

Gems & Jewellery

Summer 2026 / Volume 35 / No. 2



CONSIDERING THE
ALTERNATIVE/MIXED
METALS TREND

UNDERSTANDING
THE CRAFT CODE

LEARNING ABOUT
BOTSWANAMARK
DIAMONDS

OPENING THE
PHOTOGRAPHER
OF THE YEAR
COMPETITION



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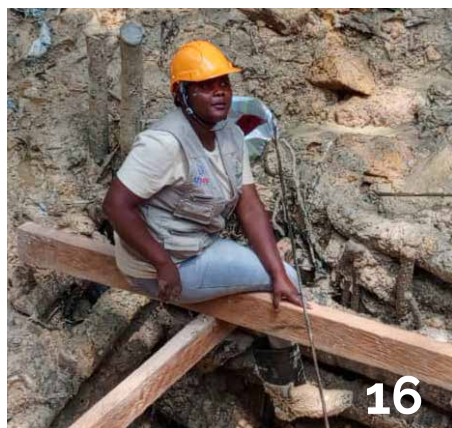
SUMMER 2026

AN ALTERNATIVE METAL REALITY

Christine Puleo Reis discusses the state of alternative metals, and the ongoing trend of mixed-metal jewellery, at the Spring 2026 Las Vegas Shows and beyond.



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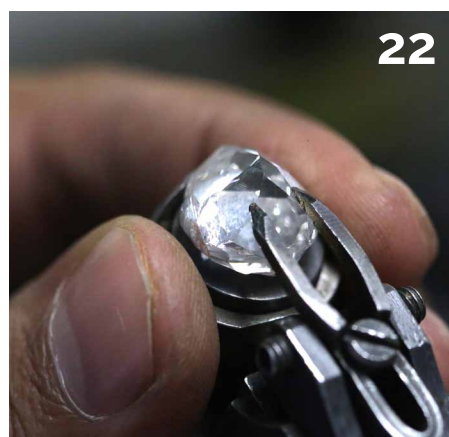
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CRACKING THE CRAFT CODE

Cristina Maria Villegas and Jennifer-Lynn Archuleta consider whether responsible mining frameworks can be applied to the coloured-gemstone sector's hidden producers.

BOTSWANAMARK'S LEGACY: TRANSPARENCY, COMMUNITY, EMPOWERMENT

How Botswanamark, an Antwerp-based programme, is dedicated to promoting the provenance and positive impact of diamonds mined from Botswana.



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Cover Picture

The Birth of a Star brooch on our cover is approximately 6.10 in. A 105.22 tourmalinated quartz, a 2.25 ct star ruby and 0.25 tcw white diamonds are mounted in sterling silver and 18K, 22K and 24K gold. Photo courtesy of Atelier Zobel by Peter Schmid.

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Gems & Jewellery

Summer 2026 Edition Featured Contributors

1. Shelley Keating

A gemmologist and independent jewellery valuer, Shelley Keating MIRV FGA DGA GG earned a BA from University College Dublin. She then trained as a goldsmith with the Crafts Council of Ireland in Kilkenny; soon thereafter, she earned her Gemmology and Diamond Diplomas. Ms Keating worked at Gem-A as a workshops coordinator and Diamond tutor. Her 16-year career with Blue Nile as the head of Quality Assurance for Europe coincided with her completion of her Graduate Gemologist diploma at the Gemological Institute of America (GIA). Upon leaving Blue Nile, Ms Keating launched her independent valuer business in Dublin; she became an IRV in 2025. She is currently a member of the IRV's Professional Community Group and of the IRV Spotlight Panel, roles which promote membership and provide support and learning opportunities to members of the IRV via monthly guest lectures.

2. Nicholas Moltke

Nicholas Moltke is a diamond expert, entrepreneur and consultant with more than 25 years of experience across the international diamond and fine jewellery industry. He studied at Gem-A, earning both his Gemmology and Diamond Diplomas. He began his career at De Beers in 2002 and spent 16 years with

the company in senior valuation, procurement and commercial roles, including as vice president of sales. In 2021, Mr Moltke founded Botswanamarck, the first fully traceable, single-source diamond-provenance programme from an African nation. Extending to diamonds as small as 0.01 carat, Botswanamarck connects Botswana's natural diamonds with international jewellery brands through a transparent chain of custody. Beyond verifying origin, the programme enables retailers and jewellers to deploy richer, more meaningful storytelling around each diamond — bringing its natural history, provenance, craftsmanship and positive contribution to Botswana's communities and biodiversity into the customer experience. Through Moltke BV, he also advises diamond producers and jewellery businesses on valuation, distribution, pricing, positioning and market strategy.

3. Christine Puleo Reis

Christine Puleo Reis is a New Yorker currently living in Rio de Janeiro, Brazil. Her career has always focused on Latin America, following studies in anthropology at Dartmouth College (Hanover, New Hampshire) and journalism at Columbia University (New York, New York). She holds an AJP and a Graduate Diamonds diploma

from GIA. Prior to moving to Brazil, she worked with Kentshire Galleries, the antique jewellery shop located at the top of Bergdorf Goodman in New York City. She enjoys writing about the diversity of Brazil's gem production and unique jewellery styles and periods, such as Brazilian Creole and Brazilian modernist jewellery, and is currently coordinating several Brazil-U.S. gem and jewellery projects.

4. Cristina Maria Villegas

Cristina Maria Villegas is a global authority on responsible mineral sourcing, due diligence, artisanal and small-scale mining (ASM), effective engagement on child labour, and working within high-value mineral supply-chain dynamics. A co-founder of Moyo Gems, she brings 20 years of field-level experience developing practical solutions to mineral-sourcing challenges across the jewellery, technology and automotive sectors. Her expertise spans the OECD Due Diligence Guidance, the Responsible Jewellery Council and the Initiative for Responsible Mining Assurance (IRMA) frameworks. In 2025, she launched Nature's Wealth LLC to provide independent advisory services focused on jewellery supply chains, mineral due diligence and social impact.

Special thanks to Maggie Campbell Pedersen FGA, Peter Schmid and Michael Schrodtt.



From the CEO

Opinion and comment from CEO Cath Hill

I am pleased to report that the second half of 2026 is building upon a successful first half. Both on-site and online-distance learning (ODL) courses have seen increased enrolment, which means that the global Gem-A community is growing. Please join me in welcoming these new students to the world of gemmology. I also want to acknowledge those students who took their Foundation, Gemmology and Diamond exams in June. Please join me in congratulating them on all the hard work they have completed up to this point.

Our events calendar (gem-a.com/resources/events) is full of activity. This is an excellent resource for people looking to expand their knowledge and socialise with members of the gemmological community. The calendar is loaded with diverse events for education and pleasure alike. Please check it as it continues to be updated!

One of the listings already on the calendar, of course, is our annual Conference, which will take place 7–8 November at the Leonardo Royal Hotel London St Paul's. This is a wonderful time to mingle with colleagues and peers from around the world, to enhance gemmological knowledge and to enjoy each other's company. We have an exciting lineup

Graduation will be held on the evening of Monday, 9 November, at an historic venue that will host the ceremony for the first time. Together, we will honour those students who have successfully completed their Gemmology and Diamond Diplomas. I hope you are able to join us for Conference through Graduation; I look forward to seeing many of you over those four days.

Finally, I am happy to introduce the current issue of *Gems&Jewellery*. As always, we have an eclectic mix of content that we hope will satisfy all of our readers.

While mixing metals in jewellery was considered a fashion faux pas for much of the twentieth century, many jewellery designers have moved away from this line of thinking. Over the last few years, many designers have chosen to mix metals such as gold and silver, or gold and platinum, in their jewellery. Still others have chosen to use less-traditional metals in their designs, such as titanium, palladium, alloys and even meteorite. In our lead article, Christine Puleo Reis interviewed jeweller-designers who are using (and combining) these materials to find out how their creative processes drove these bold choices.



of modules which, if met, shows that small-scale miners are producing in as responsible a fashion as possible. Cristina Maria Villegas and Jennifer-Lynn Archuleta demonstrate how artisanal and small-scale precious metal and gemstone producers are – in part or in total, and with many challenges – putting the CRAFT Code into practice.

In a change that we hope most readers will enjoy, we are launching the Photographer of the Year Competition in this issue. This year's theme will be photomicrographs, with our panel of three judges selecting the first-prize winner and two runners-up. The popular People's Choice Award category will return, with the public voting for the winner of this category on Facebook. This year's contest also has a new category: the Smartphone Contest. All photomicrographs taken with a smartphone qualify for this category and prize. Please see the contest rules and regulations on pp. 28–31.

Other content includes an account of Botswanamarck, a programme dedicated to preserving the provenance and positive impact from the sale of Botswana-mined diamonds; a profile of Maggie Campbell Pedersen FGA in our *Getting to Know...* section; and a report from the National Association of Jewellers Institute of Registered Valuers Conference.

I hope you enjoy this issue of *Gems&Jewellery*!

Our annual Conference is a wonderful time to mingle with colleagues and peers from around the world.

of acclaimed speakers speaking on a fascinating range of topics. As always, the Monday after Conference is packed with workshops and museum tours; however, this year we will offer exciting new workshops on the Friday before Conference as well. Registration for the Conference, tours and workshops is open on the Gem-A website.

Roughly eighty percent of coloured gemstone production is performed by artisanal miners. It has traditionally been difficult to classify these miners as engaging in 'ethical mining' because of their working conditions and their lack of legal mining and trading status. In 2018, two NGOs joined forces to create the CRAFT Code. The framework is a series

Gem-A News

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

KERRY GREGORY RECEIVES ALAN HODGKINSON AWARD

Kerry Gregory FGA DGA EG GG, a gemmologist and educator who is well known as the founder of Gemmology Rocks (IG: @gemmologyrocks), is the recipient of the first Alan Hodgkinson Medal. The prize, which was first announced by *G&J* in our Spring 2026 issue (see p. 7), is awarded by the Accredited Gemologists Association (AGA) in honour of the late Alan Hodgkinson FGA. Nominees for the Medal must have served and supported the gemmological community through time, membership and collaboration.

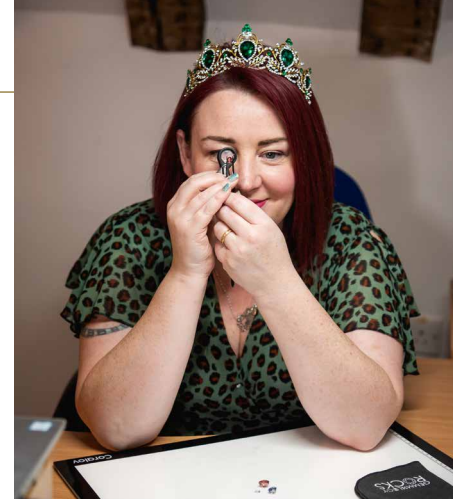
Beyond her time with Gemmology Rocks, and as a former Gem-A tutor and board member, Ms Gregory has

dedicated herself to service within gemmology. She is a trustee of the Silversmiths and Jewellers Charity, a contributor to the National Association of Jewellers Professional Trade Standards Committee, a Freeman of the Worshipful Company of Goldsmiths, and serves as a member of the British Hallmarking Council. Yet AGA noted that Ms Gregory's true gift is for teaching gemmological concepts; in announcing her award, they note that "She is not an instructor; she is a teacher." Of particular note is dedication to creating learning environments that support dyslexic and neurodivergent students, ensuring that every student may pursue their passion

for gemmology, no matter what their individual educational challenge.

"The Alan Hodgkinson Medal was created to recognise individuals whose contributions embody Alan's extraordinary commitment to the gemmological community," said AGA president Çiğdem Lüle. "Kerry Gregory exemplifies those values through her generosity, mentorship, leadership and unwavering dedication to helping others succeed. We are honoured to recognise her as the inaugural recipient of this award."

Kerry Gregory will receive the Alan Hodgkinson Medal at the AGA Gala in Tucson, Arizona, on Wednesday, 3 February 2027.



GOLDSMITHS' COMPANY SILVERSMITHING REPORT

A report on the state of the UK's silver industry was released in July. Entitled *British Silversmithing: Understanding the Sector*, the report was commissioned by Annie Warburton, CEO and Clerk of the Goldsmiths' Company, with the support of the London Assay Office. The research programme, led by Karin Paynter, revealed that the sector shows resilience and potential for growth — particularly in certain regions with established manufacturing businesses. However, the professional skills and capacity to maintain this sector are

subject to erosion without proper training, skills transfer and market development (this topic was touched on in Spring 2026 *G&J* pp. 36–39).

Research was conducted between October 2025 and January 2025, combining qualitative and quantitative data collection. Interviews and focus groups were conducted, and information collected from sources including The Silver Institute's World Silver Survey and The Heritage Crafts Red List. Risks to the sector included, but were not limited to, rising material and operating

costs, low domestic awareness (though British silversmithing itself maintains a high international profile) and difficulty recruiting successors as practitioners approach retirement age.

Following the report, the Goldsmiths' Company plans to partner with industry actors to develop a long-term strategic framework that strengthens the silversmithing sector.

To access the report, visit www.thegoldsmiths.co.uk/company-news/british-silversmithing-understanding-the-sector

GARNET DISCOVERED IN MARTIAN METEORITE

A team led by Tanya Kizovski of Brock University (St. Catharines, Ontario, Canada) discovered a garnet-bearing clast in Martian breccia meteorite NWA 8171, comprising two distinct domains: an andradite-diopside domain, and a K-feldspar-augite domain (the latter containing potassium feldspar and augite pyroxene). This clast is the first confirmed occurrence of andradite (a Fe-rich garnet) in a Martian meteorite.

NWA 8171, which is estimated to be ~4.4 billion years old, is housed at Canada's Royal Ontario Museum. The garnet in NWA 8171 has been identified by Raman spectroscopy, electron backscattered diffraction (EBSD), and microprobe as andradite occurring in a rounded clast embedded in the meteorite's matrix. The discovery has potential to provide new insights into Mars' crustal evolution.

The study by Kizovski *et al.*, was published in *Geochemical Perspectives Letters*.



Study of a Martian meteorite at the Royal Ontario Museum revealed the presence of andradite garnet, such as that shown above (from Madagascar). This has implications for the crustal evolution of Mars. Photo by Robert M. Lavinsky/Wikimedia Commons.

NEW DEPOSIT OF PARAÍBA-TYPE TOURMALINE FOUND IN ETHIOPIA

A new source of copper-bearing tourmaline, located in Abulo (or Abuloo) Rukessa, in the Guji Zone of the Oromia Region of southern Ethiopia, was announced in June 2026 by SSEF and followed by reports from other sources. The discovery makes Ethiopia the fourth major global source of cu-bearing tourmaline.

The news of the material entered the trade relatively quickly, after a stone of undisclosed origin was submitted to the SSEF lab in April. In the following weeks, similar stones that were later attributed

to the same deposit were submitted for testing. The specimen's trace-element composition did not match the established geographic origins for cu-bearing tourmaline: Brazil, Mozambique and Nigeria. Since there was no Ethiopian origin reference population for cu-bearing tourmaline at that time, SSEF withheld an opinion on the geographic opinion of the newly submitted material.

In June, rough material with Paraíba-like colouring reported to be from Ethiopia appeared in the market; in the same month, stories of alluvial

Cu-bearing tourmaline produced from Ethiopia were reported. On 18 June, SSEF announced the new source.

Subsequent reports published over the summer of 2026 include preliminary studies examining the chemical composition of the material; findings include that the deposit itself produces a chemically heterogeneous population of copper-bearing tourmaline. It was discovered that copper is the dominant chromophore in this material (moreover, this team was able to distinguish some iron-rich stones that are better classified as indicolite). The Ethiopian deposit has been confirmed and accepted as a source of Paraíba-type tourmaline by additional gemmological laboratories, including the Gemological Institute of America and the Gübelin Gem Lab.

