

Gems & Jewellery



Summer 2022 / Volume 31 / No. 2

SUSTAINABLE
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ETHICAL METALSMITHS

UNDERSTANDING THE
IVORY ACT 2018

CURRENT EVENTS AND
THE DIAMOND INDUSTRY

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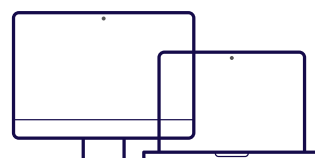
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Gems & Jewellery

SUMMER 2022

ALL THAT (RESPONSIBLY) GLITTERS

We take a look at the history and current activities of Ethical Metalsmiths, a community for responsible jewellery.



A pendant with a 2.52 ct pink tourmaline set in hand-fabricated 18K gold-tapered bezel alongside a 0.02 ct Australian diamond accent set in 100% SCS certified recycled gold. Photo courtesy of Alexandra Hart.

10



COVER PICTURE

The Vittoria pendant, from Ethical Metalsmiths member Niki Grandics, features a 58 ct rutulated hematite from the Pyramid mine in Novo Horizonte, Brazil, in a hand-fabricated 14K recycled gold setting accented by 0.15 tcw fair trade Australian black spinels. In the background sits a large Brazilian amethyst and quartz geode from Tucson, Arizona. Photo courtesy of Enji Studio Jewelry.

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Photo copyright Maggie Campbell Pedersen.

24

IMITATION JADE FROM BANGKOK

For her student project Montira Seneewong-Na-Ayutthaya PhD FGA examined materials that are commonly used to imitate jade.

IVORY LAW 2018 EXEMPTIONS & IDENTIFICATION

Gem-A President Maggie Campbell Pedersen FGA explains the exceptions to the law as well as testing and other methods to identify artefacts.



32

Photo by mj0007, courtesy of iStock.

Contributors	4	Gem-A Education: GemIntro	28
CEO Comment	5	Technology: The ALO Photo Sphere	30
Gem-A News	6	Gem-A Education: Olga González FGA DGA	36
The Big Picture: A 'Stairway to Heaven'	8	Conference Report: Sinkankas Symposium	40
Trade Shows: Las Vegas 2022	14	Book Review	42
Industry Report: Sanctions on Russia	18	Last Impression	44
Gender-Neutral Jewellery	21		

Gems & Jewellery

Summer 2022 Edition Featured Contributors



1. NICOLE AHLINE

Nicole Ahline completed her undergraduate studies in geology at Cornell College. She then enrolled at the Gemological Institute of America (GIA) for the Graduate Gemologist (GG) program, followed by the Gem-A Gemmology Diploma program. In 2016, she was hired by GIA as a gemmologist in the gem identification department, where she is now a senior staff gemmologist. While at GIA she has been a frequent contributor to gemmology journals and has given talks on numerous topics. Miss Ahline's current research interests include origin of color in coloured diamonds and geographic origin of corundum and emeralds.

2. OLGA GONZÁLEZ

The CEO of Pietra Communications, Olga González has over fifteen years of experience working within the field of gem and jewellery communications. A certified gemmologist (FGA DGA) and appraiser, she specializes in growing companies within the trade, empowering through storytelling. Her clients are designers, manufacturers, trade associations, suppliers, stone dealers and diamond-grading laboratories. Ms González currently serves as the president of the Women's Jewellery Association New York Metro Chapter Board, is a past president of the Public Relations Society of America New York Chapter, chaired the inaugural 15

Under 35 Awards and is a regular and award-winning contributor to trade and consumer publications on gem and jewellery-related topics.

3. E. BILLIE HUGHES

E. Billie Hughes is a founding gemmologist at Bangkok's Lotus Gemology. An award-winning photographer and photomicrographer, she has won prizes in the Nikon Small World and Gem-A competitions, among others. Her writing and images have been featured in books, magazines and online by *Forbes*, *Vogue*, *National Geographic* and more. Ms Hughes completed her FGA in 2013. In 2019, the Accredited Gemologists Association awarded her their Gemological Research Grant. Ms Hughes is a sought-after lecturer and has spoken around the world to groups including Cartier and Van Cleef & Arpels. In 2020 Van Cleef & Arpels' L'École School of Jewellery Arts staged exhibitions of her photomicrographs in Paris and Hong Kong.

4. JESSA RIZZO

Jessa Rizzo is originally from Chicago, Illinois. She completed her undergraduate studies in geology at Augustana College in 2017 and is currently working on earning her FGA. She completed her GG at GIA in 2018, the same year she was hired by GIA as a staff gemologist in the gem identification department. Miss Rizzo is a frequent

contributor to *Gems and Gemology*, and has participated in preparation of research samples and gemstone faceting. Miss Rizzo's current research interests include unique geographic origins of corundum and uncommon inclusions in gemstones.

5. 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.

6. SUSI SMITHER

Susi Smither founded the Rock Hound in 2015, dedicating herself to the craft of designing and creating jewellery that is transparent and ethically and responsibly sourced. Her designs show the intersection of her interest in science and her obsession with colour. The Rock Hound's award-winning work has been featured on the pages of *Vogue*, *Professional Jeweller* and other publications. Ms Smither earned her FGA from Gem-A in 2011; she also holds a JDT from GIA and a BSc in maths and management from Kings College London.

Straight from the heart

Opinion and comment from CEO Alan Hart FGA DGA

Summer is here, and I hope that Members and Students are able to appreciate the warmer weather. It has been an eventful spring, both for the gem trade and the general populace. Whether enjoying the longer days and balmy nights from home or a treasured vacation spot, it is my hope that the coming months usher in a more relaxed pace for our community.

There is a sense of excitement in the UK this year as we celebrate The Queen's Platinum Jubilee. For seventy years Queen Elizabeth II has ruled over the United Kingdom and the Commonwealth. This makes Her Majesty the longest living monarch and longest-serving monarch in British history, and the second-longest reigning monarch in world history (behind King Louis XIV of France). The year has been dedicated to commemorating this momentous event. In early June we enjoyed a four-day bank holiday with spectacular events such as the Platinum Party at the Palace. Events to observe the Jubilee are scheduled through the end of the year. Jewellery lovers might want to attend the Royal Collection Trust exhibitions on the Queen's Accession and Coronation – held at Buckingham Palace and Windsor Castle, respectively – where pieces worn by Her Majesty, including some from her personal collection, will be on display.

Even with the celebratory atmosphere the Platinum Jubilee has brought to the UK, we cannot help but feel concern and sadness about current global events. Ongoing conflicts between nations, shortages of necessities, the recent worldwide outbreak of monkeypox and the ongoing COVID-19 pandemic have left many people in a place of great uncertainty and fear. Our hearts go out to those who are struggling.

During this challenging and unsettling time, Gem-A is steadfast in our commitment to provide outstanding education and Membership services in support of the worldwide gem and jewellery trade. Nothing changes our goal of delivering the highest calibre of information related

to the gemmology field. To that end, we have been working on the Conference, scheduled for 6 November. We have a great line-up of speakers who are sure to captivate attendees. We are looking forward to welcoming first-time attendees and returning visitors alike to London to experience all that an in-person Gem-A Conference has to offer.

During this challenging and unsettling time, Gem-A is steadfast in our commitment to provide outstanding education and Membership services in support of the worldwide gem and jewellery trade.

Gems&Jewellery always has a range of topics to offer its readers, and the Summer issue is no exception. Our lead article introduces readers to Ethical Metalsmiths (EM), a not-for-profit organisation whose members not only create beautiful jewellery but are dedicated to educating about best practices in responsible design, manufacture and business operations through projects such as the Radical Jewelry Makeover.

Other content in the Summer issue discusses the Ivory Act 2018, which went into effect in the UK on 6 June; a look at the popularity of gender-neutral jewellery; a review of an innovative photography tool, and a report from the eighteenth annual Sinkankas Symposium (this year's topic: alexandrite and



Silvia Furmanovich won both Best in Innovation and the People's Choice Award at the COUTURE Design Awards with these earrings that comprise handcrafted silk tapestries, 0.81 tcw diamond, 4.65 tcw rubellite, 1.65 tcw tanzanite, 1.62 tcw sapphire and 18K yellow gold. Photo courtesy of Silvia Furmanovich.

colour-change gemstones). Industry expert Russell Shor analysed the effect of Russo-Ukrainian War on the diamond supply chain while Olga Gonzalez, who we profile in this issue, visited JCK Vegas – celebrating its thirtieth anniversary this year – and the COUTURE Show, which hosted its Design Awards.

Stay safe and healthy, take advantage of the summer weather and enjoy the newest issue of *Gems&Jewellery*!

Best Wishes,
Alan Hart FGA DGA

Gem-A News

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

QUEEN ELIZABETH SCHOLARSHIP TRUST NOW OPEN FOR APPLICATIONS

The Queen Elizabeth Scholarship Trust (QUEST) 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. 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 2022 to March 2023. Any UK resident age 18 or older who would like to improve their craft skills is eligible to apply. Applications open twice a year, with the current round opening on Monday, 11 July and closing on Monday, 15 August. Founded in 1990, to celebrate the 90th birthday of HM Queen Elizabeth, The Queen Mother, QUEST 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 craftsman. HRH The Prince of Wales is a patron, and the Marquess of Salisbury and the Earl of Snowdon are vice-patrons. Since its creation QUEST has granted £5 million towards the training and education of craftspeople. The not-for-profit organization accepts donations and offers sponsorships in order to further their work.

Certain courses offered by Gem-A would be covered by the QUEST. For more information, go to www.quest.org.uk.



**SUPPORTING
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CRAFTSMANSHIP**

EXHIBITIONS CELEBRATING THE PLATINUM JUBILEE SHOW JEWELS WORN BY HM THE QUEEN

To celebrate HM The Queen's seventy-year reign, Windsor Castle and Buckingham Palace will display jewels she has worn in public over the decades.

Windsor Castle's exhibition, *Platinum Jubilee: The Queen's Coronation*, celebrates the events of 2 June 1953. Scheduled for 7 July – 26 September, the Coronation Dress and Robe of Estate will be shown along with the Coronation Necklace and Earrings. The Queen's iconic collection of brooches will also be in the Windsor Castle exhibition. Her Majesty is well known for these pieces, which often represent present and former Commonwealth countries as she meets with their representatives. Among the brooches at Windsor Palace are the Canadian Maple-Leaf Brooch, the Australian Wattle Brooch and the New Zealand Silver-Fern Brooch.

Buckingham Palace will host an exhibition in the State Rooms called *Platinum Jubilee: The Queen's Accession*, to run from 22 July to 2 October. Alongside portraits taken

by Dorothy Wilding, historic jewellery will be on display. Pieces include the Diamond Diadem, created for the coronation of George IV and worn by Queen Elizabeth II since the day of her coronation (and on an annual basis to and from the State Opening of Parliament); the Delhi Durbar Necklace, inherited from her grandmother, Queen Mary, in 1953; and a pair of diamond, gold and silver bangle bracelets dating to the nineteenth century.

Entry to Windsor Castle's *Platinum Jubilee: The Queen's Coronation* starts at £26.50 for adults (£16.50 for children 5 – 17, £19.50 ages 18 – 24). Admission to *Platinum Jubilee: The Queen's Accession* starts at £30.00 for adults (£14.50 for children 5 – 17, £17.50 ages 18 – 24).



Photo courtesy of Royal Collection Trust/© Her Majesty Queen Elizabeth II 2022.

THE ROYAL MINT CREATES JEWELLERY WITH GOLD FROM ELECTRONIC WASTE

Spring 2022 saw the launch of 886 by Royal Mint, a unisex, sustainable jewellery collection that is predominantly made with the precious metals recovered from used electronics. It claims to be the only luxury jewellery brand to use 100% recovered gold sourced from discarded electronics. In partnership with Excir, a Canadian technology firm, The Royal Mint use a patented formula will extract and recover over 99% of the metals used in products such as laptops, mobile phones.

The new line, named for the year The Royal Mint was believed to be established, debuted with twenty-eight pieces, the majority of which were produced at The Royal Mint's manufacturing facility in Llantrisant, South Wales. A new plant, also in South Wales, is expected to open in 2023 to process up to ninety tonnes of circuit boards per week, resulting in hundreds of kilograms of gold per year while creating jobs for the United Kingdom.

886
THE ROYAL MINT®

RESPONSIBLE JEWELLERY COUNCIL ANNOUNCES NEW LEADERSHIP

New appointments to the Responsible Jewellery Council's (RJC) board of directors were announced at the organisation's annual meeting in London on 1 June. RJC chair David Bouffard announced the results of the elections, which selected member forum representatives to the board of directors. The following people are now members of the board of directors: Raj Kumar

Jain (Gemstones Corporation) now represents the forum for diamond and gemstone traders, cutters and polishers, while Ankur Goyal (MMTC-PAMP) was elected for the precious metal traders, refiners and hedgers forum. Arien Gessner (Richline Group) and Roger Forman (Marathon Company) stand on behalf of the jewellery manufacturer and/or wholesaler group and Pravin

Pattni (Minar Jewellers) represents the jewellery retailers. Edward Asscher (World Diamond Council) was elected for the trade association forum. Rajesh Neelakanta (BVC Logistics) was re-elected for the service industries forum.

Founded in 2005, the RJC has over 1,600 member companies in seventy-one countries that range in scope from mining to retail activities.

CORAL EMITS SOUNDS THAT REPORT ON REEF HEALTH

Warmer water temperatures are leading to coral bleaching, during which algae called zooxanthellae die off from the reef, causing the coral to turn completely white. In 2016 approximately 70% of the world's coral reefs were damaged, leading to fears that 90% of coral reefs would disappear by 2050. A team of scientists from the UK and Indonesia discovered that coral reefs emit sound and created an algorithm that can pick up the differences between a healthy and a damaged reef.

The team, led by marine biologist Ben Williams of the University of Exeter, recorded four types of coral reefs – healthy, degraded, newly restored and mature restored – in the Spermonde Archipelago, located in the 'Coral Triangle', off the southwest coast of Sulawesi, Indonesia. Follow-up testing with the subsequently created algorithm showed that it was 92% accurate in identifying the health of a given reef. The study was published in the July 2022 issue of *Ecological Indicators*.



Increasing temperatures of ocean water lead to coral bleaching, as in this reef located in the Coral Triangle near Indonesia. Photo by velvettfish, courtesy of iStock.

OBITUARY

Dayananda Dillimuni FGA (1939-2022)



The gem industry, especially the gemmological education sector in Sri Lanka, sadly lost one of its pillars on 6 February 2022, when Mr Dayananda Dillimuni FGA peacefully passed away after a brief illness.

Mr Dillimuni's contributions to the field began in 1978, when he obtained both his FGA and his German qualification in gemmology (DGemG) after graduating from the Institute of the German Gemmological Association in Idar-Oberstein. Immediately after returning to Sri Lanka, he attended to several gem-related activities, including the set-up of a modern lapidary under the Foreign Investment Advisory Committee (FIAC) program.

Stepping away from these activities in 1984, he focused on the teaching of gemmology when he began working as a visiting lecturer at the State Gem Corporation in Sri Lanka. When the research and training division of the State Gem Corporation was established as a separate body under the name of Gem & Jewellery Research & Training Institute, he served as a lecturer for several terms.

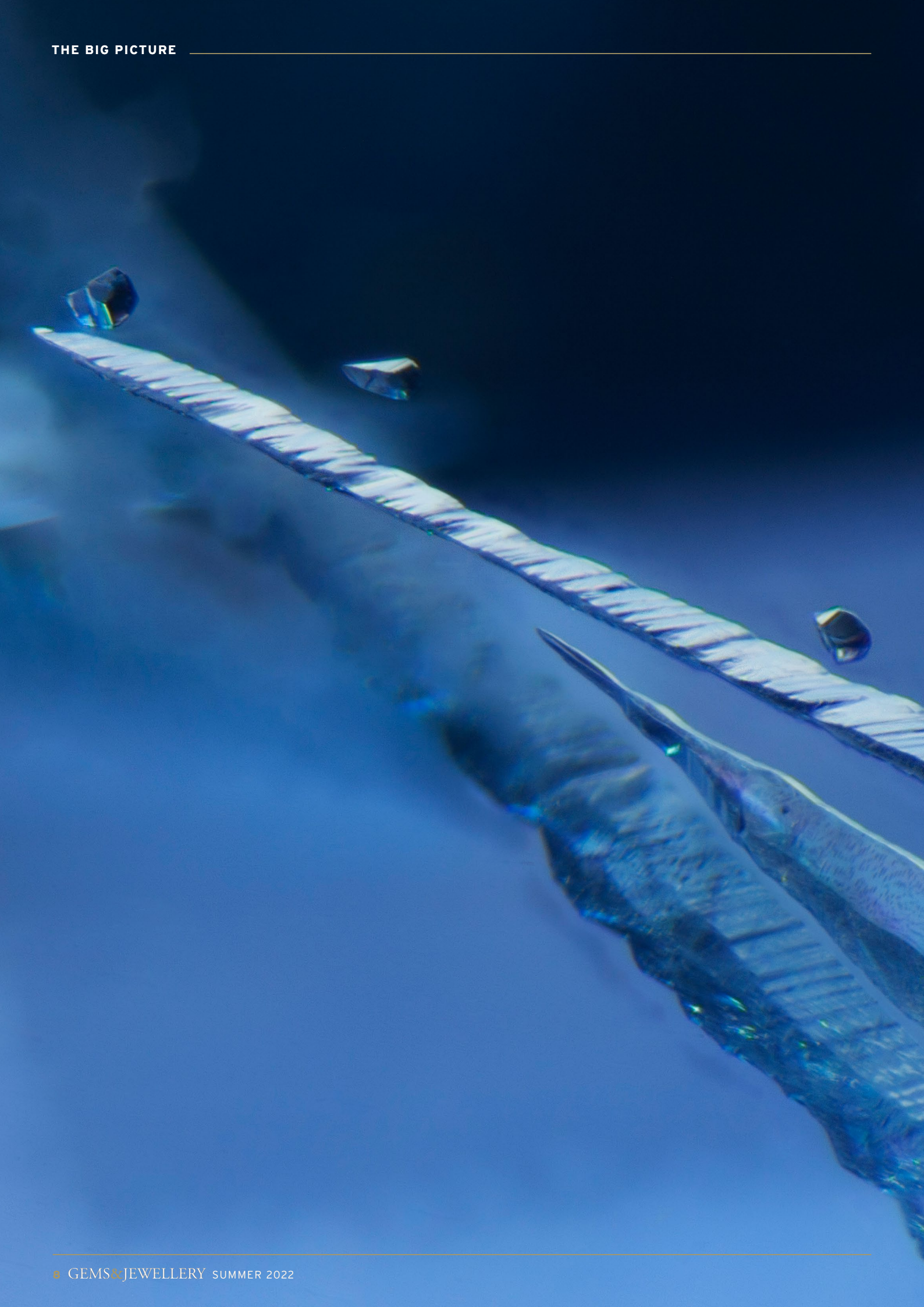
Mr Dillimuni started a lapidary project with British gemmologist Richard Wilmott in 1989. Under the name Gemstone Technical Services, they to produce replica sets of world-famous diamonds out of cubic zirconia. That same year he started teaching gemmology for Gem-A, which he continued to do until his death.

