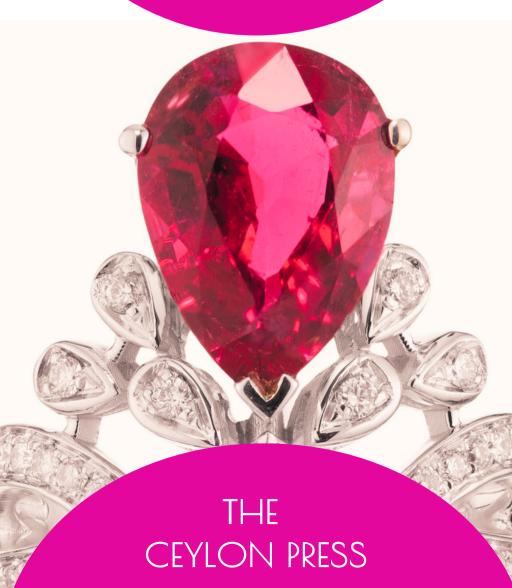
A TINY GUIDE TO SRI LANKA'S

GEMS & MINERALS



In a Word or Two

Thanks to the extreme old age of its rocks (90% are between 500 to 2.5 million years old), Sri Lanka's gems are so numerous as to often just wash out onto flood plains, and into rivers and streams.

Indeed, the mining of alluvial deposits by simple water-winnowing river mining was for long the classic technique used to find gemstones, separating them out from the river sand and clay by simple sluicing in wicker baskets. Tunnel mining represents a more scalable technique.

Typically, pits of 5 to 500 feet in depth are dug, with tunnels excavated horizontally from them The clay, sand and gravel is then sluiced with water in conical baskets to separate out the heaver stones that then settle at the basket base.

At a much more industrial level, backhoe earthmover machines, ablaze in their environmentally challenging acid yellow or orange livery, are used to excavate the top soil. Twenty five percent of the country's total land area is potentially gem-bearing,

but the greatest concentration of mining is around the town of Ratnapura which accounts for 65% of mined gems, the balance mostly coming from Elahera, a district in the North Central Province. In the precise lexicon of intentional jewellers, there are just 4 precious stones: diamonds, sapphires, rubies, and emeralds. All others – and these number some 200 – are judged semiprecious. Sri Lanka is home to 75 semi or precious gems - including two precious stones - rubies and sapphires, the latter being the gem that is unmistakably twinned with in popular imagination.

Amongst its better known semi-precious stones are Spinels, Amethysts, Sapphires, Garnets, Rose Quartz, Aquamarines, Tourmalines, Agates, Cymophanes, Topazes, Citrines, Alexandrites, Zircons, and Moonstones. All are valued according to a strict criteria: Cut, Colour, Clarity, and Carat (weight). What marks out the precious stones is their hardness, as measured on the so-called Mohs scale. This ranks minerals on a scale of 1 to 10. Diamonds score 10; Rubies and Sapphires 9 and Emeralds 7.5-8. Only a

diamond can scratch another diamond, but a Ruby, for example, can scratch an Emerald.

The country's gem mining recorded history reaches back to at least the 2nd century BCE, with the mention of a gem mine in The Mahavamsa. However, if biblical rumours of King Solomon's wooing of the Queen of Sheba with gifts of priceless Sri Lankan gems, are to be believed, the country's gem mines can be back dated at least another 700 years.

In 550 CE a Greek trader, Cosmas, wrote that "the temples are numerous, and in one in particular, situated on an eminence, is the great hyacinth [amethyst or ruby], as large as a pine cone, the colour of fire, and flashing from a great distance, especially when catching the beams of the sun - a matchless sight". A later traveller to the island, Marco Polo, wrote in the 13th century CE that "the king of Ceylon is reputed to have the grandest ruby that was ever seen, a span in length, the thickness of a man's arm; brilliant beyond description, and without a single flaw. He gives them them to the lapidaries who scrape them

down until they split away from the ruby stones. Some of them are red, some yellow, and some blue, which they call nailam (saffires)".

