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A Deep Dive into Burma Spinel
by Robert Genis

We came across a gem article in *Web Desk* that made the argument alternative gemstones are emerging as sought by collectors over the "Big Four" (diamonds, emeralds, rubies, and sapphires).

It discusses a jeweler who sold a gem red spinel in 2016 for $7700. The stone was replaced in 2023 by the insurance company for $38,000, citing unprecedented demand for this stone recently.

Rahul Kadakia, international head of jewelry at Christie's, stated, “The escalating prices of the “big four” gems have compelled buyers to explore unconventional alternatives.” Jennifer Tonkin, Bonhams co-head of jewelry, said, “Historically, spinels have been regarded as less important and therefore more affordable, but they are becoming increasingly desirable.”

The article concludes "Fire engine red” and hot-pink spinels from Burma “should continue to see market appreciation,” as these beautiful gems could soon sell for up to $25,000 per carat.

Since spinel has been in the news lately, we thought we would take a deep dive into Spinel history and the modern market.

Spinel History

Pliny the Elder (A.D. 23-79), in his encyclopedic work *Natural History*, was highly skeptical of the curative power of gems. Nevertheless, he recorded the ancient beliefs, including the idea that all red stones (garnet, ruby, and spinel) were good for curing bleeding and inflammatory diseases. Later, it was believed spinel could identify supernatural humans. Gemological historians are uncertain as to how spinel was named. It may have come from "spark" in Greek, or "thorn" in Latin. Spinel is associated with the planet Saturn.

Perhaps the most interesting thing about spinel is the crown jewels of many monarchs gleam with spinel that were originally thought to be ruby. The most famous examples include The Black Prince Ruby, The Timur Ruby, the drop-shaped spinels in the Wittelsbacher Crown, the 105 carat red in the Louvre in Paris, King Henry the Eighth's "ruby collar", the 414.30 spinel in the Imperial Russian crown (which was mounted for Princess Catherine), and the spinels in the Persian Crown Jewels in Teheran. All these stones were once believed to be ruby. In all likelihood, a great deal of regal jewelry thought to be ruby in the western medieval world is, in fact, spinel.

The Black Prince Ruby

This magnificent spinel, nearly two inches across, has belonged to English Royalty since 1367. It is one of the most treasured gems in the world. It is mounted in a crown above the 317.4 Cullinan Two, currently recognized as the second largest diamond in the world (not seen in the photo on pg 2). It is irregularly shaped, pierced in one end, and the hole is filled with a ruby.

Black Prince Ruby

It is estimated to weigh between 167-170 carats and is probably from Afghanistan.

The history of this gem is in dispute. According to one story, The Black Prince, son of king Edward the Third, received the stone from Pedro the Cruel, King of Castile, who stole the spinel from Prince Abu Sa'id, Moorish Prince of Grenada. It was added to the Crown Jewels in 1377, for the coronation of Richard the Second. The second story is that in 1360, King Peter went to war with Granada to obtain this gem. King Peter was fighting against his brother, King Henry. King Peter requested the help of The Black Prince (Edward, Prince of Wales) to assist in the war. The Black Prince defeated King Henry in 1367, and Peter gave the gem to The Black Prince in gratitude for the victory. The spinel made its way as a crown jewel for the coronation of William and Mary of Orange, with the title, "The King's Great Ruby".

Not in dispute is in 1415, King Henry the Fifth led his small British army against the French at Agincourt. For protection, he wore the famous Black Prince Ruby in his helmet. After winning the battle, he credited the stone for taking a blow meant for his head. This story gave the gem legendary status.

Subsequently, it was set and reset in various crowns worn by the Tudors and Stuarts. In 1649, after the beheading of Charles the First, the great stone was sold for a mere 4 pounds and 11 shillings. The gem reappeared at the Restoration in the Crown Jewels of James the Second. Today, you can see the gem in the British crown jewels in the Tower of London.

The Timur Ruby

The Timur Ruby is the second largest spinel in the world, weighing 352.54 carats. Its name means, "Tribute to the World". It is not faceted, but retains its original baroque form, and is engraved. The Timur Ruby now resides in the Royal collection of the British Monarchy.

