consumer confidence, which is an urgent requirement to the industry worldwide."

# Gem-A events

## Gem-A Conference 2014

*Business Design Centre, Islington*

Gem-A will host its internationally acclaimed annual conference at the Business Design Centre, Islington. Welcoming a host of speakers from across the globe, the Gem-A Conference has a reputation for tackling the most innovative and contemporary gem-related topics, whilst bringing together some of the leaders in the field for a weekend of networking and special events.

1 and 2 November: Conference

3 November: Seminars

4 November: Natural History Museum visit

*Early bird bookings now being taken!*

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

## Gem Central evenings

Gem Central evenings take place once a month, at the Gem-A Headquarters from 18:00–19:30. Gem Central and Career Service evenings will resume from September 2014.

## 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.

### Understanding gemstones

Thursday 28 August

*Gem-A Headquarters, London*

This one-day workshop will provide you with the perfect introduction to the fascinating world of gemstones, and is perfect for retail staff. Covering all aspects of the most popular gems (ruby, sapphire, emerald and others), you will learn about origin and lore, as well as the more practical aspects of their physical properties, including care and caution advice.

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

### Understanding practical gemmology

Friday 29 August

*Gem-A Headquarters, London*

This one-day workshop focuses on the practical aspects of gemmology, and covers the effective use of all the readily available instruments and testers that you are ever likely to need. The 10× lens, polariscope, spectroscope and refractometer are all looked at in detail, and, under the guidance of our expert tutors, you will quickly learn the basic principles and techniques needed to use them efficiently. Previous practical experience is not necessary. By the end of this workshop you will be able to use the equipment correctly and have an appreciation for their value in testing.

*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

## 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*

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.

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

### 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

## The Gem-A Photo Competition is now open!

Submit your photographs for the 2014 Photo Competition and you could win a year's FREE Gem-A Membership. There are four categories under which an image may be submitted:

**Natural** – Must be a digital photograph (including photomicrography) with minimal post-production work (may include basic cropping, contrast and minor hue/saturation adjustments).

**Treated** – Digital photograph (including photomicrography) with significant post-production work (such as background manipulation, HDR and contrast masking).

**Synthetic** – Computer-rendered 3D models of gemstones, crystals, crystal structures, images from microtomography, etc.



*Last year's winner by Michael Hügi FGA*

**Melange** – This category covers any gem-related image that doesn't fit in the above and may include such things as photos of a spectrum, a scanning electron microscope image, mining, cutting, etc.

The subjects may include any type of gem material (including organics), crystals or cut stones, and internal or other features of these. Jewellery settings may be included, even wearers, but the gem or gems must be the main subject. In the case of categories 1, 2 and 4, the original photo as taken, with no cropping or manipulation whatsoever, must also be submitted to us.

Please submit all entries to [editor@gem-a.com](mailto:editor@gem-a.com) by Friday 19 September 2014, taking care to read the Rules of Entry first. For more information and for Rules of Entry, please visit [www.gem-a.com/membership/photographic-competition.aspx](http://www.gem-a.com/membership/photographic-competition.aspx)

## Gem-A Events

### Gem-A Events (cont.)

recognise 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.

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

#### **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.

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

### 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 Loughborough 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 individual workshops and evening social events.

#### **Jewelry Television Conference**

18 July 2014

*Knoxville, USA*

Jewelry Television's (JTV) annual 'Gem Lovers' Conference is becoming one of

the major gem events in the US. Over the course of four days JTV invites delegates from across the world to join it in Knoxville, Tennessee, to share in a collective love of gems. A refreshing new show that aims to give an alternative from the three major US gem shows in Tucson, Las Vegas and New York, JTV's Gem Lovers Conference is gradually growing into the forth big name on the North American gem show circuit.

#### **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 international events with top international speakers and include networking, social events, and of course gemmological information and 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.

## Gem-A Shop

Don't miss this month's SPECIAL OFFERS on instruments and books from the Gem-A Shop.

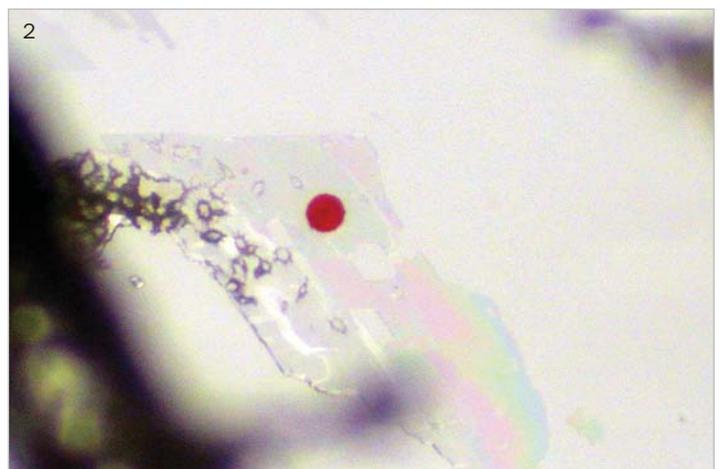
Visit [www.gem-a.com/shop.aspx](http://www.gem-a.com/shop.aspx)

# Dot on the landscape

Anthony de Goutière GG photographs a strange inclusion in colourless topaz.

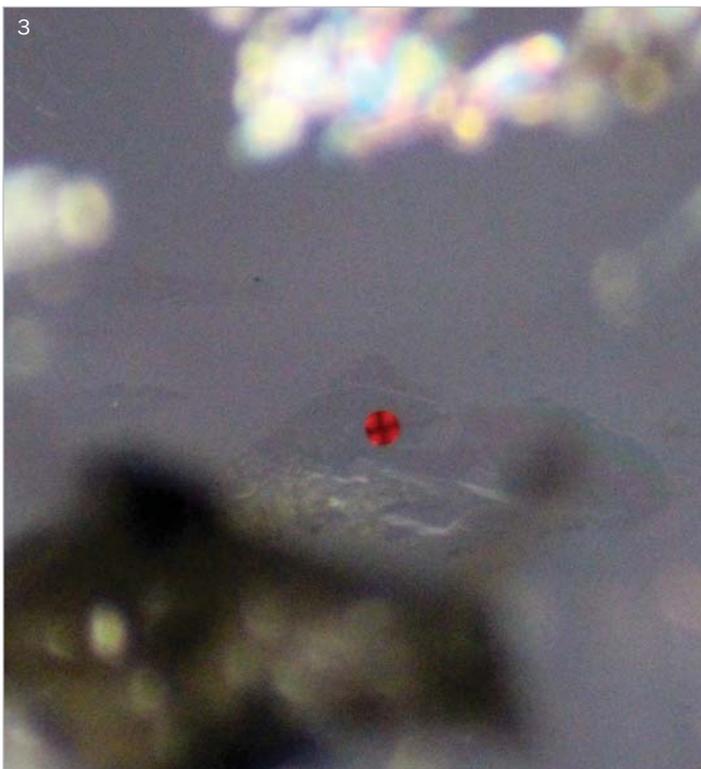
While attempting to photograph a small cluster of quartzite crystals in a colourless topaz specimen, I spotted nearby a tiny red spot in what appeared to be a cleavage plane (1). Under my highest magnification it was just a very small, solid red circle (2). Under oblique illumination there were some faint interference colours visible around the red dot. I then tried crossed polarizers and, as I rotated the polarizers, a shadow in the form of a Maltese cross appeared in the red dot (3 and 4).

