

# Gems & Jewellery

Nov/Dec 2015 / Volume 24 / No. 7

Cameos of the rainforest

Interview with Martin Rapaport

Taking the strain:  
diamonds under crossed polars



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# Nov/Dec 2015

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A 0.53 ct rose-cut diamond viewed under the polariscope with the analyzer in position. See Grenville Millington's article on 'The ins and outs of polished diamonds: take the strain' on page 12.

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# Final thoughts for 2015

Welcome to the November/December issue of *Gems&Jewellery*. By the time you read this we will have finished our annual Gem-A Conference and the 18th FEEG Symposium, held at the Royal Institute of British Architects in London. This year's conference was particularly special, as we welcomed delegates and graduates from the Federation for European Education in Gemmology (FEEG). We hope many of you were able to attend and meet with our FEEG delegates, as well as with your colleagues and friends — after all, that is partly what conferences are all about: making new connections in order to share and expand your knowledge.

We would like to thank our Sponsors for their generous support, all of whom helped to make this year's conference truly spectacular. Thank you to our Platinum Sponsors, JTV; our Silver Sponsors AnchorCert GemLab, American Gemological Laboratories, the Canadian Gemmological Association, Gemworld and Marcus McCallum, and our two Bronze Sponsors Fellows Auctioneers and TH March. We would also like to thank our speakers, workshop and trip hosts and all of our delegates for their support and attendance. Look for a report of the conference in the next issue of *Gems&Jewellery*, published in early 2016.

Christmas is now well on its way and, with it, a new year and a new start. In the last few months we have welcomed several new members of staff to Gem-A, including Fiona Conway, Finance Manager; Magdalena Nepal, Accounts Assistant and our new interim CEO, Nick Jones. A chartered accountant by trade, Nick brings a wealth of



...after all, that is partly what conferences are all about: making new connections in order to share your knowledge.

experience to Gem-A, having acted as Head of Finance for the Society of Operations Engineers (SOE) from 2001–2007 and as Chief Executive of the SOE from 2007–2013. He is working closely with the Gem-A Council and will advise on the future structure of the Association. Stay tuned for the January/February issue of *Gems&Jewellery*, which will feature a guest editorial from Nick.

I hope you enjoy this issue of *Gems&Jewellery*. Helen Serras-Herman takes a look at two sets of cameos; we feature a report from the IRV Loughborough Conference by Charles Evans and Natalie Harris; Grenville Millington takes a look at diamonds under crossed polars, and we talk to diamond titan Martin Rapaport.

Wishing you all very happy holidays, and best wishes for the New Year ahead.

**Georgina Brown, Deputy Editor**

# Gem News

## COWDRAY PEARLS FETCH TOP SALE PRICE

The Cowdray Pearls suite — the necklace strung and mounted by Cartier and accompanied by a pair of Cartier-mounted earrings — sold at Sotheby's Hong Kong on 7 October for US\$5.27 million. Featured in the Magnificent Jewels and Jadeite Autumn Sale, the necklace comprises 42 rare, natural, grey saltwater pearls, well-matched in lustre, shape and size.

The Swiss Gemmological Institute described the pearls as the “finest grey pearls in existence” that possess “extraordinary characteristics and merit special mention and appreciation”. The necklace originally belonged to the Viscountess Cowdray, Lady Pearson, who died in 1932. Sotheby's London first auctioned the item in 1937. The pearls were displayed at the Andrew Cohen stand at Baselworld 2015, as reported in the June issue of *Gems&Jewellery* (Volume 24, page 31).



that there is more work to be done when it comes to managing the global diamond supply chain. While the vast majority of diamonds contribute a significant benefit to the countries in which they're produced, as an industry we are committed to staying the course until we reach the goal of zero conflict diamonds.

“However, the Amnesty International report ignores the careful and conscientious framework being put in place in CAR. Interim arrangements regarding future CAR diamond exports and green export zones have been approved by the Kimberley Process and the Civil Society Coalition of the Kimberley Process Certification Scheme, who have in addition commissioned an outside company to audit the stockpile.

“We also applaud the Antwerp Diamond Office's strict control mechanism for each import or export of diamonds. Their close monitoring led to the interception and seizure in 2014 of two shipments containing rough diamonds from the Central African Republic. This is an example of our members' commitment to ensuring the integrity of the industry.”

## GIA NOTIFIES TRADE OF INVALIDATED GRADING REPORTS

GIA has invalidated grading reports for 1,042 diamonds submitted primarily to its grading laboratory in India. An outside party who gained unauthorized remote access to GIA's grading information database altered the reports. GIA strongly requests that anyone in possession of any of these diamonds or grading reports return them immediately to GIA for examination.

Based on discrepancies in grading information identified by internal controls, GIA initiated an investigation in conjunction with Tata Consultancy Services (TCS), its contractor that supports GIA databases. This revealed that an outside party altered grading information for 1,042 diamonds examined by GIA, and indicates that one or more former employees of TCS made these unauthorized changes. The individuals, acting for other parties unrelated to GIA or TCS, gained unauthorized remote access to alter grades before reports were printed and sent to clients. GIA and TCS have made their investigation results known to law enforcement agencies in India.

## WDC CRITICIZES AMNESTY CAR REPORT

The World Diamond Council (WDC) has issued a statement in response to the recently published report by Amnesty International focusing on the global diamond supply chain and the Central African Republic (CAR). The report claimed diamond trafficking was being used to fund violence in CAR.

In its statement, the WDC urges Amnesty International to engage with the Kimberley Process (KP) and work together with the KP participating governments, the industry and the Civil Society Coalition of the KP to achieve the goal of zero conflict in the rough diamond supply chain.

WDC president Edward Asscher said in an interview with Bloomberg that the Kimberley Process (KP) had taken “more than 99 percent” of conflict diamonds off the market. “The diamond council gladly re-invites Amnesty to participate and join us and the [KP's] civil society coalition looking into aspects of CAR and the whole Kimberley Process,” he said.

The statement reads: “As the representative organization of the global diamond and jewellery industry at the Kimberley Process, the World Diamond Council is the first to agree

## CIBJO RELEASES CORAL BLUE BOOK

CIBJO, the World Jewellery Confederation, has launched online its latest *Blue Book*, delineating acceptable trade practices and nomenclature for the coral industry and trade. The document was compiled by the CIBJO Coral Commission, headed by commission president Enzo Liverino, under the auspices of CIBJO's Sector A, which has jurisdiction over gem materials.

The new *Blue Book* is comprehensive, classifying both non-treated and treated corals, as well as artificial products that imitate and/or include coral elements. Normative terms that should be used to describe coral and disclose treatments are listed, as is the terminology that should be applied to define associated artificial products. Methods of maintaining the quality of coral jewellery are provided and the various types of different precious coral species are itemized.

Because of the unique nature of coral — an organism grown in nature without human intervention — the coral *Blue Book* includes reference to the Convention on International Trade in Endangered Species (CITES), which entered into force in 1975 to

address concerns that many living species were becoming endangered because of commerce between countries. The document also outlines national and regional regulations promoting the sustainable harvesting of coral.

The *Coral Book* is the sixth in the *Blue Book* series, and joins the definitive sets of grading standards and nomenclature for diamonds gemstones, pearls, precious metals, and gemmological laboratories. Each is compiled and updated by relevant CIBJO Commissions, whose members include representatives of trade organizations and laboratories active in the industry.

“The *Coral Book* is an additional tool developed by CIBJO to ensure ethical business practices and transparency in the jewellery business,” said Gaetano Cavalieri, CIBJO president. “It focuses on a sector that operates in a very fragile eco-environment, where proper standards and methods of operation are absolutely essential.” Enzo Liverino added: “Although coral has been featured in jewellery for millennia, it remains a product that is not widely understood.”



#### US JEWELLERY REPRESENTATIVE BODY FORMED

Diamond Manufacturers & Importers Association of America (DMIA) president Ronnie VanderLinden (left) has been named head of the newly formed

United States Jewelry Council (USJC), a group set up to represent the US industry at government and international levels.

In a statement issued at its launch last month, the USJC said it aims to deal “more effectively on key issues, such as those of social, ethical and environmental importance, that might impact the US jewellery industry”. It intends to have greater influence in dealing with challenges facing the sector in the US through combining the member associations’ expertise and experience.

The founding participants in the organization, in addition to the DMIA, are: Jewelers of America, the American Gem Society, the Diamond Council of America, the Diamond Bourse of Southeast United States, the Diamond Dealers Club of New

York, the Indian Diamond and Colored Stone Association, the Manufacturing Jewelers & Suppliers of America and the Natural Color Diamond Association.

#### ALROSA DISCOVERS 103 CT DIAMOND

Russia’s Alrosa has unearthed a 102.85 ct diamond with a moderate yellowish hue at its Jubilee kimberlite pipe. The octahedral-shaped stone, found in September, is thought to be worth more than US\$480,000 and contains small olivine, graphite and sulphide inclusions. The discovery follows a 253.16 ct rough diamond that was found at the Jubilee pipe two years ago.

#### ASSAY OFFICE BIRMINGHAM CREATES LEARNING HUB

Assay Office Birmingham (AOB) has joined forces with the Birmingham School of Jewellery to create an educational hub in the Jewellery Quarter. Announced last month, the new partnership and tenancy will see Birmingham City University’s gemmology department move into the new state-of-the-art premises at 1 Moreton Street, enabling further development of gemmological training for students and forms part of ambitious plans to establish a centre of learning excellence for the Midlands jewellery trade.



Stella Layton, Assay Office Birmingham and Gay Penfold, Birmingham School of Jewellery

Set to be completed by the end of 2015, the relocation will provide facilities for 90 full- and part-time gemmology students from BCU, as well as access to the high-specification equipment available for gemmological education within the UK. Through access to equipment for testing diamonds at AOB’s AnchorCert Gem Laboratory, the School of Jewellery will also have increased opportunity for gemmological research, while combining the knowledge and expertise of subject-specialist staff with a diverse, international student population. ■

#### GEM LABS TO AGREE ON COLOUR TERMS

The Swiss-based coloured stone testing laboratories Gübelin Gem Lab and Swiss Gemmological Institute SSEF, have agreed to harmonize their standards for the colour terms ‘pigeon blood red’ and ‘royal blue’. Their goal is to standardize the usage of these terms — used for centuries to describe the finest quality rubies and sapphires — for the benefit of the international gemstone trade.

However, while commonly understood to refer to specific hues of saturated red and blue, until now there never has been definite agreement as to the precise colours and quality criteria that correspond to the two terms. In the absence of an international standard, the use of both terms on lab reports tends not only to be inflationary, but frequently ambiguous.

For detailed information about the criteria for the terms visit [www.ssef.ch](http://www.ssef.ch) or [www.gubelingemlab.com](http://www.gubelingemlab.com)



# Events

## SAVE THE DATE

### International Jewellery Japan (IJT)

20–23 January 2016, Tokyo, Japan

The largest jewellery trade show in Japan, IJT is the gateway to expanding your business in Japan and Asia. Come and visit the team in one of the most beautiful countries in the world. Booth number A9-24.



### AGTA Tucson GemFair

2–7 February 2016, Tucson, Arizona, USA

Gem-A will be returning to the AGTA GemFair Tucson, to take part in one of the largest and most famous international gem shows across the globe. Gem-A will be joining the show to exhibit its range of educational and training courses, instruments, membership services and publications; come and visit us at booth 29.

### Gem-A's Big Gem Bash

4 February 2016, Scottish Rite Cathedral, Tucson, Arizona, USA

We invite members, students and friends to join us at the Scottish Rite Cathedral for live music, drinks and catering with the return of our Big Gem Bash, a highly popular event in 2015. Be sure to reserve your place by emailing [events@gem-a.com](mailto:events@gem-a.com) soon. Thank you to our sponsors JIBNA for their generous support of the Big Gem Bash.

### 62nd Annual Tucson Gem and Mineral Show (TGMS)

1–14 February 2016, Tucson, Arizona, USA

Gem-A will be extending its stay in Tucson to attend the TGMS. Following on from AGTA GemFair Tucson, TGMS is the Tucson Gem & Mineral Society's yearly show, inviting both gemmologists and mineralogists to come together for a number of exhibitions, workshops and events.

### Baselworld 2016

17–24 March 2016, Basel, Switzerland

One of the largest watch and jewellery shows, Baselworld is the focal point of the industry,

where all players showcase their creations and innovations. The show attracts everyone from designers and purchasers, to the global press and consumers. Come and visit the team at Hall 3.0 Stand A35.

## GEM-A EVENTS

### Gem Central: Speaker TBC

### Gem Central: The use of basic gemmological equipment from a lab perspective

10 December

Doors open 18:00, talk starts 18:30.

Gem-A Headquarters, 21 Ely Place, London, EC1N 6TD

Guest speaker Stephen Kennedy will focus on the importance and use of traditional gemmological instruments for the everyday gemmologist; their advantages, limitations and when it's advisable to seek gemstone identification from a lab. Stephen will also provide some useful instrument tips and answer any questions. The talk will be followed by a Christmas tippie, mince pies and a 20% discount on all instruments from Gem-A Instruments. To book your place contact [events@gem-a.com](mailto:events@gem-a.com).

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f t i p



# An interview with Martin Rapaport

Within the industry, and particularly the diamond industry, Martin Rapaport, chairman of the Rapaport Group, is a man requiring no introduction. A fast-paced conference call saw us attempting to keep up with his views on the market — past, present and future.

**Does the Rap List set the prices or reflect the prices on the market? If the latter, how do you get, and know, the prices?**

We don't set the prices, which is clearly evidenced by the fact that people trade various discounts and premiums to the Rap prices — mostly discounts. Diamond prices are a funny animal — we quote a very specific stone. What about the hundred or so mutations and types of stone that tend to float around in the market? No one price is going to be able to capture the precision for a certain type of diamond.