A study of 14 tourmalines (rough and faceted) from this exciting new deposit will be published in the Autumn 2026 *Journal of Gemmology*. The article will include a brief history of Paraíba and Paraíba-type specimens, the geological setting of the Ethiopian deposit and the results of standard gemmological testing. It will also include the outcome of advanced testing such as Raman spectroscopy, polarized ultraviolet-visible-near infrared (UV-Vis-NIR) and laser ablation-inductively coupled plasma time-of-flight mass spectrometry (LA-ICP-TOF-MS) on the Ethiopian material.

The article can be found at doi.org/10.15506/JoG.2026.40.3.242

These copper-bearing tourmalines, from the newly discovered Ethiopian deposit, fall within the blue-to-greenish blue colour range. The rough material weighs up to 3.76 g. Photos courtesy of Paul Wild GmbH & Co. KG, Kirschweiler, Germany



KAROWE MINE YIELDS 1,305 CT DIAMOND

On 13 July, the Lucara Diamond Corp. announced that it had produced a 1,305.4 ct white diamond from its Karowe mine. This is the tenth 1,000+ carat specimen that has been extracted from Karowe since Lucara assumed total ownership. The white diamond, which measures 79.9 mm x 34.1 mm x 51.9 mm, was recovered while processing a blend of open-pit material and previously mined, unprocessed stockpiled ore. Thus, Lucara cannot conclusively determine whether the diamond originated from current open-pit mining or from run-of-mine stockpiled material.

On this most recent diamond, William Lamb, president and chief executive officer of Lucara, commented: "The recovery of our tenth diamond exceeding 1,000 carats is another extraordinary milestone for Karowe and further demonstrates the singular nature of this world-class orebody. No diamond mine in history has consistently produced diamonds of this magnitude, and

The rough diamond shown here, weighing in at 1,305.4 ct, is the tenth diamond over 1,000 carats to be produced from the Karowe mine since Lucara Diamond took over the mine. Photo courtesy of Lucara Diamond Corp.

Karowe continues to set itself apart on the global stage...its recovery is another powerful reminder of the unique diamond population hosted within the Karowe orebody. Recoveries of this nature reinforce our confidence in the exceptional value potential of the resource and the continued development of the Karowe Underground Project."



'Too Many' Faceting Machines is Exactly the Right Number

Justin K Prim considers the collection of gem-cutting machines that became the basis of the new Museum of Faceting Technology.

In Lyon, France, there is a small museum with a big idea behind it. The Museum of Faceting Technology, the evolution of a collection I started back in 2018, is dedicated to preserving the tools and history of the lapidary tradition. What started as a small, personal collection has grown into something much larger, with one simple goal: to make sure this craft, and the people behind it, are not forgotten.

I have spent years tracking down these machines from all over the world. I did not set out to build a museum; as is the case with a lot of collectors, I just kept finding things that felt worth saving. A great deal of the museum's collection is the result of time spent on the road. I travelled across the United States for a year in 2022, visiting workshops, meeting collectors and picking up machines and old documents along the way. In 2023, after relocating to Europe, I focused on France, especially the Jura region, which has a long history of gem cutting. There, I found early jamb-peg faceting machines and tools that had been used by local artisans a century ago. Whenever possible, I documented where things came from and who used them, so the history of these items would not be lost. Over time, these objects started to tell a story, one that I felt it was worth telling the general public. This work has led me to see myself as a caretaker more than anything else. The museum collection isn't just about these machines; it is about the people who made them and the craft they represent.

The museum doesn't just focus on looking at old equipment from a safe distance. It is an active lapidary workshop that uses both modern and antique machines to cut gemstones, as well as a school that is dedicated to teaching the art of lapidary to would-be gem cutters. There is also a digital catalogue that lets visitors learn more about each object.

Today, the museum is home to 123 machines from twenty-four different countries. Together, they show how gem cutting has changed over time, and how different places solved the same lapidary problems in their own way. Some machines are simple, some are more advanced, but all reflect the skill and thinking of the people who built and used them.

The museum's collection continues to be, and probably will always stay, a growing entity. That is, in part, the point of transitioning from a private assemblage for my own enjoyment to an official museum that is open to the public. When it comes to preserving a craft as instrumental to the jewellery trade as lapidary, having an ever-growing collection of gem-cutting machines might be exactly what is called for.

To learn more about the Museum of Faceting Technology, visit facetingmuseum.com.

Justin K Prim, lapidary artist and founder/curator of the Museum of Faceting Technology, sits among the museum's collection at a 100-year-old hand-cranked French faceting bench. The objects that make up the museum's exhibits are the result of years of collection on Mr Prim's part. Photo courtesy of Justin K Prim.





(METAL) REALITY

Christine Puleo Reis discusses the state of alternative metals, and the ongoing trend of mixed-metal jewellery, at the Spring 2026 Las Vegas Shows and beyond.

At JCK 2026, held from 29 May to 1 June in Las Vegas, one of the busiest booths was helmed by HAOYANG Art Jewel, a first-time exhibitor from Hong Kong. Founder and creative director Hao-yang “Steven” Lai, who is both a designer and a manufacturer of titanium, explained that “We came to Las Vegas with two clear objectives: to expand presence in the North American market and increase awareness of titanium jewellery.” The bet seemed to pay off. “Many visitors were not simply browsing, they were actively seeking innovative materials, reliable manufacturing partners and fresh design perspectives,” he noted.

Curious designers and retailers crowded the booth to see Mr Lai’s



original designs and to learn more about designing and manufacturing titanium jewellery. Using a 32-colour sample ranging from rose gold to a deep sapphire blue, he explained how these colours are achieved through a process called anodising. Instead of using paints

Top: Alexandra Hart’s Crinodeia bracelet and necklace, part of her wearable art collection Symbiosis, uses hammer-formed patinated copper and pheasant feathers. Symbiosis was created in collaboration with couturier Tia Ninkovic. Photo by Raymond Elstad, courtesy of Alexandra Hart.

Left: The Hook bracelets from Karin Jacobson are handcrafted from oxidised sterling silver, with a 5.0 x 2.5 mm gemstone set in 18K yellow gold at their clasps. From top: Rhodolite garnet, Mozambique garnet, iolite and citrine. Photo courtesy of Karin Jacobson.

“Alternative materials allow us to create relationships that would be impossible using precious metals alone.”

or dyes, an electrical current is applied to the metal; this changes the surface of the titanium and creates a variety of colours. Anodising allows titanium to achieve vibrant, long-lasting colours in a lightweight, but extremely hard and durable, metal. Its high strength and resistance to corrosion offers some benefits, but these same properties also render it notoriously difficult to work with.

With gold commanding sky-high prices, alternative metals were the talk of JCK, as well as the concurrent Couture show in Las Vegas (28 May – 1 June). This is in keeping with the mixed-metal jewellery trend that has endured into 2026 (see Spring G&J, pp. 10–19). While economic considerations are undoubtedly influencing the interest in alternatives to gold and in using mixed-metal combinations, this is just one factor contributing to this trend. Other reasons were tied to innovation and creativity: both emerging and established designers championed alternative precious metals as a way to propel jewellery design and unlock new creative possibilities.

Lisa Koenigsberg, president and founder of non-profit organisation Initiatives in Art and Culture, has considered the use of alternative metals from many perspectives. “There are several conversations that feed into this issue,” she noted. “One is aesthetics. The other, of course, is price point. And there is a third, which is about distinctiveness, or uniqueness, which may be separate from aesthetics.” Even traditional markers of value, she argued, are context dependent. “Price is a reflection of various values,” shaped by provenance, maker reputation, craftsmanship and shifting taste. Dr Koenigsberg points to maisons that pair bronze, steel and other nontraditional materials with exceptional gemstones, sometimes achieving auction estimates in the millions. “It’s only ‘alternative’ if you’re writing from a gold-centric perspective,” she concluded.

Titanium. Traditionally used in industrial applications, titanium was first used in jewellery in the early 1960s at the Birmingham School of Jewellery; this use picked up traction in the late

twentieth century. Today, the metal is rapidly emerging as the darling of contemporary fine and art jewellery. “We view titanium not simply as a substitute for precious metals, but as a medium with its own aesthetic and possibilities,” remarked Steven Lai of HAOYANG Art Jewel. “That perspective



A grouping of alternative metals by Chris Ploof, including a collection of rings in stainless steel, hand-forged Damascus steel and hand-forged metals repurposed via the mokume-gane technique. Photo courtesy of Chris Ploof Designs.



The Morpho Butterfly ring by Karin Jacobson is composed of sterling silver and 18K gold, with a 1.28 ct Chilean lapis hexagon-cut tablet and 2.75 tcw recycled diamonds. Photo by Cole Rodger, courtesy of Karin Jacobson.

allows us to create jewellery that is both technically sophisticated and creatively distinctive, something that remains rare within the industry today,” he adds.

Italian brand Benoi, who exhibited at Couture, showed a wide range of design possibilities of non-gold metals. The company, launched in 2025 by three jewellery veterans from Italy and India, was created to fill a ‘space for innovation’.

“We felt the industry was waiting for something new and we translated that well. For the time being, we will focus on titanium and let our identity and DNA grow through this,” said Barbara Spada, global sales director of Benoi. Ms Spada also showed booth visitors the possibility of titanium lies not only in terms of design innovation, but in



This ring, designed by Chris Ploof, is cast in Modern Electrum, which is a highly durable alloy of silver, gold and palladium. Photo courtesy of Chris Ploof Designs.

construction, with many of the pieces using a non-anodised internal titanium spring.

Silver. Always a jewellery industry staple, in 2026 silver has been embraced even more due to its relative affordability and ability to hold minimalist and maximalist designs. At JCK, Lika Behar showed attendees a range of designs from her eponymous brand, many featuring oxidised silver. "One of the greatest

strengths of oxidised sterling silver is that it allows us to offer exceptional design, craftsmanship and individuality at a more accessible price point. In today's environment, where gold prices continue to climb, customers are increasingly looking for pieces that deliver both beauty and value."

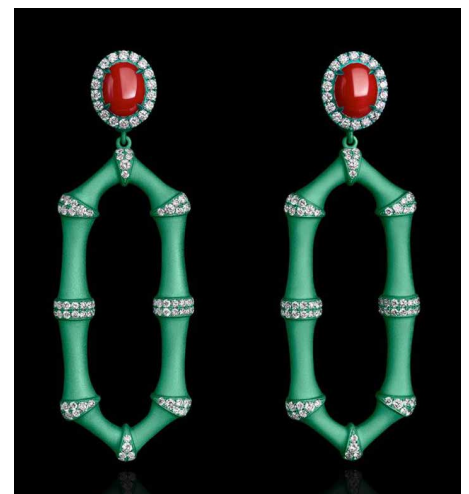
However, the use of silver is not just about price. "We have found is that clients are not choosing oxidised silver simply because it costs less—they are choosing it because they love the look. The rich contrast of blackened silver with high-karat gold creates a distinctive aesthetic that feels modern and sophisticated," Ms Behar explained. "This distinctive combination lends each piece depth, contrast, and enduring character," she adds.

Other Alternative Metals.

Metalsmith and artist Chris Ploof, whose self-titled business appeared at the JCK Show, works with nontraditional jewellery metals such as stainless steel, Damascus steel, paired metals bonded via the *mokume-gane* technique and meteorite – a rare metal with "a 4.5 billion-year-old story" according to Mr Ploof – at his studio in Leominster, Massachusetts. Mr Ploof is also an industry resource, acting as a white-label manufacturer for several companies; he also provides raw *mokume-gane*-produced metals and

bimetal stock to major suppliers, such as Hoover & Strong and David H. Fell.

At JCK 2026, he also debuted a collection made with Modern Electrum, a highly durable precious metal alloy created and produced by Italian group Legor. The modern material is modelled (and named) after the gold and silver alloy favoured by the ancient Romans, Greeks and Egyptians. Electrum was described by Pliny the Elder as comprising at least twenty percent silver and was used for jewellery as far back as the seventh millennium BCE; coinage was minted in electrum until the first century CE. The modern version of this



The Bamboo in Flames earrings by Steven Lai showcase 3.72 taw red coral, 6.66 taw diamonds and green anodised titanium. Photo courtesy of HAOYANG Art Jewel.

Smaller, independent jewellers also lean towards mixed or alternative metals to achieve their unique identity.



alloy is a proprietary blend of silver, gold and palladium that does not tarnish.

Chris Ploof extolled the virtues of non-gold metals in jewellery and precious objects. "When metals lack the high intrinsic scrap value of gold, the value must come from the art, the story and the craftsmanship," he stated. "The intrinsic value needs to be the art."

MIXED METALS

For a great deal of the twentieth century, wearing metals of different colours was considered to be a faux pas. A notable exception to this standard was Cartier's Trinity Ring, with its bands of rose, white and yellow

The 14K fused-gold-and-oxidised silver Midnight Wrap bracelet by Lika Behar also features 0.36 taw diamonds. Photo courtesy of the Lika Behar Collection.



This necklace from Benoi, with 3.29 tcw white diamonds, comprises blue anodised titanium with a titanium spring construction. Photo courtesy of Benoi.

gold, which was first launched by the maison in 1924. However, the concept of mixing metals has a long, established history in various cultures (e.g., the aforementioned alloy electrum). Starting in the 1990s, mixing metals in jewellery became more mainstream. Today the practice is considered to be an expression of personal style rather than an error in fashion judgement.

The Couture booth of Germany-based art jewellery brand Atelier Zobel by Peter Schmid was another deep dive into the use of alternative metal and metal combinations. Mr Schmid's work, which is highly sought after by collectors, combines oxidised silver with other metals (including gold) with an unmistakable aesthetic. Zobel's approach to design is built from discipline, and is likely responsible for its design identity. "The challenges of combining the various metals are, obviously, the different melting points, and making sure that the metals fuse together nicely," remarked Mr Schmid. "Over the years, we have developed our own techniques that accentuate our signature style. We do not work with copper or brass, and we never go below 18K when working with rose or yellow gold."

A 0.10 ct garnet is at the center of the blue anodised titanium Botanical Quartet ring by Steven Lai. Photo courtesy of HAOYANG Art Jewel.

The work, explained Mr Schmid, is about "staying true to myself instead of chasing trends. For me, this means going where my curiosity takes me; I find inspiration in many places, in patterns, materials, art, crafts. We use time-honoured techniques in our workshop, always looking to refine our craft and develop new techniques while staying faithful to our roots. This combination of being open-minded and grounded makes my jewellery timeless and recognisable." (For more information on the design philosophy and process of Atelier Zobel, please see p. 42.)

Beyond the Las Vegas shows, Munich-based atelier Hemmerle is one of the industry's most revered and artistic alternative-metal jewellery design houses. "Hemmerle has for decades been designing and producing bronze jewellery that often features important, highly valuable diamonds or coloured

gemstones," noted Kyle Roderick, editor of the Instagram publication *Bijoux Review*. "The highest documented prices for Hemmerle jewellery featuring bronze and highly valuable gemstones have posted pre-sale auction estimates of \$1 million to \$2 million at Sotheby's Magnificent Jewels auctions, as well as at auctions at other houses."

Hemmerle, currently run by fourth-generation family members Christian and Yasmin Hemmerle, entered the alternative metal space in the 1990s, with a groundbreaking textured-iron ring paired with an exceptional diamond. "The textured-iron ring marked an important moment in our evolution because it challenged long-established assumptions about value and preciousness in jewellery," explained Christian Hemmerle.



Lika Behar's Deco cuff bracelet comprises 0.36 tcw diamonds, 24K fused gold and oxidised silver. Photo courtesy of the Lika Behar Collection.

