

AU NATUREL

The Lotus Gold™ Gemstone Report

The vast majority of gems traded today have been enhanced to improve their appearance. On rare occasions, precious stones are found which require nothing to reveal their beauty, save for ordinary cutting and polishing. These gems are entirely *au naturel*. The Lotus Gold report is in honor of, and exclusively reserved for, these exquisitely rare, completely unenhanced gems.

1.39 & 1.29 ct

Natural Spinel
Tanzania

Report N° 7898-9169

24 April 2017


LOTUS
new directions in GEM•ology

Lotus Gemology is the world's only lab exclusively devoted to ruby, sapphire & spinel.

LABORATORY FINDINGS

24 April 2017

01 item	2 Loose Stones	05 Daylight Color	Hue Pinkish Red Saturation Vivid Tone Medium
02 weight	1.39 & 1.29 ct	06 Shape	Oval
03 dimensions	7.56 x 5.59 x 4.30 mm 7.53 x 5.59 x 4.08 mm	07 Cutting Style	Faceted Crown Brilliant Pavilion Step
04 Transparency	Transparent	08 Enhancements	None

This report is a professional opinion based on the results of scientific tests, coupled with the extensive experience of Lotus gemologists. The following pages contain information crucial to understanding the results.

NATURAL SPINEL

Report N° 7898-9169

Identity  **Natural Spinel**

Origin

Tanzania

In 2007, several enormous spinel crystals were found in Tanzania's Mahenge region. Today Tanzanian spinels are known around the world as some of the finest ever produced.



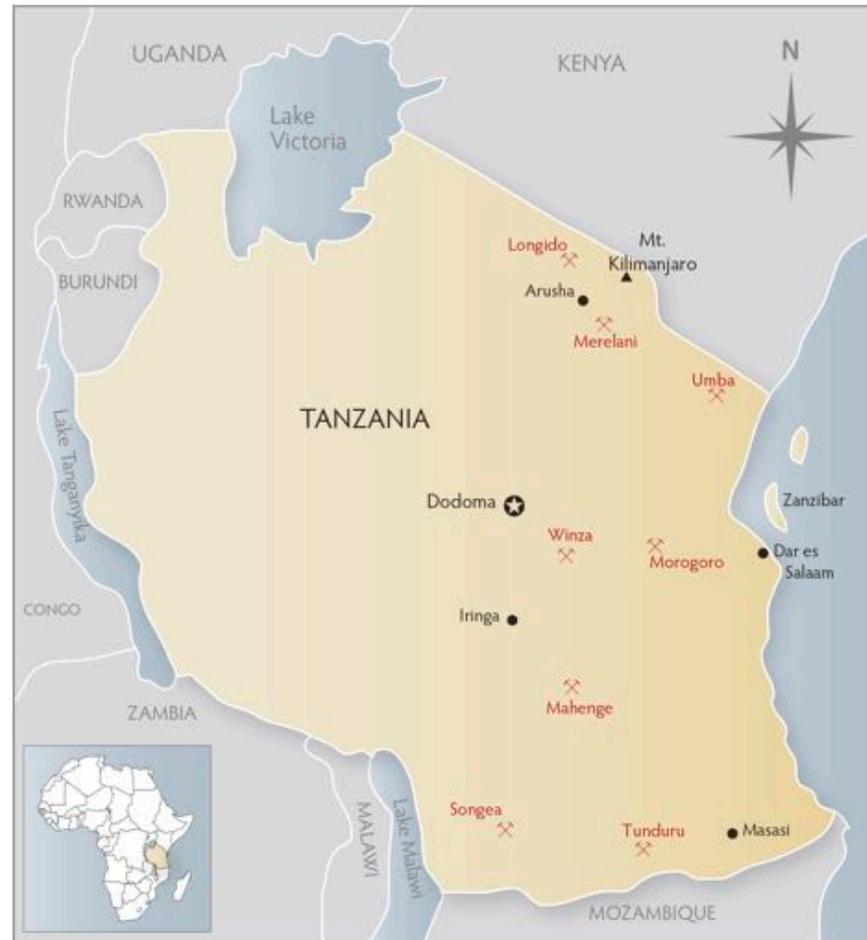
ORIGIN TANZANIA

East African Gem Giant

SITUATED JUST SOUTH OF KENYA, Tanzania dates its founding to 1964, when Tanganyika and Zanzibar joined together to form Tanzania.

