

Gems & Jewellery

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BaselWorld 2014

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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.

Increasingly, as I do this job, I realize that it's less about what you do than what you are perceived to be doing. Travelling the world from show to show or conference to conference, with a smattering of teaching centres thrown in can be exhausting. The perception can be: "What a glamorous life to have!" But it all depends on perspective.

It's a bit like that with ethics as well. What we believe is unethical in our country or sphere could be totally acceptable in other parts of the world. This was brought home to me by two things recently. The first was a meeting at the UN in New York (see page 11), where ethics and Corporate Social Responsibility were put into a global context. Secondly were complaints being made about the forthcoming CIBJO congress being in Moscow, given the current tensions and Russia's record on human rights. I'll report on the congress next month, but in a nutshell CIBJO is a member of the Economic and Social Council, part of the UN. Its congress will be held courtesy of the Russian Jewellers' Guild, a non-political organization. Unless the UN imposes sanctions on Russia (which is unlikely), CIBJO has no option but to go ahead. It's all about positioning. We have an opportunity as a trade to transcend politics and national differences and set our own agenda. This is what numerous organizations are trying to do, but the only one with real clout at the top level is CIBJO.

This brings me to the Precious Stones Multi-Stakeholder Working Group (PSMSWG), a body of people headed up by Jewelers of America and Signet who are trying to present a paper on the gem trade to the Organisation for Economic Co-operation and Development, among others. I'm sure that the initial thought was to try to do good for the trade, but the prevailing perception is that this is a self-serving enterprise written by self-appointed individuals who could potentially inflict serious damage on our trade. Dana Schorr, a Gem-A member based in the US, has highlighted serious flaws in this project, such as lack of consultation and transparency. The project is, as far as I'm concerned, dead in the water. What these individuals fail to realize, just as the Responsible Jewellery Council (RJC) has (with which many from PSMSWG are involved), is that to parade yourself as a paragon of virtue you have to constantly live up to the values you preach. PSMSWG has failed in this respect, just as RJC has laid itself open to criticism as a 'big boys' club' in the past. This, in addition to its recent failure to adequately state its position with regard to the Kaloti gold scandal and Dubai Metals Commission, has left me wondering what exactly it's all about, and feeling quite pleased that Gem-A never joined. Of course it's easy to sling mud and be 'holier than thou', and I'm sure there will be a rush to tell me all the things we do wrong. I look forward to hearing from you. Only by knowing the problems can you address them, and in life you do have to make compromises.

Speaking of compromise, congratulations to the leaders of the BJA and NAG for working together even more closely. The recent memorandum of understanding will ultimately lead to a transformation, one in which Gem-A has already been involved, and we look forward to continuing to share experiences and knowledge with the projected new association. As we know only too well, change can bring acrimony, but if it's the right change it ultimately benefits everyone concerned.

James Riley
Chief Executive Officer

Cover Picture

Two grasshopper brooches and hair ornaments, possibly created by René Lalique. Circa 1900. Courtesy of The Faerber Collection © Katharina Faerber. See *Shows and Exhibitions*, pages 8–10.



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Gem news

Honorary membership of LDB for Varda Shine

Varda Shine, who recently stepped down as CEO of the De Beers Diamond Trading Company, has been made an Honorary Member of the London Diamond Bourse in recognition of her outstanding services to the diamond industry. A rare honour, the award has only been made a handful of times since the Bourse came to exist some 74 years ago.

Shine, who joined De Beers in 1984 and was made CEO in 2006, is recognized as one of the major powerbrokers in the international jewellery trade. During her tenure as CEO she led the business to deliver record sales and profits whilst extending the company's customer base in India and developing pioneering new approaches to working with De Beers' government partners in Botswana, Namibia, South Africa and Canada.

Shine was the first woman to be awarded honorary lifetime membership of the Israel Diamond Exchange (IDE) and in 2011 received the Women's Jewellery Association (WJA) Hall of Fame Lifetime Achievement Award. She is also a governing Board member of the Diamond Empowerment Fund (DEF), a non-profit international organization with the mission of raising money to support education initiatives that develop and empower economically disadvantaged people in diamond producing nations.

On receiving the award, Shine commented: "I am both delighted and humbled to receive this honorary membership to the London Diamond Bourse. I am very proud to have been part of the long and rich history of the diamond industry in London and it will be a real pleasure to become a member of such a fine organization. The London Diamond Bourse has played a major role in the UK's diamond industry for several decades and, with its excellent leadership and connections with the international diamond industry, I am confident that it will continue to do so long into the future."



Diamond mine proposed for Finland

A Finnish mining company is seeking government approval to open a diamond mine in the Kaavi district in southeastern Finland. Should it go ahead the open pit mine and processing facility would become the first diamond mine on the European continent.

According to Yle, the Finnish national broadcasting network, Karhu Mining has received backing from the British firm British Firestone Diamonds and has filed for a mining patent survey from the Finnish Safety and Chemicals Agency. If approved, the next stage in the development would be an environmental impact statement.

During the 1980s several companies were engaged in exploring for diamonds in

Finland, and a number of locations were found to have deposits of kimberlites with clear and colourless diamonds present, many of good quality. The most abundant were found in this southeast region, according to the Geological Survey of Finland website.

'Synthetic' diamond turns out to be natural

In a twist on the usual news stories involving diamonds and disclosure, a 0.138 ct diamond that was part of a parcel of synthetic diamonds, has been tested and confirmed as natural. Hong Kong-based Diamond Services Ltd released the results of the testing (executed by HRD Antwerp) of the type 1Aab stone last month. The supplier, a well-known producer of gem-quality

synthetic diamonds, is apparently "genuinely nonplussed as to how a natural diamond ended up in the supplied parcel" says Diamond Services' owner Yossi Kuzi.

Marange mines failing on CSR says watchdog

According to a report last month by the Centre for Natural Resource Governance (CNRG) in Zimbabwe, only one mining company in the Marange diamond fields has managed to fulfill parts of its Corporate Social Responsibility (CSR) obligations, while others are now reluctant to fulfill their promises because of dwindling alluvial diamonds.

Companies involved in the extractive industry prioritize CSR as a method of continuing sustainability in operations and maintaining good relations with the government. Anjin Investments has managed to complete all 474 housing units it promised to build for displaced villagers. However Mbada Diamonds, Marange Resources, Diamond Mining Corporations and Jinan Investments are yet to complete the first phase of the relocation process. The CNRG said failure to fulfill obligations such as relocation had led to further impoverishment of the communities in which they operate.

Apple creates supply chain for sapphire crystal

Apple Inc. has entered into a partnership with a supplier of synthetic sapphire crystal, which will make it one of the world's largest sapphire producers when it reaches full capacity. Precise details of what the company plans to use the scratch-resistant crystal for are unknown, but speculation in the industry moots that the material will be used for the iPhone, iPad and possibly an iWatch, in place of the glass currently used in touch displays.

Synthetic sapphire is colourless, unless deliberately coloured. Sapphire furnace maker GT Advanced Technology — Apple's new partner — uses a variation of the Czochralski process, combining the melting of aluminum oxide, a seed sapphire crystal, and heat extraction to crystalize the alumina melt. Like natural sapphire, the synthetic is incredibly hard and that hardness creates challenges for using it.

Gem-A events

Gem-A AGM

Thursday 12 June — 17:30–20:00
Gem-A Headquarters,
21 Ely Place, London EC1N 6TD

Gem-A Conference 2014

Business Design Centre, Islington
1 and 2 November: Conference
3 November: Seminars
4 November: Natural History Museum visit
Please see our ad on p23 for further details.