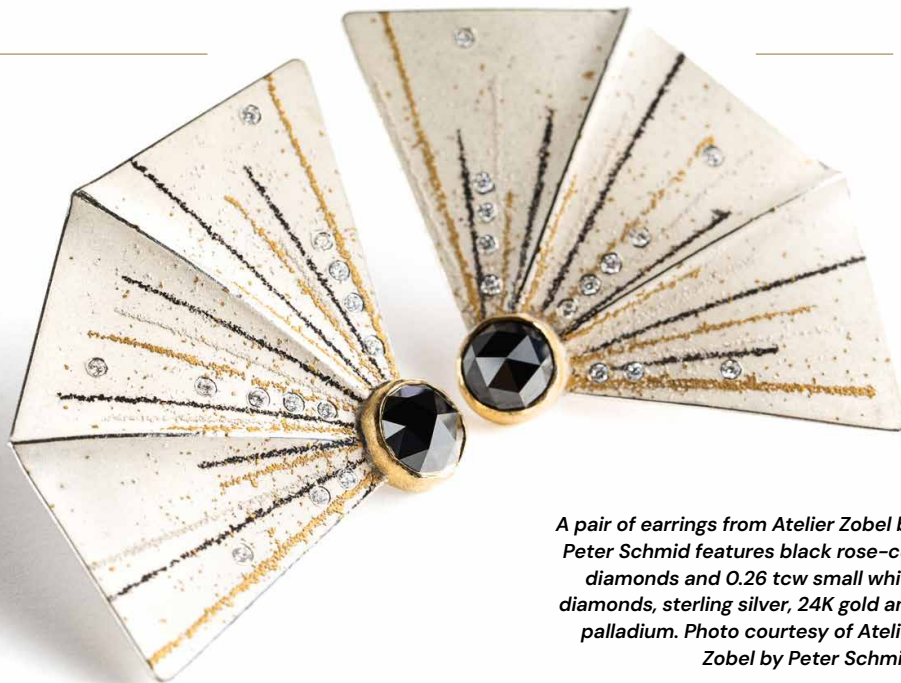
"Traditionally, jewellery has been defined largely by the intrinsic value of its materials. We were interested in shifting that conversation towards creativity, craftsmanship and design. The response and understanding of such unorthodox materials was something that took time to cultivate amongst our audiences at the time. Iron possesses a depth, character and colour unlike any precious metal. It allowed gemstones to be perceived differently and opened entirely new aesthetic directions."

"Alternative materials allow us to create relationships that would be impossible using precious metals alone," according to Yasmin Hemmerle. "They offer different colours, textures, patinas and surfaces that can



dramatically alter the way a gemstone is perceived. Bronze, for example, possesses a warmth and softness that can enhance the vivid green of an emerald. Blackened iron can intensify the saturation of coloured stones, while anodised aluminium allows us to introduce colour directly into the structure of a jewel."

Smaller, independent jewellers also lean towards mixed or alternative metals to achieve their unique identity. In the case of California-based art jeweller Alexandra Hart, alternative metals allow her to create large-scale pieces that reflect her unique



A pair of earrings from Atelier Zobel by Peter Schmid features black rose-cut diamonds and 0.26 taw small white diamonds, sterling silver, 24K gold and palladium. Photo courtesy of Atelier Zobel by Peter Schmid.



The cuff bracelet from Atelier Zobel shown here — with a 111.22 ct rock crystal cut by Bernd Munsteiner as its centrepiece — uses white baguette diamonds (2.18 taw) and small white diamonds (0.47 taw), sterling silver, 22K gold and palladium. Photo courtesy of Atelier Zobel by Peter Schmid.

aesthetic. One favourite material is copper, which she notably used to create the dramatic wearable art collection Symbiosis. The collection was exhibited in a multimedia project that included collaboration with a couturier and other artists. Ms Hart describes her design philosophy as 'honest', and she eschews lacquers and other plating, though she does patinate the copper to highlight its reactive nature. "My intention is to celebrate, and never mask, the original material," she clarified.

When discussing her use of unconventional metals, Karin Jacobson, an independent jeweller from Minnesota,

focuses on the colour part of the conversation. Among the work Ms Jacobson is known for is her Origami collection featuring oxidised silver, gold and gemstones (see Spring 2025, *G&J* pp. 10–19). The choices that she makes for gemstones are affected by her frequent use of oxidised silver, and how it pairs with certain palettes; she favours warm-coloured gems against this backdrop. "Once you oxidise the silver, you can see the contrast between the gold and the black, and it makes the gold look rich," she stated. "This makes the gemstones really pop. This provides such a nice contrast, and the pieces themselves become so graphic."

The effects mixed and alternative metals have are undeniably dramatic, but not easy to achieve. One of the reasons that gold remains a jewellery stalwart is that it is so easy to work with, being highly malleable, ductile and resistant to corrosion. These qualities allow designers and jewellers to create intricate, durable and long-lasting pieces. On the other hand, alternative materials sometimes require technical expertise and access to tools and

techniques that take years (and plenty of equipment) to acquire. With this in mind, many designers and jewellers at the Spring shows seemed eager to find manufacturers with the experience and capabilities required to consistently produce fine-jewellery standard pieces in alternative metals.

Trade shows such as JCK and Couture are an ideal opportunity for industry discussion and sharing of solutions between colleagues. These conversations advance the exhibitors' ultimate goals of creating beautiful, artistic pieces. "Many visitors were not simply browsing, they were actively seeking innovative materials, reliable manufacturing partners and fresh design perspectives," noted Steven Lai. Meanwhile, jewellery designers and artists who are amenable to using nontraditional metals may take a cue from Chris Ploof, whose goal is to remain open, collaborative and to elevate the jewellery industry as a whole. "In sharing what we are doing, I believe it elevates everyone else who is doing similar work," he said. "A rising tide raises all ships that are seaworthy." ■

Cartier's Trinity Ring, launched in 1924, was a notable exception to the twentieth-century trend of avoiding mixing metals of different colours. Shown here is a more recent version of the ring, in rose, white and yellow gold. Photo © Singaporevideo/Dreamstime.com.



HEMMERLE: A DESIGN HOUSE'S PERSPECTIVE

After the designing of a custom textured-iron ring in the 1990s, Hemmerle's move into the use of alternative metals was swift. We asked Christian and Yasmin Hemmerle, the fourth generation to run the well-respected Munich-based jewellery house, how the company became trailblazers in the mixed-metals movement.

Why did the company start exploring the bold use of non-gold metals in your pieces?

The exploration of other metals such as bronze, copper, stainless steel and aluminium felt very natural and instinctive over the past few decades. We have always approached materials with curiosity rather than hierarchy. Each material offers its own visual language, technical challenges and emotional qualities. Our role is to understand those characteristics and reveal their potential through our creativity.

An important aspect to clarify is that we did not introduce alternative materials simply for the sake of being different. We have always believed that the choice of material should serve the design. We are not interested in unconventional materials because they are unconventional; we are interested in them because they allow us to achieve a particular aesthetic effect, or to express an idea that could not be realised in quite the same way with traditional precious metals alone.

What sort of dramatic effects can be achieved with alternative materials? For example, emerald and bronze is an interesting pairing. Do the designers have a personal favourite pairing of stones and metal?

We rarely think in terms of a predefined set of combinations, because every project begins with a different dialogue

between materials. That said, there is something particularly compelling about the tension between a highly valuable gemstone and a humble material such as iron or copper. The contrast encourages people to look beyond conventional ideas of what is precious and to appreciate the jewel as a complete artistic composition.

Gold is known for being so easy to work with. Does it take uniquely skilled craftspeople to create your pieces? What advantages do alternative metals have when compared with the more expected medium of gold?

Alternative metals provide creative freedom. Materials such as iron, bronze or aluminium allow us to create entirely different visual experiences and expand the vocabulary of jewellery. From a technical perspective, these materials are often considerably more demanding. They behave differently under tools, respond differently to heat and require specialised knowledge to finish and preserve. Many of the techniques we use have been developed over decades in our Munich workshop. Successfully combining alternative materials with precious gemstones requires both technical expertise and a deep understanding of each material's characteristics.

Can you speak to the kind of consumer who requests and appreciates precious gems set in alternative materials?

Over the years we have found that our collectors are often motivated by curiosity rather than convention. They appreciate craftsmanship, originality and a strong creative point of view. Many are collectors of art, design or antiquities and naturally respond to jewellery that exists within a broader cultural and artistic context.

Interestingly, very few clients specifically request alternative materials. Instead, they respond to the finished object and the story it tells. Once they understand the role a material plays within the design, the distinction between precious and non-precious becomes far less important.

The people who are drawn to our work tend to value individuality. They are looking for something that cannot be reduced simply to the weight of a gemstone or the value of a metal. They appreciate the idea that rarity can be found not only in exceptional stones, but also in originality, craftsmanship and the courage to challenge expectations. Ultimately, they understand that true luxury lies in creativity and in the human hand behind the object.



These earrings from Hemmerle use a mix of gold and other metals. Left: Tourmalines (29.70 tcw) with magnesite and hematite discs set in copper and white gold. Right: Morganites weighing more than 25.90 tcw with aluminum and white gold. Photos courtesy of Hemmerle.

Cracking the CRAFT Code

Cristina Maria Villegas and Jennifer-Lynn Archuleta consider whether responsible mining frameworks can be applied to the coloured gemstone sector's hidden producers.

The phrase 'responsible sourcing' is now familiar to those working in the jewellery sector. Yet for many who know the realities of the coloured gemstone trade, it remains unclear what meaningful change actually looks when the vast majority of coloured gemstones are produced by artisanal and small-scale mining (ASM). The ASM units (or individual miners) can look dramatically different, with some miners using mechanised methods and others mining barefoot and without legal mineral rights.

Artisanal and small-scale miners constitute eighty percent of natural coloured gemstone production. There are isolated examples of professionalised small-scale mines

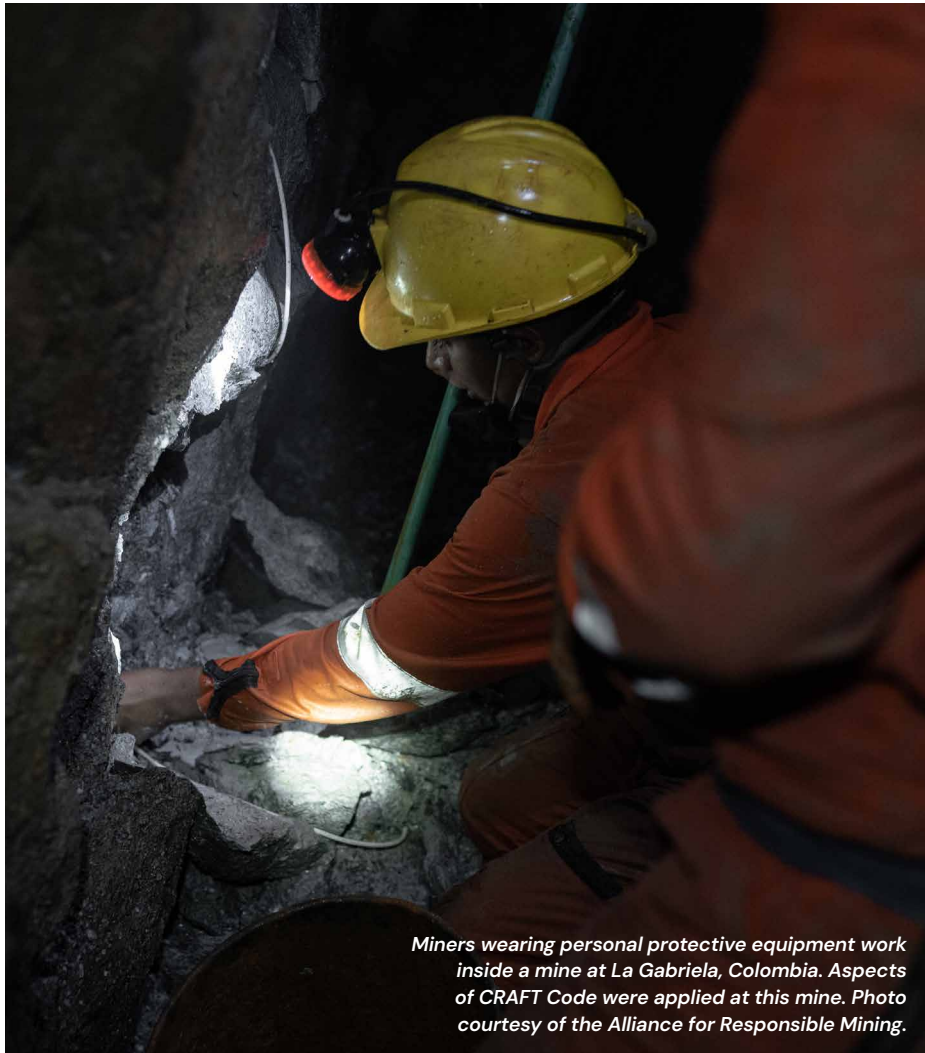
being best in class. However, the average artisanal gemstone mine would likely not be labelled as 'responsible' due to their safety records, working conditions and lack of legal mining and trading status. So what is a concerned company to do? This is where the Code of Risk-mitigation for ASM engaging in Formal Trade – an open-source framework informally known as the CRAFT Code – can be of great value. The acronym 'CRAFT' was chosen to signal careful, handmade production, such as in craft beer or craft chocolates. The standard is designed to help small-scale actors in the ASM sector meet so-called 'responsible' benchmarks in ways that are achievable to their structure.

THE EMERGENCE OF THE CRAFT CODE

Launched in 2018, the CRAFT Code is the result of two nongovernmental organisations (NGOs) developing a framework aimed at engaging and including ASM producers in the 'responsibility' conversation. The Alliance for Responsible Mining (ARM), a Colombian-headquartered nonprofit organisation, had previously developed the Fairmined Standard for ASM gold, platinum and silver producers, to prove that ASM units could operate at the highest levels of responsibility. However, whilst ASM groups in Latin America and Asia were able to achieve Fairmined certification, ARM realised that it needed to broaden the conversation – and loosen the standards – regarding what is 'responsible.' CRAFT was a collaboration between ARM and the U.S.-based nonprofit Resolve to create a standard-like, entry-level methodology that could involve more miners; cover more materials; and encourage more miners to continually, and progressively, improve conditions. Author CMV served on the advisory committee for the first iterations of CRAFT, which was developed for ASM gold mining. The second version of CRAFT, which was released in October 2020, includes ASM Mineral Producers (AMPs) who produce with gold and



The Alliance for Responsible Mining trained a local NGO, Justice Pluce, to apply parts of CRAFT Code at a project in Ituri, Democratic Republic of the Congo (shown in the photos above). They raised miners' awareness of the strengths and weaknesses of their operations and promoted concrete improvements. They also strengthened local capacities by training technical staff from local organisations that support the mining sector. Photos courtesy of the Alliance for Responsible Mining.



Miners wearing personal protective equipment work inside a mine at La Gabriela, Colombia. Aspects of CRAFT Code were applied at this mine. Photo courtesy of the Alliance for Responsible Mining.

associated precious metals (silver and some platinum group metals) in ore, concentrate or doré and coloured gemstones in any tradable form.

The CRAFT Code v. 2.1 was evaluated by the independent auditor Responsible Trade and was released in October 2024. It is fully aligned with the Organisation for Economic Co-operation and Development's *Due Diligence Guidelines for Responsible Mineral Sourcing* (OECD DDG), including its Annex 2. The OECD DDG is the commonly accepted 'global minimum' for responsible mineral sourcing and forms the foundation of most mineral standards worldwide. CRAFT meets and, in some cases exceeds, the minimum expectations as set out by the publication. In practice, because the CRAFT Code standard is progressive, this means that there is less financial expectation placed on the beginning of the supply chain as opposed to more traditional standards. Marcin Piersiak, director of the European chapter of ARM, explained that "CRAFT was designed to translate market expectations into steps that are viable for miners. It is not about perfection at the start, but about eliminating the worst risks first and supporting

continuous improvement at a pace that reflects miners' realities." CRAFT is built for progressive improvement. Of the five modules that comprise the framework, ASM units must fully meet Modules 1–3 and mitigate Module 4 risks to become CRAFT conformant. Module 5 issues are prioritised and reduced over time in consultation with supply-chain partners. Claims can be first-, second-, or third-party verified, depending on the context.

This means if the AMP has a larger jewellery brand as its end client, that brand can pay for the third-party verification of the AMP's CRAFT Code claims. The onus is not on the AMP itself to finance the audit, unlike traditional certification systems. The first-party claim would be a simple CRAFT Report by the AMP with no verification. That this is even an option recognises the meagre financial realities of the vast majority of artisanal mineral producers. In the middle is a second-party claim, which would be an assessment made by a party with a direct interest in the outcome, but not the AMP itself. This is typically a buyer, customer, industry association or supply-chain partner conducting the evaluation — these are all actors with a

vested commercial interest, as opposed to a neutral outsider.