There are wildly different prices because of the different markets and market conditions. The Rap List can never give an exact price on a specific stone — people have to calculate according to their specific items. We reflect what's going on with the previous information that we get; telling you about yesterday's weather. It's a suggested price; our prices are a maypole — a standard — around which people can dance. We suggest a price and establish a benchmark price level, so that people can all relate to the same number.

To get the prices we do a number of things: we look at diamond trading networks (including RapNet which has around US\$8

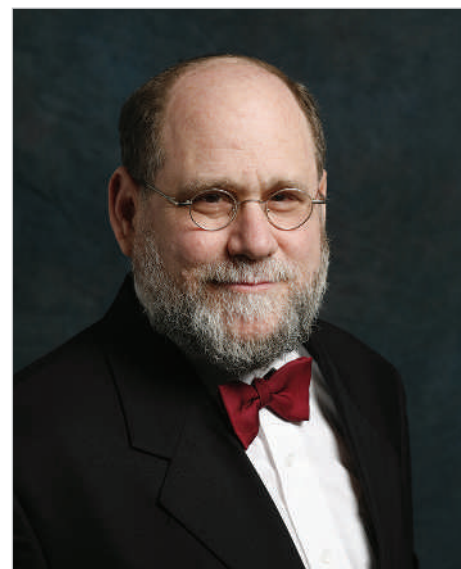
billion worth of individual stones and around 13,800 members) which gives us a pretty good feeling for the diamonds that are available in the market; we see the data that other companies put out listing the diamonds that they want to sell; we monitor the network, the value of diamonds moving in and out of various categories; we monitor the supply and demand and the weekly price quotes around the world (Mumbai, Israel, New York, Hong Kong, Antwerp) and discuss market positions. We also broker business on occasions.

**With synthetics becoming more prevalent in the market, will the Rap Report ever reflect synthetic diamond prices? What do you think synthetics will do to the natural diamond market, long term?**

Synthetics are an interesting animal. And what's very good about them now, is that they are introducing an element of competition for natural diamonds; they're forcing rough sellers to be more realistic in their pricing. Competition is a healthy thing. It's a wake-up call for these guys; if they don't get up off their behinds and start to market natural diamonds they're going to lose the business. Why should profits of jewellery be limited to what's brought out of the ground by, what... seven companies? What's happening here is a very positive aspect.

A lot of people will be able to buy these synthetics and then they'll gradually be able to graduate up [to natural diamonds]. It's great that millions of people will be able to buy these synthetic diamonds — 'democratized' diamonds.

What you can't do is mix and sell regular diamonds together with synthetics, or with glass — that's highway robbery — it's obviously the mother of all evil and reflects



badly on all of us if the industry can't do something about this. But it's starting to get its head around it.

My own out-of-the-box thinking is that the synthetic diamond industry is being strongly supported by the needs of the defence industry to create synthetic diamonds for laser warfare, as well as for high-level, testing-type, computers. The crystalline carbon of a perfect diamond has the perfect symmetrical structure to have a computer work at an atomic level. The bi-product of this is gem-grade synthetic diamonds.

However, the cost of dealing with larger and larger volumes [of synthetic diamonds] is collapse. It's reasonable to suspect that in 10 to 15 years 5 ct D flawless diamonds might be available for two or three dollars. If you take away the value component of the 'diamond dream, brand, idea', you're left with a pretty hollow promise of commitment to a young woman.

It's probable that prices will fall that dramatically. I'm not sure about trying to support a commodity that's on the way down. Taking something synthetically created, that's going to be mass-produced for 'other reasons', and placing it next to [natural diamonds] is kind of weird. It might be a good business, but what's wrong with Swarovski crystals?

Why should profits of jewellery be limited to what's brought out of the ground by, what... seven companies?  
What's happening here is a very positive aspect.



Synthetics is a nice, interesting business, but it's not my business, it's not the diamond business... unless retention of value is a more assured thing. We're not in that game — I'm afraid to promote it as a viable thing. In the language of the trade it's a bluff stone, because it does not retain value.

#### **What keeps you ahead of your competitors?**

If I tell you I'd have to shoot you! All I can tell you is that we pray and we give to charity — there are two strategic things that we have going for us! And we have 230 really devoted people working for the company; most of our senior management have been with us for 10 to 15 years, some for more than 20 years.

### **You are responsible for what you sell me — you have to know what you're selling.**

We're extremely value-driven; we don't look at profit so much as look at what is the right business to be in. For example, when we threw EGL off RapNet, we lost advertising, we were threatened. But we had to do it; the World Federation of Diamond Bourses (WFDB) and other organizations could not stop these people. They were flagrant misrepresenting the quality of diamonds to hundreds of thousands of consumers. We stood up and said: "We don't care about the money, we're going to do the right thing."

The same thing happened with Sierra Leone and the conflict business. We fight

for these kinds of issues and that's what makes us different. I'm not saying that other organizations don't have values, but we put a premium value on that and are willing to suffer financial loss. It's part of the Rapaport brand, and you know something, it's what I love to do. And I'm happy that it's not just me — the team is behind our decisions. It's the practice of integrity; the rubber meeting the road.

#### **Should there be an international standardized format for diamond grading and how do you ensure consistency between different labs using different technologies/different grading scales?**

It's a great question and the answer is: 'terminology'. About 20 years ago I took a video crew to GIA and during the three-hour interview we asked where GIA grading came from. They took the decision to start with the letter D because no-one would use it at retail and confuse the consumer. If you're going to use the terminology of the GIA, their language, you're going to have to use their standard. And we agree that standards could be one off; it can happen, it even happens at the GIA. We say that if you want to use GIA terminology you should not be more than one grade off.

But what makes the world go round is money and what makes this business go round is trading. The WFDB should enforce the rule that if you're more than one grade of colour or clarity out of a diamond that you sell, you have to take the stone back and provide a full refund. Money talks; money enforces values. You are responsible for what you sell me — you have to know what you're selling. You have eyes and have to use them. We have to take the onus of responsibility from the lab to the trader. If I sell you a diamond

as a G colour, which is actually a K colour, I should take it back. It's an issue of ethical misrepresentation — and a buyer should ask for standards.

#### **Are there any plans for developing the Rap List in the future?**

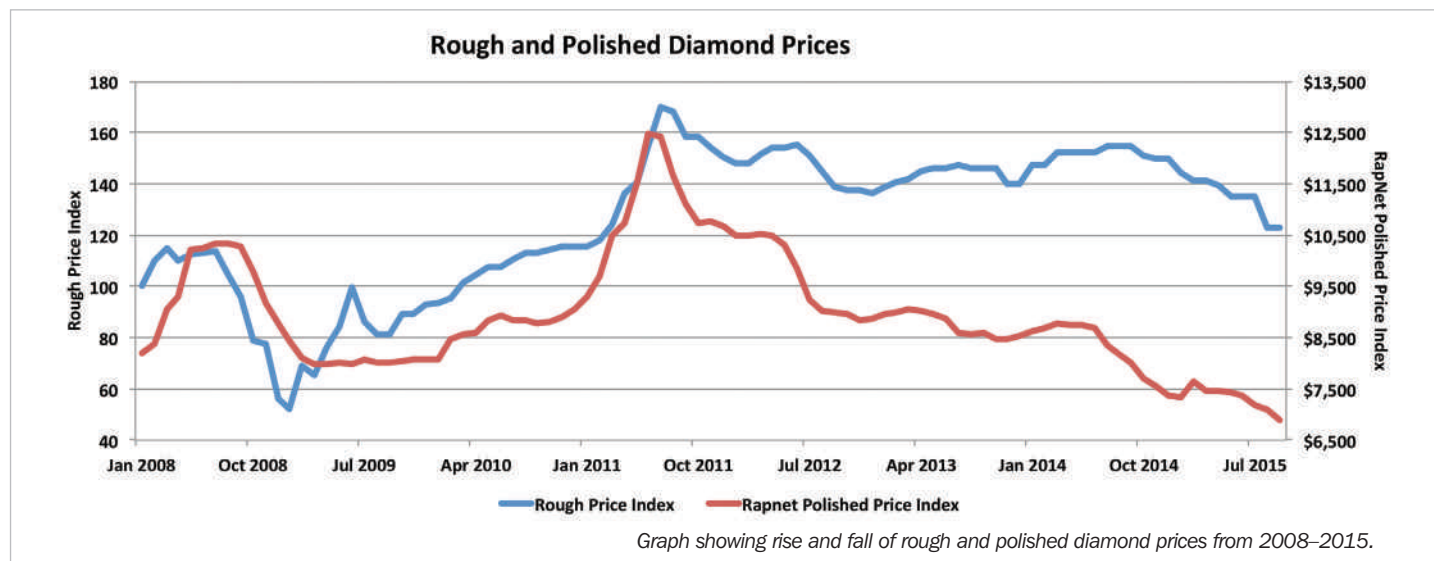
We're about to introduce RapX, which is Rapaport Exchange. It's going to be a whole new animal, a mind-blower... very sexy! Imagine RapNet with bid prices, not just asking prices. It's going to be hard to start with — don't expect miracles — but it will be amazing, with the amount of information and the ability to buy diamonds. We'll start with a test launch.

We're also doing RapLab, where we're able to grade the diamonds for people and verify all kinds of things about the diamonds — all the factors that are so important when someone is buying a diamond over the internet unseen. We can give them information based on our eyes. We're looking at so many things, like investment diamonds, high-end grading reports on top of the GIA report (to deal with things that are not included in the GIA report, like colour and location of inclusions). We want to fill the gaps so that people can trade diamonds without seeing them. They can trust us.

#### **How do you see grades evolving with regard to SI3/I3 classifications?**

I previously stated that we believe in GIA because they created the language, but I could be accused of being hypocritical, because we have SI3 on our price list. The truth of the matter is GIA doesn't have an SI3, so I'm not stealing their terminology — I'm adding to it. SI3 is strange beast; it's designed to be between an SI2 and an I1.

There is a total need for something to say if a diamond is 'eye-clean' at a consumer level. Unfortunately, the GIA with their grading system with their SIs do not disclose that fact. When you look at a diamond you need more information, the spread between SI2 and an I1 is huge. There are numerous ways that the diamond industry has traditionally — for many years — termed diamond qualities. GIA owns its own terminology, but GIA is not the 'be all and end all'. The idea of diamond grading is going to evolve. I think that rather than just have a linear scale we're going to have different shades of colours (like TTLB). But with clarity we need something that says whether a stone is 'eye-clean' to a consumer. It's challenging, but we're going to have to try it. It's a fundamental error to not have it — it needs to be introduced.



**What is your view of the ongoing relevance of the Kimberley Process (KP) given that the KP allows Zimbabwe (with its suspect human rights record) to sell their diamonds?**

I was a participant in the Kimberley Process — I was one of the speakers at the first meetings at Kimberley in South Africa in 2001. Part of the idea for KP came from my idea of a ‘kosher’ diamond. We had to stop the war in Sierra Leone. I had written an article called ‘Guilt Trip’ (having been sent to Sierra Leone by the State Department), and I was very moved. I became committed to doing something.

There was drug money laundering, there was arms movement, there was everything evil — let alone the chopping off of hands — in Sierra Leone. The KP came about to do something about this in the only way that we could — through the governments, which had to agree to the KP. None of them would agree with the human rights issues; anyone could point the finger at anyone else.

We also needed a waiver from the World Trade Organization (WTO) to implement the KP; the WTO does not allow discriminatory practices based on human rights. That took two years to get. It was never even a question that the KP was not going to relate to human rights. But the governments would support a system that controlled the flow of diamonds, so that we didn’t have these kinds of armed militia. Not only that, KP is a consensual agreement, not a treaty. Also, what happened was a resolution by Security Council of the UN designating embargoed countries. Members of the Security Council are also members of the KP; there had to be a consensus of both supporting human rights.

The attempt to say that the KP cures cancer is detrimental to the fundamental idea of supporting human rights in the diamond industry. It stopped the war; I’m glad I devoted years of my life to it. We saved hundreds of thousands of lives and that is something that I will always be proud of. That was done by the KP — stopping the government of Liberia from exporting those diamonds, getting those guns and killing those people. That’s a fact.

**We’re selling a highly emotional product. We need to develop an alternative ethical certification and sourcing systems that will address human rights, and the industry is slowly coming round to this...**

The level of lying and misrepresentation, in my view, by the leadership of the diamond industry then was immoral, unethical and resulted in the loss of significant numbers of human lives. What’s still going on in the Congo, Angola, Zimbabwe, is horrible — unacceptable — but the industry is turning a blind eye.

We’re selling a highly emotional product. We need to develop an alternative ethical certification and sourcing systems that will address human rights, and the industry

is slowly coming round to this; more and more people are getting involved. An ethical consumer is out there — millennials are so much more interested in ethically-sourced products. Everyone wants to differentiate their brand — Fairtrade diamonds are the perfect products.

**We go to press just before the sightholders’ November sale — do you see the depressed market continuing?**

De Beers have to reduce their price. We have a perfect storm here — when demand diminishes at the consumer end, it diminishes at the retail and manufacturing end effectively. Yes, the market is still depressed.

Unfortunately mining companies don’t understand that their customers need to make decent profits. Are prices more important than customers? It violates all common sense. People are losing jobs; committing suicide. Are these people crazy? It’s not in their interest to lose their customers.

Prices will have to drop another 40 per cent like they did in 2008. Extraordinary measures are needed. If your customer is not making a profit then you’re doing something wrong.

De Beers are spending US\$200m on advertising, but they’re not investing in the generic product. They’re watching the diamond dream die and at the same time milking the industry for all it can give them.

There’s a need to significantly and immediately increase the profitability of the diamond manufacturing and distribution industries. I feel like I’m sitting in outer space and I can see the whole picture. ■

# The ins and outs of polished diamonds: take the strain

Grenville Millington FGA looks at diamonds under crossed polars.

I have never seen the Northern Lights other than in photos or on the television, but I have seen the next best thing — looking at diamonds between crossed polars.