Today, the country's gem industry is high regulated and its exports are one of the country's main foreign revenue earners, with sales escalating from around \$40 million in 1980 to over \$473 million in 2022. This places it in 4th position, below that of Garments (\$4.7 billion); Coffee, Tea & Spices (\$1.6 billion); and Rubber (\$1.06 billion). This phenomenal acceleration dates in part to two bouts of government intervention: the establishment of the State Gem Corporation in 1971 and the 1993 Gem and Jewellery Authority Act.

By these moves, the government centralised and professionalised the issuing of gem-mining licenses and the leasing government land for mining.

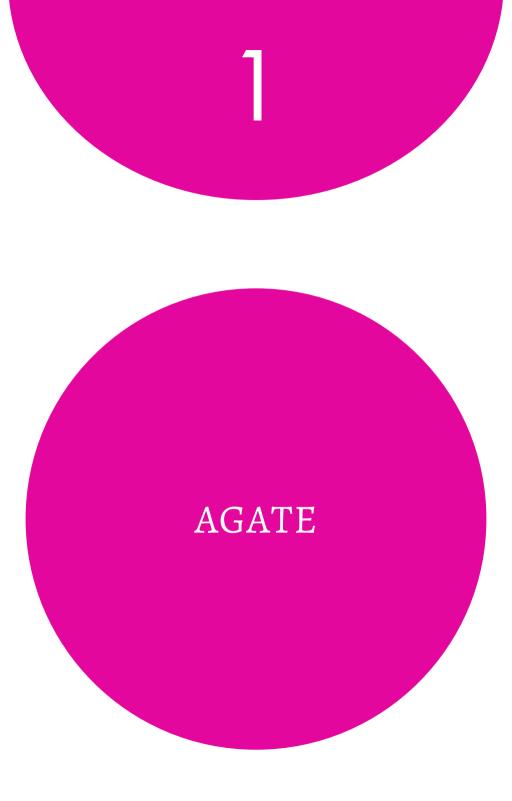
They extended control over sales and exporting and made it mandatory that gems discovered within mines could be sold arbitrarily; but must instead be presented at public auctions, with the government receiving a share of sales amounting to 2.5%.

The industry's value chain is a long one.

Gem miners sell their stones to dealers,
who sell the rough stones to cutterpolishers.

Historically, these have usually been Ceylon Moors descendants of Arabians traders. The glittering stones are then sold to wholesalers and onto retailers, where the greatest profits are to be made. The Sri Lankan Export Development Board claims that right across this chain some 650,000 people are employed – through the figure is difficult to verify.

As less known is its wider many faceted industrial mining industry, focused largely on the extraction of Apatite Rock Phosphate; Ball Clay; Brick Clay; Calcite; Dolomite; Feldspar; Garnet Sand; Graphite; Ilmanite; Kaolinite; Mica; Monazite; Pulmoddai Beach Sand Titanium; Quartz; Salt; Silica; Rutile; and Zircon. As a whole, the entire mining sector generates around \$100 million per year, with exports largely going to China, India, Japan, USA, Germany, UK, South Korea, Italy, Austria and Israel.



A modestly priced (\$10 to \$100 per carat) semi-precious quartz, agate occurs in a in a wide range of colours including brown, white, red, grey, pink, black, and yellow. Sri Lanka specialises in blue-tinted agate, said to pacify inner anger, and anxiety.



Image courtsey of Sri Lanka Export Development Board.

ALEXANDRITE

In buying the semi-precious stone
Alexandrite, purchasers gain two jewels
for the price of one - for the stone's
unusual light absorbing qualities give it
the possibly of such different
appearances that it is often known as an
emerald by day and a ruby by night.
Although relatively scare on the island,
Sri Lankan alexandrite's exceptional
quality has made it much prized within
the jewellery industry; and for between
\$3,000 - \$20,000 per carat, you could
sport one for your next appearance in
Hallo Magazine.



Image courtesy of Sri Lanka Export Development Board.

Alternatively, you might search the world for the missing Naleem Alexandrite, a Sri Lankan gem of unparalleled quality – said to be the largest such stone in the world – weighing in at 112 carats.

It was sold by a noted gem collector, Al Haj Naleem, in Beruwala but the onward chain of buyers has long since gone cold and it has not been recorded as having been seen anywhere since 2011 – a year of such unpropitious and unparalleled misery as to offer perfect cover for the shy gemstone.

