

Gems & Jewellery

Summer 2021 / Volume 30 / No. 2



PEARLS FOR THE NEXT GENERATION

ARGYLE'S FINAL TENDER

VEGAN LAB-GROWN DIAMONDS

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Gems & Jewellery

SUMMER 2021

Changes to a classic: THE EVOLUTION OF THE PEARL INDUSTRY

A younger generation becomes the new clientele of jewellery trade, seeking out new territory where the 'classic' strand of pearls once reigned supreme.



ARGYLE'S FINAL TENDER

The last tender of fancy-colour diamonds from Australia's Argyle mine is up for sale. Russell Shor takes a closer look at the material for sale, and reflects on the impact the mine has had on the trade.

VEGAN LAB-GROWN DIAMONDS

Aether, already dedicated to having a positive impact on the environment, recently became the first company to receive vegan certification for their lab-grown diamond.



COVER PICTURE

The MOP Tile Thin bracelet uses 18k white gold with golden, lavender, peacock, and white mother-of-pearl tiles and a center lavender freshwater pearl. Photo courtesy of Melanie Georgacopoulos.

Published by

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Registered charity no. 1109555
Copyright 2021 ISSN 1746-8043

Gem-A is a company limited by guarantee, registered in England, number 01945780

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Editorial and Advertising

For editorial enquiries, media pack and advertising rates please contact editor@gem-a.com.

Any opinions expressed in *Gems & Jewellery* are understood to be the views of the contributors and are not necessarily those of the publishers.

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Gems & Jewellery

Summer 2021 Edition Featured Contributors

1. DAVID GOUBERT

David Goubert founded the Swiss-based Boreal Gemstones Company in 2014. His focus on natural and untreated rare emeralds from Colombia has led him to explore that country's mines in search of exceptional specimens. He has also travelled to other geological settings, such as Australia, Sri Lanka, Thailand, Cambodia, and the French and Swiss Alps. He earned his FGA in 2009 and a degree in gemmology from the Université de Nantes (France) in 2011. Mr Goubert has worked at gemmological laboratories in Switzerland and Colombia. He regularly accompanies group tours that visit the Colombian emerald trade.

2. LISA KOENIGSBERG

The president and founder of Initiatives in Art and Culture (IAC), Lisa Koenigsberg is an internationally recognised thought-leader in visual culture. Over 20 years ago, Dr Koenigsberg established IAC's multidisciplinary conference series on visual culture, notably those that focus on gold and diamonds and explore the nexus between natural resources and artisanry, along with society and cultural currents. She has held positions at New York University, at several major museums, and at the New York City Landmarks Preservation Commission. Her writings have appeared in books, scholarly journals, and magazines, as well as in Trendvision's *Trendbook*. Dr Koenigsberg received her PhD from

Yale University. She is a member of the advisory board of Ethical Metalsmiths, and serves as special consultant for educational initiatives to *The Magazine Antiques*.

3. JUSTIN K PRIM

An American lapidary and gemmologist living and working in Bangkok Justin K Prim started cutting gemstones in San Francisco before relocating to Thailand to start a gem-cutting company with his wife (who is also a lapidary). Mr Prim has studied gem-cutting traditions all over the world, including with the traditional jamb-peg cutters of London. He has studied gemmology through GIA and AIGS. Mr Prim creates videos and webinars for the online gemstone community available at www.facetinghistory.com. His first book, *The Secret Teachings of Gemcutting*, will be released in October 2021.

4. RUSSELL SHOR

Russell Shor is the owner of Russell Shor Communications and Consulting, based in San Diego, California. He has more than 40 years of experience in the diamond industry, including 19 years at GIA as a senior industry analyst. Previously Mr Shor served as a senior diamonds/economics editor at *JCK Magazine* and as editor of *New York Diamonds*. He holds degrees from the University of Pennsylvania and Temple University in the United States.

5. SARAH STEELE

Reinforcing almost 40 years of commercial experience of working jet as a lapidary product, Sarah Steele graduated from the University of Durham with a degree in geology in 1992. She was awarded her FGA in 2013 and earned her DGA in 2015. Ms Steele is also a senior member of the Accredited Gemologists Association. Her expertise lies in the identification of natural thermoset and thermoplastic materials used in nineteenth-century jewellery, and she is considered the world's leading authority on the jet species of gemstones. In 2019 Ms Steele returned to Durham as a PhD candidate. Her project will establish a new nomenclature system for gem-quality hydrocarbons and, ultimately, country-of-origin determination for jet.

6. BETH WEST

Beth West is a gemmologist, writer, and educator specialising in diamonds, with over ten years' experience in the industry in varying roles. She is an FGA and a DGA (Bruton Medal winner) and a member of the Federation of European Education in Gemmology. Ms West has worked for a number of auction houses and museums. She has taught diploma-level gemmology at Gem-A's headquarters in London. Ms. West also works on writing and consultancy projects, principally for the De Beers Group.

Thank you to: Alistair McCallum, Scarlett Roberts and Georgina Thirkell

Straight from the heart

Opinion and comment from CEO Alan Hart FGA DGA

Things are beginning to change here in the United Kingdom. Social distancing restrictions have been placed to one side from July onwards. While it's lovely to rediscover a sense of 'normal', it's also a strange time to be in business, to be interacting with customers and welcoming students back to classrooms, both at Gem-A London and internationally at our Accredited Teaching Centres (ATCs). I am, however, feeling cautiously optimistic about the future and our ability as an Association to navigate this new period in the COVID-19 story. It's certainly not over, but I sense movement in a positive direction. We will be running both daytime and evening classes in-house at Gem-A London starting in September, but not at the expense of our online offering that continues, full steam ahead, with a new schedule for August and September.

The next challenge will be negotiating international travel and trade. As you are no doubt aware, Gem-A has always travelled far and wide to introduce our world-renowned courses to new markets. We've participated in trade fairs across the United Kingdom, Europe, the United States, and Asia. We are aware of the current limitations on travel to and from the UK; this will no doubt shape our approach to exhibiting for the rest of 2021.



Jeweller, who created these pieces using South Sea cultured pearls, spoke to us for our lead article. Photo courtesy of Jeweller.

That said, I am pleased to see shows like JCK Las Vegas and the HardRock Summit in Denver, Colorado, plan to open their doors this year. It's a hopeful sign that face-to-face encounters may soon resume in our sector.

I've received numerous emails about the Gem-A Conference, which typically takes place in November. I would truly like nothing more than to see my colleagues and friends from across the gemmology spectrum in London! Unfortunately, we must be realistic and demonstrate some restraint when it comes to indoor meetings. As I write this, there is a tentative plan to host an online conference this autumn, and we are considering all options and seeking recommendations from our Members. As soon as there is news to share, we will do so via social media and our online newsletter.

Finally, in terms of Gem-A updates, I am really excited to inform you of a new short online course in gemmology that we will be launching very soon. This is targeted at those who don't have the time to commit to our Gemmology Foundation course and is a real opportunity to reach the wider trade, gemmology enthusiasts, and amateurs alike. We will begin offering this course soon, so watch this space!

Now, onto the latest *Gems&Jewellery*! Our lead article looks at the pearls that our next generation of jewellery lovers are embracing. These younger customers are concerned about sustainability and appreciate, but seek more options than, the classic pearl necklace. Our lead article looks at how some members of the trade are responding to those desires. These bold ideas may change how we perceive, design, and wear pearls in the future.

Diamonds are well represented in the issue. Industry expert Russell Shor takes a look at the last tender of fancy-coloured diamonds produced by the Argyle mine, which ended production in November 2020. He considers what impact the mine's closure will have on the pricing of pink material. We also look at Aether, which opened its doors in 2018 and by April 2021 had created the first lab-grown diamonds



to be certified vegan. Aether prides itself on creating positive-impact specimens that source carbon from air pollution.

We provide a preview of the upcoming NAJ Summit, hosted by the National Association of Jewellers in the East Midlands of the UK. Included in the Summit is the Institute of Registered Valuers' annual Conference, which always features a line-up of great speakers discussing gems, diamonds, hallmarks, antiques, collectibles, and everything in between. This year, Pravin Pattni FGA DGA and his son, Jaysal Pattni PJ Dip, will host a workshop reviewing how to identify and correctly value the core categories of Asian jewellery. We spoke to Pravin to learn more.

Elsewhere, we speak to Alessandro Borruso of Sotheby's about their July auction, where a 101-ct diamond was purchased with the equivalent of \$12.3 million in cryptocurrency after it was announced that Bitcoin and Ether would be accepted. And I enjoyed reading the insights of gem cutter and lapidary instructor Justin K Prim, who takes us on a journey from rough specimen to faceted gem. Hearing from people who are clearly so passionate about their field of expertise is always inspiring.

All that's left to say is enjoy this issue and stay safe and healthy no matter where you are in the world. We know this has been a trying time for our Members; even so, we at Gem-A are focusing on education.

Alan Hart FGA DGA

Gem-A News

A round-up of the latest news from Gem-A

QUEEN ELIZABETH SCHOLARSHIP TRUST NOW OPEN FOR APPLICATIONS

The Queen Elizabeth Scholarship Trust (QEST) has announced funding for education and training of craftspeople and associated workers. There are scholarships of £18,000 available for artisans looking to enhance and improve their work. The funding is available twice a year. Additionally, in partnership with Cockpit Arts, each recipient will receive a place in an online Professional Development Programme, to be conducted on Zoom from December 2021 to March 2022.

Founded in 1990 to celebrate the 90th birthday of HM Queen Elizabeth, The Queen Mother, QEST is dedicated to sustaining the cultural heritage of Britain through the training and education of craftspeople through education, apprenticeships, and direct

training with a master craftsperson. The Prince of Wales is a patron, and the Marquess of Salisbury and the Earl of Snowdon are vice-patrons. Since its creation QEST has granted £5 million towards training and education of craftspeople. The not-for-profit organisation accepts donations and offers sponsorships in order to further their work. ■

Certain courses offered by Gem-A would be covered by QEST. For more information, got to www.qest.org.uk.



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JUNE HALLMARKING JUMPS 107% FROM 2020

The Birmingham Assay Office announced that the total number of pieces hallmarked in June 2021 totalled 672,021 articles, up from 323,967 – a dramatic increase of 107.4% – in June 2020.

This total accounts for all four UK assay offices. The greatest jump

(percentage-wise) was seen in platinum; June 2020 saw 12,501 pieces hallmarked, resulting in a 175.4% increase in June 2021 when 34,428 platinum pieces were struck. Gold items numbered 133,589 in June 2020, rising to 321,318 in 2021 (140.5%), while hallmarked silver rose from 177,500 to 315,709 (77.9%). Palladium articles rose to 566 from 377, an increase of 50.1%.

May 2021 saw an even larger percentage increase (212%) in hallmarking from the previous May, with 496,964 hallmarks struck this year as opposed to 159,299 in 2020.

*This gold ring shows English hallmarks dating from the 1950s.
Photo by [iStockphoto.com/vandervelden](https://www.iStockphoto.com/vandervelden)*



BRACELET ONCE BELONGING TO PRINCESS MARGARET TO BE AUCTIONED IN SEPTEMBER

A cultured pearl and diamond bracelet once owned by HRH Princess Margaret, Countess of Snowdon, will be among the lots auctioned on 14 September by Dix Noonan Webb. It had previously been sold by Christie's in their auction of the princess' jewellery and Fabergé items.

The 17.8 cm art deco bracelet (ca. 1925), seen in Princess Margaret's 19th birthday photograph by Cecil Beaton, is composed of a millegrain-set row of brilliant-cut diamonds between a double strand of cultured pearls. The bracelet also features a shield-shaped clasp of openwork geometric design, with millegrain-edged set diamonds and two cultured pearls, mounted in platinum, and engraved with the ownership mark 'M' beneath the princess' coronet. The clasp is stamped 'M' (for Mikimoto) and 'P' (platinum). The bracelet is expected to sell for between £30,000-£40,000.



This art deco cultured pearl and diamond bracelet once belonging to Princess Margaret is expected to sell for £30,000-£40,000 at auction in September 2021. Photo courtesy of Dix Noonan Webb.

In July of this year Dix Noonan Webb sold medals belonging to the late Group Captain Peter Townsend, who famously had a romance with Princess Margaret in the 1950s before she married Antony Armstrong-Jones (later the 1st Earl of Snowdon).

OBITUARIES

Sammuang Kaewen (1926–2021)



Sammuang Kaewen, known as 'the father of heat treatment', passed away on 12 April 2021 at the age of 95. He is survived by his wife,

Janya Kaewen, and seven children. Vincent Pardieu shared some highlights of his friend's life.

Sammuang was born on 10 July 1926 at Tambon Wan Yao, Muang district, in the Chanthaburi province of Thailand. After finishing his studies at the Thammasat University of Moral and Political Sciences in 1943, he worked as a policeman for seven years. He entered

the gem trading business in 1956 at the age of 30.

Sammuang became famous in the trade in 1974 when he succeeded in producing transparent blue sapphires from milky Australian rough stones. His discovery triggered a strong interest among Thai gem merchants in Australian and, soon after, Sri Lankan 'geuda' sapphires. In 1980, he built a high-temperature gas stove furnace to heat gemstones. He was renowned as the first person to heat yellow sapphire in Thailand. He then succeeded in producing highly saturated yellow sapphires from light-coloured material. In both cases, the treatments he developed were found to be stable and permanent. Sammuang showcased his yellow heat-treated sapphires during the gem shows in Tucson, Arizona (USA) in 1982. He continued his experiments, and in 1991 was able to produce dark orange sapphires

using heat treatment. He travelled to the U.S. to open the market for yellow gemstones with orange hue, and to allow some gemmologists to study his stones. In 2003, he became an honorary consultant to the Chanthaburi Gems and Jewelry Traders Association.

Sammuang was a kind and quiet man whose work has had a major influence on the gemstone industry in Thailand and around the world. He received several awards reflecting his work, including a 'plaque of honour' from the Department of Mineral Resources and the Gem and Jewelry Institute of Thailand (GIT) commemorating him as the pioneer in sapphire heating, whilst another award from the Committee of Jewelry and Decoration Business Development at the Ministry of Commerce recognised him as an expert in gemstone heating. Paintings of him and scenes from his life can be seen on several walls near the Chanthaburi gem market.

Jean Claude Michelou (1948–2021)

On 3 May, the world lost one of its great gemmological minds – Jean Claude Michelou – to COVID-19. He was 72 years old. Called JC by those close to him, Michelou was well known as the long-time editor-in-chief of *InColor* magazine. He co-founded Imperial Colors Ltd. in 2017 with his daughter, Zoé Michelou, and served the industry in numerous ways, including two terms as the vice president of the International Colored Gemstone Association (ICA). Michelou leaves behind four children – Vanessa, Nathalie, Yannick, and Zoé – his partner, Catherine Munier; his sister, Andrée Michelou; and an entire industry that mourns his absence. It is with great admiration that *Gems&Jewellery* remembers his legacy.

Michelou was born in France and studied at both the Business School of Paris and at the London College of International Business and Economics. His love for gemmology developed as he began travelling to Brazil and

Colombia to take part in the emerald trade. He would move then to Colombia in 1977, where he lived and worked for 41 years.

In 2001, Michelou was appointed to the ICA's board of directors, on which he served until 2017, including two terms as vice president. In 2004 his idea for *InColor* – an extension of the ICA's internal gazette – became a reality. He would later call Bangkok home, moving there in 2018 after the creation of Imperial Colors, which sources rough from the Swat Valley of Pakistan (emerald), various localities in Africa (beryl, garnet, and tourmaline) and Sri Lanka (sapphire). Michelou would reside in Thailand until his death, imparting his wisdom through seminars and consultations.

Deeply concerned with responsible sourcing, Michelou was a consultant for USAID, the World Bank, and other agencies to develop trade policies, mining standards, social initiatives, and infrastructure for artisanal and small-scale mining communities. He was a senior technical advisor for the United Nations Interregional

Crime and Justice Research Institute (UNICRI) for its 'Illicit Trafficking of Precious Metals and Traceability and Ethical Origins of Colored Gemstones' project. He also contributed to the Organisation for Economic Co-operation and Development (OECD) forums on precious metals and gemstones.

Michelou worked to unite gemmologists from around the globe, and he acted as a mentor to so many people who were looking to gain a foothold in the trade. He made friends everywhere he had been, many of whom he considered family. Farooq Hashmi, a man that Michelou considered a son, writes: "[Jean] is a pioneer who helped countless people in their journeys of life . . . Papa built bridges across many worlds, truly bringing people together."