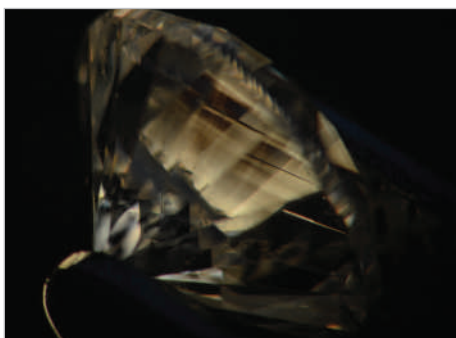
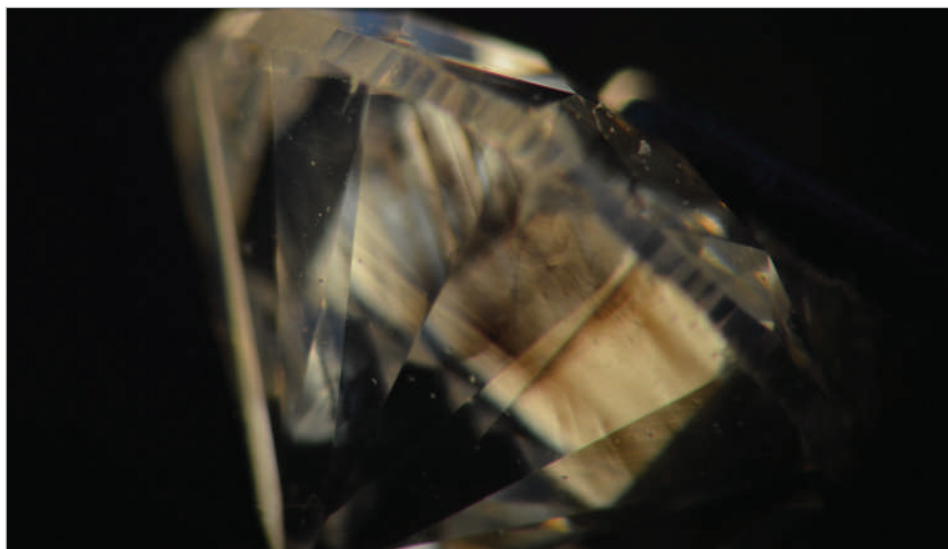
Placing gems under a polariscope is a standard testing procedure for gemmologists, but I'm certain I'm correct when I say this isn't the case when it comes to diamonds. Diamonds belong to the cubic crystal system, which, in theory, means they should stay dark when they are turned and viewed through the polaroids of the polariscope. Some stones, like synthetic spinel, are automatic candidates for polariscope use, but not diamonds. The whole point of cutting a brilliant-cut diamond (by far the most used

cutting style) is that light entering the crown is reflected within the stone and directed back out through the crown, which means that when the diamond is placed table down on the polarizer (the standard first move with any gem under the polariscope) then no light is allowed to escape through the pavilion to reach the eye of the viewer. The stone has to be turned to allow a small passage of polarized light through the pavilion and kite or star facets. This offers only a tiny area of view. Also, many diamonds show very little worth looking at anyway under such conditions!

If we turn our attention to those diamonds that do show some effect (anomalous double refraction due to strain) what are we likely to see? As most diamonds are pretty small (a 1 ct brilliant is only around 6.5 mm across) we really have to move to a microscope with polarizer and analyzer in position. It would also help if we could widen the field of view from something the size of two or three facets, perhaps. I've tried immersing the diamond in water in a clear glass cell but it is difficult to manipulate. Fortunately, the results are greatly improved by gripping the diamond, not across the girdle as is usual, but by holding it between table and culet and allowing the internal reflections to work for us, not against. The light from the polarizer can enter the diamond through one side of the pavilion and be reflected from the inner surface of the table through the opposite side of the pavilion, and then pass through the analyzer to our eye(s).

Some diamonds will show a strain pattern of smoky brown parallel lines over one or more areas, similar in appearance to graining — the images in **1** show different views of a 0.30 ct brilliant-cut diamond.

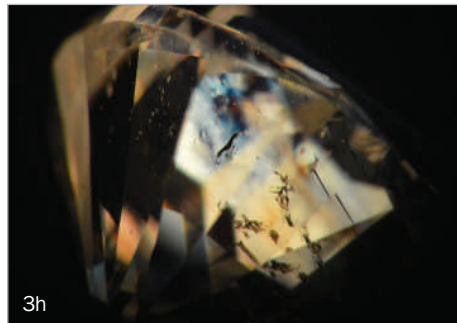
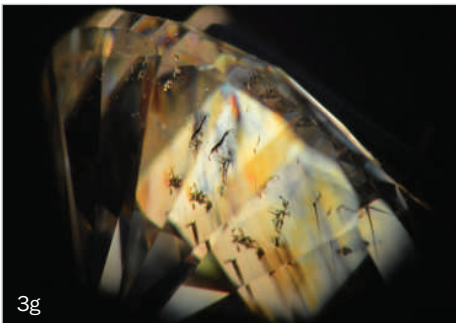
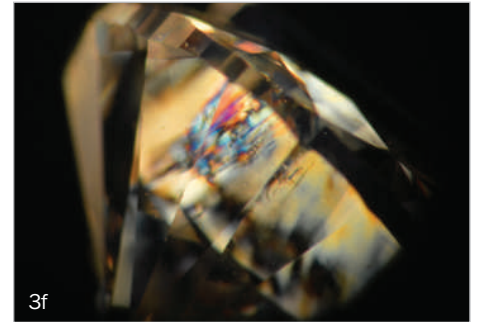
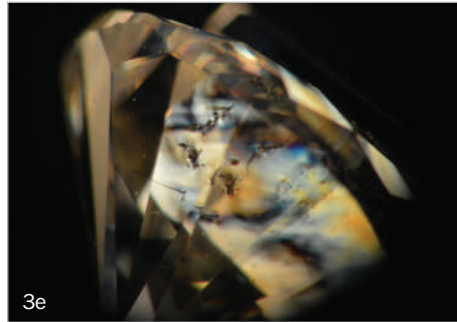
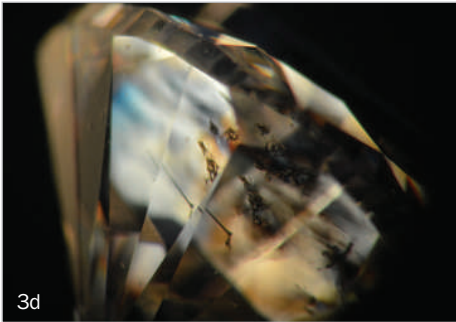
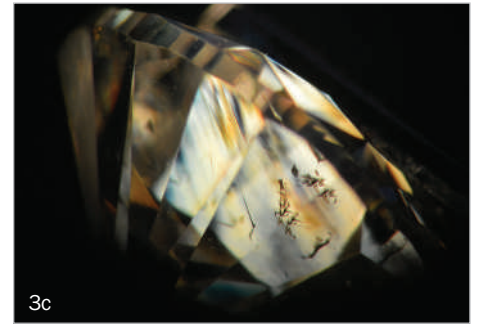
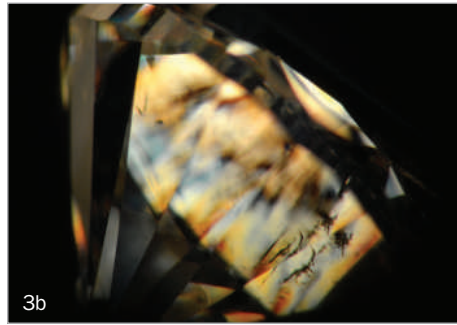
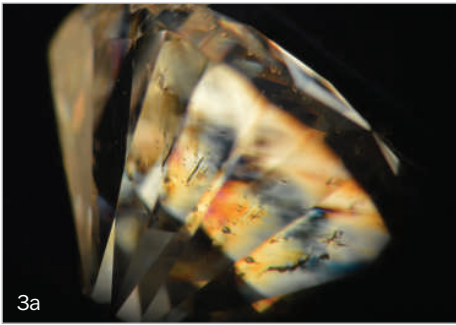
This is interesting but it's certainly no Northern Lights. However, much like the natural phenomenon, you have to wait for the effect to reveal itself. You need to try more stones. The diamond shown in **2** is more interesting, displaying the letter 'M'.



1: Three views of a 0.30 ct brilliant-cut diamond through crossed polars, magnification approx. 30×.



2: A bright letter 'M' appears to be illuminated in this 0.16 ct diamond, magnification approx. 30×.



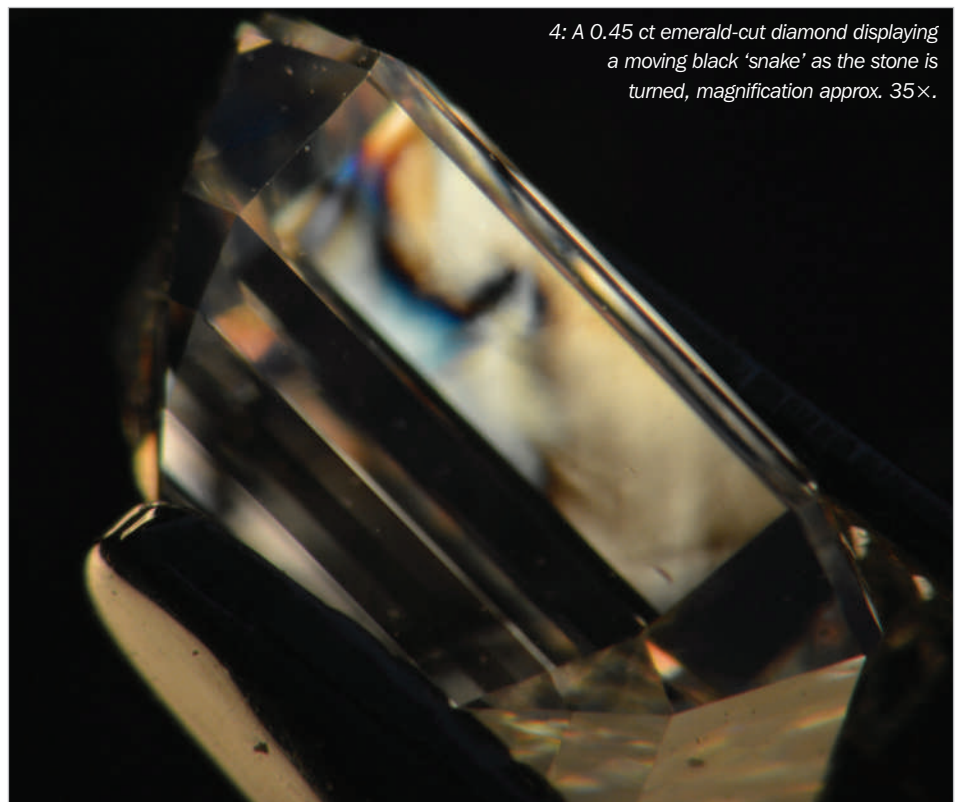
3: (a–g) Brilliant-cut diamond 0.58 ct between crossed polars, each view with the stone turned about its culet by approx.  $20^\circ$ . Shown in 3h is the same view as 3g, but with the stone tongs moved fractionally. Magnification approx.  $40\times$ .

Apart from showing a display of colours and shapes, these will change when the stone is moved even slightly. Shown in **3** is a 0.58 ct brilliant-cut diamond turned approximately  $20^\circ$  about the culet between photos (**3a–g**), whilst **3h** differs from **3g** only by a fractional twist of the stone tongs.

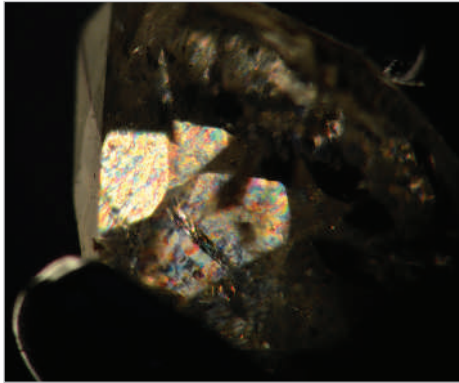
As can be seen, the colours and/or patterns displayed by some diamonds because of strain within the crystal change with every viewing angle, providing us with a 'Northern Lights experience'.

Something similar to the 'writhing snakes' pattern in some glass (paste) imitations produced under the polariscope is also occasionally seen within a diamond. The emerald-cut 0.45 ct diamond (**4**) presents this appearance as it is turned.

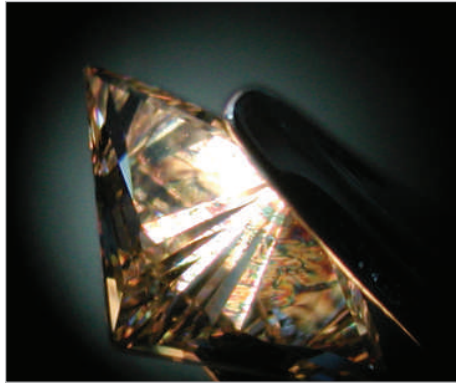
It is obvious that the presence of a crystal inclusion or a fracture could induce a strain pattern around it, as is possibly shown in the photo sequences in **3** (the diamond was graded G.SI1). In the 0.45 ct emerald-cut (**4**) the stone was graded F.VVS2, so the strain would be general.



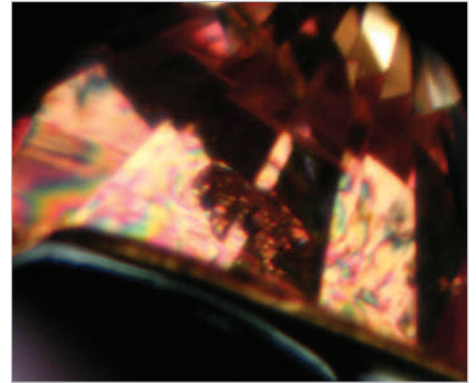
4: A 0.45 ct emerald-cut diamond displaying a moving black 'snake' as the stone is turned, magnification approx.  $35\times$ .