As the cleavage with its red dot was about 2 mm below the surface of the specimen it was very difficult to obtain a sharp photomicrograph. However, I think the accompanying photos show this micro-phenomenon quite clearly. The area photographed was approximately 1.5 × 2.5 mm. The red dot is roughly the size of a full stop on this page and is very likely reddish brown hematite, which is often encountered in topaz.



I've observed clusters of these tiny objects in other topaz specimens, but this is the first time I've been able to get useable photomicrographs, and the first time I've seen the little cross.

Perhaps the hematite circle might be very slightly lenticular giving it just enough thickness to react to the crossed polarizers.



## Recent Events

# Gem-A AGM 2014



(From left-right) Gem-A President Harry Levy, CEO James Riley, Chairman of the Board Jason Williams and Finance Manager Hayley Farr.

The 2014 Gem-A AGM was held on Thursday 12 June at Gem-A Headquarters in Ely Place. Proceedings began with Chairman of the Board, Jason Williams, introducing the current President, Harry Levy, and Gem-A CEO James Riley and Finance Manager, Hayley Farr. The annual report and accounts were adopted and Harry Levy was re-elected President from 2014–2016. Andrew Rankin stepped down from the Board and was thanked for his time as trustee and president. Andrew was elected Vice President of the Association. Mary Burland, Miranda Wells and Jason Williams were re-elected as trustees and Jonathan Lambert, having been co-opted during the year, was elected as a trustee.

After the nominations Jason gave an overview of the role and activities of the Board, and asked the members present for comments on Gem-A and its progress and direction. Peter Dwyer-Hickey, Gem-A examiner, commented that he was pleased to see Gem-A getting more “socially involved” in Hatton Garden events. The new look *Journal of Gemmology* was praised and thanks were given to Editor Brendan Laurs. It was also suggested that a précis of each Board meeting should be posted online for members to view. While this is not possible, James Riley assured the floor that

anything that needed to be communicated to members would be done so through *Gems&Jewellery* and the monthly members’ newsletter. All Board minutes are also filed with the Charity Commission for public record. The minutes of the 2014 AGM meeting will also be published on the Gem-A website.

After the AGM a drinks reception and buffet were held in Ely Place, where members were treated to a beautiful summer’s evening, catching up with colleagues and old friends.

Following the drinks reception members were invited to stay for a talk by Vivien Johnston, chair of the UK Jewellery Ethics Committee and newly appointed Gem-A Ethics Manager, on the role of ethics in the gem and jewellery industry.

Vivien urged the trade to become more familiar with their supply chains, noting that because customers are becoming more aware of their ethical and environmental footprint, it is necessary for the trade to become familiar with theirs. The trade needs to be aware of how their products are sourced and where they come from, not just to maintain trust between jewellers and their customers, but also for the sustained credibility of the whole industry. To read more about ethics and the trade see Vivien’s article ‘Ethics and the human supply chain’ in the June issue of *Gems&Jewellery*, page 13. Vivien and Greg Valerio will also host a seminar as part of the Gem-A Conference programme, titled ‘Global ethical challenges in the industry’ on Tuesday 4 November. For information on how to book see [www.gem-a.com/news--events/gem-a-conference-2014.aspx](http://www.gem-a.com/news--events/gem-a-conference-2014.aspx)



Members enjoying drinks outside Gem-A Headquarters.

# AGA Report

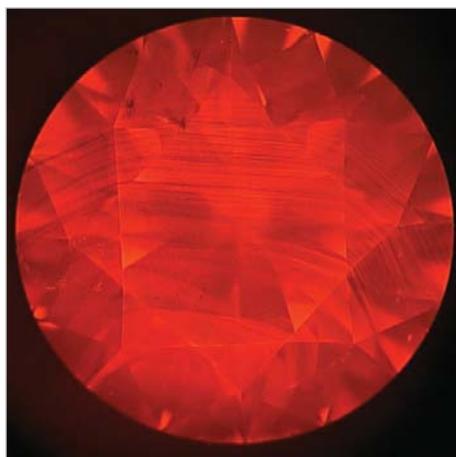
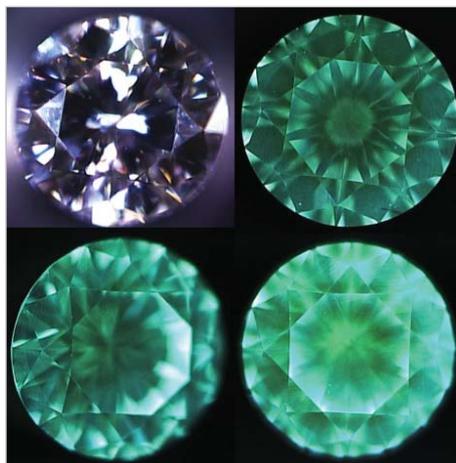
James Riley FGA DGA gives his feedback on the AGA Conference, held in June in Las Vegas.

One of the great things about the two big US trade shows (AGTA Tucson GemFair and JCK Las Vegas) is looking forward to the AGA conferences. In Las Vegas it is a half-day affair, but with a line-up and a topic which would make you stand up and listen anywhere in the world. Now, in these pages you may well be fed up with reading about synthetic diamonds — and to be honest we are all probably sick of hearing about them — but they are the hot potato of the moment and thus we have to report on them. What then did Jim Shigley, Dusan Simic, Tom Chatham and Ronnie VanderLinden have to say on the subject?

GIA's Jim Shigley reminded us of the referral and detection techniques currently being used by laboratories around the world, and the instruments available on the market. The overall message was that synthetics are all detectable at the moment... but it can take time. These stones require identification based on not just their gemmological properties and visual characteristics, but also on fluorescence, colours and patterns, spectroscopy techniques in the visible spectra (for optical defects and cause of colour), infrared (for diamond Type and evidence of impurities) and photoluminescence (for optical defects), alongside a database of information. Synthetic diamonds still 'exhibit distinctive features related to their growth history and optical defects'.

