

## Alexandrite or... Diaphanite?

*"They certainly give very strange names to diseases."*

*Plato, 427 BC -- 347 BC*



Destiny sometimes treats people strangely, not only during their lifetime, but also after their death. The true events behind a story can be distorted by gossip or slander or intentionally modified to influence their historical context. Precious stones have had their own role in the shaping of history and destiny. Jealousy and greed conspire to obscure the truth and the stories behind many of the most remarkable gems are often a mixture of truth and lies.

And one gem in particular, more rare than [diamond](#), a stone that magically changes color was the inspiration behind many of these stories. History and mystery, fiction and reality, the story of [alexandrite](#) is forever linked to the last of the Russian Tsars. More than any other Russian [gemstone](#), alexandrite has captured and captivated the interest of collectors and connoisseurs since its discovery in the Ural mountains almost 200 years ago.

It was from the Urals that Russia's architects obtained the red jasper and green malachite used to decorate the Winter Palace in St Petersburg. This is where the world's most famous jeweler, Carl Faberge, acquired many of the gems for his [jewelry](#) and objects d'art. The most important occurrence of Russian gems and minerals, this is where the [alexandrite](#) story begins.

The Ural Mountains form the traditional boundary between Europe and Asia, East and West. They extend 2500 km from the Kazakh steppes along the northern border of Kazakhstan to the frozen coast of the Arctic Ocean. The Urals are among the world's oldest extant mountain ranges. They were formed in the late Carboniferous period, when a continent consisting largely

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of Siberia collided with the supercontinent that contained much of the world's land at the time. Europe and Siberia have remained joined together ever since.

Known to medieval Russia as the Stone Belt, the Urals were reached in the twelfth century by colonists and fur traders from Novgorod. Rich in ores and minerals, the area developed rapidly and the first ironworks were established in the 1600s.

#### The colonisation of the Urals



Fig. 4.: Cossack forces and their families were ordered to far-flung frontiers of the expanding Russian Empire - The Ural Mountains, as military colonists.

Peter the Great (1672-1725), may have been the first to understand the strategic importance of these rich deposits. When traveling in Western Europe, he became acquainted with the fundamentals of [mineralogy](#), mining and metallurgy. He wanted to see Russia as an equal to European powers and pushed for the development of mining to produce metals for his army. Confident in the [mineral](#) potential of Russia, he did his best to organize geological explorations and invited skilled professionals from the most advanced European countries at the time, (England, Germany, and Holland). The first metallurgical plant to produce copper was built on the river Uktus (now Patrushiha) near its confluence with the Iset river in 1702. In the same year, the first silver deposit was discovered in Transbaikalia (the Nerchinsky Mine), and silver production began shortly afterwards.

Peter was also the first Russian Tsar who maintained an active interest in gemstones and [jewelry](#). In a culture that extolled jewelry, gold and silver were used to create fabulous ornamentation for state occasions. Throughout Europe and Asia, jewelry was crafted to reflect the grandeur of an event. Hosts would often commission a special piece for guests of honor and every state occasion called for displays of ornamentation. He moved gold and silversmiths from Yaroslavl (then the centre of religious artisans) to St. Petersburg, where they created secular

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jewelry for the noble families of Russia. He also created the [Diamond Chamber](#), a treasury to be owned by the state, to which he donated the coronation regalia -- crowns, sceptres and orbs. Moreover, he also encouraged other nobles to donate and each subsequent ruler added gems and jewels to the Diamond Chamber. Today this treasure is controlled by the Russian government and is known as the State Diamond Fund. It is on display at The State Armoury in the Great Kremlin Palace, Moscow.

Under Peter's daughter, Elizabeth I who reigned from 1741 to 1762, the tradition of extravagant ornamentation continued. This westernized empress ruled in an opulent style and hired Italian architects to help create the famous palaces and cathedrals of St. Petersburg. Two major Romanov palaces, the Winter Palace and the Catherine Palace were built by her edict and it was from the Urals that many of the decorative building materials were acquired.