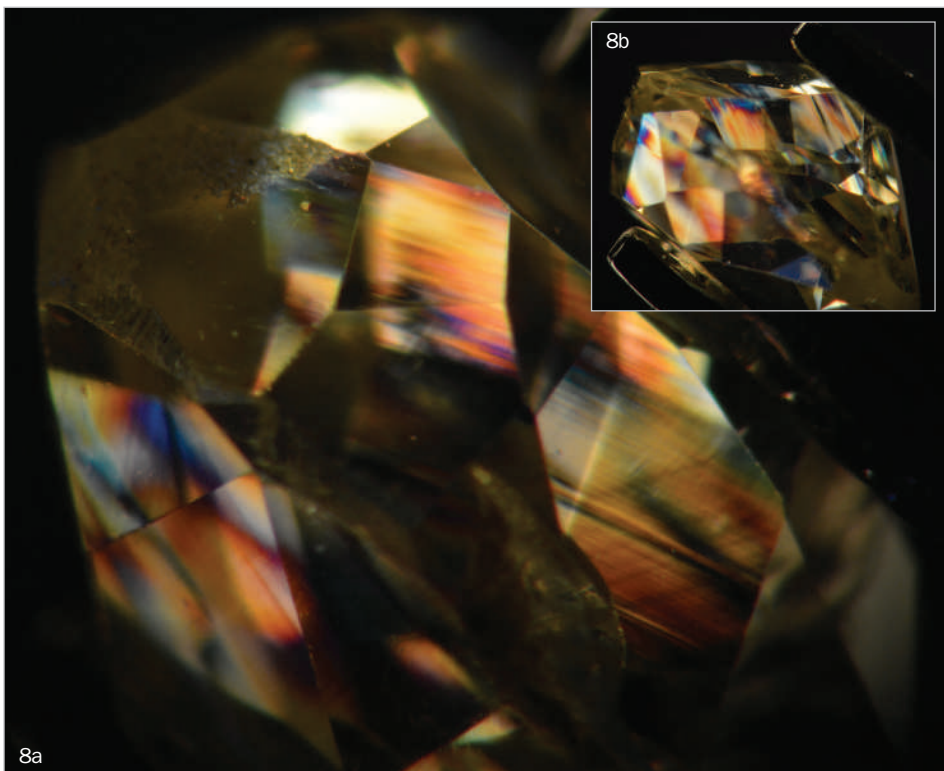
5: Harlequin strain pattern in an old-cut 0.29 ct diamond, magnification approx. 40×.



6: A princess-cut diamond, showing a harlequin strain pattern, magnification approx. 25×.



7: Natural pink diamond showing harlequin strain pattern, magnification approx. 60×.



8: (a) View through the crown of an old-cut yellow diamond 0.31 ct between crossed polars, magnification approx. 30× and (b) view through the sides of the same diamond through crossed polars, magnification approx. 45×.

A different style of patterning is found in a minority of diamonds — one that resembles a ‘harlequin’ effect of full spectrum colours (5). This harlequin pattern can be quite pronounced, as seen in this princess-cut diamond of around 0.75 ct (6). This effect is also common in type I natural pink diamonds (7). On occasion, these spectrum colours are arranged in a less general formation, as shown in this yellow old-cut diamond from possibly the early nineteenth century (8).

When occurring in type II diamonds the strain appearance is far more restrained — certainly as far as colours go — usually producing a grey cross-hatch pattern (called

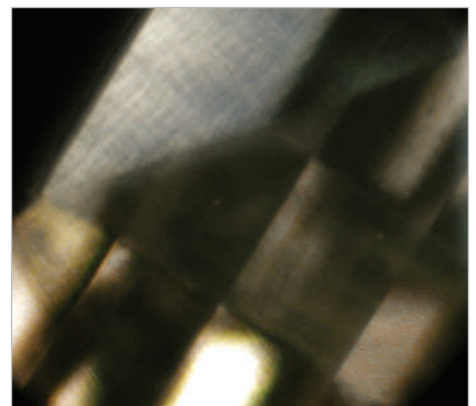
‘Tatami’ pattern) or striped arrangement. These stones can be colourless, light brown or pink. Examples are shown in 9 and 10.

I thought I would try some flatter diamonds to see if any strain pattern would be easier to see, so I opened a packet of old rose-cut stones. The second stone I examined was quite spectacular, not in the colour display but in the Tatami effect, which, as already mentioned, is usually quite restrained. The photo sequence shown in 11 is very interesting, highlighting what is really the diamond’s secret; one that cannot be seen in normal lighting conditions, but only revealed between crossed polars.

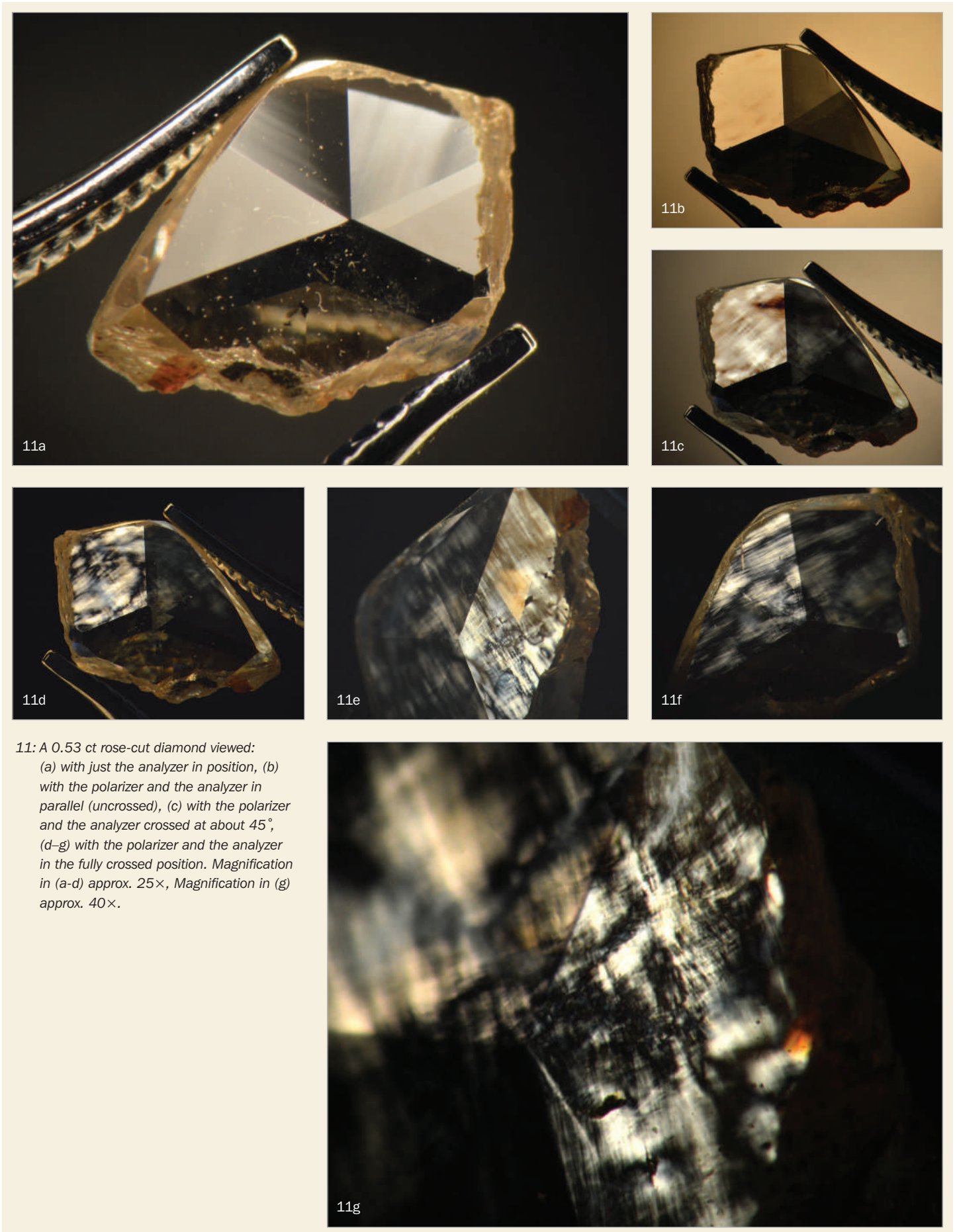
Other views of the rose-cut between the fully crossed polars are shown in 11e–g. The rose-cut diamond, which could date as far back as the late eighteenth century, is light brown in colour and, if the strain pattern had been like that shown in 11c, although with fully crossed polars, then I would have guessed that this stone is a type IIa. The intensity and high contrast of the streaks is unusual. I’ve read that type IaB diamonds can offer similarities to type IIa stones, such as light brown colour, Tatami strain



9: Strain arrangement in 0.70 ct type IIa diamond, magnification approx. 80×.

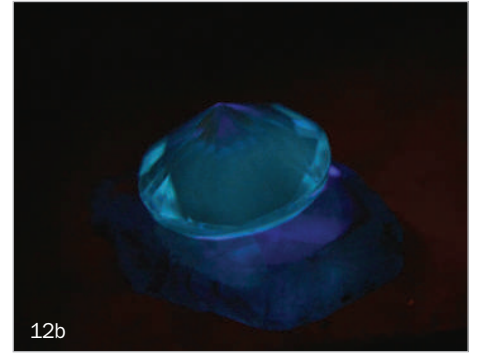
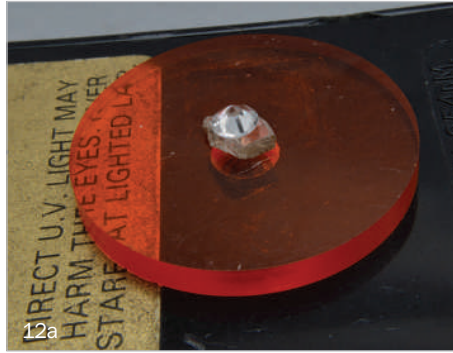


10: Strain arrangement in 2.09 ct light brown type IIa diamond, magnification approx. 80×.

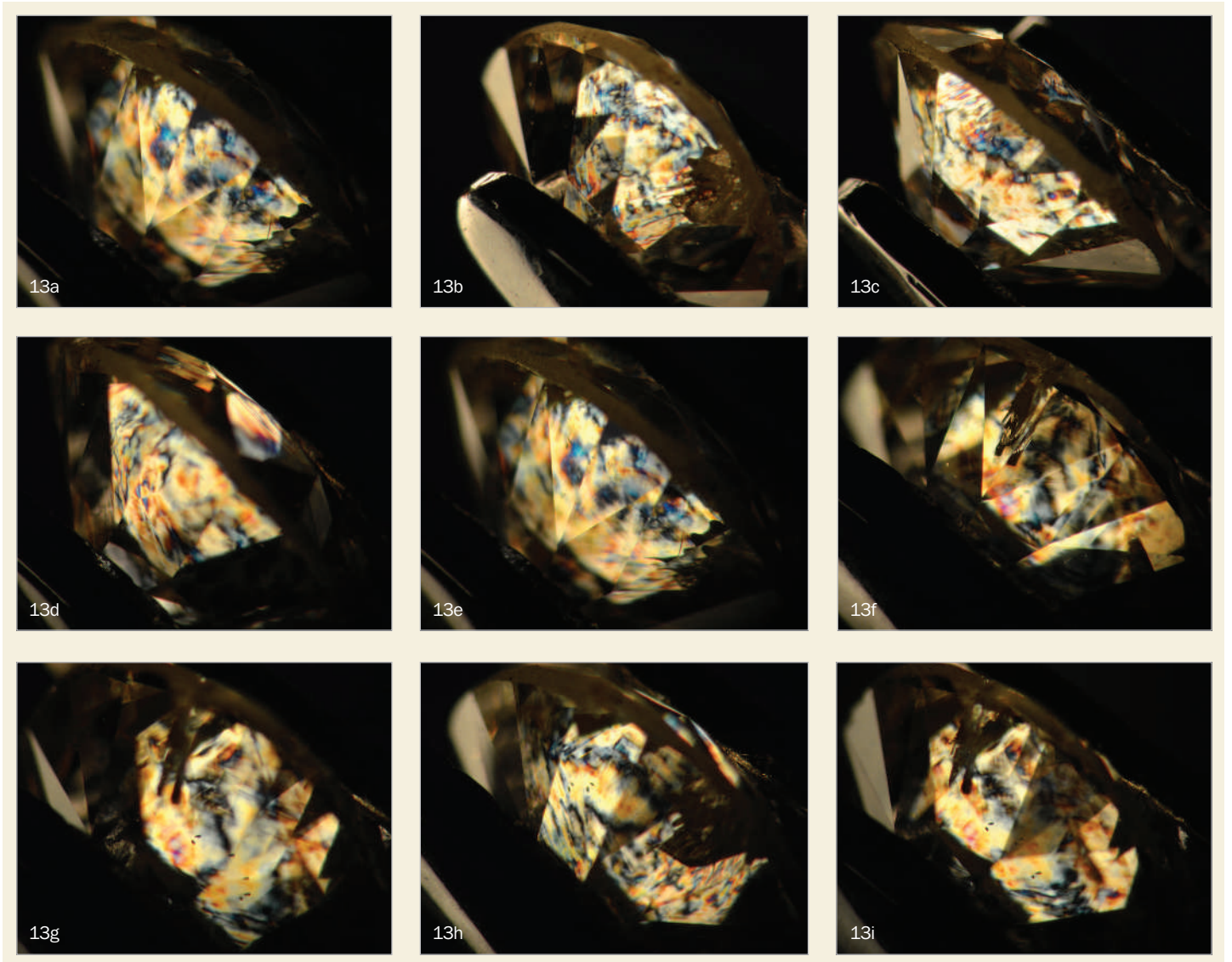


11: A 0.53 ct rose-cut diamond viewed:  
 (a) with just the analyzer in position, (b)  
 with the polarizer and the analyzer in  
 parallel (uncrossed), (c) with the polarizer  
 and the analyzer crossed at about  $45^\circ$ ,  
 (d–g) with the polarizer and the analyzer  
 in the fully crossed position. Magnification  
 in (a–d) approx.  $25\times$ , Magnification in (g)  
 approx.  $40\times$ .