Gem Central evenings

Gem Central evenings take place once a month, at the Gem-A Headquarters (address as above) from 18:00–19:30. Booking is essential.

From Mandalay to Mogok

(Specialist evening) with Peter Grumitt

Monday 19 May
Following his recent journey to Myanmar, Peter Grumitt from Apsara Gems will give a talk on rubies from this area.
£5 for Gem-A members and Gem-A students; £10 for non-members

Organic or imitation?

Monday 16 June
Join our gemstone challenge and test your skills.

All Gem Central evenings (except Specialist evenings, priced separately) are free for Gem-A members and Gem-A students; £5 for non-members.

Other events

Make your Mark

Friday 16 May
Goldsmiths' Hall
An open day of inspiring talks, activities and networking opportunities to help students make their mark on the future of the craft. Gem-A will be exhibiting to help students in their careers and to promote our courses.

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

Show Dates

Gem-A will be exhibiting at the following shows:

JCK Las Vegas

Booth L116, Mandalay Bay
30 May – 2 June

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

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, but 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

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:



Last year's winner by Michael Hügi FGA

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.

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 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

Shows and Exhibitions

JCK 2014 preview

Olga Gonzalez FGA looks at some of the featured events at the upcoming JCK show in Las Vegas, USA.



There's a definite buzz in the air at JCK headquarters at the moment. The 2014 show's lineup of events and seminars has exhibitors and attendees alike humming with anticipation of the summer show. Among the promised new and improved features are wider aisles and a new eating space called 'Food Truck Alley', which will provide a casual dining option outdoors near the Bayside entrance of the JCK show. There's also the newly-implemented Exhibitor Recommendation program JCK 'Match', which matches retailers and exhibitors based on their products and price points (and, when paired with the geo-locator function on the JCK app, allows attendees to see what's around them on the show floor). All-in-all, this year's show is expected to run more smoothly and provide more amenities to both buyers and exhibitors.

So if you need a breakdown of the best things to do (other than buy, that is) at the show by day here are some Gem-A recommended highlights:

Thursday 29 May

- Early birds and workout buffs unite! While time zone changes are working in your favour, gather at 05:30 in the Mandalay Bay Casino to register for an athletic morning charity event hosted by Jewelers for Children: Rings of Strength. Choose from a 50K Red Rock Canyon bike route, a moderate 15K ride, a 5K run or a 5K walk along the Vegas strip.
- New to the show is Shark Tank at JCK, a reality-television-inspired competition between exhibitors which will see them compete for the coveted 'final four' spots, where they will host seven minutes of live product presentations to buyers from 13:00–14:00.

Friday 30 May

- Join the JCK team in the Bayside Foyer at 09:00 for the opening ceremony, and enjoy a day full of complimentary education seminars and afternoon fashion catwalk shows. For the ladies, Saks Fifth Avenue is providing complimentary makeovers (by appointment only at the Saks counter in the Breakers Ballroom). Run — if you snooze you lose!

Saturday 31 May

- In true red carpet style, stop by the Bridal Salon and show off your look on the mani/pedi cam. JCK wants to know what you are wearing, and how you are 'rocking it'.
- A trip to Vegas wouldn't be complete without a wedding chapel. From 14:00–15:30 five industry couples are renewing their vows in the Bridal Lounge. Come and feel (and support) the love.
- In the evening the Plumb Club will host a Gala evening for members with comedian, Jerry Seinfeld, which is sure to be a fun night.

Sunday 1 June

- The morning begins with the engaging Rapaport breakfast, highly recommended for a current analysis on the diamond industry, followed by the Rapaport Fair Trade Jewelry Conference.
- One of the hottest industry concert events of the social calendar, JCK Rocks the Beach will be bringing in Grammy Award-winning Rob Thomas for a first-come-first-served private concert at the beach in Mandalay Bay on Sunday evening. Be sure to queue in advance, since Rocks the Beach has become one of the more difficult events to get into due to overwhelmingly popular demand.

So gather your inventory, and get ready to go! The countdown to JCK Las Vegas 2014 has begun...

Visit the Rising Stars

Established in 1995, the Rising Star programme highlights first-time exhibitors that show promise as the 'best of the best' up-and-coming designers. A juried process, Rising Stars are chosen by a panel of editors, stylists and retailers who rate the exhibitors' craftsmanship, originality and saleability. The Rising Star booths are a highlight of the show and are a must-see. This year's winner's are Kaura Jewels, Natalie Dissel Jewelry, Irthy Jewels, Blackbird and the Snow and Shrisa Jewels.



Gem-A

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21 June – 28 June 2014

Visits include **Edelsteinminen Steinkaulenberg, Kupferbergwerk in Fischbach, DGemG, Schneider gem tools, Deutsches Mineralienmuseum** and **Historische Weiherschleife**, as well as the chance to sample the very best of German small-town culture.

The price is inclusive of the coach to Germany, 7 nights accommodation (single or twin room), breakfast and dinner, and entry to museums, institutes and field trips.

For more information or to book contact events@gem-a.com.

Price	Single room (1 person)	Twin room (2 people)
Member (Gem-A, NAG, BJA and GIA Alumni Association)	£1,455	£1,245
Non-member	£1,745	£1,495

All prices quoted are per person

Understanding Gems™

Visit www.gem-a.com

Shows and Exhibitions

BaselWorld 2014

Back to its normal dates and now taking place at the end of March, James Riley FGA DGA reports on the ins and outs of this year's show.

Basel in springtime — not as desirable as you might think. For a start, with the exception of the old town, Basel is not an attractive city, but it is arguably at its best at this time of year. Traditionally the sun shines, blossoms are out and the watch and jewellery show is in town. I put watches first because these days BaselWorld is predominantly a watch show. The general feeling is that jewellery is not wanted and certainly, as I have expressed in these pages before, the number of jewellery companies continues to dwindle. Basel is all about brands, and the big players all continue to be there. If you're not at Basel are you really a global player? That may be a little extreme but I believe it to be true. Why else spend the exorbitant amounts of money to be there?

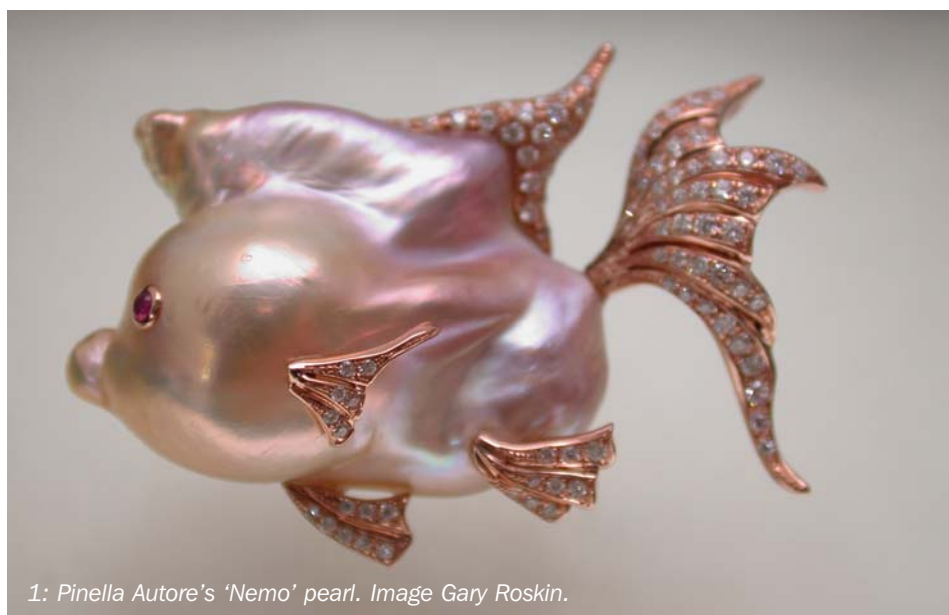
Basel has a population of 150,000. With an estimated number of visitors at the same level, the population doubles for 10 days — hence the high hotel costs and restaurant prices. With a 40% stake in the show, the city of Basel does pretty well out of BaselWorld.