Dusan Simic of Analytical Gemology & Jewelry (AG&J) has spent many years researching what happens when you treat diamonds, and has also been involved in the setting up of many synthetic diamond plants. He showed us that the range of colours of synthetic diamonds is getting bigger, and that manufacturers are perfecting the production of both HPHT and CVD-grown diamonds by adding on extra processes to the initial growth of

the diamond. Thus stones are often irradiated, annealed, subjected to the HPHT process or a combination of all three. These follow-up treatments often mask the familiar characteristics that we associate with synthetic diamonds. Because of this labs are finding identification more and more difficult — it is not so much that they cannot tell if it is synthetic, more that they



(Top) CVD-grown HPHT-treated diamond and (bottom) growth zones in CVD-grown diamond  
© Dusan Simic, AG&J

cannot say exactly what has happened. This is because most of the well known instruments operate on a system of referrals rather than detection. Stones will be identified as needing further testing and as not being of a certain Type, but often they are classed as indeterminable. Effectively then, you have three classes of diamond: natural, synthetic and 'don't know'... This last category may be a sweeping statement, as the fact that the stone is not classed as natural almost certainly means that it isn't. However, at what point do the characteristics of a treated synthetic match those of a treated natural diamond? Should we care? How do you differentiate on price? It seems to me these questions are more relevant than the simple "Is it synthetic or not?" Simic poses numerous questions which labs and the industry may not want to answer, but, sooner or later, will have to.

Tom Chatham, as you would expect, has addressed the issue and embraced it. He gave us an overview of the history of synthetic diamonds and showed us that they have been around for a long time. For example, in Russia they may have been produced before the patents in the West were even applied for... Tom's clear message was that these things are OK, providing you have disclosure.

The message was similar from Ronnie VanderLinden. Both Ronnie and Tom openly sell synthetic diamonds with full disclosure. There is a market for these stones, as natural diamonds become more and more valuable, and (if one believes the reports) as natural diamonds become harder and harder to find. Current projections predict a very different market in 50 years. There is certainly no shortage of kimberlite pipes, but whether they are worth exploiting is another matter.

Synthetics are of course here to stay and will no doubt become cheaper to produce — the starting price for a CVD or HPHT machine is around \$150,000 — and how we as a trade deal with the marketing of them will be of great interest. The scientists are still ahead of the game and that's what matters.

# Did Orlov buy the Orlov?

Among the few remaining large Mughal-cut diamonds, the most important is the Orlov diamond. Currently located in Russia, the popular story of how the gem was obtained by the Court of the Tsars differs significantly from its actual history. Anna Malecka investigates how the famous diamond really found its way to the imperial treasury.

The Russian emperors' gold sceptre is housed in the Moscow Kremlin, shown as part of the Diamond Fund collection. Created for Catherine II (r.1762-1796) by the two jewellers, Leopold Pfisterer and Ivan Leonovich, the item is made of gold and decorated with 197 diamonds with a total weight of 242.82 ct (Kuznetsova, 2009).<sup>1</sup> Of the total weight, up to 189.62 ct falls to one gem: the Orlov, one of the largest Mughal-cut diamonds, which was

incorporated into the sceptre in 1774 (Rybakov, 1975; Polynina, 2012).

The gem is, in my view, identical to the one mentioned in the work of the famous gem merchant and traveller Jean Baptiste Tavernier (1605–1689), and known in Western literature as 'the Great Mughal's Diamond', or more frequently 'the Great Mughal'. In the seventeenth century, the emperors of Delhi kept the diamond in the treasury, from where it was looted by

Nadir Shah (r.1736-1747), the king of Iran, during his raid on India in 1739. The history of the gem after Nadir Shah's death is the subject of numerous stories. For the purposes of this article it is sufficient to explain that in 1766 the diamond was brought to Amsterdam from Isfahan, the former Persian capital, by Grigori Safras, an affluent Armenian gem merchant.

Contemporary authors writing on gems, including Lord Ian Balfour as the most prominent authority on historic diamonds, believed that the gem in question was purchased in Amsterdam by Russian prince Grigory Orlov (1734–1783), former favourite of Catherine the Great, who then gave it to the Empress as a gift to try and win back her graces. While accepting the most popular version of how the Empress obtained the diamond, Balfour nonetheless mentioned the existence of unspecified Russian documents, which were supposed to shed light on the process of the transaction (Balfour, 2009; India, 2014).

The earliest historical record of the Orlov is in the last will of Safras or, more precisely, Grigori Shafras Khodiminasov (son of Khwaja Minas), the name by which he was known in Russia. The author of this document, written in 1771 in Petersburg, asked his relatives (the Empress' banker and jeweller Ivan Lazarev (1735–1801) and his brother Akim Lazarev) to go to Amsterdam and take with them a 779 Dutch grain diamond (approximately 190 ct), which he had deposited in an Amsterdam bank in 1767.<sup>2</sup> The gem was the common property of Safras and Ivan Lazarev. It is known from Lazarev's testimony made in Petersburg in 1779, on account of the division of property between Safras' heirs that on 20 October 1772 he had given 125,000 rubles to Safras to pay off the remaining 50% of his share of the gem (Pyliayev, 2007).<sup>3</sup> Probably both businessmen obtained the gem in Persia while working in close partnership, which was often the case with very expensive jewels (Huvhaniyan, 1379).

According to a very popular version of the story, Lazarev sold the diamond to Prince Orlov, who presented it to Catherine on her name-day on 24 November 1773.



The Orlov diamond, featured in the Imperial sceptre. © Elkan Wijnberg.

The gem was given in a decorative case in the form of a red egg (Potto, 2007).

This actually did take place. However, historical records show that in reality the former favourite of the Empress was only an actor in the great diamond performance, directed by Catherine herself.

The Empress was interested in buying the gem no later than in March 1773, when a model of the diamond was already in her court. Her correspondence with Adam Olsufev, the Empress' personal secretary, reveals that she paid for the diamond herself, taking 265,000 rubles out of the treasury between 1774 and 1780. The remaining 135,000 (of 400,000 — the total cost of the stone) had been paid earlier. In a letter dated 11 January 1774, addressed to Olsufev, the Empress insisted that her payments be made in secret and ordered him to pay in this way 75,000 rubles to Lazarev. The transfer was to take place "at such a moment that would coincide with the time Orlov had contracted to purchase the gem from the jeweller prior to giving it to her as a gift". And so it appears that even the court jeweller was unaware of the Empress' schemes. It is all the more probable since he entered into a formal agreement of purchasing the diamond with the count.

It was therefore not Orlov who bought the gem, but Catherine herself. Why then did she take so much care to create the impression in the court that the diamond was purchased by Orlov? The key to answering the question is the date the diamond was purchased. In 1773, Russia was struggling with two military undertakings: the war against Turkey and Pugachev's rebellion. In these circumstances, buying such a costly and excessive gem would definitely be treated by the Petersburg court as a controversial idea, to say the least (Baziiants, 1982).

It is known that the Empress was an enthusiast and collector of diamonds. Was the reason for her decision to purchase this stone tied only to this? Catherine was probably aware that the specimen offered to her is larger than other stones found in the possession of contemporary European rulers, and owning this exceptional stone



*Oil on canvas portrait of Empress Catherine the Great by Russian painter Fyodor Rokotov, 1763.*

would give her distinction among these rulers. Could this have been the reason for Empress Catherine's decision to acquire that diamond?

#### Acknowledgement

Research for this article was made possible by generous financial support granted by the Mellon Foundation.