12: (a) A sandwich consisting of a synthetic white spinel, rose-cut diamond and orange Perspex disc with centre hole, on the outlet window of a SWUV lamp and (b) the synthetic spinel fluorescing blue in response to SWUV being transmitted through the rose-cut diamond.



13: A 0.20 ct brown diamond displaying the changing strain pattern as it is turned under crossed polars, magnification approx. 45x.



patterns and transparency to shortwave ultraviolet light (SWUV). Perhaps this is one of those, so I thought it would be interesting to see if it was SWUV. I placed the stone on an orange perspex disc with a hole at its centre, positioned the disc over the SWUV lamp, and balanced a synthetic white spinel on top of the diamond. When switched on, if the diamond was transparent to SWUV then

the synthetic spinel would glow blue. The results are shown in 12.

Fortunately, the rose-cut diamond was big enough to completely cover the hole in the disc so the only light reaching the synthetic spinel had to have travelled through the diamond, proving the diamond was transparent to SWUV. This did not answer the question of "Is it type IIa or type IaB?" ... but what do you

want from an at-home gemmologist?!

I will leave you with a sequence of photos of a brown brilliant-cut diamond of 0.20 ct, which looked rather drab in normal lighting but gave a veritable song and dance when asked to perform between the crossed polars of the microscope (13). ■

All photos Grenville Millington.



# Goldsmiths' Fair 2015

Kim Foxwell FGA DGA takes a look at the latest pieces from up-and-coming designer-makers at this year's Goldsmiths' Fair.

Goldsmiths' Fair 2015 was a lively mix of old and new, with a masterful range of techniques and experience displayed across the 168 jewellers and silversmiths who exhibited. Along with the collections there also came the gemstones, and as always it was particularly exciting to see how the designer-makers had incorporated the one into the other.

Particularly notable amongst the featured stones were the number of opals on display, with examples from Laura Bangert, Hee Young Kim, Ulla Hörnfeldt and Tanja Ufer — to name but a few. Especially striking was a boulder opal ring by Catherine Best (1), which had red dancing across its surface, and Ornella Iannuzzi's 'Rock It' collection, which included caged opal spheres, looking rather like imprisoned balls of light.

Play-of-colour and opal-reminiscent iridescence were also presented in other ways. Ruth Laird's collection was particularly inventive; rather than using stones, Laird had created her own 'opalesque' effect using layers of spray paint, which resulted in a look that seemed almost like a matt opal. At the other end of the spectrum, Fiona Rae reflected this in the entire subject of her work (often using actual opals). Much of Rae's work seemed to be focused on insects and their wings, especially dragonflies, which she drew out with a mixture of gemstones and enamel.

Bright, intense colours were everywhere; especially in warm autumnal shades such as red, pink, orange and brown, and a number of designers had combined gemstones by colour rather than type. Louise O'Neill lets the stone dictate the design, but likes to work with "a palette of colours", and so featured brown and cognac diamonds and a rough imperial topaz, and a whole array of orange coloured stones all mixed together. Similarly, Tomasz Donocik's collection was all about colour subtleties — although the brightness and intensity of the colours themselves was far from subtle. He explained that his pieces were inspired by a combination of Art Deco style architecture and the neon hues of the film 'Blade Runner'. Drawn to particularly strong shades, he uses stones of similar



2: Necklace featuring crocheted antique metal beads and crocheted pearls by Ulli Kaiser.

colour next to one another — no mean feat when considering the differing hardness of each stone. Thus iolites will sit alongside sapphires, topazes, amethysts and tanzanites; arranged in such a way as to create a 'rippling' effect of colour. Donocik explained that he uses baguette stones because they hold their colour better, and to keep the colour in lines, like neon tubes.

Perhaps in contrast to the straight, direct forms of Tomasz Donocik, Ulli Kaiser also used rich coloured gemstones which were hand crocheted in the round, mostly choosing miniscule facet-cut stones to create an overall brilliance. The gems Kaiser uses range from rough uncut diamonds to glass beads from the 1920s, which she explained had a higher lustre than most of the beads made today, and all the finished pieces are surprisingly light given their seeming density (2).

There were also a number of deeply-coloured high-domed cabochons about, particularly amongst James Fairhurst's pieces and notably in Luke Shimell and Emma Madden's collection 'Orb', centred on red garnets that have been specially



1: Boulder opal ring by Catherine Best.



3: Two pieces from Luke Shimell and Emma Madden's 'Orb' collection: Orb ring (above) and Orb necklace (right), featuring red garnets.

cut to create the illusion of movement (3). Indeed, the high domes of the cabochons meant they were more half spheres than cabochons. The depth of the red colour was particularly startling where they had combined it with lively orange sapphires.

Ingo Henn had some fabulous gemstones, as to be expected, but what immediately drew the eye was a flashing mandarin garnet. A brilliant, bright orange, with no windows and a large spread, it had nevertheless kept its colour — and with no hint of brown it also had fire. An absolutely magnificent stone, it was also joined by another piece with a



4: 'La Luna', featuring carved Tanzanian moonstone from Ingo Henn.

Tanzanian moonstone carving called 'La Luna' (4). The way this piece had been made meant that, like the moon, it started to glow as you turned it, and then went what can only be described as 'quiet' again. It was subtly, eerily beautiful and a delightful contrast to the other warmer colours on display in his collection.

In contrast to the brilliance and lustre usually found amongst the displays, some of the exhibitors, such as Barbara Bertagnolli, Jane Macintosh, and Graeme McColm had jewellery with gems that had been given a matt effect, creating a restrained, more understated elegance to their pieces. Mark Soley also had set a chalcedony that was somewhat reminiscent of a matt water jade (although the gem itself was not matted), and it was lovely to see a stone often not placed amongst the most 'precious' in a precious setting.

Another common theme amongst a number of the stands was the celebration,



5: Kyanite ring from Chris Boland.

rather than masking, of inclusions. Chris Boland was back with more unusual and interesting stones in rather striking settings, including an aquamarine ring full of rain, a free-form boulder opal, a curious kyanite in a ring (5), and iron oxide in quartz in a bangle. Other designer-makers, including Amy Keeper, Jane Sarginson, Gun Thor and Serena Fox, all had stones with either subtle or overt inclusions mixed among their pieces. Nicholas Yiannarakis, who loves stones and cuts his own, had a chatoyant emerald ring. He explained that he had acquired a Brazilian emerald crystal and, when looking down the c-axis, saw the chatoyant effect and decided to try cutting it *en cabochon*. Surprisingly, the chatoyancy remained. Other curious

stones from Yiannarakis included a rubellite step cut which had a trapiche effect in its crystal form, some indigolite, and a rough tourmaline crystal set in a necklace. Another exhibitor at the Fair with a similar love of stones, David Fowkes, buys rough crystals and works with his cutter, playing with the rough to, as he put it, "understand the stone it is to become". The results are fantastic and unusual, with the artisanal cut highlighting the intrinsic beauty of the stone in a completely different way to usual facets.

Maria Frantzi continued to play with stone creation, not hiding the doublets and triplets to pass them off as simulants, but actively demonstrating and playing with the effects that can be had when, for example, rock crystal and mother of pearl are layered together (6). Similarly Emmeline Hastings uses perspex — evocative of rock crystal — which, when dyed, looks like rose quartz, sometimes set with minute gold scales (7).



7: Imitation rock crystal necklace made from perspex by Emmeline Hastings.



6: Gold and silver ring with mother of pearl, lapis lazuli and rock crystal triplet and sapphire from Maria Frantzi.



8: 18 ct white gold earrings featuring faceted round Tahitian black pearls from Josef Koppmann.

Needless to say the heft of the pieces is much lighter than if quartz were to be used, and it makes for wonderfully dramatic jewellery.

Josef Koppmann also had some pieces that played with the feel of a natural stone. Roughly chopped quartzes with polished fronts set into cufflinks gave the feel of the raw stone hidden within the polished. Koppmann also had some faceted pearls amongst his collection, explaining that the ones he had were from Japanese diamond cutters who had experimented with Tahitian pearls, putting flat facets on the round surface of the pearls, which gave the pearls a curious patina as they caught the light (8).

More modern techniques and creations were also on display amongst the more traditional. Tom Rucker's tortuously delicate laser-welded platinum pieces, set with coloured diamonds, were a sharp contrast to the more classic jewellery at many other stands (9). As each fine wire has to be individually connected, it is unsurprising that



9: Gold and platinum brooch featuring tanzanite and yellow diamonds, by Tom Rucker.

his work has often been emulated but never truly mimicked, due to the extremely fine nature of his manufacturing method.

Also working with fine wire was newcomer Karen Elizabeth Donovan, who uses pearls because of their sheen, and who incorporates the colour effect into the metal, which she hand-turns into tiny links (10). Karen uses titanium and manipulates it using electricity — she explained that by anodising the metal and playing with different voltages she could create different colours. The colours themselves are subtle, mimicking the pearls, which she threads using yellow or green silk for the knotting. The effect is elusive — the eye is drawn into the colours without obviously catching it.



10: Earrings featuring silver, pearls, silk and titanium from Karen Donovan.

The effect is elusive — the eye is drawn into the colours without obviously catching it.

Finally, and perhaps most fitting to finish with, exhibitor Maud Traon mixes all things together, using new and old materials: Swarovski and gemstones — both rough and uncut — and glitter. A truly eclectic mix, her pieces both confused and intrigued the eye, refusing to take on an obvious form or structure (11). It is small wonder she describes her manufacturing process as having “a little bit of magic too”.

Much of Goldsmiths' Fair is magical in the sparkle and gleam from each of the stands, but this year there seemed to be a bit more than the usual — it is a pity that we cannot share all of the pieces seen. A number of exhibitors seemed to have been enchanted and inspired by the iridescent, the elusive and the delicate, while in direct contrast there were also a number of geometric and linear designs intermingled amongst them. It was rather like wandering through a story, with common threads skilfully hidden in the writing, and with each chapter introducing a new perspective on a recurring theme. ■



11: Ring from Maud Traon featuring rough and cut Swarovski stones, gemstones and glitter.

# Hong Kong Jewellery & Gem Fair 2015

Andrew Fellows FGA DGA reports on the Hong Kong Jewellery & Gem Fair, held from 18–22 September.



A showcase for the highest quality jewellery and gemstones, the Hong Kong Jewellery & Gem Fair is one of the territory's premiere trade shows. Held at the Hong Kong Convention and Exhibition Centre (HKCEC), staff from Gem-A once again returned to promote gemmological education and to meet with its members, assisted by Anne Carroll Marshall, Gem-A's Hong Kong ambassador, and Gem-A members Pamela Ball, Daly Chung and Fiona Tai.

The Hong Kong show actually consists of two separate shows that overlap by two days. The first, Asia World Expo (known to all as 'the airport show' because of the venue), covers loose gemstones, diamonds and gemmological equipment, and it is here that gemmologists can satisfy their desires for the

at the HKCEC, covering all areas of the finished jewellery trade, from components and castings through to the one-off designs of individual handmade pieces.

As is usual for the Hong Kong Jewellery & Gem Fair the Gem-A stand was busy, with members renewing subscriptions, purchasing equipment and books and making use of the special show discounts. This provided a good chance to catch up on developments in the market with old friends and acquaintances. Positioned between laboratories and other educators, the Gem-A stand provided a convenient meeting point for Gem-A members and industry members alike, and, being on the main link between several halls, also benefited from much passing traffic.

The show also provided an opportunity for Gem-A staff to roam the many pavilions and see emerging trends for the coming months. The overall feel for the show was upbeat, with buoyant market trends. High end stones were trading at very respectable prices, showing that demand was there to match the quality. Spinel were more prevalent than they have been and seem to be becoming a higher profile stone, with prices for stones of 1 ct and upwards trading for anywhere from US\$200 per carat up to US\$15,000. This reflected favourably against sapphires which were offered for between US\$200 and US\$16,000 per carat for similar sizes and qualities. Spinel's profile was further boosted in the run-up to the sale of the Hope Spinel at Bonhams in London on 24 September, and which finally sold for £962,500 (see Jack Ogden's article 'Hope, Hertz and a red spinel' in the October issue of *Gems&Jewellery*, pages 20–21).

One stone whose presence has notably increased over recent months is csarite. This relative newcomer to the mainstream jewellery market has traded under many guises. Originally known as Zultanite, the material hails from the Anatolia region of Turkey, and changes colour from green in daylight to a pinkish brown in candlelight. Several dealers showcased this unusual stone, both as loose faceted stones and in designer jewellery, accented by diamonds.

Diamonds in all their forms and combinations featured heavily, as is the case



The Hong Kong Convention & Exhibition Centre sits on Victoria Harbour, with spectacular Hong Kong as the backdrop.

latest equipment — in addition to the usual range of common to rare gemstones of all prices. Microscopes of all shapes and sizes, more loupes than could ever be needed and a full range of portable (and not-so-portable) testing equipment can be seen, tested and purchased; all under one roof.

The second show (and the show at which Gem-A exhibited) is housed in the famous HKCEC. Encompassing 18 halls spread across three floors, the Convention Centre provides a unique location; set on the harbour front, the dramatic, bustling skyline of Hong Kong dominates the background. Over 1,000 individual exhibitors were present



Gem-A's Andrew Fellows (left) and Charles Evans (right) manning the stand.

highlighted the versatility of this material, as not only were cabochons and beads available in quantity, but also intricate carvings, making superb use of plant or insect inclusions as features.

