They’ll sell you thousands of greens. Veronese green and emerald green and cadmium green and any sort of green you like, but that particular green, never.

Pablo Picasso

Historically, the earliest known locality for emeralds was by the Red Sea in Egypt at the so-called “Cleopatra” mines. Although evidence suggests that these mines were worked intermittently as early as 330 BC, production is only said to have opened up under the Romans around 30 BC – just after the reign of Julius Caesar.

From recovered jewelry and paintings, we know that these emeralds were often opaque and commonly used in their natural form or slightly polished. Some pieces were fashioned as cabochons or rounded as beads and frequently drilled so they could be mounted in necklaces or earrings. Presumably, the stones conveyed some artistic, symbolic, or religious significance to their owners. Roman historian Pliny the Elder, who died in the 79 AD eruption of Mt. Vesuvius, reasoned that emeralds possessed therapeutic and soothing properties. According to Pliny, “there is no better method of restoring the eyes than by looking at the emerald, its soft green color comforting and removing weariness and lassitude.” Indeed, green symbolizes nature and the natural world and is often thought to represent tranquility, good luck and health.

Indigenous South Americans treasured and traded emeralds for centuries before western explorers ever arrived. Historians believe they could have been mined as early as 500AD. The Aztecs and the Incas collected them, but would not or could not reveal their sources because they came from tribes in present-day Colombia. It wasn’t until the Spanish conquistadors arrived and looted whatever they could that these large and exceptionally colored jewels began their rise to supremacy. The legendary Crown of the Andes, fashioned in colonial South America, is one example of how the Spanish revered emeralds. According to lore, its largest stone, now called the Atahualpa emerald, was taken from the last Incan emperor (Atahualpa), by the conquistador Francisco Pizarro.

The emerald and gold treasures recovered from the sunken 17th-century Spanish galleon NuestraSeñora de Atocha give us an idea about the treasures these vessels could have carried. If we knew more about the full extent of the trade and the cargo at the time, we could perhaps better imagine the scope of the extraordinary riches. The Atocha treasure alone was valued at $400 million.

Since then, emeralds have been discovered on almost every continent, but the best and the most expensive emeralds are agreed to be Colombian. Fine stones have also been unearthed in Zambia and Brazil, and beautiful gems also occur in Russia, Pakistan, Afghanistan, Madagascar, Ethiopia and Zimbabwe, but production has never been as extensive.

Emerald appearances are sometimes associated with specific mines. Colombian emeralds are said to have a warmer and more intense pure green color and possess a unique vibrancy that gems from other origins never seem to attain. Like Burmese rubies with their apparent fluorescence in daylight, Colombia emeralds emit a kind of glow that’s hard to find in jewels from other localities. The color appears to be of another dimension that cannot be captured by even the best digital cameras. Perhaps some kind of a 3-D manipulation would help, but even then, the exact hues would still be a challenge to reproduce. Zambian emeralds transmit a cooler, more bluish-green presence because of coloration by vanadium rather than chromium. Still, the appearances are similar, and ascertaining origin by color alone is not really an option.
Colombian emeralds are so famous for their striking colors and large sizes that dealers will pay a 20% to 30% premium for them. They may be a challenge to facet due to their uneven distribution of coloring and darker tones closer to the surface or in the “skin.” Without careful planning and pre-forming, the finished stones could end up lighter than the original material. The best quality Muzo emeralds tend to have a well-saturated slightly yellowish-green color, Chivor emeralds are cleaner with a slightly less saturated bluish-green color. Cosquez emeralds occur in a range of colors and clarities, but the best stones are dark and somewhat bluish-green in appearance.

**The Growth of the African Emerald**

African emerald production is growing, new mines are opening and their marketing and degree of organization is improving. And while the experts agree that Colombian emeralds are the finest examples so far, Africa always produces phenomenal stones of every kind and we should not be surprised about future discoveries. Still, the top colors should be obvious from its purity and intensity, regardless of the source location.

**Soond to Be King**

Zambia is a landlocked African country of rugged terrain and diverse wildlife, with many parks and safari areas. The discovery of large quantities of emeralds there led to a great deal of excitement when they were found in the 1970s.

Some of the first emerald crystals yielded stones that were so clean that even dealers suspected them as synthetics. This notion was, however, disproved and as Tiffany began promoting them for their intense colors, remarkable transparency and relative affordability, Zambian emeralds started to gain recognition and acceptance. Most importantly, the new stones offered consumers who could not afford Colombian emeralds an opportunity to buy beautiful gems at lower prices.

The beating heart of Zambia’s 41 square kilometer Kagem mine is a joint venture between Gemfields, and the government of Zambia. About 25% of the world’s emeralds originate here. In 2018, a 5655-carat jewel, nicknamed Inkalamu (the Lion Emerald), was found, and it wasn’t even the largest emerald ever pulled out of there. That honor goes to a 6,225-carat emerald mined in 2010. Gemfields named that stone “Insofu” – the Bemba word for “elephant” – for its massive size.

**Last Days of the Tsars**

Russia became a valuable source of emeralds following the discovery in 1830 of the famous emerald-alexandrite-phenakite deposits on the banks of the Tokovaya River near Malysheva. They were reportedly first found in a kind of weathered mica schist and evaluated at the Royal Lapidary Factory in Yekaterinburg. Yekaterinburg is Russia’s third-largest city and Malysheva is situated some 90 kilometers to the northeast.

