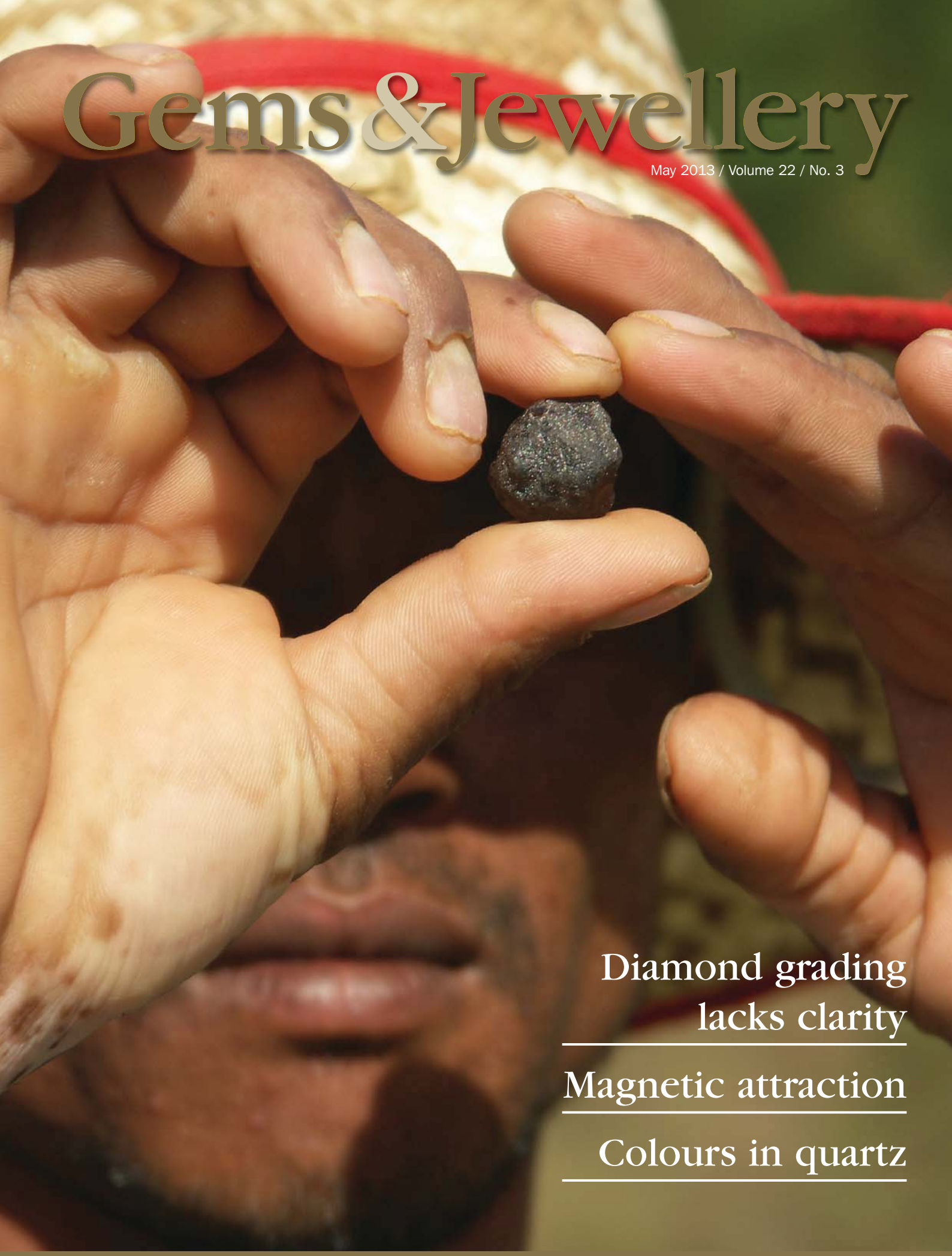
Gems & Jewellery

May 2013 / Volume 22 / No. 3



Diamond grading lacks clarity

Magnetic attraction

Colours in quartz

Gem-A
THE GEMMOLOGICAL ASSOCIATION OF GREAT BRITAIN

CHINA GEMS

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From the hottest trends to greatest inspirations.

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Editorial

Gems&Jewellery
May 13

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A message to trade organizations

By the time you read this the annual World Jewellery Confederation (CIBJO) Congress will have taken place in Tel Aviv. Much time, energy and mental effort will have been devoted to fine-tuning gem nomenclature, debating treatment disclosure and mulling over a plethora of ways in which social and environmental factors impact on our industry. Then what?

CIBJO is primarily a confederation of gem and jewellery trade organizations from around the world. In a laborious but essentially democratic process the representatives of these bodies decide the best approaches to the various issues and then go home and do their best to implement them among their members. People often complain that CIBJO doesn't do much to enforce or police the guidelines it provides, but that is missing the point.

It is up to the trade organizations in each country (working in unison if there is more than one such organization in a country) to make all reasonable effort to ensure that their members understand and implement CIBJO guidelines. This responsibility of the trade organizations is a fundamental part of their membership of CIBJO. Similarly, each member of a trade organization, should have the duty to follow these guidelines — risking a reprimand or expulsion if not. However, without clear guidelines from their trade organizations, many sellers will know little of what is expected of them and without defined sanctions to keep them in line may fall short of what the public should expect in terms of honest sales descriptions. Trade organizations need to have an in-depth understanding of the issues and actively police their members, but of course they, like CIBJO, largely rely on subscriptions for their existence, and expelling or scaring off members is the last thing they want.

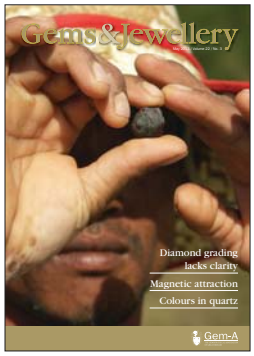
On the other hand, in recent years an increasing number of trade organizations at the retail end of the supply chain are taking an active interest in the 'ethical issues' — from child-labour in factories to environmentally-unfriendly mining. This interest is admirable, and it is certainly an area of growing importance — despite the increasing number of bodies involved and sometimes treading on each other's toes. I am all for a balanced and realistic approach to the ethical issues. However, a cynic might suggest that focusing on 'ethics' to the exclusion of gem disclosure issues at the retail end of the supply chain is an easy option for some trade organizations. It looks modern, caring and sexy, and has the advantage of pushing the responsibility for most of the 'bad stuff' back down the supply chain onto someone else's shoulders — usually in another country.

So, by the time this magazine hits your desk the CIBJO Congress will be over. Trade organizations now have to decide how to hard-wire adherence to CIBJO guidelines into their membership requirements or have the courage to stand up and say that they consider that the battle is lost and that for the vast majority of day-to-day high-street jewellery sales, disclosure has become unrealistic and perhaps even irrelevant. There is no realistic middle way — but you could, of course, join another ethics working group.

Jack Ogden

Cover Picture

Cover photograph from an exhibition of photos of gem mining in Thailand and Cambodia by Vincent Pardieu (see page 8). Copyright Vincent Pardieu.



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Gem-A news

Gem-A CEO James Riley FGA gives a round-up of what's been happening at Gem-A.

Events

As advised in the Calendar (opposite page), the Gem-A Annual General Meeting will be on Wednesday 3 July at the Naval Club in London. This year Gem-A is celebrating 100 years since the first Gemmology Diploma was awarded and, following the formal meeting, James Riley will give a brief talk on the history of the Gemmology Diploma and the future of Gem-A's courses. Dinner will be available in the Club afterwards for those who wish it. The annual report, accounts and other AGM documents will be available to download from www.gem-a.com four weeks prior to the AGM.

The first half of the year will round off with the JCK Las Vegas show starting on 31 May, followed by the JTV Gem Lovers' Conference in Knoxville in early July. The education team will be providing Gemmology Diploma and Diamond Practical seminars in both Las Vegas and Knoxville in July; ODL students – book your places now! There will also be short seminars at The JTV Gem Lovers' Conference.

Lifetime Membership

This year for the first time the Board of Trustees has agreed to make Lifetime Memberships available. Lifetime Membership will start (in common with other organizations) at 25 years' worth of subscriptions, i.e. £2,500. There is a reduction for those over 60 who wish to apply. Apply for Lifetime Membership today — your hedge against inflation.

If you have already paid for 2013 but would like to upgrade to Lifetime Membership, your fees for 2013 will be offset against the lifetime fee. For further details contact Carlos Witkowski on +44 (0)20 7404 3334 or email membership@gem-a.com.

News in brief

Gem-A returned to BaselWorld for a highly successful show. There were many highlights to the show such as an exceptional 200+ ct emerald from Colombia and a dazzling array of natural fancy coloured diamonds. A full report will appear next month.

Work has commenced at Greville Street on repairs to our building so apologies to visitors or if there is a delay in responding to any enquiries. Hopefully all should be completed in the near future. There are a number of exciting options available to us with regards to our offices and I'm sure the end result will meet with your approval.