During the show, Jewellery News Asia announced its Lifetime

at any gem and jewellery trade show. On the coloured diamond front, several sight-holders offered the full range of fancy colours, with chameleon diamonds taking their place amongst more vibrant shades. Rio Tinto showcased its 2015 tender of 65 individual pink and red diamonds from the famous Argyle mine, ranging from the palest of pinks through to the purest red. In terms of finished jewellery, possibly one of the most eye-catching designs entitled 'The Moon Goddess Necklace' was showcased by Shanghai Kimberlite Diamond. This stunning piece featured 2,877 diamonds, weighing over 108 ct in total and which included a 25.05 ct D colour Flawless stone — truly a one-of-a-kind statement piece!

Amber is rarely considered to be a gem to rival the big three, but several stands

Achievement Award winner as Professor Ou Yang Chiu Mei, of the Honk Kong Institute of Gemmology (HKIG) — a Gem-A Accredited Teaching Centre (ATC) — and author of *Fei Cui Jade, A Stone & A Culture* (see page 34 for a review). This well-deserved award reflected Chiu Mei's lifelong research into areas of jade, including the identification of a new mineral within the Burmese jade classification, and a system of nomenclature for Fei Cui jade.

Dominic Mok, of the Asian Gemmological Institute and Laboratory, also a Gem-A ATC, hosted the Asia Pacific Gemmologist Society's annual conference. This relatively new organization, celebrating only its third conference, presented workshops and talks spanning the full spectrum of gemstones; from pearls (Jack Ogden) to diamond industries

(Liang Weizhang) and Australian antique jewellery (Ronnie Bauer). Dominic closed the conference with an interesting talk entitled 'Jade – Seeing is Believing', in which he showed examples of sintered jade, a synthetic produced in relatively low quantities. The conference was followed by the Gemmological Association of Hong Kong's seminars on Fei Cui research, presented by Professor Ou Yang, and high-speed, high-volume melee diamond analysis by Dr Michael Krzemnicki of SSEF.

After the show finally closed its doors, Gem-A staff relocated to the branch office, located in Hong Kong's Central district. When travelling to Asia Gem-A staff also visit and review our ATCs, to ensure the maintenance of the high standard expected and to answer any questions tutors may have. At several of the centres I had the opportunity to sit in on lectures and view first-hand the first-class teaching techniques and resources available to our Asian students. Tours of the Asian Gemmological Institute and Laboratory (AGIL), HKIG, Hong Kong Baptist University and the Hong Kong Design Institute were made, all of which opened their doors enthusiastically to us. All centres passed with flying colours; teaching gemmology with enthusiasm and knowledge to the next generation of gemmologists. ■

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- 16th/17th January Rock 'n' Gem Show Mascalls School  
 23rd/24th January Rock Gem 'n' Bead Chepstow Racecourse  
 20th/21st February Rock Gem 'n' Bead Pavilions of Harrogate  
 27th/28th February Rock Gem 'n' Bead Cheltenham Pittville Pump Rooms  
 5th/6th March Rock Gem 'n' Bead Kempton Park Racecourse

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# Blue John Auction

Andrew Fellows FGA DGA discusses the history of Blue John and the results of the auction at Fellows auction house on 5 October.

At the start of October a potentially historic auction took place at Fellows & Sons auction house in Hockley — Birmingham's famous Jewellery Quarter. The catalogue comprised 258 individual lots, including a few pieces of amethyst and quartz, but the main component of the sale was Blue John fluorite (1).

As any gemmologist will know, Blue John fluorite is a unique gem material found exclusively in a small area in Castleton, Derbyshire — and even then only in a few mines where the veins yield ever-dwindling supplies. As fluorite is a relatively soft material (4 on the Mohs' scale), the majority is not suitable for everyday use or for jewellery, due to its tendency to be easily scratched or cleaved. Blue John differs from most other fluorites insofar as it is a polycrystalline aggregation; a mass of small cubic fluorite crystals joined together as a whole, instead of the more common growth style of single larger crystals. This gives it a stronger structure, one which is still relatively soft and prone to chipping, but with slightly less than the easy cleavage that characterizes other varieties. It is this structure which is responsible for the signature banding effect seen in Blue John, with serrated sections of blues, yellows and whites.

The uses for this famous material are quite varied — surprising, considering its less than durable nature. Bowls, tazzas (from the Italian word for a shallow cup or bowl), chalices



1: The 258 lots assembled together.

and goblets are the most widely known forms, but larger pieces have been cut into urns and vases, such as the one found at the Natural History Museum in London, and have even been used as fireplaces (the fireplace at Kedleston Hall is a spectacular example). Cut squares of Blue John have also been used to create a colourful window in Chatsworth House, Derbyshire.

Blue John is not just implicit in English history; it's also a part of English heritage. Even the names of the seams and areas of the mines hark back to olden times; seams or veins called 'Bull Beef', 'Organ Room' and 'Twelve Vein' featured in areas creatively named 'The Grand Crystallized Cavern', 'Witches' Cavern', 'Aladdin's Cave' and 'Lord Mulgreaves' Dining Room', all creating images evocative of this beautiful gem material (2).

Even the name 'Blue John' is unique and inspiring. Hailing from Derbyshire, you might expect the stone to be named after its discoverer or the local area, but the name is actually thought to have French origins, dating back to the reign of Louis XVI. Some of the early pieces are believed to have been worked by French craftsmen who, on seeing the stone, termed it '*bleu et jaune*' (meaning blue and yellow), which was then subsequently translated back into English as 'Blue John'. It has also been suggested that the lead ore originally mined in the area was known as 'Black John', and the miners termed the new, blue, fluorite material 'Blue John' in order to differentiate it. This version



2: Seam of Blue John in matrix. Photo © Ben Fiore.

doesn't seem quite as romantic, but whichever story you prefer, Blue John is certainly a unique material, with a unique history.

Early uses at Chatsworth House in 1690 and 1715 by Samuel Watson and in 1760 by Robert Hall paved the way for Matthew Boulton, a local industrialist, to use Blue John in his decorative metalworks and ormlu pieces. Such was the demand that, in 1768, Boulton even tried (unsuccessfully) to buy or lease the mine to secure the output for his now expanded business. Patrons for his works and for this material included royalty; in 1770 King George III ordered a matched pair of Blue John perfume burners, and two years later Russia's Catherine the Great acquired vases, obelisks and clocks from Boulton's works in Birmingham.

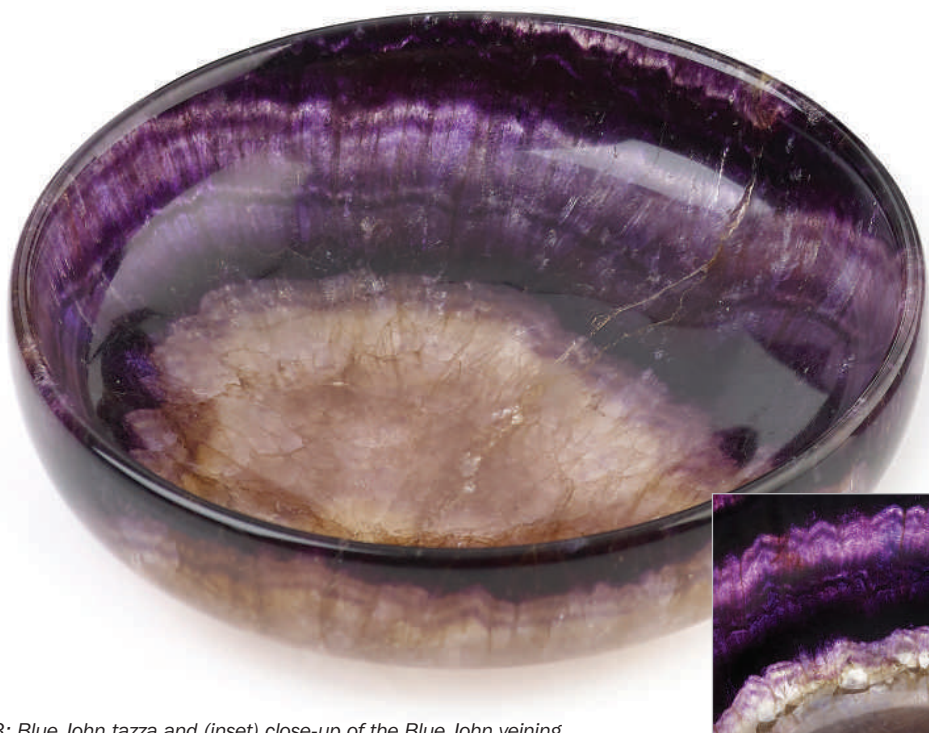
Considering its historical ties to Birmingham, it was fitting that the Blue John auction should be held at Fellows & Sons auction house.

The auction comprised approximately 258 individual lots, covering a wide variety of different shapes and forms. From bowls and tazzas to jewellery, pedestal cups, chalices and urns — there was something for every taste (3, 4).

The first lot offered was a tazza mounted on a column and plinth. The final hammer price of almost £4,500 may seem high for a piece only eight inches tall, but this just reinforced the high profile of Blue John and the level of desirability it commands within the gemmological world. This set



4: Blue John urn with cast acorn and oak leaf surmount, 200 mm high.



3: Blue John tazza and (inset) close-up of the Blue John veining.

the tone for the lots to follow, with many realizing well over the estimates.

Throughout the auction bidding was intense and fast paced — not only from attendees in the room, but also bids from commissions, over the phone and from the internet, either directly or via one of the many auction sites. Bids were coming in in a never-ending stream of competition, with each outbidding the previous in a frantic bidding war. Auctioneer Stephen Whittaker maintained the hectic pace set by the bidding throughout the auction, building tension with each lot, with (more often than not) bids coming in just as the hammer was about to fall.

Notable pieces within the auction included a Georgian paperweight (which some theorized may actually have been a curtain weight); a small scent bottle showing defined banding, measuring less than 50 mm long but which sold for £400, and a set of three small obelisks, presumably originally a matching set of fireplace ornaments, that sold for well over estimate.

One particular piece that was the subject of intense competition between phone and internet bidders was a Birmingham-made Thomas Lyster Mott Art Deco sterling silver necklace, set with 26 Blue John panels (5). Although given an estimate of between £300 and £500, this piece sparked particular interest with bidders, and, after prolonged bidding, the hammer finally fell on an internet bid of £2,000.

Ormlu-mounting featured on several pieces — a gilding technique used by Boulton on many of his urns and vases. Although a highly toxic production method (most gilders did not survive past the age of 40), this technique produced some of the highest quality finishes, which was shown in some exquisite lots, including the final piece on offer: a late eighteenth-century urn. This beautiful piece, which combined the natural spectacle of the purple and yellow banding expected of true Blue John with the neoclassical-styled ormlu rope twist mount and base, presented a unique opportunity to own a high quality piece, at the rather high price of £21,000.

All in all, the auction was a great success, and served to promote the virtues of this rather fine, British material. ■

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5: Thomas Lyster Mott Art Deco sterling silver necklace, set with 26 rectangular cushion-shaped Blue John panels.



David Callaghan addressing delegates on the Sunday.

# Loughborough 2015

Charles Evans FGA DGA and Natalie Harris FGA DGA report from the IRV Conference.

It is said that once you attend an IRV Loughborough Conference you will never want to miss another. Extending over three days, the event, held at Loughborough University, includes a wide range of lectures and workshops by well-known jewellery specialists and gemmologists from around the globe. Knowledge, ideas and inspiration flow from everyone you meet. With plenty of free time allocated to socialise with such convivial, like-minded people, you are sure to make friendships which will last a lifetime. Indeed, this is what Loughborough is really about: meeting old acquaintances, making new ones and, as part of a well-oiled organizational machine, learning from the collective experience of a vast community of diverse jewellery industry workers.

After a hearty Saturday breakfast that would fortify an army, the Gem-A team had a busy morning at the Gem-A Instruments shop in the Wye Suite. Our new TravelGem Microscope took pride of place and our new girdle viewer, with little hearts and arrows viewer neatly crafted into the base, was to prove very popular over the weekend.

The Conference began with Frank Wood, the IRV chairman, addressing all the attendees in the Wolfson's grand amphitheatre, promising a great weekend. The first speaker, Elizabeth Goring, spoke about the women's Suffrage movement and the associated colours, jewellery and medals that were created by and for the women, in her talk entitled 'Wearing the colours; jewellery and the women's Suffragette movement'. In addition to learning about Holloway Prison's role in the force-feeding of prisoners, it was fascinating to learn of the colours that came to symbolise the movement: green (hope), white (purity) and violet (dignity), and how these were represented in jewellery created by suffragettes to help support the movement.

Next up was Joanna Whalley FGA DGA, senior metals conservator at the V&A Museum, with her talk entitled 'A Journey to India: The Jewellers Art Revealed', which took delegates on a journey to India, a trip Joanna made earlier in 2015 with her colleague Susan Stronge, senior curator in the Asian Department and curator of the V&A's new exhibition, the Al Thani Collection. Joanna discussed the traditional practice of 'kundan' jewellery, a form of elaborate Indian gem-set jewellery involving a gem set with gold foil between the stones and its mount, which was popular during the Mughal era. Joanna and Susan gained exclusive access to private workshops of independent jewellers, and shared with delegates the incredible techniques and skill, still put into practice today.

In contrast to the traditional techniques of kundan jewellery is the design and production involved in Parisian design giant Cartier — the subject of Joanna Hardy's talk. Joanna, a jewellery expert famous to many in the trade, took delegates behind the scenes at Cartier, sharing breathtakingly intricate designs and the house's manufacturing process, highlighting the precision and accuracy of some of the most skilled artists and craftsman. With over 30 years' experience working for companies such as De Beers and Sotheby's, Joanna's 'Surprises & Discoveries, the Wonderful World of Jewellery' opened us up to a glittering world behind locked doors.

