Gems & Jewellery

May/June 2015 / Volume 24 / No. 3

BaselWorld 2015

Flint from Kefalonia

Synthetic diamond production in Sweden

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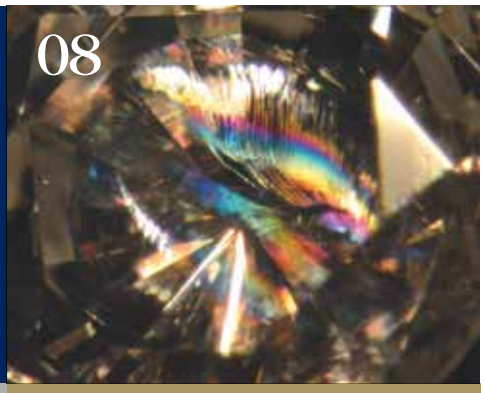
May/June 2015

Hands-on Diamonds

Grenville Millington looks at cleavage in diamond



An interview with Gaetano

We speak to Dr Gaetano Cavalieri about the future of the industry

The end of an era

An overview of the history of synthetic diamond production in Sweden

BaselWorld 2015

A roundup of highlights from this year's BaselWorld

Cover Picture

Cockatoos carved from one piece of natural rough Brazilian morganite by Alfred Zimmerman, featuring blue sapphires, yellow gold and fine diamonds, measuring 150 × 170 × 180 mm. See Charles Evans' article on BaselWorld on page 30.

Published by

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Gem-A

THE GEMMOLOGICAL ASSOCIATION OF GREAT BRITAIN

Annual General Meeting 24 June 2015

We invite all current members to come along and have their say at our AGM, to be held on Wednesday 24 June 2015 from 10:30 at The Crypt, Ely Place, London.

Programme:

10:30 — Welcome
11:00 — AGM starts
12:00 — CEO James Riley FGA DGA will give a talk on Gem-A's trip to Burma
13:00 — Refreshments, canapés and networking
14:00 — Close

To download the Notice, Agenda, Annual Report and Accounts please visit www.gem-a.com/news--events/events/gem-a-annual-general-meeting.aspx.

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Best in show

Summer is nearly upon us and by the time those of you in the UK read this we will know who is going to be governing us for the next five years — at least, one hopes so! It's strange that traditionally spring and early summer are a positive time of year for our industry, starting with the Hong Kong and Basel shows and then riding the wave through JCK Las Vegas. This year, however, things seem a little uncertain. Hong Kong was a sluggish show by all accounts, as was Basel. This was particularly true at the well-organized Diamond Show and the show in Freiburg. Both had excellent exhibitors and were well laid out, yet the visitors stayed away. It's true that neither have the glitz and glamour of BaselWorld — which has, in a way, become a parody of itself. There are amazing things to see at the very top end of the market but it is no longer a true jewellery or gem show representing the whole trade. However, if you want to see the biggest and best, it's still the place to be. It was good to see so many members and friends of the Association at these events.

Back to uncertainty: in the UK we have endured one of the most lackluster election campaigns in history. In my own constituency you wouldn't even know it was taking place, but then as Flanders and Swann put it: "We are strictly non-political — we're all Conservative"… and the market feels the same. It feels as if the spark has gone out of it. In the UK we have had the Hatton Garden heist which has, as to be expected, been sensationalized by the press, although it was admittedly a very daring robbery. Life goes on; the insurance companies will take a bath and all our premiums will go up next year, but it is excellent to see the way in which the Hatton Garden community has worked with the police and the swift action taken by insurance companies to help their clients in their time of need. No one likes a robbery, but at least no one was hurt or mentally scarred by the incident.

In other news the conference season is in full swing, with the 69th Gemmological Association of Australia's Federal Conference, the Dubai Diamond Conference, the Swiss Gemmological Society Conference, the Scottish Gemmological Association's Conference, the American Gem Society's International Conclave and the Sinkankas Symposium in the USA all having taken place in the last few weeks. These have been followed by the CIBJO Congress in Brazil and the ICA Congress in Sri Lanka, as well as the Accredited Gemologists Association and Rapaport Conferences taking place during the JCK Las Vegas show at the end of May.

I travelled to Mallorca recently, not on holiday, but as a speaker at the Mallorca GemQuest Conference organized by Geoffrey Dominy. Streamed live to almost 800 people around the world, the Conference broke new ground. It was an excellent event and a full report will appear in the next issue of *Gems&Jewellery*.

On that note, it's time to put the date for Gem-A's 2015 Conference in your diary: this year it will be held on 21 and 22 November at the Royal Institute of British Architects (RIBA). The 2015 Conference will be a special one, as we will also be hosting the 18th FEEG Symposium. As always there is an impressive array of speakers as well as seminars and visits either side of the conference.

Last but not least… another date for your diary is the AGM on 24 June. This year it will be held from 11am in the Crypt at Ely Place and will be followed by a drinks reception and a talk about Gem-A's recent field trip to Mogok. I look forward to seeing many of you there.

James Riley

Chief Executive Officer

James Riley

Chief Executive Officer

… it is excellent to see the way in which the Hatton Garden community has worked with the police and the swift action taken by insurance companies to help their clients in their time of need.

Gem News

The latest stories from around the trade

CIBJO LAUNCHES CORAL BLUE BOOK

At its Congress in Salvador, Brazil, CIBJO agreed amendments to the new Coral Blue Book, the sixth and latest volume in the CIBJO Blue Book series. Prepared by the Coral Commission, headed by Vicenzo Liverino, it provides definitive sets of grading standards and nomenclature for an industry in which there is an almost complete absence of harmonized system endorsed by International Standards Organization (ISO). CIBJO's other Blue Books cover diamonds, coloured gemstones, pearls, precious metals and gemmological laboratories.

"The purpose of the CIBJO Coral Commission is to both preserve and develop trading in coral, and jewellery comprising coral, through the development and codifying of regulations and standards that promote consumer confidence and fair trade," wrote Mr Liverino. "The Coral Blue Book will be an integral part of this process. It has been designed to provide knowledge about the product, as well as to assist all those involved in the trade, by recording the accepted and common trade practices, and creating a set of standard nomenclature for the industry throughout the world," he continued.

A copy of the Coral Blue Book will be downloadable from CIBJO's website in the near future.

DIAMOND TRADERS TAKE ON RAPNET

A group of leading Israeli diamond traders and manufacturers has decided to post its diamond stocks at full prices on the RapNet Diamond Trading Network (RapNet). The decision follows the publication of the latest Rapaport price list, which showed that Rapaport had reduced the prices of a wide range of diamond categories without any commercial justification. The group has expressed not only its frustration and concern with the lack of transparency as to how the Rapaport price list is compiled, but also noted that the high frequency and the sharp changes in the price list are among the major causes of the volatility in polished diamond prices. The companies therefore decided to post list their stocks on RapNet only at full prices.

The companies participating in this initiative on RapNet all manufacture and trade diamonds in Israel and abroad. Expressing concern with the negative effect that frequent price changes have on the downstream diamond market and, ultimately, on the confidence of the end-consumer in diamonds, they suggest that the diamond industry "would be much better served by a long term price list that would advance price stability, significantly increase customer confidence and prevent unnecessary commercial damages to diamond manufacturers".

The Israeli companies' initiative is also in support of a similar step taken by a number of Indian diamond companies which became a major topic of discussion at the Israel Diamond Exchange complex and garnered outspoken support from the Israeli diamond business community.

LUCARA RECOVERS 341.90 CT DIAMOND

Vancouver-based Lucara Diamond Corporation has recovered a 341.90 ct gem-quality diamond from its Karowe mine in Botswana last month, while processing fragmental kimberlite from the central and south lobe interface. The type IIa rough diamond shows exceptional colour and clarity. Lucara intends to sell the diamond along with two other stones that are larger than 100 ct.

According to the company excellent progress continues to be made on the plant optimization project at Karowe. Construction activities are essentially complete and commissioning activities of the final sections has commenced.

Tracer testing of the new XRT diamond recovery machines has been completed. A small volume of material was processed through the machines to check material handling aspects, which led to the recovery of a 7.8 ct diamond. It was expected that the new recovery and XRT sections would be integrated into the main treatment plant before the end of April 2015.

William Lamb, president and CEO, commented: "The recovery of this magnificent stone once again confirms the quality of diamonds contained within the Karowe resource. Timing of the sale of these exceptional stones is still to be decided."

Gem-A events

SHOWS

JCK Las Vegas
29 May–1 June
Booth L116, Mandalay Bay Resort & Casino, Las Vegas, Nevada, USA
One of the most anticipated shows of the year, Gem-A returns to the Entertainment Capital of the World. This year's show will feature a host of networking events, complimentary education sessions and a fine selection of finished jewellery and gems. Be sure to visit the Gem-A Booth, number L116.

International Jewellery London (IJL) 2015
6 September
Olympia, West Kensington, London
International Jewellery London (IJL) will once again wow London with its amazing array of all things jewellery, diamonds and gemstones. Whether you're a jeweller looking to find new collections, a diamond or gemstone dealer seeking a new supplier, or simply an industry professional looking for or offering an industry service, IJL is the perfect event for you. And with IJL celebrating its 60th year in 2015, this year's special anniversary event promises to be better than ever.

GEM-A EVENTS

Idar-Oberstein Field Trip 2015
13–20 June
Idar-Oberstein, Germany
Hurry, last few places available! Following on from the outstanding success of the visit to Idar-Oberstein in June 2014, Gem-A, in collaboration with Deborah Mazza FGA, has organized another fantastic trip to the centre of the lapidary world. Gem-A will take you 'closer to the source', allowing you a unique opportunity to visit the Edelsteinminen Steinkaulenberg, Kupferbergwerk in Fischbach, DGemG, Schneider gem tools, Deutsches Mineralienmuseum and Historische Weiherschleife, whilst also getting the chance to sample the very best of German small-town culture, with a chance to visit various lapidaries and gem workshops. To book contact events@gem-a.com.

Gem Central: Ian Mercer talks Jade
11 June
Gem-A Headquarters, London
Whether you are a student in gemmology who wants more practical experience, a gem and mineral enthusiast who would like the opportunity to handle other collections, or a member of the jewellery trade who is keen on examining some of the new synthetic treated stones on the market, Gem Central evenings are for you.
Students and Gem-A Members: Free
Non-members: £5

Gem-A AGM
24 June
The Crypt, Ely Place, London
Visit http://www.gem-a.com/membership/agm-2015.aspx to download the Notice, Agenda, Annual Report and Accounts.

Programme:
10:30 – Welcome
11:00 – AGM starts
12:00 – CEO James Riley presents a talk on Gem-A's recent trip to Burma.
13:00 – Refreshments, canapés and networking
14:00 – Close

Gem-A Conference, incorporating the 18th International FEEG Symposium
21–22 November
The Royal Institute of British Architects (RIBA), Marylebone, London
Save the date — more information to follow.

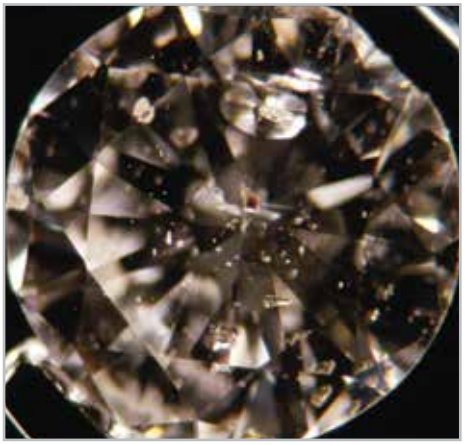
OTHER EVENTS

Loughborough Conference 2015
12 September
Burleigh Court, Loughborough University, Loughborough
Continuing a long-running tradition spanning over 27 years, the annual IRV Loughborough Conference has become a permanent fixture in the calendars of many current and prospective Registered Valuers. Boasting a number of first-class main speakers and insightful, professional workshops covering a variety of aspects of the valuing trade, the IRV Loughborough Conference is a must for anyone interested in becoming a valuer.

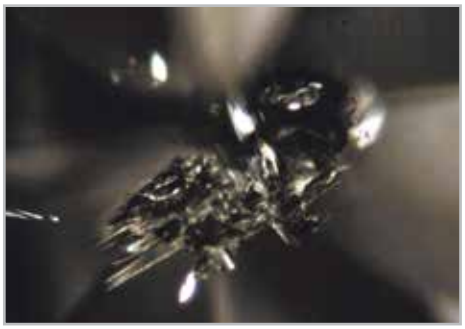
As Sponsors, Gem-A will once again be on-hand throughout the conference to discuss education and training, as well as exhibiting our range of instruments and publications fit for the working valuer.

The ins and outs of polished diamonds: cleavage

In the third instalment of his photo series on polished diamonds, Grenville Millington FGA takes a look at cleavage in diamonds.



1: An oval cleavage disc (top centre), probably caused by tension.



2: This central black 'spot' was seen to be a cluster of graphite-lined cleavage discs. Magnification approx. 60×.

A common inclusion in polished diamonds is cleavage fractures, either singly, scattered about or as a mass. A cleavage fracture (large or small) occurs along a plane of weakness in certain minerals, with diamond possessing four directional planes of weakness, all parallel to a possible crystal face. All gemmology students know this. You can have a go at cleaving a crystal on a piece of Iceland spar, or, if you are more adventurous, on a topaz crystal. Both of these minerals produce flat cleaved surfaces without too much effort being required. Diamond, however, needs quite a considerable effort to produce cleavage fractures — even then it doesn't produce a single flat surface, instead giving a series of narrow steps. The plane of each of the steps will, of course, be parallel to one crystal face or another.

