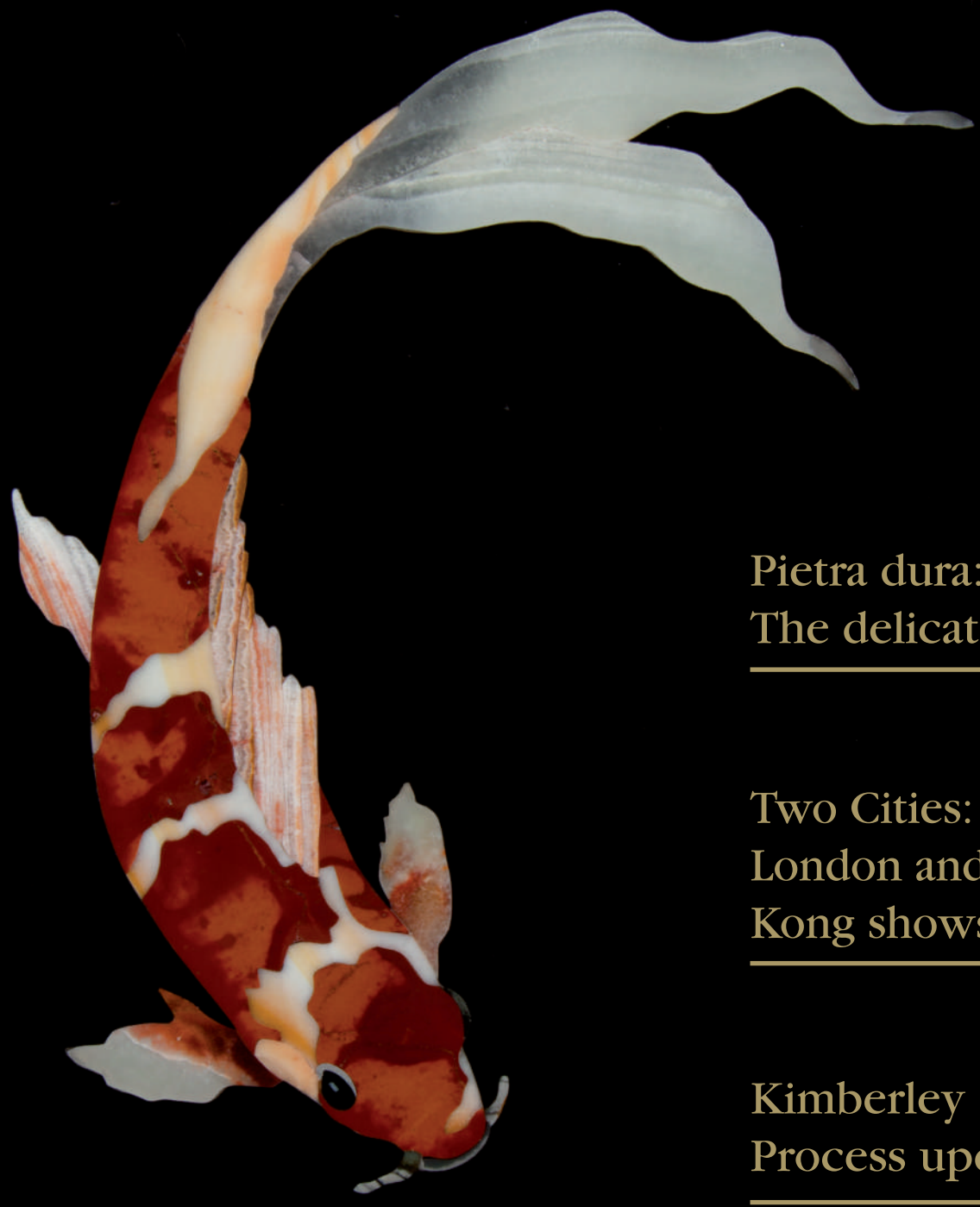
Gems&Jewellery

Autumn 2010 / Volume 19 / No. 3



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The delicate art

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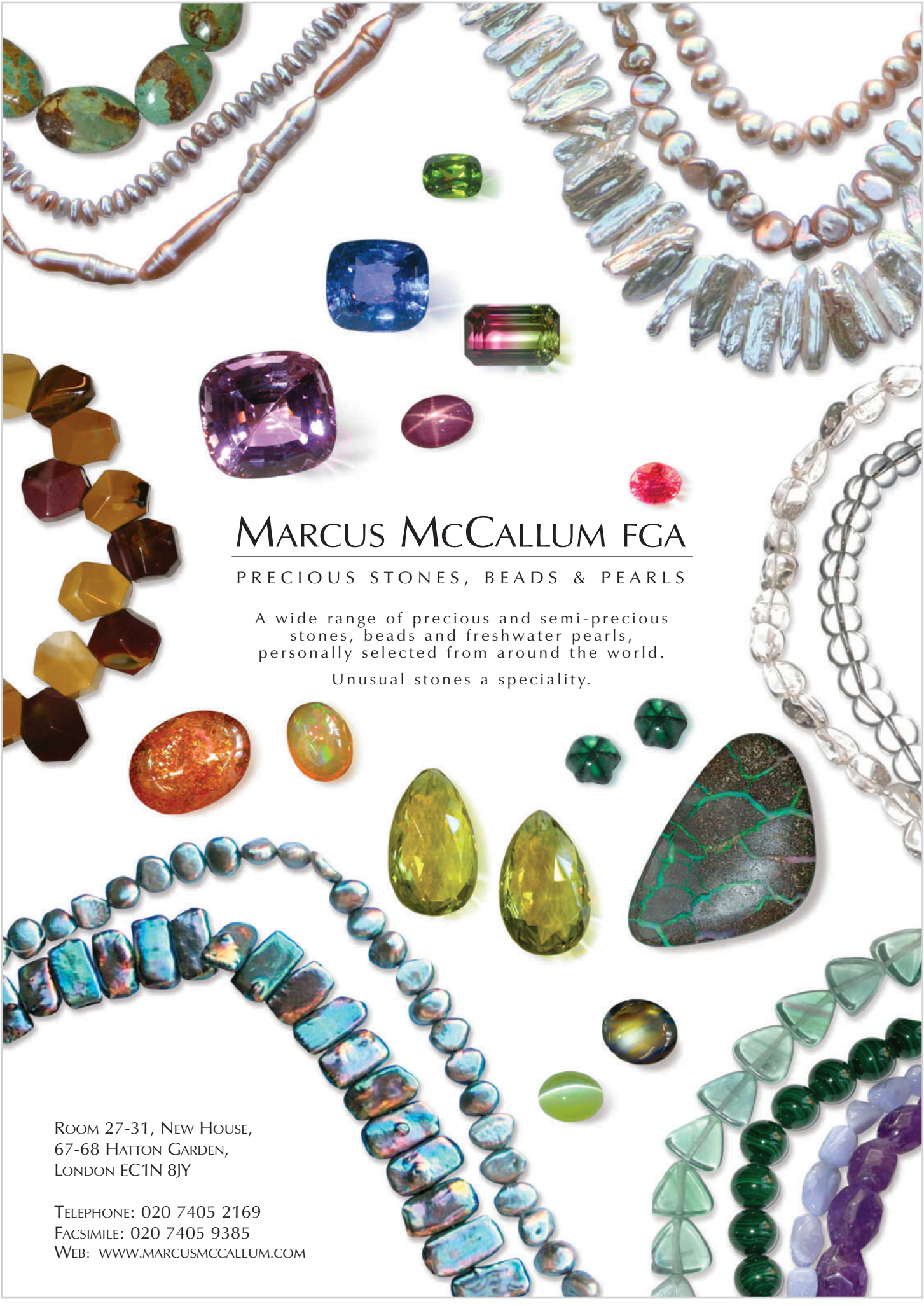
Kimberley Process update

The Gemmological Association of Great Britain



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Editorial

Gems&Jewellery

Autumn 10

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Ore what?

Cerussite is a naturally occurring, soft, white lead carbonate which often also contains a significant amount of silver. Let us imagine that we take some cerussite and separate it into its constituent parts by means of drastic physical and chemical processes until we are left with some lead, some silver and some carbon. The silver is refined to ensure 100% purity and then alloyed with other metals until it is 92.5% fine. This 'sterling silver' is subjected to all sorts of further processes until it finally emerges as a piece of silver jewellery. It is then proudly hallmarked to show its status as 'real' silver.

Now consider the bit of carbon extracted from the very same piece of cerussite. This is similarly subjected to drastic processes, although spared the indignity of being debased with other elements. This carbon is then crystallized as diamond. But it cannot hold its head high next to the 'real' silver, with which it had been intimately associated for eons; the crystallized carbon is a synthetic diamond, viewed by many in the trade (even those lovingly polishing their sterling silver jewellery) with suspicion at best, hate at worst.

The logic escapes me. Why isn't silver called 'synthetic silver' unless it is a rare example of natural, native silver? Why isn't gold jewellery described as being of synthetic gold unless it has been carved from a natural nugget of gold?

Of course, I'm writing this with my tongue in my cheek, but there is a point. The terminologies used in the gem and jewellery trades have grown up over centuries, seldom in a planned or logical way, and the rate of change has accelerated and the need to accommodate new materials and processes within old terminologies is creating considerable strains. Gem industry bodies cannot agree what to call treatments which have been around for five years, let alone new ones. We can agree that accurate scientific descriptions are possible, but most also agree that these are unrealistic in a commercial context — they are too long, too derogatory or too technical.

So what do we do? Perhaps the first step is to acknowledge that perhaps we are losing the present terminology battle and then ask what battle we were fighting in the first place. The enemies are not synthetic or treated stones, or honest sellers of them. We should celebrate both nature's creations and the extraordinary scientific accomplishments of those who synthesize diamonds or treat gems. Save derogatory names and scorn for evil or ignorant fraudsters rather than categories of products and we might make progress — and with greater sympathy from legislators and the public.

Jack Ogden
Chief Executive Officer

Cover Picture

Pietra dura Koi carp plaque by Thomas Greenaway. Photo © Greenaway Mosaics LLP. See 'The delicate art' on pages 16 and 17.

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KP — diamonds or nuts?*

The Kimberley Process is perhaps the most important issue currently affecting the whole of the jewellery industry. Harry Levy reviews the Process and gives insights into what is happening now.

In case anyone thinks that this article is written to debunk the Kimberley Process (KP), this is far from my thoughts. It is that in the ten years since its inception things have changed and both the NGOs and the trade now see faults with the Process.

Perhaps I should give a short history of the KP, which was designed to prevent the movement of conflict diamonds.

A brief history

The conflict diamond issue first 'surfaced' in Angola when a large number of alluvial diamonds were exposed after massive floods. At the time there was a civil war raging between government forces and the National Union for the Total Independence of Angola (UNITA) rebels. It was alleged that the UNITA was getting hold of these diamonds and using them to purchase arms, thus prolonging the war. The story is far more complex in that outside governments and western mercenary groups, paid in diamonds, were taking part in the conflicts and arms were being brought into the country from many sources. The role of conflict diamonds was recognized internationally and UN Security Council Resolution 1173 was passed in 1998, banning the purchase of these diamonds from Angola.

Civil wars also occurred in Liberia and Sierra Leone between 1989 to 2001. The UN accused Charles Taylor, the Liberian president, of supporting the Revolutionary United Front (RUF) in Sierra Leone with weapons and training in exchange for diamonds.

Civil wars also began to develop in the Ivory Coast (Cote d'Ivoire), the Republic of Congo (Congo-Brazzaville) and The Democratic Republic of Congo (formerly Zaire).

* KP stands for the Kimberley Process but also is a well known brand of peanuts produced in the UK.

The Kimberley Process

Some organizations involved and terms defined.

Blood diamonds, the term first used to define diamonds that were used to fund (civil) wars in Africa. This term was regarded as unacceptable to many sections of the trade and was replaced by the term **Conflict diamonds**.

Illicit diamonds, the term used to define diamonds that are used to launder money by criminal organizations, drug cartels, terrorist organizations and smuggled diamonds, to avoid the payment of taxes.

KP — the Kimberley Process. The first meeting was held in May 2000 in Kimberley, South Africa, to tackle accusations made by members of civil society, the NGOs.

KPCS — Kimberley Process Certification Scheme.

NGOs — Non Governmental Organizations, such as Global Witness and Partnership Africa Canada.

CIBJO, the World Jewellery Consortium, which works closely with the organizations listed below.

IDMA, the International Diamond Manufacturers Association. It should be noted that 'manufacturers' here means cutters and polishers of diamonds, and not manufacturers of jewellery, the way the term is normally used in the trade.

WDC, the World Diamond Council, set up in June 2000 at the joint Congress of WFDB and IDMA in Antwerp as the trade response and contribution to conflict diamond problems. It works closely with the KP, diamond organizations and the NGOs.

WFDB, the World Federation of Diamond Bourses. A federation of about 30 bourses which are trading floors for diamonds and found in most centres where diamonds are traded.

Around the Trade

KP — diamonds or nuts?

Global Witness was one of the first organizations to pick up the link between diamonds and conflicts in Africa and in 1998 published a report entitled *A Rough Trade*.

Before all this NGOs had mounted a campaign against the fur trade. This was highly successful. They brought in many well known and glamorous personalities from show business and filmed pots of red paint being thrown on people wearing fur coats, both in the streets and at fashion shows. They emphasized the blood aspect in obtaining these furs, and eventually the fur trade was decimated to the very small and exclusive trade it is today. One of the unwitting outcomes of this campaign was the effect on the Native Canadians, tribes such as the Inuit, who were very dependent on the trapping of animals. The serious depletion in the demand for furs has caused them much hardship.

The campaign against diamonds initially referred to them as blood diamonds, and a campaign was initiated similar to the one against furs. The public were subjected, through the media, to pictures of native Africans who had limbs amputated and of other atrocities committed on the native civilian population in areas where these wars were being fought. This is a technique known as an 'association of ideas', whereby showing a picture of diamonds followed by a picture of an amputee whenever diamonds are mentioned, eventually causes one to 'see' the picture of the poor native and vice versa: when shown a picture of an African amputee one associates this with diamonds. A similar technique is used by advertisers, juxta-positioning two separate ideas and images.

The NGOs' campaign was successful in that it brought the UN, governments and the diamond trade together to remove the problem of blood diamonds. The trade accepted the analogy with the fur trade, although it must be said that every fur is a blood fur because it involves killing an animal, whereas it was agreed by all parties that relatively few diamonds were 'blood diamonds' (a figure of about 3–5% of the international global diamond trade was accepted, although whether the percentages represented stones by number or weight was not satisfactorily explained).

Another premise that was strongly pushed was that diamonds were the cause of these African wars and if one eliminated the diamonds one would eliminate the wars. This is a logical fallacy since diamonds were merely 'a' cause and not 'the' cause of the wars. There are many wars in the world where diamonds play no part, although they all need financing.

A meeting was called in Kimberley, South Africa, to come up with a solution. The dominant players there were governments; those in power in Africa had legitimacy on their side and all who opposed them were branded as rebels.

The Hollywood film *Blood Diamonds* caused great fear in the diamond industry. They saw it as a film placing the atrocities being committed in Africa squarely on the shoulders of the diamond trade. Attempts were made to try to stop it from being produced, but all who saw the film will agree that it was a good yarn; it covered some of the political issues, showing that the civil war in Sierra Leone had some justification in that many of the natives had a miserable life, and showed that amputations, however atrocious, were used by the rebels to discourage people from voting for the existing government — not to induce them to reveal sources of diamonds.

When the KP was first set up it involved the UN, governments, civil society and the diamond industry. No attempt was made to try to define who were the 'goodies' and who were the 'baddies'. By default the governments were the 'goodies', and this lack of placing blame is now emerging and could destroy the KP.

During the Diamond Congress in Antwerp the trade response was to set up the WDC, involving some of those sitting in the KP, as well as a much larger proportion of trade representation. Eventually the trade representatives and the KP set up the KPCS, a certification system whereby all rough diamonds are subjected to stringent controls in their movements from one country to another.

However questions are being asked as to why the system applies to rough diamonds only and not to polished ones, and also why the trade has not set up a system to determine the origin of diamonds to enable us to pick out stones that come from, say, Sierra Leone, Angola or the Ivory Coast.