Sunday saw industry 'godfathers' David Callaghan and Harry Levy address delegates in the morning, whilst after lunch Richard Drucker took delegates through the latest from the gemstone and diamond market. The weekend continued apace; a blur of friendly conversations, exciting new knowledge and a very busy Gem-A Instruments stand.



One of the greatest aspects of Loughborough is the staggering amount of unique workshops on offer. There are over 25 to choose from; thankfully many of the sessions are repeated, enabling delegates to sample many of the delights on offer. The workshops varied from the practical including 'Grading & Pricing Coloured Gems' with Richard Drucker, 'Tucson 2015 (Plus Practical Demos)' with Alan Hodgkinson and 'Practical Polariscope' and 'Chasing Rainbows' with Kerry Gregory, to the informative, including 'Auction Market Update' by Stephen Whittaker, 'How LED, Gemmology and Sustainability are Teaming Up' by Manfred Eickhorst and 'Diamond Price Lists' with Rosamond Clayton. The latter enthralled delegates with a detailed session on how to ensure you are valuing diamonds correctly for valuation purposes by incorporating factors such as size, cut, fluorescence, clarity — and, rather usefully, giving delegates an accompanying manual to assist them. Gem-A's Claire Mitchell hosted a workshop entitled 'Assessment of Mounted Diamonds', where attendees had the opportunity to learn and refresh themselves on their diamond grading techniques. Identification of treated diamonds proved very popular as such stones are increasingly being found on the market and missed treatments could be a very costly mistake. Gem-A Tutor Pat Daly also hosted a fascinating workshop on 'Identifying Jade and its Imitations' — a stone that is becoming ever more popular in this corner of the globe.

This summary by no means even touches the surface of the depth and breadth of workshops offered, but it is certainly clear that all delegates thoroughly enjoyed each session they attended — as could be gathered by the 'buzz' after each one, where they enthusiastically discussed what they had learnt with their friends and colleagues.



Delegates studying samples of jade during Pat Daly's workshop.

In Portuguese there is a wonderfully powerful word with no direct English equivalent; 'saudade', which reflects a combination of sadness, longing and melancholy when reminiscing. After the highs of Loughborough 2015 — the friends, companionship and camaraderie and the intellectual nourishment so richly served — a drive back to London was always going to have a touch of 'saudade'. As the conference weekend drew to a close we were informed that it was the 27th conference that IRV stalwart Sandra Page had expertly organized, but that Sandra will be taking an early retirement after the 2016 event — truly a devastating loss for those who enjoy coming to Loughborough, and leaving large boots to fill. Thank you Sandra and the IRV committee and organizers; you did an incredible job. For those who have never been to this Conference, I urge you to go next year; you won't look back. ■



**Gem-A**  
INSTRUMENTS

## Gem Central: The use of basic gemmological equipment from a lab perspective

Thursday 10 December 2015

Guest speaker Stephen Kennedy will focus on the importance and use of traditional gemmological instruments for the everyday gemmologist; their advantages, limitations and when it's advisable to seek gemstone identification from a lab. Stephen will also provide some useful instrument tips and answer any questions. The talk will be followed by a Christmas tippie, mince pies and a **20% discount on all instruments from Gem-A Instruments.**

To book your place contact [events@gem-a.com](mailto:events@gem-a.com).

To be held at Gem-A Headquarters, 21 Ely Place, London EC1N 6TD  
Doors open 18:00, talk starts 18:30

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# Indonesian silversmithing

Olga González FGA DGA looks at the art and vocabulary of Indonesian silversmithing.



Indonesia, an idyllic archipelago with thousands of islands, is famed for many crafts, including woodworking, batik, ikat, ceramics, wayang and silat. To those in the jewellery trade, however, the sovereign state is synonymous with silver. Here, master craftsmen and craftswomen have perfected the art of filigree and repoussé, as well as the ability to develop the most exquisite handmade chains. Many of the largest design houses outsource their silver manufacturing to Indonesia, either developing entire outposts there dedicated to metalsmithing, or hiring experienced manufacturers and/or work-from-home artisans, to manifest designs into a beautiful, tangible reality.

Distributed internationally to European, American and Asian markets, Balinese silver is the leading silver product. One well-known designer that embraces Balinese silver making and encourages visits to its operations on the island, is John Hardy. Tourists can purchase silver locally at a variety of shops, with silver prices in Bali appealing to the tourism and expat market more than to locals. Tourists are expected to negotiate what they pay. Those working with the silver in large quantities in the trade have prices set by the cost of materials/metal, which fluctuate daily with metal value, combined with the added cost of hours/labour. Labour is cheaper there and the craftsmanship is arguably the best in silver internationally — especially for techniques such as filigree and repoussé. However, to buy as an individual, you would need to visit Bali in person and negotiate. To give you an idea on pricing,

5: The 'rerek' seeds used for cleaning the jewellery.

I negotiated a lovely Balinese-style, solid silver bracelet set with turquoise, from the asking price of US\$380 to about US\$80 (which is still much more than it would have cost if I had purchased it wholesale).

## THE MANUFACTURING PROCESS

The town that is most often associated with silver is Celuk. A hub for tourism and manufacturers of all sizes, it is a common stop for those passing through, wishing to watch jewellery-making in action or hoping to purchase a stunning Balinese-style silver memento. The streets are taken over by the silver trade, with shops side-by-side along the busy moped-clad streets. During my stay I visited two large stores that manufacture on premise, as well as work with local jewellery makers on a piece-by-piece basis, named Prapen and Angel to Angel.

I was interested in getting a glimpse of their manufacturing process, as well as learning the local trade lingo. Both stores worked their silver similarly, with a mix of modern and traditional Balinese methods. Beginning with pure silver granules (1), copper coils (7.5%

1: Various sized silver granules for granulation and phases of silver stretched to make wire for filigree.

2: a) application of silver filigree and b) application of silver granules.

3: Smashing of 'pling-pling' seeds with a few drops of water to make the glue.

4: Silver rings, shown before (left) and after oxidation (right).



6: Traditional handmade, silver, Balinese-style bracelet from Angel to Angel.  
 7: Two traditional handmade, silver Balinese rings. The top ring shows oxidation and granulation, while the bottom ring is hammered with granulation. Both are from Angel to Angel.  
 8: Round pendant with oxidation from Angel to Angel, showing oxidation and granulation.  
 9: Tree of life earrings with filigree and granulation from Angel to Angel.  
 10: Mother of pearl, silver and Tahitian pearl bracelet from Angel to Angel.  
 11: Repoussé dragon centerpiece from Angel to Angel.  
 12: Silver, mother of pearl and Tahitian pearl necklace.  
 13: Mother of pearl, repoussé silver dish with aquamarine.

copper to 92.5% silver) are melted, using a foot-operated torch, to form a sterling silver alloy, with most of the actual silver that is brought into Celuk being mined throughout Indonesia. The alloy is poured into molds to make wire and bars, and the alloys are manually shaped to standards, such as silver bars, wires or granules of varying sizes (this is called *Tempa* and is all done by hand).

*Nindes* is what the Indonesians refer to as the “activity of making silver plate”, with silver bars being manually fed into a rolling mill until the bar itself thins out. Wire is made by manually shaping a bar into a tube form and is then pulled through a draw plate. *Ngaud* is the art of making wire sizes, again manually using the draw plate and a vice made of log. Sometimes the silversmiths use their own foot as a vice. Many of these methods are mechanized elsewhere in the world, but in Indonesia you can see the craftsmen at work employing traditional silver making methods.

For granulation, wire is cut and heated until it liquefies into round balls, and a strainer is used to sort sizes. *Ngibun* is the art of decorating using granulation and filigree with the ancient Balinese patterns. Their master

artisans are experienced in decorating silver by eye, carefully bending wire and gluing without need for measurement — a performance grasped after years of training (2). Interestingly, the glue used in the jewellery-making process is made in-house by each manufacturer, by smashing the seeds of the ‘Pling-Pling’ (*Abrus precatorius*), which is found locally, making it an affordable and environmentally sustainable option. After peeling the skin, the seed is crushed with a few drops of water, forming a sticky substance (3).

When soldering, the Indonesians refer to the system of *ngikir*, which is the activity of “filing a bar of solder into powder form,” with the process taking up to a day and a half to complete. Solder paste is put on the jewellery after the glue has fully dried, and temperature is carefully controlled so as to adhere properly. When the soldered jewellery is placed in boiling tamarind water, or *belimbing wuluh*, the technique is referred to as *ngasemin*, which removes the dirt left by the soldering, leaving the silver in a matt, white state.

Most modern facilities use sulphuric acid for cleaning, but the manufacturers of Celuk prefer embracing traditional methods. After

sanding, the jewellery is dipped in an oxidizing solution and subsequently polished, leaving the raised silver polished and the recessed surface a darker colour, which brings out the beautiful patterns in Balinese silver design. Oxidation does change the look of the silver and is a signature in Balinese silver-making — easily recognizable from across the room (4).

The silversmiths in Celuk rarely rhodium plate since it changes the look of the silver, particularly when oxidized. Instead, to prevent tarnishing, they revert back to the age-old tradition of cleaning their jewellery using the ‘rerek’ seeds (mixed with warm water and scrubbed using a toothbrush) (5). The seeds are also used by the Balinese for washing Batik fabrics, since their foam not only cleans well, but is exceptional for use on delicate products. Going truly green, it is inspiring to see how the silversmiths in Bali combine old and new, as well as local resources to come up with a sustainable way of making jewellery. The town itself is a must-see for anyone passing through who loves jewellery and wants to see the great art of metalsmithing in action. ■

All images courtesy of Olga González.

# Cameos of the Rainforest

Helen Serras-Herman FGA takes a look at work by Rainforest Design®, carvers of beautifully unique cameos.



Set of two unmounted geckos, measuring 25 and 26 mm.

Standing apart from all cameos carved today are the unique, one-of-a-kind shell cameos by Rainforest Design®. Carved in high relief, they are exotic in style and subject matter, and find their roots deep in the rainforests of Panama. Frogs, lizards, orchids, birds of paradise, lilies, hibiscus flowers, hummingbirds, macaws and toucans are some of the fauna and flora rendered so life-like and realistic that they grab your attention and keep you captivated. These cameos are intricate miniature nature scenes of exceptional beauty.

Cameos are a fascinating form of gem carving, which depict faces or scenes with figures. The design is 'raised' above the background material in a relief style by removing matter from the surrounding surface. Shell cameos are commonly carved on layered materials, with a result similar to hardstone cameos carved in banded sardonyx, taking advantage of the contrasting colours.

Cameos carved on shells first appeared during the Renaissance, but they became very popular during the eighteenth and early nineteenth centuries, when French and Italian carvers began using shells widely. Most of these antique cameos are skillfully carved with individual designs. The archaeological discoveries of the nineteenth century of the ancient civilizations brought renewed interest to ancient Greek and Roman mythological subjects, along with beautiful floral patterns.

The orange and white-coloured King Helmet shells (*Cassis tuberosa*) came into Europe in the mid-eighteenth century from the West Indies, and the pink Queen Conch shells (*Eustrombus gigas*), also known as the Emperor Helmet shell, from the Bahamas. Today, among the favourite shells for carving are the *Cassis rufa* (Bull Mouth Helmet) and the *Cassis madagascariensis*, known as the sardonyx shell.



Cameo brooch featuring a frog on heliconia plant, set in 18 ct white gold, displaying delicate open lattice-work.



The Sobralia decora ('Beautiful Sobralia') orchid — a white earth-dwelling orchid whose flower only lasts one day — featured on a 40 mm cameo brooch which takes advantage of the two distinct colours of the shell. Set in 18 ct white gold with 0.73 ct faceted pink sapphires.

### CARVERS OF THE RAINFOREST

The carvers of Rainforest Design® are the Embera-Wounaan, a semi-nomadic indigenous people born in the Darién jungle of Panama, the dense area to the east that shares its borders with Colombia. Women in the tribe create beautiful tightly-woven baskets which are considered to be among the best baskets in the world.

The cameo carvers, all of whom are male, were taught shell carving by North American entrepreneur Andy Ike, who lives in Panama. For years Ike exported Queen Helmet shells (*Cassis madagascariensis spinella*) to Italy for the carving trade. Then he set out to find and teach local artists. The first carver he taught was Lider Peña, who in turn taught his brother and cousins.

The carvers' previous knowledge of carving the local tropical tagua nuts was a

The carvers of Rainforest Design® are the Embera-Wounaan, a semi-nomadic indigenous people born in the Darién jungle of Panama, the dense area to the east that shares its borders with Colombia.

great asset. Tagua nuts are the fruit seeds of the palm tree varieties native to Panama (*Phytelephas*, from the Greek meaning 'plant elephant', and often known as ivory palms or tagua palms). Once they are dried and the brown skin removed the nuts looks very much like ivory in colour and texture. Also known as 'vegetable ivory', tagua nuts are mostly carved as miniature sculptures in the full round, a design attribute that the Wounaan carvers brought to carving the shell cameos, as most of them are carved in very high relief. Carving shell, however, is a more complex endeavor compared to carving the tagua nuts. Even though the hardness of the tagua nut and shell is similar (around 2.5 to 3.0 on the Mohs



A *Cattleya Laeliinae* orchid cameo necklace with intricate lattice work, set with rubellite tourmalines and raspberry pink garnets.

scale), the taguas are tougher and more compact, whereas the shells are more fragile. The Queen Helmet shells also have at least two colour layers, 'knuckles' (lumpy growths) and curvature that the carver must take into the design consideration.

The process begins with Andy Ike selecting the shells. He cuts the blanks (the preforms) in ovals or other shapes and provides the Wounaan carvers with a ready-to-carve material. The carvers use Dremel® power tools with diamond and tungsten carbide burrs for rough pre-forming and carving. Finishing is completed with hand gravers and fine sandpaper, until they achieve a wonderful gleaming lustre on their carved surfaces.