This is a land of diverse beauty, from Africa's highest peak (Kilimanjaro at 5895 m), through the Serengeti to Ngorongoro Crater, which has been populated by man's early ancestors for over three million years and today features one of the greatest concentrations of large wild animals on the planet.

Tanzania is also one of the world's most important sources of ruby and sapphire. These mines have resulted from massive tectonic activity that created the Mozambique Orogenic Belt – which cuts a 200–300 km-wide north–south swath through central and eastern Tanzania. Rocks in this belt underwent several different cycles of tectonism, as well as extensive metamorphism, plutonism, folding and faulting. The metamorphism produced granulite complexes, which, when combined with major crustal movements, formed a witch's brew of unusual minerals and color varieties. In the granulitic cauldron, pressure and hot fluids cannibalized minerals for their chromophores – vanadium, chromium, manganese – where they were absorbed by existing minerals. At other times, minerals were simply dissolved and built anew. The result is one of the richest gem belts on Earth.



Mount Kilimanjaro as seen from Merelani.



A PERFECT MATCH

Pairs and Suites

WHEN A FINE GEM IS FOUND, its value can be multiplied if paired with another gem (or gems) of similar appearance, shape, cut or size. If the individuals that make up the set are hard to find and of high quality, the matched set is always more valuable than the individual stones on their own.

The multiplication factor increases greatly with the size and rarity of the gems in question. When it comes to untreated ruby, anything above a carat that matches is unusual. When the size of such stones exceeds two carats, the rarity factor becomes unbelievable. Don't believe it? Try to find two untreated rubies in any collection anywhere in the world that truly match in terms of cut, shape, size and appearance. Good luck!

Thus when we judge pairs and even suites, we must be far more generous. The finest qualities will almost never be found in multiples. Almost.

When it comes to pairs and sets, a number of decisions must be made. There is a basic conflict between business and beauty. Striking the balance is key to making money. But occasionally someone has the vision to throw caution aside and reach for that which is most beautiful, creating pieces that are a marvel to behold.



Sweet suite. This set of sapphires from Rock Creek, Montana (USA) is precisely cut so each gem matches in shape and proportions.



Wheels of light. Superb matching and craftsmanship produce a sum greater than the parts.

ON SPINEL

Balas ruby and more...

THROUGHOUT MOST OF RECORDED HISTORY, ruby has been the world's most valuable gem. But what few people are aware of is that most famous rubies are not ruby at all, but "balas rubies"—red spinels. This includes the Black Prince's and Timur "rubies."

The most famous source of spinel in ancient times was at Kuh-i-Lal, in what is now Tajikistan. This is the original source of the balas ruby and such was its fame that it was even mentioned in Marco Polo's travels.



Not just red. Spinel comes in a variety of colors, as this superb collection from Vietnam demonstrates.

Today, the most famous locality is Burma's Mogok Stone Tract, which, in addition to pigeon's blood rubies, also produces some of the world's finest red, pink and orange spinels. Namya in Burma's Kachin State also yields gorgeous hot pink gems.

The Burmese term for spinel is *anyan*. In the Mogok Stone Tract, spinel crystals are found that are so perfect and lustrous that they appear to have been polished by the gods. These are termed *anyan nat twe* ('spirit polished').

Sri Lanka is another important source and the finest "cobalt blue" spinels have been found in the island's gem gravels. Rare stars and cat's eyes are also known.