In 1994 Mr Dillimuni was invited to teach for the certificate course in gemmology as a visiting lecturer at the University of Moratuwa in Sri Lanka; he taught for the university until 2018.

When the MSc programme in gemmology at the Postgraduate Institute of Science in University of Peradeniya, also in Sri Lanka, commenced in 1997, Mr Dillimuni enrolled in the teaching panel and continued as a visiting lecturer until 2012. In 1999, he became the sole proprietor of Allied Gemmological Institute and Laboratory (AGIL). He created AGIL not only to teach gemmology, but to perform gemstone testing and issue laboratory reports. AGIL is registered as a Gem-A Accredited Teaching Centre (ATC); Foundation and Diploma Courses are taught there under the Tertiary and Vocational Education Commission of Sri Lanka.

Mr Dillimuni's legacy will live on in the hearts and minds of everyone he interacted with, as well as those he reached and inspired but never met.

*Ashman Amarasinghe FGA
Gemmological Institute of Colombo,
Sri Lanka*



Apatite Crystals Create A 'Stairway to Heaven'

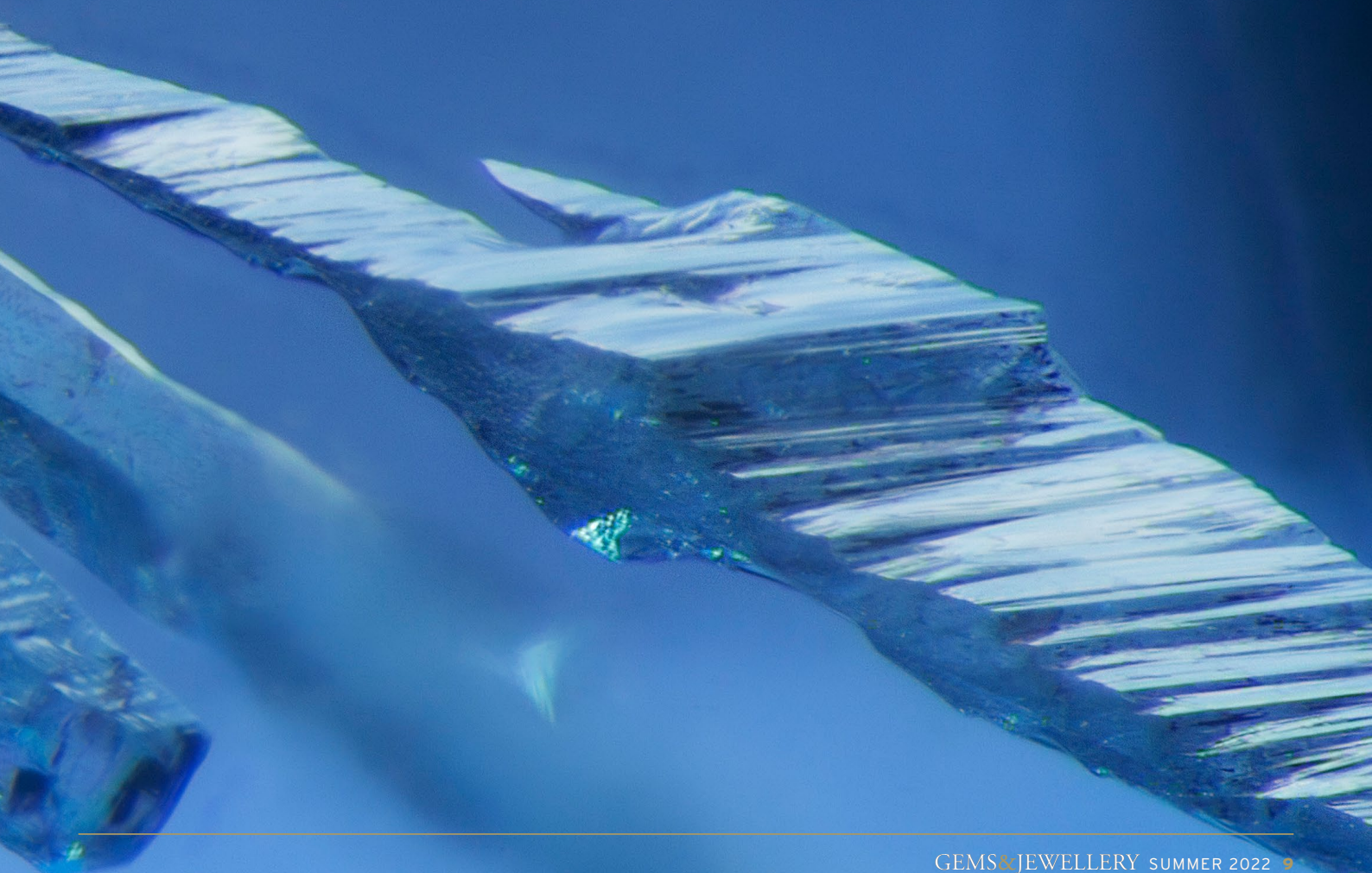
When examining an untreated sapphire, E. Billie Hughes FGA finds a common inclusion presenting in a rather unusual way.

One of the joys of gemmology is microscopy. While gemstones are known for their beauty on the outside, sometimes they are just as spectacular within. With each gem examined, the microscopist is able to traverse worlds millions of years old that have been trapped in a crystalline microcosm.

Recently, the author had such an experience when she spotted this inclusion scene while testing an untreated sapphire that was submitted to the laboratory. The features of the stone were consistent with those of sapphire from Myanmar (Burma). Analysis with micro-Raman spectroscopy, identified the crystals in the centre of the inclusion scene as apatite.

While apatite is a common inclusion in corundum, its appearance in this sample made for a memorable impression. To this microscopist's eye, the elongated apatite crystal in the centre of the scene was reminiscent of a stairway to heaven reaching deep into its sapphire host. This scene, frozen in time, was a marvel that was not soon forgotten. ■

Elongated apatite crystals, identified with micro-Raman spectroscopy, extend across this dramatic inclusion scene reminiscent of a stairway to heaven within an untreated sapphire from Myanmar (Burma). The image was captured with a combination of transmitted light with a blue filter for colour correction and diffuse fibre-optic illumination. Photo by E. Billie Hughes/Lotus Gemology; field of view 4 mm. Specimen courtesy of Kiarttichatra Intarungsee.



All That (Responsibly) Glitters

A Look at Ethical Metalsmiths

Calling themselves a 'community for responsible jewellery', Ethical Metalsmiths helps their members make responsible choices in their own practices, but also impacts the industry through their own decision making. Here, we look at their history and current activities.

Anyone who logs onto the Ethical Metalsmiths (EM) website will find that the U.S.-based not-for-profit, which calls itself 'a community for responsible jewellery' has resources to help their members around the globe not only find answers to their own questions but to become active in industry issues. EM does not act as a certification scheme or reporting agency — "We are not a watchdog," points out Alexandra Hart, a longtime member who has served as the organisation's executive director (2020-2022) and president (2017-2020).

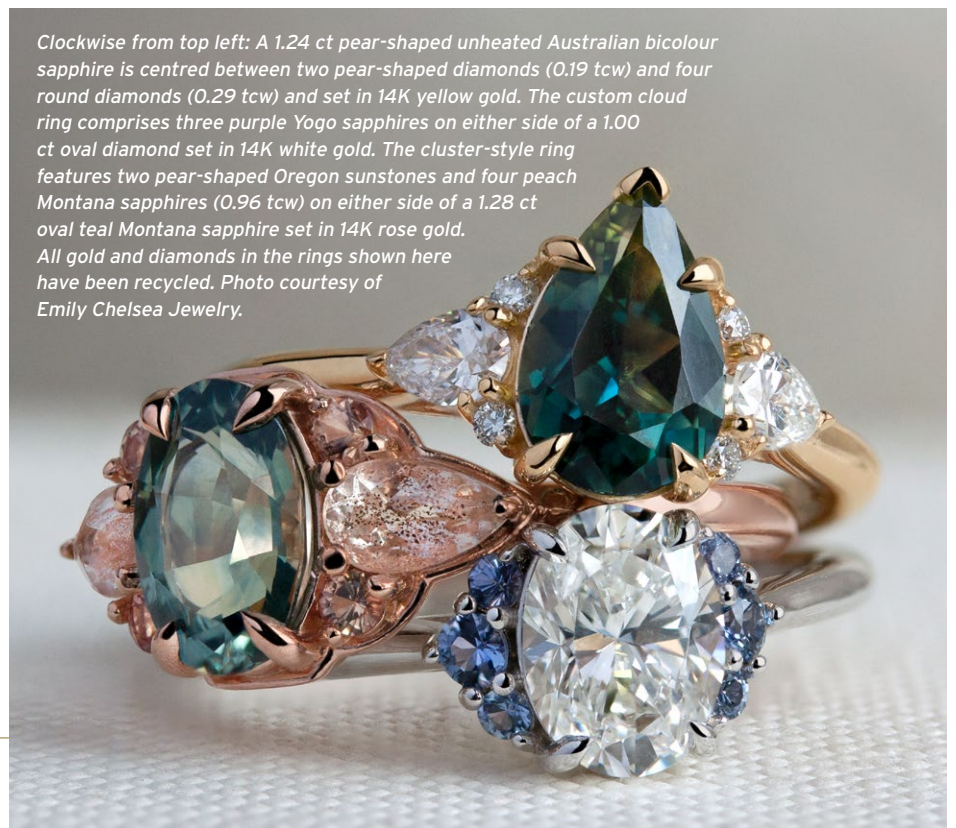
Ethical Metalsmiths is a resource for education and positive action. From student projects to mentoring programmes to coalitions for professionals, members at all levels can learn how to engage in sustainable and responsible practices. In turn, members establish relationships with other professionals while working for the greater good of the trade. Niki Grandics of Enji Studio Jewelry noted that "Being a member of Ethical Metalsmiths has benefited my jewellery practice in a number of ways. I have learned so much about responsible sourcing and all of its nuances from the EM community. One of the most beneficial aspects for me has been the community itself and the energy of working together with activists and business owners who share my values to move the needle forward on shared goals. Everyone I have met in EM has been so open to sharing their knowledge. And I have also had

the pleasure of serving on a few of the organisation's committees." In fact, their mission is 'inspiring responsible jewelry practices through education, connection and action' — an appropriate objective for a group that is well known for overseeing the first Fairmined gold purchase in the United States.

In the past eighteen years, EM has become a force to be reckoned with in the jewellery community. In the words of Barbara Wheat, who became executive director in May 2022, "Ethical Metalsmiths was founded with the purpose of creating positive change in the jewellery industry through providing education to jewellers, retailers and consumers about jewellery

material supply chains, and to support responsible sourcing and manufacturing alternatives." While this is what Christina T. Miller and Susan Kingsley hoped for when they formed a group to educate jewellery artists on issues related to gold mining, they probably did not envisage its current level of influence in 2005, when they received almost no reaction after presenting at the Society of North American Goldsmiths Conference. Ethical sourcing was not, at that time, a much-discussed topic; social media was almost non-existent; and the millennials that would champion both were not yet in their consumer ascendancy. But in time, Ethical Metalsmiths would come into their

Clockwise from top left: A 1.24 ct pear-shaped unheated Australian bicolour sapphire is centred between two pear-shaped diamonds (0.19 tcw) and four round diamonds (0.29 tcw) and set in 14K yellow gold. The custom cloud ring comprises three purple Yogo sapphires on either side of a 1.00 ct oval diamond set in 14K white gold. The cluster-style ring features two pear-shaped Oregon sunstones and four peach Montana sapphires (0.96 tcw) on either side of a 1.28 ct oval teal Montana sapphire set in 14K rose gold. All gold and diamonds in the rings shown here have been recycled. Photo courtesy of Emily Chelsea Jewelry.





The Dual ring is both customisable and gender neutral. It is shown here with 1.8 tcw Australian bicolour sapphires in 18K Fairmined yellow gold. Photo courtesy of Enji Studio Jewelry.

own and, through its growing audience, it helped the trade to understand how sustainable, responsible and transparent practices could be adopted.

The story of Ethical Metalsmiths begins with two strangers on opposite coasts of the U.S. researching the same topic and looking to educate the same audience. Ms Miller was writing her master's thesis in jewellery and metalsmithing in North Carolina, while Ms Kingsley, a California-based visual artist, was preparing an article for *Metalsmithing Magazine*. They were reading the same materials, and

Gold' campaign began. This created a strong alliance between EM and Earthworks and led EM to have access to Oxfam as well. Soon Ethical Metalsmiths began to pick up traction. The founders were asked to speak at conferences, including the 2006 SNAG Conference. There, just one year after they presented to such little response, they proposed a resolution in support of responsible mining that passed with overwhelming support. Ms Miller, Kingsley and Horning attracted potential members and aligned with other causes; additional projects,

Jewellery professionals who join the organisation do so out of a desire to work in a principled industry while building community.

they were each shocked and devastated about the human, environmental and political impact of the gold they were using. Introduced in the winter of 2004 by a mutual friend who knew that both women were deeply affected by these issues. They created Ethical Metalsmiths that same year, with the intention of raising awareness among the art jewellery and education community (they were joined in 2005 by Jennifer Horning, a jeweller who holds a degree in environmental law). In a 2021 podcast, Ms Miller recalled that EM was started as a 'civil society coalition', and not a new trade outlet. Ms Miller and Ms Kingsley set a goal to focus on mining issues, which is how they found themselves at the 2005 SNAG Conference.

During the 2021 podcast, Christina Miller said that EM opened its doors around the same time that the 'No Dirty

such as the ongoing Radical Jewelry Makeover (see box) were developed.

An evolution that occurred for some members after their time with EM was their thoughts on the use of recycled metals. As Alexandra Hart stated, "I thought I was doing the right thing by doing my homework, because I bought 'recycled' based on what was written on my invoices. I thought at the time that recycled was ethical, which is better than buying illegal. But to be ethical takes more work than that." Recycled metals are no longer considered inherently ethical, depending on their certification; investigations have shown that recycled gold supply chains have been used to

Ring from the Onefooter collection comprising recycled 18K yellow gold and a 0.70 ct Canadian diamond. Photo courtesy of Dorothée Rosen.

'clean' dirty gold. There are suppliers that recycle gold (and other precious metals) in-house from items they receive from customers, and some EM members elect to source from these companies.

Christina Miller recognised the years 2011-2015, as the time EM 'really started to get recognition' for their work; it was during this time that a notable event occurred that was a sea change for members who wished to stop using recycled gold. During this time EM created a Materials Sourcing Consortium consisting of twenty-three U.S.-based jewellers, along with wholesale manufacturer and refiner Hoover and Strong. Together they were able to two kilos of Fairmined gold from AURELSA, a mining community in Relave, Peru. This was the first purchase of Fairmined gold in the United States.

Today, Ethical Metalsmiths boasts an international membership. Jewellery professionals who join the organisation do so out of a desire to work in a principled industry while building community and learning with like-minded people. Emily Phillippy of Emily Chelsea Jewelry said, "I joined Ethical Metalsmiths back in 2013, before I had even made my business my full time career. The jewellery industry was so daunting to me for so long — it felt so competitive, with all information being treated as family- or trade secrets. Once I joined EM, all of that changed. I have made some of my closest friends through the EM community and have completely altered the way I do business. The EM community has a shared vision and goal — and that is to see a more ethical jewellery industry as a whole; no one is competing to be 'the most ethical jewellery of all'. We share suppliers, share info, and help each other out. It is so refreshing to function within this industry →



knowing I have a community of jewellers backing me up and vice-versa."

One way EM provides support and connects to its members is through committees. The Action Coalition is where members can come together with other advocates to develop initiatives to present to the trade. Niki Grandics noted that "Those who want to be part of a solution can easily team up as part of EM's Action Coalition to tackle issues ranging from getting large suppliers to use less single-use plastic packaging, to opposing deep-sea mining of precious metals." The Education committee manages student memberships and provides outreach to schools as part of their duties. They also administer the So Fresh + So Clean International Student Exhibition, which will have its ninth unveiling this autumn. In 2020, this committee invited professors and

students to share ideas and projects during the COVID-19 lockdown and received three hundred responses from seventy-three institutions around the world. This resulted in the successful 'Academics in Pandemic' online exhibition (found on the EM website). Other committees include the Advisory Board, Responsible Sourcing, Emerging Jeweler Mentorship Program and Membership.

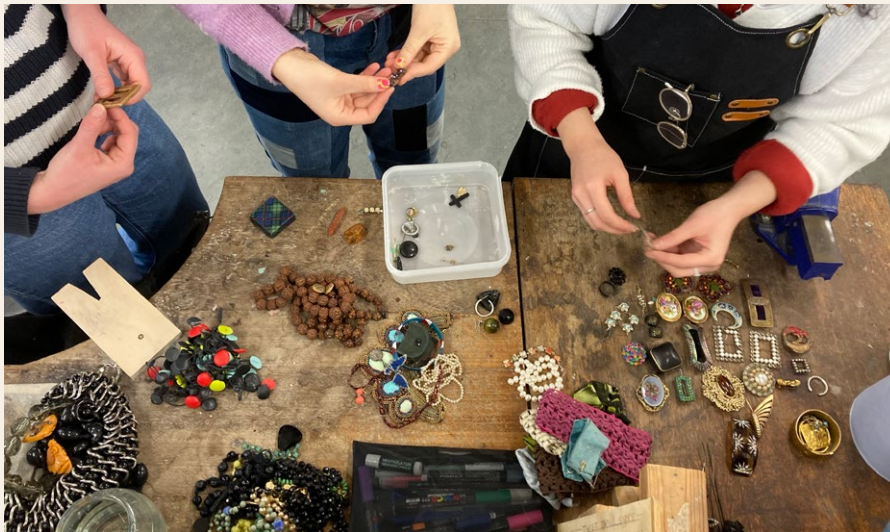
While Ethical Metalsmiths' origins are in concerns about mining, they have branched into other areas of the supply chain, including mine-to-market transparency and social welfare. According to Barbara Wheat, "The focus on manufacturing includes efforts to increase safety for workers and to reduce the industry's environmental impact. We have also advocated for people living and working in producing countries by encouraging and facilitating socially and environmentally



Alexandra Hart's Jolly Rancher pendant is composed of a 10.50 ct table-cut, naturally included orange topaz in a 14K yellow-gold bezel setting, with a 0.12 ct natural fancy-colour orange diamond accent offset in a bezel. The pendant hangs from an 18" chain and is set in 100% SCS certified recycled gold. Photo courtesy of Alexandra Hart.

responsible practices in these areas." To that end, EM has worked to give these areas the attention they deserve on behalf of their members. A Jeweler Self-Assessment was created in 2019 so that people who make jewellery can use the information to improve their practices. Information covered included but was not limited to environmental impact of design and packaging; sourcing of materials such as metals, coloured

RADICAL JEWELRY MAKEOVER



One of the sorting days of the Radical Jewelry Makeover Scotland. This step of the project was held in January 2022, while the final stage, the exhibition, was staged in Glasgow in late March.