The reason that rough diamonds cannot have their origin determined is that they migrate. In gemmology the origin of a gem is where it was produced in the ground, not where it is found. Gems acquire impurities when they grow in the Earth's crust and it is these impurities that give characteristic colours and growth patterns for stones. Thus, sapphires from Australia are dark whereas those from Ceylon are light in colour, and we can, in many cases, differentiate between emeralds that come from Colombia, Zambia and Russia (a bit like identifying wines and teas). It is much more difficult with diamonds; they surface in volcanic eruptions through kimberlite pipes and are then subjected to movement through floods, storms and rivers (known as alluvial diamonds), and so could have moved several thousands of miles from where they originally crystallized.

The reason that the KP does not apply to polished stones is purely pragmatic; it would be impossible to track every polished stone. The rough is produced in just a few countries and exported after tight controls and inspections have been carried out in the producing countries. We have to assume that the authorities ensure no conflict diamonds are put into the sealed tamper-proof boxes which are then exported to the cutting centres accompanied by a KP certificate. The boxes have to be presented to the authorities in the accepting country who then pass them on to the traders. Should a trader then wish to re-export the whole or part of a packet, approval must be obtained from his diamond authorities who issue a new certificate. Audited accounts have to be produced by such importers to ensure that no conflict diamonds have entered the system.

When rough is sorted, it is sorted not by origin but by size and quality. I understand that De Beers sort their rough into over 5000 groups and so tracking an individual stone is lost at this stage.

To have some sort of control over polished stones it was agreed that buyers should assure themselves that they buy only conflict-free stones. This is done by a system of warranties supplied by the seller who gives a written guarantee on his invoice. This system is applied

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at every stage until the stone reaches the end consumer. There is no KPCS for polished diamonds.

The present situation

The system seems to have worked reasonably well over the past ten years. However, it has now been seriously challenged by the recent finds of diamonds in the Merange fields in Zimbabwe. Artisan miners began to pick up these stones but soon the government authorities took over, killed some of the miners, and are now using the stones to keep themselves in power. The NGOs are now complaining that there are human rights abuses in the diamond fields in Zimbabwe and that Zimbabwe should be suspended from the KP, thus making them unable to export their diamonds and obtain further funds.

This is where the problems now arise as the KP does not have such powers of expulsion over governments in power; it was set up to maintain governments. Authorities in non diamond producing countries have found the KPCS an excellent tool to control the movement of all rough diamonds, conflict or illicit, and thus a wonderful tool for collecting revenues. Indeed, one of the participants in the KP are the World Customs Organizations (WCO).

Diamond cutters are complaining of a shortage of rough in the international market (partially due to De Beers, who now have a much smaller share of the market and have made drastic changes to their sight-holders' system) and express a need for the release of the millions of carats stockpiled in Zimbabwe and the huge mining potentials there. They also claim that if Zimbabwe is banned, it is possible that more of their stones could find their way onto the market through smuggling.

Interestingly two countries who were holding out for the suspension of Zimbabwe were Australia and Canada in the latest KP and WDC meetings. They are both important producers of diamonds and a huge increase in the rough available could bring down prices.

The one group who are maintaining a strong stand are the NGOs. In a meeting in St Petersburg in July, agreement was finally reached to allow Zimbabwe to export part of their stockpiles on promises of improved human rights and independent inspections. The NGOs claim that, in the latest inspections, they felt intimidated by the Zimbabwean authorities. However, the KP was set up to prevent civil wars; there isn't one in Zimbabwe. The KP was never intended to prevent human rights abuses such as unacceptable child or other exploitive labour.

Ian Smilie of Partnership Africa Canada, one of the architects of the KP, has recently resigned claiming that the KP was no longer functioning as it should. He is now writing a book on the diamond industry.

Meanwhile the industry is waiting for a final report on the situation in Zimbabwe, due at the end of September. If too many people now say nuts to the KP it could lose its authority and disappear. But if the KP does disappear, what would replace it?

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A tale of two cities

September is the month of two jewellery shows at which Gem-A exhibits: London and Hong Kong. These shows couldn't be more different in terms of size, but both give insights into the current state of the gem industry.

The London show, International Jewellery London (IJL), is billed as the UK's fine jewellery show and organized by Reed (5–8 September 2010). It is held at Earls Court, London, and is still affectionately referred to as 'The Earls Court Show' (see page 8 for a comment). The Hong Kong show, the UBM September Jewellery Show, is described as the world's largest jewellery show and is spread over two enormous venues (Asia World Expo 14–18 September 2010 and the Convention and Exhibition Centre 16–20 September 2010).

Diamonds

There were a handful of diamond dealers showing loose diamonds at IJL — including Michael Goldstein with a niche market in old cuts — but it was a far cry from the acres of diamonds available at the Asia World Expo in Hong Kong where some 400 individual booths were selling the loose material. I took an informal poll — how many loose, polished diamonds do people reckon there were at Hong Kong, including everything from one pointers up to the mega-carat rocks. No one is prepared to count, but an estimate of 10 million stones doesn't seem to strike anyone as too far out. I noted one tray of one-pointer diamonds, among the thousands of such trays of small diamonds in Hong Kong, that strove for individuality by showing the logo of its company written with a finger — The Blue Diamond Co. of Hong Kong (**1**).

Most of the aisles of booths provide little individuality in their serried ranks of trays and packets of diamonds. At the 2009 Hong Kong show I asked a friend who works for a major diamond-related organization how the

1. One tray of one-pointer diamonds among the thousands of such trays of small diamonds in Hong Kong strives for individuality by showing the logo of its company — The Blue Diamond Co. of Hong Kong. © Gem-A. Photo Jack Ogden

myriad of diamond merchants differentiated themselves. The sage — or was it cynical — answer was "The length of credit they give".

Indian companies, often with Hong Kong offices, made up the majority of diamond dealers at the Asia World, but India is not the only diamond provider doing well in China and Hong Kong; the region imported US$ 1.6 billion worth of diamonds from Antwerp in the first half of 2010.

As far as mounted diamond goods go, both IJL and the HK Convention Centre clearly demonstrated how diamonds still hold the prize when mid- to high-end jewellery is considered. There is now also a plethora of inexpensive, diamond-set jewellery available — big business, but one can't help feeling that it will have a negative effect on the sales of mid-range pieces.

For diamond-set jewellery the action in Hong Kong was at the Convention Centre — a 45 minute rail or shuttle bus trip in from the Asia World Expo site. At the Exhibition Centre there are hundreds of low-end diamond jewellery producers and wholesalers, but for the best stuff the Premier Pavilion was an Eldorado. To take but one example; Dehres Ltd showed a large range of diamond solitaire rings in 6 to 18 ct and up (we are talking diamond weight, not gold fineness) as well as fancy coloured diamond rings and jewellery, seemingly increasingly available and perhaps increasingly in demand. In Dehres vitrines were fancy yellows in various sizes and shapes up to 27 ct, pinks up to 6.5 ct and an unusual fancy orange-brown nudging 50 ct (although I must say I am not sure about the fashion for setting yellow diamonds in yellow gold). As an indication of the sheer scale of the show, Dehres Ltd, in two small showcases alone, showed jewellery with more than 50 fancy yellows in sizes greater than 3 ct. The increasing interest in yellow diamonds is also seen in the UK where, at IJL, P.J. Watson exhibited a fine range of rings set with fancy yellow diamonds of sizes more equitable for British pockets.

Star struck

For really top-end diamond-set jewellery IJL was a disappointment. The great names in Bond Street and Knightsbridge might well be among the greatest diamond retailers in the world, but London's traditional standing in the diamond market was certainly not reflected in the jewellery on show at IJL. It is still difficult not to be jealous of the rapidly developing jewellery markets in equally rapidly developing countries around the world — and the wealth and variety represented in Hong Kong.

Shows and Exhibitions

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Show time for the UK trade

IJL 2010. Photo courtesy of IJL.

IJL — International Jewellery London 2010 — looked good; considerable thought had gone into its design and layout, and it was busy and buzzing, but there was clearly a question in the air: what is the IJL show now? IJL has traditionally been billed as the UK premier fine jewellery show and, traditionally, fine jewellery has meant fine quality, high-end jewellery.

However, my overriding impression of this year's IJL is that it is changing its positioning. Less expensive silver and even costume jewellery proliferated. This is not just my view; several exhibitors and visitors have expressed the same thoughts — perhaps most starkly put by one US exhibitor: "IJL has become a low-end show".

That might be an exaggeration, but there has certainly been change. We might see this as a shrewd move by the IJL organizers, Reed, to recognize and meet the changing nature of the UK jewellery trade or, more mundanely and simply, an inability to tempt the higher end exhibitors. Indeed these are really two sides of the same coin and reflect the current realities of the UK jewellery industry.

One can see the logic in a re-positioning by IJL, even if some might be disappointed by it. The big challenge for IJL, however, now lies ahead. Very careful and strategic thought will be needed to brand and position the show for future years. How can they differentiate IJL from the other main UK jewellery show, the NEC show in Birmingham (hitherto thought of as the less-fine jewellery show), or from the numerous gift shows and even the ubiquitous rock and gem shows around the country which are voraciously expanding to encompass ever more beads and silver jewellery? It's a conundrum.

If we ignore the treasure houses of Bond Street and Knightsbridge, and the rare outposts of certain 'county jewellers', the jewellery trade in the UK is very different now to what it was even a generation ago. We'd be foolish not to recognize that, and maybe foolish to expect IJL to have more of the magnificent jewels, huge diamonds and priceless gems that grace the finer pavilions in shows such as those in Basle or Hong Kong. But once you take the wow factor and aspiration out of jewellery, it is just another commodity competing on price points and margins. We know the sort of car the average family owns, but also what the average person aspires to own. Where would the motor industry be if the Motor Show focused on Ford Fiestas?

One might argue that a major function of a trade show is to generate an unrealistic desire among the public to own the best that the trade can offer. We might wish to stop short of admitting the public to our UK jewellery shows — although Basle manages that perfectly well — but we need to go all out to use the shows to focus media and thus public attention on jewellery.

So how do we define interesting and aspirational? Which is more likely to elicit a jeweller's or jeweller's customer's admiration and excitement, and create a media 'story' — something vaguely novel produced by a bright young designer with a few grams of silver and a cabochon garnet or a unique 18 carat gold necklace set with a matched suite of Brazilian Paraíba tourmalines? I think the future of IJL and that of many UK jewellery retailers lies in the answers to that question.

Reed is not a trade organization, it is a show organizer, and the UK industry needs to be reminded of the difference. For Reed, IJL is the culmination of a year's hard work. For a trade organization, IJL is one of its launch pads for the future. IJL, for example, is justly proud of showcasing young designers, and in so doing they are fulfilling their job. The UK trade organizations' job will be done when those bright young designers — and some more seasoned designers and manufacturers — are standing proud and well marketed in the design aisles of Basle or Hong Kong. If we have no aspirations for our jewellery industry, how can we expect the British public to have aspirations for our jewellery?

Jack Ogden

A tale of two cities

I prefer to avoid the shuttle buses and the (almost) direct train between Asia Word Expo and the Convention Centre, and take the slightly longer route to use that symbol of Hong Kong — the Star Ferry. These wonderful old vessels proudly bear notices saying that they were built in Hull, Britain, in the 1950s. This is much the period when repro Victorian star brooches and other manifestations of the overt post-war conservatism of the UK jewellery industry were sucking its creative life blood and, I fear, signalling its decline. The rapid rise of China's domestic market for fine jewellery is just part of that country's equally rapid rising wealth. It is estimated that within five years China will be fourth in the world's list of countries with high-worth households in percentage terms. It is sobering to realise that the UK is still third in that ranking (after USA and Japan). So it is not a case of wealth; our modern UK population just seems overtly modest in its appetite for fine jewellery.

2. Louis Gabriel Angarita, president of the Colombian Emerald Exporters Association (ACODES), in front of one of the Colombian Emerald booths at Asia World Expo in Hong Kong. © Gem-A. Photo Jack Ogden.

Colour

As always, both the London and Hong Kong shows are treasure houses for lovers of coloured stones; from every possible range of synthetics and imitations, to natural coloured stones. In London such seasoned exhibitors as Apsara, Joias, Marcia Lanyon, Marcus McCallum and G.F. Williams exhibited fine selections of gemstones to suit all pockets and all jewellery styles.

For scale of offerings, of course, one has to head to the multiple exhibition halls of the Asia World Expo in Hong Kong. Here are acres of stones; from barrow loads of imitations and synthetics to some of the finest gems in the world. Some gemmologists now rate Hong Kong as a better destination than Tucson as far as sheer range and good prices are concerned.

Exceptional coloured gems — and unique diamonds and important natural pearls — are finding an increasing market in China and other parts of Asia where they are considered good investments. Many hope that this will prompt greater interest by consumers in general. Among the sellers of finer gems in Hong Kong we can note the Brazilian Pavilion with 28 exhibitors; a showcase of the extraordinary range of coloured gems from that country. The Pavilion was organized by the Brazilian Gems and Jewellery Trade Association (IBGM), an organization which seeks to represent and promote the growth of the Brazilian gem industry. The collective might of such organizations helps dealers cater to the growth of the coloured gemstone market in China, a growth which underlies the presence and strategies of many exhibitors. Thus the Colombian Pavilion featured eight Colombian emerald exporters, brought together by the Colombian Emerald Exporters Association (ACODES) under the enthusiastic and ambitious leadership of its president Louis Gabriel Angarita (**2**).

Among gem-producing countries Vietnam is now holding its own as a supplier of gorgeous lilac, pink and blue spinels. A superb example of the latter weighing just over 10 ct (**3**) was shown to me by Joseph Belmont of K.V. Gems Company Ltd, Bangkok. These natural blue spinels are coloured by cobalt — something that gemmologists trained in the past with the 'cobalt in blue spinel means synthetic' mantra need to remember.

So far I've ignored set coloured gems. For these, as with diamonds, the spotlight in Hong Kong moved from Asia World Expo to the premier pavilions of the Convention Centre. Here was a veritable treasure house; for example, Horowitz exhibited a collection that ranged from a magnificent nineteenth-

3. A superb natural cobalt-blue spinel from Luc Yen, Vietnam. 10.02 ct. K.V. Gems, Bangkok. © Gem-A. Photo Jack Ogden.

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century diamond and natural pearl tiara to a diamond and ruby necklet with 55 large and matched Burmese rubies. I also liked Gorgoglione Srl's necklet mounted with a mass of different coloured cultured, conch and melo pearls interspersed with diamonds.

Jade and tourmaline

Jade, of course, retains pride of place amongst the gem materials coveted by Chinese and Hong Kong consumers, and it was good to see that jewellery designers are now being more innovative in their use of the stone to meet the aspirations of wealthy young buyers. The jadeite market has been little affected by the economic downturns — showing just how insignificant the US and EU barriers to trade from Burma have been, and how insignificant the US and EU are in the jadeite market. As an example, the Burma jade auction held in the middle of 2009 saw a single lot consisting of two slabs of jade, with a total weight of 36 kilos, fetch US$11.5 million.

The expansion of China's coloured gem market, and a break of jade's stranglehold over Chinese and Hong Kong consumers, is the focus of the ambitions and optimisms of many international gem dealers and designers. Change is slow, slower than most would wish, and still the only commonly acknowledged coloured gem in China is red tourmaline — an unexpected choice to outsiders' eyes until they understand the combination of tradition and marketing that has given this stone its exalted position. But there is light on the horizon; Peter Sherman of Australia's Sherman Opals compared China in 2010 with Japan in the 1970s — a country then with a rapidly growing class of discerning and more globally aware consumers.

5. Pink tourmaline and yellow diamond ring by Aiko Yamazaki, Renaissance Gem Inc, Japan. Photo © Renaissance Gem Inc. (www.renaissance-gem.jp)

China's gems

Among Chinese coloured gems, the award for largest quantity must surely be awarded to the peridots from the Hunan Province in China that were on offer in Hong Kong. Shown in **4** are lower quality stones. Depending on quality, prices for this faceted material ranged from $1 a carat up to several hundred dollars a carat. The Chinese material is reportedly almost identical to that from Arizona.

The growth of China's jewellery industry is being strongly supported by its regional governments — something we should be jealous of in the UK. For example, Shenzhen's municipal government has allocated a staggering half billion US dollars to boost the city's traders' use of eBusiness over the next five years. This is for all business categories, not just jewellers, but the jewellery industry will get its share.