In this article we shall be looking at cleavages produced by natural forces (i.e. already present when the stone was cut and polished) and cleavages occurring after polishing.

Quite often small cleavages have been produced during crystal growth or soon after, resulting in the cleavage being wholly within the crystal, and thus not representing any great threat to future stability. In **1** the oval disc (upper centre) sits along a cleavage plane. If this were another gem it would be called a tension halo, which is what it is, but in diamond it is referred to as a cleavage disc.

A compact group of these discs (with their planes aligned to different cleavage directions) is not uncommon, and if these disc-fractures have graphite linings then a 'black' inclusion may result (**2**).

Most of the cleavages seen in polished diamonds, however, extend from a surface.

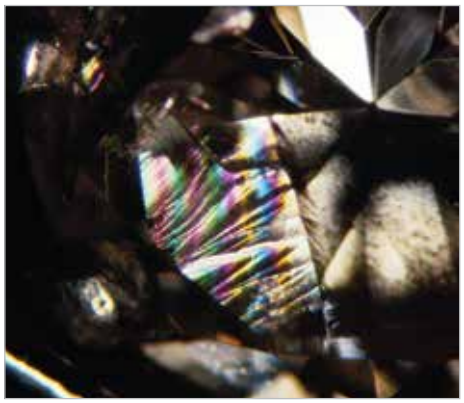
Some diamonds have obviously had a perilous time during crystal formation or in their movements thereafter, as shown by the number of cleavages they contain (**3**).

As the cleavage plane usually reflects light it becomes a major player in the clarity grading of polished diamonds. Even one is generally enough to bring the grading down to SI or below. In **4**, the cleavage is from a pavilion facet (although viewed through the crown) and is more prominent in this microscope view with darkfield illumination (i.e. from below) than it appeared in normal viewing mode.

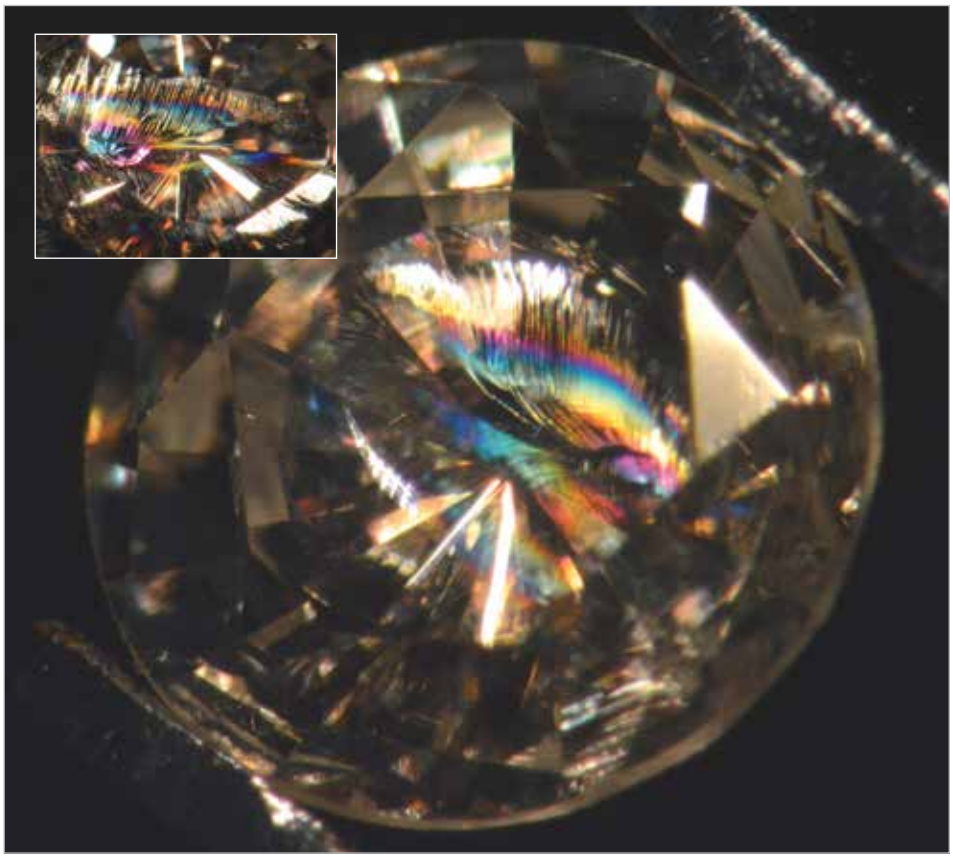
The cleavage fracture shows some faint iridescent colours, but some examples can be quite striking in their colourful display (**5**).

3: Cleavage fractures of all sizes are present in this diamond and they are also responsible for the nicks in the girdle (bottom left).

4: A cleavage, although from the pavilion surface, can be seen through the crown, giving a piqué 1 or Included 1 (I1) clarity grade.



5: This mounted diamond contains a cleavage displaying spectral colours. Magnification approx. 20×.



6: Diamond, 0.27 ct, showing diffraction colours from a large cleavage, and (inset) the rippled or stepped nature of the cleavage fracture.

The diamond shown in **6** has a very large cleavage relative to the polished stone, which is quite spectacular if the view can be angled correctly to catch the diffracted light.

A closer view of this stone also gives us a chance to see the rippled nature of the cleavage plane: it's not flat at all (inset).

The colours seen in examples **5** and **6** are, of course, produced by light diffraction, but on occasions the cleavage itself may contain the colouring matter, usually iron staining when the fracture is surface reaching (**7**).

Large cleavages can be a threat to the stability of the stone as knocks and bangs could cause them to extend further or, at worst, continue fully across the stone — maybe producing two stones for the price of one!

The central cleavage shown in **8** is a good example of one that is quite extensive but not that noticeable.

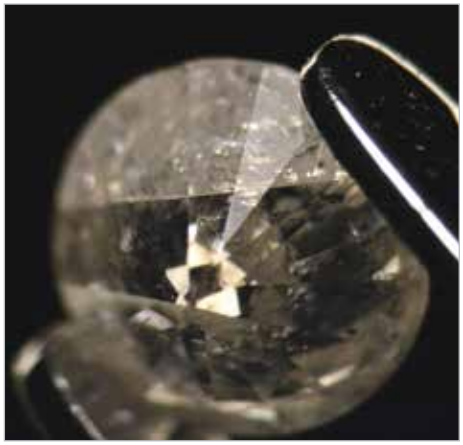
The example shown in **9**, viewed from the pavilion side, shows a cleavage across the whole of this diamond, but the stone remains whole (for now).

Although we began by saying how diamonds are quite tough and are less reluctant to produce perfect cleavage faces than those seen with topaz, it is inevitable that there will be some accidents during the jewellery-making process, especially when stone setting. Such accidents present us with a wonderful chance to look at cleavage faces of diamonds in more detail, which, in turn, gives us a better understanding of the internal make-up of the crystal structure.

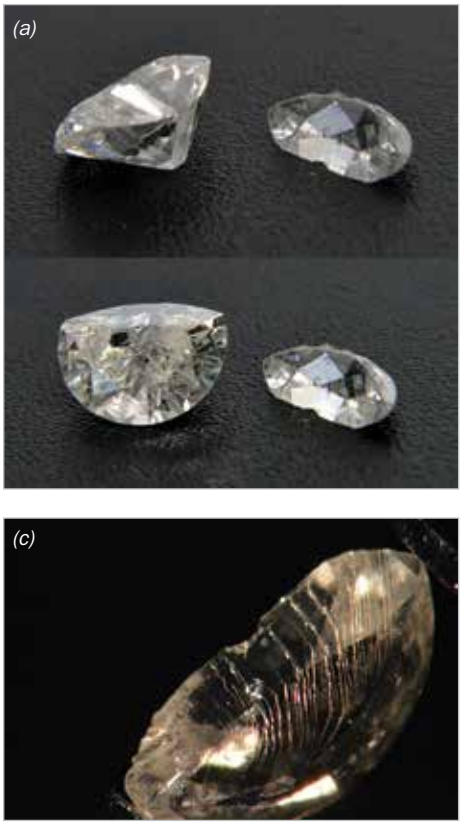
Shown in **10a** is a half carat diamond that I sent into the setting workshop — only now you are looking at the state that the setter brought it back to me. These things happen, which is why it is preferable for the end user to buy their diamond already set, because if they buy it loose and then have it set and

7: Large cleavage fracture situated just below the girdle which contains reddish iron staining (lower right). Notice the reflection of this on the opposite side.

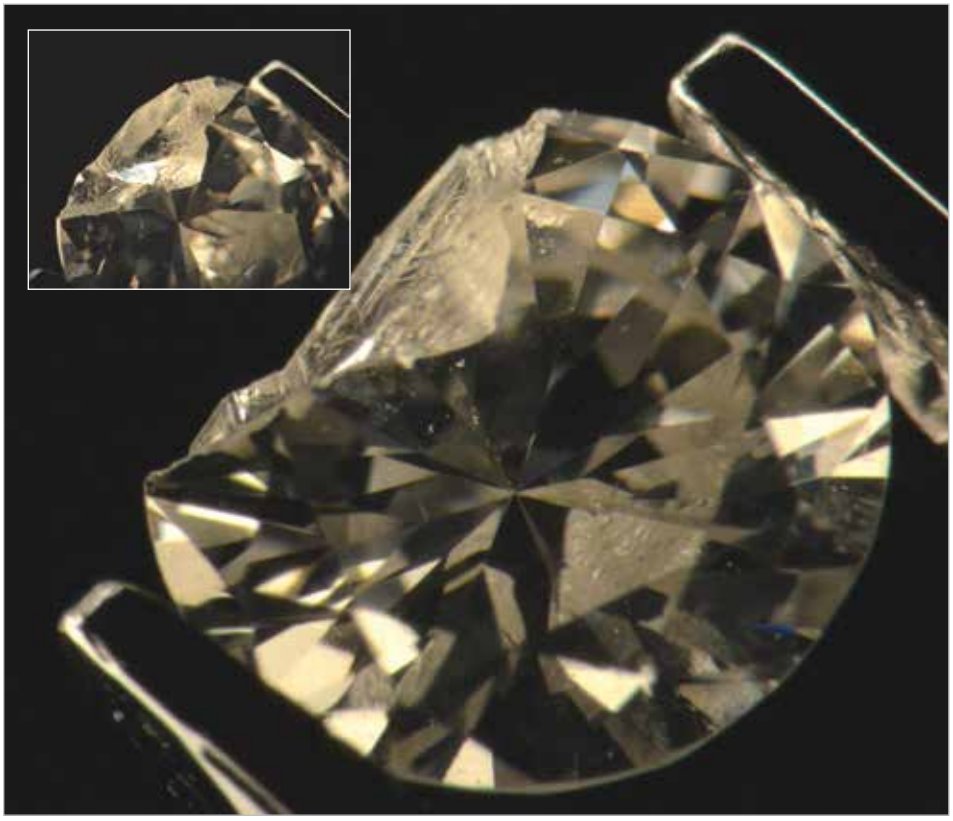
8: A cleavage extending from the centre of the table to beyond a star facet on the left.



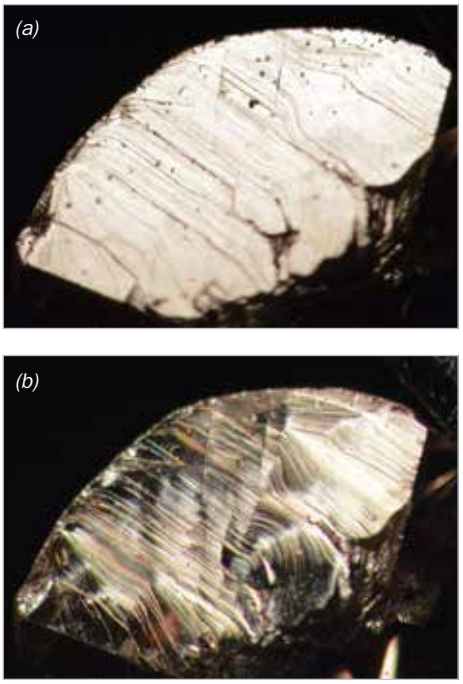
9: Diamond, 0.17 ct, viewed from the pavilion side, showing a cleavage plane extending across the whole of the stone.



10: A brilliant-cut diamond, 0.56 ct, after being cleaved during setting. (a) Two views of the diamond, (b) the larger portion, (c) the smaller portion (the bottom left of this piece fits against the top right piece of (b), and (d) the main cleavage face, as seen in (b), is shown in the dark area across the right of this picture. Look at the stepped effect shown in two areas on the table surface. Magnification approx. 80×.



11 and inset: Diamond (0.22 ct) with irregular cleavage surface.