In 1739, the Shah of Persia invaded India to seize what was thought to be the largest ruby in the world. The British East India Company took possession of the gem in 1849, and sent the gem to England. The inscription on the Timur Ruby was deciphered in 1851. Prior to that, the gemstone was believed to be a ruby, but closer examination revealed it to be a spinel. The inscription on the Timur Ruby was found to be written in Persian, and it dates back to 1740 CE, during the reign of Nader Shah Afshar. The inscription was added by Nader Shah himself, who referred to the gem as "Ayn al-Hur" ("Eye of the Houri"). The remaining five inscriptions are the names of emperors who had it in their possession, the first being Akbar Shah Jahangir in 1612. Further, the inscription says the stone fell into the hands of Timur, the Tartar conqueror, when he captured Delhi in 1398.

Gemology

Spinel occurs in a myriad of colors. It can be discovered in gem red, mauve, vivid blue, hot pink, flame orange, brown, lilac, purple, violet, greenish, wine red, steel gray, slate, indigo, rose, brown, and black. Occasionally, there occurs an alexandrite-like spinel, which changes from gray-blue to amethyst. Also, star spinels occur but they are exceedingly rare.

Spinel is a magnesium aluminate, and its pigments are chrome and iron. Its hardness is 8, and it forms as a cubic crystal, like a diamond. Spinel occurs in octahedral crystals, and has a complete absence of cleavage. Due to the gem's dispersion (0.021) gem spinels can possess vivid fire, and the intensity of these colors is partially due to the fact spinel is singly refractive. Characteristically, the inclusions in spinel are minute spinel crystals.

Spinel is usually formed as a contact metamorphic mineral in limestone. It is discovered as rolled pebbles in sand and gravel

pits. It is formed because of its resistant physical and chemical properties. Spinel today is mined in Burma and Sri Lanka, usually alongside corundum (ruby and sapphire). A top ten carat Burma gem quality is practically nonexistent. In Africa, Spinels are found in Mahenge, Tanzania, in carstic marbles. They have discovered pinkish red crystals up to 100 carats.

As mentioned earlier, at one time all red stones were assumed to be ruby. In 1783, minerologist Rome de Lisle was the first scientist to distinguish clearly the differences between true ruby and true spinel.

In 1915, synthetic spinel hit the world gemstone market. These stones are inexpensive to produce. This is the reason inexpensive "birthstone" or "class" rings contain synthetic spinel. Please note, the color and intensity of fine Burma spinel is in no way comparable to the lesser qualities of synthetic spinel, and the differences are easy detectable.

Current production

Spinels are found in Burma, Sri Lanka, Vietnam, Afghanistan, Tajikistan, and some African countries. Since the late 1990s, Pinkish Red Spinel was also found in Mahenge, Tanzania, and the new supply helped propel awareness of spinel worldwide. The African spinels are generally cleaner than the Asian stones and come in large sizes. The downside is they never reach the intense color of the Burma material.

How to Collect Gem Spinel

Ruby, to the eye, looks very much like spinel, but not all spinel looks like ruby. Only the gem reds, hot pinks, and flame oranges deserve this honor. As a matter of fact, many collectors believe these spinels are actually MORE beautiful than ruby. Spinel is a gem coveted by inside connoisseurs and certain gem dealers themselves (myself included). Burma spinel is relatively inexpensive compared to some gems that are less attractive and more abundant. The only reason is the lack of market exposure. Most people are unaware of the existence of spinel, much less its intrinsic value. If you are a serious collector, you should own at least one of every color. If you consider yourself a speculator, spinel is an underpriced gem with serious upside potential.

Historical Ratios

For decades, Burma spinel sold for 25% of the price of no heat Mogok Burma ruby. In other words, a ratio of 4:1. As most know, the prices in the Burma ruby market have escalated dramatically, greatly impacting this ratio. The current ratio is 10-20:1, meaning Burma spinel is selling for about 5-10% of Burma ruby. For example, GemGuide lists a top pigeon blood Burma ruby of 10 quality (Signified by new 2.5 AGL color grade or 70% red old Cap AGL cert) as wholesaling between $42,000-$100,000 per carat. The problem with GemGuide spinel pricing is they do not have a special matrix for Burma Spinel. Their Red spinel matrix has only one price for carat sizes goods of $4500 per carat. Obviously we need to add a premium for no enhancement, no clarity treatment, and Burma origin to these prices. Hopefully this will get done just like for Burma sapphires and Burma rubies vs stones from other regions of the world.