Gem-A, with five teaching centres in China, is happy that coloured stone dealers are also reporting an increasing desire for knowledge about coloured gems from Chinese consumers. We can note, without further comment, that some see a focus on gem lore and myth as one way to grow the mainstream gem market in China. This is all good news for gem dealers, but it also seems clear that this growing market will be inextricably tied with international brand awareness; meaning that coloured gem sales will be best served if linked with well marketed jewellery brands.

4. Chinese peridot from Hunan province offered by Yongxin Gems of Panyu (www.yongxinbaoshi.com). © Gem-A. Photo Jack Ogden.

Lap of honour

The interest in unusual and individual cuts for coloured gemstones is also expanding, although this trend is still little in evidence in Britain. By interesting cuts I mean excellent lapidary work designed to bring out the best of a gem. One example, which sums up the global nature of our trade, is the pink tourmaline, yellow diamond and white gold ring by Japanese designer Aiko Yamazaki (Renaissance Gem Inc, Osaka) (**5**). The pink tourmaline is the work of award-winning American lapidary Michael Dyber. In talking about interesting cutting I do not necessarily include all examples of what

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I see as an increasing predilection for too many facets; so that gems, including beads, are becoming all sparkle and no subtlety or character (a trait perhaps rubbed off from the diamond industry). Also, as with the diamond industry a few years ago, we can see an increase in patented cuts for coloured stones — such as Swarovski's 'Arc Cut' which, they say, provides a 'vivid interplay of tradition and modernity' — a statement that most cutters and jewellery designers would hope to apply to their work.

Pearls

Cultured pearls can hardly be forgotten. The Hong Kong show included the usual acres of strands of Chinese freshwater cultured pearls, from US$1 a row upwards, but the Chinese producers have been hit by the economic downturn over the last couple of years. Even so, Shanxiahu Town in Zhejian Province, China's 'pearl capital' (accounting for 73% of world freshwater cultured pearl output), still exported US$170 million worth of freshwater cultured pearls in the first quarter of 2010. Improving technology, including automated sorting on the basis of shape, lustre and colour, is making the market more efficient and at least one Chinese pearl farmer and exporter, Grace Pearl, has entered the retail market selling online directly to consumers.

Pearls are not just an export market for China. Astute dealers recognize that China has had a long tradition of treasuring pearls — they have been found in ancient Chinese royal burials — and so companies such as Tahitian cultured pearl supplier Robert Wan are eyeing the Chinese domestic market with interest.

With the myriad inexpensive freshwater cultured pearls available it seems strange that there is still any market in imitation pearls. Certainly the imitation pearls market has taken a huge hit, but there are still imitation pearls around, such as those of coated shell (**6**).

Chinese Akoya

China isn't only a producer of the abundant and often ridiculously inexpensive freshwater cultured pearls; there is, for example, the Akoya cultured pearl production in Guangxi Province. Here production fell slightly in 2009 in the wake of the economic downturn, but even so some four tons of Akoya were produced and we might expect that at least a percentage of these are now aimed at the domestic market. It would be a mistake to assume all Chinese Akoya are poorer quality. Of course quality and prices of Chinese Akoya cultured pearls vary, but some fine quality Akoya (those with nacre thicknesses over 0.6 mm) are being produced in China, and sell at wholesale at two to three times the price of those of similar size, but with thinner nacre layers.

6. A sample of Chinese-made coated shell imitation pearls. Dahua Jewelry Company Ltd, Hong Kong. © Gem-A. Photo Jack Ogden.

Treatments

I was not aware of any overall improvement in the disclosure of treated stones that were on display in Hong Kong (anyone want a ton of 'natural rubies' at $2 a carat?). A type of negative disclosure, long feared by stalwart CIBJO adherents, seems to becoming widespread by default — if a stone isn't labelled to say it is untreated, assume it probably is treated. This might cause apoplexy among traditionalists, but I can see it becoming a convention in the industry; a simple and logical (and sadly maybe the only workable) answer to the disclosure debate. However this will only help the industry in the long term if retailers and consumers are informed rather than bamboozled by this approach. This approach was equally true at IJL; finer, non-treated gemstones, in general, were at a premium and exhibited with labels saying 'non-heated' and such like.

Talking of treatments, Creative Gems and Jewelry Public Co. Ltd of Thailand have made a benefit out of problems. Some two percent of irradiated 'London blue topaz', the raw material from Sri Lanka, actually turns a greenish colour on treatment rather than blue — so they are now marketing 'teal green topaz'.

Synthetic gems

Demand for synthetic gems — CZs in particular, — has been unaffected by the crisis and is now growing as these materials are ideal for silver jewellery. The increasing demand is accompanied by falling prices as competition increases and larger production and improved cutting technology provide greater economies of scale.

Among the wide variety of synthetic gems available in Hong Kong was Russian-made synthetic hydrothermal morganite (pink beryl) (**7**). Synthetic morganite has been known since the 1990s but only now seems to be appearing in a good pink colour in commercial quantities. The older synthetic morganites owed their colour to titanium, not manganese as with the natural stones.

A tale of two cities

7. An example of the Russian synthetic hydrothermal morganite (pink beryl) on offer in Hong Kong next to a Chinese peridot. © Gem-A. Photo Jack Ogden.

This led to a recognizable spectrum and lower constants — it will be interesting to see how the recent material compares. Under the microscope the new Russian material revealed the typical appearance of a hydrothermal synthetic.

The other synthetics and imitations on show were described with varying degrees of imagination and honesty. Thus the synthetic sapphires and emeralds being offered by Anupam Gems of Japan are described as 'Created from Natural Scrap'. It was unclear whether this was intended to imply 'ethical' credentials of some sort or to elevate the stones above those made from more humdrum raw materials. Dayuan Handicraft Product Factory of Guangzhou had a wide range of imitation amber objects and beads on show described as 'synthetic amber' (**8**). We have samples and will investigate further.

Diamond coated CZ

There was more 'diamond coated' CZ on offer. This is often sold under various trade names including 'Diamondlite' and 'Diamondspark' with varying degrees of transparency as to its true nature. Talking of transparency, the diamond coating on CZs has been viewed as a bit like the emperor's new clothes by some who have been unable to detect its presence, so Diamondlite provides photomicrographs, including a tunneling electron microscope image at 120,000 times magnification, which show the clusters of cubic diamond nano-crystals on the CZ facets (www.diamondlite.co.jp). They also note that: "Impurities have been added to the diamond coating layer to eliminate the possibility of a Diamondlite® testing as diamond on a diamond tester." It would be interesting to know more.

Seminars and events

IJL London and the Hong Kong Show both included a variety of events and seminars. Seminars were presented at IJL by Gem-A and the Gem-A sponsored ICA Reception in Hong Kong (see In the News, page 26). The Gem-Empathy Award at IJL was again presented to C.W. Sellors (see report on page 29).

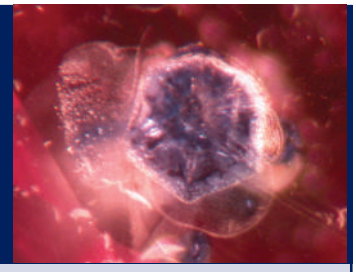
Of the other Hong Kong seminars, mention can be made of those presented by the Hong Kong Institute of Gemmology (one of Gem-A's allied teaching centres). The first was a study of 'The latest technological advances in enhancement and the market trends in rubies' by Prof. Guo Shou-Guo of the East China University of Science and Technology. The talk covered the developments in the treatment of rubies. Glass filling was, of course, discussed, along with heat treatment — now often carried out in several successive stages. Experiments to date suggest that ruby from Yunan, China, might well be heat treated to compete with the finest Burma 'pigeon blood' rubies. Madagascan yellowish-red corundum can be heat treated to produce a fine red. The second talk of the seminar was by Prof. Ou Yang Chiu-Mei, Director of the Hong Kong Institute of Gemmology, and covered 'The distinguishing factors and grading of "glassy" and "icy" varieties in jadeite jade'.

Ruby treatments and grading topics both recurred in the Gemstone Industry and Laboratory Conference (GILC) held in Hong Kong on 19 September. This is an invitation-only conference that forms an international forum to discuss important current topics. Representatives were present from many countries — including Gem-A from the UK — and the primary focus of discussion revolved around appropriate terminology for glass-filled rubies and the Thailand gem traders' proposed grading system and pricing guide for rubies. These are both crucial subjects for the international trade and it is hoped that we can report more in due course (to encourage a free expression of views, the discussions are kept confidential until agreement is reached).

Jack Ogden

8. A selection of imitation amber beads from Dayuan Handicraft Product Factory, Guangzhou. © Gem-A. Photo Jack Ogden.

An update on the heat treatment of ruby and sapphire



Distorted hexagonal blue-coloured guest crystal in an orange sapphire from Songea (Tanzania) heated with beryllium. Photo courtesy of Ted Themelis.

A ONE-DAY GEM-A SEMINAR WITH TED THEMELIS

Saturday 6 November 2010 from 10:00 to 17:00 at Gem-A's London headquarters

We are extremely fortunate that Ted Themelis, who has had first-hand experience in the treatment of ruby and sapphire, is able to visit the UK to present this important seminar. The day is to be divided into eight sessions where you will learn not only about the treatments used to enhance these gems, but also about their pricing structure. In addition, between each session you will have the opportunity to examine the treated stones for yourself, so please be sure to bring along a penlight and your 10x lens.

Full details of the programme for the day can be found in the Gem-A Conference 2010 leaflet and on our website at www.gem-a.com.

SEMINAR FEE:

£125.00. Gem-A members and registered Gem-A students: £98.50

TO BOOK:

For a detailed programme and to download a booking form, go to **www.gem-a.com/news--events/events/update-on-heat-treatment.aspx.**

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Organics

Organics are very tactile — that is one of their main attractions. Maggie Campbell Pedersen tells how they may be identified primarily by observation: sight, touch, smell, and sound — plus, of course, by using some common sense.

Getting a feel for organics

I am often shown weird and wonderful examples of organic gems when I give lectures for the National Association of Decorative and Fine Art Societies (NADFAS). Frequently, these items have been brought back to England from far-flung parts of what was once 'the British Empire' and have been handed down through a generation or two. Knowing the provenance can help considerably with the identification. For example, it was not difficult to ascertain that a necklace of woody-looking beads from Burma showing patches of transparent crimson by transmitted light was in fact not wood but Burmese root amber.

Today amber and its imitations are a minefield, but faking the material is not new. For 2000 years or more we have not been content to leave it in its natural form, but have clarified or darkened it and for hundreds of years we have imitated it using everything from dyed, boiled egg white to rhino skin.

As time has passed we have become masters of the art, but fortunately some of the imitations are still quite obvious, as in the case of opaque red, cast phenolic beads (the ones we usually — slightly inaccurately — call 'Bakelite') (**1**). I have never quite figured out what type of amber the beads were meant to be copying, but I still find it a little difficult to tell a proud owner that they are not amber but an early plastic. ("But I inherited them from my grandmother!" comes the cry.) However, the owners are usually somewhat mollified by the information that Bakelite was invented in 1907 and is not just 'any old plastic', and that such beads are now collectors' items and can fetch even higher prices than an amber necklace of equivalent age. But, as already stated, it helps to know the provenance because, as the value of these old beads increases, they are being copied and new ones are appearing on the market at high prices with labels such as 'vintage amber Bakelite'. The new copies are clearly of no particular value, but can be difficult to tell from the originals.

1. Cast phenolic beads, usually called 'Bakelite'. Photo © Maggie Campbell Pedersen.

To identify organic gem materials by knowing their provenance and handling them is one thing, but to try to identify them from photographs is possibly a little foolhardy. There can, however, be occasions when it is possible because some organics display typical structural features. Organics are not often the subject of discussion on Gem-A's online discussion forum, MailTalk, but in recent months they have featured quite often, and in a couple of instances it has been possible to be fairly certain about the identity of objects from the detailed photographs supplied.

The first was a brooch mounted with a turquoise-blue stone showing the clear structure of mammoth tusk. With the obvious proviso that we can never be 100% certain of an identification without actually handling and examining an item, given the age of the brooch it seemed very likely that the 'stone' was odontolite, the mammoth ivory heat-treated in ages past by Cistercian monks in Gers in France. It is very rare to come across examples of the material and this was a particularly lovely one.

Organics

2. Detail of conch shell cameo. Photo © Elise A. Skalwold.
3. Vulcanite pendant. When rubbed between thumb and finger it gives off a faint odour of rubber and sulphur. Photo © Maggie Campbell Pedersen.
4. Copal, turned green in an autoclave and showing evidence of added organic dye. Photo © Maggie Campbell Pedersen.

The second instance was a query about a cameo, and thanks to a very clear photo of the structure in the different colour layers of the item, it was possible to say with some certainty that it was carved from conch shell (**2**). Two types of shell are commonly used for cameos: the conch and the helmet shell. They both display very fine striations caused by the perpendicular columns of calcite that make up the layers in porcellanous shells, but in the helmet shell these run approximately at right angles to each other in each colour layer while those in the conch shell all run in the same direction.

Identification by sight is obvious, but what of the other senses: touch, smell and sound? Many organics are warm to the touch as opposed to cold, for example jet compared to 'French jet' (glass). Others will be cold as opposed to warm, for example coral compared to a plastic imitation. Furthermore, the jet will seem light as opposed to the glass, which will be comparatively heavy, and the coral will be heavy in comparison to its plastic imitation.

There are many instances where smell is important; in simple 'hot needle' tests the odour resulting from scorching a small area of the item gives a distinctive and identifying smell. But we do not always have to perform a destructive test to use 'smell'. By rubbing a suspicious looking black pendant (**3**) it may be possible to detect a smell of rubber and sulphur — an indication of vulcanite, which would indicate a jet imitation — although both jet and vulcanite are warm to the touch.

But how about sound? Where does that apply? It is less often used, but none-the-less valuable as there are times when the sound a material makes can help with identification. For example, when knocked together glass beads will not sound the same as jet beads, and sometimes — due to the typical 'clink' made by acrylics — one can hear the difference between amber and acrylic imitations by the sound they make when gently tapped against a hard surface.

There are, of course, times when no amount of common sense or 'feeling' the object will identify it, and at those times we do need the help of more sophisticated tests and, on occasion, of a laboratory. Also, in-depth research into various aspects of organics is fascinating and sometimes very necessary — for example in the case of the so-called 'green amber' where we are now not only encountering copals and ambers that have been turned green by treatment in an autoclave (**4**), but material that has also been backed to enhance the colour further. In some cases tests are giving indications of added dyes resulting in a more brilliant green colour. This type of research is necessary for us to know with what we are dealing, but not for simple identification or to tell us that the material is not natural. That much is obvious.

Occasionally a MailTalk subscriber will make a suggestion of using complicated testing methods on one of the organics, employing sophisticated equipment. With a few notable exceptions (including some ambers and some pearls) this is not necessary for the day-to-day identification of organics. Indeed it is often not possible as, for the most part, we encounter organics far away from sophisticated laboratory equipment.

So arm yourself with some basic knowledge of organics and then, when you encounter them, have a good feel! The answer is often quite simple.

'Organic Gems', the online information site devoted to organics, can now be accessed free of charge by registering and logging on through the website at www.maggiecp.com.

Maggie Campbell Pedersen at the Gem-A Conference 2010

To find out more about ambers and copals, and the latest treatments including ways in which resins are altered to appear green, don't miss Maggie's presentation.

See page 32 for details of the event.

The delicate art

Pietra dura, the ancient art form also known as 'Florentine mosaic', is still produced by traditional methods in rural Northamptonshire.

Koi carp plaque by Thomas Greenaway. Photo © Greenaway Mosaics LLP.

Almost every traveller to Florence in the late nineteenth century returned with a souvenir in the form of a piece of furniture, jewellery or other small ornament decorated with a form of mosaic commonly termed 'Florentine mosaic'. It is often referred to as 'commesso' although strictly speaking this refers to pietra dura (literally 'hard stone') pieces that are assembled like a jigsaw puzzle, rather than intarsia which is pietra dura where pieces of stones are inserted into carefully shaped holes in the background material. This extraordinary art involves the creation of designs — animals, figures, fish, geometric patterns — in minute pieces of precisely-shaped coloured stone inlaid into a backing. The coloured stones include jasper, lapis lazuli, agate, chalcedony, rare marble and (nowadays especially) malachite. The surround is most often black Belgian marble from a quarry south of Brussels, although pure black is now rare, and the backing material is slate. The technique can be traced back to Byzantine times and there are superb Renaissance examples, but from a jewellery point of view the heyday was in Victorian times, with a huge number of examples being produced, although not all with exemplary skill.