Stop press from CIBJO in Tel Aviv is that glass-filled rubies may well be illegal under EU law, a theory propounded by Jack Ogden here a couple of months ago. CIBJO is requesting direct clarification on this from the EU which will then be enforced by national governments. These meetings can often be tedious but they are vital to the trade and the consumer in order to provide clarity, advice and protection. Again, more next month.

Two recent losses

It is with great sadness that we report the deaths of two well-known figures in our field, Lord Balfour and Joseph Tenhagen.

The Rt Hon. Lord Balfour of Inchrye died on 14 April aged 88. He was a noted diamond historian who worked for many years at de Beers. At the time of his death he was working on the sixth edition of his *Famous Diamonds*, a comprehensive book on the worlds greatest diamonds. He played an instrumental part in setting the exam questions for Gem-A's first ever Diamond exam.

Joseph Tenhagen died on 27 April at the age of 79. Joe, a Fellow of the Gemmological Association of Great Britain, assisted with Gem-A education for many years. He was past president and a founder member of the Accredited Gemologists Association in the USA, an organization that started life as the Alumni of the Gemmological Association. He was also past president and secretary of the Diamond Dealers Club of Florida.

Fuller obituaries will be published by Gem-A in due course.

Gem-A Calendar

Gem-A AGM
The Gem-A Annual General Meeting will be held on Wednesday 3 July at 5:00 pm in the Naval Club, 38 Hill Street, Mayfair, London W1J 5NS. This year Gem-A celebrating 100 years since the first Gemmology Diploma was awarded and, following the formal meeting and cocktail reception, James Riley will give a brief talk on the history of the Gemmology Diploma and the future of Gem-A's courses. Dinner will be available in the Club afterwards for those who wish it. The annual report, accounts and other AGM documents will be available to download from www.gem-a.com four weeks prior to the AGM.

Gem Central and Career Service evenings
Gem-A very much regrets that Gem Central and Career Service evenings have been cancelled until September 2013. This is due to building work being carried out at 27 Greville Street and we apologize for any inconvenience caused. We will announce dates of the evening meetings as soon as possible. Thank you for your understanding.

For further information please contact: events@gem-a.com

Conferences

The 5th European Gemmological Symposium
15 and 16 June
Leiden, the Netherlands
The Netherlands Gemmological Laboratory and the Dutch Gemmological Guild cordially invite gemmologists, jewellers and anyone else interested in gemmology, to the 5th European Gemmological Symposium that coincides with the 14th Dutch Gemmological Guild Symposium. To book go to: http://science.naturalis.nl/nel

The Gem-A Conference 2013
2 and 3 November
Goldsmiths' Hall, London
A two-day conference to celebrate the 100th anniversary of the first Gemmology Diploma to be awarded and the 50th anniversary of the Diamond Diploma.

Confirmed speakers include John Bradshaw, David Callaghan, Dr John Emmett, Dr Emmanuel Fritsch, Arthur Groom, Brian Jackson, Dr Jack Ogden, Sonny Pope, Gary Roskin, Chris Sellors, Shelly Sergent and Dr James Shigley.

See: www.gem-a.com/news--events/gem-a-conference-2013.aspx

Show Dates

Gem-A will be exhibiting at the following shows:

JCK Las Vegas
31 May – 3 June 2013
Booth L116

International Jewellery London
1 – 4 September 2013, Stand J94
Gem-A is proud to be a Sponsor of IJL

Hong Kong Jewellery and Gem Fair
13 – 17 September 2013
CEC Booth 3M046

AGTA GemFair™ Tucson
4 – 8 February 2014

Photography competition

Show us your camera skills with a beautiful, artistic or quirky gem-related photo. The closing date for entries for the 2013 Gem-A Photo Competition is 28 June. Photos will be judged in three categories:

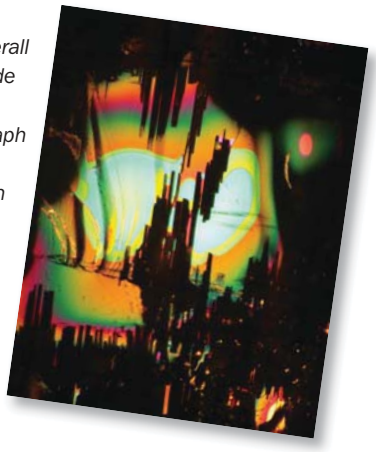
Natural
Must be a digital photograph (including photomicrography) with minimal post-production work (may include basic cropping, contrast and minor hue/saturation adjustments).

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

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

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

For submission details see: www.gem-a.com/membership/photographic-competition.aspx
Competition open to Gem-A members only.



The 2012 overall winner: Tony de Goutière's photomicrograph of a thin-film inclusion in an aquamarine crystal.

Gemstone news

Jack Ogden FGA reports on the most recent UK and international gem developments.

Harmonising lab talk

The Laboratory Manual Harmonisation Committee (LMHC) has elevated the German Gem Laboratory (DSEF -— Deutsche Stiftung Edelsteinforschung) of Idar-Oberstein, Germany, and Central Gem Laboratory of Japan (CGL) from observer status to that of permanent member. The goal of LMHC is to achieve the harmonisation of gemmological report language; it meets several times a year to discuss recent gemmological developments, nomenclature and disclosure. So far the LMHC has published 11 information sheets, the most recent dealing with paraíba tourmaline. It has also updated Information Sheet 3 'Corundum with glass-filled fissures and/or cavities enhancing/modifying the clarity'. In a posting on Gem-A's GemTalk, Gübelin Gem Lab director Lore Kiefert commented that the update for the latter was with regard to glass-ruby composites. She also noted that they don't refer to acid cleaning prior to filling since any pre-treatment is "guesswork and not observation".

All 11 LMHC information sheets can be downloaded from www.lmhc-gemology.org

The LMHC will shortly make a decision about the production of an information sheet on the nomenclature for hydrophane opal.

Tracking gems

At a meeting in Turin in April global representatives discussed the bringing together of the United Nations, governments, the industry and civil society to establish a mechanism for the traceability and certification of the ethical origin of coloured gemstones. The meeting was convened by the United Nations Interregional Crime and Justice Research Institute in cooperation with the Vienna International Justice Institute and the International Colored Gemstone Association (ICA).

Coloured gemstones account for about US $10 - 12 billion per year, 80% of which comes from small scale, informal mining. This fragmented market and the value and ready portability of gems can provide many opportunities for illegal and fraudulent activity, in some cases involving organized criminal groups. There are also many social and environmental issues including unsafe and unacceptable working conditions. The project is based on the assumption that the growth of the coloured gemstone industry could be positively impacted by better governance practices of the stakeholders up the supply chain. It thus aims to establish an instrument in the form of certificate of origin and its corresponding tracking system for coloured gemstones.

ICA President Wilson Yuen noted that: "Tracking gemstones from their geographical origin with a realistic approach is an opportunity for the public sector, the gems and jewellery industry and the civil society to address together social, technical and environmental issues as well as illicit and criminal practices threatening our sector. This will undoubtedly enhance the transparency of the distribution chain and benefit all the stakeholders from mine to market and build up consumer confidence."

Synthetic diamonds

The Business Standard (India) recently quoted Vipul Shah, chairman of the Gems & Jewellery Export Promotion Council as saying: "The synthetic diamond market has captured around one per cent of the overall diamond jewellery market in India." The article went on to say that the market has been growing at a compounded annual growth rate of 25%. Considering the size of the Indian diamond market, synthetic sales of one per cent by value, if an accurate assumption, would be a large amount — corroboration would be useful. The same article says that synthetics trade at about 40% below the natural. A figure of 30% below was given by Aagam Sanghavi, director of Sanghavi Exports, according to the *Times of India* (20 March 2013), who was also quoted as saying that synthetic diamonds, although creating a challenge at the trading level, could be dealt with by proper "disclosure, detection and differentiation". The frequent talk about how much below the price of a natural diamond a synthetic one sells for — 30% seems a typical level — raises the question "off what?". Are we talking about 30% off the price of an equivalent stone with a lab report

Examining a synthetic diamond at IIa Technologies of Singapore. Photo courtesy IIa

from GIA, say, or one with a lab report from one of the less respected labs where there is already a discount, sometime greater than 30%?