Any ASM unit in the world that is producing any mineral can attempt to achieve CRAFT, and any company or organisation can create their own adjusted version of CRAFT (see p. 20). The programme's website provides tools in English, French and Spanish; there are also some resources in Brazilian Portuguese. Most examples of CRAFT attainment come from the gold sector, where ASM comprise an estimated twenty percent of annual global production— a significant share. These examples provide useful insights for members of the gemstone supply chain to consider.

Still, whilst CRAFT Code avoids the voluminous – and expensive – requirements that existing responsible mining standards demand, the framework can be challenging to apply in many artisanal gemstone contexts. Some recent examples of CRAFT Code applied to mines come from West Africa.

Upstream Assurance Scheme.

The CRAFT Code Upstream Assurance (UA) Scheme, which debuted with CRAFT 2.1, aligns with the second version (and will align with subsequent updates) of CRAFT. This update was created with the intention of giving

“CRAFT is not about perfection at the start, but about eliminating the worst risks first and supporting continuous improvement at a pace that reflects miners' realities.”

downstream actors (listed as 'buyers' for shorthand) responsibilities to ensure compliance with OECD guidelines. This applies not only to direct exports, but where middlemen are involved with the work of AMPs before production reaches the refinery stage. The UA Scheme helps trade members further along the supply chain, such as jewellers and goldsmiths, trust the ASM-related decisions that were made as the material made the journey from mine to market. Further, the scheme helps interested AMPs mitigate certain risks along the supply chain. Through these risk-management plans, AMPs are more easily able to compile the CRAFT Report, an instrument for managing the AMP's implementation of the Code's criteria.

ARM is currently working on a CRAFT Accreditation to facilitate CRAFT Upstream Assurance Schemes by supply-chain participants, and to ensure they are applied consistently and credibly.

CRAFT IN PRACTICE planetGOLD Mining Projects.

A global initiative funded by the Global Environment Facility (GEF) and led by the UN Environment Programme (UNEP), planetGOLD partners with governments, private enterprises and artisanal and small-scale gold miners. Its goals are to improve production practices and environments of these mining communities. planetGOLD has directly aligned its ASM performance standards with CRAFT through the creation of the planetGOLD Criteria for Environmentally and Socially Responsible Operations (the 'planetGold Criteria'), which it considers a 'branched version' of the Code. It utilises CRAFT's baseline expectations on OECD alignment, human rights and formalisation, while adding three mandates: eliminating mercury use, protecting Indigenous Peoples' rights and mitigating biodiversity impacts.

Since 2018, planetGOLD has operated across 27 countries in Central and South America, Africa and

the Asia-Pacific region. Projects are considered complete in seven of those countries: Burkina Faso, Colombia, Guyana, Indonesia, Mongolia, Peru and the Philippines.

Colombia. In one such success story, ARM partnered with planetGOLD Colombia to test how CRAFT Code could be combined with environmental standards to build direct, formal market pathways. At a small-scale gold mine in Antioquia, ARM implemented a mining sustainability plan that coupled modules 1–3 of the CRAFT Code with the planetGold Criteria, focusing specifically on complete mercury elimination, occupational health, and gender equity. To bridge the gap between rural miners and international buyers, the project simplified the export route. Local trading intermediaries exported mercury-free gold to an international refinery in Italy. The Colombian pilot demonstrated that combining CRAFT's risk-mitigation framework with targeted technical support allows small-scale producers to meet stringent downstream refiner standards. Further, this can be accomplished without placing prohibitive financial compliance burdens on the mine.

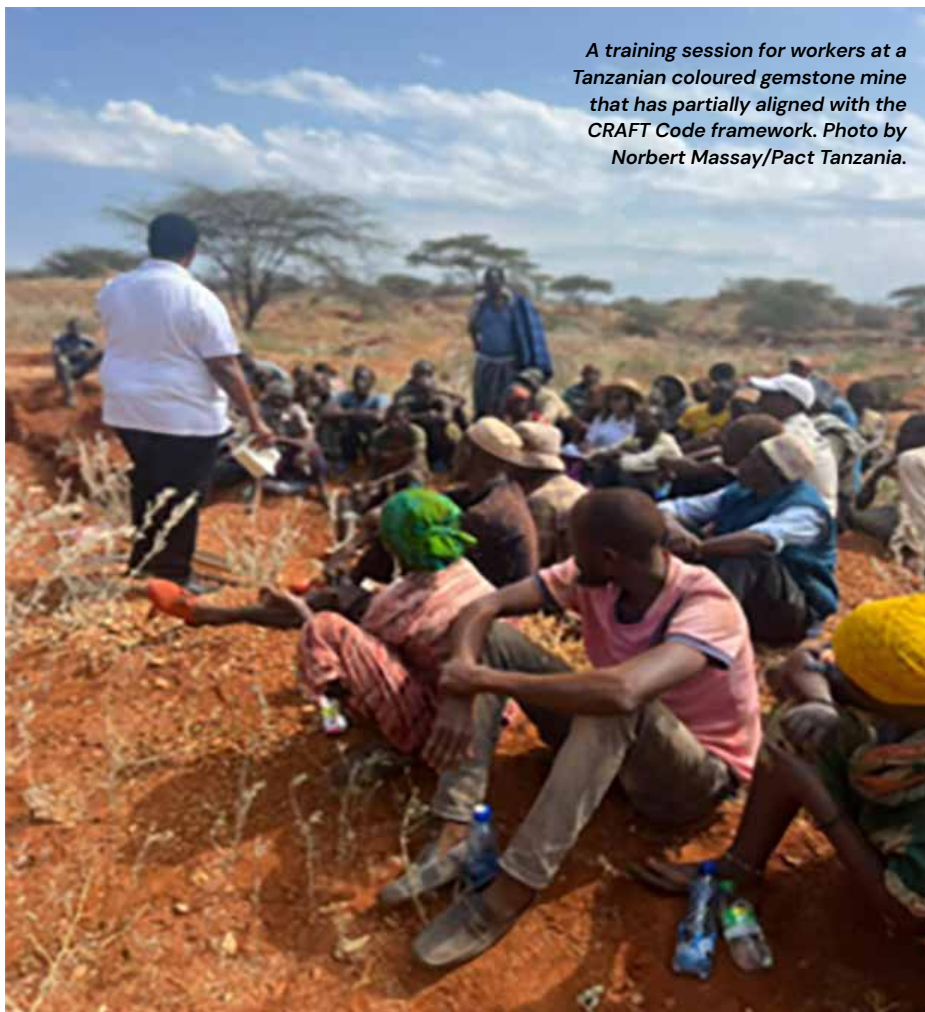
Gold Mining in West Africa.

The Ivory Coast. The international NGOs IMPACT and Solidaridad worked with four artisanal gold mines and two gold traders based in the northeastern Ivory Coast to implement parts of CRAFT Code. A notable lesson learned was the role of digital tools in making CRAFT more navigable for miners. Platforms such as Solidaridad's Extension Solutions and Bloom by IMPACT helped to break down complex requirements into manageable steps and enabled miners to demonstrate compliance to local authorities. This, in turn, reduced exposure of miners to harassment and corruption, as the miners could readily demonstrate their compliance with the law.

Also in the Ivory Coast, IMPACT and Solidaridad chose to concentrate on



Carol Muchira (left), VirtuGem's Kenya ambassador, works on a VirtuCRAFT assessment with a worker at a ruby mine in Tanzania. Photo courtesy of VirtuGem.



A training session for workers at a Tanzanian coloured gemstone mine that has partially aligned with the CRAFT Code framework. Photo by Norbert Massay/Pact Tanzania.

ten feasible actions related to human rights, gender equality, occupational health and safety and basic business practices, rather than the full requirements of CRAFT. This was because their project was focused on learning about incentives for carrying out due diligence in artisanal gold supply chains, rather than overall adherence to the CRAFT Code. IMPACT found that trainings and coaching were best delivered with practical support, such as including safety equipment, visual guidance materials and digital tools to manage documentation. According to Zuzia Danielski, communications director at IMPACT, "We found that ASM actors are unlikely to be able to implement the CRAFT Code without some level of technical or financial support. Localising the Code and focusing on progressive improvement was essential for uptake." She further noted that "The tools became a motivator, because miners could show they were operating legitimately."

Ghana, Mali, Mauritania and Sierra Leone. Daniel Stapper is an independent geoscientist with nearly two decades of ASM experience. Until 2025, he led a nonprofit initiative to implement CRAFT in ASM gold mines in four West African countries: Ghana, Mali, Mauritania and Sierra Leone. Here, the CRAFT initiative was only partially successful. Similarly to artisanal gemstone mines, the aggregation of small production from multiple ASM sites means that many sites must be covered in a given region. Local brokers pay an essential and fundamental role in any effort as they are the ones doing the aggregation. Secondly, Mr Stapper noted, "The working conditions and associated practices that we see in the ASM gold sector (both good and bad) are generally the result of existing – and in most cases long-standing – incentives and/or barriers." In short, there are deep-seated reasons why situations develop the way that they do.

Diamonds in Sierra Leone. Aspects of CRAFT Code have also been applied to artisanal diamond mining. When launching its innovative GemFair initiative – a mine-to-market programme focused on ASM diamond miners – in Sierra Leone in April 2018, De Beers decided to use elements of CRAFT (Version 1, for artisanal gold mining, was the only version of CRAFT available at that time) to guide its initial work with AMPs.

Ultimately, DeBeers created its own sourcing standard – called the GemFair ASM Assurance Programme – that is a blend of its own De Beers Group's Best Practice Principles, CRAFT Code and other responsible mining frameworks. By the end of 2025, GemFair had reached approximately 2,500 workers at 499 mining sites; the initiative had trained 168 people at sixteen mining sites in 2025 alone.

CRAFT FOR COLOURED GEMSTONES: A PARTIAL FIT?

As with the aforementioned examples, components of CRAFT Code have been applied to ASM in the coloured gemstone sector.

Moyo Gems, an initiative co-created and led by author CMV until 2025, focuses on production in East Africa, purchasing coloured gemstones from pre-registered, largely artisanal miners. Instead of formally opting into CRAFT, elements of the framework have been adopted. CRAFT was not fully adopted because, in order to maintain it, there would need to be significant budget allocations to cover the hundreds of small sites that were active in the Moyo programme. Further, as Moyo Gems was not purchasing 'run of mine' material from the miners, the incentives for rural miners to complete CRAFT without a guaranteed offtake commitment was unlikely.

The Moyo Gems programme's unique initial focus on women miners also brought more hurdles from an inclusion perspective. CRAFT's materials are not in Kiswahili, the dominant language in the region, and women are the least-likely members of the community to understand or read English. More intensive training and staffing would be needed. Finally, the programme leaders feared that women miners, in particular,





A miner at an emerald deposit in Zambia – from which VirtuGem purchases material – points out the safety signage that was created to align with VirtuCRAFT. Photo courtesy of VirtuGem.

would be discouraged from participating in the overall Moyo Gems project if CRAFT was required. Women miners already must juggle traditional household and child-rearing responsibilities alongside their mining activities, and many were not full-time miners. Adding another participation requirement could be a barrier to the overall purpose of providing economic opportunities for women miners and their male allies. Moyo Gems ultimately decided that its programme 'responsibility' claims would be based on the formal and semi-formal status of its rural participants (a unique feat); on the unrivalled 50–50 gender parity that it had achieved; and on that all its participants had received free safety training and above-market prices for their goods.

According to Norbert Massay of NGO Pact, which was among the co-founders of Moyo Gems, partial adoption of the Code has been of benefit to these miners. "Through the Moyo Gems programme, over 400 miners have learned and are applying some of the practices covered under the CRAFT Code, including health and safety, legal compliance, environmental awareness, record keeping and responsible gemstone trading," he said.

"Women, who make up a significant proportion of Moyo Gems participants, have been actively involved in these trainings and practices. However, the program has not formally assessed or monitored miners against the CRAFT Code, so their current level of alignment has not yet been measured. Given time and funding, Moyo Gems could introduce a more structured approach to CRAFT by assessing current practices, identifying gaps and developing simple indicators and milestones for miners to follow."

Mine-to-market coloured gemstone project VirtuGem is the only known company that has successfully implemented CRAFT in ASM gemstone mines, applying the standard at eight mines in Kenya, Malawi and Zambia. Under a Responsible Jewelry Transformative (RJT) grant from The World Bank's Extractives Global Programmatic Support (EGPS) Fund, VirtuGem was able to develop VirtuCRAFT. A proprietary CRAFT Scheme†, VirtuCRAFT was co-created with consultant Patience Singo and Indigenous mine owners in East Africa.

Beyond teaching the basics of CRAFT Code, VirtuCRAFT added mentoring and reporting components

that address gender inclusion and the formalisation of compensation structures for mine workers. VirtuGem continues to apply various levels of their customised framework at many of the mines where they source. When the Virtu team visits these mines, the VirtuCRAFT assessment and teaching materials are shared with mine owners, managers and diggers. Most recently, VirtuGem performed an assessment at a ruby mine in Tanzania.

For further successful implementation of CRAFT Code in the coloured gemstone sector, Daniel Stapper advises the prioritisation of larger-volume sites. "I would recommend looking for established small-scale companies, and even mineral traders and exporters who have strong records of accomplishment for production volume, who have the willingness to explore win-win opportunities. Once you find them, you'll need to explain what's in it for them, over the long term. Ultimately, purchasing companies need to work out, and be able to justify, significant investment to determine whether CRAFT is the best tool for what they hope to accomplish."

THE ROAD (OR TRAIL...) AHEAD

The creation and evolution of the CRAFT Code over the past decade has been an important development for the artisanal and small-scale mining



Mama Mwasi works at one of the mines in Tanzania's Umba Valley that has adopted some aspects of CRAFT Code. Photo by Norbert Massay/Pact Tanzania.

† According to the CRAFT Code website (craftmines.org), CRAFT schemes are "the supply chain actors who use, incorporate or build upon CRAFT to obtain minerals from ASM or to support the development of ASM." In a bespoke or proprietary CRAFT Scheme, such as VirtuCRAFT, the framework is customised, and therefore developed in such a way as to meet the needs of the organisation for which it has been adapted. The bespoke Scheme is administered by that organisation.

CRAFT CODE IN PRACTICE: WHAT THE TRADE SHOULD KNOW

CRAFT Code was created to make responsible mining practices more accessible to ASM actors. When applied to the coloured gemstone mining sector, the framework has benefits and drawbacks.

What CRAFT Code Does:

- Aligns ASM engagement with OECD Due Diligence expectations
- Focuses on eliminating severe human rights abuses first
- Supports progressive improvement rather than pass/fail audits
- Provides a shared language for miners, NGOs, buyers and jewellery companies

Challenges Involved with CRAFT Code:

- OECD Due Diligence date is expensive to document
- Application, scaling and compliance with some parts of CRAFT can be complex without consistent technical and financial support

Modules 1–3 MUST be achieved to become CRAFT miners AND to be aligned with OECD Due Diligence Guidelines, while Module 4 issues require mitigation or disengagement within six months in order to remain CRAFT compliant.

Module 5 addresses high risks that are not essential for OECD conformity, but which should be reduced over time. Miners decide which issues to prioritise, in consultation with supply chain partners.

Graphic adapted from craftmines.org.

What makes CRAFT Code work most efficiently:

- On-the-ground technical assistance
- Incentives that matter to miners and their communities (legitimacy, safety, market access)
- Financial engagement/incentives that can support the due diligence documentation required for CRAFT AND OECD conformity
- Digital tools that simplify documentation
- Realistic timelines and phased expectations

Module 1:

Sets requirements for management systems to effectively implement CRAFT Code.

Module 2:

Indicates the requirements for assessing the legitimacy of artisanal mineral producers (AMPs).

Module 3:

Establishes the highest risks defined by Annex II of the *OECD DDG*. Such risks include control by non-state armed groups, child labour, forced labour, links to war crimes and torture and other human-rights violations. Immediate commercial disengagement with the AMP is required if these risks are found. This module is pass/fail.