Among the handful of modern artists using this technique is Thomas Greenaway, of Greenaway Mosaics in Northamptonshire, whose inlaid plaque depicting a koi carp (pictured left and front cover) recently won the silver prize in the Lapidary section of 2010 Craftsmanship and Design Awards run by the Goldsmiths' Craft and Design Council. The materials and technique used in the late nineteenth century are well documented.*

A Victorian pietra dura brooch. Photo © Marcus McCallum.

It is thus interesting to talk with Thomas and see how the modern approach compares with that of some 120 years ago.

Thomas notes that many of the old techniques are still used by traditional mosaicists like himself. However stones are

Thomas Greenaway was initially trained in woodworking at the Chippendale School of Furniture, Design and Restoration in Scotland. On a visit to Italy he discovered the Opificio in Florence and was intrigued by the pietra dura work he saw there, and its relationship to the marquetry work that he had found so interesting in furniture. Studying at the Opificio was not possible, but one craftsman whom he refers to as 'an old maestro' took him in as an apprentice. He later moved on to another workshop, spending in all three and a half years in Italy before returning to Britain to establish his own workshop. You can see more of his work at www.greenawaymosaics.com

now cut into slices with circular, diamond-impregnated wheels, rather than the 'thin blades of iron or copper' used with emery as an abrasive. With the circular saw cooling is required, and Thomas uses water with the softer stones and oil for the harder ones. For cutting the thin slices — traditionally about 2.5–3 mm thick — into the intricate shapes, Thomas still uses a traditional chestnut bow saw ('archetto') with iron wire, although he also employs a rotary blade with water for larger pieces — much quicker than the archetto. Today moistened carborundum powder (silicon carbide, first introduced in 1891) has replaced the emery used in the past for sawing and levelling the backs of the pieces. The variously shaped openings in the surrounding black marble are still begun with holes through which the iron wire blade can be threaded, but today electric power drills have generally replaced the older hand operated drills.

The backings, now as then, are slate, although these are ground flat with a lapping machine nowadays rather than with the older iron plates with wooden handles. Similarly the filing of the shapes to ensure a precise fit is now carried out with diamond needle files. The final polish is still a critical process and the finest emery powder is used. The traditional adhesive was pece greca, a mixture of beeswax and mastic, with heat being used to bind the parts and care taken to use no more cement than was necessary. With use of this mixture of beeswax and mastic resin later exposure to heat can displace the inlays, and so some workers now use more modern adhesives.

Thomas notes that the greatest change since the late nineteenth century has probably been in the cost of labour and materials. He says: "Sadly many Florentine mosaicists are going out of business and I now know of only about 17 small firms still in production, many of whom are struggling with less than five employees. Rather than 1000 involved in the trade in its heyday, I expect there are now about 50, and there is a great absence of youth." He also notes that nowadays all the processes, from design to finishing, are usually done by one person rather than by a number of specialists, although the market still relies on the commissions of the very wealthy.

Pietra dura production. *(a) A chestnut bow saw is used for cutting. (b) Paper templates are stuck down to a selected area of the stone. (c) Cutting around the template at a 30° angle. (d) Gluing the pieces together. (e) Drilling holes to thread the iron wire through. (f) Sawing the Belgian black marble. (g) Filing the aperture to fit the pieces in to. (h) Fitting the pieces without any gap. Photos © Greenaway Mosaics LLP.*

Via degli Alfani 78, the home of the Opificio delle Pietre Dure, had its origins in the Court workshop set up by the Medicis in 1588. Today the Opificio houses an interesting pietra dura museum and has other departments carrying out restoration work in many different materials.

Jack Ogden

* 'How Florentine Mosaics are made.' *Pall Mall Gazette,* September 1889.

Harold Killingback tells how he was first attracted to this agate specimen by the formation which appeared to be a fluttering white flag, seen on the polished face.

'The White Flag' agate nodule

The polished face that appears to show 'The White Flag' formation (**1**) is one cross section of this agate nodule. A second cut, at right angles to the first, allows the nodule to be stood on edge for display purposes. The surface of the second face had been left rough. No one who has seen the Natural History Museum's booklet *Agates* (MacPherson, 1989) will be surprised by this example. The variety of shapes exposed when nodules are cut and polished seems to be infinite. On page 65 of the book is the following sentence:
"It is important to realize that an agate's structure cannot be understood until the stone is cut open in at least two directions, perpendicular to each other, and the resulting exposed features can be visualized in three dimensions."

Although there are over 100 beautiful photographs of agate cross sections in the book, none complies with this advice. I therefore decided to smooth the base of my sample and allow a better view of the interior. In the second cross section (**2**) the amethyst layers are much in evidence. An oblique view (**3**) allows the desired three-dimensional visualization.

Results

I am advised that 'The White Flag' is formed from two or three parallel bands of white opaline silica, which appear twisted because of the serendipitous directions of cut. The sharp tip of the flag points towards a tube of escape, which would be in the other half of the cut nodule. Another tube of escape is, however, clearly seen through the base (**2**). It leads through a rent in the chalcedony, and through the outer layers of the nodule. Small fissures can be seen in the brown outermost surface, or skin, and the discharge may have been through one of these.

The general structure is such as is often found. A region of straight, parallel layers (onyx agate) leads to curved layers which roughly follow the shape of the nodule, and enclose a small, offset, core region from which exits the tube of escape.

The close-up view (**4**) of the fractured back of the sample is reminiscent of an arctic landscape. The general view (**5**) has the appearance of a cameo. In truth, most of the areas which look white in the photograph are not due to layers of opaline silica but to films

1. 'The White Flag' face.
2. The surface of the base, showing tube of escape.
3. Oblique 'three dimensional' view.
4. Close-up of chalcedony 'cliff'.
5. Back view, as fractured.
6. Translucency of chalcedony.
All images by Harold Killingback.

of air in surface cracks, resulting in opacity. With back lighting (**6**) the translucency of the chalcedony is well displayed.

The formation of agates

Many theories have been postulated to explain how agate nodules occur. Whether these photographs do anything to clarify the situation I leave to others better qualified than I am. For my own part, if asked to explain the formation mechanism I have to surrender, and hoist The White Flag!

Reference

Harry MacPherson, 1989. *Agates.* The Natural History Museum, London. ISBN 0-11-310012-4. Reprinted for HMSO 1993.

Gems and Minerals

Another interesting composite – diamonds and rock crystal

Gagan Choudhary

Gagan Choudhary reports on a very unusual composite submitted to the Gem Testing Laboratory of Jaipur.

The 38.94 ct composite, consisting of fine chips of rough diamonds stuck over the surface of a rock crystal. Note the range of shapes of diamond chips.

"Innovative minds who try to develop new materials on a regular basis for deceiving and making good profits are currently active in the trade." This was the conclusion of my article 'A different kind of composite' that appeared in the Spring 2010 issue of *Gems & Jewellery* (Vol. 19, No. 1, pages 10 to 12). Since writing that article many composite specimens have been submitted for identification at the Gem Testing Laboratory, some similar to those mentioned previously, but others different. The 'innovative minds' have now produced something really unusual which I have not seen anywhere before. However, studying such samples is always a pleasure.

The submitted specimen was colourless, approximately 20.94 x 20.77 x 15.95 mm and weighed 38.94 ct (**1**). It was triangular in shape, reminiscent of a curved 'macle'. The sample was submitted to us as a rough diamond.

Visual appearance

The preliminary observations were enough to identify the specimen as composite. It consisted of fine chips or flat crystals of rough diamond stuck to the surface of a colourless material, fashioned as a curved triangular pyramid/tetrahedron, created mainly to imitate an aggregate crystal of diamond. The specimen displayed a characteristic adamantine lustre which indicated that the embedded chips were diamonds; in addition the shapes varied from triangular (macle) to pseudo-hexagons and irregular — all consistent with diamond rough. The junctions appeared much duller and white with yellow and brown patches, giving the impression of iron staining or penetration of some epigenetic substance in surface cavities.

Microscopic examination

Under magnification, individual diamond chips were very much evident with a dull white matrix and some yellow/brown substances (**2**). Many of these diamond chips also displayed characteristic triangular surface markings — trigons (**3**). Furthermore, some areas also displayed flattened gas bubbles and/or uneven patches of the glue (**4**) used to fix the chips on the surface of the inner colourless substance. This central material was still unidentified.

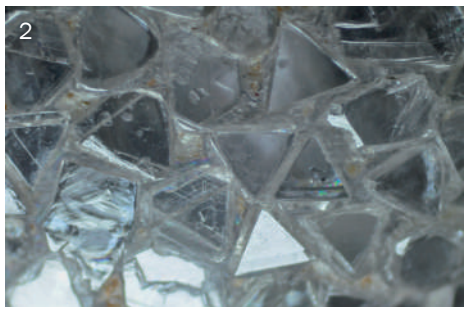
UV fluorescence

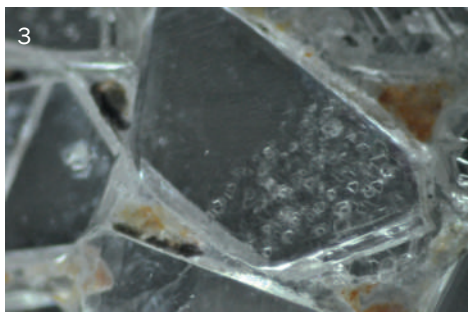
As I have mentioned in previous articles, ultraviolet (UV) light plays an important role in identification of composite gem materials. This was the case with this specimen which displayed the expected results. Since diamonds have a variable fluorescence, some of the chips fluoresced blue while others remained inert under long wave UV (**5**). Furthermore, some chips showed blue fluorescence along their edges, a feature caused by glue and not the diamond.

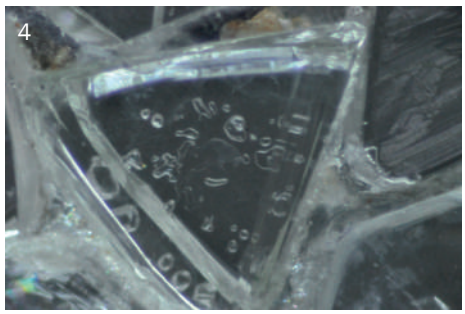
Gemmological properties

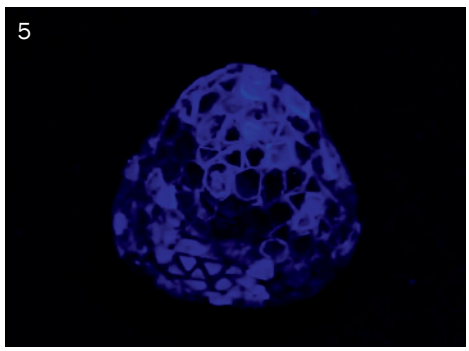
Measurement of the gemmological properties proved to be useful in identifying the central part of this composite. Its refractive index could not be measured

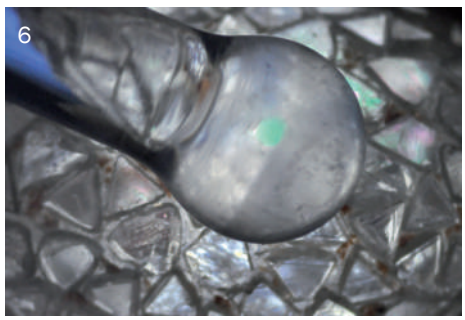
Gems and Minerals



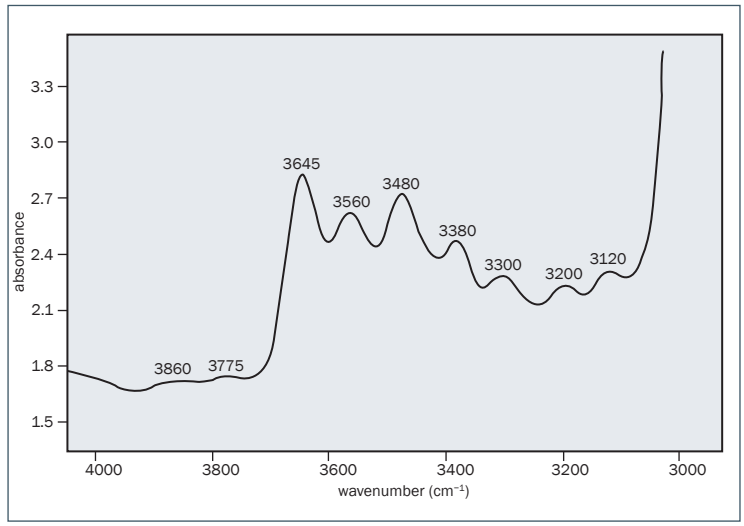








2: Individual diamond chips displaying a range of shapes with an adamantine lustre. Note the dull whitish matrix and yellowish to brownish substance. Magnified 45x.
3: Many of these diamond chips also displayed characteristic trigons. Magnified 60x.
4: Flattened gas bubbles and/or uneven patches of the glue used to fix the chips on the surface of the inner colourless substance. Magnified 60x.
5: The specimen under long wave UV light. Some diamond chips fluoresced blue while others were inert. The fluorescence around the edges of the chips was due to the glue used.
6: The green spot and pink rim seen in this partial bull's eye optic figure identify the central stone as quartz.



7. IR spectrum of the central specimen. The peak at 3480 cm^{-1} is associated with natural rock crystal.

directly on a refractometer because its surface was rough, although the triangular crystals were readily identified as diamond. Hydrostatic specific gravity was measured at approximately 2.65, sufficient to give a good indication of the identity of the majority of the specimen. Under the polariscope the sample displayed an anisotropic reaction and fortunately also displayed a partial optic figure. The optic figure was resolvable at two diametrically opposite points, where a green central spot with a pink rim was observed (**6**). Such patterns are typically observed in 'bull's-eye' optic figures of crystalline quartzes. The specific gravity value at around 2.65 and this partial 'bull's-eye' optic figure were enough to identify the central piece as rock crystal.

No inclusions were visible in this central part of the specimen, so it was necessary to use FTIR analysis to confirm whether it was natural or synthetic in origin. The IR spectrum in the region 4000 to 3000 cm^{-1} (**7**) contains peaks at around 3860, 3775, 3645, 3560, 3480, 3380, 3300, 3200 and 3120 cm^{-1}. The peak at 3480 cm^{-1} is typically associated with natural rock crystal.

Conclusions

On the basis of FTIR analysis, reactions under the polariscope and microscopic observations, the components of this composite were identified as diamond chips and natural rock crystal.

Although identification of this specimen as a composite was not difficult, awareness and careful observations are necessary. Such specimens again remind us of the changing concepts in gemmology, courtesy of innovative minds in the industry.

All photographs and photomicrographs by G. Choudhary.

About the Author

Gagan Choudhary FGA
Gagan Choudhary has been an Assistant Director of the Jaipur Gem Testing Laboratory since 2001. Currently he is involved in the education, testing and research activities of the institute, and is in charge of the laboratory.
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The Bear facts

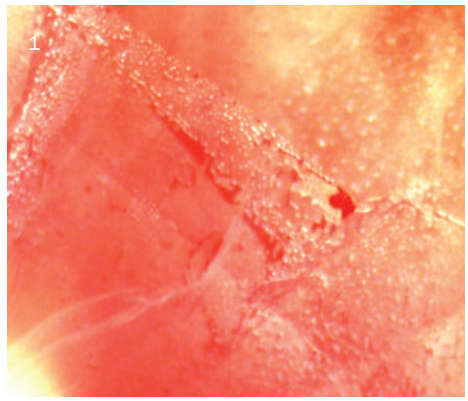
Bear Williams reports on heated African ruby with colorants in the flux.