One of the most proactive and visible ways that Ethical Metalsmiths pursues its mission is through the Radical Jewelry Makeover (RJM). This EM project is a fifteen-year endeavour that is about to land on its fourth continent and has involved hundreds of student artists. The Radical Jewelry Makeover involves participants in the practice of making responsible, sustainable choices in their studio work. The programme

partners with an institution to act as a community mining project, requesting donations from the institution community for students to sort through and create a jewellery piece of their own to put on exhibition and, hopefully, sell. In this way, the student artists learn to be discerning and mindful about the resources they are using in their work. The most recent RJM installation, in March 2022, was in Scotland, held through the Scottish

Goldsmith's Trust. Students from six art colleges across Scotland participated in the months leading up to the final exhibition in Glasgow, some as part of the curriculum for their schools, some as extra credit.

Christina Miller and Susie Ganch started the program in 2007 at Virginia Commonwealth University in Richmond, Virginia. Both were looking for ways to teach about environmental and sustainable concerns in the classroom, and wanted their students to ask the same question they were asking themselves: Where are our supplies coming from? "We wanted to learn from the people we were collaborating with," explained Ms Ganch. "It is also a community where, in a safe space, we can ask questions, innovate, and take those solutions into the future."

Ms Ganch now serves as co-director of RJM with Kathleen Kennedy, a former student participant who also took part in the Artist Project, an offshoot of RJM in which twenty-five alumni of former student projects were given curated bags of leftover materials to create extended bodies of work while analysing the motivations and outcomes of the makeover itself. According to Ms Ganch, both student and artist versions are building blocks for transparent conversations

gemstones, diamonds, components and findings; manufacturing processes; hiring practices; and health and safety. The previously mentioned Responsible Sourcing Committee continues to research how to best educate members on obtaining materials for their jewellery. From a social perspective, resources are available on the EM website to help members navigate issues related to COVID-19, diversity, and social and environmental justice, among others.

The future holds so much potential for Ethical Metalsmiths. There are always initiatives in the pipeline, always new ways to connect with other members of the industry, always ideas on how to make already great practices even better. The outlook is also optimistic for existing projects. Better Without Mercury is an ongoing programme that aims to help the Fairmined-certified Gualconda mine

in Colombia – mercury-free since 2017, after four decades of mining – with fundraising for remediation of the original processing site. This is the last stage of mercury clean-up for this location. Susie Ganch and Kathleen Kennedy were enthusiastic about the upcoming Radical Jewelry Makeover – the nineteenth since 2007 – in Minas Gerais, Brazil. And in new business, a source of great excitement is the possibility of obtaining conflict-free ‘clean’ gold from artisanal miners in Democratic Republic of Congo.

Alexandra Hart may have spoken for all members when she spoke of her role as an advocate within the jewellery industry

Fairmined silver ring set with a 2.21 ct oval sapphire from Madagascar and two 3 mm Australian blue sapphires. All three stones were sourced from responsible artisanal small-scale mining. Photo courtesy of Saskia Shutt.

and as a part of the organisation. “Your voice is amplified and you can make a bigger difference as a team,” she said. “It makes me excited about upcoming initiatives.” Pride in all they have accomplished in less than two decades, and anticipation for what is to come, may be the greatest bond between the members of Ethical Metalsmiths. ■



on the difficulties of creating a sustainable practice.

There are five steps to an RJM installation. Once a host institution and RJM agree to hold an event, the host sends out a press release requesting donations within a certain period. RJM collects about 100 lbs. (45 kg) of material for each installation. Every donor gets a coupon based on the reuse value of the donation, with everyone informed on the value of their materials. “In our system of reuse, not everything translates to an expected value,” Ms Ganch explained. An example was plated material, which has a finite reusability since it will lose its lustre. Next, established professionals gather with new students for sorting days. Jewellers and students sort precious materials, costume jewellery and other materials. Students learn to read

hallmarks and identify materials while building a sense of community.

In the third step, students attend symposia that frame the project. Collaborators are encouraged to invite activists, curators on reuse (since materials have been reused since humans have started making and wearing jewellery) and other speakers. One notable past event involved an actor who read stories of donors who gifted jewellery to the project, and who were encouraged to share stories about the items they gifted. “The actor made the emotions in those letters come to life,” recalled Ms Kennedy. “He changed the unwanted and broken jewellery into raw materials, and the letters into sources of inspiration.” Symposia are followed by making sessions that take place over the course of several weeks or months, such as group projects

and critiques for a collaborative atmosphere, film screenings and get-togethers for supplementary materials. The last step is the exhibitions, where the jewellery pieces are unveiled. Donors are invited to see the new pieces, which then go back out into the world to continue the narrative and educational mission of RJM.

As successful as RJM has been, there are still opportunities for growth. They plan to investigate jewellery businesses that want to investigate circularity, along with high schools that have jewellery programs, to bring RJM to new audiences. According to Ms Ganch, “We are here, and we are ready to collaborate. Anyone can be a donor; anyone can participate in what we want to do. There is still a long way to go, and we should go there.” After all, not everyone understands the importance of sustainability, either to their own practices or to the industry at large. “When Radical Jewelry Makeover is no longer radical, our job will be done.”

The next Radical Jewelry Makeover is planned for the Federal University of Minas Gerais in Belo Horizonte, Brazil.

For more information on the Radical Jewelry Makeover, go to radicaljewelrymakeover.org.



Jewellery created by RJM Scotland participants. Left: Brooch by Claire Fallon, made of brass, copper, steel wire and plastic stone. Right: Earrings by Dingyuan Liu, made of gold, oxidised silver and pearls. Photos by Stacey Bentley, courtesy of the Scottish Goldsmiths Trust.



What Happened in Vegas...

Las Vegas sparkled in early June as gem shows returned to the city and JCK celebrated its thirtieth anniversary. Olga González FGA DGA reported from the scene.

The industry was more than ready to make Las Vegas in 2022 a season to remember. Over the past two years, trade events, including entire shows, were postponed or cancelled. This year, Vegas brought things back into full swing, delighting buyers, exhibitors and press alike.

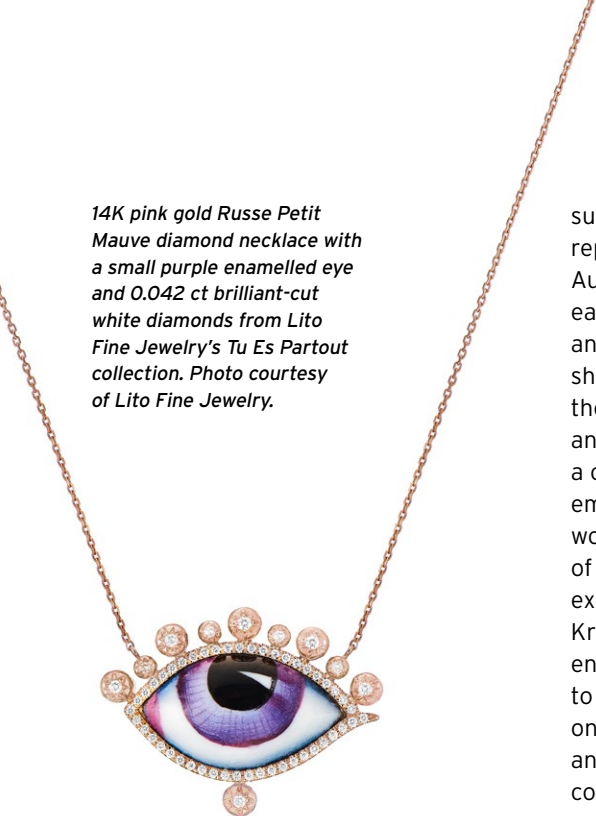
Celebrating its historic thirtieth anniversary at the Venetian Las Vegas from 10-13 June – with the invitation-only Luxury show open 8-9 June and JCK Talks beginning on 9 June – JCK made

headlines with the return of a three-year partnership with the American Gem Trade Association. Swan Sit, former global head of digital marketing at Nike, Estée Lauder and Revlon, gave JCK's opening keynote address, "Web3 is Coming – Navigating the Past, Present, and Future of Retail," to a crowd eager to discuss what is coming next for brands engaging in the metaverse. AGTA members exhibited in the Gems Pavilion alongside vendors from the International Colored Gemstone Association (ICA) and new pavilions

from Sri Lanka and Thailand. The show brought back its popular 'JCK Rocks' event, which featured current and past cast members of the musical 'Hamilton', performing tunes from the show, as well as mashups of the show's songs to music from the 1980s and 90s.

With all the excitement, and with record-breaking attendance at the JCK Show, one cannot help but ask what is trending in fine jewellery now, especially in the post-pandemic world. Here is what we learned.

14K pink gold Russe Petit Mauve diamond necklace with a small purple enamelled eye and 0.042 ct brilliant-cut white diamonds from Lito Fine Jewelry's Tu Es Partout collection. Photo courtesy of Lito Fine Jewelry.



such as melting clocks and landscapes, represent the omnipresence of time. Audrius Krulis displayed moonstone earrings from the Embrace Collection, and his Dancing Beings rings, which shared an otherworldliness. Krulis says the pieces "have a unique personality and endearing nature. They manifest a celebration of affection and joy in embracing others, yourself, and the world, and they remind us of the power of human contact." On his experience exhibiting at the COUTURE Show, Krulis said, "COUTURE 2022 was full of energy and optimism. It was exciting to see friends coming together, and once again, witness the love for design and incredible craftsmanship that this community holds."

The gold bracelets from Fratelli Bovo's Mamba line, shown here with malachite inlay, were extremely popular this year. Photo courtesy of Fratelli Bovo.



THEMES

Oculus and Surrealism. Designs based on eyes date back to their use as amulets, or talismans, to protect against misfortune. They still hold their spiritual meaning, but different variations of the eye are used, making it a medium for creative expression. From the evil eye to a resurgence of the 'lover's eye' miniature, rings and pendants – such as those from the Tu Es Partout line by Lito Fine Jewelry (at the COUTURE Show at the Wynn Las Vegas) – are integrating the oculus as a new charm with a familiar aesthetic.

In addition to the eye, surrealist objects,



Left: Medusa Ring crafted in 18K yellow gold, sparkling with 0.94 ct diamonds and enamel.

Right: Rock Candy Hoop Earrings crafted in 18K yellow gold, sparkling with 0.96 ct yellow sapphire, 0.17 ct diamonds and enamel. Photos courtesy of LORD Jewelry.

"It was exciting to see friends coming together, and once again, witness the love for design and incredible craftsmanship that this community holds."



Chained Up. The chunky gold chain is coming back into style in a big way. The shows exhibited both thin, lightweight chains that are perfect for summer, giving a dainty look, and classic styles with a modern touch. Vittorio B. Fine Jewels impressed many with their Stretch and Reverse bracelet at JCK, which was set with 18K gold in a 'chain' design and natural black and white diamonds that allowed the bracelet to be worn two ways. To the delight of buyers, JCK's Italian Pavilion had a host of companies lined with elegant chains. Traditionally worn as necklaces or bracelets, chains are also used in various thicknesses to accommodate preferences and layering. The family-owned Fratelli Bovo, from Trissino, Italy, found the gold bracelets from their Mambo collection, which can be inlaid with carnelian, malachite, onyx or mother-of-pearl, to be quite popular this year. ➔

The handmade Agape Sword earring by KIL N.Y.C. (shown here in 14K yellow gold) is sold by itself or as part of a pair. Photo courtesy of KIL N.Y.C.





The Rosa Van Parys Mini Me 3.5 Pearl Earrings comprise 8mm Australian pearls and dagger earring dangles embellished with diamonds in 18K yellow and black gold. They are paired with billie huggies in 18K white gold. Photo courtesy of Rosa Van Parys.

Whimsy. Many designers used the pandemic to create what they considered their best work ever. The extended downtime offered space for self-reflection, experimentation and prioritizing creativity over conformity, considerations also heard at the Tucson gem shows (see Spring 2022 *G&J* pp. 10-16). Unusual silhouettes, political statements, fantastical creatures and innovative constructions emerged as a result to these 'think outside the box' approaches, which are sure to satisfy the demands of customers looking for one-of-a-kind pieces.

At COUTURE, new exhibitor Karina Brez had a constant buzz around her booth. Brez, a jewellery designer who is renowned within the riding circuit, launched her wholesale collections in Vegas, including her signature Huggable Hooves. "Let the horse hug you back," said Brez. Retailers, especially those with stores near riding centres, were

delighted with the niche that appeal to equine-loving audiences.

Always a whimsical delight, LORD Jewelry's booth – also at COUTURE – had an array of colourful pieces on display; a Medusa ring was a particular standout. Jewellery brand director Lena Agdere explained that "LORD collections are an invitation to take a colorful journey through elements of history, architecture and nature." Ms Agdere reported that Lord's Rock Candy line was also hugely popular. This latest collection sets coloured stones in 18K gold with diamond and enamel accents and evokes 'sweet cravings for bonbons'.

KIL N.Y.C., which exhibited at the Antiques show, displayed their Agape Sword earrings in 14K gold. Konstantinos Leoussis, founder of KIL N.Y.C. said, "We are very much inspired by antique jewellery, specifically antique jewelled swords, and their ability to blend the masculine imagery of the sword with the gentleness of the hearts and the sparkle of a gemstone." The earrings come in sterling silver, 14K yellow gold and 18K yellow gold with diamonds; they are made entirely by hand. They were inspired by the jabot, a type of brooch. "KIL N.Y.C. tested numerous versions of the design to ensure it both looks great and stays put," Leoussis explained.

Vivacious Pearls. Pearls were present and accounted for in Vegas this year. Among the exhibitors was Rosa Van



These 'think outside the box' approaches are sure to satisfy the demands of customers looking for one-of-a-kind pieces.

Parys, at the COUTURE show, who called her self-named pearl jewellery brand 'elegance with an edge'. She explained that "As a practicing architect and interior designer, my approach to designing my pieces has these three principles in mind always: balance, symmetry and composition. I want to challenge the classic pearl jewellery standards and make our pieces rock and roll. I love the juxtaposition of geometric shapes against the roundness of the pearls." Her goal is to make the pearl pieces fierce and daring by adding pointy and edgy elements (that she calls 'daggers') while remaining stylish and elegant.



Six members of JCK's Black in Jewelry Coalition had their collections displayed at booths in the show's Design Collective district. Left: Missy Ring by Adore Adorn, composed of freshwater pearls, natural emerald, 14K gold vermeil and silver. Photo courtesy of Adore Adorn. Top right: Le Saphir by YPJ teal sapphire engagement ring featuring a 1.05 ct natural unheated teal sapphire from Madagascar, 0.39 ctw lab-grown diamonds and 14K yellow gold. Photo courtesy of Your Personal Jeweler.

DIVERSITY

A refreshing addition to the shows was a commitment to diversity, equity and inclusion through events, along with an increased presence of emerging designers who are Black, Indigenous, and People of Colour (BIPOC). For the first time, JCK sponsored the Black in Jewelry Coalition (BIJC), with booths in the Design Collective featuring works from six members: Adore Adorn, Christian Stone, Jam + Rico, JNCY Jewelers, Made by Malyia and The Personal Jeweler. "History was made at this JCK event," says Adrienne Sanogo, co-founder of BIJC. "I want to personally thank JCK for being a visionary and being committed to changing the narrative. This will always be a part of your legacy and ours."

The Women's Jewelry Association (WJA) kicked off its the Generating Community Impact Breakfast to a standing-room-only crowd, with a keynote presentation by Karine Bah Tahé, founder and CEO of Blue Level Training, a Black woman-owned enterprise focused on building diverse, inclusive and respectful work environments. WJA's 2020 Veteran Grant winner, Latoya Boyd, commented on being impressed with the diversity she saw in the room and on the show floor.

At COUTURE, The Radiance by Couture program was created in partnership with DeBeers, and featured the work of thirteen BIPOC designers, including Lorraine West. Each designer was provided with De Beers Code of Origin diamonds and seed funding, enabling them to create unique capsule collections of stunning diamond jewellery — a total of 40-60 pieces overall.

CONCLUSION

Ultimately, the return to Vegas was memorable. Buyers lined up for an opportunity to restock their collections, and business transactions were plentiful. Early days, late nights and networking were back to their usual state, with an added sense of creativity and appreciation. Everyone was happy to see each other and be back in bustling rooms, and many attendees echoed the same sentiment — that it was their best show ever. ■



Emily P. Wheeler took first place in the COUTURE Design Awards in the Colored Stones Above \$20,000 category with the Audrey choker, which features 111.31 tcw of aquamarine, 101.12 tcw of crystal quartz and 5.84 tcw of diamonds set in 18K yellow gold. Photo courtesy of Emily P. Wheeler.