AMETHYST

Sri Lanka is one of the world best sources of high quality amethysts, a semi-precious gem (\$20-\$50 per carat) that occurs in transparent pastel roses to deep purples. Used in jewellery, as well as alternative healing, its supporters argue that it helps relieve stress and anxiety, fend off headaches, fatigues, and anxiety; and promote cell regeneration. Apparently.



Image courtesy of Sri Lanka Export Development Board.

APATITE

A rock phosphate, Apatite is commercially used as a fertilizer and is mined in Sri Lanka at Eppawala, near Anuradhapura.



 $Image\ courts ey\ of\ Raimond\ Spekking.$

AQUAMARINE

The presence of iron within the crystal of this semi-precious stone is what gives it its cherished green-blue to blue colour variations. Abundant and comparatively affordable (\$130 - \$900 per carat), it is found in Rathnapura, Rakwana, Morawaka, Hatton, Nawalapitiya, Galle, Matara, Tissamaharama and Lunugamwehera. Its comparative inexpensiveness has not stopped it decorating some of the world's more famous people, including the French Emperor Louis XV who owned the



Image courtesy of Sri Lanka Export Development Board.

109.92 carats Hirsch Aquamarine,
Queen Elizabeth II who commissioned an
Aquamarine Tiara, Eleanor Roosevelt
who collected the gift of a 1,298-carrot
aquamarine gemstone when she visited
Brazil in 1936 - and the colossal
225,000 carrot Dom Pedro Aquamarine,
named after the anachronistic Brazilian
emperors, Pedro I and Pedro II.

CAT'S EYE

A semi-precious stone known to science as chrysoberyl, the colour of Cat's Eye differ from semi-transparent goldenyellow to slightly greenish or brownish yellow. They exhibit a distinct, ever changing light band that glides across the surface, resembling the eye of a cat. They are found widely across Sri Lanka including Rakwana, Bulutota, Deniyaya, Morawaka, Elahera, Avissawella, Pelawatte, Horana, Panadura, Rathnapura, Aluthgama, Ambalantota, Kalapugama and Mestiya. Given their price range of \$3 to \$1700, there's an affordable eye for almost everyone.

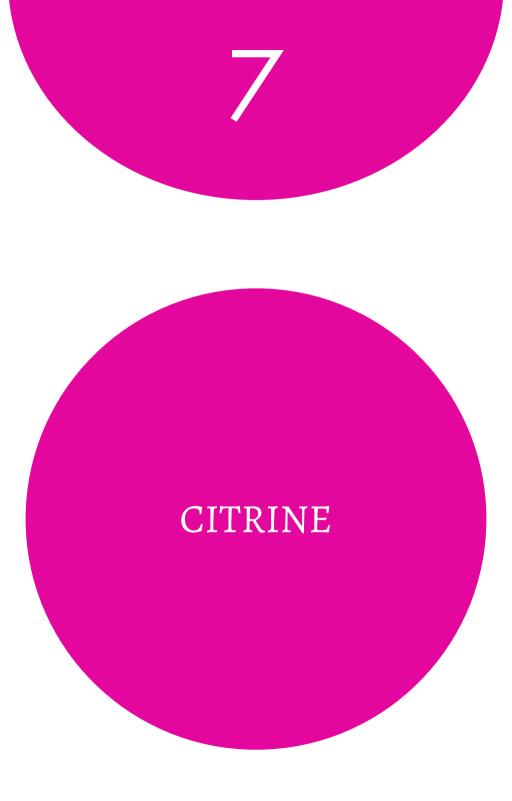


Image courtesy of Sri Lanka Export Development Board.

The nation's most notable cat's eye was fished out of a paddy field in the late 1880s in Pelmadulla. The paddy was part of a 20,000 acre estate belong to Iddamalgoda Kumarihamy, the daughter of Iddamalgoda Basnayake Nilame.

For decades the 700 carat stone lay unpolished, bequeathed eventually to the grand old lady's grandson, a notable collector of cacti, who arranged for the gem to be cut and polished in 1930.

The result was a stunning 465 carat cat's eye, the largest cut example in the world, earning it the moniker "The Eye of the Lion". Other notable, if more modest, Sri Lankan cat's eye can be found at Buckingham Palace (a 105-carat cat's eye passed down from Edward VII to Charles III); the 105 carat Ray of Treasure (now in the possession of the National Gem and Jewellery Authority in Sri Lanka); and the 58.19 carat Maharani Cat's Eye in the Smithsonian Museum in Washington, D.C.