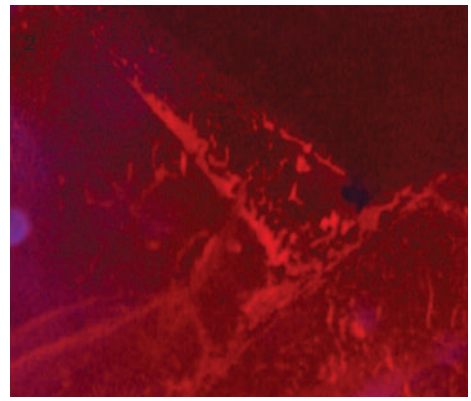
Within heat-treated rubies of various origins one can often see areas that have inclusions and filled fissures that are 'artificially healed areas'. These healed areas will house various 'flux residues' that are commonly added to facilitate the heating process, resulting in the added benefit of clarity enhancement. Flux healing with residues was originally a treatment applied to ruby from Mong Hsu, Myanmar, but is now more commonly seen in ruby from Africa, particularly Mozambique material of late.

These fluxes contain various mixtures of materials such as borax, aluminium oxide powders and other commercially available agents that are commonly used in corundum treatment. With increasing regularity we are seeing evidence of chromium oxides being added to the flux formulas in order to intensify the red colour of this material. The chromium will dissolve and mix with the filler flux and reform within molecules of the synthetic substances that crystallize within the voids. When combined with alumina powders, the chromium causes a red colour, essentially a form of synthetic ruby crystallizing within the fissures.

No doubt this type of treatment has the objective of enhancing the colour of this African material. It may even be represented as Burmese, as the treated material results in an observed fluorescence more commonly seen in that material. While there are often sufficient inclusions in such material to aid in determining stone origin, it is important to discern the nature of the treatment itself — whether it is flux-filled or lead-glass filled — and if colorants have been added. Careful observation of colour concentrations, reflectance and light path is necessary to identify this treatment. This may be aided by fluorescence observed under the microscope.

Just like the food industry label their products to indicate added colorants, either natural or artificial, it is imperative that the manufacturers and producers of gemstones with these types of treatments also properly disclose the presence of the colouring agents used. By not doing so, it should be viewed as a deceptive trade practice.





1. A flux-filled fingerprint that has the added chromium powders as would be seen under darkfield illumination. Magnification 30x. 2. The same area illuminated using a 404 nm energy light source to show the fluorescent reaction of the added formula within the flux mixture. Photos © Bear Williams.

About the Author

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email: bear@stonegrouplabs.com

Gem-A Calendar

October

19

DIAMOND BUYING GUIDE
Gem-A one-day workshop

Gem-A's London headquarters
10:00 am to 4:30 pm
An introduction to the 4 Cs, this course provides the practical information required to enable you to give sales advice or to make informed choices when buying a diamond.

20

GEM-EMPATHY — GEMSTONES FOR JEWELLERY DESIGNERS
Gem-A one-day seminar
Gem-A's London headquarters
10:00 am to 4:30 pm
Further details given on page 2

23 and 24

NEW YORK GEM LAB CLASS
Gem-A two-day workshop
FIT, New York
10:00 am to 5:00 pm
Hands-on practical instruction on gem identification using basic equipment.

26

INTRODUCTION TO PRACTICAL GEMMOLOGY
Gem-A one-day workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
A day to help you understand the principles required for effective gemstone identification. The use of gem-testing equipment will be demonstrated.

27

BEAD STRINGING I
Gem-A one-day Workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
Under the guidance of an experienced stringer in a practical and informal atmosphere, learn the techniques needed for successful basic stringing. This is an ideal workshop for those who are looking to begin stringing for themselves, friends or family.

28

BEAD STRINGING II
Gem-A one-day Workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
A continuation of the introductory bead stringing day. This workshop is ideal for those who want practical guidance from an experienced stringer, or those needing just to refresh their skills.

29

PEARLS — NATURE'S GIFT
Gem-A one-day Workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
From the origins of natural and cultured pearls, marine and freshwater, to the treatments and simulants in the trade today, students will gain experience through hands-on observation with guidance from our tutors and guest lecturers.

29

GEMSTONE CARVING
A presentation by
Memory Stather FGA DGA
Gem-A Midlands Branch
To be held in the Earth Sciences Dept, Birmingham University, Edgbaston.
For further information contact Paul Phillips at phillipsp10@sky.com.

November

2

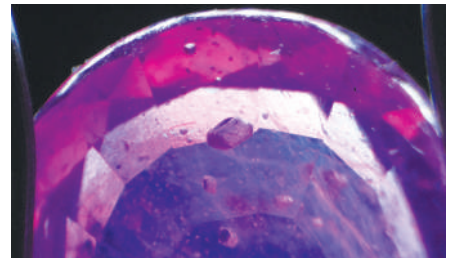
RUBY, EMERALD AND SAPPHIRE
Gem-A one-day workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
A hands-on day looking at natural ruby, sapphire and emerald, followed by their treatments (including lead-glass filling of ruby), simulants and synthetics. Whether you buy, sell or value gems or gem-set jewellery, or simply have a love for these gems, this is your opportunity to update your knowledge.

4

THE WORLD OF JADE
Gem-A one-day workshop
Gem-A's London headquarters
10:00 am to 4:30 pm
Explore the world of jade at this new practical workshop from Gem-A, and discover how jade is defined, the countries that are producing jade and the mining methods used.

6

AN UPDATE ON THE HEAT TREATMENT OF RUBY AND SAPPHIRE
A one-day Gem-A seminar with Ted Themelis



Gem-A London headquarters (see page 13).

This seminar will also be held by the Gem-A South West Branch on 4 November at the BRLSI, Queen Square, Bath, and by the Scottish Gemmological Association on Wednesday 10 November at the Quality Hotel, Edinburgh Airport.

Gem-A Calendar

7

GEM-A ANNUAL CONFERENCE
Gemmology and the Gem Market: Micro and Macro**
Hilton London Kensington
9:30 am to 6:00 pm
Dinner/disco: 7:30 pm to midnight
The 2010 Gem-A conference will be looking at gems from both gemmological and marketing perspectives, and in detail, as well as giving the wider picture. The day will conclude with a dinner/disco.

8

FROM MEDIEVAL TO MODERNISM:
A thousand-year tour of international jewellery design
A one-day Gem-A seminar with John Benjamin.

Goldsmiths' Hall, London (see page 45)
10:00 am to 4:30 pm

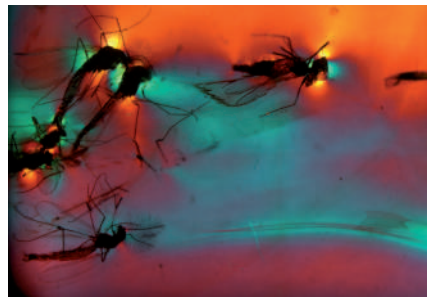
8

GEM-A GRADUATION CEREMONY AND PRESENTATION OF AWARDS**
Guest speaker: Rui Galopim de Carvalho

6:30 to 9:00 pm
Goldsmiths' Hall, London
The ceremony will be followed by a reception for graduates and their guests.

9

PHOTOMICROGRAPHY**
A Gem-A half-day workshop with Michael Hügi



Gem-A's London headquarters
10:00 am to 12:30 pm
The principles of photomicrography and the subsequent digital processing will be demonstrated.

PRIVATE VIEWING OF THE CROWN JEWELS**
Guided tour by David Thomas MVO
The Tower of London
4:00 to 6:00 pm

GEM DISCOVERY CLUB**
Gem-A's London headquarters
6:45 to 8:00 pm
Specialist evening.

IT SHOULDN'T HAPPEN TO A RUBY
Practical Session
Scottish Gemmological Association
To be held at the British Geological Survey, Edinburgh.
Further information at www scotgem.co.uk.

26

IVORIES
A presentation by Gwyn Green FGA DGA
Gem-A Midlands Branch
To be held in the Earth Sciences Dept, Birmingham University, Edgbaston
For further information contact Paul Phillips at phillipsp10@sky.com

December

12

NATURE'S TREASURES 3
A one-day seminar at the Flett Theatre, Natural History Museum, South Kensington
10:00 am to 4:00 pm
An event for anyone with an interest in minerals and gemstones. Students from schools and universities are particularly encouraged to attend. The day will include a programme of short talks as well as a number of displays and demonstrations. The day will commence with registration and coffee at 10:00 am and finish at approximately 4:00 pm.
The event is organized jointly by Gem-A, The Mineralogical Society, The Russell Society and Rockwatch, in association with the Natural History Museum.
Further information on this event is given on page 37.

*** GEM-A WORKSHOPS**
Further information on our popular one-day workshops is given on page 28.

**** GEM-A CONFERENCE AND EVENTS**
Further details are given on pages 32 and 33.

Photo credits
Facing page: top left, © Gem-A; bottom right, courtesy of Ted Themelis
This page: left, courtesy of John Benjamin; lower left, © Photoshot; centre column, courtesy of Michael Hügi.

For the latest information on Gem-A events and workshops go to www.gem-a.com

In the news

Gem-A provides Consolidator Service for GIA Diamond Grading Reports

The Gemmological Association of Great Britain (Gem-A) is proud to provide a London take-in service for Gemological Institute of America (GIA) Laboratory Services. This consolidator service, offered in the UK for the first time, gives the UK trade easy access to GIA Diamond Grading Reports. The service will start in October and, initially, shipments will leave London twice a month. Shipment will be made by Brinks direct to GIA and the usual turn-around time will be 14–21 days.

The fees for the service will be the advertised GIA report charges plus a consolidated handling, shipping and insurance charge of £48 + VAT for the first diamond, reducing to £32 + VAT for each further diamond submitted by the same consignor in the same shipment.

This fee structure provides a considerable saving over the cost of shipping stones to GIA individually. Gem-A members and Corporate Members will receive a 10% discount on these consolidated shipping and insurance charges.

Consolidation for a full range of GIA diamond grading and diamond identification services will be offered. Details are available from Alan Clark at Gem-A on 020 7404 3334 or alan.clark@gem-a.com.

Details of the GIA Diamond Report fee structure can be found at http://tinyurl.com/DiamondReports.

Gem-A Annual General Meeting

In what must have been the fastest Gem-A Annual General Meeting in history, the 2009 accounts were presented along with the Directors' Report. Echoing what he had written in his report, Gem-A Chairman of the Trustees, James Riley, explained that hard work and severe cost cutting had allowed the organization to turn in a healthy surplus for 2009 — a surplus much needed to help restore funds following the deficit in 2008.

Landy Palmer and Richard Slater were elected to serve on the Council, and Evelyne Stern and Jason Williams retired.

The AGM was held during the International Jewellery London (IJL) show to facilitate attendance by a wider range of UK Members. The AGM was kept brief to reduce exhibitors' and buyers' time 'off the floor'.

Gem-A presents seminars at IJL

IJL offers a full programme of excellent seminars during the show, giving retailers, designers and manufacturers the opportunity to discover and learn.

For the second year running Gem-A's senior tutor, Doug Garrod, presented two two-hour hands-on seminars. The first was 'Ruby and its treatments' introducing the various methods that have been used to improve the colour and/or clarity of ruby. The emphasis was on the lead-glass filled rubies that are very prevalent in the trade today. Doug stressed that the recognition of these treatments is extremely important for anyone selling, valuing or buying rubies.

The second seminar was 'Diamond treatments and imitations': Doug explored the treatments that are used to alter the appearance of diamond clarity. Diamond imitations were also considered as well as the means of separating these from natural diamond.

New Indian ATC for Gem-A

The Indian Institute of Jewellery (IIJ) in Mumbai has become the fourth Gem-A Accredited Teaching Centre in India and the second in Mumbai, a major centre for the rapidly growing Indian gem and jewellery industry. The final details were agreed in Hong Kong in September, in meetings between Gem-A and IIJ Director Vedant Jatia.

The other Gem-A Accredited Teaching Centres in India are the Gem Institute of India, Mumbai, the Indian Institute of Gems and Jewellery (IIGJ), Jaipur, and the Indian Diamond Institute, Surat.

Gem-A News and Views

Gem-A Diploma in Australia

Gem-A has had a long association with Australia. The Gemmological Association of Australia was formed in 1945 and, from the start, was an affiliate of the Gemmological Association of Great Britain. The first Australian FGA was J.H. Pope who graduated in 1946. Over the years the Gemmological Association of Australia (GAA) grew, beginning its own courses and its own qualifications. Nevertheless close ties have remained and Gem-A courses have continued to be offered at centres within Australia.

Following a series of meetings over the last few years between representatives of Gem-A (Jack Ogden, CEO, and Lorne Stather, Director of Education) and GAA's President Terry Coldham, Gem-A and GAA will be brought closer together again. At their most recent meeting in Hong Kong in September, the affiliation between the two organizations was re-established and an educational collaboration agreed; GAA will use the recently launched updates of the Gemmology Foundation and Diploma course notes for their own teaching and GAA graduates may have the opportunity to take the Gem-A Gemmology Diploma exam. The importance of GAA's education and qualifications for the Australian market are recognized by Gem-A, but gaining of the Gem-A Diploma and being elected to FGA status provides greater international recognition. The initiative is one of the educational moves by GAA, which includes establishing a wholly owned educational subsidiary — Gem-Ed.

GAA's Terry Coldham (right) and Gem-A's Jack Ogden in Hong Kong agree to closer educational collaboration between the two organizations.

Gem-A's Chinese notes

Gem-A was a sponsor of the ICA's annual reception at the September Hong Kong Jewellery Show and took the opportunity to introduce the new Chinese translations of the Gem-A Foundation and Diploma Course Notes. There are both traditional and simplified Chinese versions, translated by a team spread between Hong Kong, Mainland China and Taiwan, to best ensure suitability across the region.

Gem-A CEO Jack Ogden made a brief presentation before an audience of prominent gem dealers from around the world in the splendid surroundings of the Oasis Room, Renaissance Hotel, in which he stressed the importance of gem education in China: "Our gemmology courses retain their original purpose — to expand gem understanding within the gem and jewellery industries. China and Hong Kong are major players in the international gem trade and we are proud of the long and close relationship we have with our Accredited Teaching Centres in these regions. The Chinese translations of our updated courses will contribute to the growth of gem knowledge and provide the globally recognized qualifications so needed in the constantly exciting and evolving world of gems."

Gem-A Gemmology courses are provided in China by China University of Geosciences, Wuhan; Guilin University of Technology, Guilin, Tongji University, Shanghai, and Zhongshan University, Guangzhou. Hong Kong Centres are the Asian Gemmological Institute and Laboratory Ltd, Hong Kong Baptist University and The Hong Kong Institute of Gemmology.

Lab closure 2

The American Gem Trade Laboratory (AGTA) closed its New York Gemmological Testing Centre in July. The world-renowned lab, run over the years by gemmologists such as Ken Scarratt and Lore Kiefert, closed for reasons almost identical to those cited for Gem-A's London Gem Testing Laboratory closure in 2008. The level of on-going investment for equipment, staff, and research was far too great to be subsidized by the organization indefinitely and, as Doug Hucker, AGTA CEO said, it simply was not being sufficiently supported by the trade. As Doug agreed, however well-meaning, not all dealers recognized the huge disparity between a few dozen of them sending a handful of stones a year to a lab and the level of throughput and financial support required to keep a modern gem lab viable and up to date.

GEM-A WORKSHOPS — Autumn 2010

Tuesday 19 October	**DIAMOND BUYING GUIDE** An introduction to the 4Cs; carat weight, colour, clarity and cut. ***£97.00. Gem-A members and students £79.00***
Wednesday 20 October	**GEM EMPATHY** Gemstones for jewellery designers (see page 2) ***£97.00. Gem-A members and students £79.00***
Tuesday 26 October	**INTRODUCTION TO PRACTICAL GEMMOLOGY** If you are considering an in-depth study of gemmology and would like a taster of the practical skills involved, or would like to brush up on existing skills, this would be an excellent choice. ***£97.00. Gem-A members and students £79.00***
Wednesday 27 October	**BEAD STRINGING I** Learn the techniques needed for successful bead stringing. ***£156.50. Gem-A members and students £115.00***
Thursday 28 October	**BEAD STRINGING II** A continuation of the introductory class, Bead Stringing I. ***£156.50. Gem-A members and students £115.00***
Friday 29 October	**PEARLS — NATURE'S GIFT** Update your knowledge of pearls, natural and cultured, and the treatments and simulants on the market today. ***£140.00. Gem-A members and students £120.00***
Tuesday 2 November	**RUBY, EMERALD AND SAPPHIRE** An informative day looking at natural ruby, sapphire and emerald, followed by their treatments (including lead-glass filling of ruby), simulants and synthetics. ***£97.00. Gem-A members and students £79.00***
Thursday 4 November	**THE WORLD OF JADE** Discover how jade is defined, the sources and the mining methods used. You will learn about the colours and qualities, and techniques for the identification of jade's imitations and treatments. ***£110.00. Gem-A members and students £90.00***

From its London headquarters, Gem-A provides a varied programme of one-day workshops, from an introduction to the fascinating world of gemstones to information on the latest synthetic and treated gemstones. Workshops are held from 10:00 am to 4:30 pm unless otherwise stated.