In any case, continued growth in the synthetic diamond market seems to be expected. That is good news for IIa Technologies of Singapore which calls itself one of the world's largest producers of Type IIa diamonds. It has just announced Singapore's first highly sophisticated diamond growing facility using Microwave Plasma Chemical Vapour Deposition (MPCVD). It says that it has perfected the technique to allow it to grow colourless Type IIa diamonds in commercially viable quantities and quality. In the company's publicity it adds that: "The diamonds created by IIa Tech are pure, not only in quality, but also in origin with the assurance that the process is free from potential human rights abuses while eliminating 50% of the carbon emissions associated with traditional diamond mining." The publicity implies, but does not unequivocally state, that gem as well as industrial use is envisaged. http://2atechnologies.com

A recent patent for producing colourless CVD synthetic diamonds by Gemesis provides a useful background to the Gemesis process: http://tinyurl.com/GemesisCVD2012

Body of evidence

The production of synthetic diamonds from the cremated ashes of loved ones is a subject that raises many questions from gemmologists. An article in the *Straits Times of Singapore* (3 April 2013) discusses the ashes-to-diamond service offered by Algordanza Singapore, a branch of Swiss-based Algordanza. It quotes the chief executive as firmly refuting criticism about the process and authenticity of the origin of the stones. In answer to a frequently repeated assertion that it is not possible to extract sufficient carbon from a cremated corpse, the newspaper quotes a Dr Ong Chin Choon, a senior lecturer of forensic chemistry at Singapore Polytechnic's School of Chemical and Life Sciences, as saying that in theory "a wholly cremated adult body of average weight" could provide sufficient carbon for at least 30 one-carat diamonds.

Polishing off polishers

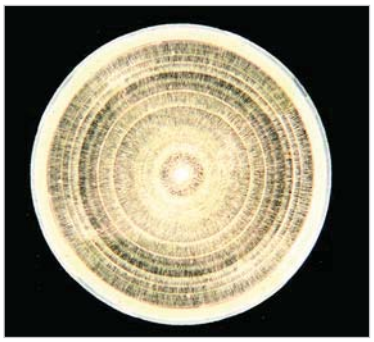
The problems of deadly silicosis among gem polishers is well recognized, but perhaps not taken seriously enough by the wholesale and retail industry to help force improvements. In short, polishing gems dry and without proper ventilation produces fine dust which is inhaled by the worker, leading to silicosis, an unpleasant, incurable and deadly disease a bit like tuberculosis. It is sometimes called 'grinders' asthma'. A recent article in the *New Haven Register* (21 March 2013) looked at the problem with a particular focus on the agate bead workers of Khambhat in Northern India — what used to be called Cambay.

This area has been producing agate beads in huge quantities for many centuries. The problem is that production techniques haven't changed much over those centuries and, because the workers often work from home rather than in factories, their employers avoid having to deal with the health and safety rules that cover factories. The solution is not that difficult — grinding the gems wet and with even basic extraction equipment can make all the difference. But more pressure is needed from those further up the supply chain to make the relevant government bodies take the matter seriously. As the article points out, it is impossible to tell which are 'good' and which are 'bad' among the endless strings of agate and other beads that now fill trade shows, malls and jewellers. Labelling is seldom useful, and even if an origin is given, it may well be where the beads were threaded, not where they were produced. The article quotes Brian Leber, a Chicago jeweller and activist, as saying that he had seen agate necklaces made by a women's co-op in the developing world and sold by a 'fair trade' retailer that were almost certainly cut by workers at risk from silicosis.

The full article can be found at http://tinyurl.com/NHR-agates.

Pearls: ancient and modern

Bahrain Mumtalakat Holding Company (Mumtalakat), the investment arm of the Kingdom of Bahrain, has signed a memorandum of understanding with three Japanese organizations to try to revitalize Bahrain's pearl industry. The Japanese organizations include the Kinoshita Pearl Co. Ltd. which deals in natural and cultured pearls and First Stem Cell Japan Inc., a biotechnology research company. As the expertise of these two companies suggest, they will be exploring new technologies in their quest to redevelop the ancient pearl industry in Bahrain. Nada Abdulghani, corporate communications at Mumtalakat has confirmed to Gem-A that it is, of course, talking about the natural pearl business. Bahrain has long had a no cultured pearls policy, and the pearl laboratory set up in the 1990s to police this was established with the help of what was then the Gem Testing Laboratory of Great Britain, later merged into Gem-A.



Will synthetic pearls be possible? The photo shows the structure of a natural pearl. Copyright Gem-A.

Meanwhile there is talk of establishing pearl culturing in India. The State Fisheries Department is exploring the potential for producing what it is calling 'Designer Pearls' in select areas along the sea coast of Kerala, India (*The Business Standard*, 28 March 2013). The Central Marine Fisheries Research Institute reports that there are many potential pearl-producing beds along the Kerala coast. The Institute's technique is bead implantation in a 7 cm long oyster and a raft culture cultivation method. The oyster used is the *Pinctada fucata* — the Akoya pearl oyster.

And what about synthetic pearls? What is termed biomineralization is developing in leaps and bounds. The announcement by a German

Gemstone News

Gemstone News (cont.)

research team at the University of Mainz that it has found a way to produce a flexible form of fibrous calcite by combining calcite and a protein (*Science,* 15 March 2013) in a way utilized by nature in the production of bones and shells (and thus pearls) may bring the dawn of pearl synthesis closer. It seems unlikely that finding a way to produce synthetic pearls to compete with normal cultured pearls would be worth the time and money, but perhaps the possibility to coat other materials or larger surfaces with a layer of 'pearl' would be appealing. According to the article, the fibrous calcite, which mimics sponge spicules, is composed of aligned calcite nanocrystals. Interestingly, the spicules are initially amorphous but "transform into calcite within months". If nothing more, such research might teach us more about how pearls form.

Gem photo exhibition

A gem miner photographed at Pailin, Cambodia, June 2006. Copyright Vincent Pardieu. See also cover.

Vincent Pardieu had a one-man show of his gem-related photos in Bangkok in April, at the Alliance Française Bangkok. Titled 'Siam Rubies and Sapphires', the exhibition presented a representative selection of photos of gems and gem mining in Thailand and Cambodia. For more than 100 years, the region extending on both sides of the current Thai/Cambodian border between the towns of Chanthaburi (Thailand) and Pailin (Cambodia) has produced magnificent rubies and sapphires. Formerly a tour guide, Pardieu became the director of the AIGS laboratory in Bangkok after studying gemmology in Burma and in Thailand. After a time working in Switzerland, he returned to Bangkok in 2008 to work for the Gemological Institute of America Laboratory where he combines his two passions: studying gemstones and travelling to gem mining areas around the world. More of his work can be found on www.fieldgemology.org.

Gemmiscellany

A consignment of small lapis lazuli cabochons seen in Gem-A's offices recently appeared to owe at least part of their smooth surface and polish to some sort of epoxy and some of the golden pyrite specks may well have been added along with the epoxy. Coincidentally just a week earlier a friend showed me some small lapis plaques he had just brought back from Afghanistan and although there wasn't an opportunity to examine them in any detail, they also appeared to owe their smoothness and polish — and perhaps deep colour — to some sort of impregnation.

Doublets are often associated with older and antique jewellery, but the practice of imitating gems with composites is still alive and well. We were recently shown some large gems which at first glance looked like poor quality emeralds, but it was soon obvious that they were doublets. Of the ones shown here, the pear-shaped stone (in tongs) has a glass top and quartz pavilion, the round stone has quartz top and bottom, and both have green adhesive holding the components together and providing the colour.

Two modern doublets imitating emerald. Copyright Gem-A.

Of course, not all imitations or modifications are intended to replicate known gem types. For example, Lore Kiefert, chief gemmologist at the Gübelin Gem Lab, told us that she had seen some rather interesting colours of 'amber' at the Tokyo Jewellery Show. Not having had samples in the lab she was unable to ascertain the exact process, but she managed to get the seller to explain that they involved an autoclave procedure similar to that used for the well-known 'green amber', probably followed by some form of colour diffusion. Kiefert reminds readers that British clients wishing to submit gems for testing at the Gübelin Gem Lab in Switzerland can now make use of a weekly shuttle service operating between London and Switzerland, provided by Malca Amit.

Samples of the coloured 'amber' spotted by Lore Kiefert of the Gübelin Gem Lab at the Tokyo Jewellery Show. Copyright Lore Kiefert.

An old attraction: magnetic gems

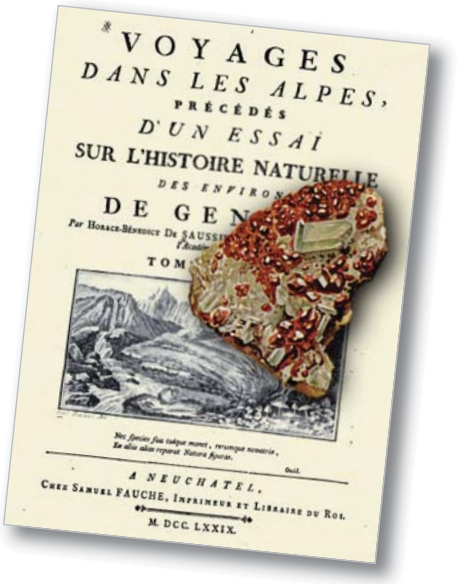
Jack Ogden FGA finds that using gem magnetism as an identification tool is not new.