A palero and friend of the author found this rough emerald crystal while working the banks and bed of the Itoco River in 2021.



Perseverance on the Banks of the Itoco River

Prospecting in a riverbed near Colombia's Muzo deposit yields emerald crystals – and a realisation – for David Goubert.

After a long hiatus, I was able to travel to Colombia in April 2021. Despite the COVID-19 pandemic and the country's subsequent economic crisis, I found that the emerald trade in Bogotá, as well as the mining sector, was still active.

I left the bustling Andean capital for a much-anticipated escape to the emerald deposits of Muzo, Coscuez, and Chivor. Upon arrival in Muzo, a long-time friend asked if I would like to join the *paleros* who prospected at the Itoco River. Among Colombian miners, the word *palero* refers to a person who searches for emeralds in riverbeds using a *pala*, or shovel.

The heat was intense the morning we set out with the paleros. It was barely 8 a.m. and the air was thick with humidity. We walked up the river carefully, our eyes wide open, eager to be the first to discover any emeralds that the Itoco's wake might have left behind. And when our eyes proved insufficient – which is the case most of the time – the shovels were used to recover, stir, and wash the gravel, all the while hoping for a

glimpse of telltale green splinters.

In this picture my friend proudly holds a rough emerald crystal that he found that hot and humid morning. His attire demonstrates the intersection of traditional and global concerns. On his head he wears the multifunctional Andean poncho, which protects him from the sun and rain – he also uses it as a gem cloth for the sorting of emerald parcels – alongside the face mask used around the world to prevent the spread of COVID-19.

This amazing crystal is the focus of the photo. Yet the background depicts the locality itself so well: the intense green of Muzo's forest contrasting with the riverbed, which mainly comprises black shale. And the splashes of colour from the ever-present groups of hardworking paleros who, in any conditions and even in times of worldwide crisis, are seeking the hidden prize among the muddy banks.

That morning we were reminded that the secret to finding emerald crystals in the riverbeds is strength and persistence. ■

Photo courtesy of David Goubert.

Changes to a Classic: THE EVOLUTION OF THE PEARL INDUSTRY

Jewelmer's cultured-pearl farm in southern Palawan province, in the Philippines, where the company farms their golden South Sea cultured pearls while preserving the marine environment. Photo courtesy of Jewelmer.

A younger generation becomes the new clientele of jewellery trade, seeking out new territory where the traditional strand of pearls once reigned supreme.

Starting in 2019, it seemed like pearls were everywhere and on everyone. Kamala Harris, then a senator for the state of California, launched her candidacy for the United States presidency on 21 January while wearing the signature pearls that represent her membership in the historically African-American sorority Alpha Kappa Alpha. The following month, *Vogue* contributor Rachel Hahn wrote about rapper A\$AP Rocky's jewellery choices, including a pearl chain he had recently worn. Significantly, singer Harry Styles has been seen wearing a strand of pearls quite regularly. The gem's visibility only rose leading into 2020, with pearls chosen for engagement rings over other gemstones and with models, male and female, wearing pearls on the catwalk.

This rise in visibility and popularity is no surprise to members of the industry. In a 2018 interview with *Gems & Gemology*, Fran Mastoloni of New York's Mastoloni Pearls mentioned that the organic gems

tend to have seven-year cycles of popularity. He considered 2018 to be the second year of a new seven-year period. His prediction is in line even with those who report on jewellery and gem trends; Forbes had anticipated the rising



The Bubbles by Sean Gilson for Assael – of which this ring is part – is that company's best-selling collection outside of classic pearl arrangements. Photo courtesy of Assael.

popularity of pearls back in 2015, with the *Financial Times* running a similar article in 2017. But the cycle might last longer than Mr Mastoloni anticipated. In 2018, pearls made up about 3-4% of the jewellery industry; its share of the market was valued at about £2.15-2.87 billion. This segment of the trade is estimated to grow to roughly £14.37 billion by 2025.

So, who is responsible for this growing market? Largely, the next population of jewellery buyers. Pearls and pearl jewellery are of particular interest to millennials and older members of Generation Z, including men, who are looking for more than the traditional pearl necklace. Instead, they are seeking out bold designs and pops of colour. They are also looking towards companies that have invested in sustainability, including corporate social responsibility, and conservation. In response, designers are creating pieces that will appeal to the next generation of clients, based on their aesthetic and ethical practices.

DESIGN

According to a *New York Times* article from 2019, 'there is something effortless about pearls'. Be that as it may, the past decade has seen an evolution in the way that pearls are used in jewellery, creating a dynamic and wholly original look. Once upon a time the white round pearl was the ideal specimen, usually paired with matching rounds to make the classic necklace or bracelet, but no more. Bold combinations in colour, size, and material have won over buyers who might have been otherwise uninterested in so-called 'traditional' pieces. For example, baroque pearls were once seen as less-desirable options than their round counterparts, but they are also playing a greater role in today's pieces. These changes are helping to create a unique look for wearers, and are giving designer-makers a chance to show what they can do.

The client base knows how to find what it is looking for, according to Peggy Grosz, senior vice-president and design director of New York-based Assael. "There has been quite a shift in the way our clients

approach our pieces and pearls as a whole. Part of it is what we call 'The Pearl Revolution', which is the undeniable importance that pearls have played in fashion in recent years (and will continue to for years to come). I believe that another part is due to the way we treat pearls in design... wonderful elements of infinite shapes and colours, but with lustre or glow as opposed to sparkle."

While some businesses started with a traditional look and branched out later, others decided to be unique during their earliest days. Jeweler, founded in 1979, only uses the golden South Sea cultured pearls that are produced solely in the Philippines, where the company is based. "The decision to produce golden pearls was made in 1983, although the production did not reach commercial quantities until the late 1990s. It was a big risk, at that time, the golden pearl was a very rare and little-known gem. The introduction of the golden pearl brought a certain warmth in the design of the pearl jewellery category. It opened new possibilities, inspiring designers to

play around with coloured stones as well as more modern designs." The design of their jewellery pieces revolves around the distinctive colour of the pearls, along with 'playfulness, joy, and modernity'.

Isabella Daniels of Yoko London says that their commitment to innovative design is something their clients have relied upon since they opened their doors

I believe that another part is due to the way we treat pearls in design... wonderful elements of infinite shapes and colours, but with lustre or glow as opposed to sparkle.



These akoya pearl-and-diamond earrings are part of Yoko London's Sleek line. Photo courtesy of Yoko London.

in 1973. "Three generations of our family have shaped and nurtured our brand. We are always trying to think outside the box for new and imaginative ways to wear pearls. Some people may have a perception of pearls only being a very classic gem, but with our broad range of contemporary, fashion-forward designs, we want to break this perception. But our greatest design inspiration comes from our clients who come from all over the world."

Melanie Georgacopoulos also did not feel constrained in her design choices. "The main inspiration for my work is pearls and mother-of-pearl themselves, but ideas can be sparked by other materials, craft, textures, photography, architecture, exhibitions, travel and experiencing other cultures." Like many other designer-makers and jewellery houses, Ms Georgacopoulos says that, "Pearls have beautiful colour tones, dramatically different shapes, sizes and personalities! Some yearn to be paired with gemstones that coax the colours from the pearls, and some shapes just seem to belong to particular parts of the body." Breaking out of the 'classic' mould wasn't an issue for Assael, though they faced other battles. "It wasn't difficult for us to push the boundaries, as



More men are wearing pearls, and these cuff links by Melanie Georgacopoulos, with lavender freshwater pearls and mother-of-pearl in an 18k yellow-gold setting, combine that new trend with tradition. Photo courtesy of Melanie Georgacopoulos.

pearls had been so under-utilised in contemporary design until recently. Not everything was accepted as valid from the start. Assael deals with retailers, so it was the good old conundrum of wanting 'new', but confusion or resistance to what isn't already known or established." The start of The Colors collection was well received and sold quickly. The Bubbles by Sean Gilson for Assael, however, "took two and a half years to gain traction. But it is now our best-selling collection (aside from classic pearls strands and studs)."

While all the jewellers noted that they have an appreciative younger client base – one that brought greater recognition to their eclectic pieces – they receive attention from all ages. As Ms Georgacopoulos stated, "The biggest compliment is when my pieces win people over who have never even considered wearing pearls before."

SUSTAINABILITY

Today's jewellery consumers are more likely to be concerned with sustainability and responsible practice than in previous years, and cultured-pearl farming is often cited as a method that allows for sustainable production. Most molluscs only produce one specimen before being sacrificed, as the appearance of subsequent pearls is likely to decline after the mollusc completes one formation. The ability to replace each pearl-producing animal with larvae, or *spat*, allows for continuous production.

At the same time, climate change, natural disasters, overcrowding, and degradation of marine conditions around the world have had a drastic impact on aquaculture. In the past few years, the Chinese pearl industry has been harshly

impacted due to water pollution. The resulting death of oyster stock and lower quality of production has resulted in the consolidation of many Chinese farms and seen the output from these farms subject to treatments such as *maeshori*, which can bleach pearls while improving lustre. In the Philippines, production has been negatively affected by changes in water temperature, ocean acidification, and plankton growth. The impact of these lower volumes will be felt at least through the end of 2021.

Even so, there are strides being made toward sustainability and conservation. In 2019, the Pearl Commission of the World Jewellery Confederation (CIBJO) released a special report reaffirming the importance of conservation to the pearl industry, but also looked at the opportunities that were in the wake of the Chinese and Philippine situations. According to Kenneth Scarratt, president of the Pearl Commission, 'with the lower



Golden South Sea pearls are interspersed in dramatic swirls of colored gems in the C'est La Vie cuff, creating a bold statement for the contemporary woman. Photo courtesy of Jewelmer.

biomass density comes the potential to achieve a higher-quality output'. The report also cited the Australian pearling industry, stretching across 1,000 km along the north-west coast of the continent, as 'the world's most ethical and environmentally sustainable choice,' so named by the international not-for-profit organisation Marine Stewardship Council. Avoiding both unnecessary by-product fishing and damage to the seabed, the Australian

industry shows that sustainable pearl farming is achievable.

Mindful of supporting the oceans and the communities that produce pearls, many retailers and designers are involved with conservation efforts and social responsibility. The Tiffany & Co. Foundation provided initial funding for sustainablepearls.org, a research project based at the University of Vermont that seeks to support the positive impacts, communities, and supply chains related to pearl farming. Assael seeks out and supports pearl farmers who work to preserve ocean environments; Christina Assael, president and CEO of the company, devotes part of her time to serving on the CIBJO Coral Commission (the company also works with precious coral). She also prioritises ocean-related causes and charities as part of her philanthropic efforts. After she began working with mother-of-pearl, Melanie Georgacopoulos created her MOP Gemstones and MOP Facets collections to highlight and raise awareness about the waste of pearl oysters, as well as issues surrounding pearl and diamond production. Ms. Georgacopoulos explained that "I hope to spread the mentality that through craft, we can elevate lesser-regarded materials and changes conceptions around them."

Yoko London considers sustainability to be an ever-evolving journey, and they are continually reviewing their processes as more information becomes available to do so. They partner with environmentally aware cultured-pearl farmers who focus on sustainability. Since they maintain close working relationships with those farmers, much of their supply chain is traceable. To reduce their carbon footprint, Yoko London grades, matches, and mounts all pearls by hand at their UK headquarters. In 2021, they made a commitment to use over 50% recycled gold in their pieces, and they in turn recycle 100% of their unused gold. All staff members are trained to discuss their practices with clients.

Cultured-pearl farming in the Philippines has been directly impacted by environmental issues, and Jewelmer has made great efforts to mitigate some of the issues in the country. "Individuals are seeing the importance and value in sustainability, and Jewelmer's practices have always been



The Rectangle necklace, by Melanie Georgacopolous for 'Le Cabinet de Curiosités de Thomas Erber' (2012). This uses oxidised sterling silver with 3-12 mm white freshwater pearls throughout. Photo by Melanie Georgacopoulos.

anchored in environmental causes." They established the Save Palawan Seas Foundation (SPSF) in 2006, with the goal of providing long-term conservation strategies for Palawan's marine environment and to create alternative sources of livelihood for its inhabitants. SPSF actively engages families in sustainable livelihood opportunities and employment, through projects in virgin coconut-oil processing, free-range chicken farming, and organic vegetable farming. It also supports the welfare and development of 10 different communities, impacting households through conducting annual medical and dental 'missions' for families, including indigenous groups, and feeding programs for children in underserved areas.

MEN IN PEARLS

From antiquity through the early twentieth century, upper-class men with the means to afford pearls wore them. Julius Caesar declared pearls to be the province of the Roman ruling class, and its reputation as worthy of only the nobility and royalty followed the gems. Portraits of royalty and nobility show pearls in places of prominence. Henry VIII wore pearl-embroidered clothing, Charles I famously wore a pearl earring to his execution, and Indian maharajahs wore long strands.

Pearl jewellery temporarily went out of vogue for both men and women in the seventeenth century. This was partially in response to the shortage created from overfishing sites in the Americas, but also was a response to the sumptuary laws that dictated, in part, who was allowed to wear certain types of jewellery. While restrictions placed by the sumptuary laws were eventually lifted, as they did pearls came to be associated with purity and virtue and therefore womanhood. They enjoyed a brief resurgence of popularity among men during the Edwardian era, during which pearl and mother-of-pearl pieces for men could be found, and again during the 1980s.

Jewellers continue to make cufflinks and other pieces that are traditionally considered 'male' jewellery using pearls and mother-of-pearl. Pearls seem to be enjoying renewed attention among men, but also among non-binary jewellery wearers. While many point to Harry Styles kicking off this trend when he wore a pearl earring to the 2019 Met Gala, others recall performer and producer Pharrell Williams walking the Chanel runway in 2016 with layers of pearls and gold chains after wearing them in performances in earlier years. Since then, men both on and off the catwalk, have worn pearls with pride: actors Billy Porter and Ezra Miller, along with musicians

A\$AP Rocky, Shawn Mendez, Gucci Mane, and members of the Jonas Brothers are fans. Designers Kim Jones (for Gucci Men) and Ryan Roche have paired their collections with various pieces of pearl jewellery. In January 2020, Mikimoto and Comme des Garçons unveiled the first unisex necklaces that mark their fine jewellery collaboration; as of August 2021, nine necklaces are available on the Mikimoto website and at select outlets.

Jewellery designers are finding a shift in their own clientele because of this public embracing of pearls by men in the spotlight. All the firms contacted for this article saw increased interest from men in pearl pieces. Even Yoko London, which has in the past created pieces for women only, has seen a branching out, with male clients purchasing strands for themselves.

In late 2019, a U.S.-based research firm predicted that the global pearl industry would grow by 13% by 2025, by which date those children born in the middle years of Generation Z will have gained their majority. As the pearl market continues to diversify itself with bolder designs and colour combinations, unisex offerings, and movements toward environmental sustainability, it is positioned to grow alongside this generation into precisely the market that these new consumers are looking for. It could be that, with these changes, this cycle lasts longer than the seven years posited by Fran Mastoloni after all. ■



Assael's Modern Mobiles collection includes these articulated peridots and Fijian pearls. Photo courtesy of Assael.

THE ARGYLE MINE CLOSURE

What Will Happen to Fancy Pink Diamonds?



The entry to the now-closed Argyle diamond mine in Western Australia. Photo courtesy of Rio Tinto.

The last tender of fancy-colour diamonds from Australia's Argyle mine is up for sale. Russell Shor takes a closer look at the material for sale, and reflects on the impact the mine has had on the trade.

After 38 years, the final tender of fancy-colour diamonds from Argyle is underway, with the winning bids unsealed on 1 September. It is a proper send-off for diamonds that have had such an effect on the global trade, with some 70 pink, purple-pink, and blue stones totalling 81.63 ct available for bidding. The tender is called 'The Journey Beyond' for the 1.5 billion years from the creation to discovery of diamonds.