Superb blue, violet and red spinels have also been found in northern Vietnam's Luc Yen district. Southern Madagascar is another important source of fine gem spinels.

In 2007, several massive red spinel crystals were unearthed in Tanzania's Mahenge region. These produced an incredible suite of stones all matched in color, a virtual king's ransom. This succeeded in further raising spinel's profile.

Today spinel stands proudly on its own, no longer in the shadow of ruby, but recognized for what it is—one of the planet's most beautiful, historical and valuable gems.



Spirit polished. Rough spinel from Mogok, entirely untouched by the lapidary's wheel.

ON COLOR

The sense of sight is indeed the highest bodily privilege, the purest physical pleasure, which man has derived from his creator.

– Sydney Smith

PERHAPS NO ASPECT of a precious stone's beauty is more subjective than that of color, which is why novices commonly ask: "What color is best." The correct answer is quite simple: "The best color is the one you find most attractive."

This is not what some want to hear. They yearn for a plot charting their way to heaven (à la diamond's D, E, F...), or a simple statement that "the color of this stone is better than that one" while not understanding that such a judgment is entirely arbitrary.



Painting with light. Instead of asking what color I am, why not ask if you find my palette pleasing?

At Lotus, we appreciate the science of color, and willingly use it. But the notion that a faceted gem possesses a single "color" can be disproved by simple observation.

Faceted stones present a three-dimensional mosaic made up of myriad colors, some bright, some dark, some intense and others dull. Each of these colors changes the moment the eye, gem or light moves. Thus to truly describe the appearance of a faceted gem, one would have to describe hundreds of colors, depending on the light source, viewing angle, background and even the size of the viewer's head (which blocks some light). In essence, gems are like miniature paintings with light as the brush on a canvas that formed millions of years before.

The colors of gems are better described in general terms for the simple reason that increasing specificity implies some higher knowledge of what an individual finds attractive and despite our best efforts, we are still not mind readers. Similar to the appreciation of fine art, one cannot exclude the feelings, experiences and sensibilities of the judge.

As a result, Lotus color descriptions are of a dual nature, expressing both scientific rigor (hue position, tone, saturation) and artistic flair. But we do not attempt to suggest one color is more attractive than another. That is a judgment that only the buyer can and should make.

CLARIFYING CLARITY

CLARITY REPRESENTS one of the most difficult and simultaneously simple concepts involved with the assessment of precious stones. Gemology books will tell you clarity is judged by the size, number, color, position and nature of inclusions. Obviously there are an infinite number of possibilities.

Allow us to simplify. Inclusions that weaken a gem are the least desirable. This includes cleavages, fissures, cracks – any form of break that might expand with time. Spinel is quite tough, so a shallow break is not so bad, but one should be careful with those that penetrate deeply into a gem.

And the rest? Let's reduce them to a single word – Distraction. The more distracting an inclusion, the more it hurts a gem. Imagine a picture of a smiling man or woman. A missing tooth at the back of the mouth is no problem; a missing front lower tooth is less desirable. The worst would be a missing top front tooth.