The magnetic susceptibility of gemstones — garnets in particular — and the use of this phenomenon in gemmology, has recently been the subject of research. However, it is not a new approach. The first to note magnetic susceptibility in garnets appears to have been an eighteenth-century Swiss doctor, an avid Alpine explorer who would have had a magnetic compass needle to hand when he encountered the garnets in his beloved Alps.

Back in the 1970s there were no course notes for Gem-A's courses, but there were the recommended textbooks. One was Basil Anderson's *Gem Testing* in which he noted: "There are occasions in testing gemstones when the oddest and most unconventional tests can prove useful." One such was magnetism. I remember trying this out back then with ancient jewellery — suspending Roman garnet-set rings in the British Museum on threads and seeing if they swung towards a magnet — they did. Anderson had first published his experiments with a magnet as early as 1953, but he was not the first.

Abbé Haüy, the 'Father of Modern Crystallography', wrote at some length about magnetism in minerals in the early 1800s. And he specifically noted its value in gem testing. Haüy described the effect of minerals on a magnetic needle and how he made the test more sensitive by first briefly heating the mineral in a candle flame, and then using a bar magnet in conjunction with the needle to counteract the Earth's magnetic field. His technique, which involved noting the change in angle of the compass needle, allowed accurate detection of magnetic susceptibility. Haüy observed that the only gemstones that were magnetically susceptible in this way were all varieties of garnet — "even the most transparent" — and all varieties of peridot. Since garnet was the only red gem with this property, and peridot the only yellow-green, "This characteristic can compete effectively with other physics that provides for the distinction of the stones in question, when they are in a state where their natural forms have disappeared, to make room for arbitrary shapes that lapidary work has lent them." However he admitted: "I understand that there is a greenish-yellow [garnet], which Mr Werner made a particular species under the name of Grossular." He added the astute comment that in distinguishing gems "the danger of mistakes increases in proportion to the often very considerable differences between the values they assign to these objects according to the diversity of the names under which they circulate in the trade". It's a statement that will appeal to many who have been following Gem-A's recent MailTalk discussions on gem nomenclatures.

Haüy himself states that he was not the first to mention magnetism in garnets. That honour, he suggested, belonged to the eighteenth-century Swiss doctor, Alpine traveller and amateur geologist Horace-Bénédict de Saussure. In his monumental four-volume *Voyages dans les Alpes*, published between 1779 and 1796, de Saussure refers to the magnetic susceptibility of garnets and says that it was not surprising to see the impure and opaque Alpine garnets with their large iron content deflecting a compass needle, but he had observed the same phenomenon in red, orange and purple garnets and even possessed "a Syrian garnet, weight of 10 grains, of the greatest beauty and perfect transparency, which moves the needle significantly".


VOYAGES
DANS LES ALPES,
PRÉCÉDÉS
D'UN ESSAI
SUR L'HISTOIRE NATURELLE
DES ENVIRONS
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A NEUCHATEL,
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Title page of de Saussure's 'Voyages dans les Alpes' overlaid with drawing of hessonite garnet from Piedmont from Bauer's Precious Stones. Image Jack Ogden.

Haüy's work was widely referred to and the first gemmology book to mention magnetism in gems was seemingly Lewis Feuchtwanger's 1838 *A popular treatise on gems.* However, the topic then seems to have been forgotten until reinvented or resurrected in the 1950s. Haüy, Saussure, or even Anderson, didn't have access to the powerful rare-earth magnets we have today, but I am sure they would have agreed with Kirk Feral's comment on his gemstonemagnetism.com website: "Any gem enthusiast can enjoy using magnets to separate and identify gems without understanding gemstone chemistry or the physics of magnetic responses."

Further reading

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- Haüy R.J., 1817. 'Sur la vertu magnétique: Considérée comme moyen de reconnaître la présence du Fer dans les Minéraux'. *Annales des mines*, **1**(2), 329-38
- http://gemstonemagnetism.com/
- Hoover, D.B., Williams, B., Williams, C., and Mitchell, C., 2008. 'Magnetic susceptibility, a better approach to defining garnets'. *The Journal of Gemmology*, **31**(3/4), 2008, 91-103
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Around the Trade

The myths in buying a diamond

Harry Levy FGA explains that not all is clarity with the 4Cs.

Many of you reading this article probably have a good gemmological background, but have never bought or sold a diamond. If asked to do so, most of you would consider yourselves competent. Knowing the weight, the colour and clarity, you would find a Rapaport List ('Rap list' – the monthly and weekly diamond price lists issued by the Rapaport Group), look at the price on the Rap List grid, convert the dollars to your local currency, subtract 25% as the discount and, hey presto, you have the correct price.

Unfortunately life is not so simple and there are many assumptions made in the above procedure which need discussing.

Carat weight

The one factor we all agree on is the weight. This is because we have a universally accepted standard for weight, not just a convention accepted within a given group. So provided you have an accurate weighing machine, or accurate weights, this factor will be the same wherever in the world you are and whoever determines it. Try and imagine if we did not have an accepted standard — a stone could weigh differently according to who weighs it.

Copyright Gem-A

Colour

The first assumption to question is that concerning the colour description. Here the diamond industry has set its own methodology. Machines are gradually coming into use for colour grading, but currently most colour is still determined by comparing a given stone against a series of master stones.

Before there were any systems in existence, diamantaires saw that stones coming from the same origin had similar colours. The first systems used terms such as River, Top Wesselton, Wesselton, Top Crystal, Top Cape, and so on. Another system developed used descriptive terms such as Exceptional White, Rare White, White, Slightly Tinted White, and so on. Such systems inevitably engendered sub-divisions such as plus, fine and so on.

Eventually the Gemological Institute of America (GIA) came up with a system using letters. They took the whitest stone they could find and labelled it D; a stone with a slight but just perceptible difference was then labelled E, the next was labelled F, and so on. Stones further down the alphabet, such as K, L and M had distinct tints of colour that most people could readily see. As a matter of interest, the GIA used D as the best colour, not to leave space for the discovery of better coloured stones, but to overcome the problem that many stones were being graded by traders as an A, AA, AAA with combinations of pluses and minuses. D was the failure grade in schools and nobody had used this as a grade. This was explained to me by Richard Liddicoat who was the head of the GIA at the time.

Colour master stones

So now colour is determined in many laboratories by using a series of nine master stones and moving the stone in test to see where in the series it compares most closely to two adjacent master stones. The GIA calls a stone whose colour is equal to or better than master stone 1 a D colour; one between say master stones 3 and 4 a G; some other systems can call such a stone an F, but they have then renamed their master stones to fall in line with the GIA system (you may have to read this several times to see what is going on).

Unfortunately this is where the problems start, as it is very difficult to obtain a set of master stones that exactly match the GIA set. Using GIA graded diamonds to create your own set doesn't work because the precise positions of such stones on the scale of increasing colour are not known. A diamond graded as an F by the GIA is highly unlikely to be the equivalent of an F master stone.

There is a proliferation of grading laboratories around the world and each works with its own set of master stones. This is complicated further by what is called harsh and soft grading. In harsh grading a diamond between F and G in colour close, but not quite equal to, a master stone 3 (F), will be graded as a G; in soft grading it will be graded an F.

Imagine if you ran a laboratory, you would need business to survive and this would mean that you would want people to send diamonds to *you* for grading, not to your competitors. Naturally, owners or sellers of a diamond want to get the best grade possible. Couple these factors together and you can see that for some laboratories there is a huge temptation to favour soft grading. Some labs are recognized as being very soft in grading, bordering on mis-grading. Such labs can claim to be consistent in their grading, pointing out that their master stones are not the same as the GIA's and that although they use similar terminology to the GIA, it refers to their own criteria.

Clarity

A similar situation exists for clarity grading. A clean stone can be graded as loupe clean (LC) or internally flawless (IF) allowing for some very fine flaws on the outside of the stone. The next grade is very, very small inclusions (VVS1) followed by VVS2. The next grades are very small inclusions (VS1 and VS2), followed by small inclusions (SI1 and SI2). Some labs now use an additional grade, (SI3). We then get into the included ranges where the marks are visible to the naked eye; these are denoted as P1, P2 and P3. Stones in this last range tend not to carry grading reports as the presence of obvious inclusions may put the customer off buying such a stone.

Clarity grading is defined by what can be seen using a loupe with a 10x magnification; it can take an expert several minutes to find the marks in a VVS stone and it may even be difficult to spot them in a VS stone. Again problems arise because there are no internationally-agreed standards for clarity. Furthermore, the classification depends not only on the size of the inclusion but its position in a stone. A small inclusion under the table of the stone will be graded lower than if the same inclusion was towards the side, unless, of course, reflections cause too many multiple images. Again because there are no internationally agreed standards for clarity grading, different labs can give different grades for the same stone. So we have the problem of soft and harsh clarity grading with some labs known to deliberately give very soft grading.