COUTURE SHOW DESIGN AWARDS

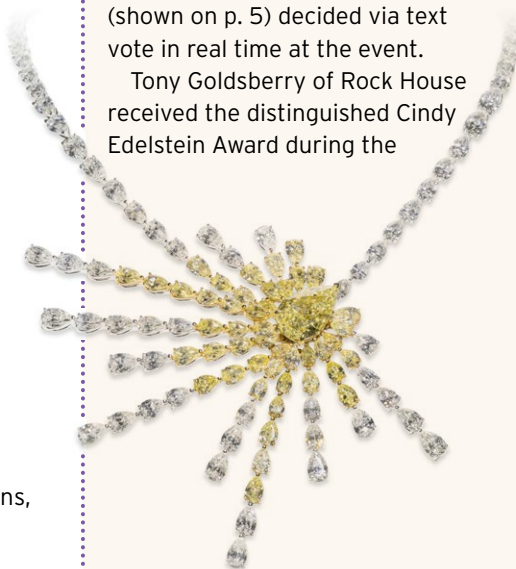
On 11 June, the COUTURE Show held its Design Awards, a celebratory showcase of the best in designer fine jewellery at the Encore Theater of the Wynn Las Vegas. Of the nearly two hundred pieces submitted into the 2022 competition, the judges — who included Diana Schade from Saks Fifth Avenue, writer Juliet de La Rochefoucauld and Stellene Volondes from *Town & Country* and *Elle Décor* — selected their top picks in thirteen categories, including Best in Bridal, Best in Colored Stones Above \$20,000/Below \$20,000, Best in Haute Couture, Best in Innovative and Best in Pearls. The Editors' Choice Award was determined by attending media, and the People's Choice Award (shown on p. 5) decided via text vote in real time at the event.

Tony Goldsberry of Rock House received the distinguished Cindy Edelstein Award during the

evening's programme. The award commemorates the life and spirit of Cindy Edelstein, a fearless leader and passionate designer advocate. While Ms Edelstein is no longer with us, her energy and passion live on. The inaugural award was posthumously given to Ms Edelstein and accepted by her daughter Remy at the 2016 COUTURE Design Awards.

A candidate for the Cindy Edelstein Award must embody the following qualities: They must be a true leader in the fine jewellery and timepiece industry; dedication to the success of both upcoming and established brands; they must demonstrate of a longstanding commitment to the COUTURE community and industry at large; and they must be an inspiration to others through an enthusiastic attitude and unabated vitality.

"It is our community that keeps us all together during these times," Mr Goldsberry said from the stage upon receiving the award. "This is a big group of my friends!"



The Raggio di Sole necklace by Gismondi 1754 won the award for Diamonds Above \$20,000. Inspired by the early morning sun, the necklace is composed of 27.83 tcw of pear-shaped white diamonds and 16.04 tcw of fancy yellow diamonds set in 18K white gold. Photo courtesy of Gismondi 1754.



The winner of the Best in Haute Couture was Elsa Jin's LIFE 2021 brooch, which comprises 147 tcw of colourless diamonds and one 26.44 ct padparadscha sapphire set in titanium. Photo courtesy of Elsa Jin.



The recent increased demand for diamonds, combined with sanctions on Russian production, have led to a shortage of mined material. Photo of mined diamond rough alongside cut specimen by RJH, courtesy of iStock.

Sanctions on Russia

Short-term shortages: long-term opportunity for lab-grown diamonds

The 2022 events of the Russo-Ukrainian War have led to concerns about the supply of diamonds available to meet growing customer demand. Russell Shor shares some insight into the situation.

While consumer demand for diamond jewellery remains robust, the world diamond market has been rocked by sanctions arising from the Russo-Ukrainian War, which first began in 2014 but saw escalation earlier this year. As of early June 2022, the United Kingdom and the United States have imposed sanctions on diamonds imported from Russia, leaving the entire industry to question whether the supply interruptions dampen the surging consumer market for diamond jewellery.

The stakes for the diamond industry are the highest they have ever been. Russia is the world's largest diamond producer, accounting for about one-third of diamond production by volume. In the short term, sanctions are causing shortages of rough diamonds throughout the market. In the longer term, the adjustments and responses to these sanctions could fundamentally alter the structure of the world's diamond pipeline for years to come.

Kimberley Process data reported that in 2019 – the last 'normal' year – Russia exported more than forty-five million carats of diamonds valued at £3.34 billion (USD \$4.1 billion). From a weight perspective, that's more than Botswana and South Africa combined. Indeed, Alrosa, the diamond-mining organization that controls 95% of Russia's production and marketing operations, has out-produced De Beers by carat volume for more than a decade. The Russian government owns 33% of Alrosa shares, while the remainder is divided equally between Sakha Province and shareholders. Alrosa also markets diamond polished at the Krystall operation in Smolensk; the company reported approximately £156 million (USD \$192 million) in sales of polished diamonds alone for 2021.

These numbers suggest that this year's sanctions will devastate the diamond supply chain this year, particularly because it does not appear that the war, and the West's economic sanctions on Russia, will end soon. These numbers,

however, do not tell the full story of worldwide diamond production. There are two major factors, along with a loophole in current sanctions, which may mitigate their effects.

First, Russia's and De Beers' diamond productions are not fully comparable. In visits to Alrosa's operations, mining engineers said they recover diamonds as small as 0.8 millimetre in size and leave nothing in the ground. De Beers, on the other hand, sets its size cut-off to 2-3 mm. Alrosa produces millions of carats of these smaller diamonds — its average sale price was about £58 per carat (USD \$72/ct) in 2021, versus De Beers' £118 (USD \$145/ct). Additionally, the mine that had been Alrosa's main source for higher-quality diamonds, Mir, closed in 2017 after a flood killed eight miners. Clearly, Russia's main supply impact is in smaller stones, especially since the closure of Australia's Argyle mine in 2020. By contrast, De Beers still controls a significant majority of larger diamonds that polish out to a half-carat or larger.

India, which processes more than 90% of the world's diamonds (and close to 100% of diamonds under 0.25 ct) saw a 25% drop in rough imports in April 2022, the first full month of sanctions. But there is a catch: Indian diamond manufacturers had been stocking excess rough for some months before the late February invasion of Ukraine. At first this extra rough was held because of better-than-expected U.S. sales, then because world inflation threatened to drive up diamond prices, which had already recovered to pre-Covid levels. As that supply bump is still moving through the pipeline, manufacturers fear they will be during a supply crisis by early fall 2022.

If history is any guide, the diamond industry will devise work-arounds if shortages hit crisis levels, because the second mitigating factor is that the sanctions on Russian diamonds are not universal. Many countries, including India and China, have not boycotted nor sanctioned Russia; thus, Russia is potentially free to do business in these countries. Additionally, an existing loophole means that those countries which have sanctioned Russia do not ban Russian diamonds that are polished elsewhere. The Russian treasury does not benefit from these mid-pipeline transactions and, in the words of the United States Jewellery Council notes that sanctions for polished diamonds apply only to those 'manufactured in the Russian Federation'. This meaning that cutting giants India and China can import Russian rough and export polished Russian diamonds to all countries with which they trade, freely and legally.

The challenge will be paying for the diamonds, as many nations have banned banks and other financial entities from doing any business with Russia using their currencies. They also have locked Russian financial institutions out of international funds-transfer mechanisms such as Swiftcode. Russia has propped up its rouble to make business viable in its own currency, but most banks will not accept it out of fear of incurring further international sanctions, along with the fact that the currency is 'propped' artificially. Cryptocurrencies have tanked in value since the war began, and India's rupee is notoriously volatile; so, how to pay?

The next challenge is reputational. Many U.S. and European retailers and dealers

There are two major factors, along with a loophole in current sanctions, which may mitigate their effects.

do not want to receive negative attention for trading Russian-origin diamonds, even if they are legally imported. Tiffany, the Signet Group (which includes Kay Jewelers and Zales Corp. in the United States, and H. Samuel and Ernest Jones in the UK) and Pandora, among others, have banned all Russian-origin diamonds acquired after 24 February 2022, the first day of the invasion. Rapaport has halted trading of Russian-origin diamonds and

the Gemological Association of America (GIA) has stopped all transactions and all laboratory submissions from any Russian companies, banks, and individuals sanctioned by the U.S. government at all its global locations. It has also suspended submission of Russian-origin rough diamonds for the GIA Diamond Origin Report service.

There is no way to identify Russian origin diamonds in the marketplace after they are cut and polished unless they are part of a tracking scheme used by some suppliers and retailers. There are currently efforts to segregate Russian goods from the pipeline. De Beers has fast-tracked Tracr, its mine-to-market blockchain diamond verification program. The system enables any consumer to track the journey of their diamond from De Beers' operations in South Africa, Botswana and Canada through the cutting process and to the retailer. In addition, GIA, Sarine and others are rapidly implementing their own tracking initiatives; these will allow producers to differentiate their diamonds from others in the marketplace. →



One week's production from Russia's Lomonosov mine. Recent sanctions on Russian production have removed many of these gems from the supply chain and raised concerns about meeting the current demand for diamonds. Photo by Russell Shor.

Lab-grown diamonds, such as the high-pressure, high-temperature specimens from Keystar Gems (shown here in mixed cuts) are an excellent choice for discerning gemstone customers. Photo courtesy of Keystone Gems.



From a consumer perspective, general inflation is a bigger threat to diamond jewellery sales now than supply chain disruption.

What will be the effect of the Russo-Ukrainian War on the diamond pipeline over the long term?

The answer is complicated. Diamond manufacturers in India and elsewhere say prices for rough and polished have risen an average of 10% above pre-Covid levels and that the scarcities imposed by sanctions will drive prices even higher as rough gets scarcer. Manufacturers estimate that costs of tracking diamonds from their sources will add an additional 5% to the cost of each stone. It is likely that natural diamond jewellery will cost 10% to 15% more by the time shopping for the 2022 holiday season commences.

Can prices keep going up? From a consumer perspective, general inflation is

a bigger threat to diamond jewellery sales now than supply chain disruption. With consumer prices rocketing for everything from gasoline to pet food, jewellery buyers are bound to feel the pinch by fall. Luxury customers—as always—are largely unaffected by price hikes, but middle- and working-class customers are already cutting back, as evidenced in the United States by first-quarter earnings at both Target and Wal-Mart, which both widely missed estimates.

From an industry perspective, history shows that people learn to work around price bubbles. This is a made-to-order situation for lab-grown diamond producers. Internet sellers and mass merchandisers intent on keeping prices low will surely move to lab-grown diamonds. In turn, lab-grown producers have a ready-made marketing mantra: 'we're much cheaper and we are not from Russia'. They will not hesitate to seize this opportunity to make further inroads into the diamond market over their mined counterparts.

The post-sanctions diamond industry may see less financial accountability if manufacturers learn to circumvent established transfer mechanisms and U.S. dollar transactions. This could create opportunities for more, dodgier players to move into the legitimate pipeline.

Finally, beyond prices and supplies, demand for origin tracking – or at least segregation in the diamond pipeline from

Russian rough – will continue to rise. Given the devastation in Ukraine already caused by the war, it is certain that sanctions against Russia's economy will continue for years after hostilities cease, and that it is quite possible that today's solutions will become tomorrow's diamond pipeline. ■

The views and opinions expressed are those of the author, and do not necessarily reflect the official policy or position of Gem-A.



The Mir Mine in Russia's Sakha Province was the source of large, well-formed octahedrons until a tragic accident resulting in the drowning of eight miners forced its closure in 2017. This 108.3 ct rough is one of the finest examples of a Mir diamond. Photo by Russell Shor.

GENDER-NEUTRAL JEWELLERY IS HERE TO STAY



For generations, even as the industry has cycled through various trends, the jewellery trade has focused on, and designed for, women. Yet jewels and gemstones have appealed to people, regardless of their gender, for millennia. The earliest pieces

used seashell beads to make necklaces that were worn by men and women alike. The ancient Maya, across all sexes and socioeconomic statuses, inlaid gemstones in their teeth – including jade, jet and turquoise – for adornment and for protection from dental disease.

Over time men came to be associated with ornate jewellery. An apocryphal story that has come down through the centuries claims that pirates and sailors wore the gold hoop earrings so strongly associated with their images as a form of life insurance, to pay for their burials →



The diamond Braille Hope bracelet from Milamore is composed of 18K yellow gold, 18K white gold and 0.04 ct diamonds. Photo courtesy of Milamore.

should they drown and wash up on foreign shores. Portraits show historical figures such as Kings Henry VIII and Charles I in gems, and the jewels of the Indian maharajahs were so sumptuous and breathtaking – more so than the maharanis – that they would influence Cartier's Tutti Frutti necklace. According to the V&A Museum, more elaborate jewellery was not geared toward a female audience until the mid-nineteenth century, a trend that has continued through this century.

But times are changing, and there is a call from the public for unisex jewellery. As millennials (born 1981-1996) and the generation that follows them, known as Generation Z (born 1997-2012), become the next cohort of consumers, their ideas about the products they want to buy influence how designers create. The push for more ethical, sustainable materials in jewellery has been heavily influenced by these demographics. Similarly, these buyers have different ideas about gender identity and roles. They are more likely to see gender as a fluid concept and, according to the Pew Research Center, are at least somewhat comfortable with gender-neutral pronouns and identities. This comfort level is allowing for fluidity within sartorial choices and personal adornment, as demonstrated by accessory choices made by celebrities such as Harry Styles, Timothée Chalamet and Shawn Mendes. In 2017, the *New York Times* reported that a trend was growing

in response to a call for genderfluid jewellery, noting that "Tastes in color, material and design also are merging...Women are opting for more texture and matte finishes while men increasingly prefer sparkle and high polish."

Members of the trade are responding to these evolving ideas and tastes. Luxury houses Bulgari, Louis Vuitton, Dior, Boucheron and Cartier have all put out unisex collections over the course of several years. Some established jewellers, such as Shaun Leane, had already developed a design philosophy that that resulted in the creation of gender-neutral pieces. Newer businesses are blazing different paths when entering the world of unisex jewellery design. In 2019, George Inaki Root opened Milamore – which 'embraces androgynous aesthetics' according to its website – without intending to create a unisex brand. But, as he explained to *JCK Magazine* in 2021, "My pieces for men are slightly delicate and for women are slightly bold. I don't really discriminate to my clients." Conversely, Martyre was founded in 2018 by Anwar Hadid and Yoni Laham with the specific purpose of creating gender-neutral jewellery. The newly formed 886 by Royal Mint (see p. 6) is creating unisex jewellery from the gold it recovers from electronic waste.

Stephen Webster established his fine-jewellery brand in London in 1989. When asked what the impetus was to add unisex jewellery to his catalogue, he responded "In fashion,

We are in a renaissance period for jewellery, and we wholeheartedly embrace these times where the lines are more blurred and consumption more fluid.

girls wear their boyfriends and casual partners' oversized shirts and jeans, and the bagginess is the point of the look. This look however is trickier in jewellery, because often it just falls off, so we wanted to create something that achieved this style but is available for everyone." In response, he began peppering gender-neutral pieces throughout different collections. According to Mr Webster, "We are in a renaissance period for jewellery, and as a designer who has always enjoyed making jewellery that can easily be adapted to be more masculine or more feminine, we wholeheartedly embrace these times where the lines are more blurred and consumption more fluid." The newest offering from Stephen Webster, the 'men's and unisex' Thorn Addiction line, is in his words "completely wearable and importantly, at an entry level price point for the younger market." This makes it an ideal choice for the younger millennials and Generation Z buyers.



In the made-to-order Vertigo Losing Perspective Pinky Ring by Stephen Webster an emerald-cut black spinel and black enamel is set in 18K yellow gold. Photo courtesy of Stephen Webster.

Stephen Webster's *Thorn Addiction* line was created as a 'men and unisex collection'. Left: The *Razor Tag Earring* features black diamond pave in 18K yellow gold. Right: The *New Cross pendant*, shown here in malachite inlay in 18K gold. It is shown on the *Crosslink Chain*; chains are among Mr Webster's most popular pieces. Photos courtesy of Stephen Webster.



Mr Webster believes his most popular item to be his chains. They are, in fact, his personal favourites, as they are reminiscent of his apprenticeship spent making handmade chain for Saunders & Shepherd of St Cross Street in Hatton Garden. Mr Webster has used the Thorn Chain in his work for almost twenty-five years, and so it is no surprise that it is used frequently in the Thorn Addiction collection in a range of gauges. It is woven through a collection of signet rings, dog tags, ID bracelets and razor tag earrings, and can be seen in polished metal, set with diamond pavé or with inlaid stones such as malachite, lapis lazuli and tiger iron. The jewellery comes in sterling silver and 18K gold; 100% recycled gold and silver are used across the collections (Fairtrade Gold used upon request). Mr Webster assured us that Thorn Addiction "is jewellery for whoever enjoys the aesthetic and style, capturing the zeitgeist in a way that would have been difficult at any time until now."

While Stephen Webster has been creating jewellery for decades, Swedish jeweller-designer Annette Welander opened her eponymous company in Askim, Sweden, in 2018. The influences for her firm come from modern architecture that is pleasing in its design, clean and simple but also functional. For this reason, Ms Welander explained, anyone with an appreciation for a minimalist, contemporary style but who are looking for passion or meaning in a piece would be interested in her jewellery. She added that her customers also tend to have an interest in both design and the environment.

"It was always our intention not to categorize our designs for a particular gender," she noted. "In Sweden, we are very open minded, and for this reason Annette Welander purposefully does not say our designs are for men or for women. Our marketing is genderless, and our website does not split the collections by gender. For us and for our customers it is more about taste than gender." Ms Welander has noticed, however, that with high-profile men in the news wearing jewellery, more men and male-identified people have been contacting the company to purchase pieces for themselves. Notably, these people are seeking diamond pavé rings; younger individuals are looking to buy earrings and ear cuffs.

While Annette Welander offers sustainably sourced 18K yellow, white and rose gold as options for their jewellery, Ms Welander herself has a special affinity for a Scandinavian version of the metal.

"We have chosen to specialize in using 18K Swedish red gold. We want to share this beautiful alloy worldwide, since it is exclusive and rare outside Scandinavia. This gold is extremely popular with all genders and with Nordic and Scandinavian people, as it has a warm colour that is between rose and yellow gold in tone. It is more understated and subtle than yellow gold. The Nordic and Scandinavians prefer a warmer gold colour, given the colder climate and distinctive Nordic light." The firm also uses high-quality diamonds and other ethically sourced materials (gem related and otherwise), not only because it is in keeping with the company's standards, but because Sweden itself has high sustainability standards.

Gender fluidity is expected to become more commonplace in society as Generation Z matures. In turn, jewellery industry experts expect that genderless jewellery will only pick up traction in the coming years. Luxury brands who have already launched unisex collections, along with jeweller-designers such as George Inaki Root, Stephen Webster and Annette Welander, who have considered these factors as they have built their bodies of work, are well placed to navigate and find success as this aspect of the trade continues to evolve.

