

Gemmological Spectrum

Short Articles

Finding Beauty in Gem Photography

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Beauty is the first tenet of a spiritual life. We are inspired by the beauty around us – it helps us to remember we have the power to find beauty in all of life's experiences.



Figure 1. *Unearthed from Nature. Sapphire crystals cut into gems become our stories. Blue sapphire, trillion, Sri Lanka, 2.27ct; blue sapphire, radiant, 3.14ct; yellow sapphire, 2.29ct.*



Figure 2. *Paraiba-type tourmalines, Namibia, 1.74ct and 1.01ct, with various soft pink morganites.*

Gem photography is quite like chasing light. Bringing out the subtle beauty in the stone is a continual challenge. Beauty is important when considering gems, being one of the three requirements when defining a gemstone: Beauty, Rarity and Durability (Figure 1).

Together with beauty, colour has long been associated with gems. Some varieties are known solely for their colour, like Paraiba tourmaline. The original source of this gem, the Paraiba mine in Brazil, produced this vivid, electric teal colour (Figure 2); currently, other mines adopt this term for the gem which is primarily the same colour.



Figure 3. Smouldering. Yellow sapphire, Sri Lanka, 3.62ct.

With the exception of the idiochromatic crystals, gemstones are aliochromatic and often colourless. Their colour comes from impurities or trace elements in their crystal structure, such as quality Brazilian emerald or pink spinel. The light wavelengths not absorbed by the gemstone are transmitted, or reflected back, to the viewer. We see these wavelengths of light and process them as colour (Figure 3).

“Colour is everything, colour is vibration like music; everything is vibration.” – Marc Chagall

When creating photographic images, the quality and source of light is another factor to consider: natural daylight, incandescent, LED or fluorescent light. Fine ruby appears much redder under incandescent light due to the excitation of the chromium ions (Figure 4). Conversely, blue sapphire coloured by titanium and iron appears bluer under LED light, which is stronger in the blue wavelength (Figure 5).



Figure 4. I love hue. Left to right: hand cut fine ruby becoming pink sapphire as the chromium content decreases. Origin: Mozambique, Myanmar, Sri Lanka and Madagascar, 0.50ct-3.07ct.

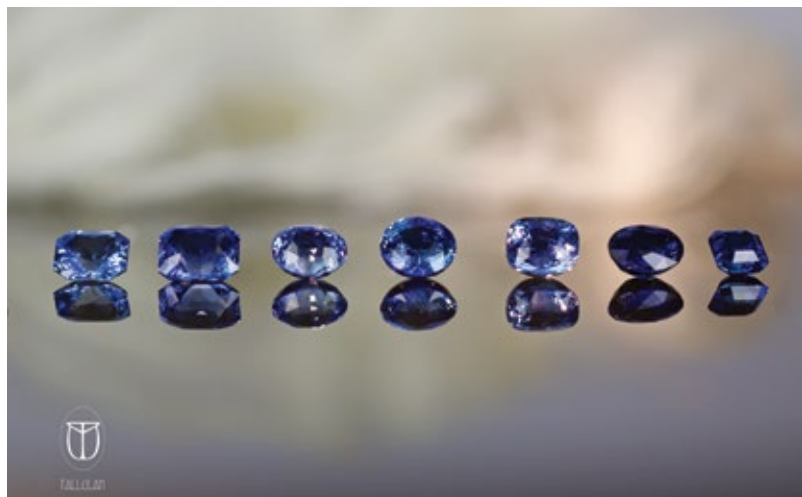


Figure 5. Sapphire blues. Hand cut fine sapphires in varied cuts and shades. Origin: Sri Lanka and Madagascar, 1.25ct-2.86ct.



Figure 6. A collection of fine Tanzanian Tsavorite garnets, 1.12ct -1.80ct.

Malaia garnet has a very strong colour shift in incandescent light where it looks especially red, while in natural daylight it shows a pinky-brown hue. Alexandrite is extremely difficult to capture due to its colour change phenomenon in two different light sources; it has to be taken in both these light sources to capture its colour change.