What is known today as the Malysheva deposit was discovered in 1833 with mining commencing in 1834. Over the years, the deposit has been leased and nationalized and privatized intermittently. Work by artisanal miners continued sporadically from the 1860s. In 1899, the Malysheva deposit was leased to an Anglo-French company (“New Emerald Mines of the Urals”), which worked the deposits until the outbreak of the World War I in 1914. The Malysheva mine was at that time the largest producer of emeralds in the world, and many of the most beautiful emerald and alexandrite specimens on display in London’s Natural History Museum have acquisition labels dating back to the mid-19th Century and originating from Malysheva.

The Malysheva mine is believed to contain 80% of the known Russian emeralds and was a significant producer in the late 1980s and early 1990s. Production of alexandrite’s was never substantial, but their exceptional quality was admired, and they were prized around the world. Nowadays, there doesn’t appear to be much of any kind of mining at this deposit, and new stones rarely appear on the market. Most Russian emeralds are light to medium green in color and the presence of yellowish-green components is quite common.
THE SUCCESSION
The color of Emeralds might give us a clue to their origin, but as there may be a great deal of variation within a single source, gemological tests and inclusion studies are the only way to identify origin conclusively. Still, the top color should be obvious from its purity and intensity, regardless of the source location.

While emeralds without eye-visible inclusions do exist, these stones are extraordinarily rare. Some inclusions are referred to as “jardin” (meaning garden in both French and Spanish), and may consist of networks of tiny liquid-filled inclusions and tiny fissures that permeate the gem evoking the appearance of a lush garden.

The public wants their gemstones to be clean, but emeralds are among the few gemstones where inclusions are accepted. Still, cleaner is better, and this is why most emeralds are treated. Some are infused with oils, and others are filled with polymer resins. The fillers are selected for a refractive index, which is very close to emerald, and they are ideal for disguising cracks and fractures. Cedarwood oil is the preferred option for Colombian stones, while Brazilian stones are usually treated with resin. The resin treatment is considered to be permanent, but many sellers prefer oiling. The treatments improve clarity and stability, and there is nothing wrong with these processes as long as the buyers are fully informed. Emeralds should not be cleaned in an ultrasonic bath as the oil may be removed. Re-oiling is not complicated, but it’s better just to avoid the bath in the first place.

The oiling or infilling of cavities and fractures in emeralds is standard practice and improves their appearance. Stones may pass immediately from the mine into a bucket of oil, and even if sellers wish to remove this oil, traces may remain.

REFERENCES

GAME OF GREENS
Even experienced gem dealers might be surprised at the variations in colors from the different deposits.

BRAZILIAN EMERALD
MOST UNDERRATED
Brazilian emeralds were not initially known for their quality, but this perception has evolved and present-day prices compare to top stones anywhere.

The higher concentrations of vanadium result in beautiful colors, yet still slightly less saturated than their Colombian cousins.

Vanutsaporn Treemok, 2020, Brazilian Emerald, Multicolour.com

MADAGASCAN EMERALD
MOST SURPRISING
Compared to emeralds from the African mainland, Madagascar emeralds are most similar to Zambian and Sandawana (Zimbabwe) emeralds. The stones are often somewhat bluish-green and sometimes remarkably clean.

Vanutsaporn Treemok, 2020, Madagascan Emerald, Multicolour.com

ETHIOPIAN EMERALD
MOST PROMISING
In appearance, Ethiopian emeralds are most similar to Zambian stones. Unlike some other emeralds where vanadium is the chromophore, the color of Ethiopian stones is attributed to both chromium and iron.

Vanutsaporn Treemok, 2020, Ethiopian Emerald, Multicolour.com
RElicS & RARITIES

Outside the trade, the name beryl might not be recognized enough to conjure a colorful array of springtime colors, but as a mineral family, the group is one of the most important and inspiring in the world of gemstones. Derived from the Latin (beryllus), and the Greek (beryllos), the name "beryl" originally referred to a “precious blue-green color-of-sea-water stone.” The term was later adopted more exclusively for the mineral beryl.

Some stones can display chatoyancy and can be cut as cat’s-eyes to highlight the effect. This 74.84-carat greenish-golden cabochon from Madagascar is an excellent example.

PROSPECTOR’S CORNER

The mineral afghanite is a rare and collectible mineral uncovered initially in the Badakhshan province of northern Afghanistan in 1968. It is often encountered in association with lapis lazuli and frequently together with lazurite, the blue component of that gemstone.

Afghanite is a member of the trigonal system and typically forms as elongated prismatic crystals or in a massive form embedded in a marble matrix. It can be white or blue and is usually opaque and rarely translucent or transparent. It has a Moh's hardness of 5.5 to 6, a specific gravity of 2.55 to 2.65, and it fluoresces bright orange. Common mineral associations include Calcite, Lazurite, Pyrite, Diopside, Muscovite and Forsterite.

Large well-defined crystals are uncommon and faceted stones of over 1ct. are very rare and never very clean. Other than Afghanistan, this stone has also been found in Germany, Italy, Canada, Russia, Tajikistan, Newfoundland and the United States.