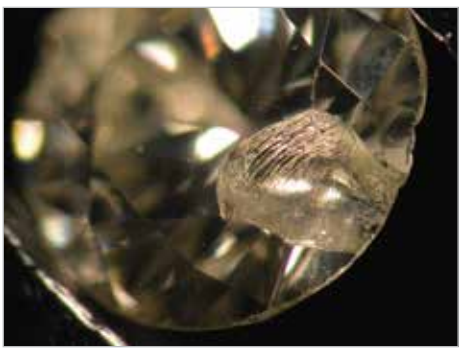
12: Light brown diamond, 0.10 ct, displaying (a) a more even stepped surface and (b) colour interference across its finely stepped surface.

an accident happens the setter will not take responsibility for replacing it!

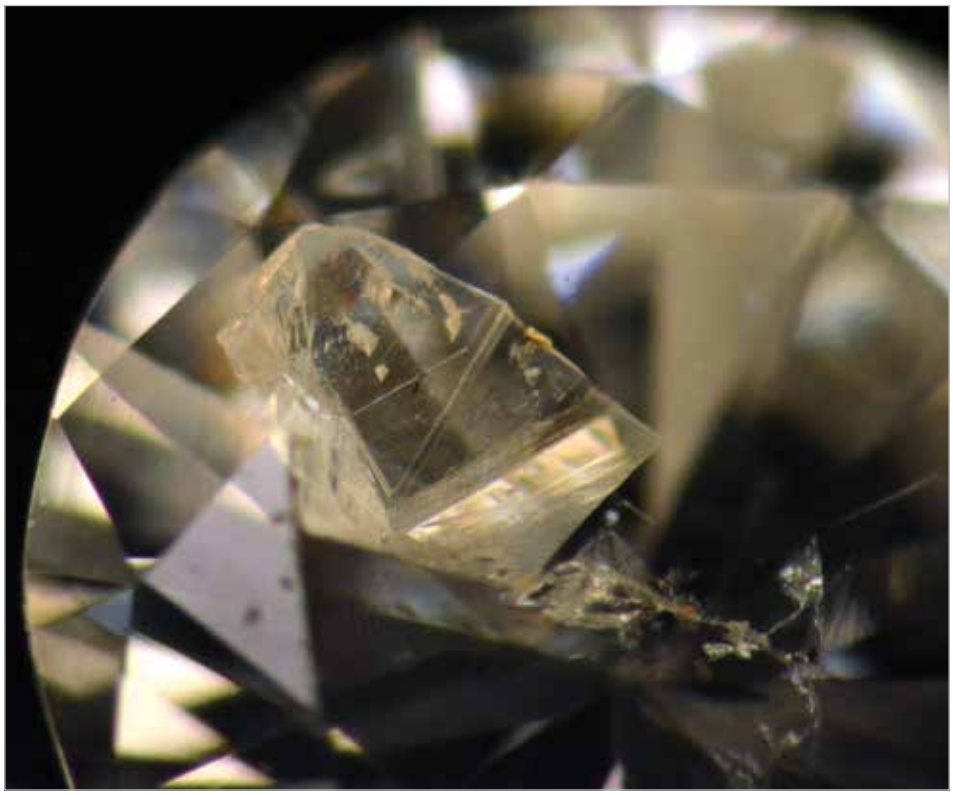
You may think from looking at **10a** that the cleavage plane is quite flat and regular, but have a closer look at **10b** and **10c**. The narrow steps or terraces of the cleaved surface are closer together along one side, but look at the table facet damage in **10d**.

The stone shown in **11** is similarly cleaved in two, but you will notice the break is far from flat, whilst a small light brown diamond gives a much more uniform surface across its cleavage 'accident' (**12**).

Quite often the force applied to the stone does not split the stone in two but results in a 'chip'. The surface of the chip will show cleavage steps, as in **13**, which has an overall curved structure.

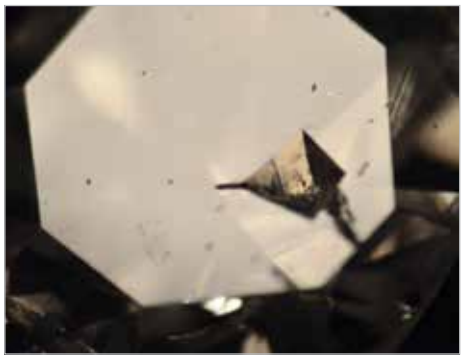


13: Curved chip in a 0.10 ct diamond, but the surface displays narrow, multiple cleavage steps.



16: A section of stone bounded by cleavage planes is still intact in this 0.18 ct diamond.

14: Extensive cleavage terraces plus a missing section are the result of a force applied to this 0.11 ct diamond.

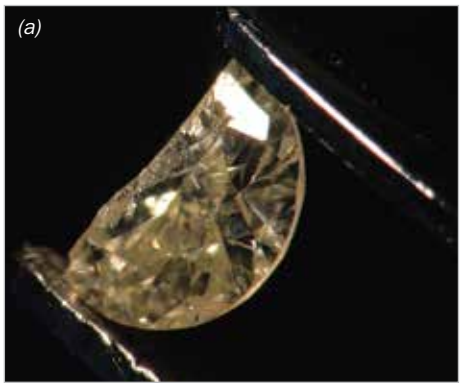


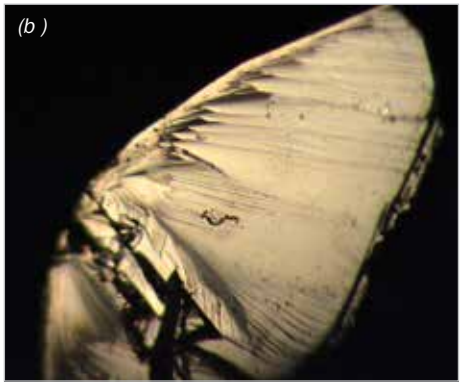
15: A section of stone bounded by cleavage planes has been lost after cutting in this 0.08 ct diamond.

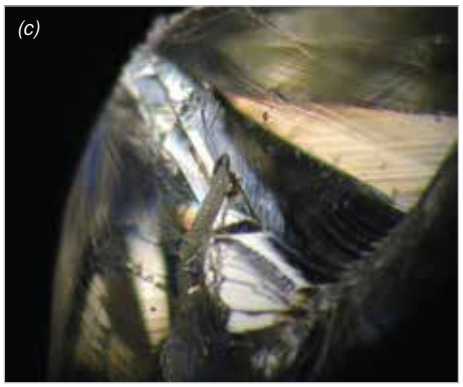
Large cleavages can be a threat to the stability of the stone as knocks and bangs could cause them to extend further or, at worst, continue fully across the stone — maybe producing two stones for the price of one!

This chip is somewhat unusual in that it appears on the crown side. This type of chip is more common when the setter slips with a 'pusher' (a hardened steel tool with a small, flat end used for pushing the claws onto a gem being set) and catches the edge of the diamond. This produces a small chip on the girdle, yet in **13** it continues as a series of steps all the way down to the culet.

In **14**, however, the force applied to the diamond was enough to remove a sizeable piece — also note the extent of the cleavage terraces on the table damage.







17:(a) Cleaved diamond, previously 0.18 ct, but now 0.13 ct, (b) the cleaved surface of the diamond displaying smooth terraces but also a perfect triangular pit — also note a row of small triangles at the bottom, and (c) triangular depressions in the diamond.

The damage to the table of the diamond featured in photo **15** is, however, due to more natural causes. A small section of the stone bounded by natural cleavage planes and exposed during cutting has been set free.

A similar scenario is shown with the diamond in **16**, although here the affected section of stone is still intact.

The damaged diamond depicted in **17a** is interesting; the cleaved face is fairly flat but displays shaped terraces and within the newly created face is a cavity displaying a perfect equilateral triangle boundary. Near the bottom of the photo you can also

18: Treated pink diamond, 0.23 ct, with price-lowering central cleavage inclusions.

detect a row of small triangles, shown in more detail in **17b** and **17c**.

We looked at triangular pits ('trigons') in the first of these articles (see *Gems&Jewellery, Volume 24, No.1, page 20–24*) and they were the well-known external features of octahedral diamond crystals. There is some speculation about their formation — are they due to etching, as with many gem species, or are they due to growth irregularities? I've always thought the latter and I think the presence of these triangular features shown in **17** seems to point to this conclusion.

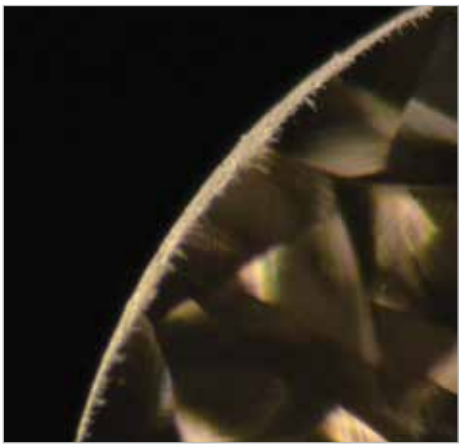
For the most part, cleavages are less spectacular than the examples we've been viewing with the help of the microscope. They are seen as lowering the value of polished diamonds, as seen in this treated pink brilliant, **18**.

Sometimes we encounter multi-cleavage cracks around the girdle of a diamond, caused by fast bruting, producing an effect known as 'bearding' (**19**).

Less seen in modern jewellery but not uncommon in lower-priced jewellery around the turn of the nineteenth and twentieth centuries were very small diamonds that were cleavage fragments, and which were simply known as 'cleavages' or 'slivers' (**20**).

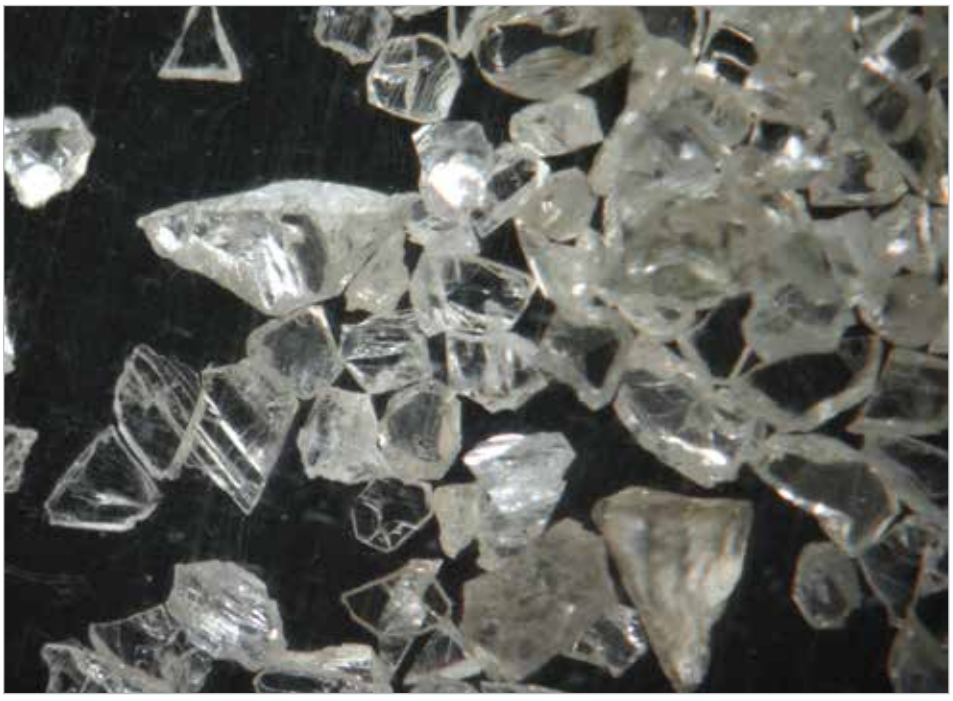
Perhaps we shouldn't leave the subject of cleavages in diamonds without mentioning fracture filling. The theory is simple: if a fracture in a stone reaches the surface (or from the other point of view, extends from the surface) then it can be filled with a substance that will reduce its visibility and possibly increase its saleability. This has been performed on diamonds since the late 1980s with a glass-like filler that has an RI just below diamond. Identifying those diamonds that have been treated in this way is yet another skill that today's gemmologists need to learn. It requires an overhead light and the stone turned so that the viewing angle is almost that of the cleavage fracture plane. Shown in **21** is a treated diamond from two slightly different angles, clearly showing the tell-tale purple flash effect defining the filled fracture.

In the next issue I shall be concentrating on just two diamonds in my possession. Having acquired them approximately 25 years apart, I had never connected the two until I began to take photos for this series. I was 'holey' amazed — and no, it's not a spelling mistake. ■



19: Mini-cleavage fractures, called 'bearding', around the girdle of a 0.10 ct diamond.

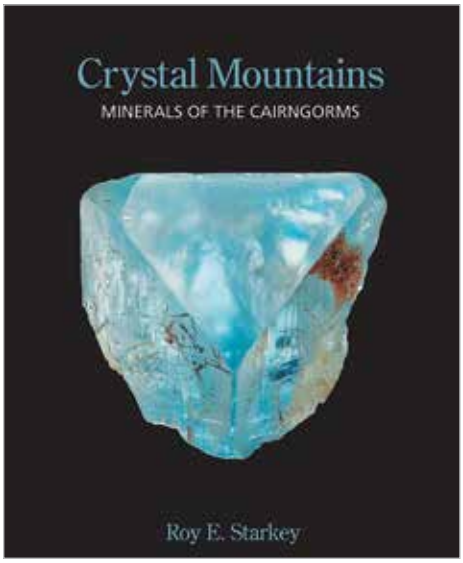
All photos Grenville Millington FGA.