We have come a long way from the seashell beads worn by our ancestors. It may seem like the stunning, non-gendered pieces that customers are seeking out in 2022 have little to do with the humble beaded chains from prehistory. While reflecting the stances of twenty-first century consumers, one might reflect that the jewellery industry is simply in another cycle, this time turning back to its gender-neutral roots. ■



Gender-neutral rings by Annette Welander. Left: The *Continuum ring*, featuring a Tahitian pearl, is shown here in 18K Swedish red gold. Right: Four of the *W2 rings* in 18K Swedish red gold; each is set with 0.44 ct diamonds. Photos courtesy of Annette Welander.



This elephant bridge is carved from ivory yielded from elephant tusk. Today it cannot be traded in the UK, no matter its age.

Changes to the Ivory Law Leads to New Testing Considerations



On 6 June 2022, the Ivory Act 2018 came into effect in the United Kingdom. Gem-A President Maggie Campbell Pedersen FGA explains the exceptions to the law as well as testing and other methods to identify artefacts.

Over the years the world has become aware of the horror of elephants slaughtered just for the ivory from their tusks. The Convention on International Trade in Endangered Species of Wild Fauna and Flora, widely known as CITES, has placed most elephants on Appendix I of its three appendices of protected species. Those animals and plants on Appendix I are at risk of extinction; therefore, the status of elephants on this list officially bans all international trade in elephant ivory.

This has not succeeded in eliminating elephant poaching, however, and many countries have subsequently strengthened their domestic laws to prohibit – to a greater or lesser degree – all trade in ivory artefacts. Such laws vary from country to country. For example, the United States has very strict laws and almost no exemptions with regard to ivory sales, but matters are much less settled in the European Union (though this may soon change). In the United Kingdom, the Ivory Act 2018 became law on 6 June 2022, bringing in far more stringent rules than hitherto.

At present in the UK, the new ivory law covers only Asian and African elephant ivory.

Thus, it is necessary to be able to tell the various ivories from living species apart. A new consultation was undertaken in 2021 to decide whether to add all ivories from extant species to the list as some of the other ivory-bearing animals – for example, hippopotamuses – are now also under threat.

If ivories from all extant species are banned in the UK, differentiation of



The detail of the break in this carving shows that the pattern of the break follows the pattern of the intersecting arcs (Schreger lines).

the various ivories would no longer be necessary. It would, however, still be incumbent upon us to be able to tell elephant ivory from mammoth or mastodon, as these latter two will not be included in an extension of the law. We must of course still be able to recognise bone or ivory simulants. Further, we will also have to be able to determine the age of anything that comes under one of the few exemptions to the law. The Ivory Act 2018 exemptions are:

- Pre-1947 items containing less than 10% ivory by volume, the so-called *de minimis* rule
- Pre-1975 musical instruments containing less than 20% ivory by volume
- Pre-1918 portrait miniatures with a surface area of no more than 320 cm²
- Pre-1918 items of outstandingly high artistic, cultural or historical value will also be exempt
- Sales to and hire agreements with qualifying museums

In some cases, the age is obvious and can be determined by an expert who is used to handling ivory and antiques, but expert opinion is not foolproof and

a recent survey discovered that, when subsequently tested, the experts were not always right. For this reason, testing methods for ivory are essential.

In Thailand, trade in African elephant ivory is illegal, though some is still permitted in Asian elephant ivory if it derives from animals that are domesticated. This would seem to present an identification problem, as wild and domesticated elephant ivory will give the same results in most tests. However, near-infrared (NIR) spectroscopy can differentiate between the two by detecting minute trace elements in the cementum and dentine that are impacted by the animal's diet. Wild elephants forage, while those held in captivity tend to be fed mostly on agricultural crops. NIR spectroscopic analysis can be performed *in situ* using a small, hand-held instrument.

identify the ivory's species of origin, but it is slightly destructive, as a tiny, uncontaminated sample must be extracted. Testing is performed in a laboratory and is therefore more suited for wildlife forensic facilities than gem labs.

Radiocarbon dating has been used for age determination, yet it can yield results which are inaccurate by decades, if not centuries. Furthermore, it is necessary to know the species from which the ivory originates, as marine ivories will give a different reading to that of ivory from land-based animals. Readings can also differ based on whether they occur in the Northern or Southern Hemisphere. The so-called 'bomb-spike' caused by nuclear detonations reached a peak in 1964, when the ^{14}C concentration in the atmosphere almost doubled. This has helped to give more accurate readings of items made

since then, but the tests are expensive, slightly destructive, and, again, require a specialised laboratory.

There may be situations where it is simply necessary to know whether we are dealing with elephant or mammoth ivory. An example would be a recently carved netsuke. If working with mammoth ivory, the actual date the ivory was carved is immaterial, because a new carving in mammoth ivory remains legal. If it is not possible to identify the ivory by sight, testing the stable water isotopes in the material will suffice, as they are absorbed in the dentine and are known to differ in animals that lived in higher latitudes to those from lower ones. Thus, mammoth ivory – yielded from animals which lived in higher latitudes – will give a different reading from all elephant ivories. This is possible because stable water isotopes →

When considering ivory or its simulants there is still a place for the basic tests we learn as gemmologists.

This simple, inexpensive testing is the type that everyone who works with ivory, be it from a gemmological, antique, or a wildlife crime angle, would like to have at their disposal. Much research has been done in recent years to develop other such tests, and studies are still ongoing. Completely new methods are under investigation, while well-known tests are being tried and tweaked to see if they can help to determine the species of origin and/or the age of ivory artefacts using simple, non-destructive methods.

In the past we have relied on radiocarbon dating (^{14}C) and DNA testing. Both tests are very specialised and costly, though they still have a valid place in our repertoire, especially when dealing with items of high value where legality is concerned. DNA testing can be used to



Modern netsuke, carved in mammoth ivory ca. 2005. Since mammoths have been extinct for thousands of years, this ivory can still be traded.



Cross sections of tusks, showing the angles of the intersecting arcs, known as Schreger lines. Left: mastodon, obtuse angles; middle: elephant, obtuse angles; right: mammoth, acute angles.

do not degrade, so readings from extant and extinct species can be compared.

It is very rare to come across ivory from the extinct mastodon, but it can happen. Elephant ivory is visually different from the mammoth variety due to the differing angles of the intersecting arcs in the structure (Schreger lines), which are seen most clearly in transverse cross-section of the tusk. Elephant ivory has wider arcs than mammoth ivory, which is most easily seen at the outer edge of the dentine. In elephant ivory the angles are obtuse, whereas in mammoth they are acute. A complication arises when dealing with mastodon ivory, which has the same, wider angle of intersecting arcs as elephant ivory, though visually the structure in mastodon ivory appears finer than that of elephant. Viewed sub-microscopically, however, the formation of the hydroxyapatite is slightly different in elephant and mastodon, thus enabling differentiation between the two.

One of the exemptions to the new UK law – the *de minimis* rule – permits trade in an item from pre-1947, in which the ivory represents no more than 10% in volume. This is usually obvious in objects such as furniture inlaid with ivory, but what of more complex items? Research in the U.S. has developed a way of accurately determining the volumetric percentage of ivory using 3D scanning.

Other UK exemptions concern portrait miniatures (see box for more information) and musical instruments. These have been included because the value of the items is not in the ivory, but in the object as a whole. The existence of miniatures or piano keys and such like are not currently putting elephants at risk. The people trading in new ivory are not interested in things that are costly to produce

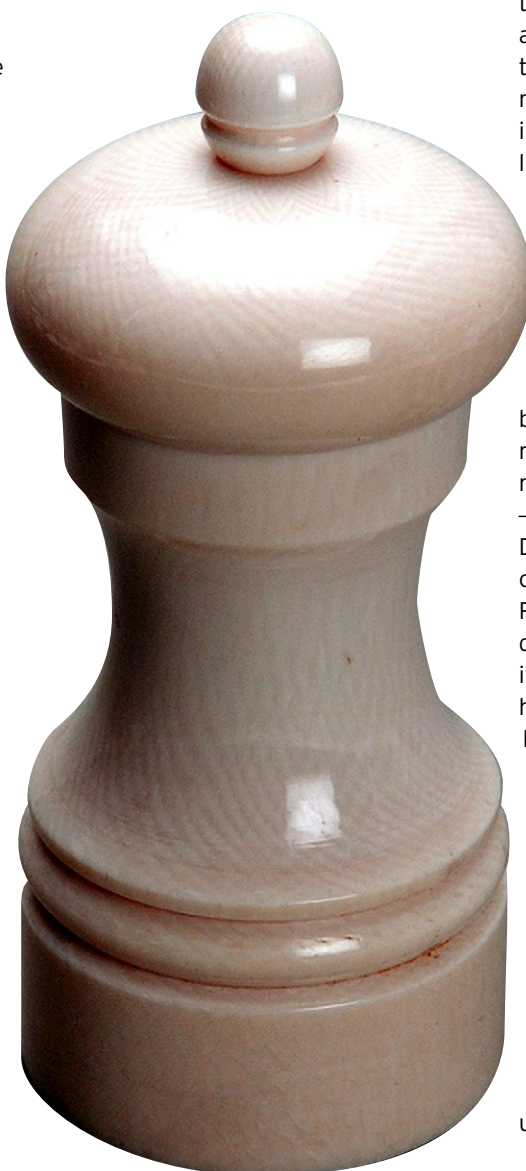
and involve other materials that may easily reveal the item as new. Rather, they are interested in jewellery, trinkets and souvenirs – all items which can be mass produced and easily ‘aged’ to be sold as old. An exception is carvings,

which can also be ‘aged’ and sold for extremely high prices.

When considering ivory or its simulants, there is still a place for the basic tests we learn as gemmologists. Foremost is always visual identification. The colour, transparency and any visible structure are the first things to look for. The feel, the weight and even the sound of the material when gently tapped can give indications of what it is. Ultraviolet (UV) light is useful for distinguishing ivory from simulants (except bone or casein, which fluoresce in the same way as ivory). In broken and damaged objects, the structure of the break may be the identifying feature.

As already stated, when further analysis is needed there are methods being researched, and although most still require testing in a laboratory, the time needed – and subsequently the costs – are coming right down. Some tests use DNA as a starting point, while others use computed tomography (CT) scanning. Raman spectroscopy can show the difference between old and new elephant ivory by observing the ratio of hydroxyapatite to collagen in the dentine, because collagen deteriorates with time. All this is extremely promising, especially considering that a very few years ago ivory tests were extremely limited.

Finally, it should be remembered that it is still legal to own ivory. Destroying old ivory in private ownership does not bring the animals back to life, nor does it protect other animals from poaching. Ivory can also be inherited or gifted, and anything unwanted can be very useful for research and for teaching. ■



This ivory pepper mill was made ca. 1970. It has been illegal to sell it for many years, though it is not illegal to own it in the UK.

The author would like to thank Morphets Auctioneers of Harrowgate for some of the samples illustrated.

PORTRAIT MINIATURES

Portrait miniatures created before 1918 are exempt from the Ivory Act 2018. What are these pieces that incorporate ivory into their construction?

Miniatures first appeared in the early sixteenth century in England and France, and their popularity spread to the elite in the rest of Europe. Originally painted in watercolour on vellum, the artists were usually manuscript illustrators and painters who were better known for their work in oils on canvas. Some miniatures depicted small scenes, flowers or animals, but the word 'miniatures' generally brings to mind small portraits.



Transfer on celluloid, imitating an ivory miniature.

A century later the pictures were painted using enamel on a copper base, but by the beginning of the eighteenth century ivory became the preferred base for miniatures, using watercolours as it lent the pictures a luminosity. Additionally, in the case of portraiture, ivory was considered to be the perfect skin colour. Fine portraits were still painted by well-known artists, but miniatures were becoming less expensive, and many were produced in workshops in India.

Miniatures were given as tokens of love or respect, or as *memento mori*. They were mounted on the lids of boxes or in frames or worn as locket or pendants and often set with gems. By the mid-nineteenth century, miniature portraits had become fashionable as decoration, many enclosed in 'piano-key' ivory frames, so named because the ivory veneer on the frame resembled piano keys.

At first a fair-sized slice of ivory was used for the picture, but later it became possible to cut it about 1 mm thick, giving the finished item a better translucency. The ivory was cut along the length of the tusk, not across it, thus avoiding the clear pattern of intersecting arcs and only showing the striations seen in the material when the tusk was cut longitudinally. It was a much more economical, less-fragile use of the material. Although most miniatures were small and often oval, large examples could also be made from thin sheets of ivory.

Pre-1918 ivory portrait miniatures are exempt from the UK's Ivory Act 2018, because they are not valued for their ivory content. The exemption mentions only portrait miniatures.

To identify those miniatures that qualify as exclusions from the ban, it is necessary to judge their age, which may be obvious because of the subject. Yet as it was not uncommon in later years to produce pictures of famous



Tinted photo on ivory, imitating a painted portrait.

people that were available to anyone, subject is not a guarantee of age.

A complication in identifying ivory miniatures is that early plastics, such as celluloid and casein, were used to imitate ivory. While casein was not invented until 1919, celluloid was invented in the 1860s. Over the years it was refined, and striations could be added to the material to make it resemble ivory. The striations may be harder to see in a thicker ivory slice, and very thin slices of ivory used for miniatures were invariably backed with thin card or paper, partly to make them more opaque but also to protect them. This backing may need to be removed to see more clearly the ivory's structure. The total absence of structure, or an unnaturally regular pattern of lines, are good indications that the miniature is not painted on ivory. It was not necessary to back celluloid.

Another problem when identifying miniatures is that, following the advent of photography, some ivory miniatures appear to be very finely painted but, when carefully inspected, can be seen to be photographic images printed on the ivory which have been hand-tinted to give them colour.

On celluloid, transfers could be used to add a coloured picture to the material. In this way, 'miniatures' could be inexpensively mass produced. They are easily detected, as the colours appear heavy and the transfers have a glossy surface.



Above: Crudely executed picture of the Mona Lisa painting in a so-called piano-key frame.

Right: Reverse of Mona Lisa miniature, with paper backing removed, showing the structure of the ivory.



Introducing GemINTRO

Recently launched by Gem-A, GemIntro is an online-only course with an entry-level qualification that provides beginners with an in-depth introduction to the world of gemstones.

GemIntro has been designed to complement the Association's existing portfolio of study options, including the internationally recognised Gemmology and Diamond Diplomas; this new beginner's level course aims to make gemmology education more accessible and, as a result, professionalise wider, trade-related disciplines with accurate, science-based knowledge.

This fully online course leverages contemporary online platforms to

disseminate much-needed content quickly and affordably. Participants will work towards an accredited Ofqual Level 2 qualification, accompanied by a formal Gem-A Certificate.

GemIntro has been created to offer a thorough introduction to the fascinating world of gemstones, incorporating 11 lessons, 50+ videos and 30 hours of self-guided study. The syllabus, which focuses on 32 gem materials, was expertly created by the Association's in-house and external partners to provide a

completely interactive and insightful overview of core gemmological principles and key mineral species.

To secure the Ofqual Level 2 qualification certificate, GemIntro participants are expected to recognise, recall and show an understanding of basic gemmological principles; understand the properties of common gem materials; and have a basic understanding of common gem treatments, imitations and synthetics.



Covers of some of the modules covered by the Association's new Level 2 course.

Registrations are now being accepted for GemIntro. Students who enroll will have access to course materials for six months from the registration date.

Alan Hart, CEO at Gem-A, said: "Gem-A has been educating people on gemstones longer than any other organisation across the world. It was only fitting that we also provide an entry-level, online-only course that educates those starting or progressing their careers, while also satisfying the curiosity of gemstone enthusiasts. We believe GemIntro has the power to increase confidence, expand knowledge and foster a whole new appreciation for gemstones among those who are new to the study."

GemIntro is relevant to those working in fields directly linked and adjacent to gemstones, including retail, manufacture, jewellery design, mining, marketing communications and auctioneering. Those wishing to explore the many career opportunities associated with the study and application of gemmology may also find the course effective.



Emerald in matrix. Photo by Marcus Budil.

GemIntro is priced at £220. No previous qualifications or experience are required. Students are required to complete chapter quizzes to unlock restricted content, while a score of 80% or more is expected on the final assessment to secure the Level 2 qualification.

Students can progress on their gemmology journey with Gem-A by advancing to the long-standing Gemmology Foundation course, which can be studied via blended learning (in-person and online). More information can be found at gemintro.gem-a.com

To discuss becoming a GemIntro reseller or bulk licensing packages, please email education@gem-a.com ■

We believe GemIntro has the power to increase confidence, expand knowledge and foster a whole new appreciation for gemstones among those who are new to the study.

Alan Hart, CEO, Gem-A



Butterfly Nebula Brooches. Photo courtesy of Wallace Chan.

The ALO Photo Sphere

Versatility and Speed in Photographing for the Trade

Gem and jewellery photography often requires that a number of moving parts come together to get the 'perfect' shot. Jessa Rizzo reviews the ALO Photo Sphere, which allows photographers to focus on aesthetics by handling lighting, background and other factors.



The ALO Photo Sphere allows gemstones and jewellery to be photographed at different orientations with a variety of backgrounds and lighting options.



Gold plated silver bracelets shown on the Photo Sphere's glossy black table background.

The technology of photography, and the quality of the resulting images, is something that is always evolving. In today's age, when it comes to image quality, we are often looking for a quick result as well as visual perfection. In most cases, 'quick' and 'perfection' are two words that do not belong together, but in the past few decades digital photography has created different expectations. The ALO Photo Sphere builds upon this understanding, allowing for greater speed and excellence in gem and jewellery photography.

A brand of Doma Automation Srl, ALO is an Italian company based out of Arezzo, a city in Tuscany that is known

for its historical architecture, and for a goldsmithing tradition that dates to the Etruscan civilization. Today, Arezzo is an important jewellery manufacturing centre; it makes sense that an Italian company dedicated to providing services to the gem and jewellery industry would be based in that city.

ALO started in the industry by writing jewellery software solutions, and they continue to create apps that benefit the trade. It was not until 2004 that they began specialising in equipment for photographing jewellery. They began producing both hardware (including light boxes) and software such as camera-tethering apps. From there,

ALO set a goal to create a system that produced the best-quality photos in the least amount of time. While ALO always intended to provide their clients with a reliable product that efficiently and effectively photographed gemstones and finished jewellery pieces, the company spent twelve years listening to customer requests and then resolving the issues that arose from addressing those issues. As a result of resetting these priorities, the ALO Photo Sphere was developed.