Named from the Old French word for lemon, Citrine is a relatively rare semiprecious quartz gem mined in Sri Lanka in colours that vary from transparent and pale yellow to brownish orange. Selling for \$10 to \$50 per carat, it lives very happily at the affordable end of the bling world.



Image courtsey of gemcrust.fandom.com.

CLAY

Clay deposits are found throughout Sri
Lanka and mined especially in
Nattandiya, Dediyawela,
Boralasgamuwa, and Meetiyagoda. It is
used widely in its ceramics industries, so
much so that it is increasingly becoming
a scarce resource.

Kaolin - or China clay has been mined almost to exhaustion in Sri Lanka, especially as Boralesgamuwa. The main component in porcelain, it is also used in medicine, cosmetics, and toothpaste.

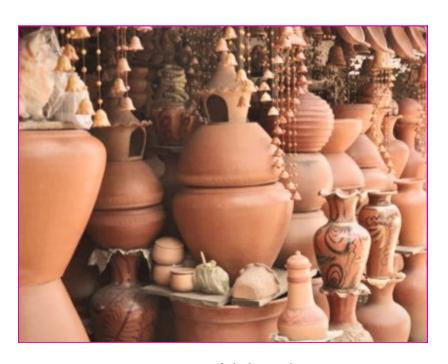


Image courtsey of Olanka Travels.

DOLOMITE

An industrial mineral found in Sri Lanka, dolomite is widely mined and used in the island's ceramic, glass, paint, rubber, and fertilizer industries and in local lime manufacturing plants.

It is scattered across the island in such areas as Anuradhapura, Habarana, Matale, Kandy, Ratnapura, Balangoda, Badulla, Bibile, Welimada, Ambilipitiya, and Hambantota. Calcite, a related mineral, is often found in the same deposits, and is used in construction.



FELDSPAR

A silicate mineral, feldspar is used in many industries including glass and ceramics, and as fillers in paints, plastics, and rubber. Deposits of it, and accompanying mines, occur in many areas of Sri Lanka - including Rattota, Namaloya, Koslanda, and Balangoda.



Image courtsey of Dave Dyet.

GARNET

There are many so-called garnet species, the reddish shades being the most popular, and the blues the rarest. The greater their ability to transmit light, the greater their value as a semi previous stone. They range in price from \$500 to \$7000 per carat. From the Pharaohs to Jackie Onassis Kennedy, the gemstone has long been a favourite of jewellers worldwide. Sri Lankan garnets span a wide spectrum of colours, from deep reds to vibrant oranges, gentle pinks, and even green.



Image courtesy of Sri Lanka Export Development Board.

GARNET SAND

A mineral sand increasingly in demand, garnet sand is used widely across many industries as an abrasive.

Although commercially relevant deposits of it exist in such areas in the south as Dondra and Hambantota, it remains little exploited in Sri Lanka.



Image courtsey of Sri Lanka Export Development Board.

GRAPHITE

Graphite, also known as Plumbago, has long been a major mineral export for Sri Lanka, thanks largely to its exceptional purity. It is a key ingredient in lubricants, and lithium batteries and with the explosion of electric cars and electronics has seen demand growing exponentially. It is, of course, also used in pencils - as Sarvesh Murthi observed: "It is always better to write your feeling in GRAPHITE than in INK, as it's much easier to erase them and start fresh."



Image courtsey of Sri Lanka Export Development Board.

ILMENITE

Ilmenite, extracted from 'black gold' mineral sand is a major industrial mineral produced in Sri Lanka for export.

Its deposits also contain relevant amounts of Rutile and Zircon – all ingredients used to make Titanium Dioxide, a raw material required for the productions of paints, plastic, and paper industries; and titanium metal. It is extracted from beach sand mined at Pulmoddai.



Image courtsey of Rob Lavinsky.

MICA

Mica mineral deposits are mined in such areas as Matale, Talatu Oya, Badulla, Maskeliya, Haldummulla, Kebithigollewa, and Balangoda.

Its ability to withstand high temperatures makes it a favourite raw material in electrical and electronic industries; as a lubricant; and for heat and electrical insulating purposes.