Module 4:

Lists risks found in the Annex II of the *OECD DDG*, including bribery, money laundering and tax evasion, that require commercial disengagement if mitigation of the problem by the AMP fails. This module is pass/progress/fail.

Module 5:

Specifies risks beyond Annex II of the *OECD DDG* that aim for AMPs to achieve gradual stricter social, environmental and governance standards.

sector. It has allowed industry actors to see how alignment with the *OECD Due Diligence Guideline* can unfold in ASM environments. The open-source nature of the framework and adaptability of the modules make progressively responsible and ethical practices within reach for actors all along the supply chain. Critical gaps remain, however, such as motivated gemstone trading companies or downstream jewellers supporting CRAFT attainment or partial attainment.

"For CRAFT to really take root, we need to have buy-in all along the supply chain. If we don't have downstream buyers demanding CRAFT and supporting miners to invest in CRAFT, then the CRAFT structure is

not tenable," Daniel Stapper explained. "Why would 'Miner X' invest tirelessly in a voluntary standard if their only option is to sell their product for the same price as all the other miners?"

Without outside encouragement and financial incentives, it is

understandable why artisanal and small-scale participants in the jewellery sector would be unlikely to adopt CRAFT Code on their own. The implementation infrastructure is now available, and the next steps are for downstream buyers to demand it. ■

The Upstream Assurance Scheme helps trade members further along the supply chain trust the ASM-related decisions made as the material journeyed from mine to market.

BOTSWANAMARK'S LEGACY: TRANSPARENCY, COMMUNITY, EMPOWERMENT?



Nicholas Moltke explains how the Antwerp-based programme is dedicated to promoting the provenance and positive impact of diamonds mined from Botswana.

For decades, diamonds have been admired for their beauty, rarity and symbolism. Yet despite their global appeal, very few consumers know where their diamond originated, how it travelled through the supply chain or what impact it had on the communities responsible for bringing it to market. Botswanamark Diamonds was founded to change that.

Headquartered in Antwerp, Belgium, at its heart Botswanamark is a provenance and traceability programme dedicated to connecting natural diamonds from Botswana with the people, communities and

conservation efforts that make their existence possible. Founded in 2021, it is built on a simple belief: when consumers understand the provenance and impact behind a mined diamond, they can appreciate not only its physical qualities, but also the broader contribution it makes to society. Consumers increasingly want to know where their products come from, how they are sourced and whether their purchases create positive outcomes. In the natural diamond sector, few countries can demonstrate this traceability and social impact more clearly than Botswana.

THE STORY OF BOTSWANA'S DIAMOND INDUSTRY

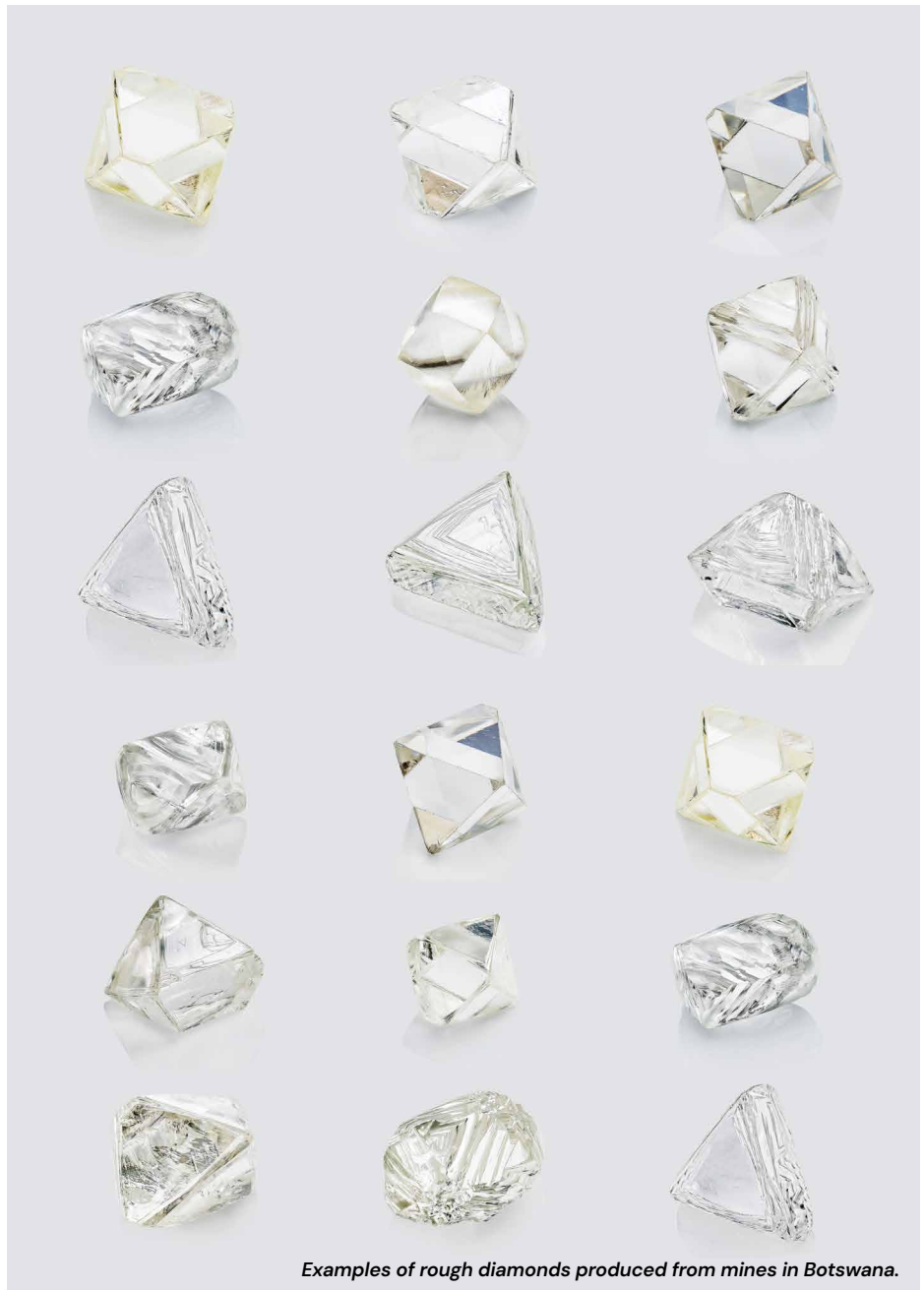
When Botswana gained independence from the United Kingdom in 1966, it was among the poorest nations in the world. The discovery and responsible management of diamond resources transformed the country's trajectory. Over the following decades, revenues generated through the diamond industry helped fund infrastructure, education, healthcare, conservation efforts and economic development. Roads connected remote regions, schools were built, game parks and conservation areas created and access

to healthcare improved dramatically. Investment in public services created opportunities for generations of Botswana citizens.

Today, Botswana is widely recognised as one of the world's most successful examples of how natural resources can be managed for long-term national development. Diamonds remain central to that story. The industry contributes significantly to Botswana's economy, supports thousands of jobs and continues to provide resources that benefit communities throughout the country. Unlike many narratives surrounding resource extraction, Botswana demonstrates how responsible mining, strong governance and long-term planning can create lasting positive impact. Yet despite this remarkable story, awareness of Botswana's success remains surprisingly low. Many consumers know diamonds originate in Africa, but far fewer know they come from Botswana. Fewer still understand the role diamonds have played in helping to build one of Africa's most stable and prosperous democracies. Botswanamark exists to bring that story to light.

BUILDING TRUST THROUGH TRACEABILITY

Questions from modern consumers about the origins, production, supply chain and social and environmental impact of the products they purchase are reshaping industries worldwide. The diamond sector is no exception. Botswanamark was created to provide



Examples of rough diamonds produced from mines in Botswana.

Botswanamark was created to provide answers and assist jewellery brands with changing the narrative around natural material.

answers and assist jewellery brands with changing the narrative around natural material. Every Botswanamark diamond originates from a mine in Botswana and follows a documented chain of custody using blockchain. This traceability framework is supported by rigorous verification processes, independent auditing and digital recordkeeping designed to provide confidence in provenance claims. The company is a member of the Responsible Jewellery Council and a party to the ORIGINALLUXURY initiative in collaboration with the International Institute for Management

Development (IMD) in Lausanne, Switzerland. In 2025, Botswanamark joined the Watch and Jewellery Initiative 2030.

Rather than relying on broad industry assurances, Botswanamark focuses on providing specific, verifiable information about origin. The objective is not simply compliance; it is transparency. By establishing clear connections between a diamond's source and its final owner, Botswanamark helps bridge a gap that has existed in the industry for generations. Through the programme's efforts, consumers can understand not only where their diamond came from but also why its origin matters.

Beyond the Four Cs

The traditional language of diamonds has long been defined by the Four Cs: cut, colour, clarity and carat weight. These characteristics remain important, as they define beauty, rarity and value. However, a new dimension is increasingly shaping purchasing decisions. Consumers want products that align with their values; they want authenticity and transparency. They want evidence that their choices can contribute positively to people who produce the diamonds and the environment from which they are yielded.

For Botswanamark, this introduces the fifth C: community. The people connected to Botswana's diamond industry are not an abstract concepts; rather, their lives have been demonstrably influenced by the responsible development of natural resources. By telling these stories and making them accessible, Botswanamark seeks to broaden the conversation around what makes a diamond truly meaningful.

A Commitment to Positive Impact

Traceability alone is not enough. Botswanamark believes provenance should be connected to measurable positive outcomes. That is why the company has embedded social and environmental commitments into its business model from the outset. In 2026, it will become the first natural diamond company to be B-Corp certified. The programme is carbon neutral through its offsetting scheme in the Okavango Delta; the mines in Botswana are on track to be carbon-neutral certified by 2030.

Furthermore, one percent of the company's profits support carefully selected charitable initiatives operating in Botswana. These projects focus on areas including education, clean water access and wildlife conservation. Consumers who engage with the Botswanamark programme may register their diamond and select a charity. They can see how their purchase contributes to initiatives that directly benefit people and ecosystems connected to the

country where their diamond originated. This approach creates a more meaningful relationship between product and purpose. It transforms provenance from a technical supply-chain exercise into a human story of connection, responsibility and shared benefit.

Protecting What Makes Botswana Unique

Botswana is internationally renowned, not only for its diamonds, but also for its extraordinary natural environment. The Okavango Delta, one of the world's most important inland wetland ecosystems, supports a remarkable diversity of wildlife and plays a critical role in conservation efforts across Southern Africa. Protecting these landscapes and the species that depend on them is essential for future generations. Botswanamark recognises that environmental stewardship must be part of any credible discussion about responsible sourcing. Through conservation-focused partnerships and ongoing sustainability initiatives,

Among the charities that Botswanamark diamond owners can sponsor by registering their gemstone are those dedicated to wildlife conservation within the country. Photo by Jay Roode.





Among the services offered within Botswana is diamond polishing.

the company seeks to support efforts that preserve biodiversity while promoting sustainable development. This balance between economic opportunity and environmental responsibility is increasingly important to consumers seeking products with genuine sustainability credentials.

Changing Perceptions of Natural Diamonds

The natural diamond industry faces a communication challenge. For many consumers, perceptions about mined material have been shaped by outdated narratives about colonialism and conflict diamonds, limited information or a lack of understanding about modern sourcing practices. At the same time, growing interest in transparency and sustainability has raised expectations across all luxury categories.

Botswanamark believes the trade can meet those expectations by providing facts, evidence and authentic storytelling about their diamonds. The objective of such a campaign is not to rely on marketing claims, but to demonstrate how responsible sourcing can create tangible benefits. Botswana offers one of the strongest examples available anywhere in the world. By highlighting verified provenance, community investment and environmental responsibility, Botswanamark aims to provide a model for how natural diamonds can be presented as a viable option for modern jewellery customers.

LOOKING AHEAD

The future of luxury will increasingly be defined by transparency and storytelling. Consumers expect

Botswanamark believes provenance should be connected to measurable positive outcomes, and has embedded social and environmental commitments into its business model.

brands to provide evidence of actions rather than promises. For the diamond industry, this represents both a challenge and an opportunity. Botswanamark sees provenance not as a trend, but as a permanent shift in consumer expectations. As technology continues to improve traceability capabilities and as demand for responsible sourcing grows, the ability to connect products to their origins will become increasingly valuable.

The company will continue moving forward with its mission in the future. Botswanamark diamonds will be available through thirty points of sale in the United Kingdom, and the company is working with leading independent designers and luxury brands all over the world. The mission behind the programme remains straightforward: to ensure that every Botswanamark diamond carries with it a verified story of origin, positive impact and responsible stewardship. Because a diamond is more than a geological miracle formed over billions of years, it is also the story of a country, a community and a shared commitment to creating value that extends far beyond the stone itself. And that is a story worth telling. ■

For more information, visit botswanamarkdiamonds.com.

All photos courtesy of Botswanamark.



CONVERSATION AND CONSERVATION

MAGGIE CAMPBELL PEDERSEN

The former Association President, current trustee and frequent G&J contributor shares aspects of her life with readers.

This issue's respondent, Maggie Campbell Pedersen FGA ABIPP, is a past President of Gem-A who joined the Association's board of trustees in November 2022. Her work includes identification, teaching, writing and constant research into all aspects of the subject of organics. She is the author of *Gem and Ornamental Materials of Organic Origin* (2004), *Ivory* (2015) and *Tortoiseshell* (2021). For sixteen years, she was an accredited lecturer for The Arts Society (formerly NADFAS).

Ms Campbell Pedersen has given lectures and seminars worldwide, including master classes in museums, and has appeared on television. She is also an Associate of the British Institute of Professional Photography. She has worked in various places as a research assistant in animal conservation, studying elephants, turtles and other animals.

1. What was your first gem-related experience?

Walking with my father on a beach on the island of Fanø, off the west coast of Denmark, and being told that if I looked carefully, I might find amber. Of course, I had no idea, at the age of five years, what I was looking for and I didn't find any. But just the idea seemed magical to me, and I was captivated.

To find a piece of amber washed up on the beach and glinting in the Sun! It is easy to understand why it so fascinated people thousands of years ago, and why they believed it have magical properties. It still looks magical to me.

2. What was the most outrageously incorrect gem identification you've ever come across?

I was wearing a silver pendant with a fairly large lump of Baltic amber while

going through security at London Heathrow some years ago. The pendant set off the alarm in their new system. The man at security had to speak to his manager on an intercom before letting me through, and I heard him describe the amber as 'a sort of diamond'.

3. What is your greatest non-trade-related achievement?

I could say 'having children', but that's a bit obvious and not very unusual! There are a couple of less-obvious ones of which I am proud... The first was qualifying as a commercial/industrial photographer on the most sought-after three-year degree course in the United Kingdom, at the Regents Street Polytechnic (now Westminster University). It was, of course, that profession which later led to work with the gem trade, though that was not planned at the time. The other achievement is a bit different: I qualified as 1st Dan Jujitsu (i.e., black belt), just before my fortieth birthday.

4. Describe your idea of the perfect meal.

Fried calamari with a glass of chilled local wine, in a restaurant on the beach in Italy on a sunny summer's day.

5. What pet peeve have you learned to outwardly accept in others (but secretly despise)?

At present, my pet peeve is emails starting with the unnecessary stock sentence, "I hope you are well."

6. What is your 'go-to' piece of jewellery that you wear every day?

I wear a gold bangle all the time because I can't get it off. I also wear very small diamond-and-gold ear-stud 'sleepers' almost all the time. If I add

something, it is likely to be my gold drum ring, set with a trapiche emerald that I bought in Idar-Oberstein many years ago, and had made up when I returned to London.

7. What is one thing about you that would surprise your gemmological colleagues?

It might surprise people to know that I have prosopagnosia, meaning that I am 'face-blind', and have to meet people several times before I recognise them. People often do not understand that it is an accepted condition like dyslexia and, not wishing to appear rude, I have become accustomed to hiding it. I hope that I have not offended anyone in the gem trade by walking right past without acknowledging them!