This year, however, there was a difference: BaselWorld has competition. The first is from our very good friend Martin Rapaport. As I have already mentioned, the show has made it very obvious that unless you are a brand it doesn't want you, and this has been keenly felt by the diamond companies who have had to endure rising booth prices, poor stand locations and a relocation of Hall 3 from right opposite the entrances of Halls 1 and 2, to the far end of Hall 1 (previously Hall 5). Last year the groundswell of disharmony was enough to cause a new diamond show to be set up by Rapaport, across the river in the old town, close to the station, in the Market Hall. This is a result for all concerned you might think, with space being created at BaselWorld for more brands, and a dedicated diamond hall with many of the world's leading diamond companies, a shuttle bus and great organization. However, it appears that BaselWorld have done everything they can to scupper the new show before it even began, with shuttle buses not being allowed to park

near the show entrances, legal threats and petty shenanigans. It's a shame because the venue was good — there were some very good exhibitors and a nice atmosphere. Well done to the Rapaport team and every success in the future. Gem-A will be there next year, but of course it will probably be necessary to show at both venues.

The second new player this year was the UBM Jewellery & Gem Fair (JGF) show at Messe Freiburg, Germany. UBM is the organizer of the September Hong Kong shows, and knows a thing or two about putting on jewellery exhibitions. The location in Freiburg, about an hour from Basel, is good for European customers and suppliers as there are no carnets or customs to worry about. The show has attracted the exhibitors that would have been at Basel 10 years ago it seems, and may now be seen at places such as Vicenza, Italy. In short, they are the international 'bread and butter' jewellery companies who are players on the international scene but who do not have a global brand as sought by BaselWorld. Sadly, visitors were few on the ground, although those that did visit are rumoured to have been major buyers and they did spend money. It seems that there is a fantastic opportunity here for these three exhibitions to work in harmony as they are not mutually exclusive. As an experiment, I posed the following question to many of the visitors to our stand: "If BaselWorld was exclusively a watch show, would you come?" The answer was a resounding "No" — even from those who came to visit the watch companies as well as the jewellery and stone suppliers. Come on BaselWorld, it's time to get your act together!

Since my return to the UK I have met numerous people who visited BaselWorld. When asked if they visited the stone hall, many told me that they ran out of time or



1: Pinella Autore's 'Nemo' pearl. Image Gary Roskin.

Shows and Exhibitions



2: Two grasshopper brooches and hair ornaments with plique-à-jour enamel wings enhanced by rose-cut diamond line details, mounted in 18 ct yellow gold, circa 1900. Although these grasshoppers have no maker's mark or signature it has been suggested that they were created by René Lalique. Courtesy of The Faerber Collection © Katharina Faerber.

didn't know it was there. This is a shame as the quality of the goods on show was (as usual) breathtaking, and with a few exceptions, unrivalled in the main watch and jewellery halls. So what did they miss?

Pearls were looking good, with many spectacular rows and individual pieces. Quite often the sheer volume of high quality pieces can make one blasé about what is seen. However, when you see a row of South Sea pearls all perfectly round and of the same colour, lustre and size (all over 20 mm), the jaw drops a little. Add to this the fact that they are all from the same farm (Atlas), and you begin to realize that they are special. Jorg Gellner has been putting this collection together for some years. The rarity is due to the mollusc 'producing' its third pearl in order to create something of this size. In other words, it has already been opened twice

before and delivered two pearls. This is amazing when one considers the death rate during the procedure, and that these molluscs are now six or seven years old. As can be imagined, the value of such a row is very high and, while not unique, it was certainly a treat to be able to view it. Something extra here — which pearl suppliers are starting to latch on to — is the provenance of the item and the clarity of the supply chain. It is possible to have a row from just one farm or locality. Gellner had 'Tahitian' (my term not theirs) pearls which were all from Fiji, as well as the traditional localities in Polynesia. As we talk more about supply issues, ethics and Corporate Social Responsibility, this type of disclosure will become much more prevalent and sought after. Perhaps one had better not talk about the animal rights of the mollusc though...

Another interesting sight was that of pink freshwater pearls in what one might term 'Kasumiga' pinks, of which Yoko London had a selection. Kasumiga pearls were large nucleated freshwater pearls from a lake in Japan, which had a distinctive hue and lustre hitherto not reported in Chinese freshwater production. Prices used to be hundreds of thousands of pounds for a large perfect necklace. As with Lake Biwa, pollution severely damaged the farms, all but ending production. These 'new' pearls are Chinese but have the intensity of colour and look of Kasumiga. The prices are not cheap compared to your run of the mill pink freshwater necklace, but in this case quality and, of course, size matter.

From the sublime to, if not the ridiculous, then certainly the cute. Australia Pearl Company had a pretty brooch in its display cabinet: a pink misshapen pearl which no one had any use for has been transformed by Pinella Autore and her team into the Disney character 'Nemo'. Inspired by the animated film *Finding Nemo*, this was a pretty piece of fun and great use of materials to accentuate a natural product (1).

Hall 3 is also the home of the antique jewellery sellers. Here you can gaze and gasp at pieces from the classic eras of Art Deco back to the Victorian age, the eighteenth century and even earlier. There were too many outstanding pieces to mention but one which stood out for me on the stand of the Faerber Collection was a pair of grasshopper brooches in glass, enamel and gold from the Art Nouveau period (2).



'Maxima' necklace, featuring 21 South Sea pearls. At the centre of the necklace is a cultured pearl measuring 20 mm. The necklace also features three diamond pavé spheres set with 630 brilliant cut diamonds. Image courtesy of Gellner.

Shows and Exhibitions

BaselWorld 2014 (cont.)

Sadly they are unsigned but one look tells you that they can only be by the French maestro René Lalique. Many people would, I'm sure, have liked to have taken them home — including me.

It goes without saying that the gemstones on display were breathtaking. I've talked before about coloured diamonds — are they really all that rare? For those of you who think they are, there was the ostentatious Graff watch on display (3). Not to my taste, but with a reputed tag of \$55 million I'm hardly in a position to judge. 'His and hers' anyone?

I would venture to suggest coloured diamonds are not as rare as the unbelievable cobalt blue spinels from Vietnam (untreated) on Vladyslav Yavorsky's stand. We purchased one for the Gem-A collection for a mere few hundred dollars. Look out for his magnificent books *Terra Garnet* and *Terra Spinel* (in short supply) at the Gem-A shop.

If cobalt blue spinels don't take your fancy then how about a 67 ct Paraiba tourmaline



3: The Graff 'Hallucination' watch, featuring over 110 ct (total weight) of coloured diamonds. © Graff Diamonds 2013.

from Paul Wild. We're not talking the 'wishy washy' colour of African 'Paraiba' here; this is the real stuff from Brazil with a price tag in the millions. Truly a unique item.