### Capital of Urals



Fig. 5.: Alexandrite was discovered in the newly found emerald mines near the city of Ekaterinburg, unofficially named as the "third capital" or the "capital of Urals"

By 1723, the Urals had become so important to Russia that Ekaterinburg (Yekaterinburg), named after the Tsar Peter the Great's wife Catherine (Yekaterina), was established as its administrative center. On May 21, 1745, a Shartash peasant named Erophey Markov was the first to discover gold. It took two years to verify his find and in 1748 the first Russian gold mine was in operation. As it turned out, all of the streams and rivers of Ekaterinburg were gold bearing and the Urals became a center for mining and exploration. The area was referred to as the Ekaterinburg gold valley. By the end of the century, 140 primary gold deposits had been discovered and Ekaterinburg had become an important city on the road between Russia and Siberia with most of the residents employed or connected to the mining in some way.

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There were experts at faceting, engraving seals, and [gemstone](#) carving. Coins were minted and lapidaries constituted a major industry. The gold also attracted the interest of the State and in 1824 the Tsar Alexander I (1777-1825) became the first reigning monarch to visit the Urals. He visited the factories and the Laborator and the Beryozovsk gold mines where he even took a miner's hack and worked for a while.

The government encouraged scientific expeditions and explorations of the region and geologists, botanists, astronomers, mapmakers, metallurgic engineers, historians, and ethnographers were invited to participate. One important visitor was Alexander von Humboldt (1769-1859) a prominent German naturalist and geologist and a worldwide celebrity who had already studied the geology of Central and South America.

Humboldt was invited by the minister of finance and agreed to visit in the spring of 1829. His party traveled in two carriages from Berlin, negotiating snow, ice, rivers, and washed away roads. On arriving after an arduous journey, the party visited the Imperial lapidaries in Ekaterinburg and the gold washings of Sabrowski. Humboldt noticed the similarity of the local geology with that of Brazil and discussed this with Count Polier who owned the gold fields on the eastern slopes of the Urals. The similarity led Humboldt to believe that there was a strong likelihood of diamonds being found in the region. Polier immediately ordered his overseer to begin a search. Four days later, the first Uralian [diamond](#) was discovered and two more were found in 1831.

Between May and November 1829 Humboldt, together with his chosen associates, Gustav Rose and C. G. Ehrenberg traversed the wide expanse of the Russian empire from the Neva to the Yenesei, accomplishing the 9600 mile journey in just twenty-five weeks. The journey, although patronized by the Russian government, was too quick to be of much scientific use. Its most important fruits were the correction of the prevalent exaggerated estimate of the height of the Central Asian plateau, and the discovery of diamonds in the gold-washings of the Urals.

Although diamonds remained rare in the area, Humboldt's report on the remote regions of the Urals and the [diamond](#) find attracted a great deal of excitement and an increased interest in the gemstones of the area. If Humboldt had spent more time in the region, he may have discovered the first emeralds or even alexandrites. However, it was a local peasant, Maxim Stefanovitch Kozhevnikov (1799 - 1865) who found the first emeralds. Making his way through the forest along the banks of the Tokovaya River on 23 January 1831, he found the green stones in the roots of a tree felled by a storm. He took the stones to Ekaterinburg where they were identified as emeralds by Kokovin Yakov Vasilevich (1787-1840), director of the Ekaterinburg [Lapidary](#) Works. Within a year, the Izumrudnye Kopi (Emerald Pits) on the river Tokovaya were in production. The site yielded not only emeralds, but also yellow phenakite, light-blue aquamarine, blue-green fluorite, light-green apatite, and red rutile. Some of the worlds largest [mineral](#) specimens (up to forty centimetres across) were also unearthed.

The Russian aristocracy became obsessed with their country's newly found precious stones. The Tsar Nicholas I immediately issued a decree ordering that all the best gemstones should be

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made available to the imperial [lapidary](#) in Ekaterinburg and that the finished stones were to be sent to the palace in St. Petersburg.

A few years later in 1833, an unusual new stone (later to be known as [alexandrite](#)), was discovered in the newly found emerald mines near Ekaterinburg. The name of the first person to actually find this stone has been lost in the mists of time. However, the first person to bring it to public attention, and ensure that it would be forever associated with the Imperial family was Count Lev Alekseevich Perovskii (1792-1856.)