20: Very small cleavage fragments, called 'slivers', were often used in lower-priced jewellery around 1900. The average size shown here is around 0.06 mm across.

21: Diamond (1.08 ct) seen from slightly different angles, displaying purple flash of a filled cleavage fracture. Magnification approx. 7×.

Crystal Mountains: Minerals of the Cairngorms



Crystal Mountains: Minerals of the Cairngorms
By Roy E. Starkey
Published by British Mineralogy Publications (2014), 184 pages
ISBN-13: 978-0993018213
RRP: £25 (softback)

Crystal Mountains: Minerals of the Cairngorms by Roy Starkey provides a comprehensive account of one of the few commercial gem-producing sites in the British Isles.

The Cairngorms is the most northerly and most mountainous national park in the UK. Maps and photographs are used to illustrate descriptions of this dramatic area which was popularized by Queen Victoria and now attracts walkers, skiers and nature lovers, but which remains relatively remote and hard to explore.

Accounts of the recovery of cairngorm (smoky to yellow quartz) go back to the eighteenth century, and include one written by a fugitive from the battle of Culloden who thought it worthwhile to delay his flight in order to search for the gem.

A chapter on the geology of the area outlines the history of research and summarizes recent theories of the origin of the granitic rocks which underlie it. The chapter also mentions the pegmatites which host the gemstones and the weathering processes which have made them accessible.

The chapter describing the collectable minerals of the region is likely to be the most interesting to gemmologists. Quartz is the most common gemstone found here, and its terminology is discussed, including the use of the term 'cairngorm'. Details are also given about the less abundant specimens of beryl and topaz. Examples of these stones, and of rarer minerals found in and around the granites, are beautifully illustrated in over 130 photographs. For each picture the main features of gemmological interest are pointed out, with localities, current whereabouts and curation details.

Later chapters incorporate contemporary reports and previously unpublished photos of the recovery of the gemstones and descriptions of the collections in which they may be found, including royal collections — some of which include rough and polished stones found by Queen Victoria and Prince Albert. Museum collections are listed, although many of their specimens are in storage and are otherwise not visible to the general public. Accounts are also given of lapidaries and jewellers who have worked with and used the gems in jewellery. The final chapter discusses experimental work on quartz during World War 2 and the search for suitable material in the Cairngorms.

It is evident throughout the book that the author has taken great care when researching the subject. The result is an attractive, well-written account of the history and cultural significance of a gem source outside the main areas of production. It will be of interest to gemmologists, mineralogists and collectors, and to all those who value the wilder parts of Britain, and is a highly recommended read.

Pat Daly FGA DGA

EDITOR'S NOTE

We would like to apologize for several errors made in our review of Anthony de Goutière's book *Wonders Within Gemstones II*, which appeared in the Jan/Feb 2015 issue of *Gems&Jewellery* (page 33).

In the review it was stated that Anthony used a '35 mm camera', but the camera used was a Canon Digital SLR. It was also stated that a downside to the book was the absence of levels of magnifications and the lack of origin of some of the stones, but it has been written in the introduction that the areas photographed varied in size from approximately 1.50 x 2.50 to 2.00 x 3.00 mm, as an alternative to giving magnifications. In terms of origin, Anthony only gave origin where he was certain of the provenance of the stone.

An interview with Gaetano

In the second of our regular series of interviews with key industry figures, we speak to CIBJO president Dr Gaetano Cavalieri FGA about the future of the industry.

How do you envisage the future role of CIBJO in the gem and jewellery industries?

It has been said before, but it is worth repeating: if there were not such an organization like CIBJO, it would have to have been invented. There are few industries in which the interests of its members are so closely intertwined. The existence of an umbrella organization, under which all sectors and nations can gather, is an absolute necessity.

Almost every single item of jewellery produced represents the hard work and creativity of a great many individuals living in different countries. Each of those individuals is part of a community, which has both members and associated stakeholders, and every single one of them has a vested interest in that jewellery item. Likewise, each individual represents a potential threat to its integrity.

CIBJO's role in our global community is to provide leadership and a common foundation for us to collectively defend our industry from the elements that threaten it, and at the same time to identify and take advantage of opportunities that present themselves. We do this by engaging the expertise, skill, wisdom and experience of the members and staffs of our member organizations.

Our mission statement declares that our primary undertaking is to uphold the confidence of consumers in our products and our industry, and this is an accurate understanding. We deal in valuable, non-essential merchandise, and any threat to our integrity, whether it is associated with the product itself or the processes by which it and its components are manufactured and traded, could compromise consumer confidence. If that is lost, then there is very little left.

I do not believe that our mission will change, but at the same time it is very difficult to predict what we will be called on to do in order to fulfil our mission. To no small degree, that is dictated by circumstance, technology and economics.

Twenty years ago, few would have predicted that we would be involved today in devising means of eliminating conflict diamonds, gemstones and minerals. Nor would one necessarily have suggested that synthetic diamonds and glass-filled rubies would be considered major issues.

Two things I can guarantee, however, is that there will be issues, and CIBJO will have to create means of dealing with them.

How important is gemmology education within the industry and where do you see it going?

Education is critical, for gemmology is a part of our common language. In the same way that any child is provided with an elementary education in order to function in society, a member of this trade needs to develop an understanding and appreciation of gemmology in order to work and communicate. You would not want to buy a prescription drug from a person who is not a pharmacist. Why then would you expect a person to buy a valuable item of jewellery from someone who does not properly appreciate its component parts?

I would like to a see an international framework established for gemmological educators, to ensure that in a global business, the gemmological standards and terminology we use are international. Harmonization is not a new subject, but we rarely address it in terms of education.

There are a large number of schools and instructors out there. How do we know what is being taught? Who is doing the teaching? Who decides whether a person can call himself or herself a qualified gemmologist? These are issues that need to be addressed.

What are your concerns for the industry as a whole?

We refer to our sector as an 'industry', or a 'trade' or a 'business', and it is of course all that, but it is also a calling, and a discipline in which people express themselves through artistic endeavour. We work in a field where the role of the individual is pre-eminent.

I worry that the individual element is being replaced by a corporate culture, and as that happens the individualism is being suppressed. Don't get me wrong, I do not question the right or the value of large companies involved in our business, but I am concerned that they sometimes impose conditions that make it difficult, if not impossible, for individual jewellers or small companies of jewellers to remain involved.

I grew up in a family that ran a modest but successful business, and provided a living for generation after generation in jewellery. I know a large number of people who grew up the same way,

But it is more difficult today to run a small family business, and if we raise the minimum requirement for entry into our sector any higher, more and more young people will find other things to do.

If that happens, we may find ourselves left with a just a handful of corporations. I consider it part of my mission to make sure that this does not happen.

How are the issues of ethics and CSR evolving? Are developments in these areas happening quickly enough do you think? What more can be done? Where is good progress being made?

It is an area that has evolved and expanded hugely over the past 15 years. What began with the conflict diamond crisis in 1999 and 2000, resulting in the establishment of the Kimberley Process Certification Scheme in 2003, advanced toward CIBJO's receiving consultative status with the United Nations Economic and Social Council in the 2006, and our committing, on behalf of the international sector, to the fulfillment of the UN's Millennium Development Goals.

We have seen the development of structured CSR compliance systems, such as that developed by the Responsible Jewellery Council (RJC), and more recently by Branded Trust in conjunction with CIBJO, where we specifically measure not only the degree to which we protect the chain of distribution, but also how we positively fulfill our social commitment. Today in CIBJO we are placing a greater emphasis on environmental responsibility, and in particular reducing the impact of fossil fuels.

While the subject of ethical business practices is one that appears to be interesting consumers on an increasing basis, I think it is important to separate the business motive from the social motive. I do accept the contention that good ethics makes for good business, but that should never be the primary reason for why we behave ethically. We need to be responsible members of society because it is the right thing to do.

Indeed, it is that meeting between ethics and business interests that worries me. Because we operate in an interconnected business sector, we all have a vested interest in the ethics of the jewellery business as whole. Ethical standards should never be deliberately used to create a competitive advantage. Not only is that unethical in and of itself, but it undermines the fabric of our industry.

Describe the working relationship between CIBJO and other industry bodies, such as the diamond bourses, World Diamond Council (WDC) or RJC, for instance.

I would say that it is better today than it has been for many years. There have been disagreements in the past, but these were always related to policies and procedures and not to the fundamental issues concerning our industry. The fact is that I am a member of the WDC board, and both the World Federation of Diamond Bourses' president and the RJC chairman are members of the CIBJO board. I hope that all three organizations are represented at our congress in Brazil this year.

> I worry that the individual element [of the industry] is being replaced by a corporate culture, and as that happens the individualism is being suppressed. Don't get me wrong, I do not question the right or the value of large companies involved in our business, but I am concerned that they sometimes impose conditions that make it difficult, if not impossible, for individual jewellers or small companies of jewellers to remain involved.

Can you reveal some of the highlights of the CIBJO Congress? What are the most important areas on the agenda?

There are a great many highlights, but I will mention two. The first is simply the location. This is the first time that a CIBJO Congress is taking place in a Latin American country, and I believe that it underscores the role that the region is beginning to play, not only as a supplier of raw materials, but also as a jewellery market in its own right.

The second is a conference that will take place on the first day of the congress, and it will focus on the integrity of grading reports and grading labs. The current situation, in which there are few (if any) enforceable standards, and almost anyone can issue a grading report, irrespective of how it was compiled and how qualified the person issuing the report is, needs to be addressed urgently. As an industry we must find solutions, and that is what will be discussed.

What Blue Book can we expect next? Is there a particular gem that needs to come under scrutiny?

The next Blue Book is the Coral Book, which is currently being compiled by our new Coral Commission.

As to what comes next; I am open to suggestions. Relating to your earlier question about gem education, possibly a 'Gem and Jewellery Education' Blue Book would be appropriate, to create a framework and minimum level of expectations of what we expect to be provided by the educators serving our industry.

What about the CIBJO leadership? Have you started to think about your retirement yet and, if so, how will CIBJO find a successor to you?

I wish I had the time to retire, but I never seem to! Seriously, the test of any organization is its ability to withstand a change of leadership, and CIBJO needs to be around for a long time to come. Without meaning to sound immodest, I believe it will be difficult right now to find someone who is able to devote the time, effort and resources that I have over the past years, and if that is the case we need to structure the organization to ensure that it able to operate effectively under a different president.

I do not expect to be the CIBJO president forever, but I do want ensure that CIBJO continues to grow and develop for a great many years into the future. ■

Craftsmanship and Design Awards 2015

With all the pomp and ceremony of a university graduation, a plethora of designers, makers, crafters and smiths joined members of the industry to pay homage to some of the biggest and brightest talent in our industry. Keeping a keen eye on the movers and shakers, Miles Hoare reports from the Goldsmiths' Crafts and Design Council Awards 2015 and speaks to the winners of the coveted Gem-A Diamond Award.

The Goldsmiths' annual celebration of all things design and innovation never fails to impress. Every year fabulous prizes are both given and received by some of the leading lights in the craft and design world; it was hard to see how 2015 could match up. However, in true Goldsmiths' style, this year's show lived up to the high expectations that it has always set, with a celebration of some of the best up-and-coming talent in the design and craft industry.

Ambassadors from the Gem-A team presented the Gem-A awards, given to two entrants who showed an inspiring and unique use of diamonds or coloured gemstones in their work. Winners of the award received a free scholarship onto our Diamond Grading and Identification Course held at the Gem-A headquarters in London, helping them to deepen their understanding and appreciation of gemstones and diamonds and take their passion to the next level.

Gurveen Singh's 'Festival of Fireworks' design

Our first winner for this year was Gurveen Singh of Glasgow Kelvin College for her suite of jewellery 'Festival of Fireworks', which mixed vibrant colours with exciting, unique design concepts, exploding with a sense of fun and passion. The Gem-A judges were so impressed with this original concept and the quality of design that Gurveen attracted the attention of Gem-A CEO, James Riley, who said: "Gurveen's design showed superb skill and innovation and that's why we've taken a particular interest in her entry. As a way of supporting young designers, we're helping Gurveen take that next step in realizing her designs by offering her some of the extra support she requires."

Talking to Gurveen on the receipt of her award, she said: "It was incredible to win the award and to get the opportunity to work more closely with gemstones and diamonds. I'm currently coming towards the end of my HND and the Diamond Grading and Identification course scholarship given by Gem-A is a great step towards the future. It gives me a fantastic opportunity to learn a new skill, increase my employability and consider avenues I hadn't thought of before."

Joanna Fronczak-Jabbal's 'Opulence — Bracelet and Earrings with Rubies' design

Our second winner is a familiar face to all of us at Ely Place, as she takes away the Gem-A award for the second year running. Last year Joanna Fronczak-Jabbal's design 'The reign of stones' wowed us with her elaborate and sophisticated combination of gemstones set in silver, reflecting the natural beauty of the peacock's plumes in nature, using coloured stones to create a stunning rainbow effect. Joanna's focus on gemstones rather than diamonds didn't detract from her entry; rather, Joanna's personal statement conveyed her equally-matched enthusiasm for both gemstones and diamonds. Having already passed the Diamond Grading and Identification course in 2014, Joanna received a place on the Diamond Diploma course, which will help Joanna along in her studies.