The headliner of the pink lot is the 3.47 ct radiant-shaped Fancy Intense Argyle Eclipse, the largest diamond ever

offered at a pink diamond tender. Other stones up for sale are the 2.03 ct Fancy Deep Argyle Lumiere and the 1.79 ct Fancy Vivid purplish pink Argyle Stella (both square radiant-shaped cuts), as well as the 2.05 ct Fancy Deep pink Argyle Solaris and the 1.01 ct Fancy red Argyle Bohème (both radiant-shaped cuts). In addition to the pinks, Argyle is auctioning an array of 41 Fancy blue diamonds, weighing 24.88 tcw, in a collection called 'Once in a Blue Moon'. There will be little fanfare when the bids for these gems are unsealed in September: Argyle NEVER reveals winning bids.

The Argyle diamond deposit, discovered by British geologist Maureen Muggerridge in 1979, began production four years later. The mine saw its first full year of operation in 1985, the same year the first auction of pink production was held. Argyle has continually offered the best of its fancy colours in yearly tender auctions ever since. Since 1983, the mine has accounted for 90% of the pink diamonds appearing in the market each year, leading to the inevitable question: Will the closure of the mine result in a large increase in the price of fancy-colour pinks?

The last tender for sale from the Argyle mine includes these Fancy pink diamonds, combined under the name 'The Journey Beyond'. Left to right: the 3.47 ct Argyle Eclipse, the 1.79 ct Argyle Stella, the 2.03ct Argyle Lumiere, the 2.05 ct Argyle Solaris, and the 1.01 ct Argyle Bohème. Photo courtesy of Rio Tinto.





The 'Once in a Blue Moon' collection, also up for bidding. The 41 lots of blue and violet diamonds from Argyle comprise 24.88 tcw. Photo courtesy of Rio Tinto.

Of course, Argyle has been predicting this for several years. And its clients are inclined to agree. But there's no crystal ball – clear or pink – that can answer this question. But there are several factors to consider.

First, dealers who have been buying these goods have known for at least five years that the mine would close, and not only ran up bid prices (to the delight of Rio Tinto accountants) but also have held most of their purchases intact. They have displayed their treasures at the luxury pavilions in Basel, Las Vegas, and Hong Kong trade shows, but have not been too keen on selling them, except perhaps at 'tomorrow's prices'. They prefer to generate cash from Fancy yellow diamonds, which are in no danger of running out. In short, the trade already has factored in price appreciation.

Second, much less than 1% of the diamonds retrieved from Argyle are 'pink,' with a good number of those specimens a distinct purple-pink colour. And the vast majority of the purple-pink material weighs less than 1 ct. Fancy pink diamonds from African sources (mainly Cullinan) tend to be rosier in colour, and can be significantly larger. So Argyle pinks can be classified almost as a different type of Fancy pink diamond, in the way Kashmir sapphires are classified against gems from other sources.

At the same time, Russia is producing pinkish diamonds in ever-increasing quantities, from both Alrosa's alluvial operations and its western mine at Lomonosov. While these are similar in size to Argyle productions, they tend to be more lavender than pink —

again, distinctly coloured products of nature. Therefore, it is more likely that any price movements will reflect Argyle's status as a highly collectable form of pink diamond, but probably would not greatly affect prices for African- or Russian-sourced pink diamonds in the long run.

According to a 2014 GIA study, 54% of the Argyle fancy-colour diamonds offered at its yearly tender sales were the purplish pink the mine is known for, with an additional 4% graded purple pink. Thirty-seven percent were graded pink, 2.5% were graded purplish red, and 1% graded red, which is the rarest of all diamond colours. Only 5% weighed 2 ct or more, with half the diamonds falling between 0.5-1.0 ct.

Of course, the approximately 1,500 diamonds offered at these tender sales over the past three decades are an infinitesimal fraction of Argyle's total output of 865 million carats, though only a minority were of sufficient quality for the gem market. Argyle also mined Fancy brown diamonds (which it marketing as 'champagne' and 'cognac'); a fair number of Fancy yellow diamonds; and smaller, lesser-hued pinks in addition to those presented at the annual tenders.

The jewellery industry will miss Argyle's production, and not just for the pink diamonds. Its vast output of smaller, lesser-quality stones sustained employment for hundreds of thousands of diamond workers in Indian towns, such as Ahmedabad and Bhavnagar in the state of Gujarat. At the other end of the pipeline, cheap Argyle diamonds made possible those low-cost 'tennis bracelets' and USD\$99 pendants that have been so popular in the United States. Perhaps an influx of smaller diamonds from Russia and increasing productions of lab-grown diamonds may take up the slack, but there is no doubt that the millions upon millions of Argyle carats helped bring prosperity and employment to what had been one of the most famine-prone regions of the world.

Will Argyle's pink diamonds continue to increase in price? No one can predict, but it is a safe bet they will remain objects of great desire, just as Kashmir sapphires have remained a draw a century after those mining operations closed down. ■



Diamond cutting at a facility in Ahmedabad, India, in the 1990s. Ahmedabad was a prime location for cutting the material that was produced at Argyle. Photo courtesy of Russell Shor.

AETHER

CREATOR OF THE WORLD'S FIRST VEGAN, POSITIVE-IMPACT LAB-GROWN DIAMONDS



As its centrepiece, Aether's Horizon Double Diamond Ring has two asymmetrical lab-created diamonds weighing 0.5 ct and 1.5 ct (shown here in pear cut).

Aether, already dedicated to having a positive impact on the environment, recently became the first company to receive vegan certification for their lab-grown diamond. Bob Hagemann of Aether talks to Scarlett Roberts about what this means for the company and the customer.



Bob Hagemann

In April 2021, New York-based jewellery company Aether received vegan certification from Vegan Action for their lab-grown diamonds. This certification – the first issued to any diamond, be it synthetic or natural – may sound like a gimmick, but Bob Hagemann, chief marketing officer of Aether, asserted that it is not. “If you had asked someone 10 years ago what the term ‘vegan’ meant, they would likely just tell you about eating an entirely plant-based diet. Ask someone today, and you will get a much broader answer,” Hagemann clarified. “Veganism is a lifestyle, not just a diet, and it focuses on ensuring that no animals are abused for any human purposes. Literally no other diamond brand on the planet can say that they’ve sourced their stones without abusing animals for human purposes.”

While many people are aware of the human rights issues associated with diamond mining, fewer are aware of its impact on wildlife and its ecological cost. Deconstructing the myth of ‘ethical’ diamonds, especially those formed in labs, might as well be a part of Aether’s mission statement. “All diamond mines destroy ecosystems and wildlife habitats, and you would likely be surprised to learn that all other lab-grown diamonds on the market are reliant on fossil fuels as their source of carbon. Fossil-fuel dependency means supporting drilling and fracking, furthering the environmental and wildlife destruction associated with it. All you have to do is type the words ‘oil spill animals’ into any search engine to see the devastating consequences that fossil fuels have on wildlife.”

So, what makes Aether different? “Our diamonds are made using sustainably sourced energy and carbon sourced from air pollution,” Hagemann explained.

“This results in a positive impact to the environment, leaving the planet in a better condition than before the diamonds were created.” In short, Aether is pulling these specimens out of thin air — and the air is cleaner for it. This is not as fantastical as it sounds; Hagemann candidly revealed that they are “really just adapting already existing carbon-sequestration technology and putting it to good use for the diamond industry.” To good use, and to beautiful effect: Aether has committed to creating specimens with a colour grade range from D to H (from ‘colourless’ to ‘near colourless’), with Internally Flawless (IF) to Very Slightly Included (VS₂) clarity grades.

Despite, in theory, being able to produce a virtually infinite number of diamonds using this three-to-four-week manufacturing process, Hagemann does not foresee the gem’s value deteriorating anytime soon. “We think that scarcity

Aether is pulling these specimens out of thin air – and the air is cleaner for it.

and value can be connected but are perhaps two different things. The reality of our process is that it requires very expensive and complicated equipment. Pricing will still play an important role in representing the value that we’re able to create through our technology.”

Aether’s co-founders, Ryan Shearman and Dan Wojno, are not new to the jewellery industry. Before creating the company, they both worked at other luxury jewellery brands for nearly 10 years. It was during this time that they became aware of the ecological damage caused by the diamond industry; it was in the course of conversations about air pollution that the idea for Aether was born. Shortly after it was founded in 2018, chief technology officer Anthony Ippolito was brought in to work out the system needed to make Shearman and Wojno’s vision a reality — alongside Bob Hagemann, who

was charged with building the brand, and Jenna Housby, their lead jewellery designer. Aether currently has three jewellery collections comprising 39 unique pieces, all of which are created using Fairmined gold and come in packaging that is just as sustainably derived as the lab-grown diamonds inside.

When asked about Aether’s plans for the future, specifically regarding other gemstone ventures, Hagemann made it clear that they are happy in their own corner — at least for the time being. “We’re in the carbon game, which directly translates into diamonds. Other gemstones have a bunch of different elements in them, and it can be a whole different world to try to create those in a lab without first developing new technology to sustainably and responsibly source those elements. Our goals right now are to scale up our ability to grow more and larger diamonds, and to push the boundaries of conventional thinking around what we can do in the lab.”

Although Aether is, of course, a profit-driven company, Hagemann states that they are just as interested in disseminating information: “Aether aims to change the power dynamic by placing the power and information into consumers’ hands. Even if an Aether diamond is not the right choice for them, at least we know that we’ve empowered them with knowledge and information so that they can make the right choice for themselves.” Aether’s blend of realism, responsibility, and transparency has led them to find their place in the market, but their impact will be felt far beyond it. ■

To learn more about Aether’s certified vegan and positive-impact lab-grown diamonds, go to aetherdiamonds.com.



All photos courtesy of Aether Diamonds.

FOR THE LOVE OF GEMS

'The Key 10138', a 101.38 ct diamond, was the first diamond to be auctioned with cryptocurrency as an acceptable payment. As Sotheby's prepared for the auction, Alessandro Borruso FGA DGA FNAJ PJVal FIRV, deputy director at Sotheby's Diamonds Europe, talks to Beth West FGA DGA EG on the allure and the future of diamonds.

Photo courtesy of Sotheby's.



Alessandro Borruso of Sotheby's Diamonds Europe.

Alessandro Borruso FGA DGA FNAJ PJVal FIRV understands diamonds. As deputy director at Sotheby's Diamonds Europe, it is a prerequisite of his job. But, as with anyone who works with this gemstone knows, knowledge of diamonds extends far beyond the academic and into the emotional. Diamonds have a way of engaging the eye, the heart, and the soul.

On 9 July 2021, 'The Key 10138', a 101.38 ct D-Colour Flawless diamond, sold for \$12.3 million (roughly £8.89 million), which the unidentified buyer paid for with cryptocurrency. It was, in fact, the first important diamond to accept cryptocurrency as a form of payment. At the time of this interview, Sotheby's was preparing for this auction. The name 'The Key' was chosen to symbolise both the history of the gem within the diamond industry and what is yet to come. As

stated on the company website, "it takes the culmination of humanity's work and knowledge on diamonds thus far, and turns the key to unlock a still more brilliant future."

While at Sotheby's boutique on Bond Street, Mr Borruso talked about his career to date, including the diamonds he has worked with and how he interprets the allure of this enigmatic gemstone.

To begin, can you tell me a little about how your career has evolved towards a specific focus on diamonds?

Since I was a kid, I was always attracted by shiny objects. I was a human magpie. I grew up in Palermo, Sicily, and during school field trips, I would collect all the rocks with mica and calcite in them, as they sparkled under the Sicilian sun. I would have pockets full. The most amazing thing about these stones was the story they told us about our planet. They were like time capsules. I decided that one day I would become a geologist, and I did.

From there, I moved to London, and I became a gemmologist and a diamond grader, finally resolving my love of rocks with my love of everything that shines. I have now been working with diamonds for twenty years. In my current job at Sotheby's, I am responsible for the diamond retail branch, 'Sotheby's Diamonds', specialising in fine jewels and rare diamonds.

You have seen some pretty extraordinary diamonds throughout your career. Are there any that stand out in particular? And why?

It must be a 102.34 ct round brilliant-cut

flawless type IIa diamond, with D-colour and excellent polish, symmetry, and cut. This diamond has no fluorescence. We had it up for sale in the shop three years ago. I still believe it is the only one in the world with these parameters. It was the yield of a 423-ct rough specimen found in Debswana's Jwaneng mine in Botswana in 2017. Our partner, Diacore, cut it in the record time of six months, achieving the triple Xs — a term used in the jewellery trade to denote a diamond that has achieved an excellent polish, symmetry, and cut grade.

I had a kaleidoscope as a kid, and I would spend the entire day looking through that tube at the thousands of symmetrical patterns. I would lose any sense of time and space. I had exactly the same sensation when staring at this amazing diamond. To me, stones like this signify the synergy between Mother Nature and humankind. We celebrate nature's beauty and perfection through revealing it in the cutting of the stone.



Mr Borruso holding a 102.34 ct round brilliant-cut flawless diamond, cut from a 423 ct rough diamond from the Jwaneng mine in Botswana in 2017. Photo courtesy of Sotheby's.



The Key 101.38 was the first important diamond to accept cryptocurrency, such as Bitcoin, as a form of payment at auction. Photo courtesy of Sotheby's.

And 'The Key 10138', the 101.38 ct diamond that was auctioned by Sotheby's in July – how did that compare? Or is the real story that Sotheby's was accepting cryptocurrency as payment for this gem? Is this just a passing trend, or is the way we buy and sell diamonds set to change?

When you have a gem-quality diamond over 100 carats, you are walking into a territory of such scarcity. The Key 10138 is another exceptional diamond that will make history. Only nine other diamonds weighing more than 100 carats with the highest colour have ever appeared at auction. Sotheby's has had the privilege of offering six of the nine for sale.

You are right that this is the first time that a major auction house is welcoming cryptocurrencies Bitcoin (BTC) and Ether (ETH) as payment for a world-class diamond. But what we see is purely a reflection of the times we are living in. There is undoubtedly a greater choice of products and services on the market today than ever before. This means there is a growing number of new clients from the four corners of the globe, with different aspirations and needs. Our role is to fulfil them, as well as to anticipate new trends.

The most striking aspect to me about the Key was the choice of name, one that sets up diamond as a symbol of the past, the present, and the future.

This does seem to be in line with an emerging trend, where conversations surrounding the symbolism of the gemstone are shifting beyond what took precedence over most of the twentieth

century – that is, diamond as a symbol of power, love, and romance – and are instead enveloping ideas of innovation and change.

What is exciting about this shift is that it unties diamonds from their current association with jewellery as a gift of love – and as a gift from a man to a woman. Do you agree that diamonds should be for everyone? Do you see a broadening category of client?

Diamonds mean different things to different people. You have the connoisseur, the collector, the client who is celebrating a milestone, the investor, and so on. De Beers and Tiffany have already launched diamond jewellery collections for men, and non-gendered collections are now in vogue. I would say that diamonds nowadays are pretty much genderless, and they appeal to a wider audience.

What is it they are buying? What do you think dictates the value of diamond?

We specialise in rare diamonds and most of our clients appreciate this, coupled with the fact that every jewel created by Sotheby's Diamonds is a one-off. This idea of 'one of a kind' is what attracts our buyers. It is what they are experiencing at auction when the hammer goes down. The value of a diamond is the result of many parameters and market conditions, but for top-quality rare stones, there is always a steady demand, because they really are unique.

Does the amount people are willing to pay for a diamond ever overwhelm you?

It overwhelmed me when I purchased a diamond ring for my then-fiancée, now my wife! In fact, I have a friend who bought a diamond on finance a long time ago, and after so many years he is still paying for it, to the point that I thought that the famous Frances Gerety slogan 'A diamond is forever' was written for him!

But the way I look at it, these things are a great emotional investment, which one day will be passed on to the next generation. It is all relative to the meaning you attribute to things, be it a jewel, a painting, or any other emotional trigger, no matter how much you paid for it.

As my dear friend, the author and

diamond authority Marijan Dundek once said to me, "we don't deal with just with diamonds, we deal with aspiration, desire, and dreams!"

I know you played a significant role in the making of Damien Hirst's 'The Skull' (or 'For the Love of God'). Do you agree with the artist that diamond is the ultimate nemesis of death?

Yes. In 2005, Damien Hirst approached Bentley & Skinner, the renowned Bond Street jewellers by royal appointment, to help him with the creation of the piece. I was working for them at the time, and I was in charge of selecting and grading most of the 8,601 diamonds set in the skull. I have prayed for years that one day Mr Hirst would come back to do the rest of the skeleton... sadly, it never happened.