Image courtsery of Sri Lanka Export Development Board.

MOONSTONE

Sri Lanka's moonstones – sometimes known as Ceylon Opals - come in shades of white, blue, and grey. A semiprecious stone, it gets its name for its texture - and the artful way in which its colour resembles moonlight shining through clouds. With a quality typically higher than almost any other mined in the world, moonstones are broadly subdivided into blue, semiblue, and white. They are most usually found in alluvial streams; and in particular in Meetiyagoda, near Ambalangoda in the



Image courtsey of moonstone-store.com.

south of the island. Smaller mines exist in places like Matale; amongst gravels in such rivers as the Mahaweli and Walawe; and in smaller quantities in Elipitiya, Pitigala, Horton Plains and Weligama.

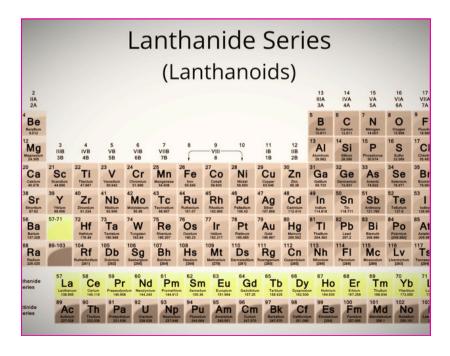
They are promoted as the stone of emotions, an essential accessory for the improvement of mental clarity and emotional equilibrium. They are also much favoured by travellers as a form of other-worldly protection. Long used by jewellers, they gained a particular boost during the Art Nouveau period (1890-1910), not least through the creations of the French goldsmith Rene Lalique.

Fake moonstones abound – but there is a tried and trusted method to distinguish the real McCoy: if you roll the stone between your fingers and it becomes translucent, it is probably a fake.

Genuine stones – like the colour of a rainbow - never change colour.

RARE EARTH
ELEMENTS

The group of 15 rare earth elements – known in the periodic table as the Lanthanide series – have become ever more in demand as they are used in high technology devices: smart phones, digital cameras, computer hard disks, LED lights, and flat screen televisions. Of the very few found in Sri Lanka, Thorianite and Thorite are also increasingly in demand to provide environmentally safe, lasting energy. Deposits exist in Bambarabotuwa, Balangoda; Monazite in Matara, Nuwara Eliya, and Balangoda.



ROSE QUARTZ

A delicate pink version of mineral quartz, Rose Quartz is mined in many shades from very light to medium-dark pink; and Sri Lanka has the happy role of being a leading source for high quality rocks.

Beloved by alternative therapists, it is also called the "Heart Stone," and is a symbol of unconditional love, infinite peace, deep inner healing, self-love – and, given its price of between \$100 to \$1000 per carat, a relatively well endowered wallet.



Image courtsey of Sri Lanka Export Development Board.

RUBY

Grey, hard, and brittle, known to scientists as Cr or No 24, the modest metal, chromium, is what gives rubies their red colour, and the metal its brush with glamour, high octane cocktail parties and the odd coronation.

Depending on the amount of chromium, the ruby shows every possible shade of red – but the pure, unmistakably fiery red reds are the ones most cherished. Whilst the best of Sri Lanka's rubies show off just these qualities, they often also come in an varieties of pink red with a dash of purple, a colour



An image of The Rosser Reeves Ruby, courtsey of The Smithsonian Museum.

variant uniquely caused by the additional presence of iron.

The ruby King Solomon gave to the Queen of Sheba is said to have come from Sri Lanka. The island's rubies, Marco Polo was later to record in 1292 are "the size of a man's arm". Their unapologetic flashiness has long made them a favourite jewel for armour, crowns, scabbards, and religious statues as well as necklaces, tiaras, broaches, rings, and bracelets. Until relatively recently, they were impossible to distinguish from the more pedestrian spinel gemstones and many a ruby owner in the past - including Catherine the Great, the Black Prince and the last Holy Roman Emperor – have posthumously found themselves somewhat shortchanged when the iconic ruby in their crowns were later identified as spinels.

Most rubies come from the mines around Ratnapura though some of the very best come from far south - in the Embilipitiya

– Udawalawe area.