#### Notes

1. In Edward Twining's classic book *A History of the Crown Jewels of Europe*, Twining claims that the sceptre was designed by a man named Troitinski, who is in turn called Troitnoki by Lord Balfour (Twining, 1960; Balfour, 2009). Russian records of Catherine's sceptre do not mention any person by this name. It is likely that both writers misspelled the name of a man called Troinitski, who was not actually a jeweller but a director at the Hermitage Museum from 1918 to 1927, and was the author of several works on historic Russian diamonds.
2. The Lazarevs were an Armenian family residing in Isfahan, Iran, since the seventeenth century, where they were involved in the gem and jewellery business. One of them, Lazar, was to become a jeweller for the Persian Shah Abbas II (r.1642–1666). During Nadir Shah's reign, when Armenians were being persecuted, the father of the future Empress' jeweller, Lazar Lazarian, who was also in the gem trade, emigrated to Russia (SAOOIA, 1838; Kuznetsova, 2009).
3. Another important gem which came to Russia through Safras is the 46.92 ct diamond from the imperial orb. This stone was bought by a Russo-Armenian prince, Ivan Abamelek, who later traded it with Tsar Paul I for land (Baziiants, 1982; Kuznetsova, 2009).

## Gem and Jewellery History

### Did Orlov buy the Orlov (cont.)

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#### About the author

Anna Malecka is a former Mellon Fellow with the W. F. Albright Institute of Archaeological Research in Jerusalem and is currently writing a book entitled *Amulets, Poisons and Royal Splendour: Diamonds in the Islamic World*.

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# Astorite

Helen Serras-Herman FGA investigates a rare pink gem with historic mining roots.

Astorite is a rare rock composed mostly of pink rhodonite along with various amounts of quartz, rhodochrosite, gold, silver and other minerals. It is mined exclusively at the historic Toltec mine in the San Juan Mountains of southwestern Colorado, about 10 miles from Silverton — an area that became famous for its silver and gold mining at the end of the nineteenth century and beginning of the twentieth century.

## Silverton and the San Juan Mountains

The San Juan mountain range is part of southern Colorado's Rocky Mountains. Surrounded by great natural beauty, the town of Silverton is a US National Historic Landmark, with many of its original buildings still standing. Gold was discovered at Silverton in 1860 and, after negotiations with the Ute Indians, the town was created in 1874, doubling in population within a year. Silverton is located in San Juan County at 9,318 ft elevation, and the mine is situated in a remote area, above 10,000 ft. Driving on the 'Million Dollar Highway' that connects the historic mining areas of Silverton and Ouray, the traveller is rewarded

with breathtaking scenery of deep gorges, mountain lakes and landscapes packed with evergreen trees.

## John Jacob Astor IV

The Toltec Mine was originally owned by Colonel John Jacob Astor IV (1), one of the wealthiest men in early twentieth-century America, who owned several gold and silver mines in the Silverton mining district. Astorite is the trade name given to this material, to honour the mine's original owner.

John Jacob Astor IV, born in 1864, was an American business man, inventor and writer. He was a member of the prominent Astor family. He served as lieutenant colonel during the Spanish-American War of 1898. His 1894 science fiction novel *A Journey in Other Worlds: A Romance of the Future* was a success. Astor was a real-estate magnate, and became famous for building the luxurious 17-storey Astoria Hotel in New York City in 1897, adjoining the 13-storey Waldorf Hotel, which was owned by his cousin William Waldorf Astor. The combined historic landmark properties known as the Waldorf-Astoria became a prestigious destination for travelling visitors.



1: John Jacob Astor IV with his wife, Madeleine Talmage Force, on the RMS Titanic. Photo Wikimedia Commons.

After his first marriage ended in divorce in 1909 and, even though it was considered to be scandalous at the time, at the age of 47 John Jacob Astor married 18-year-old Madeleine Talmage Force. The couple went on a long honeymoon in Europe and Egypt, and because Madeleine became pregnant, they were returning home aboard RMS *Titanic* on that fateful voyage in 1912. Astor and his new bride were the wealthiest people on board. Just before the ship sank Astor helped his wife, her maid and her nurse get into a lifeboat, but he was not allowed to embark, and died when the ship sank. This heartbreaking story of love and tragedy has added another layer of history, lore and mystique to astorite.

After Astor's death, the entrance to the mine was sealed and not reopened until 2001, when the new owner Will Benham — an enthusiastic rockhound — acquired the patented mining claims through a bid to the United Bank of Denver. It has also been speculated that the entrance to the mine was shut by Astor himself, wanting to save it for future exploration.

The mine claim later changed hands and since 2003 has been owned by Keith and Connie McFarland of K&C Traders in Silverton, Colorado (Lauris, 2007).



2: Large slabs of astorite that display a good balance combination of soft pink colour, black veins, striking lacey patterns of white chalcedony and 'wires' or tendrils of gold and silver. Approximately 6 x 5 in.

## Gems and Minerals

### Astorite (cont.)



3: The difference between astorite (bottom left and centre), gem rhodonite from Australia (bottom right), and 'gemmy' rhodochrosite from Argentina (top) is evident.

### Astorite composition and properties

My husband and I first purchased some rough material in 2002 from Will Benham (2), and I am thankful that he provided us with the mineral data.

Based on its composition, astorite is a somewhat familiar, although mystical,

gem material. What makes the rhodonite-rich astorite an exceptional material is the addition of three more major components: rhodochrosite, quartz in the form of pseudomorphs and chalcedony, and ore gangue, which is a highly silicified, complex sulfide with native metallic elements of gold, silver, copper, lead, chalcopryrite and magnetite, as well as galena, tenninite



4: The black inclusions in astorite match chalcocite, galena, pyrite and sphalerite. Beautiful stone images of two 'love birds' appeared when we consecutively cut these slabs.



and tetrahedrite. The term 'ore gangue' refers to material that surrounds (or is mixed together with) a main mineral or ore deposit.

Many mineral sceptics still argue that the material is simply rhodonite, but Raman spectroscopy performed on two cabochons at the GIA lab in Carlsbad, California, proved that the rock is composed of rhodonite, quartz, rhodochrosite and other minerals (3). It also showed that the black spots match chalcocite, galena, pyrite and sphalerite (Laurs, 2007), unlike black manganese veins that run through rhodonite (Yakabowski, 2003). There are also some rare mineral inclusions of helvite, rose red crystals of friedelite, and transparent colourless fluorite and calcite (4). The amount of these minor minerals varies in each piece of rough and, consequently, in the cut slabs. The rock is not considered gold or silver ore, although it does assay at approximately



5: Easily cut into cabs and free-forms astorite takes an exceptional polish.

0.1 oz of gold and 7.75 oz of silver per ton. The material is highly fluorescent under both shortwave and longwave UV light.