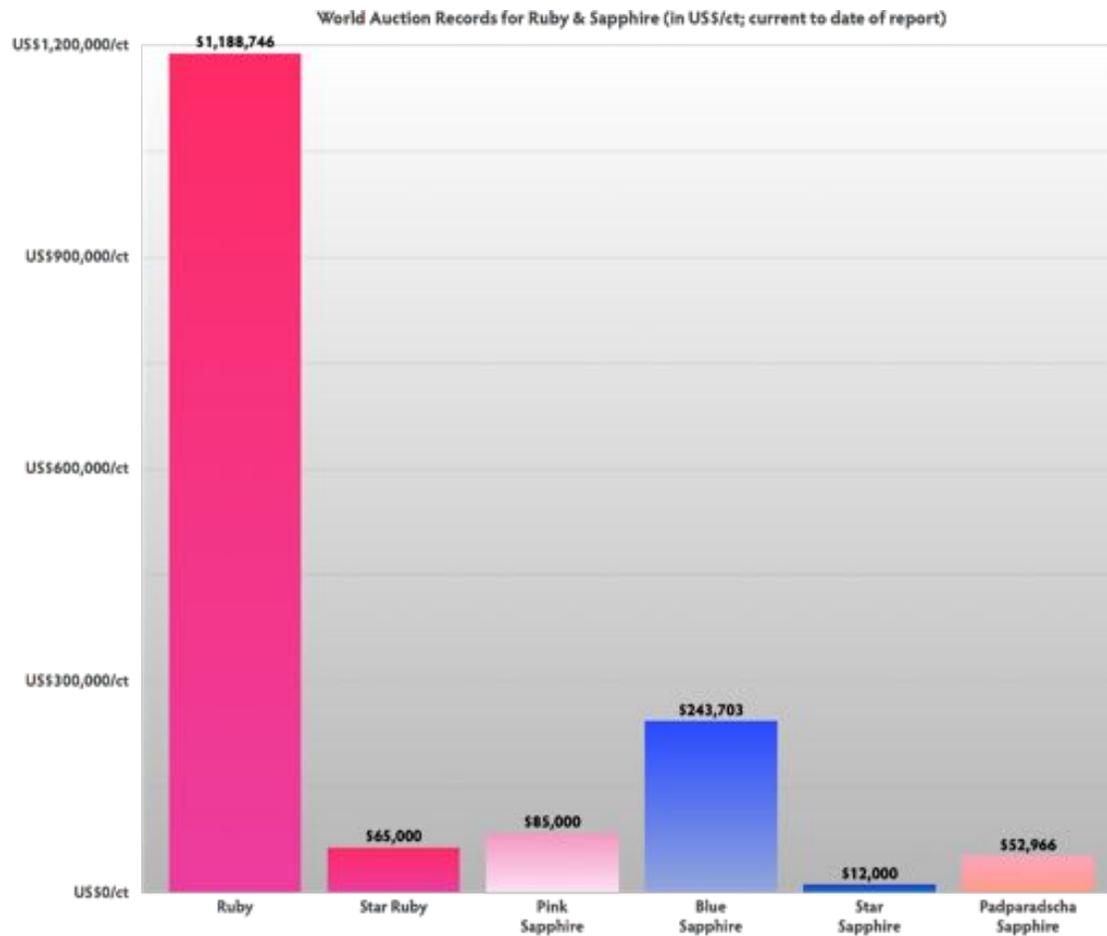
Gems are no different. When you evaluate a prospective purchase for clarity, concentrate on the distraction level. You can live with inclusions that are difficult to see. Those that are instantly obvious will probably fail your distraction test.

One final note on clarity. Unlike diamonds, the clarity of spinels is always judged with the naked eye.

Frozen time. A foreign crystal trapped within the depths of a Burmese spinel.

ON PRICES

Auction Records



THOUSANDS OF TIMES more rare than diamond, ruby and sapphire are among the world's most expensive gems. But like all gem materials, they are found in a number of qualities and across a large range of prices.

Historically, sapphire prices are about a quarter the price of ruby, but this fluctuates from time to time. While even a five-carat ruby of quality is extraordinarily rare, fine sapphires of more than 100 carats are known.

The chart shown here shows world auction record prices for both ruby and sapphire. Note that these do not necessarily represent the highest prices paid; the finest gems often trade hands in private sales at prices above the auction market. We reference them because the auction market is an open reflection of the world gem market. Unlike real estate, gems can and do travel, and therefore have a worldwide value. While auction prices do not always accurately reflect the market (due to bidding wars, etc.), they are public, and thus useful for those wishing to better understand prices.