Any one visiting The Smithsonian might happily spend a little time gazing upon

"My Baby," a 138.7 carrot ruby from Sri Lanka beloved of its original owner, Rosser Reeves, the guru of American advertising, whose slogans for Bic pens, Minute Maid orange juice, M&M's and Colgate toothpaste recall a now lost world of innocent consumerism.

Pricing a ruby is an art form all of its own - but \$300 - \$250,000 per carat is a good a range as any – unless you own the Burmese "pigeon blood" Sunrise Ruby which sold for \$1,000,000 per carat. Eden so, proportionality is everything, as the Bible noted: "a wife of noble character who can find? She is worth far more than rubies."

SALT

The ancient Mahavamsa Chronicle records salt pans in Sri Lanka as far back as the 4th century BCE, and from then into the medieval period salt was to become a valuable commodity and a source of much royal taxation and regulation. It was produced in the simplest of ways, with seawater allowed to evaporate in specially constructed shallow pools to leave behind salt crystals. New techniques were introduced by Portuguese, Dutch and British colonialists to improve evaporation methods.



Image courtsey of www.aithiya.lk

The modern commercial production of salt in Sri Lanka dates back to 1938 when it was overseen by the then Hambantota government agent, Leonard Woolf. Woolf, who was later to become the husband of Virginia Woolf was the author of The Village in the Jungle, published in 1913 - the first alternative view of the corrosive impact of colonization from within the British establishment.

Under him the small saltern salt producing areas in the south were enfranchised under the state Salt Department, with salt being harvested on a more industrial scale by prisoners.

By 1970 the Salt Corporation was set up to manage this and other salt producing sites in places such as Puttalam and Kuchchaveli and, with the help of. But despite increasing production, the introduction of some more modern techniques and improved infrastructure, the country still remains a net importer of salt.

SAPPHIRES

So great is the affinity between Sri
Lanka and its sapphires that the nation
might legitimately put in for a name
change to be better called Sri Sapphire.
Closely related to rubies, they are most
typically blue – but can also pop up
black, colourless, grey, or even pinkorange – a variant known as
padparadscha – from Padmaraga. The
country also excels at producing Hot
Pink Sapphires, a yellow sapphire that is
apparently a good deterrent against
witchcraft, orange, and white ones. The
gem accounts for 85% of the precious



Image courtesy of Ceylon Gem Hub.

stones mined in Sri Lanka – but the colour variant that gets the most acclaim is the Ceylon Blue Sapphire, the blue of cornflowers, clear skies, and inestimable, sophisticated material contentment. Selling for \$5,000 - 8,000 per carat, they are as much statements of investment as they are items of adornment: "A kiss on the hand may feel very, very good," noted Anita Loos, "but a diamond and sapphire bracelet lasts forever".

Sri Lanka's sapphires are found in alluvial deposits across the country, the very best from Elahera and the Thammannawa, Kataragama area. Since Ptolemy noted their glittering existence, they are much favoured for crowns, thrones, diadems, as well as jewellery for First Nights and cocktail parties, Sri Lanka's sapphires have won their place in global hearts since the very earliest times due to their exceptional clarity and transparency. For any wearer interested in absolute quality, they are the go-to source for best-bling, shorn as they are of the incipient vulgarity that often accompanies diamonds. Not coincidently, Sri Lanka's sapphires have given museums and auction houses jewels of such arresting quality as to

to gain themselves names and identities in the own right – including

- The Aphrodite Sapphire
 The Bismark Sapphire
- 3 The Blue Bella Of Asia
- 4. The Blue Giant Of The Orient
- 5. The Empress Marie's Sapphire
 - 6. The Heart of the Ocean
 - 7. The Logan Sapphire
 - 8. The Midnight Star Sapphire
 - 9. The Pride of Sri Lanka
- The Princess of Wales Engagement Ring
 - 11. The Queen of Asia
 - 12. The Serendipity Sapphire
 - 13. The Star Of Adam
 - 14. The Star of Artaban
 - 15. The Star of Bombay
 - 16. The Star of India
 - 17. The Stuart Sapphire
 - 18. The Talisman of Charlemagne

SILICA SAND

Silica sand is found in Sri Lanka's rivers and – in accumulations – on its beaches and in its shallow seas. It is used in glass, ceramics and in construction - especially for concrete since it does not contain cause corrosion of any reinforced steel placed within the concrete.