The present gap between Burma spinel and Burma ruby might be similar to the ratio between gold and silver, which many people use to decide which metal to invest in. For example, the gold/silver ratio reached highs of over 123:1 during the COVID-19 pandemic, and has since fallen to around 80:1. It is reasonable to assume the standard Burma ruby to Burma spinel ratio will reassert itself and Burma spinels will close the gap.

Burma vs. African vs. Sri Lanka Spinels

As mentioned previously, Burmese gem reds, hot pinks, and flame oranges are the most sought after colors by collectors. Vivid blues from Vietnam are also highly desirable. We have seen two carat vivid blues wholesale for over $60,000 per carat and many wholesalers asking $100,000 per carat for the material. Any gem spinel over two carats is rare. The most desirable spinel is red or orange red. When searching for pinks, search out day glow electric colors, often called Jedi today. Please be aware, as a general rule, Burma spinel tends to be Moderately Included. Some believe the inclusions are linked to the vivid colors.

Some collectors might also like African spinel. If clarity is important to you, this might be a better choice. The best colors are not similar to the gems reds of Burma but are an attractive pinkish red. They are also available in larger sizes.

Every gem collection decision is a trade off to some degree. Depends what is more important to you.
Avoid Sri Lanka stones; they are pastel in color or red-black. Avoid common garnet-like spinel-red stones with dark tones and obvious brown secondaries.

SPINEL - RUBY COMPARISON CHART

	Spinel	Ruby
Hardness	8	9
Supply Burma Africa	 Ultra rare Plentiful	 Mogok - ultra rare Plentiful
Brilliance	More fire	Less fire
Rarity	200+ times more rare than ruby	Ultrarare
Price	5-10% the price of ruby	Expensive

3.07 Orange Red Burma Spinel

Conclusion
The problem in obtaining fine Burma spinel today is the same as with Burma ruby and Sapphire. Mining in Burma, particularly in the Mogok region, is very curtailed, making it challenging to find high-quality spinel crystals. Spinel was never common, but is now more elusive than ever. It appears the Chinese are no longer the main culprit behind the rising Burmese prices. Due to their weak economy and financial stress with their own declining real estate prices, they are no longer buying gems. Of course, Burma is also under tremendous military pressure with an ongoing civil war. But just what is the real issue? Seems like the problem may be the Burmese dealers themselves. In a way, they are victims of their own success. In the old days, they needed to sell to finance more exploration and feed their families. Business was so good for so long, with the whole world wanting Burmese stones, these dealers are now extremely wealthy. Unlike in the West, they have very few options for what to do with their money. They don't trust the kyat, the local Burmese currency. They don't trust banks or their fledgling stock market. So they buy real estate and own gems. In their minds, there's no better place to store your money. When outside dealers go to Burma, the local dealers want a higher price than the world market is willing to pay. It's almost like an old Western gun standoff. So far, neither side has blinked, and the world has no new Burmese goods. The only way to get top Burmese gems today at prices that are not insanely high is to rebuy from old collectors or estates. If you do not have the resources to invest $100,000 for a Burma ruby, a Burma spinel is an excellent alternative.

De Beers Pulls "Last Resort" Price Cut As Diamond Price-Floor Crumbles
By Robert Genis

The collapse in diamond prices has prompted DeBeers to implement broad price cuts. In the last DeBeers sight sales of December 2024, they cut prices 10% to 15%. The reason is the sliding market pressured by low-cost lab-grown diamond supply, plus sinking demand across the West and China. It appears that cash-strapped consumers, and the Millennial and Z generations are gravitating to artificial stones.

Historically large decrease
Price cuts at Anglo American's DeBeers come as the Diamond Standard Index, which dates back to early 2002, has plunged to record low levels. The index has lost 45% of its value since March 2002. All support levels have been taken out and downside prices are in an unchartered territory.