8. What do you love to do that is unrelated to gemstones?

I love to read... but only real books, not on an iPad.



Maggie Campbell Pedersen at a book signing at the 2006 Tucson Gem Showcase.



Ms Campbell Pedersen in Thailand in 2014, proving that female Asian elephants have small tusks (called 'tushes').

9. Where would you have chosen to live, if your career had not brought you to your current location?

As I have worked largely from home, I have been free to live where I choose. My current location in London is not decided by work, but by the fact that I have usually have a black Labrador by my side, and my house is right opposite a dog-friendly park.

10. Who are your trade-related heroes/idols, and why?

I have many! Perhaps my real heroes are my tutors, who were happy to pass on their knowledge and did so with great patience and encouragement. They allowed me to find my own niche in the fascinating subject of gemmology while also ensuring that I learnt what I needed to learn.

11. What is your favourite bit of gemmological lore?

Taking 'lore' in its original sense, the myth that pearls are dewdrops that fall from heaven at the full moon.

12. What annual gathering of the industry is your personal favourite, and why?

My favourite gathering is the Gem-A annual Conference in London, of course! I may be a little biased, but it is the best.

13. What is the one gemmological instrument that you cannot work without? Be as specific as you like.

A 10× lens, as in a loupe. This is the instrument with which all gemmologists begin an identification, but when identifying organics (also called

biogenics), the identity is often so obvious that it is possible to stop there and not use anything else. Conversely, more comprehensive testing – especially when the item may be subject to trade bans – can involve equipment that is not even available in a gem lab, but has to be carried out in a specialist lab (e.g., DNA or Carbon-14 testing).

14. What trade-related skill (that you do NOT have) do you wish you had/could have learned, and why?

Organic chemistry. It would have been so useful.

15. If you could only work with one gemstone for the rest of your career, which would it be, and why?

If it could only be one, I would have to choose a very emotive and controversial one: ivory, which derives from many species. Ivory belongs to animals that should never have been killed just for their teeth or tusks. However, it is a fact that ivory has been used almost worldwide. It is inextricably linked to, and featured in, many cultures for various reasons throughout history, dating back thousands of years. Further, it is undeniably a very beautiful material that can be used for many things and in many ways, including being worked by skilled craftspeople.

16. What is your personal definition of happiness?

Apart from the obvious of knowing that all is well with my children and grandchildren, happiness for me is

having time and peace to appreciate nature. That can be anything from appreciating a view of snow-covered mountains to watching the parakeets that nest each year under the eaves of my house giving their fledglings a flying lesson (sometimes with comic results).

17. When you were a child, what did you want to be when you 'grew up'? What was appealing about this job?

A veterinarian, so that I could work with animals. Or a silversmith, but I was turned down for an apprenticeship by the Georg Jensen company in Denmark because the profession was at that time deemed to be too physical for a girl (it was a long time ago!).

18. If you could visit any one gem source/deposit, which would it be, and why?

Can I name a whole country? Greenland. It has beautiful and largely unspoilt landscape, fascinating animals (many of which have large tusks or teeth) and, of course, plentiful minerals such as rubies.

19. If you could sum up your personal philosophy of life in one sentence, what would it be?

"If you can't do anything about it, don't waste time worrying about it." I only wish I could actually learn to live by it.

20. Which talent do you wish you had, and why?

I would have loved to be able to sing well. I have no idea why!

21. What do you see as the greatest accomplishment of your gemmological career?

To be asked to be Honorary President of Gem-A. I loved every minute of the years I held the position.

22. What advice would you give to anyone starting out in the gemmology industry?

Study well, understand the basics and pass the exams. After that, the real fun with gemmology can begin.

23. Describe your career in five words.

Unplanned. Driven by curiosity. Enjoyable. ■



The 2026 PHOTOGRAPHER OF THE YEAR Competition is open!

Our annual photography contest once again focuses on photomicrographs, with an additional category open for consideration.

Gems&Jewellery is officially accepting submissions for the Photographer of the Year Competition! Gem-A opens our photography contest to submissions from around the globe in order to see what gemmological wonders our community has captured over the past year. The 2026 competition will feature even more opportunities for our colleagues and peers to showcase their work in the field of photomicrographs. We cannot wait to see what appeared to our entrants, using their microscopes, over the past twelve months. As in previous years, our first-prize winner will

receive a one-year membership to the Association and a voucher to Gem-A Instruments; their photo will also grace the cover of the Winter 2026 issue of *Gems&Jewellery*.

In addition to the wildly popular People's Choice Award (PCA) category – where the winner is selected via the number of votes an image from the Longlist Gallery receives on Facebook – we will feature a new category: The Smartphone Contest. This category is open to all photomicrographs taken with any type of smartphone; these photographs will be compared and assessed by our panel of three judges alongside the main competition.

Please note that submissions taken with smartphones will be accepted into the general competition, and may place in the Longlist to win first, second or third prize in the 2026 competition. They may also receive the People's Choice Award, should they be chosen for the Longlist and gain enough votes on Facebook. *However, photomicrographs taken with smartphones do not have to place in the final ten photos in order to win the Smartphone Contest.*

Once the deadline for submissions has passed, our Longlist will be curated – through a blind assessment from at least one member of our

Top: Our first-prize winner in 2025, Keith Chow, captured thin film-like fluid inclusions in a Russian emerald. The focus-stacked image was captured with a Leica S9D and Canon EOS RP under darkfield and fibre-optic illumination, with polarisers applied. Photo by Keith Chow, field of view 3.5 mm.

Right: Voting on Facebook yielded the winner of our 2025 People's Choice Award: A photomicrograph of a pyrite inclusion resembling a gold nugget within a 14.35 ct cabochon of hyaline quartz from Bahia State, Brazil. The photomicrograph was obtained from a stack of eighteen photographs at 90 × magnification. Darkfield illumination with fibre-optics and polarized light was used. A Canon EOS M50 mirrorless camera 24 MP 18–55mm IS STM and Bausch + Lomb microscope, along with a darkfield GIA GEM Mark VII and fibre-optics of Fiber-Lite, were used to create this photomicrograph. Photo by Giovanni Pace; field of view 1.60 mm.



panel of judges – and subject to a public vote on Facebook. The image that secures the most votes will receive the People's Choice Award. That photographer will collect a prize alongside the first-prize winner, two runners-up and Smartphone Contest winner, which are chosen by our team of three judges.

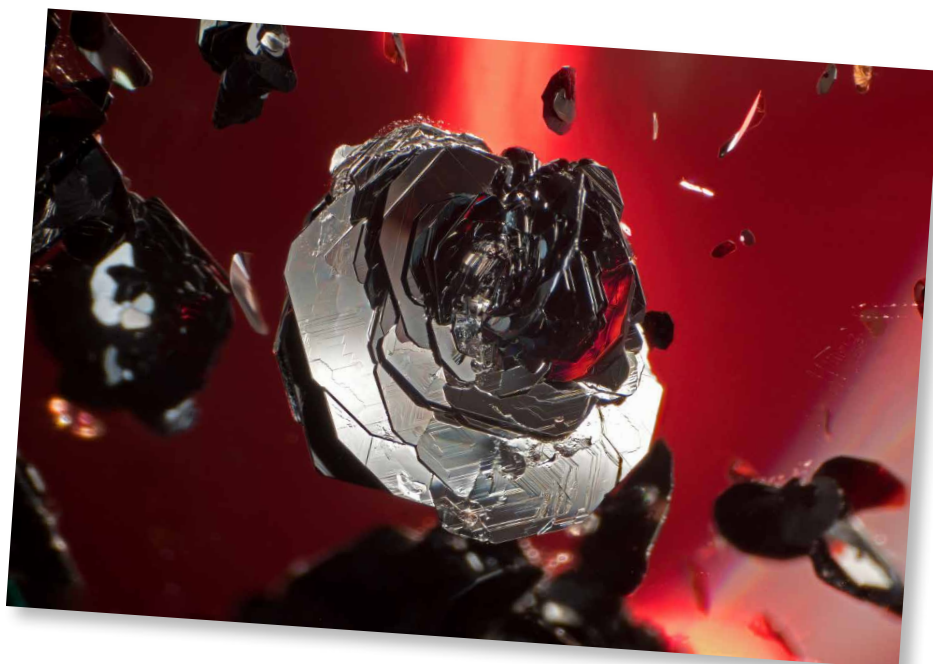
Submissions are welcome from all areas of the trade; previous winners and runners-up are also encouraged to enter. We look forward to seeing what our entrants have uncovered in the past year.

RULES

MAIN COMPETITION

All photographs that are entered into the competition and meet the rules as laid out below:

- A maximum of three photographs may be entered per person.
- All photographs entered into the competition must have been taken within the last twelve months.
- We are only accepting photomicrographs for the 2026 competition. Any photos that are not photomicrographs will be eliminated.
- Photographs must be in .jpeg or .tiff format; no other formats will be accepted.
- Photographs must be high resolution (300 dpi); they must maintain 300 dpi resolution when sizes are increased to G&J's cover measurements of 210 × 297 mm (8.27 × 11.70 in.).
- Photomicrographs must be



Liviano Soprani took first prize in the 2024 Photographer of the Year competition with his photomicrograph of a black hematite 'rose' inside a 31.14 hyaline-quartz cabochon from Bahia State, Brazil. Mr Soprani created the image from a stack of twenty-five shots taken at 40× magnification with darkfield illumination, a red filter and oblique fibre-optic light. Photo by Liviano Soprani; field of view 3.50 mm.

- Entries must be accompanied by your name and post-nominals (if applicable).
- Images must be captioned and include the following:
 - Host material and inclusion type
 - Locality of material (if available)
 - Date (approximate) that the photomicrograph was taken
 - Illumination used to capture the scene
 - Equipment used to take the photomicrograph (e.g., camera, microscope, smartphone)

image(s) for marketing, promotional and editorial purposes across its print and digital channels, including but not limited to publications, websites, social media, email communications and other promotional materials. You will always be credited as the creator of the work.

People's Choice Award Category

The following information applies to the PCA section of the competition:

- All photographs that are entered into the 2026 competition may be considered for the PCA.
- All rules that apply to the main competition apply to the PCA.
- Once a ten-photo Longlist Gallery is compiled, the images will be posted to social media for voting.
- Voting for the PCA is open to the general public.
- The photo that receives the most 'like' votes on Facebook during the voting period will win the PCA. A photo that takes first, second or third prize in the main competition may also be selected for the PCA. However, the PCA may be awarded to a photo that does not take any of those prizes.
- If taken with a smartphone, the PCA may also qualify to win the Smartphone Contest.

In addition to the wildly popular People's Choice Award (PCA) category, we will feature a new category: The Smartphone Contest.

accompanied by field of view for proper digital representation.*

- All image editing or manipulation that has been performed on the photo(s) must be disclosed in the photograph description. Please note that the judges reserve the right to request the original, unmanipulated image to compare the two outcomes.

- Any image editing or manipulation that was performed to create the final image
- A description of no more than 200 words telling the story behind the photograph must be included
- By entering the Photographer of the Year Competition, you accept, acknowledge and grant Gem-A permission to use your submitted



This photo of fluid channels interference colours recorded in a tsavorite was entered into the 2024 competition. The photo, which was captured using darkfield illumination using crossed polars, was taken with a Zeiss microscope paired with a Samsung Galaxy s23 Ultra smartphone. Photo by Muzdareefah Thudsanapbunya; field of view 2.20 mm.

- Spam mailing people with whom you have no personal connection (Gem-A Members, Students or any other members of the public) is prohibited. If someone reports to Gem-A that they have received a spam message or unsolicited message from an entrant they do not know, the entrant risks disqualification from the competition.

Smartphone Contest Rules

The following information applies to this year's Smartphone Contest:

- All photographs that are taken with smartphones that are sent in for the 2026 competition will be entered into the main competition AND the Smartphone Contest.
- All rules that apply to the main competition apply to the Smartphone Contest.

- Photos taken with smartphones do NOT have to make the Longlist Gallery, or place in the top three photos (or be chosen as the PCA) to be considered for the Smartphone Contest. However, if a smartphone photomicrograph is chosen for the Longlist, it may qualify for first, second or third prize and/or the PCA as well as the Smartphone Contest.

**To calculate field of view, multiply the magnifying power of all of the optics between the sample and the camera. Determine the physical sensor width of the camera sensor (which should be published by the camera manufacturer). Divide the physical sensor size in mm by the magnification factor to determine the field of view.*

Alternatively, you can capture an image and, using the same magnification and camera arrangement, use a small scale (calibration slide or table gauge) to physically measure the same field of view as the image that was just taken. This is useful when taking a photo with a mobile phone should it not

Isabelle Corvin made the 2025 Longlist with her photo entitled Iron Daisies, taken on a Samsung Galaxy S22 Ultra phone with a GIA Gemolite NXT microscope. Here, dendritic 'flowers' play on a boulder opal, seeming to float on the surface. The contrast of the iron colours of the dendrites with the cool-blue background of the boulder opal creates a playful and artistic look through the microscope. Dendrites often appear tree- or branch-like, but these dark inclusions resemble daisies. The image is cropped, and contrast was adjusted digitally. A reflective overhead light source was used. Photo by Isabelle Corvin, field of view 3.00 mm.



be possible to determine the magnifying power of the optics built into the phone's camera.

HOW TO ENTER

Email all entries to editor@gem-a.com. Please send files larger than 10 mb, or multiple files to editor@gem-a.com via [WeTransfer.com](https://www.wetransfer.com) (this is a free-to-use media transfer service). The competition is now open, and anyone may enter. There is no cost to enter the competition. We will be accepting photos until **11 November 2026**.

The G&J team will mask the identities of the photographers and will receive the input of at least one of the competition judges, along with other gemmologists, to select ten entries to make up the Longlist. These images will be posted to Facebook so that the general public may vote for a People's Choice winner. Voting will be open until **30 November 2026**.

The first-prize, runners-up and People's Choice and Smartphone award winners will be announced on Gem-A's

Francesco Protopapas took second-place honours in 2025 with The Little Fish. Microscopic examination of a beryllium-treated natural sapphire, purchased in Chanthaburi, Thailand, revealed a fully melted crystal reminiscent of a tiny fish in a body of water. The image was created from a stack of 183 photomicrographs using a Canon EOS R7; Amscope 10x + extension tubes; and Affinity Photo and Topaz Sharpen AI. InPainting was used to remove some crystals. Sewing machine LED lights AC-110-240v 50/60Hz 1W were used for illumination, and white plastic cups acted as diffusers. Photo by Francesco Protopapas; field of view 1.2 mm.



social media channels in mid-to-late December; all winners will be featured in the Winter 2026 issue of G&J.

For more information on the contest rules, or on how to enter Gem-A's Photographer of the Year Competition, please contact editor@gem-a.com.

PRIZES

The first-place winner will receive a one-year membership to Gem-A, as well as a £300 voucher to spend at Gem-A Instruments. The first-prize

winner will also have their photograph on the cover of the Winter 2026 issue of *Gems&Jewellery* magazine and on Gem-A's social media channels. The two runners-up, the People's Choice Award and the Smartphone Contest winners, who will also be featured within the Winter 2026 issue and on Gem-A's social media, will each receive a £50 voucher redeemable at Gem-A Instruments. ■

Good luck to all our entrants in 2026!



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Valuing Learning and Community with the NATIONAL ASSOCIATION OF JEWELLERS

Shelley Keating FGA DGA MIRV GG recounts the activity at the 37th Valuers' Conference, held in Birmingham in May 2026.

The 37th National Association of Jewellers (NAJ) Valuers' Conference took place on 16–17 May. For only the second time, the event was held at Edgbaston Park Hotel on the campus of Birmingham University.

The Institute of Registered Valuers (IRV) – which is the United Kingdom's leading authority on the appraisal of jewellery, watch and silverware appraisers, and is integrated within and regulated by the NAJ – continues to grow in membership. The organisation's annual conference is designed to appeal to all, from longtime NAJ members and valuers to students just embarking on a career path (more than 30 students were in attendance this year, thanks in part to support from the NAJ Educational Trust). The weekend's programme was planned to broaden the knowledge of all audiences; provide an opportunity for attendees to catch up with colleagues from across the UK and beyond; and to welcome newcomers to the event.