All these additional mineral inclusions make astorite a unique lapidary material, with an attractive colour combination of soft pink, grey, black veins and tan spots, with beautiful translucent lacy patterns and fortification bands, and 'plumes' of white chalcedony. Pink gemstones have a love-hate audience, and because of this it is sometimes difficult to sell pink gemstone jewellery. That said, the delicate, pastel pink colour with gold and silver flecks, makes astorite gemstones

beautiful, distinctive and eye-catching, and desired treasures for collectors.

The hardness of astorite is approximately 6.5–7 on the Mohs scale, depending on the amount of chalcedony quartz present. It is easy to cut into cabs and free-forms and takes an exceptional polish. The addition of chalcedony veins brings the hardness of this lapidary material up, facilitating a better and higher polish. Thin slabs retain good sectional integrity.

## One-of-a-kind cabs and jewellery

My husband and I first visited the historic towns of Ouray and Silverton in 1994, but at that time we were not familiar with astorite. However, we recognized the beauty of the material and that the layers of history and lore behind it would make astorite a desirable gemstone. Since then we have cut most of our rough and sold slabs and one-of-a-kind cabs (5). Astorite lends itself beautifully to carving, and I have created some lovely pieces by incorporating them into my jewellery artwork (6 and 7).



6: Astorite necklace designed by Helen Serras-Herman.



7: The colours of astorite complement many other materials, like these shells in this 'Astorite Tempest' necklace, now in private collection. Design Helen Serras-Herman. Photo by Michael Colella.

At present, rough material and slabs of astorite are seldom sold and are considered very rare. Large slabs of astorite that display a good balance combination of soft pink colour, black veins, striking lacy patterns of white chalcedony and 'wires' or tendrils of gold and silver, are considered extremely rare in the market.

A unique gem, astorite is certainly one worth adding to your collection.

All photos by Helen Serras-Herman, except where otherwise stated.

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### About the author

Helen Serras-Herman is an acclaimed gem sculptor with over 30 years of experience in unique gem sculpture and jewellery art. A 2003 National Lapidary Hall of Fame inductee, Helen's award-winning work has been exhibited worldwide and published in over 140 trade magazine articles and books. Visit her website at [www.gemartcenter.com](http://www.gemartcenter.com)

## Shows and Exhibitions

# Gems in the Nevada desert

Gary Roskin FGA takes us on a gemmological tour of JCK Las Vegas 2014.

Considered to be the largest jewellery show in the Americas, JCK's 23rd annual jewellery show in Las Vegas was certainly all of that. From a gemmologist's perspective good walking shoes, a water bottle and a keen eye while moving quickly were the necessities of the show. With over 2,500 exhibitors and covering two convention hall floors and numerous adjacent ballrooms of the Mandalay Bay Resort Hotel & Casino, it was, as it has been before, impossible to actually see everything in the four (or five) short days of the show.

Among the exhibitors, there are displays of loose gems, finished jewellery, manufacturing and gemmological equipment, as well as educational and business-related offerings. Gem-A was well represented, with CEO James Riley and marketing and events manager Amandine Rongy, in the booth selling courses and gem instruments, and promoting the upcoming annual conference from 1 – 4 November. Olga Gonzalez and I also helped out, along with Gem-A members who would pass by, step in, and create that necessary gathering which drew even more attention to the booth. We also had Mikko Åström and Alberto Scarani and their portable Raman spectroscope, the GemmoRaman, running spectra and promoting the very latest in gemmological testing.

JCK is full of other activities pulling you away from the show floors, such as seminars, working breakfasts and fashion shows. It all just seems a bit much to take in, but this allows everyone an opportunity to find what's important to their business. (Yes, there are the additional after-show extravagant Las Vegas performances, such as rock'n'

roller Rob Thomas, singer/songwriter from the band Matchbox Twenty, at JCK's 'Rocks the Beach' concert and the Diamond Empowerment Fund's 'Diamonds in the Sky' event, featuring 10-time Grammy Award-winner singer/songwriter, Chaka Khan. Then there was the Plumb Club's double event: breakfast with 'Shark Tank' TV personality and entrepreneur Daymond John, founder and CEO of the iconic fashion brand FUBU, as well as an evening gala with comedian Jerry Seinfeld.)

Officially, the show is only four days long: Friday 30 May — Monday 2 June. However, the American Gem Trade Association (AGTA), North America's natural colour gemstones and cultured pearls suppliers' organization, is allowed to open its two adjacent ballrooms one day earlier to get a jump on the finished jewellery competition from Thursday 29 May – Monday 2 June.

If that's not enough, there are two other gem and jewellery shows in Las Vegas. At the Mirage Resort Hotel, with the flaming volcano and indoor rainforest, is the annual Gem & Lapidary Dealers Association (GLDA) gem show, while across the street and up the block at the Paris Resort Hotel is the annual Las Vegas Antique Jewelry & Watch Show.

But who has time for all of that? Let's talk gems!



1: Most of what you see at JCK are the heat-treated black diamonds shown here — round brilliant cuts and faceted beads. The poor quality starting material is always evident under magnification and even here in the image — you can see pits, cavities and fracture lines on many of these random samples. Obviously, these gems are admired for their colour and their lustre (adamantine). Courtesy of Danis GMBH, Tiefenbronn, Germany.

## Diamonds in Las Vegas

News touched on around the show was the possibility of CVD synthetic diamonds ending up in parcels of natural diamond melee. In fact, I was at one booth feeling comfortable about the melee they were offering as all natural, and then wouldn't you know, two booths away I was talking with a prominent and well-respected diamond supplier about that very melee and he asked in a whisper: "Is it natural?"

It was also very evident that almost everyone seems to be comfortable talking 'CVD' and 'HPHT synthetic', as well as 'HPHT-treated'. I don't recall that from last year.

Rough diamond crystals, low quality diamond slices, black diamonds (1), and mounting diamonds upside down to reveal the culet (2) are still being offered by cutters, jewellery manufacturers and jewellery designers. But there were fewer seen (unless the rough diamond crystals start becoming more gemmy/cuttable), so look for that trend to start fading. Still popular are fancy pink diamonds, shown in 3.

## Around the pearl

Also seen (4) was some interesting nacre on fresh bead-nucleated South Seas rounds; a very small hammered appearance, similar, and yet tiny, when compared to natural pearls (not cultured). We also saw some baroque-shape grey Tahitian cultured pearls (5). Apparently, these were nucleated using baroque-shaped beads.

## Colour prices going up

If you haven't taken notice, large coloured gems are being priced for sale higher than in past years. Those in the know are concerned that supplies will not be as forthcoming as they once were. Restocking large 10, 15, 20 ct tourmalines, for example, is not going to be easy, and certainly no less expensive. See the beautiful examples of Tsavorite from Bruce Bridges shown in 6, and some wonderful Paraiba tourmalines from Akiva Gil, shown in 7.



2: Rose cuts are still very popular, as are fancy colour diamonds and faceted diamond slices. Combine the look of fancy colour, low quality diamond slices and rose cuts, and we get what we see here. Are they popular? Are they trending? That's not for me to say but it makes sense that someone sees this as a possible popular look. Courtesy of Facet, Barcelona, Spain.