I have a great respect for Damien Hirst, both as a man and as an artist. He had a clear vision of what he wanted to create, down to the minute details, and he was always present and supportive during the two years of the making of the Skull.

He said two things that still resonate with me: Once, only a pope or a queen could have commissioned such a piece. This served as a reminder that historically diamonds were only worn by an elite of powerful individuals. Secondly, and most poignantly, he could not have put a stronger currency against death than a diamond which in contrast to the fugacity of our own lives, exists the eternal nature of these fascinating stones. ■



Mr Borruso helped to select and grade most of the 8,601 diamonds that were used in 'For the Love of God', by artist Damien Hirst. Photo from Wikimedia Commons.

The Creative Process of the Gem Cutter

Justin K Prim talks about how the decisions made while transforming a rough specimen to a faceted gem impact the stone's final look, colour, and feel, as well as his own experiences as a lapidary.

Gem cutting lies at the intersection between art and science. The lapidary must constantly keep in mind technical aspects, such as angles and proportions, while also considering how to emphasize the maximum amount of beauty of each individual gem. The process of cutting and polishing a coloured stone is itself easy to understand and usually follows the same steps. But the numerous minute creative options that the cutter has during the process – for shaping and faceting the material, orienting the colour, and polishing the finished product until the dazzling gemstone emerges – means that it takes a lot of experience to make all the right decisions, and each cutter's creative process will be unique. Their choices will have a huge impact on the final look, colour, and feeling associated with a gemstone.

I became interested in gem cutting as soon as I discovered the world of gems and jewellery. At my first visit to a trade show in California, I became fascinated with the idea of cutting gems,

and quickly sought out a lapidary club to help me learn how to do it. Since then, I have taken my obsession around the world, learning techniques from master cutters in Europe and Asia. I've integrated these various techniques into my practice and now as I approach each stone, I do so with experience, a creative eye, and a clear mind.

The first step in cutting a gem is to attach a rough stone to a dop stick so that it can be inserted into the faceting machine. In the first image, a spinel is being attached to a brass dop stick with a special kind of wax called, tellingly, 'dop wax' (1).

Once the dop is inserted into the machine, the physical cutting process



1: Dop wax is used to attach the rough blue spinel crystal to the dop stick.

begins with faceting. All the steps are done by hand, and it is up to the cutter's skill, experience, and coordination to cut all the facets in a balanced manner. The cutting process uses metal cutting disks, called *laps*, which are embedded with rough-to-medium grit diamond powder to do the cutting work. The bottom left photo (2) shows that the spinel has been placed into the faceting handpiece and is having its facets cut in a systematic pattern.

Specific angles are very important to the cutters work. All modern machines have a way of showing the cutter exactly the angle at which they are cutting. We can see in (3) that this faceting handpiece is set to 25 degrees. Each type of gemstone requires specific angles to bring out the maximum colour and sparkle, and it is up to the cutter to understand the needs of different types of gems. For instance, the bottom of a diamond can be cut as low as 25 degrees and still make a sparkling stone, whereas if you cut a sapphire with the same angles, the gem would look dull and lifeless, without reflection or sparkle. This is because sapphire needs deeper angles in order to create reflection in the stone.

Every tool available is used in order to



3: The faceting handpiece, used to select angles for cutting, is shown set to 25 degrees.

As I approach each stone, I do it with experience, a creative eye, and a clear mind.



2: Once attached to the dop stick, the spinel is ready for cutting on the first lap.

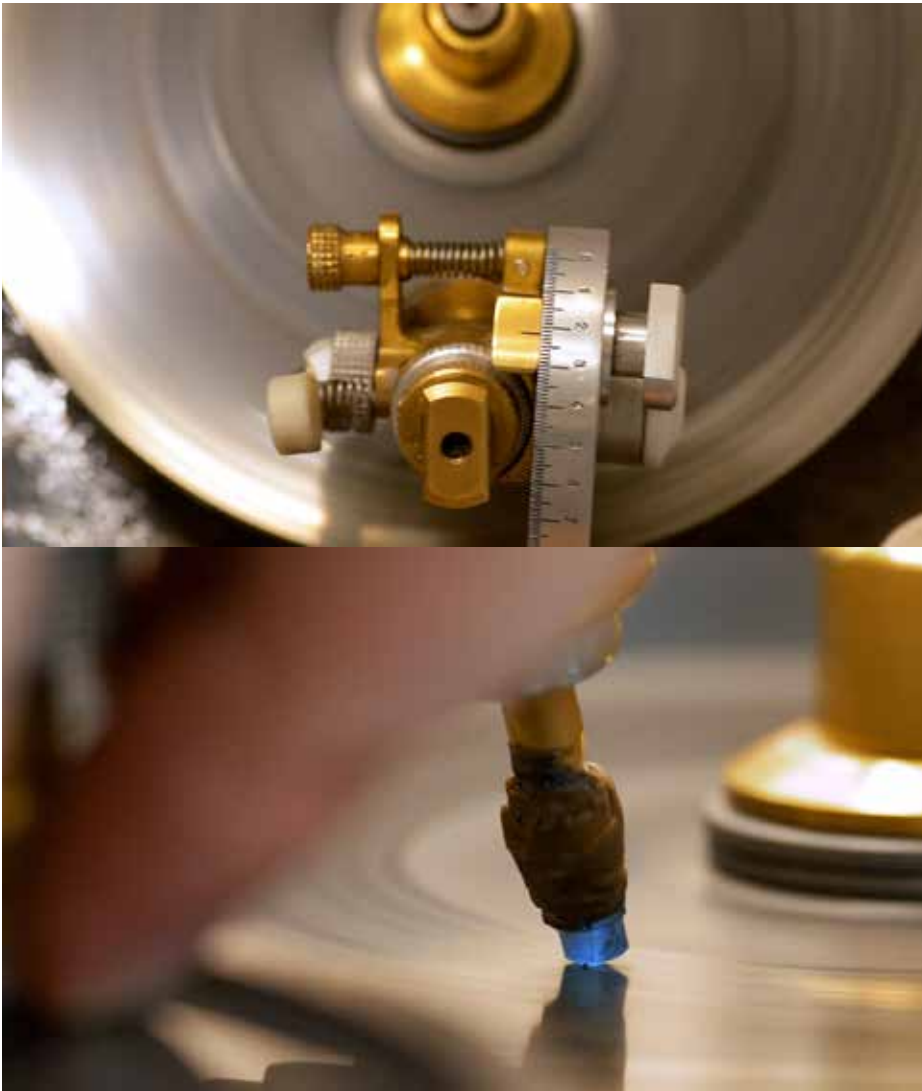
perfectly execute the cutting of the stone. The loupe (4) is a very important tool for looking closely at the pattern applied to the specimen and making sure that it is balanced. In the photo on the bottom right, we can see through the loupe that all the facets of our spinel have been cut; thus, it is ready to be polished.

The final step to making the stone

shine is the polishing, where metal polishing laps (5) and finer grits of diamond powder are used to achieve a glassy look. The polishing step requires the cutter to go back to every facet made while cutting, with one or two more steps of finer polishing required with ever-finer grits of the diamond powder. The polishing step is usually the hardest



4: The loupe (shown here from different perspectives) is essential to the cutting process.



5: During the polishing stage, laps with ever-finer grits (top) are used to achieve a glassy look. Our spinel's blue colour is shining through as it is polished (bottom).

part of the whole process, because the cutter must make sure all of the facets are perfectly balanced – not too big, not too small – while also making sure that the faces are free of scratches. Depending on the material, this can be tricky and time consuming, though for our spinel it was quick and easy. The blue colour had already started shining out of the stone while it was being polished!

In (6), the spinel we have been following is finished. It sparkles and shines. For this stone, I chose the Hanami cut. This gives the stone a unique look using polished and unpolished facets to create a flower petal-like design. This is an example of a fancy shape that wouldn't normally be found in the commercial gemstone market; gems with designs like this need a boutique cutter to create them. Typically, the commercial

cutters who supply the jewellery industry with their stones don't do these kinds of complex patterns.

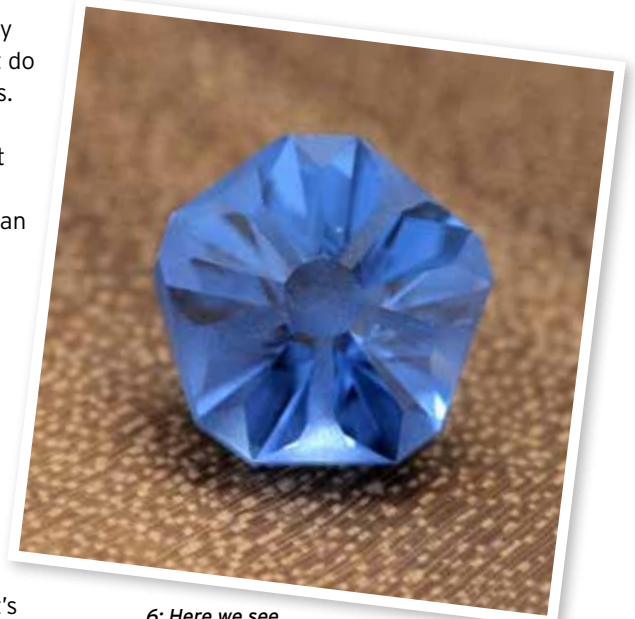
Depending on the material and the colour, the cutter might choose a pattern to emphasize different qualities. In the Nigerian sapphire (7), I used a classic cushion mixed-cut design to follow the shape of the original rough and to emphasise the deeply saturated blue colour. The cushion-shaped mixed cut is the most popular cut in the international gem trade, and it has been applied to everything from ruby to spinel, from garnet to amethyst. It's a flexible cut that's great for emphasizing colour; it has been in use for a few hundred years, so most

seasoned cutters know exactly what to expect from it in terms of its effect on the colour of the rough stones.

The Panjshir emerald in (8) uses a cut that is named after the gemstone itself. The emerald cut is ideal for these types of gemstones because it allows the colour to glow out of the stone while utilizing the emerald's natural rectangular rough shape. I chose to use this design because of its simplicity: It perfectly frames the stone, but doesn't distract the viewer from the intense and beautiful green. The cut also allows the wearer to have a clear view of the emerald's unique *jardin* – its grouping of inclusions, named for the French word for 'garden' – which is visible through the table.

For the colour-change Umba sapphire (9), we chose to create a new design to give the gemstone a unique geometrical look that isn't found anywhere else. The design follows the hexagonal shape of the rough sapphire, but then uses a brilliant design to make the stone as bright and sparkling as possible.

When working with the five unheated tanzanites (10), the cutter used their skill to get the best colour out of each gem. Notice that for the first and last stones, they decided that for the best yield and color, it made more sense to cut the stone in half, in the latter case creating a matched pair. Even though these are all the same type of stone we can see a huge variety of colours, as well as a creative use of shape and faceting pattern.



6: Here we see the finished product of all this work: the 2.1 ct blue spinel with the Hanami cut.



7: This 2.9 ct Nigerian sapphire was cut in a classic mixed-cut pattern to show off its best attributes.



8: The emerald cut was used on this specimen of the same name from Panjshir, Afghanistan.



9: Creativity was key when creating a cushion cut for this colour-change sapphire (final weight 1.9 ct) from Uмба, Tanzania.



10: Though these are all tanzanites, the different cuts applied display a variety of faceting options to optimise colour.

Each gem cutter has their own process, their own specialties, and their own unique experiences to inform their decisions. Much of the world's rough gem material has potential, but it is up to the cutter to imagine that potential while the specimen is still in its uncut form. The creative visualizations and careful actions of gem cutters transform a colourful but dull rock into a gem that shines, sparkles, and dances with colourful light.

The art of the lapidary has a lineage that has been passed down for over half

a century. It is useful for a beginner to acquire skills from an experienced cutter so as to learn from the experiences and mistakes of previous generations. To make the learning process easier, novices would want to start with material of lower value, abundant availability, and larger sizes, such as topaz, garnet, and aquamarine. Over time, the beginner will gain experience and develop their own routine, which includes discovering which stones they prefer to work with.

Gem cutting is the silent heart that

beats continued vitality into the gem trade. The creativity that comes through the well-practiced hands of lapidaries around the world is what keeps the gem and jewellery industry fresh. Their efforts mean that we are constantly supplied with new gems and new patterns for use in the jewellery and *objets d'arte* of the future. ■

To learn more about gem cutting with Mr Prim, please go to his website: www.justinkprim.com.

All photos courtesy of Justin K Prim.

PLEDGING TO DO GOOD: A LOOK AT FAIR LUXURY

Acting in the interests of inclusion, transparency, and responsibility, a group of volunteers from different sectors of the trade has created a movement that shows no sign of losing momentum.

In early June, the UK Jewellery Awards 2021 Shortlist was announced, with the winners to be revealed on 1 September. Among the nominees for Marketing/Social Media Campaign/Collaboration of the Year was the Fair Luxury Pledge, a call to action by the organisation of the same name. Also known as the Provenance Pledge, the effort calls upon members of the gem and jewellery industry to work towards transparency, responsibility, and sustainability. Only three years since its inception, the movement hit a major milestone in April of this year, when the 100th Pledge was taken. As of July 2021, over 110 Pledges have been promised from very broad geographic locations.

Founded in 2015, Fair Luxury is a voluntary collective of jewellery professionals – including retailers, wholesalers, designers, suppliers, and educators – who are greatly concerned with conservation of the environment, ethical sourcing, equitable treatment, and eliminating poverty. The original members had a vision of an inclusive, sustainable, and transparent trade, one that empowered traditionally marginalised members of the jewellery

supply chain and fought social, economic, and environmental injustice.

Alongside these concerns was the knowledge that incorporating a traceable, transparent supply chain is not without its challenges. The original purpose of the group, according to founding member Anna Loucah, was not to demand perfection among people who were working towards inclusion and transparency, but instead provide a space for people to find out about the efforts of others in the industry who had the same concerns. Loucah recalled wanting to move in the direction of a more ethical business, but said that “it can feel like pushing against a brick wall all alone in your studio”. As a community, Fair Luxury sought to “create a movement, to inspire people” through the efforts of members, who all have different skill sets that are vital to the gem trade.

An early success of the organisation was a 2017 exhibition, called ‘Fair Luxury Presents’, that was a joint effort with the Fairtrade Foundation and photojournalist Ian Berry of Magnum Photos. Held at The Goldsmiths’ Centre in London, the exhibition followed a piece of jewellery ‘from earth to wearer’, accompanied by

photographs of mining communities in Uganda. Members of the group, including Rachel Sweeney of Cox and Power, Lauren Davidson of Ellie Air, and Amanda Li Hope, designed pieces specifically for the show that used Fairmined and recycled metals.

The Pledge, first announced in 2018 at the Royal College of Art, is the natural outgrowth of the organisation’s work. Loucah indicated that anyone involved in the gem and jewellery industry can take the Pledge. It requires a promise to conserve and restore the environment; work in a way that is responsible, transparent, and accountable; and play a role in educating and empowering others. “Independent designers and large retailers, gem dealers, metal refiners and journalists have all joined on the journey,” Loucah stated. “We have been incredibly inspired by the diversity in the Pledges themselves.”

Loucah said that Pledge takers can start out by “picking one little thing: maybe making the switch to greener studio tools, or ethically sourcing one type of gemstone.” For instance, part of Loucah’s Pledge was to stay up-to-date on research related to Fair Luxury’s mission, and to consistently share positive, encouraging

I'm working on it!

fair LUXURY
PLEDGE

2021

#provenancepledge

The Fair Luxury Pledge was first announced in 2018, with its second phase beginning in April 2021. Those who have taken the Fair Luxury Pledge may share this badge to show their commitment to inclusive, sustainable, ethical practices in the gem and jewellery trade.

Fair Luxury members designed and created pieces for the organisation's first exhibition in 2017. Below left: The Ribbon Diamond drop earrings are made from Cox and Power's first batch of Fairtrade and Fairmined platinum; photo courtesy of Cox and Power. Below right: Lauren Davidson of Ellie Air made the one-of-a-kind Empress ring from Fairmined Ecological Gold and an Ocean diamond that was sourced by hand from a seabed on the coast of South Africa. Photo courtesy of Ellie Air Jewellery. Right: Created for the exhibition, Amanda Li Hope's Auroboros necklace is handmade from pure Fairtrade gold, mixed with 100% recycled copper, silver, and palladium. It went on to win the Bronze Award in the Fairtrade Gold category by the Goldsmiths' Craft and Design Council in 2020. Photo courtesy of Amanda Li Hope.



stories on ethical practices on social media. It is empowering, she notes, to be a part of a network working towards the same goal. Together, they celebrate small victories and help set future goals for each other.