So knowing the colour and clarity of a stone does not mean that you can consistently and reliably price it on a Rap list. Rapaport very clearly states that his price list is for stones graded by the GIA only, although anyone who has a grading report will use the Rap list as a selling tool. To be a successful dealer you have to know the reputation of the grading laboratory, and the dealer will then price it accordingly, sometimes looking at the H line for a G graded stone and under the VS grade for a VVS graded stone. A question I always put when offered a graded stone is to ask: "Who says so?"

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Discounts

Rapaport states that his list is usually a high trade asking price for a stone which gives room for negotiations on the price — hence this magical 25% discount. Clearly if a diamond has passed through several hands there cannot have been a 25% discount on each transaction. Rapaport adds that discounts are based on availability of the stones. Generally lower grades are more plentiful and discounts are higher, better quality stones tend to be rarer and discounts are lower. Also as the weight increases prices tend to be higher, some reaching premiums over the Rap price.

Cut and fluorescence

Rapaport also states that his price list reflects the cut, polish and symmetry of the stone. Many people ignore these important factors in determining a suitable price for a diamond. Similarly, many ignore the impact of fluorescence under long-wave ultraviolet light on the price of a diamond. A professional grading laboratory will have fluorescence master stones. Strong fluorescence will make a stone look bluish and while such 'blue-white' diamonds were once desirable the current fashion makes this no longer true and they now attract a discount. The most marked effect of blue fluorescence is on the appearance of tinted stones — those in the L M range — counteracting the yellow of the stones and making them appear whiter under sunlight.

So much of what one thinks straightforward in the diamond trade is not the whole story, and this continues to provide strong justification for dealing with a jeweller or merchant you can trust.

The Journal of Gemmology

Summary of an article published in *The Journal of Gemmology*.

The colours of quartz*

A review by Ulrich Henn and Rainer Schultz-Güttler of the range of colours that occur in quartz.

The quartz group of gemstones provide a wide spectrum of colours, both natural and those produced by modifications such as heat-treatment and irradiation or a combination of these. These provide an interesting colour palette for the jewellery trade, but distinguishing naturally-coloured and artificially-enhanced quartz can be challenging for the gemmologist.

The causes of colour in quartz can be divided into three groups:

1. Colour centres
2. Optical effects
3. Inclusions

For this article the authors focused on macro-crystalline quartz, such as amethyst, where colour is most commonly due to colour centres associated with foreign ions — typically iron, aluminium or both — which replace silicon atoms in the structural framework of the quartz.

With amethyst the purple colour is due to iron. This colour is stable up to 350-450°C, above which the amethyst starts to bleach to colourless or pale yellow. At the same time minute haematite (iron oxide) particles are formed giving a yellow to brown colour to the gem. Most citrines on the gemstone market are heat-treated amethysts and the higher the temperature of heat treatment, the stronger the brown to orange hue. In the gem trade, golden-yellow material is called 'golden citrine' and the more brownish-orange to orange stones are 'Madeira citrine'. Amethyst from the Palmeira mine in Brazil can be treated to produce a particularly good citrine — what is sometimes called 'Palmeira citrine'. In contrast to the citrine created by heat treatment of amethyst, natural citrine possesses distinct pleochroism, but no Brazil law twinning.

Natural prasiolite (green quartz) is rare in nature, but some amethyst turns green when heated and most prasiolite on the market is amethyst heat-treated at 400–500°C, much probably coming from the Montezuma mine in Minas Gerais, Brazil. The gamma irradiation and heat treatment of prasiolite produces violet, violet-blue to dark blue colours — called 'blueberry quartz' in the gem trade.

Citrine (heat-treated amethyst) of various yellow to brownish-orange colours: pale yellow, yellow, golden citrine, Palmeira citrine, Madeira citrine (from left to right). Photo by German Gemmological Association.

* Summary of an article published in *The Journal of Gemmology*, 2012, **33**(1–4): Ulrich Henn and Rainer Schultz-Güttler, Review of some current coloured quartz varieties, 29–43.

Above 500°C amethyst develops a slightly milky turbidity and bleaching, providing what the trade sometimes calls 'neon quartz'. At even higher temperatures the milky turbidity develops much more strongly giving colourless gems which are sometimes used as moonstone imitations.

The best-known bi-coloured quartz is ametrine which has amethyst and citrine colour zones. Yellow/colourless gems — sometimes called 'Lunasol' in the trade — result from a heat treatment process of colour-zoned amethyst.

Like iron, aluminium can also replace silicon in the crystal structure of quartz and provides all shades of lime green, yellow to yellow-orange (natural citrine), and all shades in brown to black including grey 'smoky quartz' and opaque black 'morion'. Irradiation, whether natural or applied, will turn all this material nearly black, but many commercial colours can be the product of additional heating. One variety of citrine has a distinct touch of green and is so-called 'lemon quartz' or 'green gold'.

In recent years a new green variety of quartz has appeared sold under the name of 'green amethyst' or 'greened amethyst', or sometimes prasiolite. Most of the raw material comes from south and southwest of Brazil and the green colour is produced by irradiation. The prasiolite derived by heat treatment of amethyst from the Montezuma deposit shows green with the Chelsea Colour Filter, whereas this new irradiated green variety shows red. Studies have shown that this type of quartz has a significant water content and the name 'wet quartz' is proposed. The irradiated prasiolite will bleach within a couple of hours if raised to 150°C.

Faceted 'neon quartz', i.e. bleached amethyst. The milky appearance is produced by microscopic fluid inclusions, formed by heat treatment. Photo by German Gemmological Association.

A tale of two rubies

Grenville Millington FGA examines two red stones with some unusual features.

1. Ruby and diamond cluster in 18 ct gold.

Over the course of two weeks I examined two rubies, each sent to me by a different client. As usual with such stones, establishing that the material is 'corundum' or even 'ruby' is no problem. The refractometer and spectroscope offer all the proof that is required. Assuming that 'ruby' was the outcome of the first part of the testing procedure, the next question is 'natural or synthetic?' and this, nowadays, has to be followed by 'any treatment?'. The ordinary gemmologist has to move to the microscope, and it is usually here that the fun begins. As the years go on, the 'fun' increases, as new deposits and new treatment methods come to light. I use the word 'fun' here in its very widest sense, for, with many gemmologists, the term 'fun' can be replaced with others such as 'headache'. So, here are two 'fun' stones, both showing internal features that I hadn't seen before in ruby.

Mounted stone

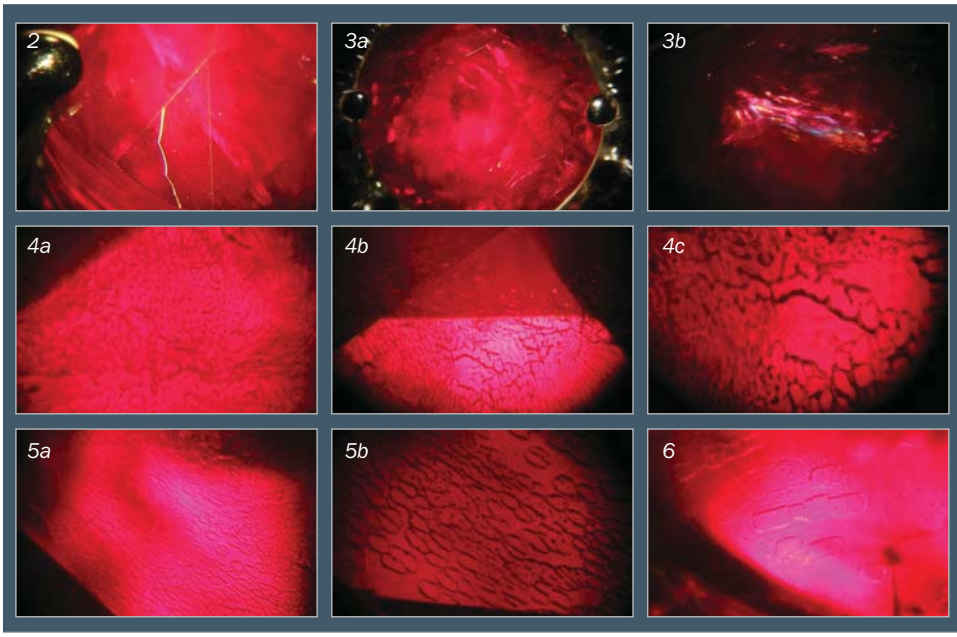
This stone was set into an 18 ct white gold mount and had a diamond-set border. It had a stated weight of 1.60 ct and was almost round 6.7 x 6.1 mm (**1**).

Obviously, mounted gems offer fewer viewing angles than loose ones but I was fortunate here in that the stone was set fairly high, which allowed some view of the girdle and pavilion. The RI was 1.763-1.772 and although it showed a ruby spectrum the chromium lines were not very strong, in spite of the stone being a very good, full red. Although not readily discernible with the 10x lens under normal lighting, surface fracture lines were visible under the microscope with angled top lighting (**2**).