The extraordinary talent of the carvers impels them to create these miniature masterpieces, inspired by the beauty of the tropical rainforest. Recent pieces show open lattice-work — small open areas that give the carving more depth and a three-dimensional look. This piercing method, though, can be very risky during the carving process, as the shell may fracture or break.

### DESIGN AND JEWELLERY

Many endeavours come to fruition thanks to the perfect timing of people and minds coming together. In 2004, Roslyn Zelenka, another expat American living in Panama, came onto the scene. At the beginning she was purchasing the cameos from the



Wounaan cameo carvers.



A Liliun cameo suite, which is an intricate miniature nature scene set in 18 ct gold with akoya pearls. Centre cameo is 40 mm.

carvers and supporting their efforts, and was responsible for promoting and selling the cameos, as well as setting them into jewellery. But with time, Zelenka developed new design ideas, pushing the limits of the carvers' capabilities. The inspiration always comes from the limitless fauna and flora of the rainforest and the cultural heritage of Panama, making them absolutely unique in the world cameo scene.

Several pieces are designed and carved as a suite — a centrepiece with two or more pieces for a necklace, or matching earrings, carved with amazing accuracy symmetrically in mirror-style. Matching sets cannot be created from every shell — to achieve a

five-piece suite it may take examination of between 700–900 shells, making these exotic beauties very rare indeed. All Rainforest Design® cameos, whether loose or set, come with a serial-numbered certificate of authenticity.

Zelenka explores innovative designs and Andy Ike relates this information to the carvers before each carving begins, finding the perfect shell for each design. Once the cameos are finished, Zelenka collaborates with local goldsmiths and coordinates the creation of astonishing jewellery pieces, all skilfully produced. Some pieces are simple pendant/pin settings framing the cameos in 18 ct white or yellow gold and 950 silver;

Matching sets cannot be created from every shell — to achieve a five-piece suite it may take examination of between 700–900 shells, making these exotic beauties very rare indeed.



Starfish cameo pendant displaying extraordinary high relief and taking advantage of the shell 'knuckle', showing high curvature on the reverse side. Measuring 28 mm, set in 18 ct gold.



Three-piece set of lattice-work octopuses, each measuring 31 mm.



A butterfly cameo with open lattice-work set as a brooch in 18 ct gold.

others, especially some of the necklaces, are amazingly complex multi-piece cameo suites set with faceted gemstones and multi-strands of delicate pearls and gemstone beads. Types of jewellery offered

for sale include necklaces, pendants, earrings, brooches, bracelets, cufflinks — even tiaras.

Zelenka is also in charge of marketing these exotic pieces, under the name Rainforest Design®, and placing them with Panamanian and US galleries, jewellery stores and authorized retail representatives. One such representative is US-based Elaine Rohrbach — an old-time friend and phenomenal gemstones dealer — of Gem-Fare, a company that exhibits at the annual Tucson gem shows, where Zelenka brings her latest creations to show.

I met Roslyn Zelenka over a decade ago, when she came looking for me after reading Anna Miller's book *Cameos Old & New*. When she showed me the Rainforest Design® cameos, I was astounded by their

beauty, quality, excellence of fine detail and high-relief carving and, of course, their unique subject matter. Every year, when we meet in Tucson, I marvel at the new designs: tropical angelfish, starfish, octopuses, snakes, seahorses, turtles, quetzal birds, butterflies, dragonflies and countless exotic orchid styles, all set in beautifully crafted jewellery pieces, or sold unmounted — a designer's dream palette. ■

For more information about the cameos of Rainforest Design®, please visit the visually-rich website at [www.rainforestdesign.com](http://www.rainforestdesign.com)

*All jewellery and cameos shown in the photographs by Rainforest Design®. All photos courtesy of Rainforest Design®.*

#### ABOUT THE AUTHOR

Helen Serras-Herman FGA is an acclaimed gem sculptor with over 32 years of experience in unique gem sculpture and jewellery art. Her award-winning artwork has been exhibited world-wide and published in over 160 trade magazines and books. See her work at [www.gemartcenter.com](http://www.gemartcenter.com) and her business Facebook page at Gem Art Center/Helen Serras-Herman.

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# Cameos: sculpture in miniature

Helen Serras-Herman FGA takes a look at a rare collection of cameos, exhibiting at the Phoenix Art Museum until April 2016.



Phoenix Art Museum curatorial assistant Chelsea Ellsworth, responsible for curating this Cameo exhibit, has done some incredible work researching the history, timeline and iconography of the cameos.



Orpheus, carved in Persian turquoise, 2.9 × 1.7 cm, eighteenth to nineteenth century. Image © Phoenix Art Museum. Published with kind permission.

The cameo collection to be exhibited at the Phoenix Art Museum was acquired in 1944 by the world-renowned jeweller Pierre Touraine, who created inspiring jewellery from the 1930s until the 1970s. The Pierre J. and Velma J. Touraine cameo collection was donated in 1983 by the estate of Pierre Touraine to the Phoenix Art Museum, and has been out of sight in the museum vaults ever since.

The origin and creation of the cameos is shrouded in mystery. Sadly, we don't know anything about the original collection owner, the cameo artists or where the cameos were created. The first and only time the Touraine cameo collection was shown to the American public was in May 1954 at the Glendale Gem Festival — the annual show sponsored by the Glendale Lapidary & Gem Society, held at Glendale Civic Auditorium in Glendale, California.

## THE EXHIBIT

Phoenix Art Museum curatorial assistant, Chelsea Ellsworth, is responsible for curating



The portrait of Siegfried carved in green variscite against brown matrix, 5.1 × 3.8 cm, c.1876-1900. Image © Phoenix Art Museum. Published with kind permission.

this cameo exhibit; she contacted me some months ago asking for some help with these cameos. She has done some incredible work researching the history, timeline and iconography of the pieces.

Chelsea very kindly invited me to the Phoenix Art Museum for a private viewing of the collection. The 174 unmounted pieces were fitted in precise cut-out openings in 11 wooden box frames, the way they were

## PIERRE TOURAINE

Pierre Touraine had a fascinating life. He was born in 1907 in Marseilles, France, where he fulfilled a five-year jewellery apprenticeship. He then studied painting and sculpture at the famous L'Ecole Des Beaux Arts (School of Fine Arts) in Paris, and worked 10 years as a master craftsman in the French capital. He worked with gems and created many jewellery pieces for the European aristocracy and royalty of the time, particularly for the coronation of George VI of England in 1936.

In 1938 Touraine emigrated to the United States and lived in New York City, working for Harry Winston and Van Cleef & Arpels. In 1943, in the midst of World War II, when fine custom jewellery was not a priority, he moved to Pasadena, California, helping the war effort by creating jewel bearings for instruments. Immediately after the war he started his own business in Los Angeles and became famous for his freehand faceting, for cutting stones for invisible mountings, and creating jewellery for a high-end clientele. He was the rare combination of lapidary, jewellery designer and master goldsmith.

In 1960, Touraine moved again due to his wife's health, to Scottsdale, Arizona, where the landscape and culture of the American Southwest inspired him to create unique jewellery pieces, and taught European jewellery manufacturing techniques to young Native American craftsmen eager to learn non-traditional techniques.



President Gerald Ford accepting the Bicentennial Jewel in 1977, created by Pierre Touraine in 1976. Photo © White House Photographic Office (WHPO) — Schumacher, Gerald R. Ford Presidential Library and Museum.





Most of the cameos are carved in agate; many are in black-and-white onyx, while others are in orange-and-white sardonyx, and several are engraved in pure cornelian. A four-layered cameo portrait of Michelangelo can be seen in upper row of lower box.



When I privately viewed the cameos with Chelsea, we looked for any signature marks, dates or any other markings that would help us with the identification of these pieces.

displayed at the 1954 show. The vast majority are cameos, with a few intaglios, dating from 100–200 years ago. They are tiny masterpieces ranging in size from less than an inch to over two inches across. Themes depict figures and scenes inspired by ancient Greek mythology, as well as some historical portraits.

Most of them are carved in agate; many are in the banded black-and-white or brown-and-white onyx, while others are in orange-and-white sardonyx, and several are engraved in pure cornelian. A handful of them are carved in different materials, such as turquoise, variscite, rock crystal and shells. Some show not only two layers of colour but also multiple layers, and the carvers have taken full advantage of that. The carving in relief utilizes the layering characteristics of the material to achieve a colour contrast between the raised design and the background. Some are fairly flat, carved as bas reliefs; others, especially the ones we thought were older, are carved in a much higher relief form. Once we looked at the entire collection we were able to somewhat bundle the works by artist or period.

Another mystery is why Pierre Touraine acquired this collection. Was he going to use the cameos for jewellery? Did he intend to

keep it just like that, as a collection? Was it a payment in lieu for work that he had done? It is known that he was perfectionist in his work, and being a gem and art lover, he was probably simply attracted to the beauty and fascinated by the artistry of these the cameos, just like I am.

Looking at this amazing cameo collection there is a lot that we contemporary gem carvers can learn from studying these masterpieces. The precision of their technique and meticulous workmanship, the way the carvers used the gem materials to their advantage featuring the various bands and colours, their approach to fitting figures and scenes in limited space, the way they used undercutting to create depth of field, and the method of telling a story, are all aspects to be considered in our current work, even if the style of carving may be different.

I am overwhelmed with the artistry of the pieces and intrigued by the mystery surrounding the collection and the artists. *The Cameos: Sculpture in Miniature* exhibit is on display for a very limited time, 28 November 2015 until 17 April 2016, and should not be missed by any art and gem lovers.

For those of you travelling to Arizona for the Tucson gem shows in February, Phoenix is an easy hour and a half drive from Tucson. For open hours, directions and admission fees, visit [www.phxart.org](http://www.phxart.org). ■

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#### ABOUT THE AUTHOR

Helen Serras-Herman is an acclaimed gem sculptor with over 32 years of experience in unique gem sculpture and jewelry art. See page 31 for Helen's full biography.

Photos by Helen Serras-Herman, except where otherwise stated.



*Heracles or Hercules and Greek Maiden, both carved on sardonyx, 2 .9 cm, c. eighteenth to nineteenth century. Image © Phoenix Art Museum. Published with kind permission.*



*Bacchante, the female companions of Bacchus, carved on Brazilian agate, 4.1 × 3.2 cm, eighteenth and nineteenth centuries. Image © Phoenix Art Museum. Published with kind permission.*



*An unusual cameo in full-face instead of profile featuring the portrait of Marie Louise, second wife of Napoleon, in white and brown agate. Image © Phoenix Art Museum. Published with kind permission.*

# Fei Cui Jade, A Stone & A Culture

If ever there was a gemmological, mineralogical and professional literary work to describe the ins and outs of jade and Fei Cui in English, this one would be it. The book records the in-depth scientific research and studies on jade and Fei Cui of Professor Mimi Ou Yang and Humphrey Yen over more than 30 years. Professor Ou Yang is an Honorary Life Member of Gem-A and honorary chairman of The Gemmological Association of Hong Kong. She is also nicknamed the 'Jade Lady' by gemmology and jewellery colleagues both in Hong Kong and internationally.

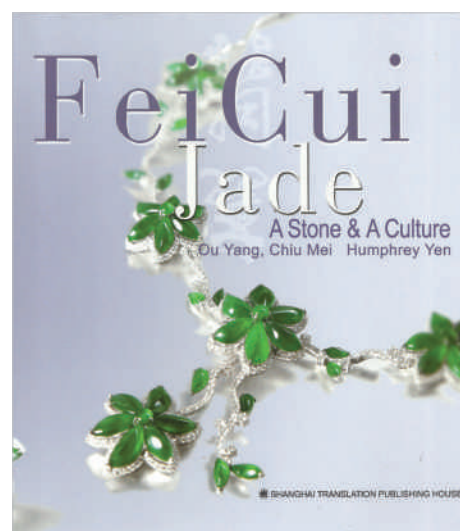
In this book the authors share around 380 stunning colour photographs, illustrations and diagrams. The book describes jade, especially Fei Cui, from the ancient Chinese culture to contemporary, geological deposits, mining and production, factors of valuation, varieties, classification, nomenclature, processing techniques, classification of finished products, simulants, artificial treatments and their identification, principles of valuation, trading and marketing, as well as a glossary of jade and Fei Cui terminology.

This is a comprehensive publication recording the full gemmological bibliography of Fei Cui, and a combination of original ideas and research which can be found in no other book.

Professor Ou Yang said: "I would like to contribute to the jewellery industry the results of my lifelong study, not only to the Chinese communities, but also to every jewellery and gemmology colleague in the world. This is why I strived to put my studies into English during the past decade."

*Fei Cui Jade, A Stone & A Culture* is a veritable 'bible' of Fei Cui, providing in-depth information highly recommended for gemmologists, mineralogists, collectors, students, jewellers and jade traders, as well as anyone interested in jade and Fei Cui. It is also a significant record of Chinese culture and a scientific study of this precious gemstone translated for English speakers.

**Christine Chu FGA**



***Fei Cui Jade, A Stone & A Culture***

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& Humphrey Yen

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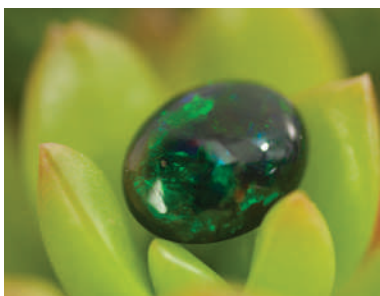
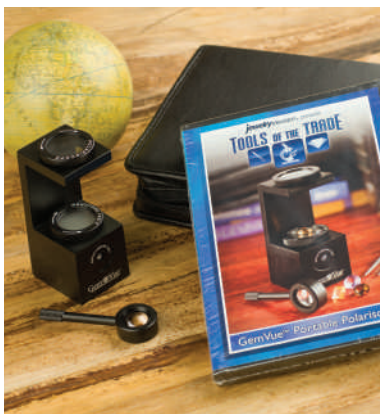
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