What sets the Photo Sphere apart from many other types of photography equipment is that the user can move the machine on two automated axes while also adjusting the lighting. The system's unique design allows photographers to



A blue sapphire shot on the transparent table.

take high-quality images and videos. Anyone that photographs jewellery knows just how difficult it can be to properly orient each piece, how trying to find the right angles with the best lighting to make not only the gemstones look captivating but to show the metal to its best advantage. With the Photo Sphere, the jewellery stays in place, and the camera moves around the sphere to achieve many different views. Their Smiley Turntable can be used for hanging jewellery, such as necklaces and earrings, to show them in

The ALO team strongly believes that the only limitation of the Photo Sphere is the user's own creativity.

Even set-up is relatively simple; the machine is delivered with a QR code linking to assembly video tutorials. From there, there are a wide scope of uses for the system. The ALO team strongly believes that the only limitation of the Photo Sphere is the user's own creativity. In fact, a wide range of businesses use ALO's product in their own endeavours. Members of the trade who use the Photo Sphere to capture their own products include big-name jewellery companies, for both internal and external content, and small jewellery shops who wish to remain competitive and post captivating photos on e-commerce and social media platforms. Other Photo Sphere customers include wholesalers who need to maintain 1:1 ratio in photos for catalogues, factories who use the system's versatility for technical photos and for quality control, and designers who spotlight their creations with stunning photography and videos.

With so many options available to the user, The Photo Sphere is a fantastic way for any individual to capture the essence of jewellery and gemstones through high-quality photographs. ■



Zircon and silver earrings are captured using the Photo Sphere's Smiley Turntable, which allows hanging items to be photographed in a more natural position.

For more information on the Photo Sphere or other ALO products, visit www.alo.zone.

a more natural state. Thanks to the shape of ALO's machine, the photographer can rely on their own vision and creativity by manipulating the overhead spotlight to create focal points on the subject.

With the Photo Sphere, any user can achieve the following results:

- Technical pictures in 1:1 ratio (a ruler can demonstrate the actual size of the piece)
- Still-life picture with white or transparent background, without the need for any props or glue
- Lifestyle pictures that evoke emotion in the viewer via the use of props or a coloured background
- 360-degree turntable videos
- 180-degree spherical videos
- Combination turntable-spherical videos
- Live presentations that can broadcast over streaming platforms

The Photo Sphere is very user friendly; there are no specific skills required to run the device. ALO Customer Service offers remote classes and offers 2-3 hour training sessions for new users.



Cameos on a gold plated silver chain shown on a glass and tinted paper set.



View of Yaowarat Road,
the main road of
Bangkok's Chinatown.
Photo by M. Chuewong.

THE STUDY OF FIVE

JADE IMITATIONS FROM BANGKOK'S YAOWARAT ROAD

Montira Seneewong-Na-Ayutthaya PhD FGA examines five samples from Bangkok's Chinatown to identify materials that are commonly used to imitate jade.

Bangkok's Chinatown is in the city's Samphanthawong district; its main street is called Yaowarat Road. Officially built by King Rama V of the Chakri Dynasty in 1891, the area known as Yaowarat Road has been important for Thai Chinese communities since they moved from their old site, at the location of the current Grand Palace, in the late eighteenth century.

The path of Yaowarat Road is said to be like the curvy body of a dragon, making it an auspicious location for business. Vendors sell all types of goods, including but not limited to gold and jewellery, souvenirs and antiques. The most prominent jewellery pieces found in Bangkok's Chinatown use gold and jade, both of which are very important to Chinese culture. There is a Chinese

saying that goes, "Gold has a value; jade is invaluable" (Roy, 2007; Tourism Authority of Thailand, 2020).

Jade, called *yu* in China, is a valuable gemstone linked to immortality, as well as good luck, benevolence, purity and enhanced intelligence. It is used as an ornament and in jewellery. There are two types of jade, jadeite and nephrite and jadeite, referred to in Thailand



Rings with Burmese imperial jadeite. Photo by mj0007, courtesy of iStock.

as 'Chinese jade', and 'Burmese jade', respectively. Jadeite is also called 'Fei cui'; it is a sodium aluminium iron silicate $[\text{Na}(\text{Al}, \text{Fe})\text{Si}_2\text{O}_6]$ and the structure is an arrangement of grainy crystals. It has a refractive index (RI) of 1.66; its specific gravity (SG) is 3.24-3.43. Nephrite is a calcium magnesium iron silicate $[\text{Ca}_2(\text{Mg}, \text{Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2]$ that is made up of fibrous crystals that interlock in a matted texture. Nephrite has a lower RI, at 1.62, and an SG of 2.95. Nephrite is slightly softer than jadeite and tends to have a resinous lustre, while jadeite is more vitreous. Jadeite is found a wider range of colours, including green, lavender, yellow, white and black. Nephrite colours range from mid to dark green or grey-green, white, yellowish green and reddish brown. Most jadeite jade in the market is from Myanmar (Burma), while the nephrite jade is from China (J.M. Hobbs, 1982; Hughes, 2000; Franz et al., 2014; Usavagovitwong, 2013; Zeitlyn, 2018).

Jade jewellery is very popular; it is also expensive. It has therefore given rise to many imitations; especially jadeite, which is counterfeited because of its value and rarity. Jadeite imitations can be made from any material regardless of whether it is natural or fabricated. Minerals and materials used to imitate jadeite include nephrite, green chalcedony (chrysoprase), quartzite, green dyed quartz, aventurine quartz, green glass, albite, prehnite, serpentine and green garnet (Tan et al., 2003; Gem-A, 2008).

The identification of natural jade, and disclosure of treatments and imitations, is vital in the gem and jewellery industry. With study and careful practice, jadeite and nephrite can be expeditiously



Bracelet set with Burmese imperial jadeite. Photo by mj0007, courtesy of iStock.

separated, both from each other and from their imitations. Initial observation of the external appearance is performed with a 10× loupe. Through the loupe the observer can examine colour, surface lustre, texture and fractures. After that, gemmological instruments (both basic and advanced) are used to classify the material and to determine whether it has been subject to any treatment.

SAMPLES AND BASIC TESTING

Many jade imitations can be found on Yaowarat Road. For this study, five samples, all advertised as jade, were purchased from the jewellery shops in the Yaowarat Road area. All proved to be jade imitations. Sample details and basic instrument testing are provided in Table 1. SG and RI were collected to identify →

With study and careful practice, jadeite and nephrite can be expeditiously separated, both from each other and from their imitations.



Five samples, identified by sellers as jade, purchased from Yaowarat Road for testing Photo by M. Seneewong-Na-Ayutthaya.

Sample	Cut/Shape	Weight (ct)	SG	RI	UV Radiation Testing	
					LWUV	SWUV
A	Cabochon (small)	9.60	2.589	1.540	Chalky green	Chalky green
B	Cabochon (large)	10.71	2.653	1.545	Inert	Inert
C	Ring	36.34	2.639	1.530	Inert	Inert
D	Donut-shaped pendant	26.58	2.605	1.540	Chalky green	Chalky green
E	Carved Buddha pendant	19.86	2.252	1.480	Inert	Inert

Table 1: Gemmological properties of five jade imitation samples from Yaowarat Road, Bangkok, Thailand.

the material used to imitate the jade. Samples A, B, C and D are crystalline—quartz or quartzite (SG $\approx 2.59 - 2.63$, RI = 1.552 – 1.554), while sample E is a green glass, likely an artificial glass (SG ≈ 2.30 , RI = 1.50 – 1.70). Samples A and B showed strong fluorescence in a chalky-green colour under long-wave ultraviolet

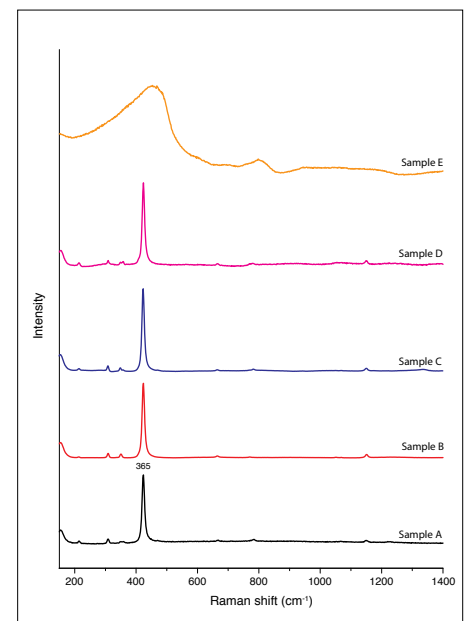
(LWUV) and short-wave ultraviolet (SWUV) testing, which may indicate trace resin or polymer filling in the specimens.

The microscopic appearance of the five jade imitation samples was then compared to natural jadeite. There is a fibrous appearance to jade imitation samples A, B, C and D; the

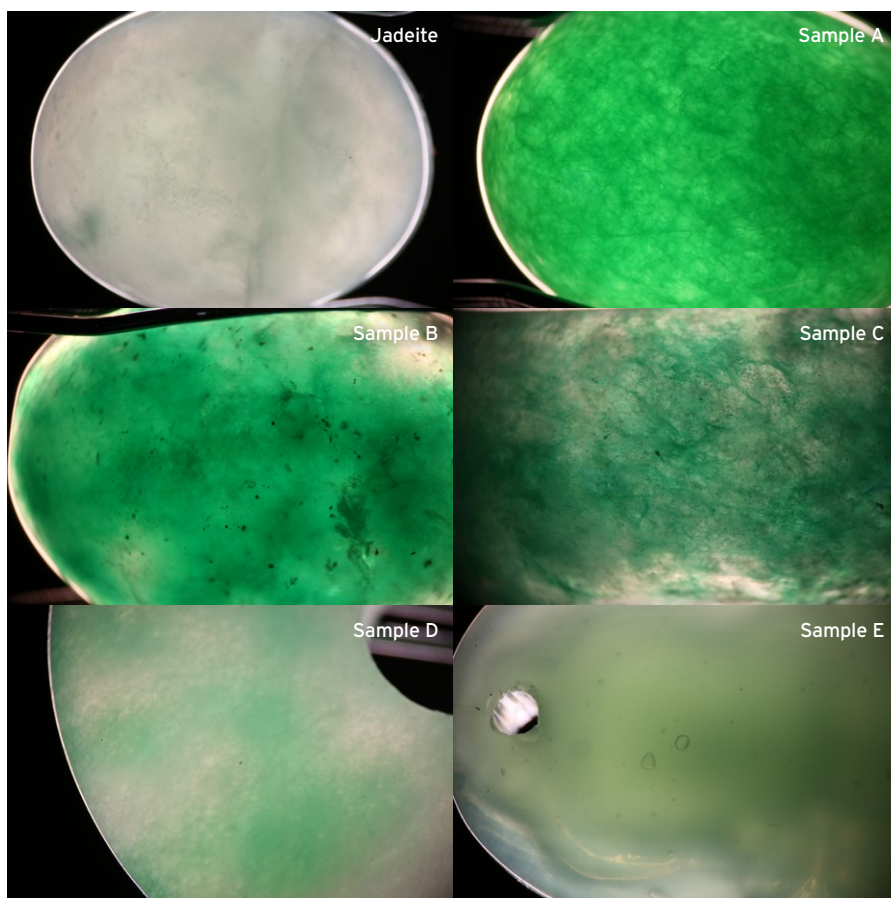
microscopic analysis also revealed green-colour concentrations between grains, indicating the presence of dye. In natural jadeite, the green area had a smoother, more consistent pale-green colour. Pale quartzite may also be dyed, usually green or other colours, with or without resin treatment. Gas bubble inclusions were found in jade imitation sample E, which could be a sign of an artificial (manufactured) glass. The samples were then ready for more advanced analysis.

ADVANCED INSTRUMENT TESTING

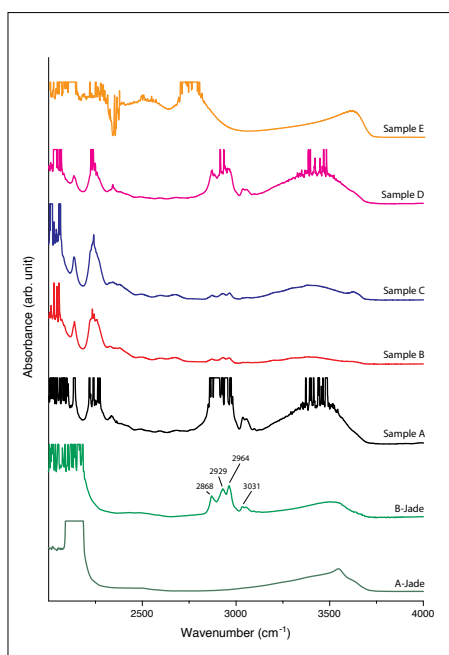
Raman Spectroscopy. The jade imitations were subjected to Raman spectroscopy, using a Renishaw inVia Raman microscope, to confirm the actual material used. Samples A, B, C and D were identified as quartzite by comparing with known spectra (Bauar, 2018). Quartzite is a polycrystalline species of the quartz group, one that has a granular structure. It is a fairly common jade imitation. Quartzite may be used to imitate white or yellow jade, or it may be dyed green to imitate high-grade jadeite. Lastly, sample E was confirmed to be a manufactured glass with an amorphous structure; this is a popular choice to imitate natural jade due to its inexpensive price point.



Raman spectra of jade imitation samples also identified samples A, B, C and D as quartzite, and sample E as an artificial (manufactured) glass.



Natural jadeite and jade imitation samples under a microscope (magnified 10 \times). The differences between the natural jadeite and between the five imitations can be seen. Photomicrographs by M. Seneewong-Na-Ayutthaya.



FTIR spectra of type A jade, type B jade and the five jade imitation samples. These peaks demonstrate that the type B jade and samples A, B, C and D were all subject to polymer impregnation.

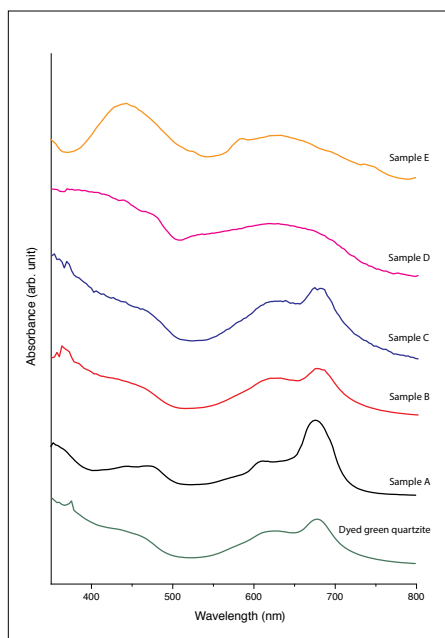
Fourier-Transform Infrared

Spectroscopy. Polymer treatment is used to enhance the durability and translucency of jade imitation. Fourier-transform infrared (FTIR) spectroscopy provides an excellent tool for analysing the polymer treatment in imitation jade samples. FTIR spectra of type A jade (natural, or polished with wax only), type B jade (bleached with acid before polymer resin impregnation) and jade imitation samples were taken using the Thermo Scientific Nicolet IS50 Spectrometer. The result showed that the type B jade has a large peak located in the aliphatic hydrocarbon region at 2868, 2929, 2964 and 3031 cm^{-1} , indicating the presence of polymer, wax or epoxy resin (Fritsch et al., 1992; Promdee & Wongkokug, 2014). Peaks in the aliphatic hydrocarbon region were also found in the spectra of samples A, B, C, and D, indicating that the polymer was found in the jade imitation samples. Samples A and D have strong polymer peaks that indicated a larger amount of polymer. The presence of polymer would account for the appearance of the chalky-green colour under UV radiation testing.

Ultraviolet/Visible/Near-Infrared

Testing. Ultraviolet/visible/near-infrared (UV-Vis-NIR) analysis has been used to reveal the colour treatment in jade

imitation, most notably by dyeing. Jade imitations are often dyed to look like natural jade. UV-Vis-NIR absorbance spectra were taken of a dyed green quartzite and the jade imitation samples using a PerkinElmer LAMBDA 1050 Spectrophotometer. The absorption bands of the jade imitation samples were then compared with the dyed green quartzite. Samples A, B and C are shown the same absorbance spectra as the dyed green quartzite. Sample E showed a green glass absorbance spectrum pattern (Liu et al., 2009). The results of this study indicate that most of the jade imitations obtained from Yaowarat Road for this study were dyed green quartzite.



UV-Vis-NIR spectrum of dyed green quartzite and jade imitation samples. Samples A, B, C and D showed the same absorbance as the spectrum for the dyed quartzite.

CONCLUSION

Five jade imitation samples from Bangkok's Yaowarat Road were analysed by basic techniques (specific gravity, refractive index, ultraviolet radiation and microscopic observation), then tested with advanced methods (Raman, FTIR and UV-Vis-NIR). Analysis indicated that four of the five samples are dyed green quartzite; sample E is green artificial (manufactured) glass. Dyed green quartzite is popularly used to imitate natural jade in Yaowarat Road because its appearance looks like natural jade at a cheaper price, but buyers must be aware of such imitations through disclosure. ■



MEET

MONTIRA SENEWONG-NA-AYUTTHAYA PHD FGA

I have been working as a research scientist with The Gem and Jewelry Institute of Thailand (Public Organization), known as GIT, in Bangkok, Thailand. Because of my background is chemical engineering, I needed to acquire fundamental knowledge for conducting gemmological research. As we all know, Gem-A is well-respected around the world, and the Association's FGA programme is renowned for its in-depth scientific study of gems. Thus, I decided to obtain my Diploma in Gemmology. The FGA has helped me to enjoy this fantastic opportunity at GIT and empowered me to work and meet new challenges within in the gem and jewellery industry. Above all, I believe that the FGA will be key in raising the standards for my own research interests.

For my Diploma project, I chose to write on jade imitations. Most jade jewellery that sold on Yaowarat Road, in Bangkok's Chinatown, are jade imitations. They are made from other stones such as dyed green quartzite and green artificial glasses. This report is to educate both Thai people and tourists, and to build trust and confidence when purchasing jade and jewellery in Bangkok and beyond.

A list of references is available upon written request to the editor.

When the FGA Meets Jewellery PR

There are many different career paths for the person interested in gemmology. Olga González FGA DGA, CEO of Pietra Communications, recalls how her Gem-A training led to a career in public relations.