It was soon apparent that the stone was traversed with many fractures and the fact that the overall colour/appearance was uniform with no obvious large reflections from within suggested some form of fracture treatment (**3**).

We should be quite used to seeing the results of ruby fractures being partially healed by the introduction of flux fillers and this stone offered such views (**4a**, **b**, **c**). What was unusual was that in places the flux residue joined up to form more regular patterns (**5a**, **b** and **6**). The problem with flux repair residue is that it is exactly like that seen in flux-fusion synthetic stones, such as the Chatham synthetic rubies of the 1980s (**7**).

When such a flux residue picture presents itself, it is necessary to find something else to confirm the natural origin of the stone, such as silk, needles, crystals, etc. When using the microscope, inclusions such as fine 'silk' are often visible only when the light reflected from them travels



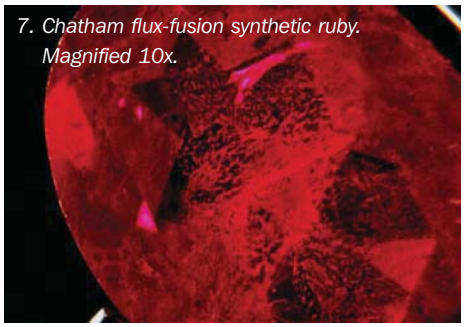
2. Top light reflected from the facet showed surface-reaching fractures. Magnified 15x.

3. Ruby lit from below (a). The straight white 'needle' is a facet edge. (b) The reflections just seen towards the bottom of the stone in (a) showed spectrum diffraction colours under top lighting (the 'flash' seen in glass-filled fractures does not normally show a spectrum of colours).

4. The 'dots and worms' effect of flux-repaired fractures (a) and (b). (c) Sometimes the 'worms' join up. Magnified (a) 35x, (b) 25x and (c) 60x.

5. Feathers showing the flux residue took on more ordered structures. Magnified (a) approximately 30x, (b) 75x.

6. Elongated, squared forms of flux residue. Magnified approx. 80x.

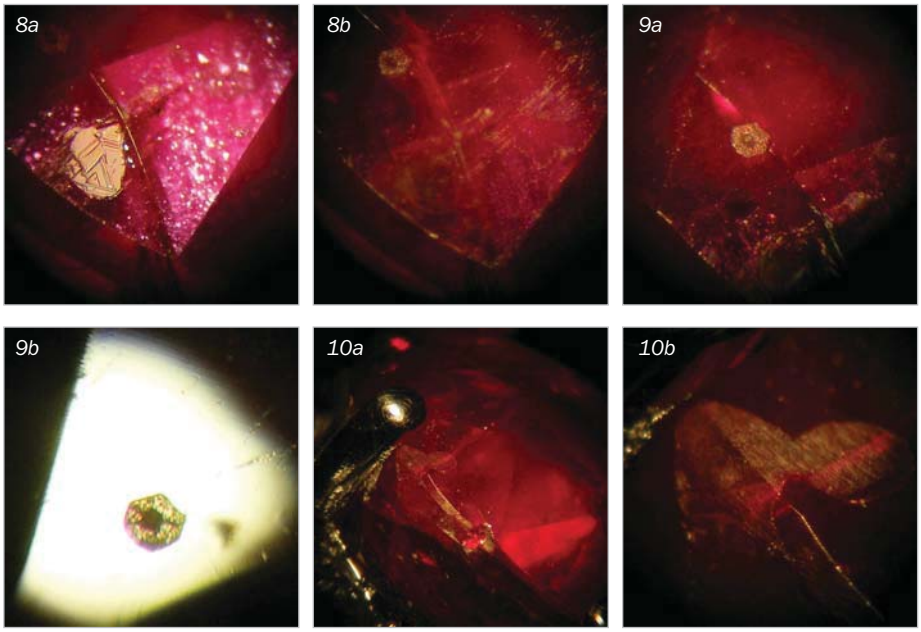


7. Chatham flux-fusion synthetic ruby. Magnified 10x.

all the way to the eye, so stone and/or light manoeuvring is necessary. In this stone an area near the girdle provided such evidence (**8a**, **b**). The hexagonal feature seen near the top of **8b** reached the surface, and by reflecting a top light off the facet surface it could be seen that this was a filled surface pit (**9a**, **b**), but it had an obvious 'nucleus' which may be nothing more than a gas bubble. This was not the only example of surface filling. Two areas near and on the girdle were cavities that had been filled with a substance of different RI to that of corundum, producing a lower lustre (**10a**, **b**).

At last there was a conclusion: the red stone was a 'ruby (corundum) of natural origin, but with flux-repaired fractures and glass filling of cavities'. As this is rather cumbersome to write on the ring ticket, I suggested the owner call it 'treated ruby', but to be prepared to answer questions about the 'treated' part.

The ordered formation of some of the flux residue probably has something to do with the orientation of the fractures relative to the crystal structure, but why is this so uncommon in other stones? Maybe there is a newer process that uses even higher temperatures than previously or the flux may be of different composition to the old borax-type fluxes. Whatever it is, it does not change the general description of the gem. The client later told me the original material was from Mozambique and had been sent to Thailand for treatment.

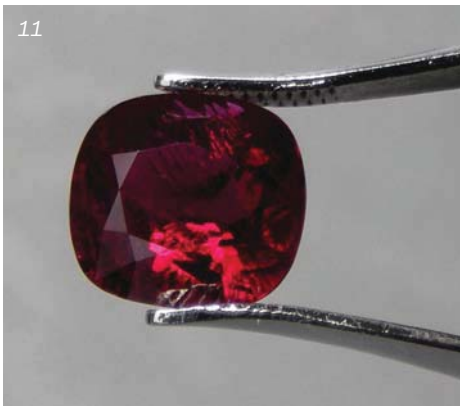


8. Overhead lighting picked out reflective silk particles and also highlighted the trigon-like formation on a thin film (a) that became invisible if the light was moved fractionally (b). The fine yellow line visible in (a) is the surface edge of a fracture. Magnified 45x.

9a, b. The hexagonal feature at the top of 8b viewed with top lighting reflected off the facet surface. Hexagonal surface pit filled with glass. Magnified 50x.

10. Two areas across the girdle that had glass-filled cavities: (a) magnified 20x; (b) the larger area of glass filling near the claw, magnified 80x.

Loose stone



11. Ruby of deep, rich colour, 1.64 ct.

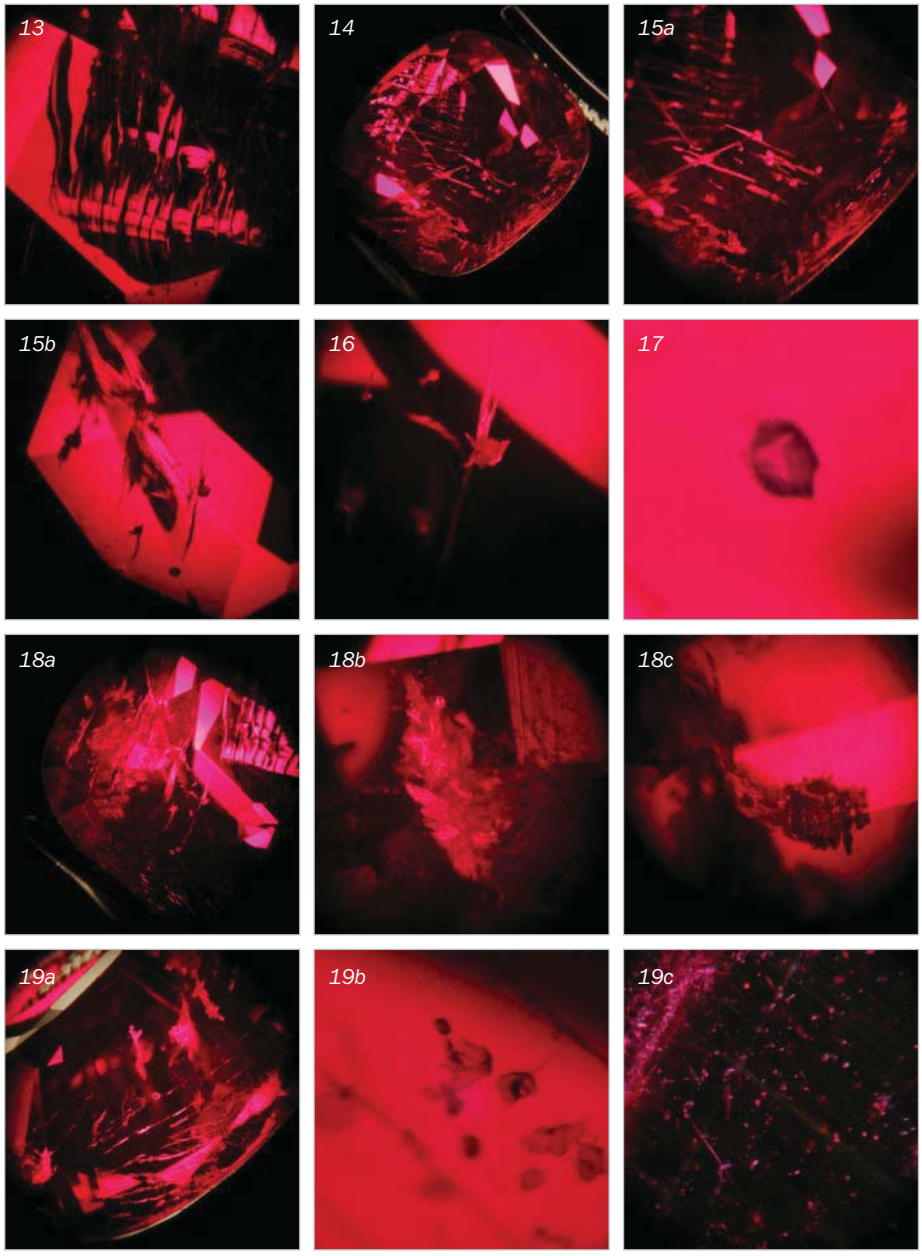
12. Shallow, stepped cavity on the pavilion of the 1.64 ct ruby.