Joanna's 2015 entry, titled 'Opulence — Bracelet and Earrings with Rubies', again showed a superb use of coloured stones; the silver bracelet and accompanying earrings are lined with an intricate ruby design, inspired by the orchid. The design for her bracelet was presented alongside the earrings themselves, made by Joanna using Weston Beamor's 3D printing and casting facilities, and continued to display her great flair for design, as well as her skill in craft and creation.

On receiving the award, Joanna said: "I am so excited to have won this prize for the second time. Last year I gained the certificate in Diamond Grading and Identification, which I found fascinating, and this year I am looking forward to undertaking the Diamond Diploma." Gem-A offer their congratulations to both Gurveen and Joanna. ■

An evening with John Hatleberg

Olga Gonzalez FGA reports on Gem-A's salon evening with John Hatleberg, gem artist and authority on diamond replicas, held on Monday 23 February.

A conceptual gem artist brimming with 'think-outside-the-box' ideas, John Hatleberg delighted Gem-A members and friends with total gem euphoria at his Manhattan studio. John, who began his career as a teenager cutting gemstones at the Smithsonian Museum, is one of the most sophisticated lapidaries around today, and is particularly known for creating replicas of the world's most famous diamonds. He has worked with such magnificent gems as the Hope, the Millennium Star, the Centenary, the Eureka and the Koh-i-Noor (**1**)— a replica of the latter was brought out for Gem-A members to see during the evening to the everyone's delight. John also had interesting casts for show and tell, with the 'before' and 'after' casts of the Wittelsbach-Graff being shown. John explained the choices made in the re-cutting of the stone and discussed his process, and members saw one of his current diamond replicas in development.

John said of the event: "I believe that gems are primal, living and seductive and I wanted to share and explore that perspective this evening… Although many people visit the studio, I look forward to the informed 'give and take' of the group being comprised of gemmologists."

Diamond replicas aside, there were also plenty of gorgeous coloured gemstones to see. John impressed everyone with an aquamarine faceted to reflect Michelangelo's Piazza Campidoglio in Florence; 'The Mineral Kingdom'— the most luxurious custom display box for minerals many in the room had ever seen, modelled after Joseph Cornell's 'Taglioni' Jewel Casket (**2**); amorphous opals with an electric fluorescence; pearl pod convertible jewellery/sculptures (**3**) and a stunning painting of Van Gogh's 'Irises' (**4**), made of ground up gemstones — lapis from Afghanistan, thulite from Greenland, lepidolite from California, aventurine from India and blue apatite from Madagascar.

An unforgettable evening for gem enthusiasts, Gem-A members were soon asking about the next event being hosted in the U.S. For more information about Gem-A Events visit page 7 or the Gem-A website.

1: John Hatleberg's replica of the Koh-i-Noor diamond. Photo Tony Pettinato.

2: 'The Mineral Kingdom' display box featuring assorted mineral specimens. Photo John Hatleberg.

3: Pearl Pods, featuring Tahitian pearls and 18 ct gold. Photo Tony Pettinato.

4: Irises, after Van Gogh. Pigment made of lapis, malachite, thulite, apatite, green ockite, selenite and others. Photo John Hatleberg.

Spring in the Arizona Desert

Eric Fritz FGA brings us the latest on Gem-A's activities from across the pond.

Things are really blooming here in North America, and I am not just referring to the flowers. Gem-A has been as busy as the bees since the end of the Tucson shows in February. Foundation and Diploma lab classes were provided through our partnership with Jewelry Television in Knoxville, Tennessee. All of the students enjoyed their experience and delight ensued with the words: "Wow, I get it now" being said often. Many thanks go to team members Lizzie Gleave, Claire Mitchell and most of all Pat Daly, for producing wonderful stone teaching sets. Pat tested and recorded reactions for hundreds of stones to enable our students to see a wide range of real-life scenarios in a lab setting.

Gem-A continues to be well received by everyone we come into contact with. Exposure is the key to success in North America, and our name and brand recognition within the industry is top-notch. The biggest challenge we face now is how to familiarize the world at large with the Gem-A brand. The current approach is to be in as many places as possible within the entire realm of the gem and mineral world. People become mesmerized by the products offered by Gem-A Instruments, and showing a spectrum, a dichroscope or inclusions and growth lines under the microscope quickly 'hooks' many of them in. This phenomenon was witnessed at the recent Eastern Federation of Mineral and Lapidary Societies' convention, held in conjunction with the Catawba Valley Gem and Mineral Show, in Hickory, North Carolina.

The Eastern Federation show held in March brought delegates from the entire southeastern United States. A presentation on the GemBasics course was provided to a captive audience prior to the annual auction. Over 40 attendees were amazed to hear about glass-filled rubies and curved synthetic growth lines. Several attendees came away as prospective Gem-A students, and many others took away further information. The concept of 'grass roots movement' comes from our political campaigning. Politicians and their representatives operate by penetrating smaller communities and promising what can be provided on an individual basis. Gem-A is effectively the politicians offering the most respected gemmological training and brand in the world… and it is working.

Gem-A is also sponsoring two ongoing gemstone exhibits in the United States: Somewhere In The Rainbow, a modern gem and jewellery collection based in Phoenix, Arizona, is exhibiting at the University of Arizona Mineral Museum in Tucson. Shelly Sergent, curator of the Somewhere In The Rainbow collection, was also kind enough to take a travelling exhibit along to the Eastern Federation Show mentioned earlier. We also have curatorship over the gemstone exhibits at the Flandrau Science Center and Planetarium and are co-hosting 'Happy Birthday to Me', a 12-month journey through both traditional and contemporary birthstones. The exhibit showcases many unique stones as well as jewellery by some of the United States' upcoming top designers and cutters. These partnerships, and the willingness to work side by side with the trade, will make the Gem-A brand even better and more well known. The exhibit runs until March 2016; be sure to stop by while at the Tucson shows next year.

Eric Fritz, Gem-A's North American manager

The second exhibit will take place at the newly-opened Natural History Wing at the Pisgah Astronomical Research Institute (PARI), outside Brevard, North Carolina. PARI, former NASA satellite and manned space flight tracking centre as well as Department of Defense facility, is now a public science and education facility. School groups, science camps, universities and researchers from all over the world come here to study space and utilize the two 26 metre radio telescopes which have been restored to full functionality. Gem-A has provided an unrivalled collection of over 200 cut stones and their matching crystals, all from North Carolina, one of the richest states for minerals diversity. The collection contains ruby, sapphire, emerald and aquamarine, as well as a vast array of quartz and other rare inclusion stones.

What's next? There are exciting opportunities for Gem-A every month this year. Late spring sees the team at the JCK Las Vegas shows — from 29 May–1 June — where we will have a booth showcasing Gem-A Instruments as well as our courses. We will be joined by Alberto Scarani and Mikko Åström of GemmoRaman, who will be premiering the new GemmoSphere UV-Vis-NIR. In June I will be back in London to share more of the exciting developments taking place in the future. July sees the Gem-A team head to Knoxville, Tennessee, for the Jewelry Television Gem Lovers conference on 23–24 July. August takes us to Washington D.C. for the National Association of Jewelry Appraisers Conference and, later in the month, the Dallas Mineral Symposium. September offers the second largest gem and mineral show in the world, held in Denver, Colorado, where we will be joined by Shelly Sergent for an exhibit from the Somewhere In The Rainbow collection, as well as a joint presentation on Native American jewellery and the materials comprising this art form.

I will keep you guessing until next time for the remainder of the year's activities. ■

Finding flint in Kefalonia

Gem sculptor Helen Serras-Herman FGA on her discovery of the aesthetic qualities of flint.

After all the years of accumulating gems, I am always excited to carve gem materials that I have not used before, especially ones that I have collected. I rarely have the chance to go rock-hounding, so when the opportunity came up in Greece, it was a welcomed good fortune. And if it wasn't for the circumstances that you will read below, I may have not considered flint to be part of my artistic palette.

During our trip to Greece in 2009, we spent two weeks on the Ionian island of Kefalonia (also spelt Cephalonia), located off the west coast of Greece in the Ionian Sea. In contrast to the well-known Cyclades Islands in the Aegean Sea, with their stark natural beauty, white-washed houses, and bright blue church domes, the Ionian Islands are very green, with beautiful idyllic beaches, mountains reaching down to the sea, vineyards and olive groves. The houses are built in the neoclassical style with bright red tile roofs, reflecting the Venetian rule from 1194 to 1797. The bucolic island was featured centre stage in the 1994 book *Captain Corelli's Mandolin* by Louis de Bernière, set during the Italian and German occupation of World War II, and made famous in the subsequent 2001 movie filmed on location, starring Nicolas Cage and Penélope Cruz.

Good specimens of flint from the Greek island of Kefalonia.
All photos © Helen Serras-Herman MFA FGA.

The remarkable 'Museum of Natural History of Kefalonia and Ithaca' is located in the hillside village of Davgata, overlooking the town of Argostoli, the capital and main port of the island since 1757. My husband and I were the only visitors when we arrived at the museum in the early afternoon of a late summer day. The museum has some incredible displays of rocks, minerals, sands, shells, trees and plants of the island. Among them, we saw several specimens of Kefalonian flint, but at the time we didn't think much about it. Later, I talked with my friend Nikos Garbis — a wonderful local goldsmith — who showed me some rock specimens a German tourist had found. They were small, broken-off pieces that had good orange colour and translucency, and our thoughts went toward quartz and jasper.

Flint — what the material proved to be — is a cryptocrystalline variety (very small compact crystals) of quartz. It was used in ancient times for engraved seals and for tools because the nodules knapped off easily. It usually occurs as nodules and masses — often with a rough, thin, white cover layer — and it has a glassy or waxy appearance. Nikos knew the town in the northern part of the island where the specimens were found, but not the exact location. All he said was, "It is near the sea."

Samples of the artistic jewellery pieces with centrepiece pendants carved in Kefalonian flint created by Helen Serras-Herman.

After rock-hounding for a while under the hot sun near the beaches where all we found were large white pebbles, we were ready to give up. The elusive rocks could have been anywhere! Driving back, I looked on the right side of the road away from the beach, and there seemed to be a small outcrop of rocks among an olive grove and free-roaming goats. We stopped to give that place a try. Within minutes we started finding pieces of flint, some better than others, some encrusted with a white coating, some complete nodules. Keeping only the best specimens, we still had plenty enough for us and to share with our friends.

Rough specimens of Kefalonian flint and jewellery with centerpiece pendants carved in the Kefalonian flint.

One of the carved flint pendants, similar in appearance to cornelian, displaying the high translucency typical of some of these stones. Now in the permanent collection of the Carnegie Museum of Natural History.

A selection of the carved pendants with the white rind retained to indicate the nodule origins of the gem material.

new appreciation at all the flint specimens as we photographed them. The colours of Kefalonian flint range from cream to pale yellow to reds and orange, bringing to mind petrified wood. Many of our specimens are bright orange-red, some are very translucent, and some are opaque. We were thrilled to have been able to locate this gem material. Flint is found in many places in the world, and possibly in other places in Greece, but material from the island of Kefalonia is not generally collected today or used in contemporary lapidary or in artistic jewellery.

When I came back home to my studio I carved some of those rough stones, and they became beautiful, unique gems, similar to cornelian. I left the white rind on the carvings purposely, so it would show the nodule origins of the material. Then I designed and created a few artistic jewellery pieces with centrepiece pendants carved in the Kefalonian flint.

During my 30-plus years in carving gems and creating unique gem sculptures and jewellery, I am always excited to use a new material, especially one that has historic roots. As with all my artwork, I want them to tell a story. This Kefalonian Flint Jewellery Collection tells our rock-hounding story and our warm friendships with other artists on the island. It also pays homage to my paternal grandfather's island of birth, the island that I have been visiting since I was very young and now travel from the faraway high deserts of southern Arizona to visit. ■

Helen Serras-Herman in Argostoli, the capital of the island of Kefalonia, wearing one of her Kefalonian flint necklaces.

Later I talked with Niki Katsouni, the curator of the Museum of Natural History of Kefalonia and Ithaca, who confirmed the existence of flint on the island. The flint's historical significance has also been revealed by recent archaeological research on the island that has uncovered several Paleolithic finds of the rock.

Back at the museum, we looked with

ABOUT THE AUTHOR

Helen Serras-Herman is an award-winning gem sculptor with over 30 years of experience in unique gem sculpture and jewellery art. She was inducted in the National Lapidary Hall of Fame in 2003. Helen's award-winning work has been exhibited worldwide and published in over 150 trade magazine articles and books. Visit her website at www.gemartcenter.com or her Facebook page at Gem Art Center/Helen Serras-Herman.

By George!

John Kelly FGA DGA , valuer at Greenslade Taylor Hunt, takes a look at a rare medieval gold ring depicting Saint George.

Metal detectorists have provided academics and museums with some truly terrific finds. One, based in Somerset, has unearthed a number of rare pieces over the years, but his latest find is the jewel in his crown; a visit to a farm in North Somerset yielded a rare Medieval gold iconographic Saint George ring, dating from the fifteenth to early sixteenth centuries.

SAINT GEORGE

It is said that Saint George (c. 275/281 — 23 April AD 303), one of the most venerated saints in the Catholic Church, was the son of Gerontius, a Roman soldier and a Greek Christian, and Polychronia, a Christian from Roman Palestine. George was martyred for not renouncing his Christian faith after Emperor Diocletian issued an edict that every Christian soldier in the Roman army should be arrested. Despite being given ample opportunities to renounce his faith (Gerontius, George's father, had been the Emperor Diocletian's favourite soldier), George publicly refused, and was executed.