3: LJ West Diamonds, New York, is one of the leading fancy coloured diamond suppliers at JCK Las Vegas. Fancy pink diamonds are still one of the most popular, and pricey, of the 'commercially available' fancy colours. The earrings seen here feature a 1.22 ct and a 1.05 ct centre round brilliant cut, graded Fancy Intense Pink and Fancy Intense Purplish-Pink respectively, accented by 2.32 ct total weight of pink pear-shapes and surrounded by 20 colourless pear-shapes.

4: These beautiful 17 mm round cultured pearls left us scratching our heads as we had never seen the micro-hammered nacre before. Pay no attention to the larger dimple just below the bright reflection. Cast your focus into the centre of the pearl where the dark shadow meets the reflection of the cotton. Natural pearls often show this 'hammered' appearance, but mostly in larger surface indentations. In more than 12 years of taking close-up images of large South Seas and Chinese freshwater cultured rounds, we have never seen anything quite like this. Courtesy of Jack Lynch, Sea Hunt Pearls.

5: Is this a first? These are baroque 14 × 15.1 mm Tahitian cultured pearls, created using baroque-shaped mother of pearl nuclei. It's the first time we have seen them, and leave it to Jack Lynch of Sea Hunt Pearls, San Francisco, to bring them to the show. Known for searching out the very latest, Jack is always our first stop on the gem show circuit.

6: Expanding the talk of large colour becoming rare and pricey, here we have a fabulous suite of tsavorite gemstones from Bruce Bridges, Bridges Exploration, Nairobi, Kenya. Founder of the green gem, Bruce brought out these three gemmy beauties, noting just how important and how difficult it is to match up a trio like this. Large cushion brilliant, 10.75 ct, and smaller matching pair, 13.52 ct.

7: Courtesy of Joe Gil at Akiva Gil, New York, a glimpse of Paraiba tourmaline. It was refreshing to see the Brazilian material here in Las Vegas since almost everyone else had tourmalines from Mozambique. That said, we really did not see any noticeable difference in colour quality from one locale to the other, reinforcing the notion that the best Brazilian material is not only rare, it may be historical.

## Shows and Exhibitions

### Gems in the Nevada desert (cont.)

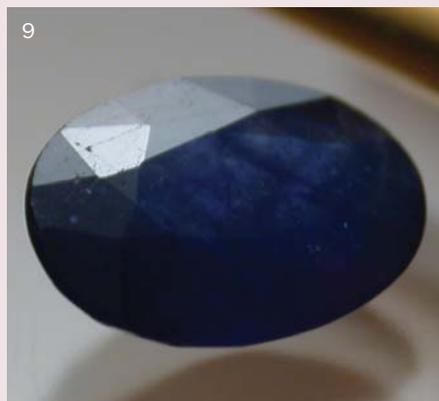
#### We finally found it!

We've been looking for the glass-filled blue sapphire ever since Bear and Cara Williams first mentioned it (see Cara's article 'Seeing red when blue', page 20) and showed us images online over a year ago. There it was, right next to the glass-filled composite

red corundum, both priced at just \$0.99 per carat (8). That's right, less than one dollar per carat. Asking prices for faceted materials varied from an overheard high \$150 per carat down to roughly \$5 per carat, which is what we spent to acquire the oval seen here (9).

#### Last but not least

A couple of quirky and wonderful items that we chanced upon on our travels are shown in 10, 11 and 12.



8: While you shouldn't make your identification based upon price, this seems to be giving us fair warning that this is not just heat-treated corundum. Noting that numerous pieces of the original starting material have been joined together, the obvious determination is that this is indeed rough cobalt glass-filled blue corundum. Most of the pieces seen here weighed 50 ct and up, so we opted not to purchase any at this point in time. From Colomin Stone Co. Ltd., Bangkok, Thailand.

9: We have been waiting to see glass-filled blue sapphire at the shows, and that day has finally come. While there is no 'flash effect' as we see inside glass-filled ruby, the flattened gas bubbles, numerous fracture lines racing in every direction across every facet, as well as showing red beneath the Chelsea Colour Filter, the identification of cobalt glass-filled sapphire (composite sapphire) is not difficult. Prices can vary. Courtesy of Vijay Tak, of Colomin Stone Co. Ltd., Bangkok, Thailand. Also seen here were diffusion-treated star sapphires, as well as what appeared to be \$5 per ct beryllium diffusion-treated sapphire.

10: You'll just have to believe us: this is colour-change sphene from Afghanistan's northern province of Badakhshan, bordering Tajikistan and Pakistan. Shown by Eric Braunwart at Columbia Gem House, Vancouver, Washington, this gem variety is not new, but the depth of colour and the colour change was remarkable. What we saw was what you see here: a dark brownish-green to what appeared to be a dark reddish-brown colour change. (Lighting colour-change gems in typical convention show lighting is frustrating at best.) The classic sphene dispersion was nothing less than amazing against the dark coloured background.

11: Conni Mainne Designs, in Mendocino California, is one of our favourite designers, always managing to find the most unique gem materials for her exquisite jewels. Conni loves to search out gemstones with interesting textures and inclusions. This year she's found yet another inclusion; a splash of pyrite in rock crystal, creating an eye-catching feature for her designs.

12: You don't have to love dogs in order to appreciate the cameo work seen here, from Herbert Stephan KG, Frauenberg, Germany. It offers custom gemstone engravings and carvings, as well as assembled gem materials.





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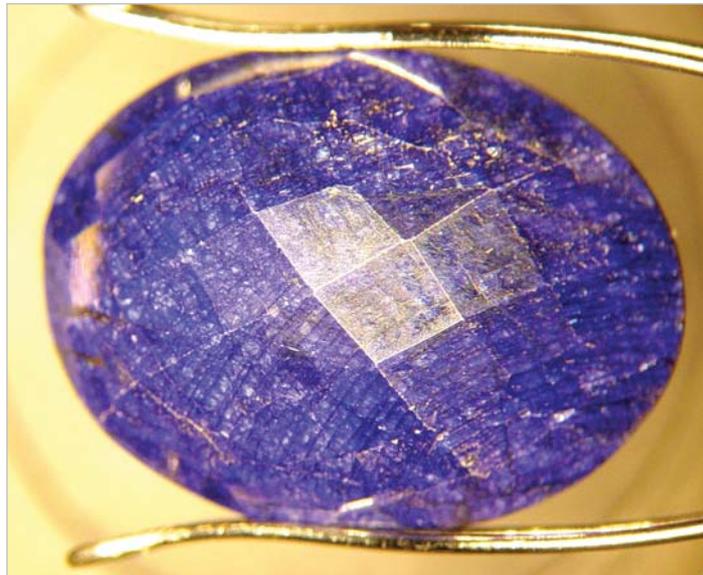
# Seeing red

Cara Williams FGA discusses the limitations of using the Chelsea Colour Filter to identify treated blue sapphire.