For information on the latest workshops or to book go to **www.gem-a.com** or call Paveet Amrit on +44 (0)20 7404 3334 or email paveet.amrit@gem-a.com

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UK Registered Charity No. 1109555

Gem-A
THE GEMMOLOGICAL ASSOCIATION OF GREAT BRITAIN

In the news

Gem-Empathy Award 2010

Congratulations yet again to Derbyshire-based C.W. Sellors, third-time winners of the IJL Gem-Empathy Award. Sponsored by Gem-A, the award is presented to the IJL exhibitor whose gem-set jewellery, in the opinion of the judges, best combines innovation and design with flair and a knowledgeable understanding of the materials used.

Said Gem-A CEO Jack Ogden: "What we look for is an exhibitor with genuine enthusiasm and knowledge about gemstones, who displays jewellery with a combination of interesting and unusual gems as well as excellent design. IJL provided a wealth of all of these individually — but C.W.Sellors, in our mind, presented the best overall combination. You might argue that design and choice of materials are also simply a manifestation of enthusiasm — so I guess that epitomises C.W. Sellors — 'enthusiasm'. And what's great is that it is an enthusiasm maintained across the company!"

C.W. Sellors was established in 1979 by Chris Sellors, producing handmade jewellery featuring the locally mined Derbyshire Blue John stone, plus an array of exotic gemstones sourced from around the world. The company continues to handcraft unique pieces in their in-house workshops. They showcased several new collections encompassing a wide range of gemstones at this year's IJL show. These new collections included the nature-inspired Stepping Stones range of stackable gemstone jewellery, bold new additions to the men's meteorite cufflink collection, Whitby jet wedding bands and innovative Whitby jet and cluster diamond combinations.

Chris Sellors commented: "To be acknowledged for a third time with this prestigious award is an absolute honour for us. We use our specialist in-house design and manufacture teams to produce innovative and unique collections which we are proud to say are consistently recognized by the industry."

Further information on the company is given at www.cwsellors.com.

The presentation of the Gem-Empathy Award to the family business, C.W. Sellors. From left: Sarah Kitley (Marketing Manager, IJL), Diane Sellors, Rebecca Sellors, Jason Sellors, Chris Sellors and Gem-A CEO Jack Ogden.

Meteorite jewellery

This year the judges were particularly impressed by the meteorite cufflink collection.

The new pieces use meteorite which has been lightened through a unique etching process and which has been cut to reveal the striking internal structure. The meteorite is sourced from eastern Siberia following a large meteorite fall in 1947 when over 23 tons of material showered the area. Each meteorite features individual thumb-print like surface depressions and distortions which results in each piece being entirely unique.

The cufflinks are part of a range which includes bracelets and pendants made from darker, untreated meteorite. The design has evolved from a collection originally produced by James Sellors.

Photo: courtesy of C.W. Sellors.

Recent Events

The Land of the Midnight Sun

Björkstugan. Photo © Doug Garrod.

Fossicking, gold panning and stone cutting: Elizabeth Passmore recounts her recent field trip to Arctic Sweden with Gem-A.

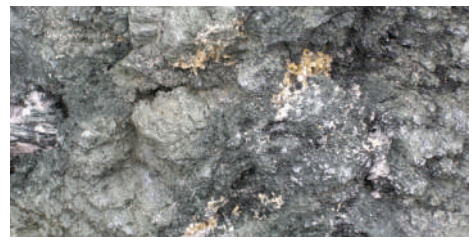
The flyer for the short field trip to the 'Land of the Midnight Sun' promised a visit unlike previous Gem-A expeditions such as those to East Africa, Thailand, Brazil and Madagascar. No tourmaline, sapphire or aquamarine was to be found in mines, spoil heaps or offered by gem dealers following us all day long, but gold panning, cut-your-own-stone and hunting for specimens of stilbite, magnetite and so on.

At the end of July our small party met our host at Kiruna Airport and were taken immediately to the site of early mining for iron ore just outside Kiruna. From that high vantage point we saw the location of the world's largest underground iron ore mine and had a glimpse of the Arctic landscape: forests, lakes, miles of roads and very few houses.

Then on to Abisco to prepare for our first day in the field at Björkstugan looking for almandine garnets. Next morning the clear, dry weather had given way to mist, rain and just fleeting periods of clear sky. We battled through boggy ground and up through the silver birch woodland to the area above the tree line where the garnets were to be found, or not! There were mosquitoes in their thousands, but we were not very successful in locating garnet crystals of any reasonable size. Not to be deterred in our quest for minerals, we kept hunting and found veins

Carat the dog looks on as our group learn the techniques of gold panning. Photo © Jenny Soderstrom.

Recent Events



A lone reindeer strolls around the spoil heaps at Svappavaara (top) and (below) examples of the stilbite deposits found there. Photos by Elizabeth Passmore.

of beautiful copper-bearing ore before retreating several hours later to the minibus for our journey to Kristallen, the Jewellery School in Lannavaara, which was to be our base for the rest of the trip.

At Kristallen we saw extensive facilities for students to study gemmology (courses led by FGA tutors), lapidary, metalwork and jewellery making. The mineral museum was being relocated, but even without all the material on display the collection kept us questioning and engaged as we were privileged to examine closely material more often kept behind locked glass doors. There were lots of the garnet crystals too as well as a splendid restaurant with a spectrolite tiled floor.

On to panning for gold: what fun! After a demonstration of the technique and encouragement to be bold and discard material, we were astonished to find small flakes of gold in the bottom of our pans. We caught gold fever and carefully kept each precious flake, but we weren't ready for the following weekend's Gold Panning Championship.

Then to the workshop to cut a stone for ourselves, but could we produce anything worthwhile? With some guidance we were pleasantly surprised to end up with creditable efforts for our first attempts.

At Svappavaara we fossicked around the spoil heaps from iron ore mining and were rewarded with specimens of stilbite, tremolite, calcite, magnetite, haematite, pyrite and apatite.

Andreas Branting and Doug Garrod rock hunting in Björkstugan. Photo © Elizabeth Passmore.

Our final visit was to Kiruna, to the huge Luossavaara-Kiirunavaara AB (LKAB) mine — the reason Kiruna exists, but also why it is sinking and due to be relocated.

All too soon we headed to the airport at the end of another fascinating Gem-A field trip.

Members of the group try their hand at stone cutting. Photo © Doug Garrod..

Gem-A Conference 2010

Gemmology and the Gem Market: Micro and Macro

Sunday 7 November — The Hilton London Kensington

The 2010 Gem-A Conference will be looking at gems from both gemmological and marketing perspectives, in detail as well as giving the wider picture. The programme will cover some of the latest treated, synthetic and simulated gems, and how you may differentiate between them, gemstones from their origins to the present day, pricing structures and photomicrographic techniques.

SPEAKERS:

RICHARD DRUCKER, USA
DR MICHAEL KRZEMNICKI, Switzerland
GIOIA DE SIMONE, Italy
CHRISTOPHER P. SMITH, USA
MAGGIE CAMPBELL PEDERSEN, UK
ANDREW CODY, Australia
MICHAEL HÜGI, Switzerland

The programme will allow you ample time for networking and to view displays by the speakers, and to browse through the latest books and instruments available from Gem-A. The conference will open at 9:30 am for registration and coffee, finishing at approximately 6:00 pm. A dinner/disco will follow on the Sunday evening. The fee for the Conference, to include lunch and refreshments, is £130.00 for Gem-A members, £150.00 for non-members and £55.00 for Gem-A registered students. Tickets for the dinner/disco are £46.00.

Conference Events

Saturday 6 to Tuesday 9 November 2010

SATURDAY 6 NOVEMBER

10:00–17:00 **An update on the heat treatment of ruby and sapphire.**
A one-day seminar with TED THEMELIS at the Gem-A headquarters in London

Divided into eight sessions, this seminar will not only cover diffusion and heat treatment, but will also discuss pricing structures for the treated stones. There will be the chance to examine samples of each treatment, so be sure to bring along a torch and your 10x lens. Further information on the seminar is given on page 13.
Price: £125.00. £98.50 for Gem-A Members and Students.

19:00 for 19:30 **Informal dinner**

Enjoy an informal meal at a Singapore Chinese restaurant a short walk from the Hilton London Kensington.
Price: £32.00 to include wine and soft drinks.

MONDAY 8 NOVEMBER

10:15–16:30 **From Medieval to Modernism: a thousand-year tour of international jewellery design**
A one-day seminar with JOHN BENJAMIN at Goldsmiths' Hall in the City of London.

This intensive four-part seminar offers a unique opportunity to study the evolution of international jewellery design from Medieval times to the end of the twentieth century. We are extremely fortunate that John has offered to give his presentation free of charge, to ensure that the attendance fee may be kept to a level affordable to anyone in the trade. Further information on the seminar is given on page 45.
Price: £15.00 to include morning and afternoon tea and coffee.

18:30–21:00 **Graduation Ceremony and Presentation of Awards**
Guest speaker: RUI GALOPIM DE CARVALHO

The graduation ceremony will be held at the prestigious Goldsmiths' Hall in the City of London where graduates will be presented with diplomas and prizes gained in the 2010 Gem-A examinations. The ceremony will be followed by a reception.
Price: £14.00.

TUESDAY 9 NOVEMBER

10:00–12:30 **Photomicrography.** A half-day workshop with Michael Hügi

The principles of photomicrography and the subsequent digital processing (HDRI and focal depth enhancement) will be demonstrated. To be held at the Gem-A London headquarters.
Price: £30.00.

16:00–18:00 **Private viewing of the Crown Jewels.** Guided tour by David Thomas MVO
David Thomas, Crown Jeweller from 1991 to July 2007, will be providing a unique opportunity to view the Crown Jewels in the Jewel House at the Tower of London.
Price: £40.00.

18:45–20:00 **Gem Discovery Club**

The Gem Discovery Club is a weekly practical gemmology evening for Gem-A members. Once a month, club members have the opportunity to examine items from the collections of gem and mineral specialists.
Price: £5.00 *(No additional fee is charged for current Gem Discovery Club members, but those wishing to attend should notify Gem-A in advance.)*

To book for the Conference and Events

To book for the Conference and Events, download a booking form at **www.gem-a.com/news--events/events/conference-2010.aspx** or contact Carlos Witkowski on +44 (0)20 7404 3334 or email carlos.witkowski@gem-a.com.

Photographs (facing page): Growth structures (negative crystals) in aquamarine. Photo courtesy of Michael Hügi. 'Medusa head' in Corallium elatius*, a statue which forms part of the Antonino De Simone private collection of antique ethnic jewellery in coral. Photo courtesy of Gioia De Simone. Rare black harlequin opal. Photo courtesy of Andrew Cody of Cody Opals (Australia) Pty Ltd.*

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Summaries of two articles to appear in *The Journal of Gemmology*. The full articles may be viewed by Gem-A members only at www.gem-a.com/publications/journal-of-gemmology/the-journal-online.aspx

Mexican jadeite*

Although jadeite is a well-known mineral, its confirmed occurrences are limited to about a dozen worldwide. Of these just two were known for certain in the Americas; those of the central Motagua Valley in Guatemala which provided jadeite for the carved jades of early Middle America, and the minor occurrence along Clear Creek in San Benito County, California, which does not appear to have been exploited historically. Other possible American jadeite occurrences have been suggested, including some in Mexico, but past study and recent fieldwork had not confirmed any of these. However, in 2007, Jorge Diaz de Leon of the Mineral Technology Company presented the Mexican Mineralogical Society with some green rocks from the Vizcaino peninsula, a mountainous region in Mexico located on the western side of Baja California.

Three of the green samples were used for analysis. Polished flat samples were examined with a scanning electron microscope (SEM), with electron-microprobe analysis used to determine the concentrations of the major constituent elements. X-ray diffraction (XRD), Raman microprobe, infrared spectroscopy (FTIR) and UV-Visible-NIR absorption spectrometry were also used. These analyses showed that the samples contained jadeite, making them the first confirmed instances of jadeite from Mexico.

The main mineral phases in the Mexican samples proved to be jadeite (pale green), omphacite (dark green), aegirine (green to black) and albite. Under the microscope a network of very small prisms overgrown by a matrix of impure jadeite could be seen. This mineralogical assemblage differs from that of jadeite rock from Guatemala and that from San Benito County, California. The Mexican jadeites were also found to typically contain little or no chromium.

The jadeite-bearing fragments, probably formed by abrasion and transportation of primary metamorphic rocks from their source in the blueschist-bearing serpentinite mélange at Puerto Nuevo, range from a few centimetres to as large as 30 cm across. These jadeite rocks differ from those in California and from the Guatemalan jadeites in their associated minerals and can be distinguished on this basis. The authors suggest that this Mexican jadeite might represent an interesting mineralogical and gemmological opportunity although its full range and economic potential awaits determination. **J.O.**

* A summary of 'Mexican jadeite-bearing rock: a first mineralogical and gemmological approach' by Mikhail Ostrooumov and Alfredo Victoria Morales. *The Journal of Gemmology* (in press).

Editor's note: If and when this new material begins to appear on the market, do remember that 'Mexican Jade' has also been long used as a misleading and incorrect term for green dyed calcite.

NATURE'S TREASURES 3

The Flett Theatre, Natural History Museum, London

Sunday 12 December 2010
10:00 am — 4:00 pm

An event for anyone with an interest in minerals and gemstones. Students from schools and universities are particularly encouraged to attend. The day will include a programme of short talks as well as a number of displays and demonstrations.

The stimulating programme of talks will include:

Morning session: Analysis and Identification

- Fred Mosselmans
  Synchrotron in the analysis of minerals and gems
- Peter Treloar
  Non-destructive techniques in the analysis of minerals and gems
- Terry Williams
  Micro-Computed Tomography (micro-CT) applied to mineralogical samples
- Douglas Garrod
  And you thought it was natural!

Afternoon Session: General

- Ron Callender
  Scotland's gold
- Maggie Campbell Pedersen
  Gems from life
- Caroline Smith
  Meteorites
- William Burgess
  Nature's Treachery: Arsenic in the Bengal basin

The event will also include the opportunity to talk to the speakers and others about careers in the geosciences and gemmology, and to view the several displays planned for the day, including the Virtual Microscope (Andy Tindle), real microscopes (Leica), geological specimens for sale (Richard Tayler) and others.

Fee: £20.00 (under 16s £10.00) including refreshments and a sandwich lunch.

For further details and to register: http://www.minersoc.org/pages/meetings/nature3/nature3.html or contact Kevin Murphy at kevin@minersoc.org
Rockwatch delegates should register via Rockwatch. Details available from http://www.rockwatch.org.uk/events_main.html

Campylite from Dry Gill Mine, Caldbeck Fells, Cumbria. Photo courtesy of David Green.

An event organized jointly by:

Gem-A: The Gemmological Association of Great Britain,

The Mineralogical Society

The Russell Society

Rockwatch

In association with the Natural History Museum

At a snail's space*

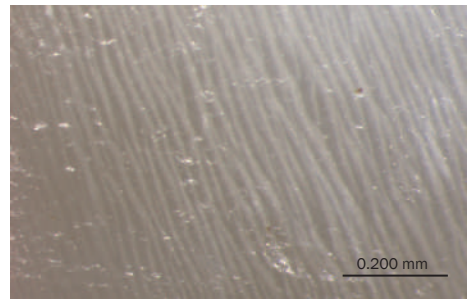
Natural nacreous and non-nacreous pearls, fresh- and salt-water, are found in a wide variety of different molluscs around the globe, although they are becoming increasingly rare. In recent years the authors have examined a variety of natural pearls, but four gastropod-shaped objects described as pearls submitted to the GEMLAB for identification were particularly unusual. If these gastropod-shaped objects were indeed pearls, it would indicate that the shells of the gastropods had been completely filled by the pearl substance — a mode of formation that would raise doubts about their identity.

