

Alexandrite World Occurrences

"Why Siberia? Never mind, Siberia if you like. I don't care...we'll work...there's snow in Siberia...I love driving in the snow...and must have bells."

F. Dostoevsky, "The Brothers Karamazov"



The [alexandrite](#) variety of [chrysoberyl](#) was initially identified in the Ural Mountains of Russia in 1830. Alexandrite chrysoberyl from the Ural Mountains is considered some of the best in the world. In addition to Russia, chrysoberyl has been found in Sri Lanka and India, the principal source for this [gemstone](#) today. Brazil has produced some excellent alexandrite gemstones. Between 1840 and 1900, Russia was the primary source for alexandrite. During this period, the Takovaya district on the eastern flank of the central Urals was mined extensively and many large emeralds and alexandrites were unearthed. Little specific production information is available but the deposit was thought to be nearly depleted at the turn of the century. No significant amount of new Uralian material has been reported since the Russian revolution in 1917.

Largest to date, the unique [alexandrite crystal](#) specimen measures 25cm x 14cm x 11cm and weighs 5724g found Urals's in Russia, Izumrudnye Kopi (Emerald mines).

One of the largest known rough chrysoberyls found in history weighed 1,876 carats and one of the largest faceted [alexandrite](#) (at 66 carats) is now part of the Smithsonian collection.

The largest uncut [alexandrite](#) of gem quality was discovered in 1967 by the founder and chairman of Amsterdam Jewellers, Jules Roger Sauer, in Jaqueto district, Bahia (Brazil). The

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stone is named the Sauer Alexandrite, weighs 122,400 carats and is held in Souer's private collection at Amsterdam Sauer in St. Thomas, Virgin Islands (USA).

The famous light green, [transparent](#) Hope [chrysoberyl](#) located in London weighs 45 carats. Bauer (1968) describes another gem that weighed 80.75 carats (23 x 17mm) that was a yellowish-brown chrysoberyl with a distinct, narrow [zone](#) of chatoyancy. In addition, a 63.38-ct [alexandrite](#) is reported to have been recovered from Sri Lanka during the past.

Cook describes another large [chrysoberyl](#) that weighed an estimated 225,000 carats that was destroyed during the blasting of a [pegmatite](#) near Paris Maine. He also mentions reports of twinned crystals up to 120,000 carats that have been found in the past.

When the Russian deposits were thought to have been exhausted, interest in the unique color changing stone decreased because so few stones with an attractive [color change](#) were available from anywhere else. Information about the overall color and clarity of these Russian stones is scarce and today, there are few Russian alexandrites available anywhere. Irrespective of quality, Russian alexandrites are highly valued from a historical perspective alone and will command the highest prices especially if they are of high quality and their origin can be certified.

Presently, small quantities of [Alexandrite](#) are mined in Brazil, Sri Lanka, India, Myanmar, Tanzania and Zimbabwe. Most of the current production is alluvial where the alexandrite constitutes a small percentage of the overall [chrysoberyl](#) production. India is the only country that produces a significant quantity of alexandrite today and even there, production is limited.

[Alexandrite](#) was discovered as rolled pebbles in the gem gravels of Sri Lanka not long after its initial discovery and for a long time, Sri Lanka was the only alternative source for the stone. By the early twentieth century, it was the main source for all three varieties of [chrysoberyl](#): alexandrite, [cymophane](#) (cat's eye) and ordinary chrysoberyl have been recovered from river gravels and alluvial material along the foot hills in the southern portion of the island near Saffragam and Matura. The original source for the gem is believed to be granitic pegmatites in the central massif. Alexandrite from Sri Lanka was sometimes fine but never as vividly colored as those from the Ural Mountains in Russia. Some exceptionally large cymophane rough as well as large alexandrite have been mined in Sri Lanka, including some that produced gemstones exceeding 65 carats. Today, the Ratnapura district, where gems have been found for thousands of years, still produces a limited production of alexandrite occasionally.

Tanzanian uncut chrysoberyl



Fig. 16.: Very rare minty bluish-green uncut chrysoberyls from Tanzania owe their color to the presence of vanadium.

In Brazil, [alexandrite](#) has been found in the states of Espento Santos, Bahia Minas Gerais. Minas Gerais was formed mainly by colonists who searched for veins of gold and gems and later diamonds. The name literally means "general mines", a shortening from Minas dos Matos Gerais, or mines of the general woods. Minas Gerais is so rich in gemstones that they have been found in excavations for building foundations, in drainage ditches, in water wells and in road cuts. Mining techniques in Brazil are mostly primitive but effective with relatively few mines using modern techniques. Brazil still has enormous gem potential. Little research has been done on country's gem reserves and large deposits have almost always been discovered by accident. The [chrysoberyl](#) from Brazil exhibits a variety of colors including grey-white, pale-yellow, citron-yellow, olive-green, grass-green, and pale-green. Some of the colorless stones approach [diamond](#) in transparency and brilliancy. Most of chrysoberyl is found as pebbles in auriferous muds or clays derived from the [weathering](#) of nearby granitic and gneissic rocks in the Piauhy and Calhao rivers.