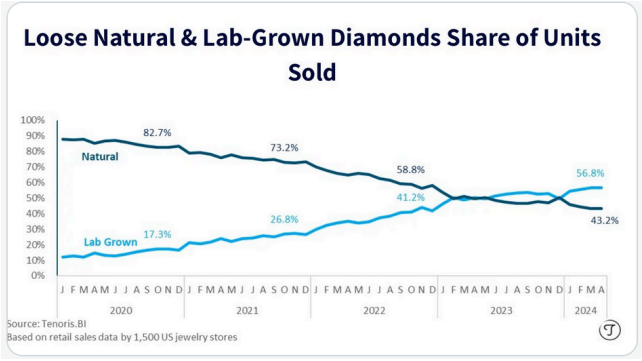
Source: Bloomberg Diamond Standard Index, 2002-2024

As most know DeBeers holds 10 sales each year in which the buyers — known as Sightholders — generally have to accept the price and the quantities offered. This was always seen as the ultimate status and almost like printing money for the Sightholders. Even with the steep cut in prices today, the company's stones are still more expensive than the going rate in the secondary market. Therefore the Sightholdres are simply losing money buying from DeBeers today. How long will this system last?

Amy Wu X Post.

Amy Wu, the Menlo partner venture capitalist, in a viral post on X, highlighted how 2023 marked a pivotal year in the battle between natural diamonds and lab-grown stones for market share.

According to trend analytics firm Tenoris, which surveyed 1,500 US jewelry stores, lab-grown diamonds (lower blue line) are beating natural diamonds so far in 2024, accounting for 56.8% of diamonds sold, while natural diamonds trailed with 43.2%.



Source: Tenoris

Summary

Insiders believe DeBeers will even lower prices more in the January sight (sale). After all, rough prices are still 20% to 25% more expensive than goods at these sales in some categories. They must reflect the reality of prices in the real world or the entire sight holder system might collapse. The Sightholders will not continue to lose money forever. DeBeers is in a tough position after dominating the diamond market for over a century. They did a fantastic job in controlling the producers with an iron fist. The DeBeers marketing and advertising campaigns were considered possibly the best of all times. Buying a diamond for marriage was ingrained deeply into the US and many cultures. DeBeers needs to reach the younger generations to persuade them to buy real diamonds. Can this be done? We don't know.

As we all know, diamonds have never been particularly rare compared to colored diamonds or colored gemstones. My old friend David Marcum famously said, "For each handful of top-quality Burma ruby, Kashmir sapphire, large gem red spinel, or top-quality tsavorite, a whole driveway could be surfaced with fine quality diamonds." We have not recommended white diamonds for investment or collection in decades. However, we do believe white diamonds should be used to accent colored gemstones in jewelry. For those doing that, it just got a little less expensive. Enjoy.

Gem News

Popular Gems Around the World: 10 Most Sought-After Rare Gems For Your Collection
Luxury Travel Magazine
October 28, 2024

Pretty good list but where is Burma spinel and Burma sapphire? Not sure Black Opal should be on this list because they often craze and break. Probably cannot go wrong here otherwise. ED

While some gemstones captivate with their sheer beauty and sparkle, others intrigue collectors and enthusiasts with their rarity and mystique. Across the globe, countless gems boast these traits, but only a select few have reached legendary status due to their scarcity and unparalleled allure.

From the vibrant greens of Colombian emeralds to the coveted Argyle pink diamonds, rare gems continue to fascinate and drive interest among jewelers and collectors alike. Let's explore ten of the most sought-after gemstones in the world, each with its own unique story and intrinsic value.

1. Argyle Pink Diamonds

Starting with one of the world's most exclusive gemstones, argyle pink diamonds hail primarily from the Argyle Mine in Western Australia. Renowned for their exquisite blush hue, these diamonds are highly prized and exceedingly

rare. The mine's closure in 2020 has only amplified their desirability, making them a cherished collector's item.
The unique coloration of argyle pink diamonds is believed to be due to a distortion in their crystal lattice, a phenomenon not fully understood, which only adds to their allure. These diamonds are typically set in luxurious jewelry pieces that emphasize their beauty and rarity.