Different views of the 84.77 ct specimen examined in this study. Photos by T. Hainschwang.

The four objects appeared to belong to the same species of gastropod. All were non-nacreous white, semi-translucent and with surfaces that revealed details of the original shell. They had no indications of polishing or other forms of working, other than at the original aperture of the gastropods.

Microscopic observation showed a distinct concentric structure in the zone of the original aperture of the shell. There was also a faint flame pattern present in all samples, but only clearly visible when the surface of the pearls was viewed under the microscope. Such a flame pattern is characteristic for certain non-nacreous pearls, of which the pink to orange pearls from *Strombus gigas* and *Melo melo* gastropods are the best known. Under intense UV illumination all specimens exhibited a distinct blue fluorescence with a lighter and yellower fluorescence visible in the central portion of the gastropods' original aperture on three of the specimens. With analysis, a small but distinct level of strontium was detected, but minimal manganese, in line with what would be expected in saltwater aragonitic materials. Specular reflectance FTIR (infrared) spectra confirmed that aragonite was the main constituent.

These and other methods of examination, including X-rays, scanning electron microscopy and radiocarbon age determination, revealed no inconsistency



The fine flame pattern seen in the largest specimens, as seen in reflected light. Photo by T. Hainschwang.

with these objects being natural non-nacreous pearls, but did not provide unambiguous proof that this is what they were.

However, after consultation with shell specialists the specimens could be identified as natural and belonging to the species *Magilus antiquus*. These are unusual gastropods that live on and in corals. When the coral grows, the *Magilus* fills up its shell with aragonite and lives on some sort of pedestal close to the surface of the coral.

Are such calcareous concretions formed by coral-dwelling gastropods 'non-nacreous pearls' or simply 'calcareous concretions'? The authors suggest that the term 'calcareous concretion' might be more accurate because the process and motivation for the formation of these objects is quite different from that of 'regular' non-nacreous pearls. Nevertheless, these unusual objects would make attractive and very individual pieces when mounted in jewellery. **J.O.**

* Summary of 'A cautionary tale about a little-known type of non-nacreous calcareous concretion produced by the *Magilus antiquus* marine snail' by Thomas Hainschwang, Thomas Hochstrasser, Irka Hajdas and Wolfgang Keutschegger. *The Journal of Gemmology* (in press)

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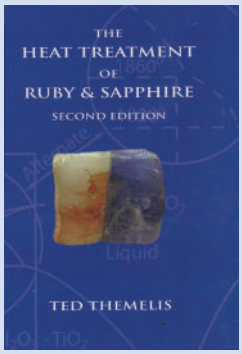

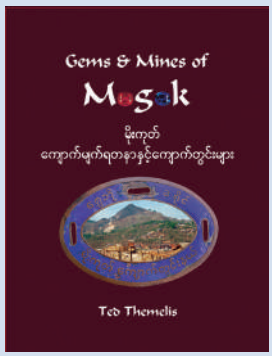

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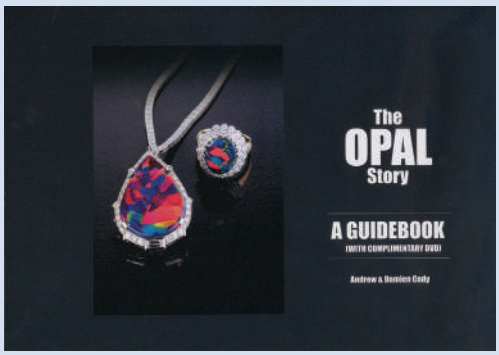

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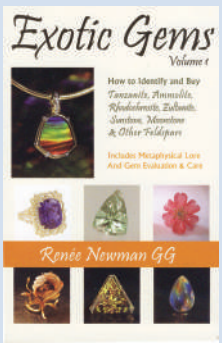

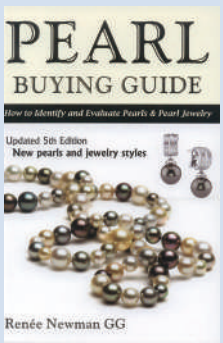

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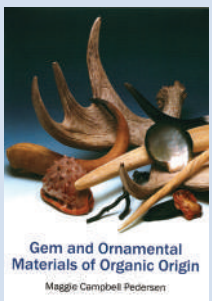

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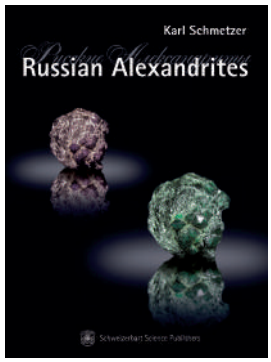
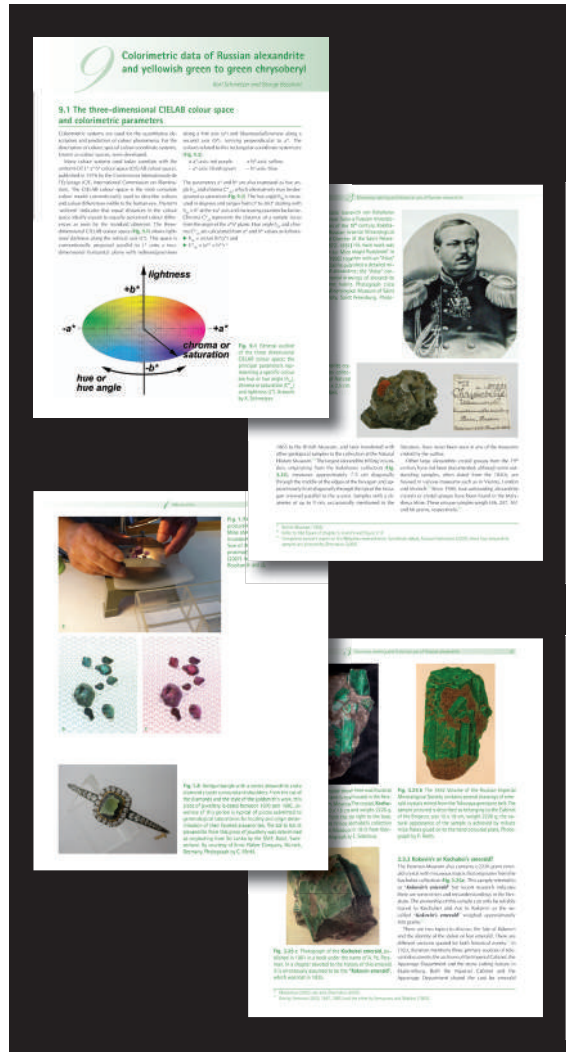
Russian Alexandrites



Karl Schmetzer with contributions by George Bosshart, Marina Epelboym, Lore Kiefert and Anna-Kathrin Malsy, 2010.
Schweizerbart Science Publishers, Stuttgart, Germany. 141 pp. Fully illustrated in colour.
ISBN 978-3-510-65262-4

Alexandrite, a variety of chrysoberyl, and one of the finest colour-change natural gemstones, may almost be called 'the national gemstone of Russia'. This is based on two facts: its noble name in honour of the Tsarevich Alexander Nikolaevich (the future Tsar Alexander II) and its dazzling colours — green in daylight and red in incandescent light — the military colours of Imperial Russia. Although quantities of facetable quality alexandrite are considerably less than those of emerald, alexandrite is counted among and compared to the 'big four' of the gem business: diamond, ruby, sapphire and emerald.

In this long-awaited book the authors present an historical overview of emerald mining in the Urals, the discovery of Russian alexandrites in the Uralian emerald mines, the naming and historical use of alexandrites and their appearance and display in mineralogical museums and the gem trade. Morphology and twinning of rough alexandrite is described for single crystals, single contact twins and cyclic twins (trillings). Mineralogical and gemmological properties are thoroughly explained and numerous photomicrographs of inclusions and growth patterns in faceted samples are presented. Chatoyancy and asterism of alexandrite and chrysoberyl from Russia and Sri Lanka are also described. A further chapter deals with characteristic growth patterns of Russian and other natural and synthetic alexandrites. Colorimetric data of Russian alexandrites and green chrysoberyls are explained using the CIELAB colour space, and the distinction between these varieties is explained. A chapter on trace element chemistry and locality determination rounds off the book. An extensive appendix containing lists of historical names, a timetable and numerous references provides valuable information on Russian alexandrites for all researchers in the mineralogical and gemmological fields as well as for gemmological laboratories, jewellers and gem dealers.



Consequently, this book, illustrated with more than 200 colour figures and photographs, addresses mineralogists, gemmologists, historians, mineral and gem collectors as well as all members of the gem trade.

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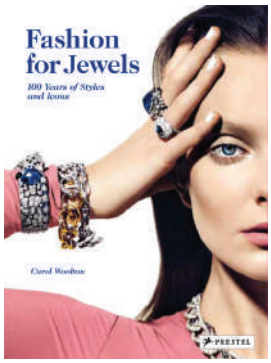
Jewellery and watches

Fashion for Jewels: 100 Years of Styles and Icons



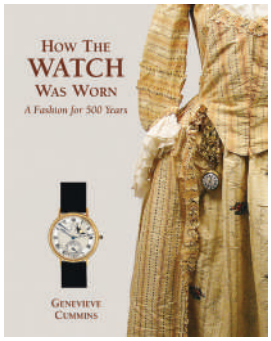
Carol Woolton, 2010.
Prestel Verlag, Munich, Germany.
176 pp. Fully illustrated in colour.
ISBN 978-3-7913-4484-3
Price £25.00

In this lavishly illustrated book Carol Woolton, jewellery editor of British *Vogue,* examines the links between fashion and jewellery.

For as long as we've been dressing ourselves, we've been adorning ourselves with embellishments for ears, hands, wrists, waist and fingers. And as fashion trends evolve, so do trends in jewellery. Here jewellery expert Carol Woolton demonstrates how the worlds of fashion and jewellery have become increasingly integrated over the last century. From the corset-bound silhouettes of the turn of the century, with their elegant drop earrings and delicate chokers, to the free-flowing kaftans of the 1970s, adorned with chunky, earthy bangles and beads–major trends and designers are featured in double-page spreads that offer endlessly fascinating and informative texts and illustrations. Profiles of icons from Coco Chanel and Harry Winston to Princess Diana and Michelle Obama reveal the interplay of personality and history in the world of fashion. And as jewellery from Chanel, Boucheron, Van Cleef & Arpels and others was shown for the first time alongside haute couture in this year's Paris Fashion Week, Woolton explores how brands have made the most of this trend.

Gorgeous photography from the archives of Condé Nast, Sotheby's, and many fine jewellers bring precious metal and gems to life on the pages of this book.

How the Watch was Worn: A Fashion for 500 years



Genevieve Cummins, 2010.
Antique Collectors' Club, Woodbridge, Suffolk
134 pp. Fully illustrated in colour.
ISBN 978-185149-637-2
Price £45.00

The watch was not only made to work, but to wear. Its creation, approximately 500 years ago, has been one of man's mechanical masterpieces. This deserves to be celebrated. The technical and decorative aspect of the watch has been extensively covered in available literature. The manner of wearing has, however, been sadly neglected - a surprising fact, considering that the watch with its attachment is one of the more common and significant fashion accessories.

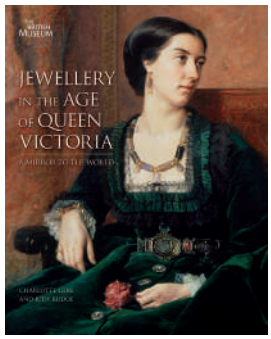
This book aims to correct the deficiency by presenting, in largely pictorial fashion, the relevant styles and changes from 1510 to 2010. To achieve this, over 1000 images are included. These depict watches and people wearing watches (paintings, engravings, fashion plates, advertisements and photographic portraits) as well as gowns and outfits of the day adorned with appropriate styles of watches and chains. The types of watches include fob, pocket, pendant, brooch, ring, buckle, cufflink, doll, occupational, etc, along with the current dominant wristwatch. Attachments for the watch included chatelaines, brooches, wristbands, guard, vest and fob chains. Confused terminology for these chains is clarified.

Those interested in watches, jewellery, fashion and antique photography should find this publication an invaluable resource, as will re-enactors, keen for authenticity.

Book Shelf

Jewellery in the Age of Queen Victoria

A mirror to the world



Charlotte Gere and Judy Rudoe, 2010.
British Museum Press, London
552 pp, 500 illustrations, 400 in colour
ISBN 13: 9780714128191
10: 0714128198
Price: £50

This large *Magnum Opus* of a book, weighing in at some three kilograms without its wrappers, is a truly monumental work. The two very distinguished authors have spent more than the last thirty years accumulating the facts and data which have resulted in this present extensive volume.

The book consists of ten chapters and is over 550 pages long with over 550 illustrations, each chapter detailing jewellery from different aspects of design, manufacture and ownership. The colour reproduction is excellent and the paper quality is of a high standard.

This book breaks completely new ground for a reference work on jewellery. It provides not only considerable detailed research into the background of the pieces illustrated, but also of their makers and their social background and history. It attempts to explain in some detail the events that led to the conditions for the design and production of a number of unique pieces of very personal jewellery.

A wide range of materials which are seldom used today in jewellery is discussed, including the employment of metals such as aluminium in combination with gold and other materials. Details and examples are shown of jewellery made from human hair, hummingbird's heads and fish scales, to give just a few examples.

The first chapter is dedicated to Queen Victoria and the extensive range of her personal jewellery, and her relationship with her husband (who designed and commissioned many pieces). It is profusely illustrated with innumerable portraits and actual photographs of her jewellery, many of which have not been published in a book before.

The authors were granted extensive access to The Royal Collection and many details of Queen Victoria's life and her relationship with her husband are revealed here for the first time. Prince Albert was a man of many talents, and this becomes very evident when you peruse the range of jewellery he designed for his beloved wife.

The next chapters go on to describe and illustrate the truly elaborate range of jewellery which was exhibited at the Great Exhibition of 1851, and the subsequent exhibition of 1862.

The authors have gone to considerable lengths to try to cover the enormous range of styles, materials and qualities of jewellery that were available at the period.

Great care was taken by the authors in narrowing down the dates of many pieces using information from a wide variety of sources and from details of company names as well as any information which was printed or written on their original jewellery boxes.

There are sections on decorative jewels, hairpieces, fashions and designs. One section details the Language of Jewellery and contained within this is a fascinating section on Gem Lore.

The book contains an extensive bibliography and an index. The index from a gemmological point of view is not very helpful. It contains only references to materials such as amber, coral, jet and shell, but there is no well known gemstone listed there at all. Fear not however, as the book is full of illustrations of amazing diamond, ruby, emerald and sapphire jewellery as well as many other gem set pieces too numerous to list here. There are a number of diamond references but these are strangely listed under the famous names of the particular stones such as 'Koh-i-noor diamond', etc.

There is one misidentification I spotted on the description of item 210, page 242, which is described as 'angel skin coral', and is in fact a truly superbly carved suite of Conch shell jewellery. The antique jewellery trade often sell carved conch shell mistakenly for angel skin coral, and the description used here is almost certainly the one used by the dealer who originally sold the piece and has not been amended.

This book provides a valuable number of original details and references, and is a must for anyone remotely interested in jewellery and gem history from this period. It would be a welcome addition to any reference library and is very reasonably priced for such a very large, well illustrated and substantial book.

Christopher Cavey FGA

Salesroom News

Rough, uncut and vigorous: Fleur Fenton-Cowles

Salesroom News

Anneabell Bailey, recently appointed an intern in the jewellery department at Christie's London, reports on the life and jewellery of a very remarkable woman.

The jewellery department of Christie's auction house in London continuously hosts a fabulous array of gems and jewellery being studied, assessed and valued by specialists. This exciting environment is perfect for learning about jewellery and for utilising my more formal gem skills attained at Gem-A. As well as currently completing a History of Art degree, I wish to go on to complete the diamond diploma and gemmology diploma with Gem-A London.

One of my first tasks as an intern in the jewellery department at Christie's King Street premises was to research the life of Fleur Fenton-Cowles. Fleur was a formidably creative American journalist and artist who surmised her personality as a "rough, uncut and vigorous" gem. The comparison with her trademark 94.98 ct uncut emerald ring was apt, as Fleur's jewellery was as recognizable in magazines, photographs and newspapers as Fleur herself.