The second stone was loose weighing 1.64 ct (virtually the same weight as the first stone), measuring 7.6 x 6.8 mm and was of a darkish red that could be classed as intense (**11**) (it was impossible to correctly capture the intensity in the photos). The colour was somewhat reminiscent of the Thailand rubies that we saw frequently before the advent of the Mong Hsu rubies in the early 1990s. The brilliance, obvious through the crown of the stone, was helped by reflections from a wide, shallow cavity on one side of the pavilion which was strangely stepped and acted in the manner of a bicycle reflector (**12**). This external cavity was also plainly visible through the stone, for example when viewed through the table (**13**).

Internal features included many fracture 'feathers', mostly confined to one half of the stone (**14**). Many of them were centred

Gems and Minerals

A tale of two rubies (cont.)



13. The external surface cavity viewed through the table.

14. The bright parallel streaks to the top left are reflections from the back cavity. Magnified 12x.

15a, b. Blocky crystals were at the centre of 'wings' fractures, mostly aligned along the same direction, but some crystals had no associated fractures (d, bottom right). Magnified (a) 20x, (b) 30x.

16. A 'wings' fracture. Magnified 80x.

17. A translucent crystal. Magnified 80x.

18. (a) Sugary, opaque feathers at the one end of the stone. (b) Some parts were irregular, while others were more like fans. (c) Grotesque feather. Magnified (a) 20x, (b) 40x and (c) 80x.

19. (a) Flattened internal cavities and parallel fracture lines. (b) Very small coloured films with minute crystals. (c) Dotted silk with associated short needles. The parallel greenish streaks are polishing lines on a facet. Magnified (a) 30x, (b) and (c) 80x.

around a blocky, crystal nucleus and took the form of 'wings' although some could be described as grotesque (**15a**, **b**, and **16**). Some crystal inclusions were isolated with no associated fractures (**17**). Other features had a sugary, semi-opaque to opaque nature, with ripples and fan formations (**18a**, **b**, **c**).

Other features noticed were flattened cavities and roughly parallel fractures (**19a**). Some tiny films were also seen in one small area, along with minute dark crystals (**19b**). The end of the stone that housed the most feathers also had a large area of dot-like 'silk' held in position by a flat plane of similar dotted material. While we often associate dotted 'silk' with heat treatment, that feature in this stone also incorporated well-defined short needles, which would suggest that the stone had not been heat treated (**19c**). There were several small dark crystals that had no accompanying fractures or haloes. One area showed small dot-like inclusions, almost as a cloud, together with mostly short needles.

There was an absence of twinning lamellae, colour zones and colour-flash associated with any of the fractures (most of which were fully contained within the gem host and did not break the surface).

The RI was 1.765-1.773 and the spectrum, unlike that of the first mentioned ruby, was intense and similar to that of the synthetic ruby, with strong chromium lines (including a fluorescent doublet), dense coverage of the green, and powerful, black lines in the blue.

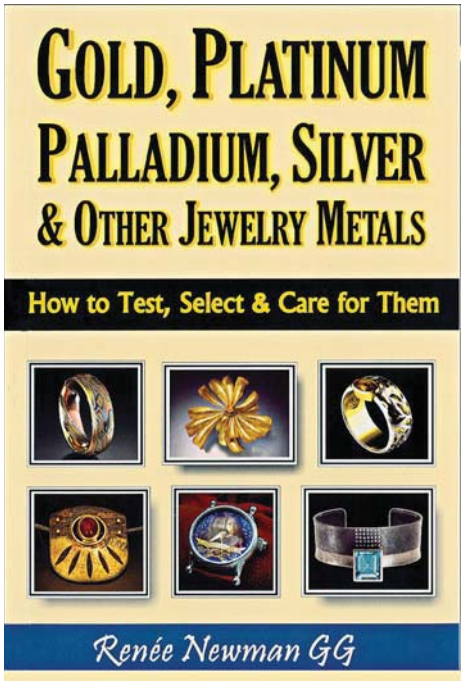
The conclusion of the testing of this second ruby is that it is a ruby (corundum) of natural origin and is untreated.

About the author

For many years Grenville Millington ran his own gem and jewellery business and taught gemmology and retail jewellery at the Birmingham School of Jewellery.

Gold, Platinum, Palladium, Silver & Other Jewelry Metals

Jack Ogden FGA reviews a practical handbook on metals that should prove indispensable for anyone working within the jewellery industry.



Renée Newman
International Jewelry Publications
Los Angeles 2013
ISBN: 978-0929975474

The author of this book on the metals used in jewellery needs no introduction to gemmologists; Renée Newman's popular series of books on gemstones is as invaluable to retailers selling gems as to gemmology students. This volume is an updated and expanded replacement for her 2000 *Gold and Platinum Jewelry Buying Guide*. For gemmologists, a book on metals might seem peripheral, but the precious metals have always served a supporting role in gem-set jewellery. And this is a useful, practical handbook. Unlike most books on gold and silver, this one barely mentions hallmarks, designers or design — the sub-title says it all: "How to test, select and care for…"

The properties and use of the various metals are described — the colours of golds for example — along with useful information ranging from how silver jewellery can be blackened to methods of testing and identification of frauds. The chapter on manufacturing techniques such as casting is up to date with its mention of CAD and 3D printing. Hand fabrication is only briefly discussed — a sad but realistic recognition that most jewellery on the market today is not made by hand. There is coverage of decorative techniques such as plating and enamelling, and even about responsible mining. Inclusion of chapters on copper, brass, bronze and other metals reflects how, as precious metal prices rise, many retailers are looking to less costly alternatives.

There are a few minor niggles, for example the description of how to test gold jewellery by placing "a small drop of acid on an inconspicuous spot on the piece you want to test…" might be an unwise inclusion. I've seen too many antique pieces disfigured, if not permanently damaged, by testing like this; better to use a touchstone, as she explains elsewhere in the book. On the other hand, her recommendation that rubber gloves and safety goggles should be used when testing metals with acid is true, although I fear many in the industry will ignore the advice. For British readers the focus on 14 ct and 18 ct gold (spelled *karat*, of course) might be slightly alienating.

All in all this is a very useful brief guide, and one that will be relevant to anyone working with jewellery, whether buying, selling or valuing.

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- Arthur Groom, Clarity Enhancement Laboratory

SATURDAY 2 – SUNDAY 3 NOVEMBER

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Gem-A will bring together a range of globally-renowned speakers and international delegates to discuss a variety of important issues within the gem and jewellery trade, from both a scientific and trade perspective – also to be explored will be the historical side of the gems and jewellery industry. The Gem-A conference audience will as always be a diverse mix of members of the gem trade, gemmologists, gem enthusiasts and gem students from all corners of the globe.

This year — amongst other topics — the conference will be looking at diamonds from the challenges encountered in diamond grading to the process and detection of synthetic diamonds; it will also be looking at the coloured gemstone market, from very rare gems to the clarity enhancement of some commercial materials.

In celebration of the centenary of the first gemmology diploma to be awarded, British gemstones will have a privileged place as well as the historic side including the history behind jewellery dating back to the 16th/17th century.

Guest speakers will include:

- John Bradshaw
- David Callaghan
- Dr John Emmett
- Dr Emmanuel Fritsch
- Arthur Groom
- Brian Jackson
- Dr Jack Ogden
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Guest speakers will include:

- Martin Rapaport (TBC)

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Instruments

A point for pointers: lasers in gemmology

A useful new gemmological tool or just geeky fun? Jack Ogden FGA considers laser pointers and gem testing.