2. Colombian Emeralds
Colombian emeralds are celebrated worldwide for their deep, vibrant green color, a result of the ideal geological conditions in Colombia. Known for clarity and brilliance, these gems have long been the favorites of royalty and celebrities alike.
They differ from other emeralds by their vivid hues, often described as "spring green." The Muzo and Chivor mines are legendary for producing these spectacular gems, making Colombia synonymous with the highest quality emeralds.

3. Burmese Rubies
Burmese rubies, especially those from the Mogok Valley, possess a fascinating "pigeon blood" red hue that makes them especially prized. The rich, intense color is unrivaled, often fetching the highest prices at auctions.
Their rarity stems from not only their color but also the limited availability from natural sources. These factors combine to maintain their status as some of the most sought-after gems in the world.

4. Taaffeite
Discovered serendipitously by gemologist Richard Taaffe in the early 20th century, Taaffeite is one of the rarest gemstones on Earth. It occurs in violet to soft pink hues and offers a luster similar to spinel.
Found in Sri Lanka and China, Taaffeite is so uncommon that few exist in the market, making it an enticing gem for collectors and connoisseurs appreciative of its scarcity and beauty.

5. Alexandrite
With its remarkable color-changing properties, Alexandrite has mystified the gem world since its discovery in the Ural Mountains of Russia. This gem changes from green in daylight to red under incandescent light, a phenomenon often described as "emerald by day, ruby by night."
Esteemed for its rarity, original Russian Alexandrite is exceptionally valued. However, prized sources are also located in Sri Lanka and Brazil, continuing to enchant enthusiasts with their chameleon-like qualities.

6. Paraíba Tourmaline
Discovered in the 1980s in Brazil, Paraíba tourmaline stands out with its mesmerizing neon blue and green tones, attributed to traces of copper. This striking appearance, coupled with limited availability, makes it one of the gemstone world's rare treasures.
The stones are so vibrant that few other gems match their intensity, leading to high demand and significant market value. Mines in Nigeria and Mozambique have also discovered similar tourmalines, broadening the mineral's allure yet maintaining its elite status.

7. Red Beryl
Often known as the red emerald due to its similar mineral composition to emerald, red beryl is found primarily in Utah, USA. Its fiery red hue is unparalleled, and it is one of the rarest and most valuable gems in existence.
Many consider red beryl rarer than diamonds, with fewer than 10,000 carats mined to date. Its scarcity along with its vibrancy makes it a coveted possession among gem collectors.

8. Black Opal
Australia's Lightning Ridge area is renowned for producing the world's finest black opals. These gems feature a dark body tone with vibrant spectral colors that "dance" on the surface.
Black opals are rare because they have a unique play-of-color set against a dark background, heightening their brilliance. Collectors worldwide prize them for their dynamic beauty, making each gem truly unique.

9. Kashmir Sapphire
Known for their velvety blue appearance and exceptional clarity, Kashmir sapphires are among the most exquisite sapphires found. The original mines in the Kashmir region of India are nearly depleted, adding to the gem's mystique and value.

These sapphires are distinguished by their soft, cornflower blue color, setting the standard for blue sapphires worldwide. Their rarity and legendary color continue to captivate gem enthusiasts and investors alike.

10. Jadeite

Long revered in Asian cultures, jadeite is the most valuable form of jade, recognized for its striking, vivid colors, particularly the intense green known as “imperial jade.” Primarily mined in Myanmar, these stones are treasured for both their beauty and cultural significance.

Jadeite's allure lies in its smooth texture and depth of color, making it a symbol of status and refined taste. Its historical and modern appeal means jadeite remains one of the most sought-after gems globally.

The allure of rare gemstones transcends mere aesthetics; it taps into the human experience of beauty, rarity, and value.

Which are rarer: diamonds or emeralds?
Live Science
By Hannah Loss
published October 21, 2024
The rarity of precious gemstones comes down to the geologic process of their formation.