To return to my theme above about provenance; all of these stones had a story to tell, as to where they had been mined and by whom. Emeralds perhaps lead the way here. Gemfields have successfully marketed the stone with their interests in Zambia, but increasingly where the stone was mined, not just the country, is becoming important. Meeting our good friend Ron Ringsrud, who was working for Muzo — which now controls the entire Muzo mine

— and seeing some of its pieces, brought home to me how important it is to be able to tell a story. The product we deal in revolves around emotion. If we can add to that a story and at the same time demonstrate the core values, which all our customers would expect (yet unknowingly do not get) in terms of traceability, non-conflict and ethical sourcing, we have a very powerful tool to both increase sales and maximize the returns for everyone in the supply chain. The school playground tactics of the show organizers show us how not to do it, while the companies listed above show us how we can.

rock, gem & bead shows 2014

7th/8th June	Rock Gem 'n' Bead	Kempton Park Racecourse, London
5th/6th July	Rock Gem 'n' Bead	Newcastle Racecourse, Newcastle Upon Tyne
2nd/3rd August	Rock Gem 'n' Bead	Kempton Park Racecourse, London
9th/10th August	Rock 'n' Gem	August Royal Welsh Showground, Builth, Wells
16th/17th August	Rock Gem 'n' Bead	Pavilions of Harrogate, Harrogate
20th/21st September	Rock Gem 'n' Bead	Newark Showground, Newark

Have you subscribed to the Rock 'n' Gem Magazine?
www.rockngem-magazine.co.uk

All Shows open

10am - 5pm Saturday • 10am - 4pm Sundays. All Shows are indoors with free parking, disabled access and refreshments

Admissions

Kempton Park Racecourse - Adults £5.00, Seniors £3.00 • Children £1.00 (8-16 years) under 8s free
 All other R&G Shows: Adults £4.00, Seniors £2.00 • Children £1.00 (8-16 years) • under 8s free

For a list of all shows, directions, maps and exhibitors attending each show, go to
www.rockngem.co.uk info@rockngem.co.uk

A day out at the United Nations

James Riley reports on the recent United Nations meeting held in New York.

It's not every day you get asked to visit the UN! When CIBJO president Gaetano Cavalieri invited me to a lunchtime seminar in New York, I thought it was a long way to go for lunch. Fate decreed I would be in the US anyway and so off I went, not knowing just how much I would learn.

Do you know your MDGs? These are the eight UN Millennium Development Goals which encompass: eradicating poverty, universal education, gender equality, eliminating child mortality, improving maternal health, eradicating diseases such as HIV and malaria, ensuring environmental sustainability and global partnerships for development. As a business community we can now help and assist in all of these goals. There are already a number of jewellery companies who have community schemes aimed at these areas such as the Tanzanite Foundation, whose work was outlined at the meeting by Hayley Henning.

The subject for this meeting was Goal 8: develop a global partnership for development, which is concerned with how government, civil society, academia and the private sector can work together to help bring about these goals. To date only two areas of the business community have recognition



(From left-right) Dr Hanifa Mezoui, Chief of the NGO Section of ECOSOC, Gaetano Cavalieri, President of CIBJO, and Jean-Pierre Diserens, Secretary-General of CIFA, signing a memorandum of understanding.

at the UN and the Economic and Social Council, CIBJO and the Convention of Independent Financial Advisors (CIFA) — as Jean-Pierre Diserens puts it, an association for the well-being of bankers! These will soon be joined by the International Food and Beverage Alliance (IFBA). Working together across industries is critical to the success of the UN's mission: learning best practice and sharing ideas.

Present at the seminar were many luminaries of the US and world jewellery trade, including Martin Rapaport, David Bonaparte of Jewelers of America, Cecilia Gardner of the Jewelers Vigilance Committee and Tim Matthews of JTV. Add to these luminaries representatives from the UN's Global Compact, the UN office for Humanitarian Affairs and Civil Society and the UN liaison with NGOs, and we had ourselves an interesting mix of attendees.

At the seminar CIBJO and CIFA signed a cooperation agreement to enhance business practices and sustainability in their sectors. This was backed up by a

presentation from Branded Trust, a CSR management system promoted by CIBJO, with which delegates at last year's Gem-A Conference will be familiar. Branded Trust has now been endorsed by the UN and its educational component will shortly be available through Gem-A.

You might ask whether all this really matters, whether this is a bunch of diplomatic bigwigs spouting a lot of hot air. I believe that it is important to our industry to look at where our product comes from and ensure its long term viability and sustainability and the well-being of those involved with it. Surely these are inalienable



Ben Sheehy of Branded Trust.

truths for our business? Many of us have a lot of work to do, but if we do not do it now, before long our customers will be asking difficult questions about what we sell. By embracing and educating ourselves in these processes we will be able to give them confidence in what they buy and set ourselves apart from those who are just out to make a fast buck.

For more information on the Millennium Development Goals visit www.undp.org/content/undp/en/home/mdgoverview.html



Professor Donald Feaver of Branded Trust.

Unusual zincite formations

Andrew Fellows FGA DGA discusses interesting zincite crystal specimens.

Zincite, as most gemmologists know, is an unusual material 'accidentally' formed as a by-product of the zinc white production process (used in the plastics and paint industries, amongst others). Although natural zincite does exist (its main locality being in the Franklin area of New Jersey, USA), the majority of rough specimens and faceted stones seen on the market originate from sources such as the Olawa Foundry, in the Silesia area of Poland. Stories vary as to the exact origin of these crystals, and the growth conditions under which they form. One popular theory is that zinc vapours escape through a crack on the back of a furnace, and then recrystallize there and up in the chimney vents. An alternative, outlined in the *The Journal of Gemmology* by Nowak *et al.* (2007) suggests that zincite crystal formation occurs when crystals form within the furnace, and the production of zinc white is slowed. When the furnaces were subsequently serviced, the crystals were found on the screens that transferred heat between the actual furnace section, and the area arranged for the vaporization of powdered zinc. The zincite crystals were

subsequently harvested and eventually found their way onto the gem market as the collectors' stones that we see today. Unfortunately, as production processes changed, the growth of these crystals reduced and ceased, so nowadays the majority of stones/specimens on the market are from old collections.

As a small scale collector of rare and unusual stones, I have managed to amass a reasonable collection of both faceted and rough zincite in the full range of reds, greens and yellows that are available. Due to its low hardness (4 on the Mohs' scale), faceted stones are not really suitable for jewellery use, but as they show high dispersion (0.127), sub-adamantine lustre and refractive index (2.01–2.03), they do look beautiful, and as such, the vast majority of sizeable crystals have been scooped up by faceters and cut into various shapes. More unusual and interesting are the crystals themselves (now increasing in rarity). Some of the larger crystals and faceted stones that can still be found are shown in 1, and are sought after by collectors.



1: Large zincite crystals and faceted stones. The main crystal is 70 mm long, while the round cut red stone is 6.5 mm long. All photos by Andrew Fellows.



2: This stone is only 50 mm in length at its maximum. Pictured on the left are two close-ups of features found on the stone's left side.



3: The petal-like forms exhibited by some of the crystals.

Whilst these large crystals have appeal, they tend to form as regular shapes (hexagonal crystal form) with clearly-defined faces. Smaller crystals form as more unusual shapes, and can, as one viewer once put it, “resemble space-age cities with towers and domes”. It is these that appeal to me most, and that are more likely to stand the test of time, as only minute stones could ever be cut from them — with careful storage and care, these will last as reminders of the beauty and triumph of nature over industry. One such stone is shown in 2.