THE RING

The ring has an elongated octagonal table engraved with an image of Saint George and the dragon in shallow relief. George is wearing armour, created by incised lines, and the visor of his helmet is up and his face exposed. He is driving his spear into the mouth of the dragon — a classic pose. To his left hand is a small triangular shield engraved with the cross of Saint George, whilst the dragon is on its back, with gaping jaws and a tail which frames part of the bezel.

The shank tapers in width from the shoulders to the back and is decorated with diagonal lines of pellets, inlaid with bands of flower heads on stems, and there are several petals at the base interspersed with oval seeds or fruit. Adjacent to the bezel on these broad bands are recessed 'ray' motifs with traces of white enamel on two areas. The inside of the shank is plain. A row of stamped pellets create the border down one edge of each shoulder.

The form and decoration found on this ring are similar to other iconographic rings that have been found; including one ring featuring Saint Christopher, another featuring the Virgin and Child and one depicting Saint Barbara — all dated to the fifteenth or early sixteenth centuries. Depictions of Saint George from this time are seemingly rare, although there is one example illustrated in *Finger Rings: From Ancient to Modern* by Henig and Scarisbrick (2003). This was the high point in the 'cult' of Saint George as England's patron saint; the patron previously being Saint Edmund. In terms of pilgrim souvenirs these were found in silver and lead alloy, depending on social standing.

To put the rarity of this ring in context one must consider gold at the time. Gold jewels were foremost the preserve of nobility and royalty. Availability of gold during the fifteenth century was drastically reduced due (in part) to wars and rebellions rife in Europe and beyond — a considerable strain on economies and population. The disruption of trade routes (particularly via the Sahara) and the capture of Constantinople by the Turks in 1453 choked the gold supply. The Black Death almost halved the population of Europe in the second half of the fourteenth century, reducing the labour market and causing poor mining output. The shortage of gold saw Edward IV raise the price of gold in 1464 by 25 percent, although Columbus's voyage of discovery in 1492 opened up the Americas and a new era for precious metals.

This rare find will be offered for sale by Greenslade Taylor Hunt of Taunton in its sale on 4 June 2015. For further information please contact the sale room at: antiques.saleroom@gth.net. ■

Gem-A

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OF GREAT BRITAIN

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The end of an era

Jan Asplund FGA DGA gives an overview of the history of synthetic diamond production in Sweden.

Robertsfors, 1964. This is the only existing picture of the presses. Due to the high secrecy the operators are standing in front of (and therefore hiding) the HPHT equipment. Photo Swedish National Museum of Science and Technology.

The production of synthetic diamonds in Sweden will end in 2016 when Element Six closes its factory in Robertsfors — a 63-year tradition will be over. Synthetic diamonds have had a huge impact on the jewellery business during the last few decades and their importance will continue to grow as techniques and quality is improved. Synthetic diamonds have also had a great role in the development of tools and machinery for diamond and gemstone cutting. Today diamond powder, as well as diamond-impregnated cutting wheels and sawblades, is cheap and affordable for both the professional and hobbyists interested in the lapidary arts.

Even though Baltzar von Platen, the constructor of the first diamond press, once said his vison was to create 'Koh-i-noor diamonds', there were never any plans to produce gem-quality diamonds in Sweden; all research and production was focused on industrial applications mainly toward construction and mining.

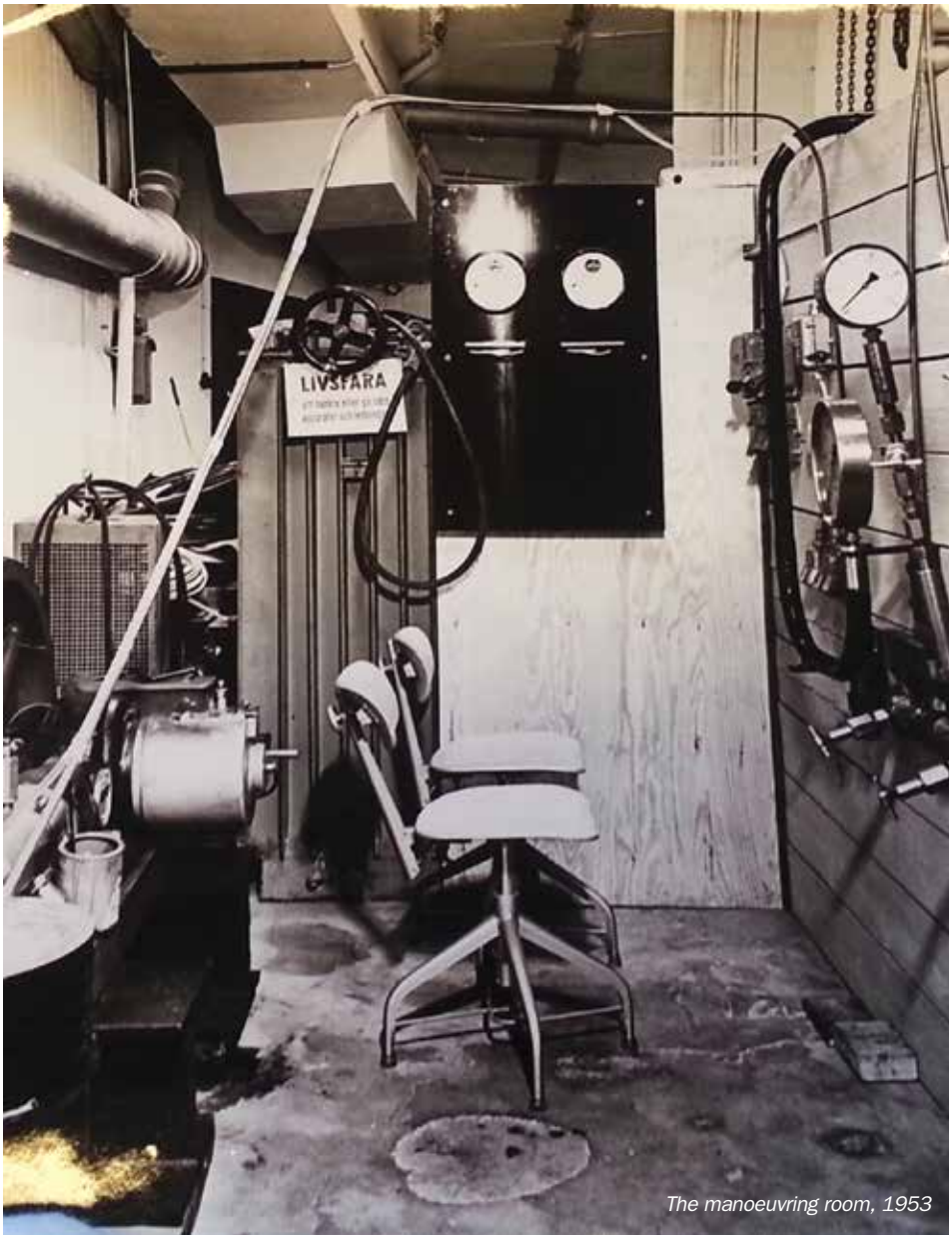
It was in 1942 that serious attempts to synthesize diamonds started in Sweden. Von Platen, known for inventing the refrigerator, built his first diamond press in 1937. He was inspired by P. W. Bridgman's *The Physics of High Pressure* (1931) and his research on thermodynamic behaviour of materials. Von Platen used flattened piano wire wound around conical anvils in a spherical form, which created pressure on a cylinder containing carbon. Several different geometrically-shaped constructions were tried out until finally the cube-shaped reaction chamber turned out to be the most efficient. Von Platen experimented on his own for a few years before asking the Allmänna Svenska Elektriska Aktiebolaget (ASEA) for financial aid; and in June 1942 an agreement was signed (Johnson, 1961; Lundblad, 1988).

ASEA rented von Platen's equipment and hired researchers. The project was code named 'Quintus' and the equipment was moved from Stockholm to Västerås in 1945, but by 1948 it was moved back to Stockholm and von Platen's newly-renovated laboratory at Götgatan 16, a magnificent building from the seventeenth century. The experiments went on slowly during the 1940s, mainly due to von Platen's other engagements, and the experiments were mainly focused on the direct transformation of graphite into diamonds (Lundblad 1988).

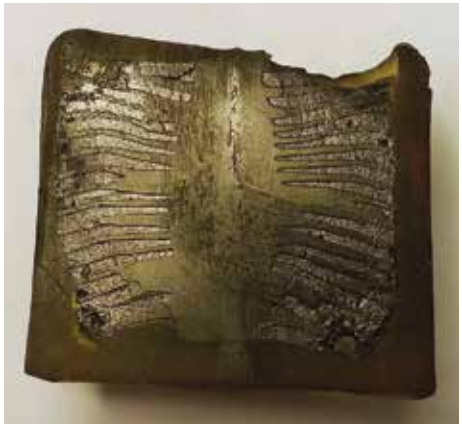
Louis de Geer's palace in Stockholm, built in the 1640s, where the first successful diamond synthesis was carried out.

During early 1950 ASEA reorganized the project; five scientists and engineers were employed, headed by Erik Lundblad. Von Platen's involvement was reduced; at first he was kept as a consultant but in 1952 he left the project entirely. By then ASEA owned all equipment and all involved people were employees of the company (Lundblad, 1988; Barnard, 2000).

The press now consisted of a cube-shaped reaction chamber and six pyramidal anvils with flat surfaces on the smaller end facing the reaction chamber and larger rounded areas facing outwards, creating a sphere. The sphere was put in a chamber filled with fluid, water or alcohol, that put an even pressure on the rounded outer part of the anvils. The area where an anvil pressed onto the reaction chamber versus the rounded outer area of the anvil where the hydrostatic pressure was applied was 1:20, creating pressure between 75,000–90,000 atm. The materials used and the precision of the anvils and reaction chamber was of utmost importance, and it was a tedious process to prepare an experiment — each experiment could take up to four months to prepare. The idea of transforming graphite directly into diamond was abandoned in 1951 and from 1952 solvents for carbon were tried out. Melts of different metals were saturated with carbon and then, under pressure, left to cool down. Theoretically the precipitated excess would crystallize into diamond, should pressure be kept steady long enough. After studying the solubility of carbon in several metals, iron turned out to be the obvious choice as iron's solubility with carbon is relatively high at about 9% at 2200˚C.



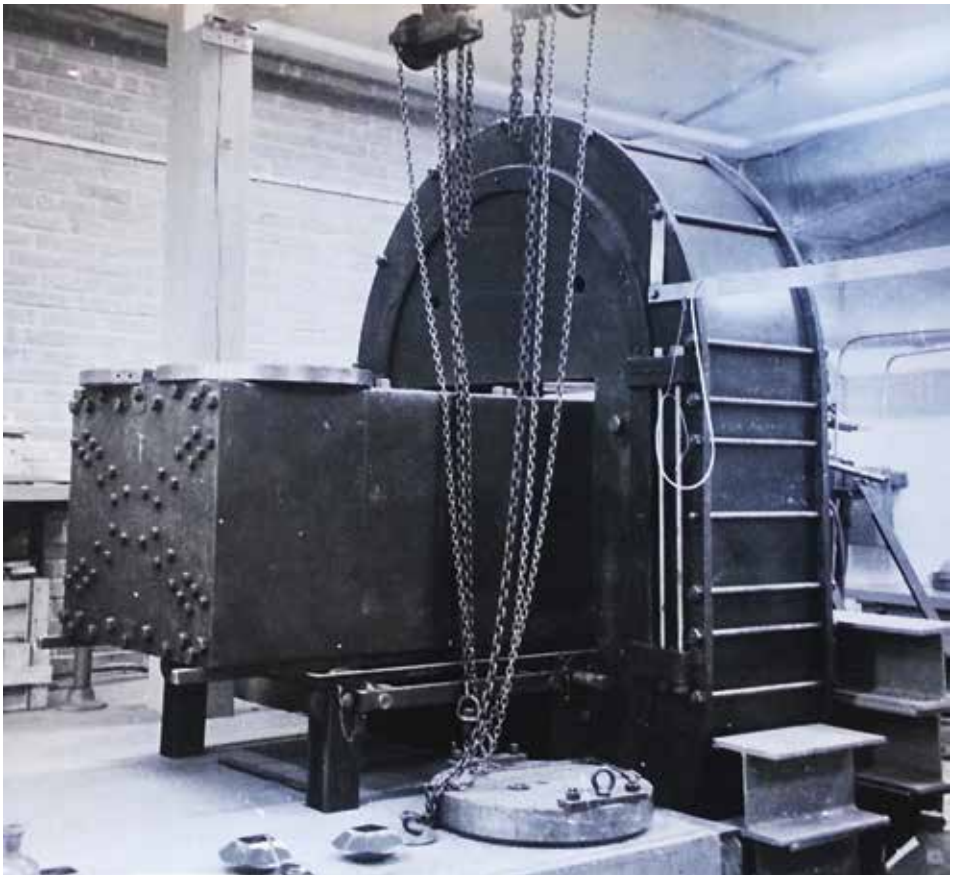
The manoeuvring room, 1953


The reaction chamber cut in half and moulded in plastic for preservation at the Swedish National Museum of Science and Technology. Diamonds grow between the dark layers of cobalt. Photo Jan Asplund.