Naturally, people in the gem trade agree colored gems are rarer than diamonds. However, it's nice for a scientific style article to confirm with real numbers. ED

Sparkling diamonds and verdant emeralds are some of the most coveted and priciest gemstones. But which precious stones are rarer: diamonds or emeralds?

Comparison

In terms of total known deposits, emeralds are rarer. There are 49 emerald deposits, according to a 2019 review in the journal Minerals. In comparison, there are about 1,000 rock formations that contain diamonds, although there are only 82 operating diamond mines, according to a 2022 article in the journal Reviews in Mineralogy and Geochemistry. But it's hard to compare numbers of diamonds with other gemstones because the industry is more established.

Diamonds are produced by international mining companies with complex pricing structures and commercial partnerships to meet global demand. There are 100 million to 150 million carats, or about 22 to 33 tons (20 to 30 metric tons), of diamonds produced worldwide each year, according to Natural Resources Canada.

In comparison, between 7,000 to 9,000 kilograms, or about 7 and 10 tons (6 to 9 metric tons), of emeralds were produced in 2015 from the main producing countries (Colombia, Zambia, Ethiopia, Madagascar and Brazil), according to 2022 market research data compiled by the British mining company Gemfields.

Tracking the global production of any gemstone other than diamonds is difficult because mines are spread across the globe and are mined primarily by small companies that don't have strong reporting systems in place.

But those numbers don't tell the full geologic story. Both gemstones form through complex processes.

"For both of these things, you need a unique set of geological circumstances to kind of all come together in just the right way," Evan Smith, a senior research scientist at the Gemological Institute of America, told Live Science.

Diamond Formation

For diamonds, those conditions start deep within the mantle, Earth's middle layer. Diamonds form 93 to 124 miles (150 to 200 kilometers) underground, making them the deepest-occurring gemstones on Earth, according to a 2018 article in the journal Gems & Gemology.

Diamonds form as single crystals of carbon. Geologists think this happens when a change in pressure or temperature, or some other chemical reaction, cools liquefied mantle rock containing carbon, Smith said.

For diamonds to get to depths where humans can actually mine them, there has to be a rare volcanic eruption, called a kimberlite, that forms from magma about 100 to 180 miles (170 to 300 kilometers) underground. On its way to the surface, the kimberlite may pass through an area with diamonds and sweep them up to shallower depths. But this isn't guaranteed.

"You need to form diamonds in the first place," Smith said. "And then you need to have them kind of accidentally intercepted and swept up to the surface by this volcanic eruption, which is a totally independent event."

Because diamonds are distributed pretty evenly within these kimberlite formations, it's easy to mine diamonds on a large scale, Smith said. "You can kind of dig a big pit and you can blast it, fill up big haul trucks, and then process it in a bulk way," he said. "You can't really do that with emeralds."

Emerald Geology

Emeralds form in more complex geological formations that are more conducive to smaller-scale mining and extraction by hand, Smith said. Emerald is the green version of the mineral beryl that gets its color from an addition of chromium and/or vanadium. Beryllium, the main element in beryl, is concentrated in igneous rocks of the continental crust. Chromium and vanadium are more common in the upper continental crust. To form emeralds, these separate geologic environments must meet.

"You've somehow got to get those two to react to make an emerald," Chris Tacker, a research curator of geology at the North Carolina Museum of Natural Sciences, told Live Science. This usually happens when rock containing beryllium or beryl comes into contact with sedimentary rocks like limestone or shale. Other times, liquefied rock oozes through surrounding rock environments and picks up chromium that way, too. For this reason, emeralds are often found in collisional zones such as mountains, where tectonic plates smash together different geologic environments, Tacker said.

Who Wins?

While the geologic conditions that create diamonds and emeralds are both special, there's no contest that emeralds are rarer in terms of what's accessible to humans.

In The News

With its remarkable color and growing desirability, green Paraiba tourmaline is quickly becoming one of the most coveted gemstones in the luxury jewelry market. It is poised to become the next must-have gem for collectors and enthusiasts alike.

“Blue-colored Paraiba has long been a favorite among luxury brands, but there is a rising fascination with the green variant, which shares the same signature neon glow."

Steven Hennigan, Director of Business Development at Cuprian & C0.

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