High purity deposits are mined in Marawila, Nattandiya, and Madampe, near Puttalam.



Image courtsey of Wickramsinghe Silica Sand Suppliers.

SPINEL

Often mistaken for rubies or sapphires, spinels come in red, pink, and blue colours and are widely available in Sri Lanka. They make up a major part of its gem exports to the rest of the world. The value of this semi previous stone has increased over time and a carat will now put you back between \$300 to \$3000.

Although now much easier to identify, many a ruby owner in the past – including Catherine the Great, the Black Prince and the last Holy Roman Emperor – have posthumously found themselves



Image courtesy of Sri Lanka Export Development Board.

somewhat shortchanged when the iconic ruby in their crowns were later identified as spinels.

This was also the fate of the famous
Timur Ruby-cum-Spinal which was
'liberated' (along with the Koh-l-Noor
diamond) from the Moghul India in
1849. It was presented by the East India
Company to Queen Victoria and set into
a necklace, still to be glimpsed from time
to time on the necks of royal Windsor
ladies

TOPAZ

From colourless to pink or blue, the higher value topaz stones are typically red or peach orange, sometimes called Sherry Topaz. They cost from \$100 to \$1000 per carat. Open pit mining for this semi previous gem is carried out in many places in Sri Lanka, including Matale, Sigiriya, Balangoda and Nawalapitiya. Recent advances in industrial techniques for inducing colour into colourless topaz by irradiation have created something of a topaz bonanza for Sri Lanka as its topaz is especially susceptible to this treatment and produces the best shades of blue.



Image courtesy of Sri Lanka Export Development Board.

TOURMALINE

Although available in almost every possible colour, Sri Lankan Tourmaline tends to be restricted to yellowish-green & bright green colour ranges. This semi previous gem is found right across the island, especially in Uva, Ratnapura and Tissamaharama. It came into global prominence when the Dutch East India Company imported large quantities of it from Sri Lanka to the west. There it was called the "Ceylonese Magnet" because it could attract and then repel hot ashes due to its pyroelectric properties. It sits



Image courtesy of Sri Lanka Export Development Board.

happily in the mid-market at \$100 - \$400 per carat – with the exception of Paraiba Tourmaline, a non-local variant, that can cost around \$30,000 per carat.bright green colour ranges.

This semi previous gem is found right across the island, especially in Uva, Ratnapura and Tissamaharama.

It came into global prominence when the Dutch East India Company imported large quantities of it from Sri Lanka to the west. There it was called the "Ceylonese Magnet" because it could attract and then repel hot ashes due to its pyroelectric properties. It sits happily in the mid-market at \$100 - \$400 per carat – with the exception of Paraiba Tourmaline, a non-local variant, that can cost around \$30,000 per carat.

VEIN QUARTZ

High purity vein quartz deposits are found in many areas of Sri Lanka, including Galaha, Rattota, Balangoda, Pelmadulla, Embilipitiya, and Ratnapura.

It is a major ingredient in the manufacturing of computer chips and in the ceramic industry.



Image courtesy of Sri Lanka Export Development Board.

ZIRCON

Mined in Matara and known locally as Matara Diamonds, zircon has long been a popular substitute for diamonds around the world, its price ranging from \$30 to over \$3,000 per carat, depending on quality. Although typically found in colours from brown and red to blue and purple, it is mostly cherished in its colourless and purest form which most closely resembles diamonds.

The colourless zircon found in Sri Lanka is noted for its brilliance and fiery flashes of multicoloured light.

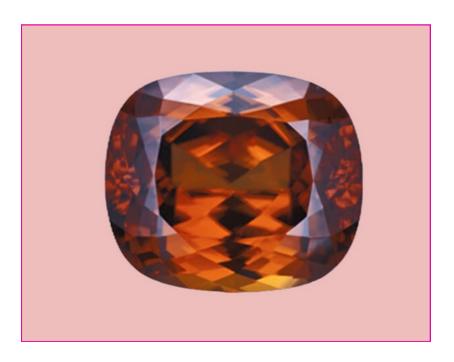


Image courtesy of Sri Lanka Export Development Board.



THE CEYLON PRESS

A small island surrounded by large oceans. Sri Lanka is a well-kept secret. The Ceylon Press aims to make its story more accessibte.