Mehdi Seadian, incoming NAJ Chair, and last year's recipient of the David Wilkins Award, presents this year's award to Sammantha Maclachlan FGA DGA FIRV MJVA.

The programme opened on day 1 with presentations on a wide range of topics. The morning began with a lecture from **Francesca Cartier Brickell**, a direct descendant of the Cartier family and author of *The Cartiers*. For lovers of the maison, this talk was a captivating and often touching look at the history of Cartier through Ms Bricker's eyes, who decided to leave her career in finance in order to research the brand's international growth and legacy. She shared personal memories of her grandfather, Jean-Jacques Cartier, alongside never-before-seen photographs that she unearthed during her years of research for the book. The effect was spellbinding and truly brought to life the unique personalities of the three Cartier brothers – Louis, Pierre and Jacques – whose vision, passion and family values would establish the maison's place in the global luxury market and allow it to become the iconic jewellery house it is today.

Jonathan Darracott, global head of watches at Bonhams, shared insights into how wildly different valuations must be ascribed to certain watches that, on first examination, may seem very similar. His presentation, "Similar Watches, Very Different Values," revisited the topic of Cartier, with an explanation of the differences seen in the Cartier Crash models from Paris versus those from London. Attendees saw how features such as 'double signatures' on watches, owing to their rarity, can increase value exponentially. Mr Darracott shared insights into the current market, contrasting the heady sales of the early 2020s to today's new buyers. He also noted a resurgence of interest in



Dr Yun Luo, of the Gemological Institute of America, presented on the impact and importance of fluorescence on diamond appearance.

dress watches, a trend that has become apparent in auction rooms.

In "Carbon-Based Gems, Carbon-Based Consequences — Jet's Synthetic Legacy," leading jet authority **Sarah Caldwell Steele** FGA DGA explained how the material's history can be a useful lens through which to view other areas of the trade. Her talk spanned the early history of jet production and use, through troubling times when imitations were introduced, up to the modern-day jet trade. The timeline was offered alongside Ms Steele's reflections on how it might inform our understanding of the current diamond trade, with the advent of lab-grown diamond and its place in – and effect on – the market.

The conference moved from the blackest of gem materials to the brightest white with **Dr Yun Luo**, director of metrology and quality control at the Gemological Institute of America (GIA). Presenting on "The Impact of Fluorescence on Diamond Appearance," Dr Luo began by musing on how the crystal-lattice irregularities that cause fluorescence have traditionally been referred to as

'defect centres'. The term, she noted, inferred from the outset a negative implication in relation to fluorescence in diamond. This connotation began with the 1938 move by the Federal Trade Commission (FTC) of the United States to ban the term 'blue white', the term then used to market diamonds with fluorescence. The association with 'banning' spilled over into the trade's perception of fluorescence itself and this negative connotation persists into the present day, but is it warranted? Dr Luo explained that loss of contrast in diamond is not necessarily loss of transparency and fluorescence differs from haziness. The key takeaway from her presentation was that fluorescence in and of itself is not a flaw.

Mark Cullinan is the owner and CEO of Cullinan Diamonds. He is also the great-grandson of Sir Thomas Cullinan, who discovered the Premier mine (now known as the Cullinan mine). Mr Cullinan gave a retrospective of the early days of diamond mining in South Africa along with his own prospecting experiences. As a specialist in diamonds, investment diamonds and jewellery, Mr Cullinan's thirty-year career allowed him to give an account of the trade of the past,



Mark Cullinan, CEO of Cullinan Diamonds, spoke on the history and future of the diamond trade.

and where it may be headed in the not-too-distant future.

Finally, **Justin K Prim**, author, lapidary and founder of the Museum of Faceting Technology (see pp. 8–9), gave an account of the history of gem cutting. Starting with point and table cuts, Mr Prim explored the historical record of lapidary activity, from the rose cut in its various forms through the cutting styles of today. He also shared his own insights, experience and experiments in modern gemstone cutting.

Day one ended with a gala dinner, during which this year's newest Members of the Institute of Registered Valuers (MIRVs) and Fellows of the Institute of Registered Valuers (FIRVs) were presented by incoming IRV Chair **Sammantha Maclachlan** FGA DGA FIRV MJVA. Moments later Ms Maclachlan herself was announced as this year's deserving winner of the David Wilkins Trophy. Voted for by peers and fellow IRV members, the David Wilkins Award is the pinnacle of achievement for jewellery valuers, and the worthy winner →

He shared insights into current changes in the market, contrasting the heady sales of the early 2020s to today's new buyers.



Newcomers and repeat attendees were able to connect during the scheduled breaks.



Barry Sullivan led the hands-on workshop "Let's See How It's Made" on day two of the conference.

options to choose from, attendees were spoiled for choice. Options included "Auctioneering behind the Scenes," offered by **Kate Flitcroft** FGA; "Let's See How It's Made," led by **Barry Sullivan**; "Valuing Asian Jewellery," with **Pravin Pattni** FGA DGA; "Coloured Gemstone Pricing," by **Tracy Jukes** FGA; "Watch Complications and Why They Are Valuable," held by **Jonathan Darracott**; "Investigating Gemstone Treatments," with **Gabriel Kleinberg** FGA DGA EG; and "Valuing Large Diamonds," with **Seth Solomons**. Longer breaks between workshops,

With some fifteen different options to choose from, attendees were spoiled for choice.

described the experience as 'the very greatest honour' for which she was 'so very grateful' (for more on Sammantha Maclachlan's career, see Spring 2025 G&J pp. 38–40).

The second day of the conference launched with a full agenda of practical workshops. These classes covered a wide range of choices, which attendees pre-booked in advance of the weekend. This year, the workshops returned to the longer, two-hour format, based on feedback from last year's conference attendees. With some fifteen different

also added as a result of last year's feedback, ensured that repeat conference attendees and newcomers alike had plenty of time to chat and network between sessions.

The NAJ committee did a tremendous job in organising such a successful event, which goes from strength to strength every year and encourages newcomers to attend and get involved in the organisation. By all accounts, at the time of writing, the team have been at work for some time to put plans in place for next year. ■



Author and presenter Francesca Cartier Brickell speaks to an NAJ IRV Valuers' Conference attendee.

For future announcements about the NAJ IRV Conference 2027, please visit www.naj.co.uk.

All photos courtesy of the National Association of Jewellers.



Institute of Registered Valuers' chair Sammantha Maclachlan (far left) with this year's new Members of the Institute of Registered Valuers and Fellows of the Institute of Registered Valuers.



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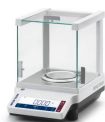
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MARCUS & CO: THREE GENERATIONS OF NEW YORK JEWELERS

Reviewed by Christine Puleo Reis

M*arcus & Co: Three Generations of New York Jewelers* is history, New York story and multi-generational family saga. Above all, it is a true work of scholarship. The coffee-table-style book traces the business and design evolution of this well-regarded but little understood – and now defunct – jewellery house. The volume covers the company's founding in 1864 as Starr & Marcus in 1864, through its transition to Jaques & Marcus (1878), and its emergence as Marcus & Co. in 1892.

The authors are two prominent American jewellery scholars. They spent a decade collaborating, both as a research duo and with a range of collectors, academics and other individuals. Sheila Barron Smithie FGA specialises in historic and vintage jewellery. Early in

her career, she worked in investment banking, and her financial and business expertise is evident in the book (for more on Ms Smithie's contribution, see the related box). Beth Carver Wees is curator emerita of The American Wing at the Metropolitan Museum of Art in New York City. This institution eventually helped to fund the digitalisation of archives that forms the basis of this book. Her longstanding connections in the museum world opened doors for collaboration with Tiffany & Co. archivists and key jewellery curators and specialists, including Jeannine Falino, Judy Rudoe and Yvonne Markowitz.

The authors' exhaustive research, which provides great detail on the financial, legal and marketing records of the



By Sheila Barron Smithie and Beth Carver Wees, hardcover, 320 pp., illus., publ. by Arnoldsche Art Publishers, Stuttgart, Germany, 2025, £54.00.

company and the New York jewellery world of the mid-nineteenth to mid-twentieth centuries, is a highlight of the book. Yet what is equally impressive are the hundreds of colour photos and sketches that show the very best of the house's *oeuvre*. These include Indian-inspired pieces fashioned with enamel elements and carved gems – particularly emeralds and, later, boulder opals – all in opulent colours. Also shown are intricate, astonishing and botanically accurate pieces using the *plique-à-jour* enamelling technique that are so complex that the 'how' and 'where' of their creation remains something of a mystery.

Like many New York jewellery houses, the origins of Marcus & Co. are in Europe; specifically Dresden, in modern-day Germany. Company founder Herman Marcus arrived there in 1842, at age 14. It was in Dresden that he trained under silversmith and Royal Saxon court jeweller Moritz Elimeyer (who also became court jeweller to Queen Victoria in the 1840s). In 1850, Herman Marcus emigrated with his family to New York in search of a more stable business environment. Records indicate that he worked for a time at the downtown locations of Tiffany & Co. and Ball, Black & Co. (later to become rivals of his own firm). His arrival in the



Plique-à-jour enamel floral jewels from Marcus & Co., ca. 1905–1906. On the left is a Cattleya mossiae orchid pendant, with conch pearls and diamonds in its composition. The iris brooch on the right has the findings digitally removed to illustrate the fully sculptural quality. Photos by Bret Willis, courtesy of Macklowe Gallery.

United States was well-timed, as it coincided with the California Gold Rush and the rise of luxury firms in New York.

In 1864, Herman Marcus joined forces with Theodore Starr, a well-known local jeweller, who provided most of the capital for their professional endeavours. The pair swiftly began competing against Tiffany and Ball, Black & Co, among others. Immediately, Starr & Marcus was known as an 'upstairs jeweller'. This term was associated with a bench jeweller or artisan who operated a private workshop or showroom on the upper floor of a commercial building, rather than a street-level location that drew retail foot traffic to a shopfront or showcases. These upstairs jewellers engaged in a new sales approach, one that was bespoke for each client. From the start, the firm communicated in a different, rarified tone. Their advertising, which ran in periodicals, took an educational approach, with repeated emphasis on learning, education, science, luxury and refined taste.

Within just a few short years, the company was on solid financial footing. However, the partnership dissolved for reasons that are not entirely clear, with Theodore Starr choosing to work on his own and Herman Marcus heading back to where it all started: as a salesman at Tiffany and Co.

The father-and-son pair reestablished the Marcus brand, and incorporated under the name Marcus & Co. With this change, the company entered its golden era.



*Emerald and enamel necklace in the firm's 'antique' style, ca. 1896–1897.
Photo courtesy of FD Gallery.*

But much more was happening behind the scenes, and the stage was beginning to be set for a new, second-generation company. While still at Tiffany, the senior Marcus financed a partnership between his older son, William, and jeweller George Jaques, then a partner at jewellery firm Alexander Rumrill. This firm, Jaques & Marcus, thrived and became a favourite of the coveted prominent families of the time. However, in 1892, the *New York Times* reported dissolution of this second firm, with all property and assets sold and transferred to Herman and William Marcus. The father-and-son pair re-established

the Marcus brand, and incorporated under the name Marcus & Co.

With this change, the company entered its golden era. The same can be said for the book that commemorates the company's history and output. In fact, part II of the volume – "Marcus & Co., The Second Generation" – could well be a standalone publication. This section, broken down into six chapters, includes dozens of sketches and photos of fantastic, daring creations that show the design evolution and its many and varied inspirations. The chapter "The Evolution of Their Signature Styles, 1906–1917" shows a wide range of creations, including Art Nouveau designs, →

Egyptian-influenced jewels and pieces that the company described as 'antique'. Here, the authors trace how the *plique-à-jour* concept – where the enamel is applied in cells without applying backing for the final piece, so that light can shine through the transparent or translucent enamel – evolved from a design element to a central technique, flourishing in their Art Nouveau collections. There are several images of botanically accurate pieces that feature flowers, such as irises, orchids and geraniums, as well as other plant matter such as hazelnuts and grapes. The authors also document what is perhaps the most important development, not only of the company's history, but of the company's overall success: a family trip to India in 1895. Travellers included Herman Marcus (then sixty-five years old), and his sons William and George, the latter who displayed creativity for decades following this trip. The family returned not only with gems and jewellery, but a wide-ranging collection of textiles and other objects, which they sold to collectors. The influence of Indian jewellery on Marcus & Co.'s design aesthetic was intentional, with advertisements referring to their 'Hindu' or 'Neo-Indian' jewellery. One such example is a masterful boulder opal and diamond 'Hindu' pendant brooch (ca. 1902). The authors note that "The opal, possibly fashioned by an in-house

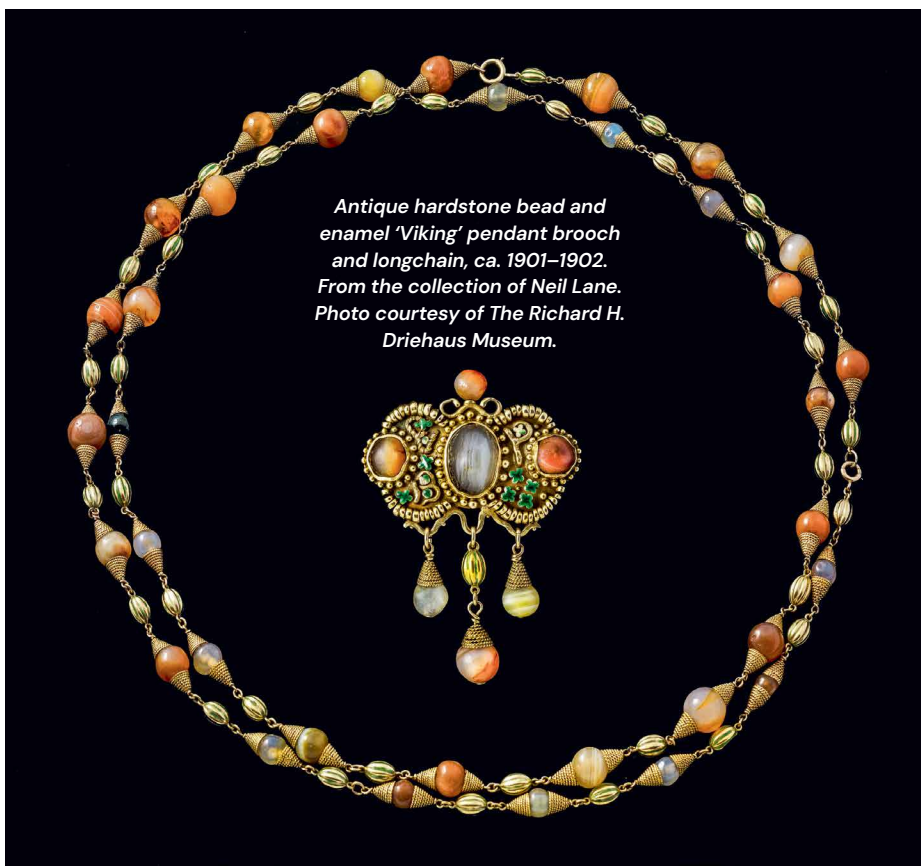


Front and side view of a black opal 'Hindu' ring, ca. 1908–1910. Photo by Tony Virandi, courtesy of Macklowe Gallery.

The authors trace how the use of the *plique-à-jour* concept evolved from a design element to a central technique, flourishing in their Art Nouveau collections.

Marcus lapidary, has a fiery pink phenomenon enhanced by the substantial framing of ironstone host rock that it retains. It is set within a surround of bright green champlevé enamel, with delicate prongs formed of scrolling 'Hindu' gold. In addition to the Indian influence, the unusual choice of boulder opals with all their imperfections, such as the random dark ironstone stripe across the drop, reflects the Arts & Crafts preference for the imperfect shared by Marcus." (It is important to note that, like members of other jewellery firms, the Marcus family also often travelled to Europe. The authors indicate that the family's link between New York and Europe is illustrated by their design, production and collaboration.) In the aftermath of the death of Herman Marcus in 1899, the house had moved uptown to a location on Fifth Ave. and the authors note that "this period represents the firm's apogee in originality, diversity, and creativity and design."