While the Chelsea Colour Filter (CCF) can help to identify when a sapphire is filled with cobalt-coloured lead glass, it is not diagnostic. Quick tests can lead to the wrong conclusions if all parameters are not understood. While such tests often provide a quick and handy means of eliminating certain options, they can seldom be relied on for diagnostic identification. When cobalt-coloured, lead glass-filled sapphires ('hybrid sapphire') first began to enter the market in a significant way, I advised clients that there was little to worry about regarding this material as it was readily identifiable with the CCF, which would make it appear red rather than the greenish colour of naturally coloured blue sapphire. This quick test was proven



1: Dyed opaque sapphires showing deep royal blue colour.

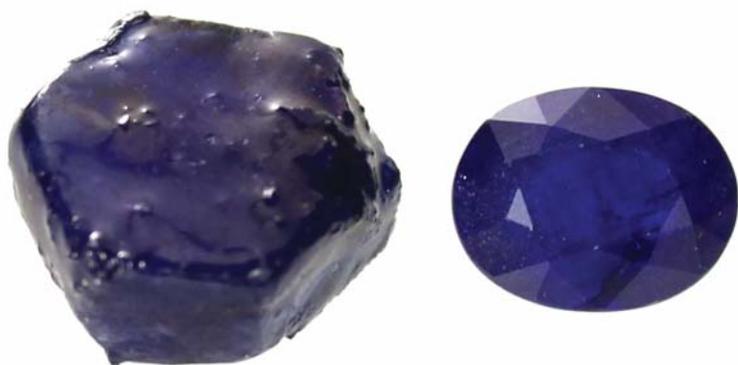


2: Close-up showing dye concentrations along fissures and twin planes.

insufficient when sapphires set in silver jewellery (1) were recently submitted to confirm treatment by lead glass filling. These stones were obviously not glass-filled and tested negative for either cobalt or lead, yet still appeared red when viewed through the CCF. It was explained to the client that it is not just cobalt that will cause this reaction. If one digs far enough, there is an exception to every rule in gemmology.

The submitted items were not gem grade sapphires, but even this term needs revision, as nowadays it is very common to see this grade of gem material — what we once considered non-gem grade or specimen grade — set in fine jewellery with diamonds. Many of these stones are completely natural, such as well-formed but opaque diamond crystals or sapphire slices, while others are treated in various ways. These stones were opaque and resembled deep blue lapis lazuli, especially with the sub-surface fissures creating a reflectance effect, subtly twinkling like pyrite inclusions might do.





3: Cobalt-coloured lead glass-filled sapphire ('hybrid sapphire'), rough and faceted.

Microscopic observation revealed numerous surface pits and repeated twinning with open fissures, typical of low-grade corundum that could allow the admission of foreign substances (2). Following these lines were concentrations of blue colour. There was none of the glassy, smooth appearance of a filled gemstone (3), and fissures remained unfilled, although there were minor polishing residues that remained within some surface pits. No fluorescence was observed under UV excitation. RI readings were not ideal due to the irregular surface, but weak dual RI readings of approximately 1.76 and 1.77 confirmed these to be corundum. Identification as corundum was further confirmed on several surfaces with Raman, which will also detect glass when present.

Swabbing with acetone yielded very little colour in this case — so little as to be inconclusive whether it was dye or merely polishing

residues. As destructive testing was not possible, the original colour could not be determined. It should be noted that some dyes are much less impervious to solvents, some even water-soluble.

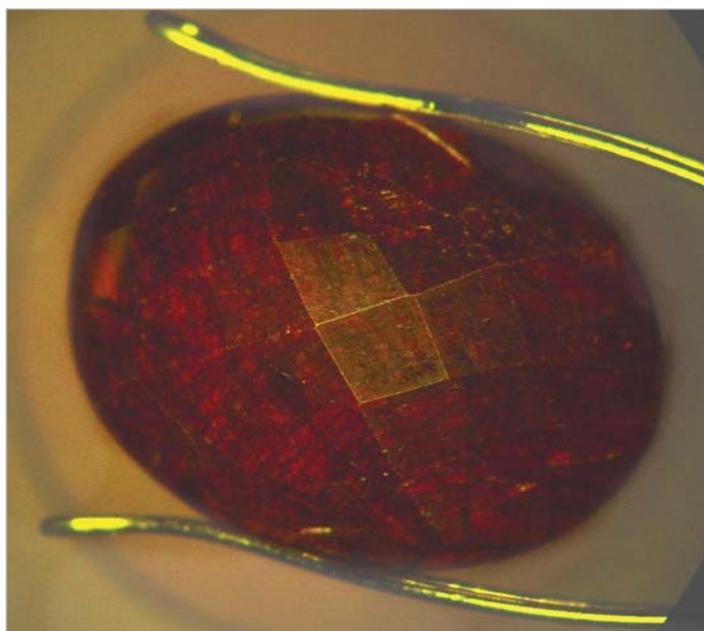
The CCF can identify these as other than natural blue corundum (4), but further observation and testing should be done to confirm whether the stone is dyed or filled with cobalt-coloured lead glass. Cobalt will cause the lead glass filler to fluoresce, but the high iron content of these stones and the nature of this dye did not allow any fluorescence to be observed. Cobalt glass-treated sapphire will also commonly show air bubbles within the glass areas, but the opacity of these specimens prevented the observance of any internal features.



5: These dyed corunda were originally greyish in colour. CCF reactions were the opposite of what would be expected based on appearance.

It should be noted that corundum of low quality can be dyed various colours. Grey corundum that has been dyed red is not ruby, although it may look like it and test like ruby in some ways. Green dyes may cause a stone to resemble emerald, but such material would not qualify as emerald or green sapphire; it is best described as dyed green corundum (5).

All photos © Stone Group Labs.



4: Dyed sapphire viewed through CCF.

#### About the authors

Bear and Cara Williams operate Stone Group Laboratories, which provides non-destructive, advanced gemmological testing services to the trade and offer global consulting services as well as custom research projects regarding coloured gemstones. Cara is also tutor for the Gem-A Gemmology Diploma Open Distance Learning course.

# Silversmithing

## A Contemporary Guide to Making

This publication is authored by veterans of the industry Brian Hill and Andrew Putland. Brian is consultant secretary to the Goldsmiths' Craft and Design Council, and has over 40 years' of expertise in the practice and teaching of silversmithing at the University of Creative Arts in Rochester, while Andrew, who studied at Rochester, went on to form the silversmithing partnership Padgham and Putland, and was involved in the production of silver plates for the Vatican as part of the Church 2000 project.