In 1987 a major strike of [alexandrite](#) was made in the Brazilian state of Minas Gerais at Hematita. As soon as news of the find leaked out, three thousand garimpeiros (independent prospectors) descended on the small valley, five hundred feet wide by six hundred fifty feet long, and began to dig.

This "[Alexandrite](#)-rush" lasted about four months during the spring and summer of 1987. On average, one person a week was shot to death until bloodshed caused the government to issue an order in June 1987 to shut down. The situation had become so violent that the government

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had trenched a moat around and posted soldiers on the only remaining operating mine. By this time, the area appeared to be mined out.

Estimated production from this strike was two hundred and fifty thousand gem carats in the rough (50kgs). The original Hematita mine has now been taken over and mining is going deeper into the mountain. Although it is unknown if the mine can produce much more, the material is high quality. Some dealers say this deposit is already depleted but this is difficult to verify. Small amounts of [alexandrite](#) have also been found a bit further north in Minas Gerais at Malacacheta.

Brazilian alexandrites show both a distinctive [color change](#) with good clarity and color under any light source and also found in the Bahia State which includes localities that have produced some [alexandrite](#) near the Carniaba emerald mine at Campo Formoso. One [pegmatite](#) near Jaqueto yielded a 120,000 [carat](#) twinned [crystal](#). Many other localities in Brazil include pegmatites at Teixeira de Freitas, Medeiros Nero and Cahoeira. In Espirito Santo, exceptional specimens have been recovered from the Itaguacy, Santa Thereza, Tancredo and Colatina deposits, and v-shaped twins up to 22 cm (8.7 in) in length were recovered from Pancas. The Brazilian stones are admittedly not as strong in green as Russian alexandrite, but their purple-reds are thought to be better and the color change is easy to see.

Madagascar's [gemstone](#) production boomed in the 1990s and has continued over the last decade. The mining region around the towns of Ilakaka and Sakaraha in the south central part of the country is the most prolific. The area is mined by a combination of traditional diggers and private investors, - some with machinery. Occasional alexandrites are found as a very small percentage of the alluvial mix. Although some gem quality large single [chrysoberyl](#) crystals up to 12.5 cm were recovered in the Lake Alaotra.

The Tunduru area in southern Tanzania, near the Mozambique border produced a large quantity sapphires, spinels and chrysoberyls in 1993. All of the easily accessible areas were mined out in one year. Today, mechanized mining is still producing limited quantities of material but work is difficult in such a remote area. The Tunduru region has produced a variety of outstanding stones including a large clean top color 40ct+ rough [diamond](#) and some stunning alexandrites and [vanadium](#) colored chrysoberyls. In the north, the Manyara area has also produced some alexandrites.

Although [Alexandrite](#) has been discovered in Zimbabwe, the present situation in that country means that the only major mines now operating in Zimbabwe are the Sandawana emerald mines in the south west Zvishavane region. The mines are worked by a private company and are known for producing small emeralds of fine color. Although Alexandrite has been found in Zimbabwe, there is no current production. Zimbabwean Alexandrites are small, but may reveal a strong [color change](#), from dark green to purple red.

A few alexandrites have been found in Myanmar in the Mogok area, one hundred and twenty miles north east of Mandalay.

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Indian uncut alexandrite



Fig. 17.: Alexandrite from Samunda mines famous for their plumb reddish purple color under incandescent light.

Some [alexandrite](#) has been found in near Dowerin, Western Australia. Known since 1930, the deposit has yielded many small alexandrite crystals. Recent re-working of the deposit has allowed further examination of the gem-bearing rocks and some further discoveries. The Dowerin occurrence is situated in the southwestern region of the Archaean Yilgarn Craton, Western Australia in the northern part of the Lake Grace Terrain.

India is currently producing the bulk of today's [alexandrite](#) production. The focus of the current mining is in Andhra Pradesh province near the city of Vishakhapatnam in the towns of Narsipattanam and Araku. Narsipattanam alexandrite mine was discovered and opened in 2005 and produces larger alexandrite with satisfactory clarity and color. Araku produces more cat's eyes. Most of the mining is illegal so it is difficult to estimate how much material is being produced and most of Vishakhapatnam mines was closed in December 2004 by tsunami. Alexandrite was also found in the Karaka Hill region of the Raipur district in Chattisgarh in 1994 but this deposit is not producing much anymore. Most of the Indian stones show a weak [color change](#), but a few stones are exceptional world class gems. These stones are well known for their outstanding daylight bluish green color and superior clarity and mostly come from now non-producing Samunda Mine, which was closed in 2001 after few years of operation. Samunda alexandrites also known for their incredible color-change and plumb reddish purple color under incandescent light.

Confirmed findings of Alexandrite (1833 - 2008)



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Dowerin	Carnaiba Mine Caraiba mine Esmeraldas de Ferros Hematita Itaitinga Mine Novo Cruzeiro Teafilo Otoni Serra Dourada	Deobhog mines
 Madagascar	 Myanmar	 Russia
Ilakaka	Mogok	Izumrudnye Kopi Malysheva mine
 Sri Lanka	 Tanzania	 USA
Balangoda Horana	Tunduru Lake Manyara	La Madera Mtn.
 Zimbabwe		
Girdlestone Farm		

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