Even though Baltzar von Platen . . . once said his vison was to create 'Koh-i-noor diamonds', there were never any plans to produce gem-quality diamonds in Sweden; all research and production was focused on industrial applications mainly toward construction and mining.

Heating was done with thermite made by a mixture of barium peroxide and magnesium that gave a temperature of up to 2200˚C and cooled down within a few minutes.

The lack of success during the first attempts was due to a reaction between the iron carbide and the thermite. In February 1953 the iron carbide was put inside a shell made out of layers of platinum and tantalum to separate it from the thermite, thus preventing any undesired reaction. The experiment was turned out on 16 February 1953. Pressure was set at 83,000 atm and held for one hour. Some control diamonds were put in the reaction chamber to make sure the pressure and temperature relation stayed within the diamond stable area. After opening the chamber was cut in half and contained



The press about to be moved. On the bottom left anvils for the sphere can be seen. Photo Swedish National Museum of Science and Technology.

close to 50 small crystals. Four of the crystals were sent for X-ray analysis at Stockholm University and were confirmed to be diamond. The experiment was repeated on 24 May, this time without control diamonds but with the same result and again repeated with success on 25 November 1953 (Liander and Lundblad, 1960; Lundblad, 1988).

ASEA decided to continue with the diamond synthesis but wanted to refine the technique before publishing and patenting the process. There was also a discussion about whether it would be possible to patent the diamonds as they were just copies of a natural material, not a new invention. ASEA did not think that they had any competition in the area — one reason for that was that P. W. Bridgeman when visiting Stockholm in 1951 was asked if he knew about any other research on diamond synthesis. Bridgeman denied knowing about anyone experimenting in the area but in actual fact he had been experimenting with diamond synthesis himself for several years. Bridgeman had also been co-operating with General Electric (GE) during their experiments in the area in the 1940s; a project that was terminated for a few years but restarted in 1951 (Lundblad 1988).

GE announced its first successful production of synthetic diamonds in 1955. Erik Lundblad described it as quite a shock to read the news in the Swedish papers on 16 February 1955, a few days after GE's announcement that they had succeeded in synthesising diamonds in December 1954 (*Svenska Dagbladet,* 16 February 1955). ASEA published a press release with very little information about its process on 16 April 1955, but details of the process were not published until 1960 (*Svenska Dagbladet* 17 April 1955; Liander, 1960). GE published details about parts of its process in *Nature* in June 1955 but had to wait until 1960 before publishing more details because of a US government secrecy order (Bundy et al., 1955; Hall, 1960).

Quite a battle was carried out between GE and ASEA through most of the coming decade, where both were granted access to different markets around the world, mainly in favour of GE, but in the USA (GE's home market) ASEA was allowed to sell its products, which mainly consisted of drills, saws and

Left: The sphere before an experiment

Middle: The sphere after an experiment. The diameter of the sphere is 52 cm.

Right: The sphere when sealed and put under hydrostatic pressure. Photos Swedish National Museum of Science and Technology.

polishing wheels for construction and mining. The equipment for diamond production had been moved around to several addresses in Stockholm during the 1950s but in 1962 the decision was made to move the whole diamond sector to the small town of Robertsfors (TM 42168; Lundblad, 1989).

A third party involved in the experimentation and production of synthetic diamonds in the 1950s was De Beers. It too felt threatened by GE's patents and even though they were licenced to use all GE patents, De Beers and ASEA eventually started a joint venture, Scandiamant AB, that came to own the factory and production in Robertsfors. By this time ASEA had come up with a new product called Nicodur: diamonds coated with nickel. This product was superior to the earlier methods used for applying diamonds into metal for making drills, saws or cutting wheels. Nicodur was the reason De Beers wanted to join forces with ASEA as Nicodur threatened De Beers' own production of industrial tools and machinery using natural diamonds. Scandiamant and GE later acquired sub-licences from each other through De Beers, and the companies more or less got access to all of each other's patents. In 1975 Scandiamant AB was transformed into Element Six AB and ASEA no longer had any role in diamond production (Lundblad, 1989). The manufacturing of synthetic diamonds in Sweden will come to an end in 2016 when the production is moved to more modern facilities in Ireland and South Africa (*Västerbottens-kuriren,* 16 July 2014).

Natural diamonds were discovered in Sweden for the first time in 2014. These diamonds are of tectonic origin and are neither gem quality or of industrial interest, but it is fitting that this discovery was made at this time, so even if the production of synthetic diamonds is coming to an end there are still diamonds in the place where they were first made by man (Koffmar, 2014).

ACKNOWLEDGEMENTS

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Diamond products ready for polishing.

Hong Kong: 10 years later

Michael Hoare returns to Hong Kong after a 10-year absence, and discusses the highlights of this year's Hong Kong International Jewellery Show, which was held earlier this year from 4–8 March.

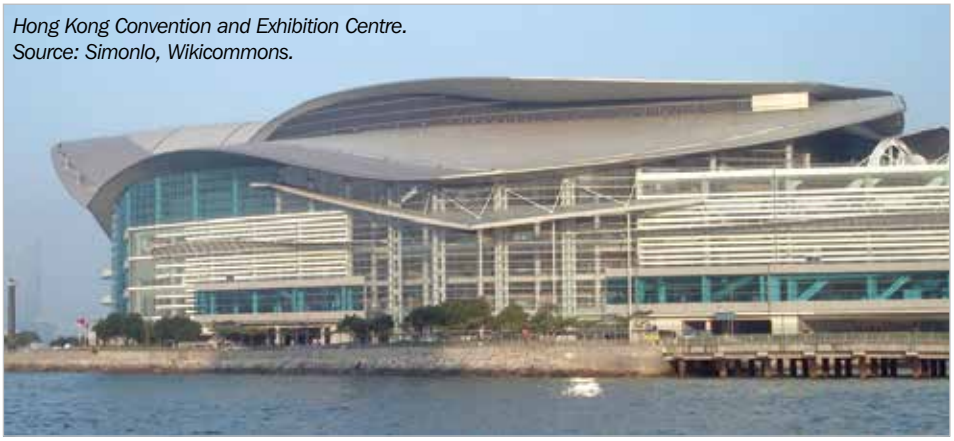
Returning anywhere after a 10-year absence is bound to highlight changes. Buildings, skylines, roads — all may come and go — but few territories other than Hong Kong are actually increasing in mass over time. The new man-made island accommodating the airport had recently been completed when I first arrived as a CIBJO Congress delegate in 2005 and found myself perched atop the nearby Shangri-La Hotel. From that vantage point it was noticeable that the Convention Centre that houses the Hong Kong International Jewellery Show was on a promontory sticking out into the South China Sea. Not anymore; in 2015 it is now fully land-locked, the ground around it reclaimed from the waves. I checked my photographic archive to verify this fact, and found a snap I had taken of CIBJO president Gaetano Cavalieri 'resting his eyes' during a particularly dull speech a decade ago… but I digress.

Back in 2005 the CIBJO Congress coincided with the show, and I vaguely remember being herded, somewhat jet lagged, into a VIP enclosure at the opening party. This time around I was there to do a different job: represent Gem-A and James Riley — who was at home tending to his new-born daughter.

It's a bit like standing in for the Pontiff really — the faithful eager to touch the hem of your raiment — for such is the power of Gem-A!

In all seriousness, my overriding impression of the show is of the reservoir of goodwill towards Gem-A, which was expressed by students, visitors and staff from teaching centres, including Beijing, and who popped by to say hello. Commendation goes to the indefatigable Amandine Rongy, who was a powerhouse of energy and technical expertise throughout the show, but also to the hugely approachable Anne Carroll Marshall, Gem-A's ambassador in Hong Kong, and a font of wisdom on all matters educational. Knowledgeable and good-humoured assistance was also offered by local residents Daly Chung, Fiona Tai and Pamela Ball, whose language skills helped bridge the occasional gap. And compared to the sterile behemoths of some nearby competitors, the Gem-A's more modest and home-spun exhibition stand drew favourable attention from jewellers and gemmologists who were drawn to the range of books and instruments on display. Casual enquiries about the availability of 14× loupes, comparison sets and Chelsea Colour Filters often led to demonstrations, technical comparisons, and sales; all enhancing the standing of Gem-A, and cementing international relationships.

Taking the occasional opportunity to walk the five floors and many halls crammed full of merchandise, I was almost overwhelmed by the sheer volume of jewellery on offer.



Hong Kong Convention and Exhibition Centre. Source: Simonlo, Wikicommons.

From a retail standpoint I wondered just how one would sort the wheat from the chaff. Design-wise, the substantial Italian showing was the only area displaying any flair and innovation, with many others churning out derivative styles to satisfy the mass market. Fascinating to my eye, but not necessarily commercially appealing to European sensibilities, were the immensely ornate suites of jewellery reflecting cultural influence.

Meanwhile, a small but determined British contingent soldiered on against what looked like overwhelming odds; but appearances can be deceptive, and one old friend from London who I bumped into amongst the aisles, declared himself more than satisfied with his week's work. Likewise the denizens of the Heritage pavilion, including some well-known English names, seemed to be doing brisk business in pre-owned watches and jewellery. Interestingly, I noticed several companies from the USA trading in this section under some rather British sounding names. I'm sure someone will prove me wrong, but are Dover and Windsor prominent American cities?

Amandine Rongy, Anne Carroll Marshall and Fiona Tai on the Gem-A stand.

I reckon startling revelations and game-changing products are few and far between, and in the final analysis I guess most retailers expect to see their existing suppliers at trade shows — be they in Hong Kong, London or Birmingham — so that they can compare and contrast their goods with whatever else is on offer, and (having checked they remain competitive) continue to do business with them anyway. Of course, 3D printing directly into gold might be the paradigm shift that sweeps away the need for these international market places, taking with it the conventions and traditions of the trade, but I hope not, because, even if selling jewellery is reduced to dealing in commodities where only two things can be flexed — price, or your relationship with the client — the latter is what makes all the difference. In my view that (and returning to Gem-A for a moment) is the key differentiator in any successful business: relationships. ■

BaselWorld 2015: Gem-A out in force

Charles Evans FGA DGA rounds up highlights from this year's BaselWorld, held from 19–26 March.

1: Suite of cushion-cut red spinels from Tanzania with a total weight of over 180 ct.

2: Marquise-cut red spinel from Tanzania, weighing 61.29 ct.

Building upon the considerable momentum that drove an energized Gem-A team through 2014, we approached the BaselWorld date with a little trepidation at the size of our self-assigned task. We have been regular exhibitors at BaselWorld for a mere three years, yet, like many of the big names in the stone hall, we are an important and established exhibitor which only gets to meet many of our continental members at this particular show.

This year, however, we would be doing three simultaneous shows; BaselWorld, The Diamond Show and Freiburg. The Diamond Show, just across the river from BaselWorld and in total contrast to the huge modern exhibition venue of BaselWorld, was held in the fascinating domed Markthalle. Having been impressed by the efforts of the Rapaport team to support the members of the diamond industry whose budget did not stretch to a BaselWorld stand, we were happy to be both sponsors and exhibitors at the event; and what better place for established members of the diamond community to cast their sage eyes over our newly updated Diamond course.

As if this was not enough, we also had Freiburg to make an impression at. Having paid a visit to Freiburg and the Jewellery and Gem Fair Europe in 2014, we felt that it was important to get involved in this new and exciting opportunity, that had already been embraced by over 400 exhibitors who had travelled from far and wide to this delightful medieval city nestled on the edge of the Black Forest. For the Tucson regulars, it was like a mini-AGTA and GJX rolled into one.

And so it was that I set out from London, with my car loaded to the gunwales with Gem-A brochures and instruments, to drive across France to an isolated vineyard in Alsace where we would all be able to stay at rates that were rather more affordable than Basel — dear at the best of times, but exorbitant when the watch companies arrive...

At BaselWorld we were moved from our 2014 position, a prominent booth in a high-traffic area, into an 'Association Corner' where we were gathered with SSEF, Gübelin and GIA. This made us busier with a 'higher quality' of passing traffic than might otherwise have been the case.

Barnett Bear and his many fans and Facebook friends provided a constant stream of photo calls and, interestingly, autograph opportunities. It is amazing how this little furry bundle has generated so many laughs and such camaraderie among the community of gemmologists from around the world. To become friends with Barnett search Facebook for Barnett Bear: Gem Hunter Extraordinaire or on Twitter #barnettbear.

3: Cockatoos carved from one piece of natural rough Brazilian morganite by Alfred Zimmerman, featuring blue sapphires, yellow gold and fine diamonds, measuring 150 × 170 × 180 mm.

We were joined by our good friends Mikko Åström and Alberto Scarani who kept a steady gathering of interested parties fascinated at the capabilities of their brainchild and Gem-A's own GemmoRaman SG-532 and our GemmoFTiR. The nearby associations all got to feel severe 'instrument envy' —

a condition similar to 'food envy', but more expensive to cure (even in Basel).

When I got out and about I saw some fascinating stones and noted some interesting trends. BaselWorld has always been the best place in the world to see the most exceptional gem specimens on the market. No other show brings out the same level of quality or attracts quite so many of the very top-end buyers. If you are a dealer and you have got it, then you show it off at BaselWorld. All the very best pieces graced the display windows of the show's stone dealers. As has been the case every previous year, all prices have been moving inexorably upwards and the dealer comments have a familiar ring to them: "People will pay these prices" and "I can sell something, but I have no idea where I can buy rough of the same quality to be selling such good stones next year". Somehow though, they always manage! While there is undoubtedly some truth to this, there will always be new and growing sources bringing something else to the market.