#### Count Lev Alekseevich Perovskii



Fig. 6.: Russian mineralogist and Vice-President (1852 - 1856) of the Appanage Department responsible for naming alexandrite in the honor of Tsarevich Alexander.

Perovskii was close to Nicholas I and was later to become Vice-President of the Appanage Department (1852-1856) which was established to manage the Imperial Family's estates and income. The Appanage Department was also responsible for the manufacturing of numerous precious souvenirs that were distributed by the Tsar as rewards.

Perovskii contributed much to the development of the [lapidary](#) and mining industries in Russia and many new deposits were mined because of Perovskii's initiatives. In 1839, the German mineralogist Gustav Rose even named a new Uralian [mineral](#) ([Perovskite](#)) after him. But above all, Perovskii was an ardent collector and one of his passions was minerals and precious stones. He often took advantage of his rank to assure that all the best stones went to the Appanage Department and later found a home in his private collection. In trying to obtain certain specimens, Perovskii would use bribery or any other unscrupulous means. Many officials of the Appanage Department served as his spies and agents as noted by his contemporaries. In A.E. Fersman's (1883-1945) essay "Kokovin's Emerald", Fersman writes that the director of the Ekaterinburg lapidary, Yakov Kokovin, stole a unique emerald but was exposed by Count

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Lev Alekseevich Perovskii. The convicted Kokovin was compelled to commit suicide in the Ekaterinburg prison. But after Perovskii's death in 1856, that same stone known as "Kokovin's Emerald" was found in Perovskii notable collection of unique specimens!

According to a widely popular but controversial story, [alexandrite](#) was discovered by the Finnish mineralogist Nils Gustaf Nordenskjold, (1792 -1866) on the Tsarevich Alexander's sixteenth birthday on April 17, 1834 and named Alexandrite in honor of the future Tsar of the Russian Empire.

Nordenskjold described and discovered a number of minerals, some new and some previously unknown in Russia. He also published a number of articles in foreign journals and later went on to discover and name green andradite as demantoid (like a [Diamond](#)). His reputation was established well beyond Russia and Scandinavia and there was no one who could compete with Nordenskjold's knowledge of [mineralogy](#). It was to Nordenskjold that Perovskii turned, when he needed someone with a comprehensive knowledge of gemstones.

#### Tsarevich Alexander



Fig. 7.: Alexander II succeeded to the throne to become Emperor of the Russian Empire from 3 March 1855 until his assassination in 1881.

Although it was Nordenskjold who discovered [alexandrite](#), he could not possibly have discovered and named it on Alexander's birthday. Nordenskjold's initial discovery occurred as a result an examination of a newly found [mineral](#) sample he had received from Perovskii, which he identified it as emerald at first. Confused with the high [hardness](#), he decided to continue his examinations. Later that evening, while looking at the specimen under candlelight, he was surprised to see that the color of the stone had changed to raspberry-red instead of green. Later, he confirmed the discovery of a new variety of [chrysoberyl](#), and suggested the name "diaphanite"(from the Greek "di" - two and "aphanes", - unseen or "phan", to appear, or show).

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Perovskii however had his own plans and used the rare specimen to ingratiate himself with the Imperial family by presenting it to the future Tsar and naming it [Alexandrite](#) in his honor on April 17, 1834.

Three years later, the grand duke Alexander Nikolaevich, the future emperor Alexander II visited the Urals. On 26 May 1837 the party arrived at the border separating Europe from Asia and went on to Ekaterinburg. While visiting, Alexander was shown some of the most impressive stones the area could produce including Alexandrites but, it wasn't until 1842 that the description of the color changing [chrysoberyl](#) was published for the first time under the name of [Alexandrite](#).

In retrospect it is perhaps fortuitous that the name [Alexandrite](#) instead of Diaphonite was finally chosen. Alexandrite may never have achieved such prominence were it not so inextricably connected to the Tsar Alexander and the end of the Russian monarchy. Green by day, red at night, "green morning full of hope" and red, -- the color of blood and the end of the Russian monarchy.

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