Fleur was born on 20 January 1908 to Morris Freidman and his wife Lena. Escaping her modest beginnings in New York, Fleur started her career as a columnist for *The World Telegram*. This culminated in the launch of her highly individual and acclaimed *Flair* magazine; despite being short lived in the 1950s, the magazine is now highly collectable. A golden pin shaped like a swallow's wing, which Fleur thought of as 'a symbol of flight, excitement, beauty', was used on the cover of the first issue. *Flair* established Fleur's status as a style icon with avant-garde ideas for fashion and the arts, displaying an array of cutting edge attractions such as pop-outs, textured papers, scents and pull-outs; each revolutionary at the time. Contributors to *Flair* amongst Fleur's distinguished friends included Salvador Dali, Lucian Freud and Sir Winston Churchill.

Fleur socialised among the elite, eulogizing weekends away with Marilyn Monroe and having her portrait sketched by Pablo Picasso in the South of France. Her address book became full of the powerful and famous, from the monarchy to world-renowned designers and artists. After World War II, President Harry S. Truman appointed Fleur as a consultant to the Famine Emergency Committee, where she met Michael Cowles of the Cowles Publishing Empire. They married in December 1946, later divorcing. During their marriage, Fleur became instrumental in a redesign of Michael Cowles' *Look* magazine as associate editor. Working in the front-line of fashion, she proved a role model to many post-war women seeking to regain individuality through style and fashion. Truman also named her a special envoy to the Coronation of Queen Elizabeth II. Fleur's friendship with English royalty developed; she later organized an eightieth birthday celebration for Queen Elizabeth the Queen Mother at which Fleur famously arranged for Luciano Pavarotti to sing 'Happy Birthday'.

As Fleur's personality developed, she collected jewellery which expressed her own very individual style. Her possessions included an elegant antique floral rose-cut diamond tiara and a Cartier purse watch, as well as a number of gem-set bracelets and beaded pieces, which she often wore together to create interchangeable cuffs of gems. Fleur also designed pieces of her own jewellery including a gold and old-cut diamond bangle and a pair of diamond rings. In 1950 on a visit to Argentina, Fleur's jewellery was greatly admired by Eva Peron, particularly her stunning baroque natural pearl and diamond brooch of foliate design, *circa* 1890.

Fleur moved to England in 1955 and married Thomas Montague Meyer with Cary Grant as their best man. An accomplished artist, completing over fifty one-man exhibitions, Fleur contributed her work to exhibitions abroad, organised by the Company of Goldsmiths in order to enhance the international market for British jewellers. In addition, her artwork became widely known in the children's books *Tiger Flower* and *Lion and Blue*. As a senior fellow of the Royal College of Arts, London, Fleur continued to network with the global elite, including Elizabeth Taylor with whom she shared many characteristics: glamorous with an enduring love for jewellery.

In a 1949 *Time Magazine* interview, Fleur summed up her multi-faceted life: "I've worked hard, and I've made a fortune, and I did it in a man's world, but always, ruthlessly, and with a kind of cruel insistence, I have tried to keep feminine." This philosophy of life continued for another sixty years. Fleur died in London in June 2009 at the age of 101.

The sale of Fleur Fenton-Cowles' jewellery will be held at Christie's, King Street on 1 December 2010. www.christies.com

Opposite: Fleur Fenton-Cowles modelling her trademark emerald ring and gold and old-cut diamond bangle, 1964.
Left: Russian uncut 94.98 ct emerald ring.
Above: Baroque natural pearl and diamond brooch of foliate design, c. 1890.
All photos © Christie's.

The Jewels of the Duchess of Windsor

Offered for sale 23 years ago, items from this famous collection are once again to be auctioned by Sotheby's

Jewels designed by Jeanne Toussaint for Cartier, Paris.
Above: Onyx and diamond panther bracelet, 1952. The attenuated and articulated body is designed to encircle the wrist and to assume a stalking attitude. Top right: Ruby, sapphire, emerald, citrine and diamond clip, designed as a flamingo in characteristic pose, 1940. Images © Sotheby's.

The romance between Wallis Simpson and the Duke of Windsor (the former King Edward VIII) is perhaps one of the greatest royal love stories of all time. The King was precluded by constitution from marrying Wallis, a twice-married divorcee from Pennsylvania, and chose instead to surrender the throne in 1936. They married the following year. Throughout their relationship the couple commissioned jewels from the great European jewellery houses.

The Duchess died aged 90 in April 1986 and the collection went on sale at Sotheby's in Geneva the following year, fetching £31 million — a world auction record for a single owner jewellery collection. Twenty of the pieces that were sold then are to be auctioned again after 23 years. The sale will comprise a comprehensive array of pieces commissioned from Cartier, one of the most favoured jewellers of the Duke and Duchess. A highlight of the sale will be an onyx and diamond panther bracelet, one of the three-dimensional 'great cat' jewels, designed in 1952 by Jeanne Toussaint, Cartier's High Jewellery Director. Another example of Jeanne Toussaint's work is a flamingo brooch set with rubies, sapphires, emeralds, citrines and diamonds, bought by the Duchess in 1940. The flamingo brooch caught the imagination of the world and became the emblem of the 1987 sale.

While representing important examples of the art and creativity of the twentieth century as well as the style of the Windsors, the jewels also give an insight into the life of the famous couple, and many pieces in the sale are dated and bear inscriptions of an intimate nature. In addition to the Cartier creations, the selection will present a gold mesh, ruby, turquoise and diamond purse by Van Cleef & Arpels and a series of silver items and medals, once property of the Duke of Windsor.

The sale will take place on 30 November 2010 at Sotheby's, London.
www.sothebys.com

From Medieval to Modernism

A thousand-year tour of international jewellery design

A water sapphire, polychrome enamel and emerald pendant by Henry George Murphy c. 1928. Photo courtesy of John Benjamin.

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We are extremely fortunate that John has offered to give his presentation free of charge, to ensure that the attendance fee may be kept to a level affordable to anyone in the trade.

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Museum News

The Immortal Alexander the Great

The 'immortal' Alexander will be brought to life at the Hermitage Amsterdam in an exhibition spanning a period of almost 2500 years.

Alexander hunting boar. Italy, first century AD. Sardonyx cameo, 2 x 2.2 cm.

No other king from antiquity has such a powerful appeal to the imagination as Alexander the Great (356–323 BC). Certainly no other king has been so often cited and depicted as an example.

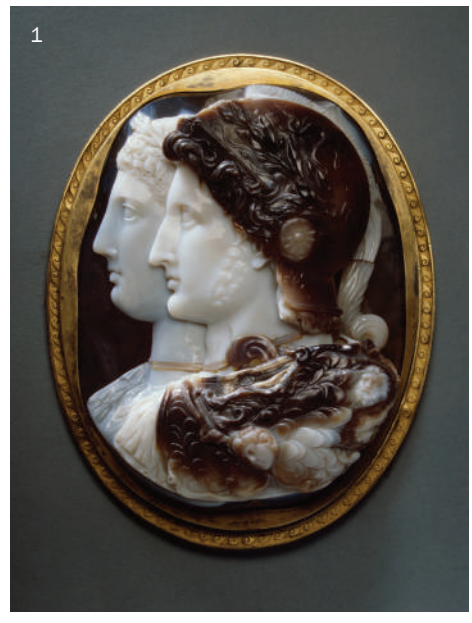
Born in 356 BC, Alexander succeeded to the throne at twenty years old following the assassination of his father, King Philip II of Macedonia. Two years after Alexander's succession he set off on the expedition that would define his prominence as King and shape the future of the rest of the world. Alexander's journey brought him into contact with many cultures, from the Middle East through to Central Asia, including Syria, Egypt, India and parts of modern-day Afghanistan and Turkmenistan. Founding new cities wherever he went, Alexander's impact upon local architecture, language and art was phenomenal; over time these foundations of human culture assimilated and replicated Alexander's Greek influence, a process that later became known as Hellenism. This Hellenic influence, which extended from Egypt to India, was visible in most arts; particularly in the design of jewellery dating from during, and after, Alexander's reign.

To celebrate Alexander's influence an exhibition devoted to his life, his journey to the East, and the influence of Hellenism is being displayed at the Hermitage Amsterdam until March 2011, during which time the 'immortal' Alexander will be brought to life for six months.

Comprising over 350 masterpieces and spanning a period of almost 2500 years, the exhibition gives not only a picture of Alexander himself (the myth, the reality, his journey and his heritage), but also of the great cultural and artistic changes that followed in the wake of his conquests. It is worth noting that included in the exhibition is the famous Gonzaga cameo (**1**), on loan from the State Hermitage Museum in St Petersburg, as well as a selection of gold jewellery dating from between the fourth to second century BC.

The exhibition features a gold olive wreath (**2**) (*circa* mid-fourth century BC), excavated from the burial mound on the land of Mirza of Kekuvat (formerly the Bosporan kingdom, now also on the outskirts of Kerch, Ukraine). Short twigs, leaves and fruit, accurately conveying the shape of

1. Gonzaga Cameo. Twin portrait of Ptolemy II Philadelphos and Arsinoe II. Alexandria, third century BC. Three-layer sardonyx , 15.7 x 11.8 cm.



Museum News

2. Olive wreath. Greek, Northern Black Sea region, Bosporan Kingdom, mid-fourth century BC. Gold, c. 32 cm. 3. Earrings with pendants in the form of a dove. Greek, Alexandria (?), second century BC. Gold, hessonite, glass, 6.3/6.5 cm. 4. Earrings with Nike, goddess of victory. Greek, mid-fourth century BC. Gold, 4.8 cm

the leaves and fruit of the olive tree, are attached to stems of gold leaf rolled into tubes or freely inserted into apertures. The somewhat careless manufacture of the wreath (particularly the construction of, and the manner in which, the detailing is attached) appears to suggest that it was made specifically for a burial. The custom of heroising deceased nobles or wealthy citizens took root in the Bosporus kingdom from the middle of the fourth century BC, whereby a gold wreath was placed on the deceased's head in preparation for his meal beyond the grave with demigods and heroes of the past.

An example of the Hellenic influence in design can be seen in a pair of dove earrings (**3**), *circa* second century BC. Excavated from the Artyukhov burial mound on the Taman Peninsula, Russia, the earrings comprise a disc crowned with an imitation of the headdress of Isis: a round garnet, a sun surrounded by fine wire, and steers' horns. The two feathers above the round garnet, the petals of the rosette on the disc, and a dove's head and body are all covered with a thin layer of a glassy mass of various shades. The highly artistic execution, the use of a variety of techniques and materials, and the rich colour range are characteristic of the heyday of Hellenistic art. The use of an Egyptian motif in the design suggests that the earrings may have been made in Alexandria.

Also on display is a pair of gold Greek earrings depicting the figure of Nike (**4**), the Greek goddess of victory. Originating from mid-fourth century BC, the earrings were excavated from the Pavlovsky burial mound on the Yuz-Oba ridge (near Kerch, Ukraine). Both earrings feature the figure of Nike, mirroring the motion of the other's raised arm which holds a ribbon, whilst double-layered rosettes over the figures' heads conceal the wide hooks of the earrings. The arms, wings, feet and ribbons were made separately and soldered to the body, which was formed in a single section. The hair, facial features, folds of the chitons and feathering of the wings were carved subsequently. A repair to the broken hook on one of the earrings, carried out in antiquity, is evidence that they were worn for a long time. It is thought that a monumental sculpture may have served as the prototype for this miniature work.

In addition to the jewellery, the exhibition also features paintings, terracotta figurines and stone fragments of architecture relating to Alexander's reign.

The Immortal Alexander the Great exhibition is truly worth seeing to appreciate the pervasive beauty and influence of Hellenic design, as well as to demonstrate the magnitude of Alexander's kingdom; the king who is, and always will remain, truly immortal. **G.B.**

All images © State Hermitage Museum, St Petersburg.

'The Immortal Alexander the Great' is exhibiting until 20 March 2011 at the Hermitage Amsterdam.
www.hermitage.nl/en/

Stone Scoop

Colour play

Colour change

As Karl Schmetzer's long-awaited volume on alexandrite appears (see page 39), it might be useful to quote another couple of properties of this stone. Gems might be thought to attract muggers, but seemingly not always. According to a 1903 edition of the *San Francisco Call* (12 April): "To the superstitiously inclined the alexandrite should appeal strongly. Orientals hold that it not only protected the wearer from footpads [muggers], but that those troubled with insomnia can obtain a good night's rest by gazing intently upon the stone after it has changed colour."

Perhaps it helped those who lay awake at night worrying about muggers.

Fit for princesses

The extraordinary colour effects of opals have long fascinated all classes of gem-wearer — including royalty. Opal was first discovered in Australia in the early 1840s and with the subsequent discoveries of new mines it became very much the gemstone of Australia. But Australia was part of Queen Victoria's Empire and Australia's treasures were Britain's treasures. Australian opals were cut in Britain and fetched good prices there. A report of the Great Exhibition held in London in 1851 in *The Times* noted that Australian opal exhibiting "a bright variety of colour ... has been sold at the same price with diamonds of equal size".

The 1888 Centennial Exhibition held in Melbourne's Royal Exhibition Building had a spectacular display of Queensland opals which the *Brisbane Courier* (Saturday 29 September 1888, page 9) described as follows: "The Opals Mines Company of Queensland, whose offices are in Waterloo Place, London, work the mines in the above named district [Cooper's Creek] the matrix being forwarded to England and sold to artistes who work the opals into designs of various kinds. They are set with diamonds of the finest water and in the form of bracelets, pendants, pins, necklaces, are sold at surprisingly high figures."

Amongst the exhibits in the exhibition was "a rare black opal entirely free from matrix formed as a pendant. £500." It adds: "These Queensland opals are in demand in England, being much in favour with the Queen and the royal family, the Princess of Wales having appeared in a full suite of them at a recent brilliant assemblage. They are likely, it is said, to be adopted as the distinguishing stones in the engagement rings of the branches of the royal family."

To dye for

Love of colour — or a desire for the absence of colour — has been the stimulus for a great proportion of gem treatments over the years. One of the major discoveries in the nineteenth century was aniline dye.

Initially aniline was an expensive commodity, but mass production became possible in the mid-nineteenth century and aniline dye technology spread rapidly. Blue aniline dye was behind a huge scam in the diamond industry in the 1880s, whereby a blue aniline wash was applied to off-coloured and slightly yellow diamonds to improve their colour and "a great many of those cheats were marketed". The benefit — if that is the right word — of aniline dye is that its resinous-like nature meant it could be applied to gems and didn't wash of in water. Luckily it was soon realized that it could be removed with alcohol and thus detected.

However, one UK diamond dealer writing in 1890 said: "The most extensive and costly fraud worked on dealers that I recollect took place in 1883. Our firm was robbed of nearly £25,000. It was called the 'coating system', and was discovered in Amsterdam and put into operation in London. By saturating off-coloured or yellow flawless stones worth from £3 12s to £5 a carat in a peculiar solution it gave them the appearance of first-water stones worth from £20 a carat up.

"The simulation was perfect and, while the dodge was new, it played havoc with the trade at large. The solution was effective for a few days or weeks only, and then the stones returned to their original 'off-coloured' condition. This scheme is defunct as far as the wholesale and jobbing trade is concerned, but it is still utilised to catch pawnbrokers and bargain hunters."

Diamonds were not the only gem so treated. The *Shendoah Herald* for 30 September 1892 tells us that "White sapphires are made to look like blue and thus multiplied many fold in value by a mere touch of blue coloring on the point at the bottom of the stone... The same effect is sometimes obtained by the use of a little blue enamel in the setting."

But seldom to hang for

With several thousand years of gem deception behind it, you would think the gem industry would have learned to correct its ways. Sadly not. The Judge in an 1840 case in London, relating to the sale of doublets as real, noted that he was aware that "it was a custom with many shopkeepers to represent certain articles as genuine, which they were well aware was not the case. The higher tradesmen, as well as those in an inferior station, must be taught that they could not act in such a manner with impunity, and if they did they must take the consequences" (London, Central Criminal Court 27 October 1840, recorded in *The Times* 28 October 1840). In this case the gems were "two pieces of crystal ... with a piece of coloured tinsel placed between them, which gave the appearance of rubies". One can agree wholeheartedly with the judge, but note with some sadness that his comments still apply more than a century and a half later.

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