The beauty of gem colours can be summoned when attributed to locations – alluring Tsavorite from Tanzania (Figure 6) stunning, neon-fibre blue sapphire from Kashmir; pinky-orange Padparadscha

sapphire from Sri Lanka; the exquisite stop-light red Burmese spinel (Figure 7); alluring spectral colours of Australian Lightning Ridge opal (Figure 8); and dreamy, sky blue Aquamarine. The play of light in these colours create memories and ignite the imagination, for everyone not only the designer or photographer. We see colour around us every day, and consciously or subconsciously, choose hues that bring us a sense of connection and inspiration.

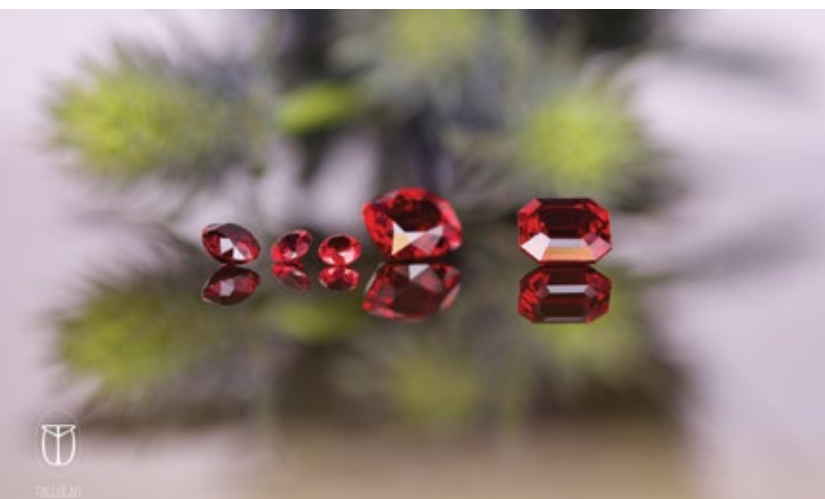


Figure 7. Scintillating red spinel. Left to right: Burmese cushion, 3.01ct with smaller oval and rounds, 0.30ct-0.78ct; Vietnamese emerald cut, 2.48ct.



Figure 8. Opal from Lightning Ridge.



Figure 9. Left to right: *Zambian Emerald, 1.85ct; Namibian Tourmalines, 2.15ct and 3.12ct; pair Cambodian Zircons, 2.10ctw.*

Each individual gemstone has subtle differences, entirely due to brilliance. Brilliance is dictated by the quality of the crystal and the way it has been cut, cutting being an art in itself. When a gemstone has been cut beautifully it gives life to the stone. The lapidary industry has changed to commercial, machine cutting for many cheap and small varieties of gemstones. It is exciting to record fine coloured stones that are cut by hand. The changing availability of material is a constant challenge, so to celebrate this beauty is a privilege. When photographing these wonderful pieces in macro photography, you can see the facets are not identical – as they tend to be with machine cut material – the cutter follows the light within the crystal to bring out the best aspect, carefully balancing the hue, play of light and carat weight.

Training as a gemmologist assists with taking macro photographs of gemstones – knowing the reactions each stone has to light and creating different light sources to bring out the primary and secondary colours. Gems captured in macro photography often show every aspect of the stone's personality: colour patches to windows; many types of inclusions including silk and tiny crystals; the hardness, cut and polish (Figure 9).



Figure 10. *Crystals and faceted gems. Left to right: Sri Lankan Sapphire; Colombian and Zambian emeralds; Vietnamese and Mozambique ruby; Tanzanian spinel.*

Quality in a stone is defined by the even hue, balance with expert cutting, and very few inclusions, which help to maintain the stone's brilliance. Value is defined by rarity in quality, size, and shape. It is unusual to find a quality stone in a large size of a certain, desirable shape. Round brilliants and radiant cuts result in more lost weight when cutting the rough crystal leading to increased wastage; thus, they are more expensive.

When capturing colour in fine material, there is something undefinable, you feel it when you see it, the instinct to see the most beautiful aspect.

All the elements come together with the composition, to evoke a mood, encapsulate the feeling, and finally to share the beauty of the image (Figure 10).

All photos courtesy of the author.