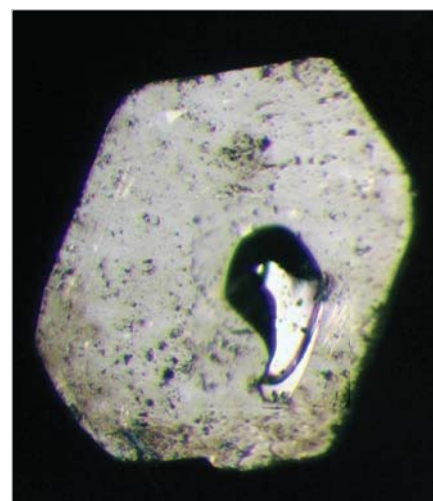
The images shown are all from the Nowak collection (according to the sources they were purchased from), and the largest is only 80 mm in length. Nonetheless, these plates of tiny crystals offer numerous different formations, and offer a rare insight into the micro-world of crystal forms and the variety of intricate and beautiful shapes that can be formed. As can be seen in these images, the

majority of the tiny zincite crystals form as small, thin needles, which, under microscopic examination, show a hexagonal cross-section, smooth crystal faces and sharp, well-defined edges. The terminations are (for the most part) pyramidal in form, thus showing almost perfect crystal growth/shape. In contrast, a good proportion of these needles have a more exotic termination. For some reason, be it imperfections or inclusions encountered during their growth, or contact with some other (now non-existent) material, they terminate in flat plates, displaying an almost flower-like formation... the overall effect being one of a country meadow with grass blades and wild flowers (3).

Under microscopic examination, these forms can be seen to possess a regular repeating structure, suggesting that each ‘petal’ or ‘flake’ is an individual crystal in itself, radiating outwards from a central point on the crystal stem. The largest of these structures measures approximately 2 mm in width, with the single needle crystals reaching up to 12 mm in length. As the images below show, these flat endings to the needles have anywhere upwards of five distinct growth directions, and show microscopic growth features on each. Very high magnification is needed to resolve these patterns.

One interesting and unusual feature seen only once in the 13 samples investigated is shown in 4. Here, a single hexagonal ‘plate’ can be seen, devoid of any noteworthy or important features, save for the existence of a curved teardrop-shaped indentation, the origin of which could not be determined. Of all the samples, this was the only form of this kind.

One final feature of these zincite plates worth noting, although very difficult to photograph given the equipment available, is that they all fluoresce a uniform lime green when exposed to long-wave UV, with the exception of the bulbous crystals of yellowish body colour, seen on some of the specimens, which exhibited more of a yellow fluorescence. This was as expected and is in line with the current literature and research on the area.



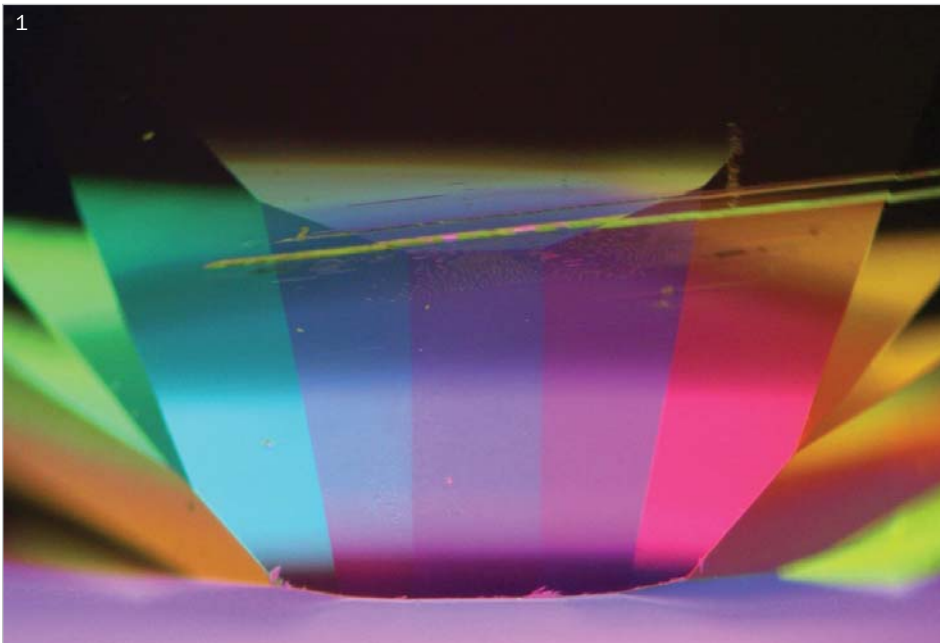
4: An unusual hexagonal feature seen on one of the specimens. Magnification approximately 90x.

Reference

J.W. Nowak, R.S.W. Braithwaite, J. Nowak, K. Ostojski, M. Krystek and W. Buchowiecki, 2007. Formation of large synthetic zincite (ZnO) crystals during production of zinc white. *The Journal of Gemmology*, 30(5/6), 257–267.

Experimenting with filters

Anthony de Goutière GG experiments with filters and shows some unusual and colourful results.



While searching for interesting inclusions in a 1.08 ct emerald-cut, colour-change Zultanite (diaspore), I routinely checked for any reaction using crossed polarizers. Nothing too exciting happened during that procedure, but just for fun I inserted a first



order red-compensating filter between the specimen and the lower polarizer and was surprised at the spectacular display of colours (1 and 2).

I have used this filter occasionally to enhance the colour in some thin-film inclusions in crystal specimens, but this was the first time I'd used it with a faceted gemstone. I then experimented with a colourless oval-cut topaz weighing 8.43 ct (3), an oval-cut diopside weighing 2.48 ct (4), then finally a cushion-cut grossular garnet weighing 0.32 ct (5). Each of these specimens reacted in a similar way. The colour play seemed most intense in the diaspore, with the topaz a close second.

Now, if I could just find a way of locking these colours permanently into the gemstones, think of the marketing possibilities...





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Misidentifications and trading loopholes

Maggie Campbell Pedersen FGA discusses several misidentified organic materials.



1: Could these possibly be rhino horn beads?

A few months ago I was contacted by a gentleman who had been avidly collecting horn beads (1), believing them to be misidentified rhino horn. He wanted my confirmation that he was correct.

Unfortunately I was not able to give this assurance. The beads were identical to some that I had in my collection, and were clearly good, old-fashioned, common-or-garden horn, carved from the solid tips of bovid* horn. The gentleman was very insistent and remained unconvinced, and so to be on the safe side I decided to check. I took my beads to Christopher Cavey who kindly examined them, and who agreed with me.

Bovid horn is formed in keratin lamellae, whereas rhino horn is formed of tubes of keratin, akin to hair. In the centre of a rhino horn the tubes are slightly mineralized to give the horn strength. The centre of bovid horn is hollow, as all bovid horns grow as horny sheaths covering bony protuberances on the animals' foreheads (2).

The difference in structure results in a different reaction to light. Although bovid horn has a striated pattern, the lamella structure causes light that is shone on the material parallel to the axis of the horn (in this case the end of a bead) to illuminate the surface, and not penetrate very far into



2: Proximal ends of two hollow bovid horns (left and centre) and rhino horn (right).

the material. By contrast, when a light is shone onto rhino horn parallel to the axis of the horn, the tubes act in a manner similar to fibre optic light, and the illumination can be seen to shine into the material (3).

Another way of differentiating between the two materials is by size. This would not have worked with the beads, as they were not very large and the tip of a bovid horn is solid enough to be made into beads. However, the size test would have worked with an item that came up for auction at the end of last year, and it should have been sufficient warning to the



3: Detail of rhino horn cup showing light penetrating tubular structure.

* Bovids are members of the family Bovidae, which are cloven-hooved, horn-bearing animals and include cows, sheep, goats, buffalo, antelopes and so forth.



4: Rhino horn cup.

auctioneer (and the experts that he said he had consulted), that he was probably not selling a 'horn' cup (4).