Even in the face of the recent pandemic, the group has had to reconsider the best way to communicate their goals to the public and to each other. They have been successful in creating a presence on social media, and since May 2020, they have built momentum by holding regularly scheduled online Open Houses – what Loucah calls 'mini conferences' – that are free and open to all. Each session has a focus; previous topics have included 'Gemstone Pioneers' and 'Design and Consumer Trends in 2021 and Beyond'. There are breakout rooms, Q&A sessions, and audience participation. A 'buddy system', used in the online Open Houses as well as offline, allows members to reach out to each other and helps them

stay motivated and in touch with their Pledges.

And they are working towards outreach, in a most recent case finding out what the call is for ethically sourced metal. Part of this is the current jeweller's survey, which founding member Sweeney indicated is "an attempt to link up demand and supply for responsibly sourced metal. We're looking to gain as much info as possible on what materials people are currently using and what they would like more of so we can play a part making that possible." This survey is open to all jewellers and closes at the end of September 2021. The Open Houses will continue throughout 2021, though in a less-structured style; after a full year, Fair Luxury will consider the next steps.

In the meantime, the Pledge continues to attract followers, and of course the nomination for the Jewellery Award is

Anyone involved in the gem and jewellery industry can take the Pledge. It requires a promise to conserve and restore the environment...



an exciting development. This is all part of Fair Luxury's goal to create a broader world view and make the industry a safe, supportive, and inclusive place for all its members. Loucah notes that in its formation Fair Luxury intended to "create some noise. People have started listening, and I'm so proud of what we have achieved." ■

To take Fair Luxury's jeweller's survey on responsibly sourced metal, go to <https://www.fairluxury.co.uk/goldsurvey2021/>. To learn more about the Fair Luxury Pledge, or for a list of the organisation's upcoming events, go to [fairluxury.co.uk](https://www.fairluxury.co.uk).

Finding Value

This year's Valuers' Conference, hosted by the National Association of Jewellers' Institute of Registered Valuers (IRV) will take place across three busy days in September, incorporating keynote speeches, masterclasses and workshops by a range of professionals. Here, we preview the event and outline some of the sessions that are not to be missed.



a workshop on identifying fake watches – well, now they can! In addition to the learning opportunities the Summit offers, the events taking place mean that people involved in all aspects of our wonderful industry can get together in one place to make new contacts and enrich their businesses moving forward. Important networking will certainly be a major benefit for those attending the NAJ Summit, and there will be many opportunities available over the three days to do just that.”

Anyone who is new to the world of gemstones will no doubt benefit from the range of introductory sessions on offer, such as a look at sapphires, rubies, and emeralds; a guide to using a loupe for maximum efficiency; and workshops that will introduce attendees to the process of valuing. For those who want to take a deeper dive into more specialised topics, there are some fascinating sessions, workshops and masterclasses on offer, including ‘Let’s See How It’s Made’, where **Barry Sullivan** will help participants identify casting methods, rubber mould wax, CAD wax, and handmade methods to improve their appraisal skills.

In a change from previous years, the Institute of Registered Valuers’ (IRV) annual conference will take place as part of the NAJ Summit – a three-day event in September that incorporates a trade show, gala dinner, and a retail jewellers’ congress. Despite the challenges of a COVID-affected world, the Valuers’ Conference already has an impressive line-up of speakers scheduled to attend, with topics ranging from the history of Cartier and valuing Georgian jewels to understanding historic hallmarks and the principles of forensic jewellery.

For those based in the United Kingdom and further afield, the Valuers’ Conference is an opportunity to reconnect with peers in the valuations field, as well as meet a broad array of diamond specialists, gemmologists and jewellery experts who are ready to share their wisdom. We are spotlighting some of the speakers at the event – many of whom are Gem-A Members – with the hope of inspiring your visit.

Sandra Page, IRV Administrator at the

National Association of Jewellers (NAJ), says: “Our Valuers’ Conference has been an important part of the valuer’s world for more than three decades. Offering the conference as part of the NAJ Summit opens up what the conference has to offer to those who may have felt that the whole event wasn’t for them – but if only they could just attend, say,



Attendees listen to one of the Main Presentations at the Valuers' Conference in 2019.



Dr Jack Ogden FGA will also be on-hand to discuss 'The Black Prince's Ruby: Investigating the Legend', one of eight 'Main

Presentations' that form the backbone of the Valuers' Conference. Other main presentation speakers include **Joanna Hardy** and **Sandra Cronan**, who will discuss sapphires and natural pearls, respectively.

And, of course, for those working as professional valuers, there are workshops designed to hone your skills and implant new ones, like perfecting your descriptive skills, refreshing your mounted diamond assessment skills, and understanding the importance of the 'letter of transmittal' that forms part of the valuation documents given to clients.



Joanna Hardy

ALL ABOUT ANTIQUES

As one might imagine, when professional valuers enter a room, the history of jewellery and identifying antique pieces becomes a big topic of conversation. This is certainly reflected in the Valuers' Conference schedule, with the likes of **Catherine Taylor** hosting an 'Identifying Antique Jewellery' workshop and **John Benjamin FGA DGA** hosting a main presentation on 'Georgian Gems and Jewels: A Window onto a Forgotten World'.



John Benjamin FGA DGA

Elsewhere, **Rachel Church**, a curator at the Victoria & Albert Museum, will discuss 'Stories in Brooches' — a product category that is growing in popularity at auction and on the red carpet. She says: "Brooches fell out of fashion in part due to the rise of very casual clothing in the 1960s and 70s. I think they picked up a bit

SPEAKER SPOTLIGHT



David Callaghan FGA

'The House of Cartier'

This talk will chart the history of the world-famous jeweller from its mid-19th century beginnings through the 19th and 20th century and its renowned works of art. Heavily illustrated, the talk highlights the ingenuity behind many of the celebrated pieces of craftsmanship and design.

Don't Miss! 'It Ain't Necessarily So'

— a masterclass, also hosted by David Callaghan, that demonstrates how the eye (and subsequently, the pocket) can be deceived. Discover the differences between reproductions of an original and those that are deliberately counterfeit, and learn how these differences are determined by the specialist.

When? Saturday, 11 September.

I first attended the Valuers Conference in 2018 to support my studies. Everyone is so friendly, welcoming and you really feel like you're part of the family.

*Charlotte Pickett MIRV,
Picketts and Pursers.*



This art deco brooch by Cartier was sold for £150,000 inc. premium in May 2021 by Chiswick Auctions whose Head of Jewellery, Sarah Duncan, will speak at the NAJ Summit 2021.

of an association with twin sets and conventionality, however unfairly! But interest in mid-century design, the popularity of 'vintage' clothes and furniture have helped to bring them back into fashion. A well-made jewel without major damage and with an original working pin would be worth having. It's worth bearing in mind that some brooches have been adapted from other jewels — they may still be lovely to wear, but that may affect their value."

Similarly interesting workshops and masterclasses will be hosted by **Rebecca Tucker** on 'Identifying Whitby Jet from its Victorian Simulants', and **Steven Jordan** on 'Anglican Church Silver: History and Values'.



A trio of laboratory-grown diamond themed talks will take place at the 2021 Valuers' Conference.

LABORATORY-GROWN CONVERSATIONS

A trio of speakers will discuss the important issue of laboratory-grown diamonds in the world of valuations, including **Julia Griffith** FGA DGA EG,

founder of The Gem Academy; **Dr Richard P. Taylor** PhD of Taylor & Co. Valuations; and **Andrew Fellows**, gemmology and diamond lecturer at Birmingham City University.

Griffith says "This practical workshop offers delegates the rare chance to handle a range of LGDs that exhibit telltale features that disclose their artificial origin. There will be the opportunity to test these stones using a range of equipment, from basic tests accessible to the average gemmologist to specialised screening tools. Advanced instrumentation and the logic of testing high-quality stones will also be discussed."

Although he doesn't believe laboratory-grown versus natural diamonds is a controversial topic, Dr Taylor does believe it "creates huge

potential risks for companies and individuals operating in the industry". He adds: "I want everyone attending to come away from the masterclass with a perspective of the market from the past, present, and future that will enable them to create a business strategy to maximise potential, minimise risk, and make the best decisions to suit their own business."



Julia Griffith FGA DGA EG



Dr Richard P. Taylor PhD

AUCTION ACTION

Valuations and auctions go hand-in-hand, which is why this topic makes up a significant portion of the Valuers' Conference schedule. **Emily Barber** and **Carole Gordon**, jewellery director and head of the jewellery department at Bonham's, respectively, will take attendees 'Behind the Scenes at an Auction House'. **Richard Winterton** of Richard Winterton Auctioneers will host a main presentation on 'The Changing World of Auctions'.

These conferences are very useful in keeping abreast of what is happening in the industry and adding to your already existing knowledge.

Diane Owen FIRV,
Susannah Lovis Jewellers.



Emily Barber



Richard Winterton

Elsewhere at the NAJ Summit, **Sarah Duncan**, head of jewellery at Chiswick Auctions, will be in attendance to discuss 'The History and Legacy of Bespoke Jewellery'. In fact, the NAJ Summit has a range of talks, separate from the Valuers' Conference, that may be of interest to Gem-A Members and their small businesses, including marketing, social media, and enhancing customer care.

GEMS IN CONTEXT

If this isn't enough to tempt you, there are a range of talks that put the world of gemmology in context, such as a session by Gem-A Graduate **Tracy Jukes** on the impact of politics, the pandemic, and Brexit on gemstone prices in the UK. **Mehdi Saadian** will give an overview of the GIA Diamond Cut Grading System; **Bob Rontaler** will help guests distinguished between real and fake amber; and **Howard Levine** will assess whether the internet is a help or a threat when it comes to selling diamonds.

Meet the World's First 'Forensic Jeweller'



Dr Maria MacLennan

Dr Maria MacLennan – 'The World's First Forensic Jeweller' – will host a main presentation on the emerging interdisciplinary area of forensic jewellery. She will discuss how the application of a wide variety of tools, techniques, and approaches within the jewellery industry have the potential to assist police and other forensic investigators with the identification of human remains.

Are there crossovers between forensics and jewellery?

I think a lot of jewellers, valuers, and appraisers are already kind of detectives, and they are very familiar with language and how important it is to use a very particular kind of language to describe jewellery. To document it, photograph it, and plot out the various features and

characteristics of the anatomy of a piece of jewellery... there are some really interesting crossovers here with forensics.

What can you tell us about your PhD in Forensic Jewellery?

I was trying to test if the field of forensic jewellery is a worthwhile and viable field. Is there a need to have these forensic jewellers or people who have this specialised knowledge and capability, whether that's training jewellers to be more forensically aware or training the police to be more knowledgeable in jewellery and gemmology? Maybe one day there will be jobs where forensic jewellers are embedded in police forces.

How do people perceive you when you tell them you're a forensic jewellery specialist?

People like to add their own embellishments and hyperbole, and there is a connotation that pops into people's heads that I'm out working at crime scenes with my gloves on and my little jewellers' loupe. It's quite a romanticised vision of what a forensic jeweller does, which I think excites people! I think because the job description hasn't really been defined and doesn't really exist yet, people are free to imagine what that might look like. However, I have consulted on real cases, been out in disaster situations, and dealt with the deceased.

At the heart of it I'm an academic, I'm a researcher, and a lot of an academics' work is quite theoretical and research based. That's the reality, I think, there's a lot of research, especially in the early phases, to build the foundation before you get the 'fun stuff'.

No matter your area of specialism or your areas of interest, the Valuers' Conference at the NAJ Summit is designed to provide an overview of our industry and a snapshot

of the conversations happening among gemmologists, valuers, retailers, scientists and auctioneers. The only question now is, do you want to join in? ■



SPEAKER SPOTLIGHT

Craig O'Donnell

Senior Valuer

'Hallmarks on Jewellery and Watches: 1800 to the Present Day'

A history of British hallmarks on jewellery and watches from 1800 indicating changes in the law as well as different Assay Office quirks in marking, why some laws were introduced and changed over the past 220 years, and how confusion can be avoided in hallmark and date letter identification.

When? Sunday, 12 September.



Attendees enjoying the Valuers' Conference in 2019.

The NAJ Summit incorporating the Valuers' Conference will take place from 11-13 September 2021, at the De Vere Staverton Park Estate in Northampton. Guests can attend for one, two or all three days, with prices ranging from £175 to £399. Accommodation costs are not included. Visit naj.co.uk/summit or email Garry.Lane@naj.co.uk for details. ➔

Valuing Asian Jewellery

Pravin Pattni FGA DGA and his son, Jaysal Pattni PJ Dip, of London's Minar Jewellers will host a workshop dedicated to valuing Asian jewellery. Here, Pravin Pattni discusses how they achieve accurate valuations.



Pravin Pattni FGA DGA



Jaysal Pattni PJ Dip

For any valuers or jewellers who do not have experience in Asian jewellery, what are some of the typical features, materials and styles associated with the category?

The term 'Asian' jewellery defines jewellery made or originating from the Asian subcontinent. It is usually made of high-carat gold that is almost invariably over 18k gold. Most of the UK Asian Jewellery is 22k hallmarked jewellery. It is traditional within Asian customs to give the daughters that are brides-to-be, and the future daughters-in-law, ornate handmade suites comprising a necklace, ear drops, bangles and forehead ornaments. The average spend on wedding jewellery is over £40,000.

When you receive a piece of jewellery for valuation, what are some of the first things you look for or notice?

The colour of Asian jewellery is richer and more yellow because of the high gold content compared to 9k and 18k gold. Both 9k and 18k gold have 375 and 750 parts per thousand of gold within

the jewellery, respectively, whereas 22k gold consists of a minimum of 916 parts per thousand. Hand manufacturing gives a more ornate look to Asian jewellery. There is more artisanal work and, while the designs look similar, they are still individually made and not machine produced.

Are there added complexities involved when valuing Asian jewellery for insurance purposes? For anyone who isn't well-informed, can you describe the differences between valuing Asian jewellery compared to other jewellery categories?

I have been acting as an expert on valuing Asian jewellery for more than 23 years. In order to make the task easier, I have divided Asian jewellery into four categories:

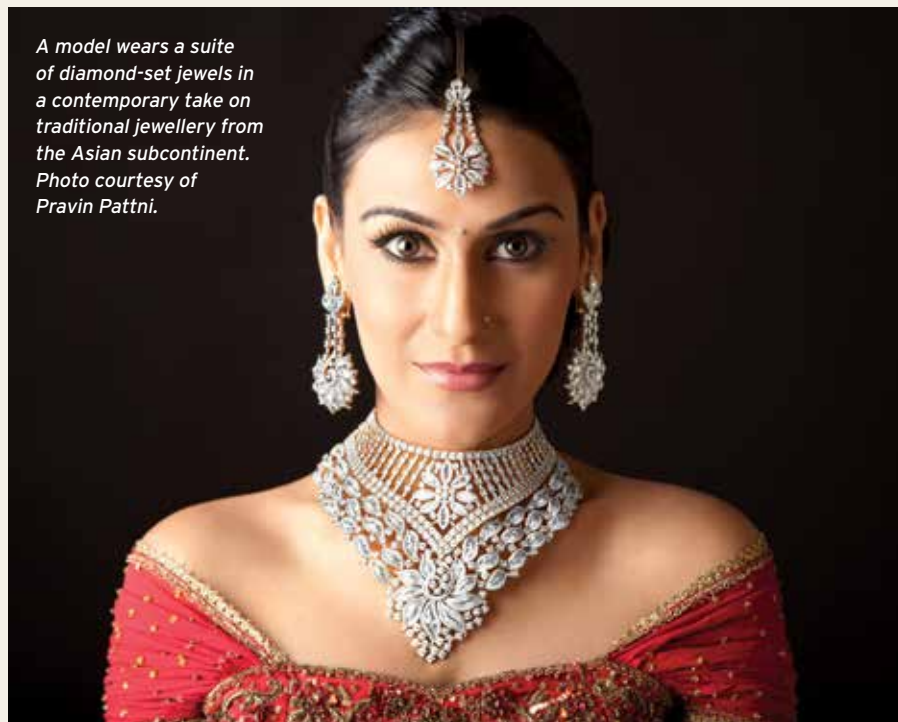
- A. Straightforward all-gold jewellery, without stones or enamel
- B. Jewellery set with synthetic stones
- C. Jewellery that is custom made
- D. Diamond jewellery with brilliant-cut diamonds, champagne-colour diamonds, and lasque-cut diamonds

If pieces don't fall into one of these four categories – for instance, they are genuine antiques or pieces from the Rajasthan and Jaipur regions of India – a valuer will need to conduct their own research about market availability and perhaps seek a second opinion.