The publication refers to a selection of renowned work from the silver collection of the Goldsmiths' Company, and presents key

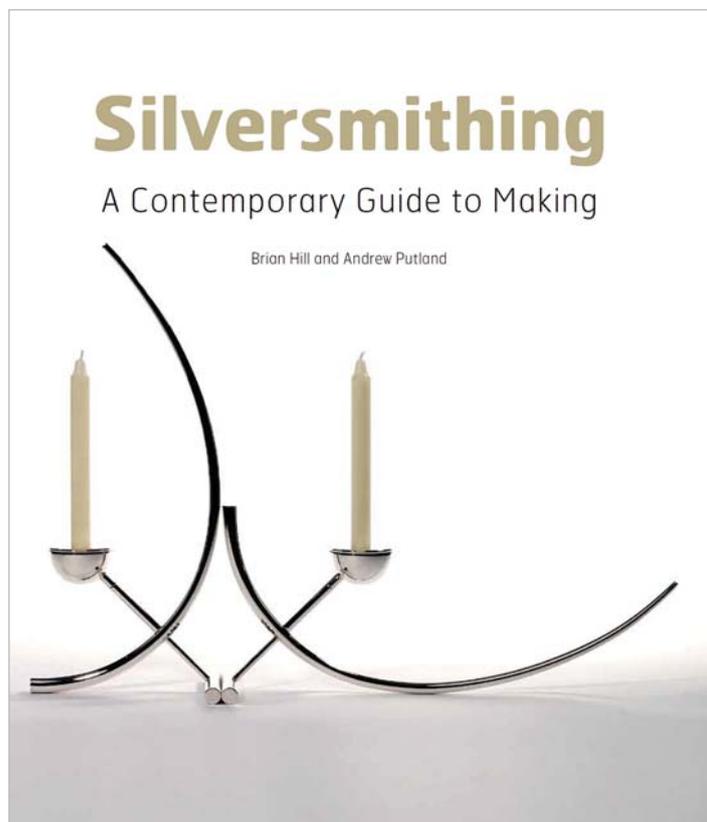
historical facts about each item, along with an analysis of the skills involved in making the piece. A beautiful example of a sweetmeat basket produced by William Plummer in 1759 is featured with the pierced, saw-cut method being highlighted as its main trait. Brian and Andrew add that the techniques used to create this piece are enhancements to its functionality.

The authors seek to promote the traditional methods of silversmithing, deeming them to be irreplaceable linchpins of the trade and which hold the key to high quality work. Thus the main section of the book details the core manufacturing techniques such as hammering, raising, soldering, spinning, polishing and finishing, with the use of visual step-by-step guides, which are either hand-drawn, or in some cases, detailed through a series of photographs. Decorative treatments such as engraving, enamelling, chasing and etching (amongst others) are also detailed, using examples from different designers to highlight each of these techniques. Also included is a description of the history and processes of hallmarking with procedures and tips on how to get an item hallmarked in the UK.

Although the main focus of the book is to understand the fundamental aspects of silversmithing, the authors feel that "it is important to participate actively in the arm of technology that promotes and enhances one's work." The next section therefore goes on to explain the positive impact of technological processes on the craft, such as computer aided design, laser sintering and casting. These processes are described in detail and illustrated with pictures, making them easy to follow and understand.

The final two sections of the book look specifically at key designers involved within the industry. The authors have selected work from an eclectic mix of contemporary established designers including Brett Payne, Hiroshi Suzuki and Alistair McCallum. Samples of each designer's work are presented with a description of their artistic strengths and specialist techniques.

Brian and Andrew conclude by highlighting a mixture of up and coming designers to demonstrate that the next generation will "promote, protect and enhance the traditional craft of silversmithing in a contemporary domain" — a statement which is reflected throughout the book. The authors show an obvious passion to instil those values within the trade and their readers, and state that whilst the book is predominantly a teaching journal and a contemporary guide to assist people in learning the values of silversmithing, it should also be used as a foundation for skills-based learning. The book certainly fulfils its purpose and acts as an excellent reference for those already practicing silversmithing or those who have a developing interest in the field.



*Silversmithing: A Contemporary Guide to Making*

By Brian Hill and Andrew Putland

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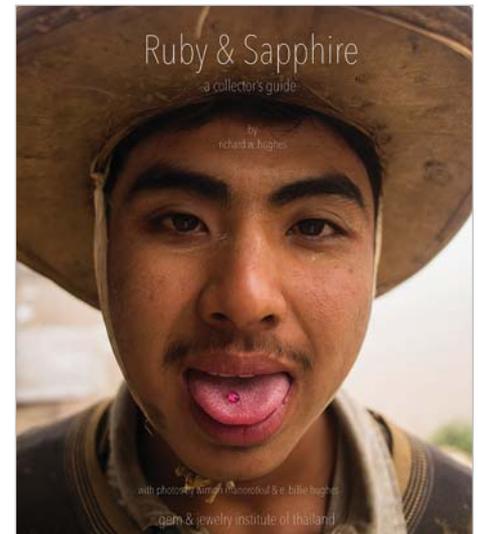
# Ruby & Sapphire

## A Collector's Guide

Anything by Richard Hughes is always a joy to behold, and this is no exception. This book gathers together numerous photographs and Hughes' vast knowledge of the history, occurrences and gemmology of these marvellous stones. It should be noted that this is not an update of his tour de force *Ruby & Sapphire* published in 1997, although owners of that will definitely want to take a look at this.

This book is more about people and Hughes' lifetime love affair with these gems, and is almost a social commentary on the ruby and sapphire market today. There are photos from deposits around the world showing where these stones are mined and, more importantly, the people doing it. There is a fantastic scope of pictures, from young children with rough stones which have just been unearthed to images showing traditional heat-treating techniques, as well as pictures of some of the world's most famous gems. The quality of the photos is superb, and this book is a must for your collection.

Available to order from [www.ruby-sapphire.com/ruby-sapphire-collectors-guide/index-ruby-sapphire-collectors-guide.php](http://www.ruby-sapphire.com/ruby-sapphire-collectors-guide/index-ruby-sapphire-collectors-guide.php)



### *Ruby & Sapphire: A Collector's Guide*

Richard W. Hughes

Publisher: Gem and Jewelry

Institute of Thailand, 2014

ISBN: 978-6169145035

**\$99.00 (plus shipping)**

# Terra Spinel and Terra Garnet

*Terra Spinel* and *Terra Garnet*, both by Vladyslav Yavorsky, also have scintillating photographs and print quality. Perhaps more in the line of 'coffee table' books, both reinvigorate these often maligned and forgotten gem species. The books display exquisite photos of cut and rough stones alongside photographs of the people involved in mining and selling, adding a warm, human element to the story of these beautiful gems and to the industry. Images of the lands from where these stones are mined build a complete picture. These books need to be seen to appreciate the beautiful imagery. Both will soon sell out so reserve your copy today.

Both books are available to purchase from Gem-A Instruments.  
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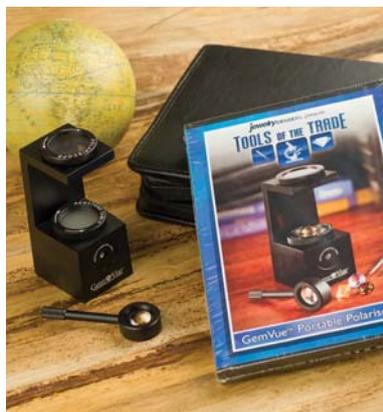
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