The cup in question measured 11 cm in diameter, was an even, round shape, and was carved from one piece of material — that is to say the base had not been carved

separately and inserted. The inside had a gentle curve and the bottom of the cup was at least 2 cm thick (5). Buffalo horn is the usual choice for imitating rhino horn due to its colour and size, yet even a buffalo horn is only solid at the tip. Its diameter at the start of the hollow area is probably not more than about 4 cm, at which point the horn ceases to be round in cross section and becomes slightly triangular (6). In other words, for this cup to have been carved from buffalo horn, the animal must have stood over five metres tall at the shoulder!

A few weeks later a couple of items made from ivory came up for sale at another reputable auctioneers. One was correctly labelled as 'carved in elephant ivory'. The second was described as a nineteenth-century 'ivory elephant tusk' cribbage board. The catalogue description further added that it was 'carved with several animals, including hyenas, turtles, whales, walrus and lions, and two boats'. I was unable to get to the auction but I could see from the photograph what the item was, and I am happy to say that I am now the proud owner of a beautiful Inuit walrus ivory cribbage board (7), complete with carvings of whales, seals, arctic foxes, polar bears, birds and Inuit canoes (8). No lions or hyenas, nor any hint of elephant ivory. It is most probably Alaskan and made by the Inuit to sell to visiting whalers when their ships came into port in the late nineteenth century.

The tusk is very solid and is gently curved, but there the similarity with elephant ivory stops. There is no visible structure of proboscidean ivory, i.e. no intersecting arc



6: Rhino horn (left) and water buffalo horn.

pattern (also known as Schreger lines) anywhere. Viewed from the proximal end, the tusk has a slightly hollow surround, but the centre contains a hard, knobby substance (looking a bit like a walnut), and which is the secondary dentine of walrus ivory. Further, when viewed in cross section, the tusk is not round or nearly round as would be the case with elephant ivory, but is an irregular oval shape with indentations (9). The descriptions of the animals were clearly invented to fit in with what was assumed to be an African artefact.

While I am delighted to have been able to obtain such an item at a low price, and of course there is no problem with the legality of the sale as it is antique, it seems extraordinary that auctioneers can take on such items and identify them so incorrectly. Even if the Inuit style is not known to the auctioneer, he should at least see that there is something odd about the object. Few people might recognize the dark mass at the end of the tusk as being secondary dentine, but it is clearly not typical of elephant ivory. The cross section of the tusk is not the elephant tusk shape either, and there is no structure of intersecting arcs. Warning bells should ring.

5: Proximal end of rhino horn (left) and cup (right).



Misidentifications and trading loopholes (cont.)

In the case of the rhino horn cup, both the auctioneer and the vendor would have been liable to fines if the matter had been taken further. In some cases it is worth pursuing illegal sales, but in the case of the rhino horn cup it is not. Although of unknown provenance and age it might have proved to be old, but it was clearly a one-off, and part of a collection of various items that were sold and inadvertently misidentified.

The rhino had been dead for a very long time and could not be brought back to life, and making an issue of the case would in all likelihood have gone unnoticed and done nothing to help save the rhinos today.

It is a different matter altogether with online auction sites, which have a policy of no sales of ivory — even apparently pre-1947 and therefore legal ivory — because they cannot be certain of the age of items sold. Unfortunately they do not police their sites, but expect us, the public, to report dubious items. I have recently been in contact with a very well-known online auctioneer about a seller who specializes in ivory, all of which is sold with several photographs including detailed shots showing the intersecting arc pattern of elephant ivory. Suffice it to say that, although they express concern, they are not very helpful.

Ivory is now sold online as 'faux ivory', with descriptions going so far as to say that the item is antique and with clear structure. In one case the words 'Schreger lines' were used. Many of the items are little trinkets, or old pieces of no particular value or consequence, sold by dealers who sell a variety of old items, which were probably bought at car boot sales. However there are other dealers selling lots of little carved figures, most of which could well be brand



7: Walrus tusk cribbage board, carved by the Inuit.

new. Some dealers sell artefacts with an asking price in the thousands of dollars or pounds, still using the term 'faux ivory', although that seems to me to be a higher price than anyone would wish to pay for an ivory simulant.

We are still looking for an inexpensive and easy method of testing ivory to tell its age or the species from which it derives. In the United States a new law regarding ivory has been brought in with immediate effect, the gist of which is that no African elephant ivory of any age — including antiques — can be imported into the country, and only antique African ivory can be exported from the country. Further to this only antique ivory can be traded across state borders. 'Antique' is deemed to mean 100 years old or more. It would seem to apply only to African elephant ivory, which immediately presents a determined smuggler with loopholes. It is going to be very difficult to police without a simple and cheap method of testing.

There is now a relatively new method of testing called Zooarchaeology by Mass Spectrometry (ZooMS), that has been developed at the University of York. The test is not destructive and can be done *in situ*. Furthermore it can be used on very small items — for example it could determine whether intricate inlay in a piece of furniture

in a museum is ivory or bone. The actual analysis is carried out in a laboratory afterwards and takes several days.

ZooMS can certainly help, but it is not the ultimate answer for testing the legality of ivory items for sale, as it cannot tell the difference between elephant and mammoth ivory, nor the age of an item. It is most useful on archaeological items, where it is not possible to determine the species from which a material has originated using other tests. ZooMS looks at the proteins in a sample, and works on the principle that the proteins of every species have different and identifying 'bar codes'. Collagen is extracted from a specimen, cut by an enzyme (usually trypsin) into peptide fragments, and the mass of each fragment is measured using mass spectrometry. Test results are compared against a database of masses from previously analyzed samples.

Mapping protein sequences is more costly than DNA analysis, which can also differentiate between species, but once sequences are known, measuring the peptide mass fingerprint is cheap. Other advantages are that protein survives approximately ten times longer than DNA, so an item can be successfully tested for protein sequences after its DNA has decayed and fragmented and is no longer viable. Furthermore, the protein sequences can survive various forms of processing, so for example they can differentiate between various leathers after they have been tanned and the DNA destroyed.

The reason ZooMS fails to differentiate between the ivory from mammoths and elephants, or between Asian and African elephants, is that the species must have an evolutionary divergence of at least five million years, which these species

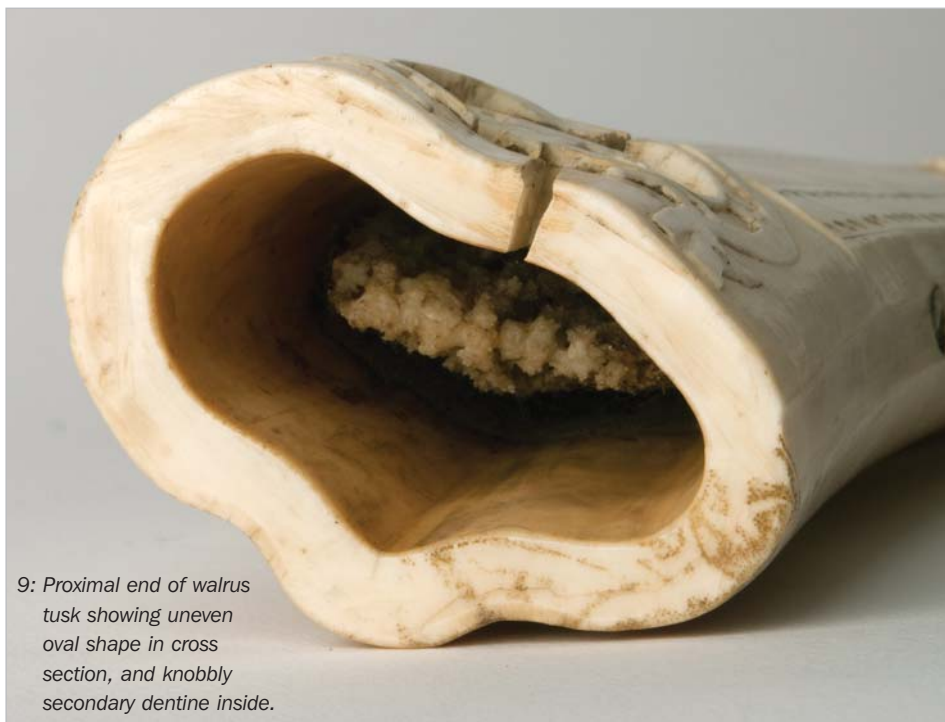
8: Detail of walrus tusk cribbage board showing carved animals.



do not have. However the test should be very suitable to find out whether those horn beads mentioned earlier are bovid or rhino horn, and they are at present being tested against confirmed rhino horn at the University of York.