Mozambique, after a stumbling start as a source of the ghastly lead-glass ruby composites (along with Madagascar), has tidied up its act with the help of some industry big-hitters. As witnessed at the Gemfields tender in Singapore in December, there is now some magnificent ruby reaching the market from its Montepuez operation. Indeed, BaselWorld was an opportunity for some of that product, now finished, to be shown off. With the Singapore 2015 tender price averaging an overall US$689 per carat (source: diamonds.net, http://goo.gl/2UKY-Pl), there were not going to be any bargains among the products available in Basel.

As the Brazilian state of Paraíba yields less of its name-sake tourmaline, so we see ever-larger and better-coloured stones bearing its moniker, albeit with the country of origin clearly stated as Mozambique. Practice makes perfect with the cookers, perhaps; now they are being unleashed on the big stuff. The prices of this material are approaching the giddy heights that true Paraíba hit five years ago. Interestingly, there was little Nigerian material.

5: Melo pearls from Ernst Faber.

4: Sapphires of 223 ct (left) and 195 ct (right) from Crown Color.

Spinel has a growing status and BaselWorld saw some magnificent specimens displayed. The variety of colours available is almost as diverse as corundum, with French dealers Marcel Poncet displaying, amongst some stunning sets and many larger pieces, a little tray of Burmese delights to which no photo could do true justice (**1**).

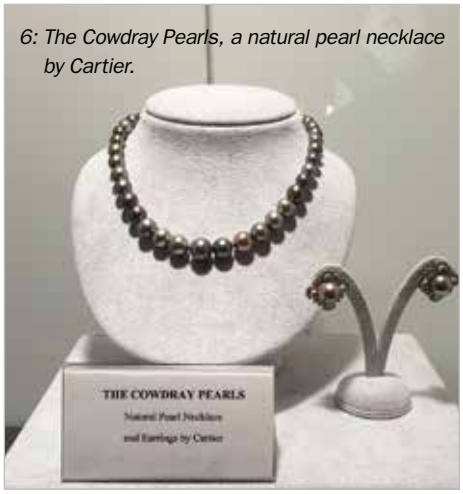
At Henn there was, as always, something special to see and this piece came with a tone of red that was quite spell-binding. A marquise-cut red spinel from Tanzania of over 60 ct was the stand-out item (**2**), even if it was dwarfed by another Tanzanian stone, this time over 7000 ct of ruby carved into a bowl that gently followed the curves and contours of the material.

No-one could walk past the morganite cockatoos without pausing for a look. Designed by Alfred Zimmerman, the three cockatoos, carved out of one natural rough piece of Brazilian morganite at over 19,000 ct, with blue sapphire eyes, 18 ct yellow gold and over 16 ct of very fine diamonds (**3** and front cover). Simply stunning.

These were just some of the wares of one BaselWorld exhibitor. For those who have never been, try to imagine such magnificence being replicated over hundreds of stalls. Indeed, simply turning around put me in front of Crown Color where two sapphires caught my eye (**4**). All credit to the friendliness and good humour of the Crown Color team, they were most obliging in letting me clumsily photograph these two stones, even throwing in copies of their lab reports. The trusty Gem-A pen lends an impression of size, where words fail me on the rest.

On the pearl front, there was a delightful selection of conch and melo pearls available, with Munich dealers Ernst Faber pipping the rest with a set of melo that was quite staggering (**5**), while the Andrew Cohen stand featured the so-called 'Cowdray Pearls' — a stunning Cartier suite with an interesting history (**6**). We will be researching Basil Anderson's laboratory diary to see if, in 1937, this famous ensemble graced the Gem Testing Laboratory of Great Britain.

Of course, I could never do justice to all the wonder on display in BaselWorld's stone halls — that would take up volumes and would still be sure to miss a 'gem' that caught the eye of another visitor, but my time off the stand was short. Along with a number of my colleagues, we spent long days talking to our members and serving advice and information to the many who find the opportunities that Gem-A offers to be inspirational and aspirational. ■



6: The Cowdray Pearls, a natural pearl necklace by Cartier.

Fun in Freiburg

Kim Foxwell reports on Gem-A's first visit to the Jewellery & Gem Fair Europe, held in Freiburg, Germany, from 22-25 March.

2: Jeremejevites from Denis Gravier. Jeremejevites were once known as 'Desert Ice'.

Walking in to Messe Freiburg, home of the Jewellery & Gem Fair Europe, the first thing to strike you is the abundance of natural light. The halls are large and airy, and the visitor feels able to look around in a relaxed manner at the many types of gemstones and jewellery on display. A surprisingly eclectic variety of trade areas seemed to be represented; mass manufacturers and wholesale dealers from South East Asia, single retailers and independent designers from Europe, CAD printing companies, jewellery-making suppliers selling findings galore for both the hobbyist and the more serious jeweller (silver chains, leather thongs, partially diamond-set mounts, etc.), high-end and costume jewellery… and hidden amongst them an original (and operating) chain-making machine and a few manufacturers actually at work during the show. There was also a wonderful mixture of striking and rare gems, as well as gem carvings, strings of beads and pearls, crystals, and, of course, gem traders.

This was Gem-A's first time exhibiting at the Jewellery & Gem Fair Europe, which is organized by UBM Asia — the same outfit behind the Hong Kong Jewellery & Gem Fair. The show is only in its second year, and its proximity to Basel meant that a number of people did both shows in one trip, sometimes even in one day. A shuttle bus was provided between the two shows, and although the show at Freiburg was much smaller than BaselWorld, the variety and beauty of the stones on display did not reflect this, and there were a number of gems that were particularly exciting.

One of the most wonderful gems of the show was a 21.86 ct gem quality rhodochrosite (**1**), sitting quietly amongst several other eye-catching stones on August Mayer's stand. Although at first glance it seemed to be just another large, pretty stone, once noticed for what it was, it was difficult to ignore. Eye-clean and a beautiful bright pink, the fire dancing inside was clearly visible. It was also not the only unusual stone at that stand. A faceted triplite, showing a lively orange colour (with a hint of brown), sat nestled in its box on one of the shelves. Described by James Riley as being "like a fire opal without the cloudiness", it was all

1: A 21.86 ct rhodochrosite from August Mayer, displaying characteristic strong double refraction.

3: Smoky quartz bear by Nebert.

4: Ametrine orchid by Nebert.

6: Star quartz depicting Venus by Martin Steinbach. Particularly beautiful is the way the star seems to hover above Venus as part of the scene, rather than as a separate feature.

There was ... a wonderful mixture of striking and rare gems, as well as gem carvings, strings of beads and pearls, crystals, and, of course, gem traders.

the more remarkable as some of our most experienced gemmologists had never come across the species before, let alone such a pretty specimen.

The triplite was also far from being the only rare stone at the show. I was pointed in the direction of Denis Gravier, well-known for his unusual gems, and was not disappointed. Amongst his collection were some particularly remarkable sphalerites, beautifully cut, some even calibrated. As to be expected these flashed a great deal of fire, but they had an ever so slightly muted feel to them, which Denis explained was due to the softness of the stone (Mohs' hardness of 4), and the consequentially slightly blunter angles. Denis's collection also contained blue benitoites from California, a particularly bright purple Pakistani fluorite, sapphires mined in France, yellow chondrodites, Mahenge spinels, piemontite in quartz, star diamond slices, gem-quality apophyllite, beautiful lagoon-blue hemimorphite and jeremejevites (**2**) from both Namibia (blue)

5: Carved quartz sea shell by Carlo Wild.

and Madagascar (colourless), to name but a few. For collectors of rare gemstones his stand was a particular treat.

As well as uncommon and unusual gem species, there were also superb carvings and *objets d'art* made from gemstones, such as Nebert's wonderful smoky quartz bear (**3**) and beautiful ametrine orchid (**4**), magnificent in its fragility. There were also some fantastic demonstrations of skill and artistry, including Carlo Wild, one of the younger stallholders there, who had amongst his collection some beautifully carved seashells (**5**), delicate butterflies (which sadly could not be photographed as they had been sold), and a rather wonderful black tourmaline lion's face. Martin Steinbach had some very fine jade carvings, and a fantastic collection of different types of star stones, including star corundums and star quartzes, some with mythical or legendary scenes and creatures carved into them (**6**). Nearby, Hermann Petry had gemstones on display which had been cut using a relatively new water jet technique, which gave some fabulous results, as well as his more traditionally finely cut stones brought from Idar-Oberstein.

These were just some of the fantastic array of gemstones to be seen at Freiburg, displayed and sold by some wonderfully friendly and open stallholders, who were just as happy to direct enquiries to other exhibitors as to sell their own pieces. For a relatively small show that is still very new to the trade show circuit, Jewellery & Gem Fair Europe is definitely one to add to the diary. ■

The Diamond Show

Miles Hoare concludes the BaselWorld-Freiberg-Diamond Show trio with his report on the Diamond Show, held in Basel from 19-23 March.

Arriving in Basel you wouldn't have realized there was more than one show on. Walking along the Riehenstrasse, past high-hanging BaselWorld banners and flags flying proudly from tram fronts and posters picketing every bus stop and billboard, you couldn't help but think there was only room for one sheriff in the town, and he'd definitely got top billing.

There's something to be said about being humble, however. In an industry that often focuses on the large, luxurious and lavish, a sense of humility is very much welcomed by those of us put off by the flashing lights of fame and fortune. If you're a person of simple and straightforward pleasures then there is another offering in Basel that you would have been foolish to miss.

Located in Basel's old Markthalle, situated smack-bang in the city's historic centre, The Diamond Show acted as a more muted alternative to the garish extravagance of BaselWorld, offering nothing more than was suggested in the title: diamonds. Packed wall-to-wall with some of the more niche diamond offerings, the show has already attracted a number of sizeable companies, despite this being only the second year it has opened its doors.

From the outset, the differences between the two shows were greatly apparent. Rather than being packed in a monstrous labyrinth of interconnected halls, with all the trappings of the classic 'exhibition' feel, The Diamond Show managed to present a number of quality exhibitors and suppliers whilst retaining a relaxed, airy atmosphere.

Exhibitors ranged from a number of sponsors and service providers to the usual plethora of display boxes showcasing a range of diamonds from melee upward, with one particularly amazing vivid yellow 23 ct VVSI selling at $13,000/ct. Coloured diamonds were all the rage, with most opting to display their brightest and best ambers and vivid yellows. Although the diamonds around the show were plentiful and a joy to wander round and study, there was, on the whole, little to distinguish one stand from the next.

Franck Notari and Dr Thomas Hainschwang FGA of GGTL pose with Barnett Bear and their Diamond Fluorescence Imaging (DFI) machine.

On the service providers' side it was great to see strong representation from the European diamond centre in Antwerp, with the International Gemmological Institute (IGI), HRD Antwerp and Kompass Diamonds flanking the Gem-A stand. We also had the pleasure of meeting up with one of our returning conference speakers, Dr Thomas Hainschwang FGA, in attendance with Franck Notari, both of GGTL, to showcase their Diamond Fluorescence Imaging (DFI) machine. Similar to the DiamondView, the DFI combines fluorescence with various excitations, Raman spectroscopy and photoluminescence (PL) spectroscopy for melee stones. Users can test a number of stones at once, and are also able to study the spectrum at the same time as seeing fluorescence through a microscope. One of the first diagnostic tools of its kind, with similar products being offered by De Beers and SSEF, the DFI is a unique offering that we're excited to see emerge onto the market.

For Gem-A this was not only our first year at the show, it was also our first year joining the bill as a show sponsor, and presented a great opportunity to showcase some of our latest products and offerings. On show were the new Diamond Diploma course notes, released at IJL in September 2014 and now fully available to all members, past students and those looking to study our full Diamond Diploma course. Alongside our Diamond notes we promoted Diamond and Corporate Membership to those looking for a trusted source of industry information, resources and support. In addition to our educational and membership offers, Gem-A Instruments ran a special promotional show discount on the brand new Gem-A Multi Tester, capable of testing for metal, CZ and synthetic moissanite. The Gem-A Multi Tester is still available from Gem-A Instruments; visit www.gem-a.com/shop.aspx or email the shop at instruments@gem-a.com.

Overall, the feeling we received from The Diamond Show was very positive. Although there were murmurs around the Basel village about the uncertain future of the event, especially as an offshoot or competitor to the monster that is BaselWorld, what will happen next year remains to be seen. Although there were disgruntled words coming from exhibitors about the number and frequency of visitors, the main point of contention wasn't the show itself but current issues in the market. With many people suffering from restricted budgets and cash flow being more tightly regulated by the banks, sales of diamonds have suffered and the market has slowed, with many shows reporting underwhelming levels of footfall. As a show in and of itself, there's no reason why The Diamond Show shouldn't go from strength to strength. Organized with the skill and precision expected of Martin Rapaport and his team, and backed by the powerful media arm that is *Rapaport Magazine* and diamonds.net, we're confident that, come 2016, The Diamond Show will be back again — hopefully with a more buoyant market to play with. ■

Gem-A

THE GEMMOLOGICAL ASSOCIATION
OF GREAT BRITAIN

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