When red laser pointers first appeared in the 1980s many of us wondered whether they had any use in gemmology as hand-held tools. They didn't seem to excite any visible fluorescence in gems and really all they did do was provide a useful indication of double refraction. If you pointed one through a doubly refractive gem onto a wall or other surface you could see neatly doubled dots of light. That was about it. The miniaturization and greater availability of lasers had enormous impact on gemmology — from Raman to Gem-A's Brewster Angle Meter developed in the early 1990s by Dr Roger Harding and the late Peter Read — but generally speaking the red laser pointer seemed to be frustratingly useless as a gemmological hand tool.

Typical blue laser pointers.

Diamond fluorescing under blue laser on an antique ruby and diamond brooch. Photo Jack Ogden.

The introduction of green laser pointers around 2000 changed things. As soon as they were cheap enough to play around with they could be tried in a gemmological context. Alone they did little, but in conjunction with a deep blue filter they seemed to be a modern alternative to the old cross-filter test. Rubies for example, when viewed through a blue filter* while illuminated with the green laser, appeared really bright red.

The rapid march of consumer electronics — and blossoming BlueRay technology — brought hand-held blue laser pointers onto the market. Initially they cost hundreds of dollars and the inevitable price drop with all evolving technology seemed a long time coming. Then came a lucky break. During the 2009 September Hong Kong Jewellery and Gem Fair I wandered through that city's Temple Street market — a wonderful row of shops and stalls selling all manner of stuff from counterfeit designer handbags and kitsch souvenirs to a bewildering range of electronic gadgets and rip-offs. Anyway, back in 2009 I picked up at random one of the dozens of red and green laser pointers on display, pressed the button and a violet-blue light shone out. It had been mislabelled. The rest were all red or green. So the blue one was quickly purchased and, like a kid

An Ottoman gold applique set with rubies and emerald. Left shows ruby illuminated with blue laser, right is same ornament with the emerald (probably Colombian) illuminated with blue laser. Photo Jack Ogden.

with a new toy, I rushed back to my hotel to see what it did with gems. Only gemmy bits and pieces picked up at the show were to hand, but the results exceeded all expectations. Rubies fluoresced red as if they were on fire, an Australian opalized shell not only fluoresced but also phosphoresced so much it seemed to pulsate.

I shared my enthusiasm on Gem-A's email forum — MailTalk as it was then — and with blue laser pointer prices soon falling, more gemmologists played with them and results were shared and compared. In *Gems&Jewellery* Summer 2010, Michael Seubert described how a blue laser pointer could be used to help screen synthetic diamonds — an approach later seen with Diamond Services Ltd's Diamapen launched at the Hong Kong Jewellery and Gem Fair in September last year. These days low-powered violet-blue laser pointers can be purchased online for under £10.

Is the blue laser pointer really anything more than just a bit of geeky fun for gemmologists? More and more are reporting that they are using them, even in some gemmology teaching. From a personal point of view I can say that I have found a blue laser pointer invaluable with antique jewellery. For example in a recent project looking at the gems in a major collection of old Mughal Indian jewellery, the blue laser was the most useful bit of pocket equipment I had with me after the loupe. It does much of what the Chelsea Colour Filter does, is great showing fluorescence in diamonds and is particularly useful when looking at gems in museums, shops and other places where there is distance and a sheet of glass between you and the gem.

Safety note: lasers can be dangerous. Observe suitable safety measures, wear protective eye-wear and check the power you are using. High powered laser pointers, although often readily available online, are illegal in some jurisdictions. You want to explore gems, not bring down a jumbo jet.

*I found that a 'Congo blue' photographic gel filter from Lee or Rosco worked best.

A synthetic pink sapphire. Left, in natural sunlight; right, the same but also illuminated with a blue laser pointer. The fluorescence is caused by the presence of chromium and is clearly visible even in bright sunlight. Photo Jack Ogden

Stone Scoop

Pearls 1913

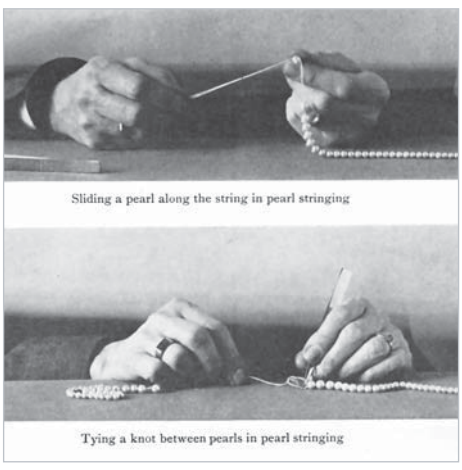
In the last couple of issues we've looked back to 1913 and to what was happening then with diamonds and coloured gems. This time Jack Ogden FGA looks at pearls.

Values

In 1913 cultured pearls figured more in jewellers' nightmares than in reality; it would still be a few years before spherical cultured pearls reached the market. So the natural pearl was still king — and very valuable. *The Evening Telegraph* (24 February 1913) explained that "During the past few years pearls have been a magnificent investment, as well as mere adornments, for their steady appreciation in price has meant a better return on the money invested than most gilt-edged stocks could afford." The article went on to say that "According to one of the leading authorities, the price of pearls has doubled within five years." It is often forgotten that natural pearls were found in Australia long before culturing was carried out there. *The Sydney Globe* (31 May 1913) reported that sums of £1,000 and £1,350 had been offered for two 'magnificent pearls' that had been found at Broome. The owner of the larger had asked £2,000.

Grimsby and La Paz

High prices meant that there was money to be made, and alternative sources of natural pearls were actively sought. *The Western Times* announced that three fishing trawlers from the Yorkshire fishing port of Grimsby were setting sail to the waters off Southern Nigeria to take a part in the pearl fishery there. The other side of the Atlantic was Mexico, whose waters had long produced pearls. In 1913 an open market in pearl fishing was inaugurated in Mexican waters — hitherto, according to *The Manchester Courier and Lancashire General Advertiser* (22 March 1913), "Pearling concessions were held by an English firm [and] nearly all the pearls secured were shipped to Europe, and rarely could a pearl be bought at La Paz."



Threading pearls, as illustrated in Kunz and Stevenson's Book of the Pearl, *1908.*

Doped

The high value of fine natural pearls inevitably meant that methods were sought to improve the appearance of poorer specimens. These apparently included 'doped pearls'. According to *The Evening Telegraph* (27 October 1913) "A special meeting of the chamber of dealers in diamonds and pearls has been called for to-day [in Paris] when an enquiry will be opened with regard to the alleged introduction of 'falsified' or 'doped' pearls on the Paris market. The chamber was induced to take action in the matter owing to one such pearl being offered for sale by M. Altschueler, a leading jeweller for the sum of £10,000. This gem which M. Altschueler states he purchased for £2,800 was, he declares, transformed by means of an electrical process of which M. Warma, an Indian scientist, holds the secret, into a pearl of such marvellous lustre that its value has been increased to £10,000." Does any reader know what this technique was — if it really existed at all? This must surely be the same as the "several clever faked pearls made by a Hindoo… one valued at £10,000" that had been seen in Paris as reported on the other side of the world in *The Northern Miner*, Queensland (28 October 1913).

String theory

In the pearl supply chain, from oyster to aristocrat, it is easy to forget an important step with most pearls — their threading. *The Evening Telegraph* (15 May 1913) contained a long article entitled 'Girls Who Work in Secret' which described the job of pearl stringing, a skill that was often handed down from generation to generation. The article concluded "The work of the pearl stringer is too little known, so quiet and dainty that it is doubtful if one in a thousand men who stop to admire and covet as they pass show windows ever give a thought to the patient fingers that have threaded the beautiful beads and tied the almost invisible knots that link them to their diamond clasps."

Pearls a la mode

And it sounds as if the rows passing through the threaders' fingers were getting longer. *The Manchester Courier and Lancashire General Advertiser* (2 October 1913) writes: "The pearl is the fashionable jewel now in Paris," said a woman just returning from that city. "Long ropes of pearls are worn in ways fashion has never dreamed of before outside of the Orient. An elegantly gowned woman I saw at the opera had her long loop rope of these exceedingly becoming gems passed directly over her forehead." But not all was rosy in Paris. The wearing of pearls in such unconventional ways in Paris in 1913 was also commented in the more pragmatic Australian press which pointed out that "The woman who would use valuable pearls in such a way would be taking considerable risks from thieves; but some women would do almost anything to be in the fashion"(*Barrier Miner*, New South Wales, 18 October 1913).

rock, gem & bead shows 2013

08th/09th	June	Kempton Park Racecourse, London	(Rock'n'Gem)
22nd/23rd	June	Bath & West Showground, Shepton Mallet	(Rock'n'Gem)
06th/07th	July	Newcastle Racecourse, Newcastle upon Tyne	(Rock'n'Gem)
13th/14th	July	Farnham Maltings Gem Show, Farnham	(Gem'n'Bead)

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