Meanwhile they have been examined by more experts, and we are all in agreement that they are not rhino horn. Had they turned out to be rhino horn after all, I am unsure what the gentleman could do with them. He regards them as an investment, but in order to sell them for commercial gain he must be able to prove that they were made before 1947. Anything younger, or of unknown provenance, cannot be legally sold in this country, nor can it be legally exported for sale elsewhere. And no-one can know with certainty where anything bought at popular online auction sites has originated, nor when it was made.

All photos Maggie Campbell Pedersen.



9: Proximal end of walrus tusk showing uneven oval shape in cross section, and knobby secondary dentine inside.

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Exotic Gems

This is the latest volume in Renée Newman's library of delightfully illustrated and useful books. This edition focuses on some of the less commonly seen stones, including matrix opal, fire agate and the various members of the tourmaline family, which, although not the rarest gemstones, are deserving of more recognition than they currently get.

Renée begins by looking at the factors that affect the value of these stones, and goes on to systematically investigate the properties of each stone, showing why they deserve the label of 'exotic gems'.

One interesting inclusion in the volume is that of pink tourmaline. Although probably not considered exotic by many, pink tourmaline quite rightly deserves a place because of its historical importance, being highly sought after by the Chinese Empress Dowager Tzu-hsi, who was laid to rest with a pillow carved from this much-beloved material. Stories such as this, interspersed throughout the book, bring the human element of gemstones and gemmology into what other texts might treat as a simple discussion of properties and effects.

Nonetheless, the various optical effects of each stone are still covered and, in this respect, tourmaline is probably the most amazing stone. Standard uni-colour tourmalines are mentioned, followed by a discussion on the many varied colour effects that tourmaline is capable of showing. Renée notes that striping across the crystal is common, with many colours seen in various combinations, but also discussed is the concentric banded form (watermelon), along with the rarer chatoyant, colour-change and Usambara effect forms.

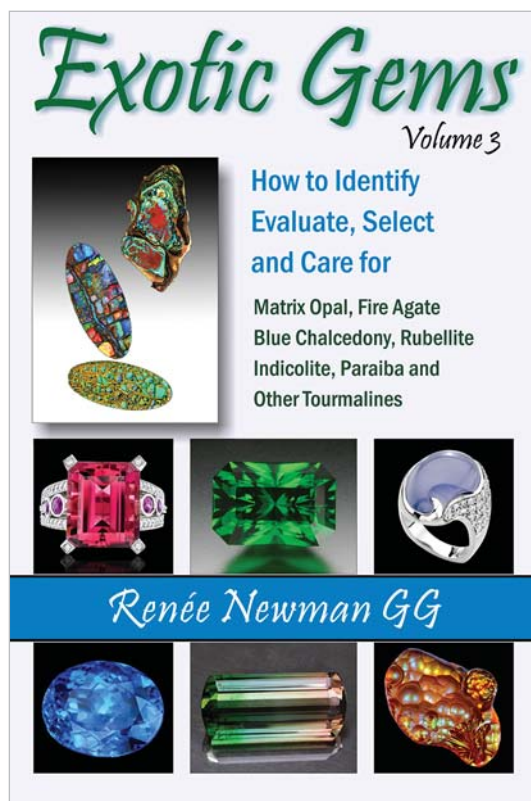
Fire agate also features, with details on which of its iridescent colours are the most desirable and/or valuable, and the known sources worldwide. As with the section on tourmalines, detailed images of professional cutters are included, along with commentary from master cutters specializing in each material.

Matrix opal and blue chalcedony are the remaining two stones covered, and each is considered with the same level of care and attention to detail. When discussing blue chalcedony, Renée focuses on the different localities that this material can be sourced from — an important feature for collectors. The range and variety of colours and structures that this material takes are also covered, with various cutting styles designed to enhance these features.

Matrix opal, which is often overlooked in textbooks in favour of the more 'desired' forms of precious opal, gets a well-deserved review, and the images included here show that this has a unique appeal all of its own. Different formations and localities are dealt with and even a form of synthetic matrix opal is included.

Overall, this is another excellent addition to the famous and much-loved Renée Newman series. The information contained is wide-ranging, ensuring that there is something for everyone, whether amateur collector or serious gemmologist.

Andrew S. Fellows FGA DGA



Exotic Gems — Volume 3: How to Identify, Evaluate, Select and Care for Matrix Opal, Fire Agate, Blue Chalcedony, Rubellite, Indicolite, Paraiba and Other Tourmalines
By Renée Newman GG
Publisher: International Jewelry Publications,
Alhambra, CA, USA, 2014.
ISBN: 978-0929975481 **RRP £16.99**

Ivory Identification

This publication follows on in quick succession from *Ivory Identification — A Photographic Reference Guide* (2012), a straightforward 20 page guide to ivory identification. This new text, *Ivory Identification: A Photographic Companion*, is a reference guide for different types of ivory and ivory substitutes. It describes a wide variety of ivories, from familiar ivories such as elephant, to the lesser known ivories, such as dugong and babirusa.

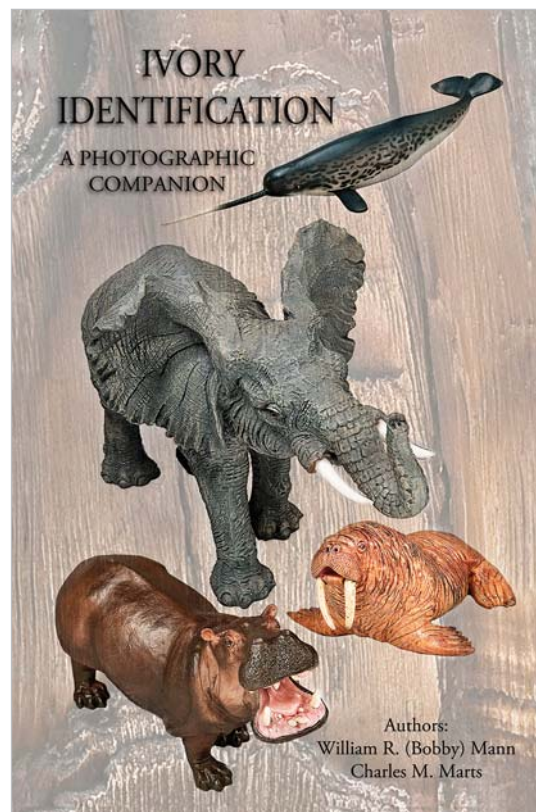
The book is written in a consistent and logical way that allows the different chapters to be flicked through and referenced individually, without reading the whole book. Each chapter states a comprehensive list of different identification features you can expect to see for that particular ivory. The first chapter gives tips on how to test ivory and information on tools that may aid identification. The book then runs through the different types of ivory, starting with the most popular, before discussing natural and manmade ivory imitations.