Caring for Your Treasure

GEMS ARE AMONG THE MOST durable of nature's creations, but still require care to retain their beauty. Caring for your jewelry is a matter of common sense and simple precaution:

- Always remove your jewelry when engaging in activities that risk impact or exposure to chemicals or heat such as sports or housework.
- Always put jewelry on after using lotions, cosmetics, hair spray or perfumes, not before.
- Never remove your jewelry by pulling on the gems.
- The best way to store jewelry is in the compartments of a jewelry box or in pouches. Store each piece of jewelry separately and necklaces flat so that harder stones don't scratch softer ones. Almost every gem is harder than the metal in which it is set. Gems can scratch one another or the finish on your jewelry if stored carelessly.
- Carefully wipe jewelry with a soft lint-free cloth after each wearing to remove oils and salts.
- Clean your jewelry on occasion with a cleaning solution or mechanical cleaner suitable for the gem; use a dish rather than the sink, for if a gem accidentally falls out of the setting, down the drain it goes. When in doubt, just use warm soapy water and a soft toothbrush.
- Think twice before putting gems in an ultrasonic cleaner. Diamonds and rubies and sapphires are generally fine, but other gems may not be. When in doubt, leave it out.
- Opaque gems such as lapis lazuli, turquoise and malachite are porous and may absorb chemicals and soap, discoloring them. Thus they require special care. Never use ultrasonic cleaners, ammonia or chemical solutions. These gem materials should just be gently wiped clean with a moist cloth.
- Opals also require special care. Never use an ultrasonic, never use ammonia, and avoid heat and strong light that can dry out the water in opals.
- Due to their organic nature, gems like pearls, coral and amber are both soft and porous. Thus they should be simply wiped clean with a moist cloth. Be careful about chemicals in hairspray, cosmetics, or perfume; over time they can damage pearls in particular.
- Stones that have a Mohs hardness of 7 or less are subject to scratching; harder stones are less susceptible, but still subject to chipping and fracture.

When it comes to caring for your ruby and sapphire jewelry, a bit of warm soapy water and a soft toothbrush is usually all that is needed. After cleaning, simply wipe it dry with a lint-free cloth.



ABOUT LOTUS

Auction Records

LOTUS GEMOLOGY begins with a simple idea – beauty is the principal source of attraction for precious stones. Thus it should also be the major focus of gemology. In other words, the gem is the most important part of GEM•ology.

Founded by gemologists Richard W. Hughes and Wimon Manorotkul, Lotus operates from a base of more than 70 years of collective experience in the study, purchase, sale and appreciation of precious stones. Over time, we have come to realize that gemology is not simply counting atoms. Science is a method of organizing knowledge such that it can be rationally explained and reliably tested. And yet today's science cannot accurately explain or test certain phenomena. Which rainbow is the prettiest, what painting speaks to you, which person do you find most attractive? These are personal choices that can never be reduced to a simple set of measurements, anymore than the beauty of a sunset can be expressed by formula.

Rest assured, we are not Luddites. We not only appreciate science, but also use it daily. At the same time, we recognize that many parts of the human experience extend into realms beyond the ability of science explain or test. Thus the gemology at Lotus is wide, including not just science, but weaves into the mix history, culture, art and travel. We do this in the belief that these factors play important roles in how humans perceive desirability and value.