For many years, Asian jewellery has been seen as an investment as well as a fashion piece. Most individuals and families of Asian heritage are conscious of how much gold weight is within the piece(s) they are buying. The Asian customer is more aware of the price of gold and compares that to the final price of the purchase, allowing them to determine how much they are likely to get back if they have to sell. I find that 9k and 18k gold jewellery is bought more for the fashion element, which enables the retailer to charge a higher profit margin.



A model wears a suite of diamond-set jewels in a contemporary take on traditional jewellery from the Asian subcontinent. Photo courtesy of Pravin Pattni.



What should attendees to your workshop at the Valuers' Conference expect?

I have been providing guidelines to the Institute of Registered Valuers for over 23 years. To make the task of valuing Asian jewellery easier for new valuers, I have provided clear guidance related to the value of the jewellery that's most commonly seen. With market changes, there are pieces of jewellery which are 'outside the norm'. Examples of these are bi-metal jewels with silver and 14k gold set with gemstones, champagne coloured diamond-set jewellery, rose-cut diamond jewellery and lasque diamond jewellery, and pieces mounted on 18k and 22k gold. There's also jewellery with natural diamonds and treated gemstones on the market, which means valuers need to be vigilant.

Why is the Valuers' Conference an important date in your annual calendar?

I have been to over 15 Valuers' Conferences, and every single time I have learnt something. This event is a perfect opportunity for experienced as well new valuers who want to learn the art of valuing different types of jewellery from silver, antiques, watches, diamonds, rare pieces and, of course, Asian jewellery. This is a must for every retailer who is interested in furthering their valuing skills. ■

The Pattnis' workshop is part of the Valuers' Conference during the NAJ Summit 2021, held 11-13 September at the De Vere Staverton Estate in Northampton. More information can be found via naj.co.uk.

Eighteen-karat white gold and platinum sales are increasing in the Asian market. In the 22k gold sector, jewellery with an antiquated look (oxidised finish) and a rouge finish (coppery look) are popular, as is multicoloured stone jewellery. The stones in the latter type can be synthetic or natural. Most of the natural stones are medium- to poor-quality rubies, emeralds, and sapphires; most are treated for colour stabilization and/or improvement. It is not unusual to find synthetic and natural stones in the same piece of jewellery, so valuers must be especially cautious.

To what extent is knowledge of the history of Asian jewellery an essential in order to value pieces?

Asian designs have evolved over the years. The first big impact and increased demand came when Asians from Uganda came to the UK in 1970, followed by the immigration of East African Asians between 1972 and 1980. Until then, it was difficult to find good-quality Asian jewellery retailers. The Asian market has now matured and there is now an overlap of design styles, hence the proliferation of contemporary and vintage pieces. Whenever there are pieces of jewellery from 'The Raj' era (1858-1947), they need to be identified and valued accordingly.

There are a few auctions of Asian jewellery by reputable auction houses. The values for these pieces are much higher than the normal market value. A good knowledge of these pieces is essential so as not to apportion incorrect values for rare or vintage pieces.

Hand manufacturing gives a more ornate look to Asian jewellery.



Traditional Asian jewellery like these bangles is typically crafted in 22k yellow gold. Photo courtesy of Pravin Pattni.

The Importance of LUMINESCENCE

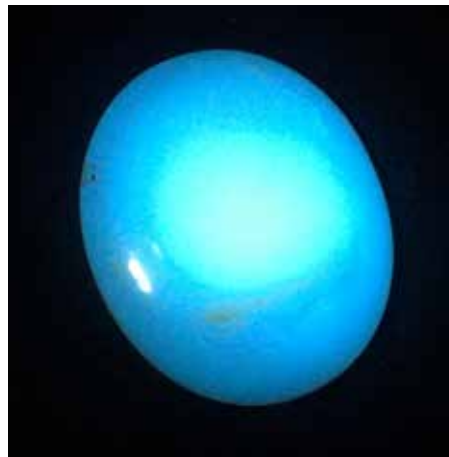
By Alistair McCallum

Luminescence is defined by Webster's Dictionary as 'the low-temperature emission of light'. This property can be split into categories, including photoluminescence, caused by electromagnetic radiation (for more information see Read, 1991; Robbins, 1994; and Luo and Breeding, 2013); mechanoluminescence, as induced by mechanical action; cathodoluminescence, which is produced by an electron beam in a vacuum; and electroluminescence, generated by an electrical current.

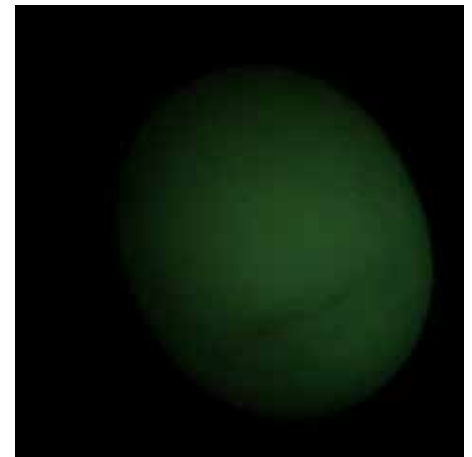
The most commonly used and important type of luminescence for gemmological purposes is photoluminescence; the property is invaluable in gemmological enquiry and can be of use at any level of gemmology, from quickly checking a stone in the field to longer, more advanced testing in a laboratory. Here, we explore some of the reasons behind luminescence, specifically fluorescence.

EQUIPMENT

There is a huge potential for the investigation of materials via their responses to differing stimuli. Improved technology has allowed for the development of sensitive and expensive gemmological lab equipment, such as the energy-dispersive X-ray fluorescence (EDXRF) machine, which uses X-ray fluorescence to ascertain the chemical



Left: An opal fluorescing bluish white after exposure to long-wave ultraviolet (LWUV) light.



Right: The same opal phosphorescing green after the LWUV light source is removed.

composition of a material. However, we are mostly focusing on applications outside of the lab.

Materials can have quite different reactions when stimulated by different wavelengths, and 'in many cases it is the effects seen by a stone irradiated by first one, and then the other source, which prove to be of value' (Lewis, 1977: 30). In gemmology, we tend to use either UV radiation of a wavelength that is 'long' (365 nm) or 'short' (254 nm). The reason for these exact wavelengths is historical: it was cheap to manufacture lamps that produced these wavelengths. Long-wave ultraviolet (LWUV) light used a phosphor-coated glass tube, while short-wave UV

(SWUV) utilised electrically excited mercury vapour within a glass tube (Robbins, 1994: 7). These devices also emit a range of wavelengths, reducing their accuracy. For example, traditionally, LWUV has peaks at 365, 404, and 435 nm (Williams, 2007).

Now these limitations no longer apply, as we can manufacture light-emitting diodes (LEDs) that are able to emit a range of very specific wavelengths. However, we still use 365 nm and 254 nm as standard measurements, because they allow direct comparisons to be made between known responses. Although there is no other particular benefit, gem-specific wavelengths could be used in the future to create more accurate gemmological tools.

Currently, the most common tools are the UV torch/keyring and the UV viewing cabinet. The torch/keyring typically uses only LWUV, whilst the cabinet offers a switch between both LWUV and SWUV but is not very portable. LWUV devices are very cheap and portable, giving instant results in the field. Devices that have SWUV tend to be more expensive and less portable; however, they still offer considerable value over expensive lab equipment and can reduce potentially unnecessary certification costs.



Phosphor-coated glass tube (historically used in long-wave UV radiation).



Left: LWUV torch and keyring. Right: UV viewing cabinet (compatible with LWUV and SWUV).

These factors make both options very practical and economical methods of getting results fast.

Note that UV, especially SWUV, can be damaging to the eyes. Sensible precautions are advised.

HOW PHOTOLUMINESCENCE WORKS

In order to photoluminesce, a material must be able to absorb energy from a source operating at a higher level and convert it into visible light. For photoluminescence to occur, an electron has to gain enough energy to jump from its original orbital level (grounded state) to a higher energy level (excited state). This is due to interactions between the incident radiation and the material's electrons. For example, when UV radiation strikes a material, certain electrons absorb this UV and jump up a distinct energy level. After a short time, they drop back down to their original level and emit the excess energy in the form of visible light. This is in accordance with Stokes' Law, which states that 'a material's luminescence is always of a longer wavelength than that of the original excitation' (Read, 1991: 128). If the wavelength is longer, the energy is lower.

Just as with the causes of colour in gemstones, luminescence can be caused by elements inherently present in the material, impurities, or crystal defects. In the case of crystal defects, the incoming energy is enough to free an electron that has been trapped there, allowing it to roam freely through the crystal lattice and leaving a positively charged vacancy. It travels until it is captured by another positively charged gap and releases energy in the form of light.

Elements whose presence in materials cause luminescence are referred to as activators. Just as with colouring elements, there are certain elements that are often the culprits. Some of these are familiar as colouring elements, such as chromium and manganese, while others are less familiar. Rare earth elements (REE) tend to be fairly interchangeable within materials; however, there are often a mixture of either light or heavy rare earth elements due to similar atomic sizes grouping together. This can result in complex mixed spectrums and variable responses (Robbins, 1994: 45-48).

In many materials, the increase in energy needed to photoluminesce is not possible to achieve with UV as the energy level is too high to reach with this level of excitement. However, when there is an activator impurity present, it can introduce

a new energy level that is higher than the original orbital level, but lower than the much higher excited state – a level that the electron is able to reach.

After reaching a higher energy level, the electron quickly returns to its original state, sometimes via a series of lower energy levels, at each of which it emits a packet of energy. If the electron releases some of this energy in the form of visible light, then the material's luminescence can be observed. This is true of blue-

Light Rare Earth Elements

Element	Symbol	Atomic Number
Lanthanum	La	57
Cerium	Ce	58
Praseodymium	Pr	59
Neodymium	Nd	60
Promethium	Pm	61
Samarium	Sm	62
Europium	Eu	63

Heavy Rare Earth Elements

Element	Symbol	Atomic Number
Gadolinium	Gd	64
Terbium	Tb	65
Dysprosium	Dy	66
Holmium	Ho	67
Erbium	Er	68
Thulium	Tm	69
Ytterbium	Yb	70
Lutetium	Lu	71



Left: Fluorite without UV excitation showing no fluorescence. Right: Fluorite under LWUV showing bright blue fluorescence.

fluorescing fluorite; this is caused by the REE activator europium, and in this case the changing energy levels happen wholly within these europium atoms (Robbins, 1994: 42; Read, 1991: 27).

In some minerals an interaction between elements must take place for luminescence to happen. For example, in red-fluorescing calcite the fluorescence is due to manganese; neither the manganese nor the calcite is able to absorb the UV. Instead, any lead that is present absorbs the UV, and transfers

the energy to the Mn, which then emits red light. Elements that absorb energy and pass it to elements that emit it as luminescence are called *sensitisers* (Robbins, 1994: 42-43).

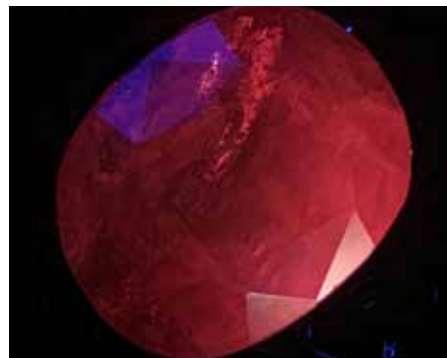
Frequently, luminescent materials involve multiple atoms of different elements, which together constitute an activator system. Interactions between electrons of metal atoms and O atoms are often the bases of a typical system (Robbins, 1994: 42-43).

HOW LUMINESCENCE CAN BE INHIBITED

There are certain conditions under which a material we would expect to luminesce does not. There are three distinct situations where this may happen:

1. When there are elements present that 'quench' the luminescence.
2. When the concentration of activator atoms is too high, quenching occurs.
3. When the material is outside its optimal temperature for luminescing, thermal quenching occurs.

Quenching elements absorb the energy before it can be emitted as light. This happens in ruby, where chromium ions (Cr^{3+}) are the activator impurity and iron ions (Fe^{3+}) are the quenching element. Trivalent iron (Fe^{3+}) is able to replace trivalent aluminium (Al^{3+}) in the corundum matrix. It then involves itself in the charge-transfer process and essentially steals away the incoming UV energy from the chromium. The iron electrons become excited, but in this case emit the energy as heat instead of red light. Thus, when the ruby has a low concentration of iron and a high concentration of chromium, it will fluoresce bright red when subjected



Top: A Burmese ruby fluorescing brightly under LWUV. Bottom: A Thai ruby shows a more subdued fluorescence under LWUV.

to LWUV radiation but, if the level of iron is higher, the fluorescence will be dimmer. This can be a quick indication of whether a ruby is from a source where there is low iron content, such as Burma, versus a locality with high iron content, such as Thailand (Fritsch and Waychunas, 1994: 160).

Concentration quenching is when the concentration of activator atoms is so high that the energy is passed around due to the atoms being more concentrated. Eventually, the energy may be converted to another form of radiation, such as heat, and so we do not see the luminescence that we would expect.

Thermal quenching usually happens when the temperature is increased and molecular vibrations within the material interfere with energy transfer. Different materials can be affected differently and consequently have different temperatures where luminescence is inhibited (Robbins, 1994: 42-43).

IDENTIFICATION (SYNTHETICS, SIMULANTS AND TREATMENTS)

Luminescence can be a useful tool in the separation of synthetic, imitation, and treated material from natural stones. Two good examples are jadeite and emerald, where impregnated or dyed material may elicit a response not observed in natural gemstones (Faber, 2018).

Ruby is another example where synthetic versions will usually fluoresce a strong red. This can also happen in nature, but combined with the observations of a clean and perhaps poorly cut stone it is grounds for considerable suspicion. LWUV can be a quick method to separate a parcel for further tests and in this respect is a great time saver.

Opal has varied luminescent responses; this is because it is a very variable material. Precious white opal can phosphoresce green. This happens very weakly, at best, with synthetic or simulated material (Hodgkinson, 2015: 369).

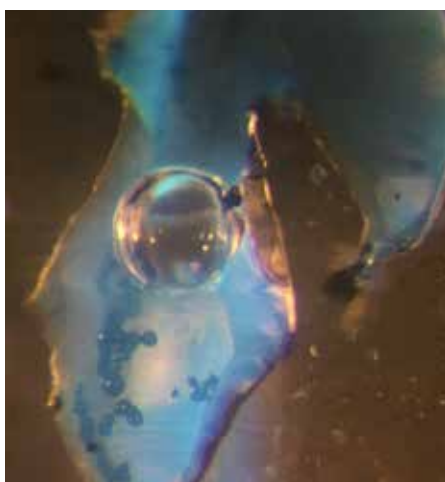
Fluorescence is also an important test in distinguishing feldspar (orthoclase moonstone in particular) from synthetic spinel. When moonstone is subjected to SWUV, it is common to see a weak pinkish red fluorescence. This is probably due to iron impurities (interesting, as Fe is usually a quencher; see Robbins: 123). Synthetic spinel can have a range of



These two photographs were both taken under low-level room lighting, with the effects of exposure to LWUV shown in the right-hand photo. Top row (from left): Synthetic corundum (bright red), glass-filled corundum (dull red), natural corundum (medium red). Middle row (from left): tourmaline (inert), synthetic corundum x 2 (both bright red). The bottom row comprises three pyrope/almandine garnets (all inert).

fluorescent responses depending on the colouring elements used. However, colourless adularescent spinel is most likely to be misidentified as moonstone. This spinel can fluoresce whitish blue, not a typical response from moonstone (Hodgkinson, 2017).

A very good – and often overlooked – use of the property is to confirm the presence of heat treatments in corundum. SWUV can cause a chalky whitish-blue fluorescence in corundum that has undergone high-temperature heat treatment. This can be hard to see and may require immersion and careful inspection of the stone, as it most often appears in colourless zones and planes. In ruby, a filter may be required, as the



These photos show two different examples of fluorescent petroleum with bubbles in quartz with the addition of LWUV. The phone on the left is taken at high magnification, the one on the left at moderate magnification.