At the beginning of each section there is background information on each type of ivory, giving brief details about the animal from which it came, including current trading laws. It then focuses on identification features such as size, shape, colour, long wave ultraviolet light reactions, surface markings and internal features that you may see on whole tusks, cross-sections and carvings. The identification features listed are repeated for each type of ivory, which allows for comparison between the chapters.

It is a photographic companion indeed, as there are plenty of images throughout the book. These are varied and are a fantastic visual aid to the descriptions of the different features to look for. It is hard to see some of the more subtle features, but overall the images were useful. The book is an excellent quick reference guide that is well illustrated and structured and it gives a comprehensive insight into all the ivories on the market. I would recommend this book for anyone who has an interest in or passion for ivory or organics.

William R (Bobby) Mann has been a GG graduate since 1982 and specializing in ivory identification workshops since 1996. He is co-founder of the International Ivory Society (1996) and owns the largest collection of natural and imitation ivories that is available for hands-on teaching.

Julia Griffith FGA DGA



Ivory Identification: A Photographic Companion
By William R. Mann and Charles M. Marts
Published by Ivorymann Publishing, 2013.
ISBN: 978-1484846902 RRP: £23.00

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The name game

The naming of colour-change diaspore and turbidity in hessonites.

Letter from Professor Henry A. Hänni FGA

Following the article 'Gem updates' by Gary Roskin (*Gems&Jewellery*, April 2014, 10–14) I would like to express my opinion on the use of trade names. As a gemmologist and teacher of gemmology I have spent much time explaining such fancy trade names to consumers and students.

Diaspore

I do not favour the use of another unnecessary name like 'Csarite' — this name is linked to Russian rulers. The stone's name is diaspore. Maybe it helps the consumer to understand that 'Csarite™' is just the same as 'Zultanite' and diaspore. In Gary Roskin's article it would have been more important to read about the colour change being related to the traces of chromium in the stone (Hänni [1983]), the same as in alexandrite (1).



1: A rough diaspore crystal (4.5 cm length) from Turkey, with a light colour change due to 0.1 wt.% Cr₂O₃.

Hessonite

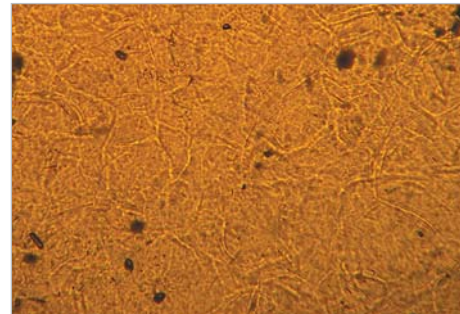
The "roiled appearance caused by mosaic structure..." is due to the polycrystalline structure of this orangey-brown grossular variety (2, 3). I think the term 'polycrystalline' is not too academic for the Gem and Minerals section of *Gems&Jewellery*. This structure

is the true reason for the oily internal appearance. Inclusions of apatite, diopside or zircon (as shown in the photomicrographs) do not explain the effect. Other gemstones possess these inclusions, without having an oily appearance. Grossular single crystals (e.g. tsavorite) are fully transparent. Grossularite (from *grossularia*, Latin for 'gooseberry') is a good term to underline the polycrystalline character of some grossulars. They exist as hessonite when orangey-brown, but also in reddish and green colours.

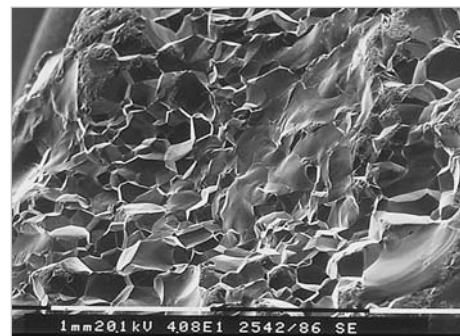
Response by Gary Roskin FGA

I certainly appreciate another professional laboratory gemmologist's point of view regarding the naming of colour change diaspore as 'Csarite' and 'Zultanite' as being a bit much. And what about misspellings? Shouldn't it be Tsarite, or Czarite? Seriously though, I don't think we're stepping too far outside into the consumer realm if we talk about what consumers are seeing on television shopping channels. After all, more people know transparent green grossularite garnet from Kenya and Tanzania as 'tsavorite', and blue/violet zoisite from Tanzania as 'tanzanite', and even cubic zirconia as 'Diamonique'. These are all marketing names created by jewellery firms to help sell the beautiful gem materials we have available. And whether we talk about diaspore, Zultanite or Csarite, at least we should all be on the same page. It never hurts to report on these things, not so much as to a gemstone's gemmological properties, but as to what is more to a gem enthusiast's reality.

As for the turbulence in the hessonite caused by the polycrystalline structure, I thank you for that addition. I probably should have added that, but I just thought John Koivula and Dr Gübelin's description of "Roiled appearance caused by mosaic structure..."



2: Photomicrograph of hessonite, showing the grainy boundaries responsible for the 'roiled' appearance.



3: Scanning electron microscope (SEM) picture of the broken surface of a piece of Sri Lankan hessonite, showing the grain boundaries and polycrystalline character of the material.

from the *Photoatlas of Inclusions in Gemstones* was much more engaging to the reader (both gemmologist and jeweller). Yes, I agree, 'polycrystalline' is not too challenging for us. But I obviously saw no harm in choosing language that was a bit less 'dry' and gemmologically scientific, and a bit more — are you ready? — marketable. And if anyone thought that I was referring to the included crystals as having anything to do with the 'scotch in water' appearance of our mosaic polycrystalline structure, this was certainly unintentional. Frankly, the inclusions were not only cool, they were the only things I could get in focus!

Reference

Hänni, H.A., 1983. Weitere Untersuchungen an einigen farbwechselnden Edelsteinen. *Z. Dt. Gemmol. Ges.*, **32**, 99–106

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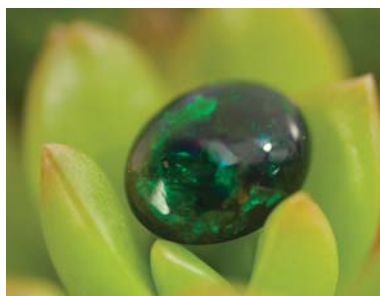
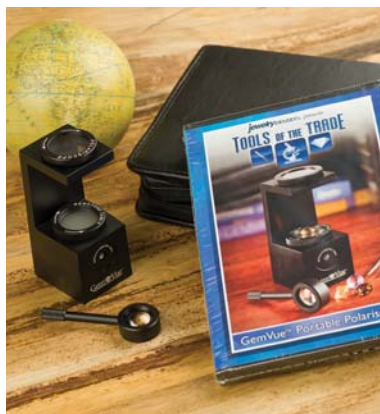
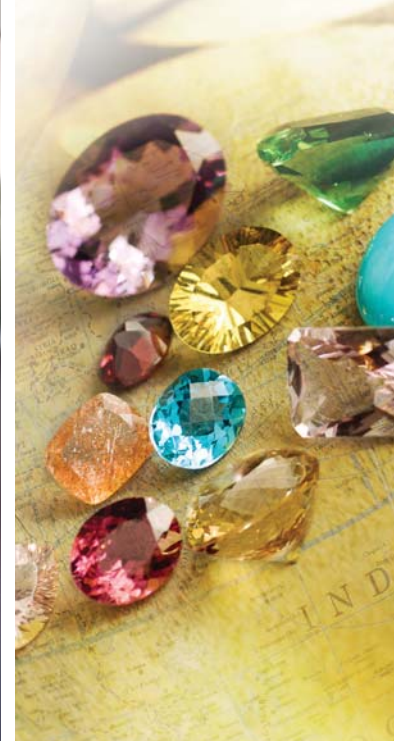
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