Choosing a career is a daunting task, with thoughtful consideration taken when deliberating on one's future and livelihood. Growing up, rocks fascinated me. Back then I did not have any gemstones of my own, so I remember going out in the yard, collecting rocks from the ground and painting them with nail polish to make my first 'coloured gem' collection. I was proud of them and kept them in my windowsill. They were not, however, presented as the key to a career.

On the surface, it can seem like students have to choose between making money and following their passion, as if they must choose one over the other. I can understand; I was given a choice between three possible professions: doctor, lawyer

or architect (because I was talented with my Lego, apparently). Gem-A Students reading this article may have opted for passion because, like me, they have a fascination with gems and jewellery. During a Foundation class with Pat Daly, I saw a horsetail inside a demantoid garnet. I was fascinated by the whole other world inside the gem, and I found myself hooked on gemmology.

To be sure, few things are as exciting to those of us with a love of gemstones as being a gemmologist. Jewellery is unique — it is the only luxury item with both sentimental and inherent value, passed down from generation to generation. It commemorates love, people, milestones and loss, and the gemstones that are part of so many pieces are a wonder. Within

the trade there are an endless array of possibilities for career paths, even ones that overlap more traditional studies, like business. This year marks the tenth anniversary of my New York City-based agency, Pietra Communications, which offers various communications-related services to the trade. The most popular by far is our work within the space of public relations, placing brand products and news in editorials across print and digital media and positioning clients as industry experts in their niche.

In 2006, I moved to London for graduate school at Christie's Education. The master's program in art connoisseurship covered European fine and decorative art from the Renaissance to the 1960s, and I was engrossed in it. While studying, I was



Ms González, shown here at an event for the Women's Jewelry Association, currently serves as president of that organisation's New York Metro Chapter. Photo by John Curry.

accepted into an internship in the curatorial department of the Worshipful Company of Goldsmiths, helping then-curator Rosemary Ransome-Wallis. Rosemary was extremely passionate about gold and silver, and under her tutelage I learned to identify goldsmithing techniques and was allowed to take charge of several projects. The Goldsmiths' Company has a collection of contemporary jewellery, which piqued my interest, and Rosemary gave me the opportunity to judge a jewellery competition, advise on buying for the permanent collection and organise my first press preview event (for the *Treasures of Today* contemporary silver exhibition in Oxford). That was the start of my jewellery PR career.

On the last day of my internship, Rosemary told me she was sure it was my destiny to work in the jewellery trade. She gave me the number of Dr Jack Ogden, then-CEO of Gem-A. I did not know at the time that Jack would become a mentor and friend. I was nervous about calling since I did not know what to say. Thesis writing at Christie's was my life, but I wanted to continue with my education in gemmology and was seeking advice on how to start a career in the UK, where I wanted to stay. I cold-called Jack and asked if he would be open to meeting and reviewing my resume. He enthusiastically agreed.

During our meeting, Jack mentioned that there would be a position opening soon at Gem-A, as the Membership Manager was going on maternity leave. Serendipitously, my last position was as a Membership Manager for the Girl Scouts in New Jersey, where I implemented new programs that exponentially grew membership there. I told him I would apply, but that I was more interested in a path related to marketing and events. At that time there was no such position, but 2008 would mark Gem-A's one-hundredth anniversary, so something special was on the radar. I started working part-time at the Association and enrolled in the Foundation Course while writing my thesis at Christies.

After finishing my master's degree, I began full-time work at Gem-A in Membership before becoming the first Marketing and Events Manager. It was an exciting time to be a part of an incredible company, and it was gratifying to take on multiple projects. Reporting to Jack



Olga González looks through a loupe at her office in New York City. Photo by Matthew Yeung.

Ogden was an exercise in observing great leadership. He was a visionary who openly embraced change and encouraged staff to be innovative. From Jack, I learned the art of thinking on my feet, which is essential to surviving in the world of public relations. He taught me to question everything. As a jewellery historian and expert in ancient jewellery-making techniques, I appreciated how he would analyse gems, jewellery and artefacts that came his way, always thinking outside of the box. That level of curiosity and dedication to continuous education are practices I continue in my own business.

Gem-A wanted to update their look in anticipation of the one-hundredth anniversary, so I moved fast and worked many late nights. During my first week, I produced the idea for a new logo that incorporated the Gem-A Coat of Arms. I worked with a third-party vendor on a redesign of *Gems & Jewellery*.

Our vision included putting a model on the cover, developing marketing materials, and creating a new website, for which I wrote all the text and launched in under three months. Finding venues for Conference, planning a candlelit anniversary dinner and auction, designing ads, speaking to press and writing press releases were all part of a typical day. As a regular contributor to *G&J*, I worked closely with the late Mary Burland, another brilliant mentor. She taught me how to use InDesign and Illustrator to create layouts for issues.

After working at Gem-A during the day, I took in-house evening courses. I was lucky that I was able to attain my FGA while working in communications in the gem trade. I felt I was set for a life in the UK until my application to extend my visa was rejected. I didn't see it coming, so I found myself starting over.



When life is at a crossroads, I always pray, "May the right doors open, and the wrong doors close." Doors opening and closing is precisely how my business began.

When life is at a crossroads, I always pray, "May the right doors open, and the wrong doors close." Doors opening and closing is precisely how my business began. My career path is one I never could have imagined, yet I am grateful for the wild ride it has been.

Growing up, my father often said, "Whatever is meant for you, no one can take away from you." After coming back to the United States, I interviewed for four months before working in-house with a firm again. Some find themselves entering

the trade because of family, either taking over a business or being exposed to it from their parents. At that time, I wished that was my story, because it would have been easier navigating with some groundwork in place, but I am grateful for the experience of building a business.

A funny thing happened as I worked for other companies: I was contacted by designers to design their websites, write press releases to launch their collections, do brand copywriting and plan events. Then a number of occurrences shifted

my perspective. First, I threw my back out and needed to get a discectomy. I would be bedridden for months, but also needed flexibility during recovery to do physical therapy post-surgery. Second, side work was coming in rapidly via word of mouth, from designers to manufacturers to gem dealers. Third, in one week people in my life kept insisting that I start my own business. Clients offered retainers to start my own agency so I could work more for their brands.

During that time, trade members Herta and Elena Kriegner spoke frankly and encouragingly about their passion for entrepreneurship, as did our mutual friend, the late Christian Toggenburger. His sudden passing was a stark reminder that life is too short not to choose a path that brings happiness and fulfilment. I decided to dive in. While out on the town with friends, I toasted the start of my new business, which I announced on the spot. The next day, I started the paperwork to incorporate. It was impulsive, and there was no business plan or forethought. Ten years later, I can say it was the best decision I ever made. Elena and Herta have become trusted collaborators — Elena is an incredibly talented bench jeweller, and Pietra Communications commissions her to make corporate gifts and custom pieces, while Herta is an exceptional graphic designer with whom we work on our customers' design projects. For years, we have worked together and inspired each other.

My gemmology degree is something I use every day, sometimes in unexpected ways. Within my own company, I promote businesses I personally believe in and where I have product expertise. Before attending Christie's and Gem-A I received a bachelor's degree in English and art history at Rutgers University in New Jersey. After receiving my FGA, I went on to complete a certificate in Appraisal Studies at New York University before completing Gem-A's DGA. For years, I worked in TV/film/theatre, and I have travelled all over the world. As a result of all this experience, Pietra Communications provides services for the gem and jewellery trade (about 80% of our clients), but also works in the fine art, fashion, media and travel sectors (though these fields are not publicly promoted). To this day, our growth is due to word of mouth,

Her work in the trade brings Ms González to sites all over the world; here, she is visiting a mine in Idar-Oberstein, Germany.





Olga González looks at jewellery with Herta and Elena Kriegner, who encouraged her to start Pietra Communications. Photo by Matthew Yeung.

and our new customers are mainly referred to us by other clients.

Training my staff on the company's expertise, specifically in gemmology, is a part of my day-to-day life. If we are working with a client that designs with gemstones, I explain the background of a given gemstone and why this design or story of this stone is significant within the history of jewellery. Clients who are designing against an editorial calendar will often come to me for advice on which stones to use, especially when they are not gemmologists. I advise them on hardness and setting, sharing what material may work best for certain pieces as well as consulting on lore and symbolism that could enhance the brand story.

Every day our agency sorts through media opportunities, where editors contact us about a story they are already writing, looking for our clients to fill in content. For example, they may be writing a holiday gift guide, or seeking an interview with a gemmologist about synthetic diamonds. At times, I do interviews when writers need an expert opinion from a gemmologist and none of my clients can provide a quote in time for

a deadline. Also, I write for trade and consumer publications on gem and jewellery-related topics. At times it leads to adventures, like visiting mines and expanding my knowledge in person.

Gemmological knowledge also comes in handy for photo shoots and celebrity styling. Since I know how to speak about the pieces and how to handle jewellery, I often teach about gemstones at shoots. I can answer questions from those who want an in-depth understanding about what they are wearing.

For event planning, a Gem-A education is also useful. Whether providing advice to bakers (What colours would be realistic in this geode cake?) or mixologists (What are clever ideas for gem-themed cocktails?), knowing one's stones makes it fun to host a gemmy party. Between clients and associations, we are constantly planning events. One of our first events was the publicity for a jewellery exhibition at the Forbes Galleries, called *Jewellery in the Space Age*, where we suggested some designers for the curator and helped with some acquisitions, such as getting a Cartier Lunar Module to New York for the event.

Currently, I am the president of the Women's Jewelry Association (WJA) New York Metro chapter; I am also a past president of the Public Relations Society of America New York chapter. No matter where your gem education takes you, it is important to pass the torch on by teaching and mentoring others. With WJA, I work with fifteen incredible board members to oversee thirty-seven committee members across communications, events, membership, mentorship, diversity and inclusion, as well as sponsorships and partnerships. Using what I learned at Gem-A, I bring ideas to the table for educational events or suggest hot topics in the trade. We offer members relevant in-person and virtual gatherings that support their businesses and develop their education.

Growing up, I'd never heard of gemmology as a discipline. Now I use my gemmological education in my work, volunteer life, and by collecting. I collect gems, mineral specimens and contemporary jewellery, and it brings me joy, especially when I wear the jewels. Which doors can be opened through gemmological education? The sky is the limit. ■

All photos courtesy of Olga González.

EIGHTEENTH ANNUAL SINKANKAS SYMPOSIUM

Nicole Ahline FGA summarises how alexandrite and colour-change gemstones were explored during 2022's virtual meeting.

The eighteenth annual Sinkankas Symposium, co-sponsored by the Gemological Institute of America (GIA), the Geo-Literary Society and the Gemological Society of San Diego, was held virtually this year. The Sinkankas Symposium, held in honour of American gemologist and mineralogist John Sinkankas (1915-2002), brings together a diverse group of speakers to share their knowledge. In response to 2022's topic, eleven speakers presented on alexandrite and other colour-change gemstones via pre-recorded videos that were available to watch online from 25 April to 13 June.

The emcee was **Robert Weldon**, director of the Richard T. Liddicoat Gemological Library at GIA's Carlsbad, California. As a world-renowned gem photographer, Weldon was also one of the event speakers, discussing the challenges of capturing colour-change gemstones on camera. He quoted French photographer Henri Cartier-Bresson, who said, "It is an illusion that photos are made with the camera...they

are made with the eye, heart, and head." This encompasses Weldon's approach to shooting these gemstones. He states how the key to photographing the stones is continuous light with a stable tripod and access to Adobe Photoshop to accurately achieve the colour.

Two speakers covered the mining of colour-change gemstones. **Dr Ciğdem Lüle**, an archaeogemmologist and founder of the consulting firm Kybele, talked about colour-change diaspore from Turkey, the subject of her master thesis (for more on Dr Lüle's education and career, see Spring 2022 *G&J*, pp. 34-37). Colour-change diaspore – shifting from a muted green to a muted pink – has become popular in the past two decades. Dr Lüle detailed the formation of diaspore and its metamorphic origin in western Turkey, noting that surrounding the diaspore mines – which became more active in the 1970s and 80s – are corundum-bearing emery mines that have been producing since the Hellenistic period (300-30 BCE). With

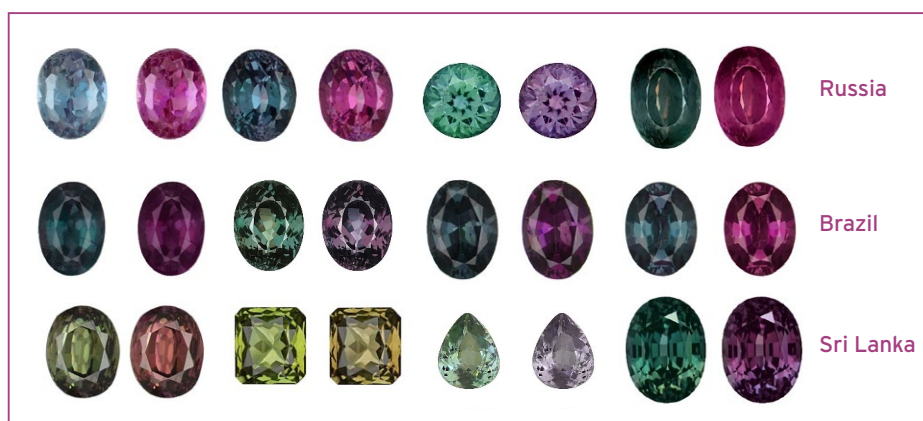
its perfect cleavage in one direction, cutting and setting these stones can be challenging, but Dr Lüle is not aware of any laboratory-grown counterpart, nor does she know of any treatments applied to the Turkish material.

Wim Vertriest, manager of field gemmology at GIA, gave an overview of the geology and mining of alexandrite. Alexandrite is a variety of chrysoberyl, which is a beryllium aluminium oxide, and the colour-causing chromophore is chromium. Vertriest explained that one of the reasons alexandrite is so rare is because of the presence of both beryllium (Be) and chromium (Cr). These two elements are found in less than 1% of Earth's crust and tend to concentrate in two different environments. To have them come together to form alexandrite is very uncommon. Vertriest discussed material found in primary and secondary deposits. In primary deposits, gemstones are found in the place they formed; for alexandrite, these include the Ural Mountains in Russia. The mining of primary deposits allows gemmologists to have a better understanding of the local geology. Secondary deposits are locations where gemstones were transported out of their host rock and tend to have higher percentages of larger and cleaner stones. These secondary deposits for alexandrite are found in Brazil and Sri Lanka.

Dr Aaron Palke, senior manager of coloured stone research at GIA, and **Dr George Rossman**, mineralogy professor at California Institute of Technology in Pasadena, jointly tackled the causes of colour in colour-change gemstones. They used ultraviolet-visible (UV-Vis) spectra to show how daylight and incandescent light can portray different colours in the same stone. The fact that alexandrite is anisotropic – it has different absorption properties that vary with the stone's orientation – was also mentioned. Dr Palke covered the different origins of alexandrites and the colour ranges they commonly depict. Stones from Russia and Brazil appear to be a more typical blue-green to green in daylight, changing to red-purple to purple in incandescent light, while material from Sri Lanka and India tends to be less saturated with brownish or greyish overtones. This is correlated to a greater presence of Cr in Brazilian and Russian alexandrites; those from



Two alexandrites from Russia, a 32.55 mm twinned crystal and a 2.61 ct faceted stone, are shown in daylight (left) and incandescent light (right). Photos by Robert Weldon/GIA; courtesy of William Larson.



Alexandrites from different localities in incandescent light (left) and daylight (right). Photo courtesy of Aaron Palke/GIA.

Sri Lanka and India have increased amounts of iron. Drs Palke and Rossman also touched on colour-change in sapphires, cobalt spinel, tourmaline and a tricolour-change cubic zirconia.

Dr Sally Eaton-Magaña, senior manager of diamond identification at GIA Carlsbad, spoke on colour-change diamonds. The diamonds that show the closest pattern to the alexandrite effect are natural diamonds from the Argyle Mine in Australia. At GIA, diamonds are colour graded at their stable state with daylight-equivalent lighting. The diamonds that exhibit this colour-change effect are coloured by hydrogen with their graded colours ranging from grey to blue; when observed under incandescent lighting, the diamonds tend to have a violet coloration. Other diamonds Dr Eaton-Magaña highlighted are that show a photochromic effect, which is a temporary colour-change response due to a certain light source, and a thermochroic effect, a temporary colour change due to a variation in temperature.

Nathan Renfro, manager of gem identification at GIA Carlsbad, explored the micro-world of alexandrite as well as other colour-change gemstones such as pyrope-spessartine garnet and sapphire. The inclusions found in alexandrites are reflections of their growth environment and can include fluorite, apatite and fine needles. He reviewed inclusions in laboratory-grown alexandrite via the flux and the Czochralski pulling processes. Renfro also spoke on pareidolia, the tendency to perceive vague patterns as familiar objects, with splendid examples of inclusions reflecting this effect.

Attendees got a look into the colour-change mineral and gemstone collection

of **William Larson**, president of Pala International, with specimens from different localities. Larson showed alexandrites from Zimbabwe, Russia, Sri Lanka and Brazil. Of these, Brazil has become a large producer of alexandrites, specifically from Malacacheta and Hematitia. He displayed his 'holy grail' of alexandrites, a single cyclic twin from Russia. Other gemstones included a 5.25 ct pyrope-spessartine from Tanzania and diaspore specimens from Turkey. Larson's photochromic stones included hackmanite specimens from Badakhshan, Afghanistan, and Mogok, Myanmar (Burma) that were on the cover of a 2021 issue of *Journal of Gemmology*.

Niveet Nagpal of Omi Privé provided an insight into designing jewellery with colour-change gemstones. Nagpal prefers an emerald cut or step faceting when working with colour-change centre stones; the stone's colours will reflect up along the facets when using mixed light. Nagpal has designed many pieces with alexandrites as side stones that he sets in black rhodium to enhance their colour change, rather than platinum, which can lighten the stones. Omi Privé sets a small alexandrite next to their marking on the shank of one-of-a-kind pieces to emphasise the rarity of the gemstone.