*Top left: Heat-treated sapphire.
Top right: the treated sapphire under SWUV.
Bottom: A close-up of the treated sapphire's surface showing zones.*

fluorescence can be overpowered by the red colour; this same effect is commonly seen in synthetic sapphire. The cause for this is the Ti^{4+} charge transfer. When there are sufficiently high concentrations of Ti-Al pairs, fluorescence becomes visible. In natural sapphire this is rarely observed, as Ti-Al concentrations are only high enough in some rare cases (usually Malagasy/Sri Lankan stones). However, when natural stones are heated to improve colour, the Ti^{4+} that is present in the stones, often as rutile, combines with the Al and forms charge-transfer pairs (Hughes and Emmett, 2005).

ENJOYMENT AND INSPIRATION

Apart from the considerable practical applications, photoluminescence can also be a lot of fun. Collections of dull-looking rocks can be transformed into magical and intriguing items. Lasers can be built using fluorescent materials. Fascinating inclusions that fluoresce separately to their host material are a joy. These are guaranteed to catch the attention of any budding young gemmologist or mineralogist, and are an accessible way to inspire the next generation, which is always valuable.

Photomicrography is a hobby that many gemmologists develop alongside their occupation, and capturing luminescent effects can bring a new perspective and challenge.

CONCLUSION

There are a huge variety of applications for luminescence in gemstone testing.

It is often true that 'fluorescence is not a diagnostic test, and results can vary dramatically even within the same gemstone species' (Faber, 2018). This does not stop it from being an essential tool in the gemmologist's kit. Further understanding of what causes these variable responses may yield valuable gemmological knowledge.

In 1994, Emmanuel Fritsch and Glenn Waychunas stated that fluorescence 'is certainly one of the underdeveloped areas of gemmology' (Robbins, 1994: 173). This is just as true now as it was then. With greater understanding of the subject and increasingly precise equipment, we can make the best use of these fascinating properties. Perhaps it is time to revisit luminescence and take it to the next (electron) level. ■

*All photos courtesy of the author.
References available upon request.*



ABOUT THE AUTHOR

I am a gemstone dealer in Hatton Garden working for my uncle who has taken me under his wing to teach me the trade. He recommended that I take the Gem-A Gemmology Diploma course, being an FGA himself. I'm glad I took it, as it has allowed me to have the confidence to buy and sell coloured stones as well as answer our clients' questions with authority.

The subject of luminescence is one that is often overlooked due to its rare use in diagnostic testing. However, there is still much to be gleaned from the understanding of it, as well as it being a fascinating subject in and of itself – at least in my opinion! That's why I chose to write about it for my student project.

As to what I am doing now? Well, there are plenty of projects in the oven, which will be announced over time. However, most of my time is dedicated to trying to offer a good service to our customers.



Unsquare Dance is an 18 kt white gold and diamond bracelet designed by Ana Katarina, one of the panellists at the conference. Photo by Emilja Guobyte-Krzeminski, courtesy of Ana Katarina.

Report from the 11th Annual Gold and Diamond Conference

Though many conferences scheduled for 2020 and 2021 have been cancelled or rescheduled, others have shifted to an online or hybrid venue. Lisa Koenigsberg provides a report from Initiatives in Art and Culture's three-day online event.

The COVID-19 pandemic has resulted in the cancellation of many conferences, and in the restructuring in an online format of others. Under the theme "New Realities, Future Promise", the Initiatives in Art and Culture (IAC)'s 11th Annual Gold and Diamond Conference was convened virtually from 13-15 July 2021. The three-day event focused on two imperatives: Governments, along with civil society and the industry, must preserve the magic, romance, and emotional power that gold, diamonds, and jewellery represent for the consumer. Secondly, they must also engage in the hard work required to meet the imperatives of the United Nations'

Sustainable Development Goals (SDGs), including responsible sourcing and practice while raising environmental and social awareness. At the threshold of a decade of change, challenge, and opportunity, IAC reached out to deepen partnerships and collaborations with organisations, individuals, and entities through this shared undertaking.

Built on the foundations laid by IAC's 2008 event "Green: Style, Significance, and Sustainability", with its considerable focus on gold and other precious substances and responsible practice, this year's virtual conference was made possible by the development of a robust digital initiative in 2020.

Addressing the mandates of our time and the demands of the future, the 2021 conference married that digital approach with the breadth and depth that has characterised the organisation's annual in-person event. Key to the event's realisation was the generosity of the event's sponsors: GIA (Gold), DMIA and Sarine (Contributing), and Royal Asscher (Pathfinder).

Lisa Koenigsberg, the founder and president of IAC, opened the conference stressing that a commitment to authenticity, artisanry, and materials undergirds all considerations undertaken by IAC, along with a mindfulness of sustainability and of our obligations

Governments, along with civil society and the industry, must preserve the magic, romance, and emotional power that gold, diamonds, and jewellery represent for the consumer.

to the planet. These are in keeping with IAC's goal to initiate dialogue and challenge to integrate change without fear. Opening remarks were then made by **Philippe de Montebello**, former director of The Metropolitan Museum of Art and current chair of the Hispanic Society Library and Museum, underscoring IAC's commitment to jewellery as a part of visual culture (the so-called fine and decorative arts) and as documentation of an age. Using the Met's collections as a lens, de Montebello discussed the breadth and unity of visual culture. He noted that jewellery and other objects crafted from precious materials are both aesthetic accomplishments and central historical records reflective not only of a patron's specifications, but of the beliefs, values, and aspirations of a culture.

In her keynote remarks, **Iris van der Veken** (Responsible Jewellery Council) shifted the focus to the critical social, moral, and environmental impact played by every sector involved in the creation of jewellery. She emphasised 2020 – 2030 as a decade of action, a time during which the many dimensions of the jewellery world must not just affirm but deliver on the realisation of the goals articulated in the aforementioned SDGs. Discussing the criticality of initiating change – incremental or more encompassing – van der Veken articulated the RJC's goals, including its commitment to the SDGs, and to realise them by working in concert with other organisations.



Mine staff at the Lucara Diamond Karowe mine in Botswana. Photo courtesy of Lucara Diamond.



The three winners of IAC's awards. From left: Edward Asscher (Royal Asscher), winner of Initiatives in Art and Culture Award for Extraordinary Contributions to the Diamond and Jewelry Industries. Cristina Villegas (Pact) and Robert Weldon (GIA), recipients of the Fourth Annual Award for Leadership in Responsible Practice in Jewelry.

The opening session focused on the tension between internationalism and the specifics of a particular country or bloc's restrictions, at the same time highlighting the importance that origin determination can play in advancing positive international goals, such as the elimination of trade in conflict goods and environmental devastation. In 'Global Expectations: Language, Legislation, Regulation, and Transformation', (moderated by gem and jewellery consultant **Katherine Andrews**), panellists **George Cajati** (U.S. Department of State), **Tiffany Stevens** (Jewelers Vigilance Committee), and **Mark Hanna** (Richline) considered the importance of language regarding these concepts, as well as the ways national and international accords can result in global transformation. The importance of traceability and sustainability to these international challenges garnered significant attention in 'Transparency: Diamond Origin and the Consumer'. The mine-to-market journey of a diamond was the focus of conversation among **Anisa Costa** (Tiffany & Co.), **Eira Thomas** (Lucara

Diamond), **Cathryn Ramirez** (GIA), **David Block** (Sarine Group), **Allison Charalambous** (Brilliant Earth), **Stephen D'Esposito** (RESOLVE) and **Rob Bates** (JCK), who addressed the divergent meanings of and pathways to ascertaining a diamond's origin.

The importance of origin and sourcing was prevalent in the discussion of gold, also a store of value for millennia, with starting with the question 'where does your gold come from, and why does it matter?' The panellists were **Angel Camacho**, a criminal analyst with over 10 years of experience working with transnational organised crime; **Luis E. Fernandez** (CINCIA and Wake Forest University); **Shamiso Mtisi** (Zimbabwe Environmental Law Association); **Jen Peyser** (RESOLVE); and **Joanne Lebert** (IMPACT). Their expert insights highlighted both challenges – including the importance of regional variation and specificity – and opportunities, such as the social impact of the ASM sector and determining responsibly sourced gold. They also identified

successful strategies, among them the use of aerial photographs for environmental assessment.

The importance of responsible mining throughout the supply chain and the narratives associated with sourcing and origin was the basis for the second day's discussions. In 'Romancing the Stone', **Dave Bindra** (B&B Gems) was in conversation with **Roger Dery** (Roger Dery Gem Design) **Prince Dimitri of Yugoslavia**, jeweller and author of *Once Upon a Diamond: A Family Tradition of Royal Jewels*; and **Paul Schneider** (TWIST) explored the power of trusting suppliers when sourcing stones, store design, and web presence to impactfully convey the meaning of jewellery to the consumer. **Kyle Roderick**, journalist and author of *Bejeweled: The World of Ethical Jewellery* and Lisa Koenigsberg spoke with designers **Ana Katarina** and **Alice Cicolini**, who focused on two principal elements of sustainability: the sourcing of stones and metal, and employing traditional crafts and engaging those who have mastered them to ensure that these skills and cultural memory are maintained for future generations.

Aimee Boulanger (IRMA), **Nick Cotts** (Newmont), **Cristina Villegas** (Pact), **Feriel Zerouki** (De Beers Group), and **Robert Weldon** (GIA), guided by **Jennifer-Lynn Archuleta** (*Gems&Jewellery*), brought expertise to a discussion of industry best practice

The question and importance of origin was a deep vein in the discussion of gold, also a store of value for millennia.

Initiatives

in Art and Culture

that benefits mining communities. The discussion addressed such topics as sensitivity to, and partnership with, indigenous communities, greater equity in profit sharing, positive social and environmental aftermath, and the organisational and corporate initiatives with artisanal miners and the strategies designed to realise them.

Underscoring the importance of new approaches to sourcing, the day closed with the presentation to Cristina Villegas and Robert Weldon of IAC's Fourth Annual Award for Leadership in Responsible Practice in Jewellery. This award is presented to members of the jewellery industry, or part of a jewellery-focused organisation, that have made a transformational contribution to ethical

sourcing and responsible practices in the worldwide gem and jewellery trade. The award recognises Weldon and GIA's signal role in developing an artisanal miner's guide, and the subsequent collaboration with Villegas and Pact. This pairing brought to the project concern about the profiting in price negotiations by brokers and regional traders from miners' lack of knowledge about stones, resulting in a pilot program in Tanzania.

Following a continuation of the previous day's discussion on sourcing and best practice which was joined by Mark Hanna and **Ruby Stocklin-Weinberg** (GemFair Initiative, De Beers Group), the final day of the conference explored diamonds. British jewellery historian **Jack Ogden**, author of *Diamonds*:

An Early History of the King of Gems, moderated a panel on the importance of diamond cut and its impact on consumer behaviour. 'The Heart of the Matter' featured **Al Gilbertson** of GIA, author of *The American Cut: The First 100 Years*, **Edward Asscher** (World Diamond Council), whose sixth-generation company introduced an enhanced version of the famed Asscher cut; and **Eve Goldberg** (William Goldberg), whose father pioneered the Ashoka cut that the company continues to celebrate.

'Total Clarity: The Socioeconomic Impact of Diamonds', a dialogue on the ways the industry has sought to address social impact and community benefit, was discussed by **Sheila Khama**, policy adviser on the mineral, oil, and gas industries for Botswana; **Pat Dambe** (De Beers Group); and **Eira Thomas**. They considered how the industry can be fit for the future in which profitability must be married with a corporate bedrock of social engagement and environmental responsibility.

The conference concluded with the presentation of the first Initiatives in Art and Culture Award for Extraordinary Contributions to the Diamond and Jewellery Industries to Edward Asscher. Reflective of IAC's belief in collaboration, community, and commitment, this award recognises and honours extraordinary ongoing engagement and dedication to positive change. The presentation of the award was highlighted by a conversation between Asscher, previous panellist Shamiso Mtisi – who also leads the Kimberley Process Civil Society – and **David Bouffard** (Responsible Jewellery Council), wherein they discussed the way forward for both larger producers and smaller operations, including artisanal miners. ■

For complimentary registration to watch all or part of "New Realities, Future Promise," visit <https://wirestream.tv/customer/iac/2021/07-13/>. To learn more about Initiatives in Art and Culture, visit <http://artinitiatives.com>.

Miriam, one of the miners that PACT works with in Tanzania. Photo courtesy of PACT.



Pursuing a Gemmological Passion for

Sarah Steele FGA DGA reflects on how her childhood passion – and her time at Gem-A – has led to her dream career.

WHITBY JET

I fell in love with gemstones – all gemstones, but especially Whitby jet – as a child. I was one of those kids with a pocket full of stones.

At seven I discovered Whitby jet on a family holiday. If I am honest, it was love at first sight. I knew that this material was important to me, but I couldn't have envisaged the journey on which it would take me. I was always good at science at school but was also drawn to the arts, particularly three-dimensional crafts. I was taught to polish jet at eleven and started my business with the help of my mother, Isobel Caldwell. Initially, we sold jewellery to friends and family, and then on the national craft-fair circuit.

Although I loved working jet as a lapidary product, I was also fascinated with the material from a scientific standpoint. In 1989, I enrolled as a geology undergraduate at Durham University, hoping to learn more about the geological processes controlling the formation and gem quality of jet. It became evident, however, that there had been little research into jet specifically. After I graduated, I worked on building my jewellery business. I opened my shop, The Ebor Jetworks Ltd, in Whitby in 2009. But my vocation for research was still strong, and the more I read on the subject, the more I realised that the published data on jet was incorrect.

Whitby jet has been used as a gemstone for 5,500 years in the British Isles, and with such a rich history of usage, myth and legend often prevail over scientific fact. The longer these myths are perpetuated, the more real they seem to become. It's a widely held

belief, for example, that Whitby jet is fossilised monkey puzzle tree. This myth predates the field of paleobotany, when all fossilised wood was referred to as 'araucarian material'. The modern monkey puzzle, *Araucaria araucana*, is distantly related to some of the species we find in Whitby jet, but it is incorrect to say that jet is made from monkey puzzle wood, as these ancient species would

have looked completely different. Despite it having been disproved many times over the last hundred years, this myth is still perpetuated, generally by the jet manufacturers themselves, as it forms the basis of a nice marketing tool.

Recognising that much of this questionable data was also being published by the gem authorities, I approached Gem-A. Although my

Some sea-washed Whitby jet samples that Sarah Steele worked with at Ebor Jetworks Ltd. Photo courtesy of Sarah Steele.



concerns were heard, it was politely explained to me that I was an earth scientist, not a gemmologist, and therefore my findings were personal opinion and not based on gemmological research. I signed up for the Gemmology Foundation course that evening. I completed my Gemmology Diploma and Diamond Diploma by 2015, but of course, these qualifications represent just the beginning of a gemmology career, and the route into gemmological research is not necessarily an easy one.

My first hurdle was to become a field gemmologist, as no scientifically collected research suite of jet materials had ever been assembled. There are considerable perils associated with jet collecting, from descending 200-foot perilous cliffs in Asturias, Spain, to collecting samples of Spanish jet, to trekking four miles inside abandoned Victorian jet mines in North Yorkshire to study jet in the host stratigraphy. The next battle is to find an institution prepared to support this research. While this is not easy from a British perspective – and even more difficult for a subject as under-researched as jet – the amazing thing about gemmology is the fact that it is a young science. As such, it is possible to network at conferences with the founding members. To receive encouragement and mentorship from people like the wonderful Alan Hodgkinson would be almost inconceivable in other scientific fields. Armed with references and validations supplied by these contacts forged through Gem-A, after five long years I received an offer to return to



Sarah Steele in the Victorian jet mines in North Yorkshire. Photo courtesy of Sarah Steele.

Whitby jet has been used as a gemstone for 5,500 years in the British Isles, and with such a rich history of usage, myth and legend often prevail over scientific fact.

Durham University to do the first jet-related PhD since 1933. I am creating a new nomenclature system for a gem group; this includes defining the individual species, identifying the gem varieties present, and building the databases required for laboratory identification from the ground up.