Part II features several side-by-side comparisons of original sketches and photos of surviving pieces from its most creative era, led by George Marcus. In one example, an opal, diamond and enamel brooch from the Richard H. Driehaus Collection is opposite a photo of one of the design notebooks, which are large leather-bound albums with detailed designs in watercolour, pen-and-ink or graphite, on white or black card stock. The similarity between the original sketches and pieces that still exist today is striking. Other such illustrations are found in the book, including a double-page spread entitled "Brooches, Pendants. No. 1" which shows two dozen examples of Hindu, floral and even abstract motifs.



Antique hardstone bead and enamel 'Viking' pendant brooch and longchain, ca. 1901–1902. From the collection of Neil Lane. Photo courtesy of The Richard H. Driehaus Museum.

During the time period the company continued to invest little in typical advertising. Rather, they relied on soft-sell collaborations, such as publishing essays by independent and even groundbreaking female authors, journalists, scientists and artists. The authors note that some of these women and their families may have been clients or social acquaintances, and that the essay booklets were distributed to clients as a subtle form of marketing and engagement.



Emerald and enamel necklace in the firm's 'antique' style, ca. 1896–1897. Photo courtesy of FD Gallery.

Boulder opal, diamond, and enamel 'Hindu' pendant brooch, ca. 1902. Photo courtesy of Historical Design.



In 1917, the family and company faced a tragedy when George Marcus drowned while swimming at his summer home in Moosehead Lake, Maine. After this tragedy, the third generation of the Marcus family entered the business, specifically William's sons, William Jr and Chapin, and George's son Peter. While records show some tepid attempts at design by William Jr, George Marcus' creative period had come to an end.

Lacking the latter's design genius, the firm increasingly turned to efforts beyond artistic innovation and production. However, the family were still pioneers in other areas. For example, Marcus & Co. became known for unusual and theatrical window displays, which maintained public fascination on Fifth

Avenue. They transformed windows into dramatic miniature stage sets, with elaborate scenes of historical intrigue, mysterious figures and mechanised characters and elements created by a well-known set designer. Rather than simply displaying jewels, the windows invited pedestrians into atmospheric narratives that drew crowds along the avenue. Several photos collected from an advertising trade magazine show examples of these curious tableaux dating to the 1930s.

By this time, art deco was the rage. While the book shows some examples of the firm's output, the authors also note that the Marcus production was indistinguishable from others of the era. European jewellery houses, such



Sapphire, natural pearl, diamond, paillonné and plique-à-jour enamel brooch, ca. 1908. Photo courtesy of Historical Design.

RESEARCHING THE BOOK WITH SHEILA BARRON SMITHIE FGA

The narrative behind the book about Marcus & Co. is as compelling as the history of the company itself. Christine Puleo Reis interviewed Sheila Barron Smithie FGA about the massive feat of chronicling the story of the little-understood jewellery firm.

It is undeniable that *Marcus & Co: Three Generations of New York Jewelers* is the result of meticulous research, widespread collaboration and generous funding from partners, particularly from Van Cleef and Arpels and the L'ÉCOLE School of Jewelry Arts. Sheila Barron Smithie FGA, an historic and vintage jewellery specialist and co-author of the book, noted that the work was also only possible thanks to a wide range of contributors. In fact, the acknowledgements page lists dozens of individuals, institutions and academics.

Perhaps the most compelling source of information came from a treasure trove of eight Marcus & Co. design notebooks held at Dartmouth College (Hanover, New Hampshire). The volumes themselves were donated by Elliot Burton, an alumnus of the college and the son of the investor who bought the Marcus & Co. name and rights.

"A very dogged researcher at Tiffany & Co., using ArchiveGrid, was able to identify the existence of the Marcus &

Co. design volumes at Dartmouth College," explained Ms Smithie. "The records were labelled as Jaques & Marcus, which initially made them difficult to locate through searches for Marcus & Co. These books contain thousands of *gouache*, pencil and ink jewellery drawings with annotations, codes, initials and repeated handwriting.

"We also determined that the coded numbering system matched late-nineteenth-century jewellery-trade coding systems used for custom commissions and stock production records. What became clear was that George Marcus was the firm's principal creative designer. This is based on stylistic consistency and drawings signed with his initials."

Digitalisation of Dartmouth's Marcus archive was later funded and coordinated through the efforts of co-author Beth Carver Wees, and Metropolitan Museum of Art, making the material fully and easily accessible not only to the authors but to all other scholars. With constant access to these copiously illustrated and

annotated files in digital form, the authors were able to unravel the story of the firm.

The Charles Hosmer Morse Museum of American Art (Winter Park, Florida), well-known for its collection of Louis Comfort Tiffany pieces, was another locus of research. After the sale of the company, William Marcus (Herman Marcus's son) donated a portion of the design books to Rollins College, which then transferred the volumes to the Morse. These volumes have not yet been digitalised, but Ms Smithie stated that the museum may entertain inquiries from those engaging in scholarly research.

Ms Smithie highlighted the contribution of renowned jewellery scholar Janet Zapata and her collection of *Jeweler's Circular* trade journals, which were also digitised through the support of the Metropolitan Museum of Art. This industry publication, through articles and interviews with jewellers, offered the authors biographical information on jewellers of the region and era, discussions of jewellery styles, market conditions and trade practices. The authors also consulted *Jeweler's Circular* holdings located at the Gemological Institute of America and research website Archive.org. Non-trade publications were also consulted,

as Cartier and Van Cleef & Arpels, rose to dominance during this time with bold, modern designs. Conversely, Marcus & Co. – once known for its daring designs – increasingly appeared stylistically conservative and every year less distinct from competing American firms. The Great Depression then dealt a severe blow to the luxury jewellery trade as a whole, damaging the firm financially at a moment when it was already struggling creatively. The firm never recovered from these external and internal pressures, finally closing in 1942. Eventually, the name and rights were sold off to investors, with the brand then appearing as a line at the Gimbels department store.

With its 360-degree view of the business, *Marcus & Co: Three Generations of New York Jewelers* illustrates how economic and internal

Red- and yellow-gold dragon belt buckle with plique-à-jour enamel and multicolour zircons. From the collection of Vartanian & Sons, New York. Photo by David Behl.

factors led to the demise of the jewellery house. While economic policies and the art deco era played a role, it seems clear that a loss of artistic direction following the untimely death of George Marcus was a highly relevant, if not the most important, factor. Even the final pages of the book, lacking the examples of the earlier exuberant Hindu-inspired or Art Nouveau pieces, are literally and figuratively less colourful. For several decades afterwards, the name itself went quiet, a mystery for even jewellery scholars. With this book, the story comes to life, well told in words and images. ■



and the book contains several images of advertisements and other media that offered a first-hand look at Marcus & Co. designs, exhibitions and display strategies. *Town & Country* was an important source, and the authors found mention in 1906 of a large Marcus & Co. window display filled with *plique-à-jour* flower jewels that attracted crowds along Fifth Avenue. Thankfully, a few pieces from this display still survive, with two masterpieces recently reappearing on the market.

According to Ms Smithie, New York City's Macklowe Gallery obtained two *plique-à-jour* enamel pieces that had disappeared from the market for twenty years: an orchid pendant and an iris brooch, both three-dimensional jewels with very sensitive colour gradations. The resurfacing of these pieces enabled the researchers to connect them with the original design books. The technique behind these masterpieces is detailed in the narrative. The authors include front and reverse images of both objects, complemented by a digitally altered photo of the iris brooch with the findings removed to show its full sculptural character.

Outside of obtaining these two items, Macklowe Gallery and other collaborators also played a central

role in research. Ms Smithie explained that New York-based goldsmith and enamellist Tom Herman conducted research on the Marcus *plique-à-jour* enamel pieces at the Gallery. His technical analysis posited that the jewels required multiple specialised craftsmen, were mechanically assembled from many components and used enamelling techniques that were beyond known American workshop capabilities of the time period. He identified evidence of multiple elite specialists participating in the construction, including sheet-gold workers, saw specialists, enamellists, chasers and engravers. He found that the pieces were likely produced in Paris – possibly within circles connected to René Lalique or Georges Fouquet – and then assembled in New York.

Putting her finance background to work, Ms Smithie scoured the R.G. Dun & Co. credit archives at Harvard Business School's Baker Library. The company was the first commercial reporting agency in America, with written commercial credit records that documented supplier relationships, debt levels, payment histories, business reputations, tensions between partners and ownership transitions.

Other related sources included the New York County Surrogate's

Court, which Ms Smithie used to research George Marcus's estate, and which included testimony of his creative genius and ability to navigate Rockefeller-level elite-client relationships. Probate and tax records documented his ownership stake and the company's valuation after his death. Another source was the Rockefeller Archive Center itself. Correspondence found there showed that John D. Rockefeller Jr consulted and highly valued George Marcus as a designer as well as an authority on gemstone purchases. In addition to the Marcus story, the book contains detailed information on production and business dealings of the firm's competition, including Sheila Barron Smithies' own original mapping and charting of locations of the various houses that vied to be the selected jeweller to the leading New York families.

Finally, a key source of information for the book were descendants of the firm's original leadership. These family members supplied the authors with personal letters documenting Herman Marcus's entry into the jewellery business, the founding of the company and the firm's early development, in addition to providing clues for the reconstruction of Marcus family and personal relationships.

Always Curious

Our cover features the work of Atelier Zobel by Peter Schmid. Here, the designer considers the role of curiosity in his creative process.

I have always tried to understand what a piece of jewellery wants to become, as well as the person it is being created for. I think recognisability is simply what remains after years of asking the same questions with curiosity.

My design process rarely begins with an object; rather, it starts with conversations. I think about the individual who will wear the piece, how it will move with the body, how light will fall across its surface or what story already exists within a gemstone. Every stone carries its own history. The inclusions, fractures and unexpected colours are not imperfections to be hidden, but part of its character. The author James Joyce once wrote that it is our imperfections that make us lovable. I think gemstones deserve the same generosity.

Curiosity continues to be the guiding principle of Atelier Zobel. Every collection begins with a question rather than an answer. We are always interested in designing jewellery that allows us to explore different ideas. That curiosity has taken us in many directions — from scientists studying animal behaviour, to extraordinary gemstone cutters, to artists, to

architects and master craftspeople. It has also led us to develop our own techniques whenever existing ones could not express what we imagined.

Our fused palladium and silver surfaces grew from exactly that impulse. We wanted to draw with metal as freely as one sketches with graphite on paper—to create subtle layers of grey through to deep black that become part of the metal itself



The Still En Rose ring is composed of 22K gold, palladium and sterling silver, set with a 12.84 ct rhodochrosite and 0.05 tcw black diamonds.

rather than simply sit upon it. The surface became a canvas, giving us another language through which to express ideas.

One piece that embodies this philosophy is the brooch that is featured on the cover. Rather than imposing a design onto the gemstone, we allowed the material to lead the conversation. Naturally occurring

Several metals were used to create this ring, including 22K and 24K gold, palladium and sterling silver. The design was completed with a 71.45 ct tourmalinated quartz and a 0.31 salt-and-pepper brilliant-cut diamond.



White diamonds (0.16 tcw) are mounted in these earrings, which also use sterling silver, 24K gold and palladium in their composition.

tourmaline crystals suspended within quartz create their own landscape. The fused palladium dances above and below these formations, creating a sense of depth and drawing the eye through the structure before arriving at the star ruby, which quietly anchors the composition. The jewellery is not trying to overpower nature, but to continue the story it has already begun.

The first pieces combining gold and silver were created in our atelier in the early 1980s. Since the studio was founded in 1968 by Michael Zobel, every new technique has emerged from the same desire: not to be different for the sake of being different, but to find a more truthful way of expressing an idea. I began my apprenticeship at Atelier Zobel in 1993 and became creative director twenty-one years ago. Looking back, I realise that while our materials and techniques have evolved, the questions have remained remarkably consistent.

For me, jewellery exists as a personal cultural artefact. It carries memory, identity and meaning. Its value is not measured by status or rarity alone, but by the life it gathers over time. The object leaves the atelier complete, but its real story only begins when someone chooses to wear it. ■

All photos courtesy of Atelier Zobel by Peter Schmid.

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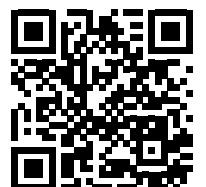
Dr. Stefanos Karampelas, Professor School of Geology, Aristotle University of Thessaloniki (AUTH), Greece

Dr. Raquel Alonso Perez, Curator, Mineralogical & Geological Museum, Harvard University

Dr. Aaron Palke PhD Geological and Environmental Sciences, BSc Geology, Gemmologist Researcher, GIA

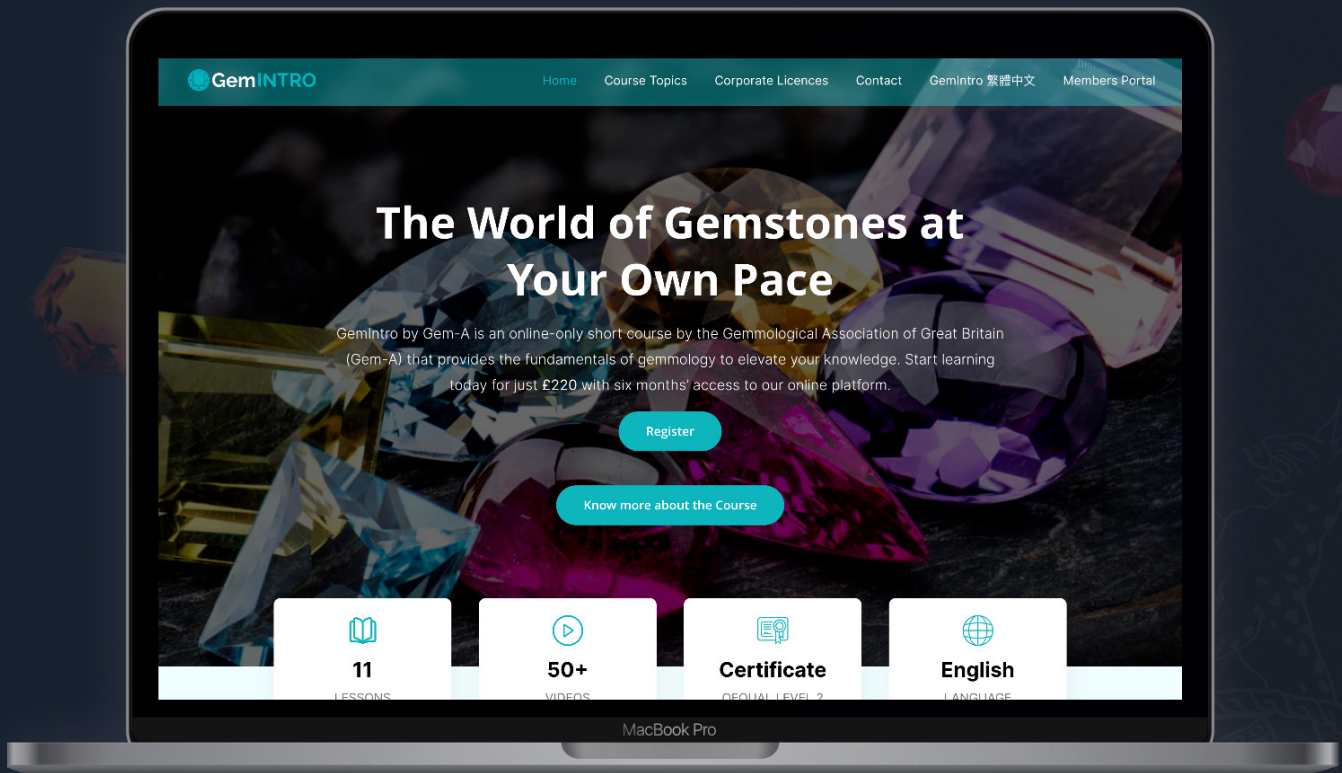
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