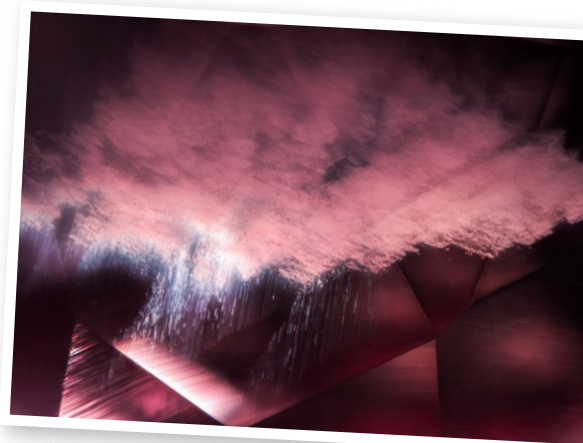
Stuart Robertson, vice president of Gem World International, spoke on the current price trends of alexandrite, colour-change garnet, and colour-change sapphire. The value of the gemstones is dependent on availability, as well as the presence – or lack of – a phenomenon, promotion and supply. Alexandrite is among the most coveted gems in the international market, and

Robertson believes the buying of the finest materials for wealth preservation will accelerate. Currently extra-fine alexandrite may sell for USD \$40,000/ct (£32,700/ct). The affordable alternate to alexandrite is colour-change garnet, where extra-fine material may sell for USD \$2,000 per carat (£1,635/ct). Colour-change sapphire prices are less defined, as there is less of an emphasis on the colour change, but as seen with other phenomenon stones in the market, their prices have doubled in the past decade.

In conversation with Robert Weldon, gem dealer **Evan Caplan** mentioned that there is always hope for the future of the trade, specifically in alexandrite, as it is one of the rarest stones even among collectors. Even with the little mining that is occurring due to the economic crisis, Caplan believes there are stones in the ground ready to be mined, and voiced confidence that the market will bounce back over the next several years.

A common theme that all eleven speakers spoke of is the rarity of alexandrites and other colour-change stones. The photos and specimens that they showed to emphasize the beauty of these gems were extraordinary. Many of these can be seen in the *Proceedings from the Eighteenth Annual Sinkankas Symposium*. Starting 30 June, a free PDF of the proceedings will be available for download; more information is available at <https://sinkankassymposium.net/>. Pre-orders of the physical volume will start to ship in early July.

We look forward to what the nineteenth Sinkankas Symposium has in store. ■



A 0.73 ct alexandrite displays the pareidolia effect when viewed with fibre-optic lighting. The 'cloud' inclusion is composed of parallel bands of particles; the 'rain' is fine oriented needles. Photomicrograph by Britni LeCroy/GIA; field of view 2.90 mm.



Modern British Jewellery Designers 1960-1980: A Collector's Guide

Reviewed by Susi Smither BSc FGA JDT

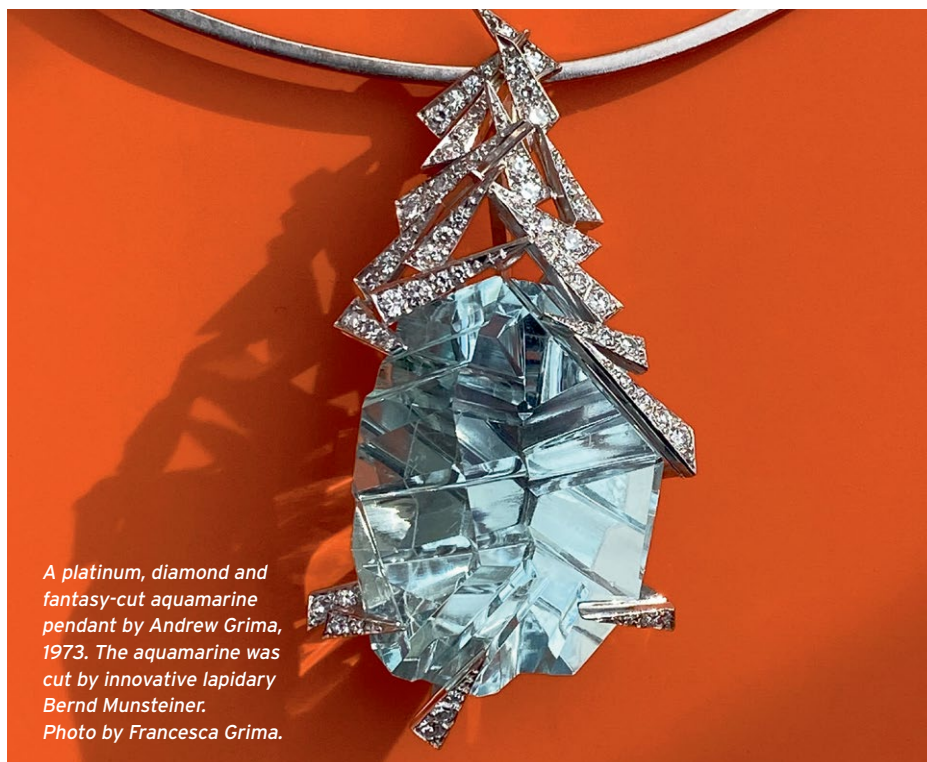
As a designer and goldsmith, I have to confess that I often don't read a word in jewellery books. I've a beautiful library of weighty tomes which I often use as a palate cleanser between designs. So when I was invited to give a book review, I was delighted to take the time to properly digest this beautiful book and learn more about this pivotal time in modern British jewellery history and the evolution in design that took place over twenty years.

From the outset it's apparent that this is a life-long passion for Mary Ann Wingfield. She has written this book to share her deep respect for the twenty-five key British jewellers of the time, including Stuart Devlin CMG, Elizabeth Gage MBE, Joseph Kutchinsky and Gerda Flöckinger CBE. Each designer

gets their own chapter, but rather than a dry listing of their merits, each biography is a small insight into their life's work. I love hearing the convoluted journeys which brings people into the trade – or even leave the trade in one case – and Wingfield brings these stories to life. Through what must have been painstaking research, she's pieced together the designers' history in the jewellery industry as well as noting awards won and notable commissions. One famous example she provides is of Louis Osman's commission by The Worshipful Company of Goldsmiths to create the only known British royal crown to be made in the twentieth century. This was worn by HRH Prince Charles on his investiture as Prince of Wales in 1969. It is an interesting work, since the body



An 18K two-colour gold and diamond necklace from Alan Gard, comprising overlapping bark-textured panels with claw-set brilliant-cut diamonds, maker's mark AMG, 1974.



A platinum, diamond and fantasy-cut aquamarine pendant by Andrew Grima, 1973. The aquamarine was cut by innovative lapidary Bernd Munsteiner. Photo by Francesca Grima.

of the crown is made in 24K Welsh gold and iridium, a noble metal not normally used in jewellery.

Throughout *Modern British Jewellery Designers* we are treated to stunning images of over 100 pieces of jewellery from these top-class designers, the photos often filling an entire page so we can revel in their details. It's always a pleasure to see some original designs and we are treated to eight gouache renders from Tom Scott. The inclusion of an evocative *Vogue* cover from 1965, featuring model Jean Shrimpton wearing a showstopping Andrew Grima aquamarine ring, really sets the scene. Wingfield explains that fashions were changing thanks to the influence of designers Barbara Hulanicki (founder of clothes store Biba) and Mary Quant (owner of the Bazaar

boutiques). The latter, having a keen eye for designer jewellery, began selling paper and plastic jewellery by Wendy Ranshaw and enamel pieces from Gerda Flöckinger. However, times changed in the 1970s and 1980s, "with power dressing and the growing confidence of women to buy their own jewellery."

The book's introduction gives a glimpse into the clashing economics of the time. As a goldsmith myself, I revel at the idea of the London Gold Pool, formed by eight central banks in the United States and seven European countries to 'peg' the price of gold at \$35 per ounce through an agreement reached in November 1961. Sigh, I can only dream. As a result, up until the London Gold Pool collapsed in 1968, designers had the freedom to experiment with large expanses of textured gold – bark from Alan Gard, twisted rope from Hans Georg Maunter, 'cubes' from John Donald and Andrew Grima's distinctive gritty surface or molten gold – without blowing their budgets.

A pivotal and audacious moment pins many of these jewellery designers together and signifies the start of this era of jewellery design: the International Exhibition of Modern Jewellery 1890-1961. This event was organised by Graham Hughes, art director of The Worshipful Company of Goldsmiths, in association with the V&A and held at Goldsmiths' Hall in 1961. As a result of this show, Wingfield notes, "the nucleus of a permanent jewellery collection at Goldsmiths' Hall was formed by gift, bequest and purchase." This acted as a fulcrum that not only thrust individual

Andrew Grima created this 18K yellow gold, 1.5 ct diamond and emerald brooch pendant with additional detachable carved drop, maker's mark HJCo, 1964.

designers into the spotlight but put British jewellery on the map and opened trade up to the rest of the world.

Wingfield does a wonderful job of highlighting the vital role that Graham Hughes played throughout these two decades, from organising this exhibition and recognising these talents to mentoring certain jewellery designers and touring with them overseas. One such designers is Gilian Packard who, in 1971, became the first female Freeman of The Worshipful Company of Goldsmiths in a professional capacity. In fact, Wingfield holds Hughes in such high esteem that she ties the closing of this revolution with his resignation from The Worshipful Company of Goldsmiths in 1981. "The halcyon days were over

but the flowering of creativity that Hughes and the exhibition of 1961 has launched would be remembered for ever," Wingfield writes.

From the introduction I was captivated by Wingfield's desire to help the reader learn by dedicating a section to The Art of Collecting. This includes invaluable advice such as the importance of proving provenance once pieces become vintage – always keep the original box and receipt. This ensures that a collection will hold its investment over time. We get glimpses through the book of Wingfield's own love of collecting; there's even a few pieces of hers included amongst the images. A woman after my own heart, Wingfield declares herself a true 'rockhound' discovering a lilac-blue ➔



Brooch by Michael Gosschalk in 18K gold, pink sapphire and diamonds, maker's mark MG, 1970.



chalcedony gold pendant by Hans Georg Mautner in Cornwall and aptly naming him Sid the Scorpion.

There's a wonderful tie running through the book of jewellery chosen or commissioned by notable collectors, and the bar is set by including a forward by David Armstrong-Jones, 2nd Earl of Snowdon. Lord Snowdon explains his love of design is inherited — his father, the 1st Earl of Snowdon actively "encouraged my mother, Princess Margaret, to support the creative talent of the independent jewellery designers who were testing the boundaries of new possibilities in jewellery making and design in the early 1960s." This patronage of HRH Princess Margaret led to an exceptional collection which, on her passing, came up for auction at Christie's in June 2006. Every piece was sold with the original documentation to prove provenance. Her collection included the work of seven independent designers – Stuart Devlin, Andrew Grima, John Donald, Alan Gard, Michael Gosschalk, Leslie Durbin and Theo Fennell – five of whom are represented in Wingfield's book.

For my fellow gemmologists out there, we are treated to plenty of unusual stones as this era heralds the start of designers using rough gemstones in their work. Graham Hughes is quoted as crediting Nevin Holmes' 1960s silver ring using uncut opal with being "Probably the first modern jewel ever made in Britain using a rough as opposed to polished stone."

We are treated to lots of their trendsetting designs, including a vivid



From Andrew Grima, an 18K yellow gold open-work ring of abstract design set with single-cut diamonds, signed GRIMA, 1968.



From Tom Scott: 18K gold, citrine and diamond collar pendant necklace and matching ring, maker's mark TES, dated 1969.

green diopside pendant brooch and a pastel-toned fluorite brooch, both by Andrew Grima; a polycrystalline garnet taking centre stage in a brooch by George Weil; a specimen of rock crystal suspended in a necklace from David Thomas; and multiple pieces from Gillian Packard incorporating minerals, including a stunning necklace of thirty-two watermelon tourmaline slices made in 1970 which anyone would be proud to wear today.

The expert lapidary skills and unusual fantasy cuts coming out of Idar-Oberstein, Germany made their way into British jewellery in the 1970s, and the book includes a showstopping Andrew Grima platinum pendant from 1973 featuring an aquamarine cut by Bernd Munstiener — two masters collaborating to create a work of art where stone and metal come together harmoniously.

It's with diligent research that Wingfield has been able to elaborate on each designer and I particularly loved reading about the interconnecting trajectories of

their learning and careers: who studied under whom, who sold through another's shop and even down to the details of who attended Gerda Flöckinger's pivotal Experimental Jewellery class at Hornsey College of Art.

Readers get a sense that Wingfield enjoys the detective work of tying together the tales and tracking down pieces of long-lost jewellery in auctions. One example is a wonderful anecdote about Alan Gard from a visit to his workshop in Hatton Garden. She had acquired one of his brooches and arrived at his workshop wearing it on her lapel. She recalls, "As he opened the door he cried, 'My brooch!', which was quite amazing because it was more than 50 years since he had last seen it." You get a glimpse of her dedication when she comments on multiple visits to Tom Scott, "The stairs up to his workshop are still hazardous, the workshop is in a time warp and the tools could have been used in Pliny's day."

A pivotal and audacious moment pins many of these jewellery designers together and signifies the start of this era of jewellery design: the International Exhibition of Modern Jewellery 1890-1961.

Andrew Grima is probably the most known of the jewellers of his time. Wingfield explains, "I first met Andrew Grima through Michael Gosschalk and his French wife, Jenny Fischer, in 1959. Jenny was a society hat maker with a little shop at 16 Motcomb Street, and I was her hat model — a very happy association for us both." Grima rightly gets a full sixteen pages of *Modern British Jewellery Designers*. Having met him on multiple occasions, Wingfield

is able to give a brilliant overview of a master jeweller and artist-designer with a shrewd business mind who understood the importance of achieving 'star quality' (an attribute Wingfield also gives to Roy King). Through Wingfield, it becomes apparent how a 2.97 ct greyish-blue diamond ring (hallmarked London and dated 1971) up at auction in Bonhams in 2015 sold for £1,482,500, a world record for a Grima piece. The pieces chosen to represent him in this book give a deeper

understanding of his ground-breaking style and his nuanced design which evolved around rough gemstones.

It's hard to choose my favourite piece in the whole book, as there's so much exquisite craftsmanship on display, but for any rockhound a juicy red spinel with its triangular crystal face serving as a "table" entombed in a golden cavern created by John Donald is perfection —



From Tom Scott: 18K gold, citrine and diamond collar pendant necklace and matching ring, maker's mark TES, dated 1969.

amazing to think it was created fifty-five years ago. In fact, Donald is quoted as saying, "I feel sorry for the designers following us, ten years later, as we have all experimented in so many ways that they found it difficult to be innovative."

Wingfield writes with ease as if she's letting her readers into a secret; by the time I finished the book, I appreciated her cohesive approaches to the era and I learnt many things which I probably should have known before. Novices, art historians through to designers, and avid collectors themselves will enjoy this book. It has a place in the library of anyone who enjoys jewellery, especially to act as a future reference. The only thing missing is that I would have loved a biography of Mary Ann Wingfield herself and even a further peek at her own collection. Having finished the book, I'm now left with a tantalising treasure hunt of where to find pieces from each designer. ■

Each jewellery piece shown is from a private collection. Photos by Jon Stokes unless otherwise indicated.



An 18K gold brooch pendant, designed as a segmented textured panel set with oval and semicircular opal cabochons, by Alfred Gruber. Maker's mark AGS, 1970.

A Glance Back at Gems&Jewellery

An overview of some of the stories that *G&J* has delivered to our readers over the years.

Since its inaugural issue in 1991, *Gems&Jewellery* – first released as *Gem & Jewellery News* – has diligently kept Members informed about industry-related matters. Throughout our evolution from the newsletter format to a printed colour magazine to the online platform used to deliver *G&J* today, we have published commentary on trends and terminology, trade shows, updates on treatments and enhancements. Here is a summary of *G&J*'s articles over the decades.



A diamond tiara of oak leaves reviewed in *Gem & Jewellery News*, Summer 1997.



Five Years Ago... Summer 2017:

The articles in our Summer 2017 issue covered the wide range of topics for which *G&J* has become known.

The partnership between

Gübelin Gem Lab and Gemfields that yielded the DNA-based Emerald Paternity Test; the field trip to Australia, taken by Carmen Garcia-Carballido FGA DGA, to explore the opal and sapphire industries; and an interview with De Beers CEO Bruce Cleaver were all found in these pages. The cover shows thin-film interference in a Brazilian topaz crystal, using oblique plus transmitted illumination (photo by Anthony de Goutière).



Ten Years Ago... Summer 2012:

Reports in *G&J* include a brief discussion of a golden coral bead that was both impregnated and coated with a polymer or resin; a brief from the

2012 CIBJO Congress and Vicenza

Jewellery Fair; and photomicrographs of fossilised amber. A recounting of issues in the diamond trade was written by then-Association president Harry Levy FGA. In the cover photo, strain fields in amber caused by the included midge give rise to beautiful interference colours due to anomalous birefringence around the silhouette of the insect (photo by Michael Hügi).

Fifteen Years Ago... Summer 2007:

Readers learned that FGA graduates were eligible for entry into a new BSc Honours degree programme at Kingston University, London. An update on China's bead cutting industry was included, as well as a discussion of Gem-A's assistance in providing ancient gold samples to students from the Physics Institute from the University of Bern. The cover image is of a fine and strongly banded agate from Ballindean, Scotland; photo courtesy of the Trustees of the National Museums Scotland.

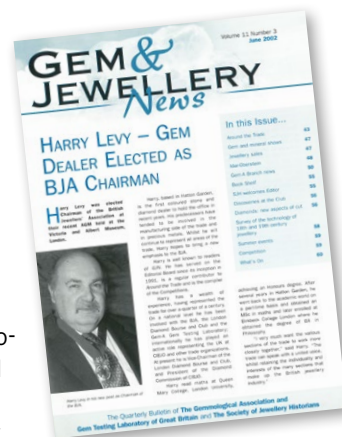
Twenty Years Ago...

Summer 2002: *Gem & Jewellery News* opened with editorial board member Harry Levy's election as chairman of the British Jewellers' Association. Mr Levy also penned an article explaining the

difficulties of establishing pricing structures for high-quality coloured gemstones. Other content included a discussion of so-called 'cultured diamonds', a tour diary of Idar-Oberstein, and a celebration of the Midlands Branch's 50th anniversary.

Twenty-Five Years Ago...

Summer 1997: The June 1997 issue announced that the Gemmological Association and Gem Testing Laboratory of Great Britain were on the internet! Readers were advised to head to the website (www.gagtl.ac.uk/gagtl). Plans for the website included abstracts of *Journal of Gemmology* articles and links to sites run by Members. The issue also included a review of Wartski's 'One Hundred Tiaras' exhibition, which featured a diamond tiara of oak leaves (pictured at top of page) made by Garrard for the 15th Duke of Norfolk on the occasion of his 1904 marriage to Gwendolen Constable-Maxwell (photo courtesy of Wartski). ■





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