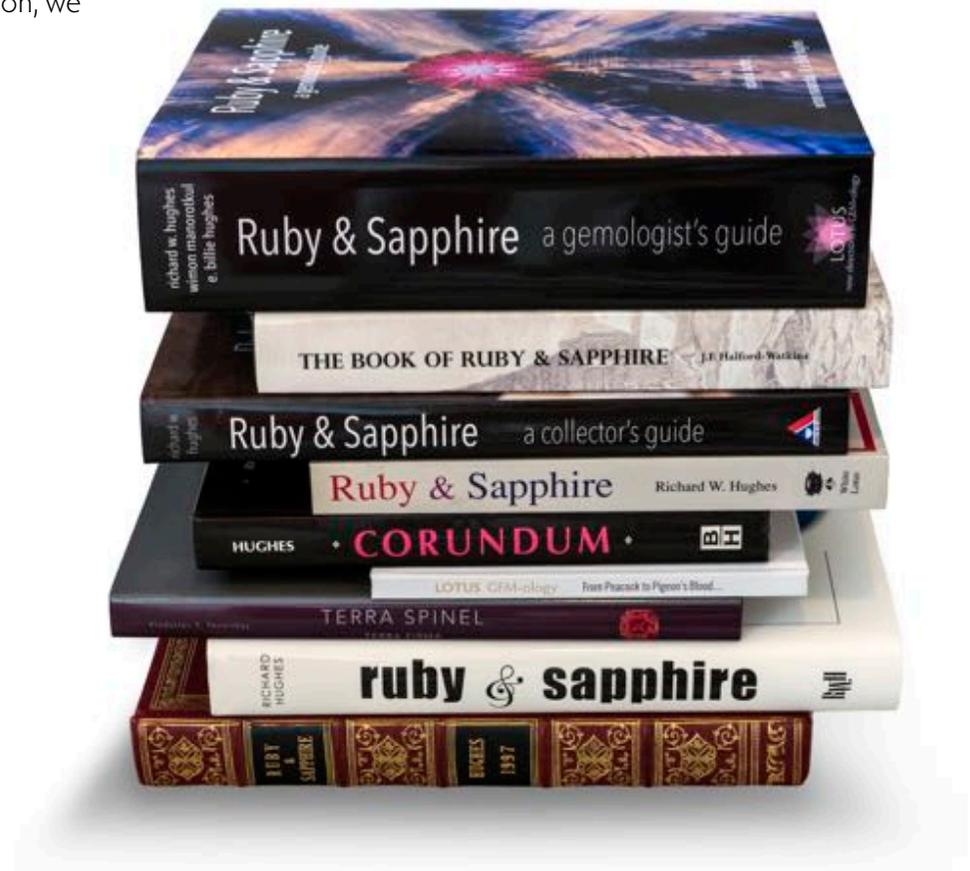
Precious stones are among the most compelling examples of Mother Nature's artistic genius. Our lives have been enriched beyond measure by our involvement with these gifts of nature and we believe if we characterize them with the appropriate reverence and care, we can open this magical world to others. This is our goal. The translation of the intangibles of rarity and aesthetic beauty is our strength.

Finally, like a small French restaurant, we believe that crafting a fine meal takes time and individual care; thus our seating is limited. But we are confident the result will be something special, just like these precious treasures we have the pleasure of working with.

SUBSTANCE

Classic Books by Lotus Gemology's Richard Hughes

WITH OVER 80 YEARS of collective experience, the Lotus team has authored more than 160 papers on various aspects of gemology. We did not simply write the book on ruby, sapphire and spinel, we wrote the books, a collective body of work unsurpassed on the subject. In addition, we have designed, authored and edited other books on precious stones.



TERMS OF REFERENCE

Important Notes

limitations

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- Each report contains a description of the article tested based upon tests and techniques used by Lotus at the time of examination. Gemstones can be enhanced at any time after leaving our premises. If there are doubts about an item's current condition, please submit it for rechecking.

origins

WHEN AND WHERE THE EVIDENCE warrants, Lotus issues an opinion regarding the probable geographic origin of the gem tested. Origin opinions are given solely at the discretion of Lotus. Clients should be aware that differences in opinion between one lab and another might arise. This is because the geologic conditions in one place sometimes overlap with similar conditions in other localities.

Even in laboratories possessing millions of dollars of equipment, the most important evidence for origin determination is generally collected via the simple gemological microscope. It is the experience of the gemologist with the microscope that largely determines the accuracy of origin reports.

In short, origin determination is not an exact science, and depends greatly on the experience of the individual gemologists doing the testing. The gemologists at Lotus have been involved with ruby and sapphire for many decades, including visits to almost every major deposit on the planet.

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