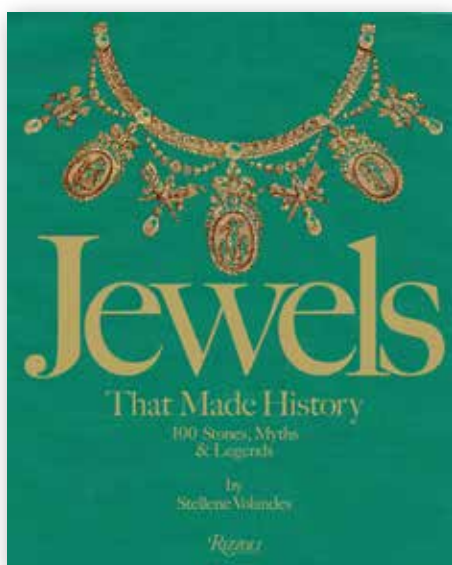
I would loosely describe my project as 'archaeo-gemmology', a term coined by pioneering gemmologist Dr Çiğdem Lüle, who herself has become both an encouraging mentor and friend. Mine is a multidisciplinary project, drawing on expertise not only from archaeology, but also organic chemistry, hydrocarbon geology, and material sciences.

Traditional gem-testing techniques designed for transparent crystalline gems are not always applicable for jet, so it is very much a case of thinking outside the box. I do, however, feel incredibly privileged to be involved in this project; not every research gemmologist gets the opportunity to create an entirely new gem-nomenclature group.

I hope to complete the PhD stage of my research within the next 18 months, with a long-term goal of establishing country-of-origin determination for jet. From a research perspective, however, I am just at the start of this journey. There is so much more to learn, but I truly am living out my childhood dream. ■

Jewels That Made History: 100 Stones, Myths & Legends

Reviewed by Jennifer-Lynn Archuleta



***Jewels That Made History:
100 Stones, Myths & Legends***

By Stellene Volandes, hardcover, 224 pp., illustrated, publ. by Rizzoli, New York, NY, 2020, **£35.00.**

Elizabeth Taylor. Wallis Simpson. Empress Farah Pahlavi. Some famous people are also world-renowned for the jewellery that adorned them, whether they favour a particular designer or acquire pieces from many different brands throughout their lifetimes. Then there are the jewels – the Hope diamond and the Star of India among them – whose reputations precede them, that are famous no matter who owns them. Stellene Volandes focuses on both individual and jewel in her most recent volume, the elegant *Jewels That Made History: 100 Stones, Myths & Legends*. As would be expected

in a volume such as this, the photographs and illustrations are a feast for the eyes. But while the images often take up full pages or double-page spreads, there's no denying the fascinating narrative found in the book's text.

While Volandes is quick to note that she is not writing a book on the history of jewellery, the pieces themselves act as snapshots of the times during which they were produced. While the author does take the reader through millennia – from a pectoral set with lapis lazuli, carnelian, and turquoise found in the tomb of King Tutankhamun (Tut) to the 128 ct Tiffany Diamond worn by Lady Gaga to the 2019 Academy Awards – her focus is to examine the design, material, locations, and lore associated with these pieces.

Volandes begins by looking back chronologically before the Christian era; the first image of the narrative is of a bone and stone piece from the Neolithic Age. Moving to the aforementioned pectoral, then to the Greece of Alexander the Great, she demonstrates how

gemstones and precious metals acquired via conquest helped establish a base of wealth for an empire. She explores briefly how rulers were able to establish their power through the wearing of jewellery, and how lore established gemstones as having certain powers that could be transferred to the wearer – the ancient Egyptians believed that carnelian and turquoise both warded off evil, while opal was believed to be good luck in antiquity (only to be associated with evil in the nineteenth century, a reputation that still plagues the stone). Certainly, we know conquest led to the increased circulation of materials; pearls are an example that is cited on several occasions. It is clear, however, that this is not the only way a locality is discovered or gets attention: the tale of Hector Dimas Barbosa discovering Paraíba tourmaline in the late twentieth century demonstrates this.

By the time the Justinian Code of 529 AD dictated the wearing of certain gemstones as the right of the Byzantine emperor only – sapphires and emeralds



The Vladimir tiara, commissioned by the wife of Grand Duke Vladimir of the Romanov dynasty, is now owned by Queen Elizabeth II. Photo by Peter Macdiarmid, courtesy of Getty Images.

among them – jewellery was an overt, visible symbol of a monarch's power. The centuries that follow do nothing to diminish this reputation; we see objects famous for their association with royalty, such as the Black Prince's Ruby, the Palatine of Bohemian crown (the oldest known surviving crown of England, dating to the late fourteenth century) and the pearl earring Charles I of England famously wore until it was removed after his execution.

Despite its deep reach into history, the book's pace truly picks up with the nineteenth century, when Volandes

The pieces themselves act as snapshots of the times during which they were produced.

begins exploring the jewellery of the ruling families of Europe, a theme that carries through to the present day. Several pieces were gifts from Napoleon to his brides, including the Cameo tiara, which belonged to Joséphine and which was inherited by her son Eugene (now the official wedding tiara of Sweden's royal family, who are among his descendants), and the Marie Louise diadem. This latter crown originally featured 79 emeralds that were sold, individually, by Van Cleef & Arpels and later replaced with turquoise. It was donated to the Smithsonian Natural History Museum in Washington, DC by American philanthropist Marjorie Merriweather Post in 1971.

Vignettes throughout the book tell of the diamond and pearl stars by Köchert that Elisabeth of Bavaria (Empress Sisi) wore in her hair and the sales of the French crown jewels in 1887, some never to be recovered. The Romanovs (and the impact of the Russian Revolution on their collections) are mentioned in several different places, although surprisingly, no Fabergé is included. The book does cover the sale of the royal jewels by Christie's



Empress Farah Pahlavi at her 1967 coronation, wearing some of the Imperial Crown Jewels of Iran. These include a crown of 1,541 stones and an emerald necklace and earrings, all designed by Van Cleef & Arpels. Photo by Carlo Bavagnoli, courtesy of The LIFE Picture Collection via Getty Images. ➔



This necklace from Dreicer & Company, comprising diamond, natural pearls, and platinum, is now part of the collection of the Metropolitan Museum of Art in New York City. As of July 2021 it is not on display. Photo courtesy of Historical Views/Alamy Stock Photo.

in London in 1927. Of particular note is a double-page spread of the Vladimir tiara, commissioned by Grand Duchess Vladimir (formerly Marie of Mecklenburg-Schwerin) and sold to Queen Mary, consort of George VI. The photo shows the tiara with the 15 emeralds that Queen Mary had prepared to wear instead of the original pearl drops; Queen Elizabeth II, the present owner of the tiara, has worn it with the pearls, the emeralds and, in a 'minimalist' approach, on its own without either embellishment.

The British royal family is the monarchy with the greatest presence in the book, even before their increased popularity in the 1800s. Volandes begins with a

write-up of Queen Victoria as 'the original influencer'. Her engagement ring – a serpent with ruby eyes – is mentioned just before her sapphire and diamond coronet, designed for her by Prince Albert himself. The increased popularity of Whitby jet for mourning jewellery to be worn after his death (and then her own) is also covered. Other notable entries include the five-strand Cartier Festoon necklace, originally owned by Margaret Greville and left upon her death to her friend the Queen (later Queen Elizabeth the Queen Mother); the regalia first seen on television during the coronation of Elizabeth II; the art deco emerald and diamond necklace that the Princess of Wales wore as a headband during a tour of Australia in 1985; and, of course, the sapphire-and-diamond engagement ring given to Lady Diana Spencer by the Prince of Wales in

1981, which now graces the hand of the Duchess of Cambridge. A section at the end, '#TIARAWATCH', shows photographs of the Duchess of Sussex and Princess Eugenie of York on their wedding days, wearing a diamond bandeau (1932) and the Greville Emerald Kokoshnik Tiara (1919), respectively.

It would be a mistake, though, to think that Volandes only discusses the crown heads of Europe. India's impact on the jewellery world – from the collection of the Maharajahs of Patiala and Baroda, to the diamond mines of Golconda to the Indian influence on Cartier's Tutti Frutti necklace and other pieces – are seen throughout the book. Volandes also discusses the impact of the Egyptian revival on the art deco period, and the Imperial Crown Jewels of Iran are not to be ignored. Pieces belonging to American First Ladies, such as a sunburst brooch belonging to Jacqueline Kennedy (as well as pieces received when she became Jackie Onassis) and an American flag ring

from Bulgari owned by Nancy Reagan – along along with the pin collection of Madeleine Albright, former Secretary of State and U.S. Ambassador to the United Nations – are also explored.

This is in keeping with a recurring theme, as Volandes discusses localities, brands, and trends: the effect of celebrity and popular culture on jewellery houses and individual pieces. If royalty and nobility were the original celebrities, starting in the 1920s we begin to learn about the collections of actors and actresses, and the latter half of the book is interspersed with luminaries such as Marlene Dietrich, Ava Gardner, Liza Minnelli, and Jennifer Lopez. The 68 ct Taylor-Burton diamond, famously purchased for Hollywood actress Elizabeth Taylor by then-husband Richard Burton, is among the pieces discussed (Taylor's ownership of the pearl known as La Peregrina – another gift from Burton, though they were of course not the only famous owners – is also included.) Volandes does not neglect the glamour of fictional characters with jewellery



This earring, made from pearl, gold, and enamel, was removed from the ear of King Charles I of England after his execution in 1649. Photo courtesy of Bridgeman Images.

This book acts as a collection of glances; pauses along the path of jewellery's history.

associations (a scene from the movie *Casino* where the characters played by Robert De Niro and Sharon Stone are surrounded by Bulgari) and pieces of fictional provenance ('The Heart of the Ocean' from *Titanic*).

Readers are also introduced to individuals and companies who ushered the trade to where it is today. Stories about mineralogist George F. Kunz and the aforementioned Wallis Simpson are included, as would be expected, as are designers Coco Chanel, David Webb, and JAR. But some readers may be less familiar with Ganna Walska, the Polish opera singer who had a stunning jewellery collection that was catalogued, but without relevant information that would identify the pieces, such as provenance, designer, or grade. Or Millicent Rogers, the Standard Oil heiress and jewellery connoisseur who became known for pairing designer pieces with the Native American silver and turquoise that were found in her beloved New Mexico. We are briefly introduced to Kazuko, the former Fulbright scholar who created a line of crystal jewellery sold exclusively at Barneys. And we learn of Dreicer & Company, a family company with a

flagship store on New York City's Fifth Avenue that was known for bringing natural pearls to the American market. Jewels from Dreicer's were considered a status symbol in the Gilded Age. But the company closed in 1927, selling its inventory to Cartier for USD2.5 million (equivalent to USD38.67 million, or GBP27.83 million, in 2021 currency).

Trivia enthusiasts will find plenty of reasons to enjoy this book. Some, such as the De Beers advertising campaign of 1948 known as 'A Diamond Is Forever' that popularised diamond as the engagement gem of choice, are well known in the trade. Other stories may be less familiar. Among the facts that Volandes presents to her readers: Legend has it that the first engagement ring, rather than just a wedding band, was given in 1477 by Archduke Maximilian of Austria (later Holy Roman Emperor Maximilian I) to his betrothed, a daughter of Charles the Bold of Burgundy known as 'Mary the Rich'. Why did Elizabeth I wear pearls so often? Because they indicated her wealth and her power as monarch. They were a symbol of her victory over the pearl-rich Spanish. When Mary, Queen of Scots was executed in 1587, Elizabeth came into possession of the Hanover pearls, which had been gifted to Mary by her mother-in-law, Catherine de Medici. Yellow and rose-gold jewellery rose in popularity in the 1940s, when platinum, the metal of choice of the art deco period, was requisitioned for the war effort. Lastly, the coronet created for the investiture of the Prince of Wales in 1969 was designed, in part, to recognize Prince Charles' disinclination to wear a wig. These, and so many other fascinating stories, are accessible to readers thanks to Volandes' research.



One of the localities Volandes shines a spotlight on is Paraiba, Brazil, where tourmalines with remarkable blue colour were first found by Brazilian prospector Hector Dimas Barbosa. The pear-shaped 1.62 ct Paraiba tourmaline here is set in a platinum ring with a pear-shaped rose-diamond surround. Photo courtesy of Sotheby's.

Jewels That Made History would be of interest to anyone interested in gems and jewellery. But it is of particular use to someone just beginning in the field, be it from a gemmological bent or a fashion interest. This book acts as a collection of glances; pauses along the path of jewellery's history. For that reason alone it is a fine addition to anyone's library. But Volandes' real success is in condensing each fascinating, relevant story to one page; a pit stop, allowing readers to consider where along this timeline they'd like to visit longer. In this vein, it would make an excellent gift for someone at the beginning of their own path, someone developing a hobby around or considering a career in the jewellery world. ■



This art deco bracelet by Boucheron is composed of 604 rubies, emeralds, sapphires, and diamonds (54.10 tcw) and is mounted in platinum, osmium, and gold. Photo courtesy Siegelson New York.

Breaking News from the Summer 1991 Issue of *Gems&Jewellery*

Gems&Jewellery is officially 30 years old.

The publication has evolved from the newsletter format of its early days. Still, it continues to meet the purpose that was present in its second issue: To keep Gem-A Members informed about the industry.

Originally a joint effort between Gem-A and the Society for Jewellery Historians (SJH), *Gems&Jewellery* – then known as *Gem & Jewellery News* – became Gem-A's trade publication in 2008. Members would continue to receive the *Journal of Gemmology* as well; in between each issue of the peer-reviewed journal, readers would be treated to articles of historical interest, retail content, book and museum reviews, and other trade-related information.

The two publications kept Members abreast of changing trends and news within the gem and jewellery industry.

Like the issue that preceded it, the second *G&J* caters to a diverse audience. The lead article, by archaeologist Martin Henig, concerns Roman-era engraved gemstones excavated from sites in Caerleon, Wales, and Snettisham, Norfolk. Of particular note is a then-recent acquisition by the British Museum: a silver buckle (or 'waist-clasp' as the museum calls it)



designed by Patriz Huber, member of a Darmstadt artists' colony founded by Ernst Ludwig, Grand Duke of Hesse, in 1898.

The buckle (right), which was made at the Pforzheim factory of engraver Theodor Fahrner, is made of hammered and oxidized silver, and is set with four green-stained chalcedony cabochons. The designer and manufacturer's marks on the back and the London hallmarks from 1902 on the front are intact. The buckle, part of the British Museum's exhibition, 'Collecting the 20th Century', is still part of the museum's Britain, Europe and Prehistory department, but is no longer on display.

The second issue also recounts the opening of a laboratory in Bahrain due to the demand of pearl identification services in the area. It discusses the growing popularity within the UK of coloured stones outside the 'Big Three' – examples include rubellite and tanzanite – as well as the acceptance of nontraditional cuts, such as trillions and half-moons. The newsletter also warns about jewellery customers falling prey to investment scams, and highlights a material readers would no doubt become familiar with in the coming years: sapphires from Montana, USA. ■



The hammered silver buckle, set with four green-stained chalcedony cabochons, was designed by Patriz Huber ca. 1901 and was acquired by the British Museum 90 years later. Photo courtesy of the British Museum.

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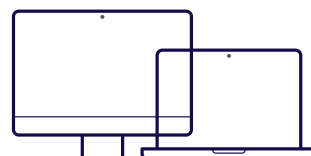
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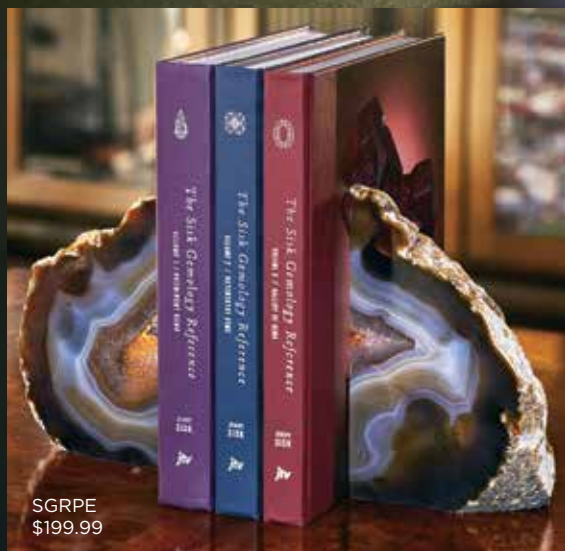
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