

VENIAMIN A. SILBERMINTZ AND HIS COLLECTIONS AT THE VERNADSKY STATE GEOLOGICAL MUSEUM

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1. Veniamin Arkadievich Silbermintz, mid-1930s.

Veniamin Arkadievich (Aronovich) Silbermintz (1887–1939) is one of the famous Russian geologists, whose life was tragically cut short in the years of repressions. He is undoubtedly one of the brightest and most diverse researchers who worked in our geology in the first half of the 20th century

Key milestones in the life of Veniamin A. Silbermintz

Veniamin Arkadievich (Fig. 1) was born on June 19 (July 1), 1887 in Poltava in the family of military doctor Aron Gershovich (Aaron Grigoryevich) Silbermintz (Alphabetical Name Index...) and Sarah Isaakovna Silbermintz (Dedushka (дедушка), Grand-père, Grandfather..., 2018).

In 1905, he entered the Kiev Imperial University of St. Vladimir, and in 1906, he entered the metallurgical department of St. Petersburg Polytechnic Institute (data of Central State Historical Archive (CSHA) SPb), from where he transferred himself to the physico-mathematical department of St. Petersburg University. In 1911, Silbermintz graduated from the Department of Mineralogy of the Faculty of Physics and Mathematics, where he began to work as assistant to Professor PA Zemlatchenskiy. In 1914–1915, he worked under the leadership of VI Vernadsky and geologist AK Meister in the Radium Expedition of the Geological Committee in the Baikal region, primarily in the Slyudyanka area (Veniamin Arkadievich Silbermintz..., 2017; Vernadsky, 1914). This expedition marked the beginning of the study of uranium and other radioactive elements in Russia.

During his student years, Veniamin Arkadievich married Sofia Nikolaevna Sazhina (1889–1961), the niece of Sergei Yulievich Witte. Later (circa 1929), he married a second time, Natalia Alexandrovna Vlasova (1899–1992), the daughter of the well-known Moscow therapist AV Vlasov. Veniamin Arkadyevich had four children – a son and three daughters.

In 1913–1923, Silbermintz was a junior assistant, then an assistant at the Department of Mineralogy and a keeper of the Soil Museum of Petrograd University. It was then that his collaboration with Academician Vernadsky began, which developed into a strong friendship.

After the 1917 revolutionary events, Silbermintz started to work for the Commission for the Study of the Natural Productive Forces of Russia (KEPS). He studied minerals of the central provinces of Russia. In 1918, as a member of the Geological

Specimens: from the collection of V.A. Silbermintz, Vernadsky State Geological Museum, RAS (GGM).

Photo of mineral specimens: Yulia V. Azarova

Historical photos 1–10: from the family archive of V.A. Silbermintz, provided by Anna A. Khvalebnova (granddaughter of V.A. Silbermintz).

"He is accused of spying for German intelligence and participating in a fascist organization" (from the testimony of NM Fedorovskiy, director of VIMS arrested in 1937; this testimony was given under extreme interrogation pressure) (Veniamin Arkadievich Silbermintz..., 2017).

Colleagues, friends (VI Vernadsky, NV Borisov, PI Stepanov and others) and his wife did everything possible to free Veniamin Arkadievich from arrest (Vernadsky, 1997; Veniamin Arkadievich Silbermintz..., 2017). All these troubles remained fruitless. On February 21, 1939, Silbermintz was shot in Moscow.

On July 18, 1956, Silbermintz case was "reconsidered again, under newly discovered circumstances." The sentence was reversed, and Silbermintz was posthumously rehabilitated by the Military Collegium of the USSR Supreme Court.

Veniamin Arkadievich Silbermintz was buried at the New Donskoi Cemetery in Moscow, in the Donskoi Crematorium's "grave of unclaimed ashes number 1" (Shot Lists, 2005).

In our days, in January 2019, at the request of Tatyana Belogorskaya, a memorial plaque was placed on the house at 31 Bolshaya Ordynka Street, next door to where Veniamin Arkadyevich Silbermintz lived his last years in apartment 13 (Fig. 7) <https://www.poslednyadres.ru/news/news806.htm>).

Rocks and mineral specimens from Silbermintz in the Vernadsky State Geological Museum

The collections held in the collections of the Vernadsky State Geological Museum of the Russian Academy of Sciences (GGM) in Moscow show samples collected by Silbermintz during different periods of his activity. The minerals collected in the Middle and

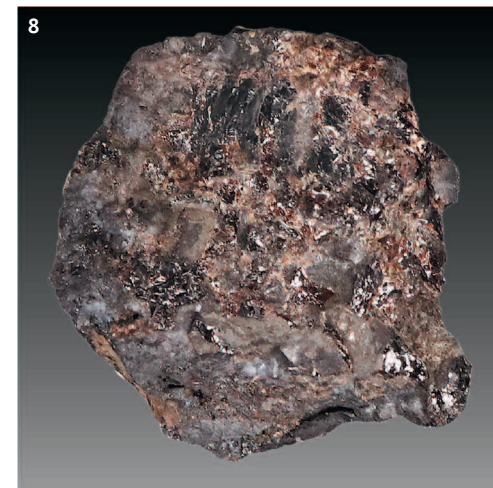
Southern Urals in 1928–1930 are most diverse. Particularly interesting are the samples investigated by Silbermintz while studying the distribution patterns in minerals of rare-earth elements and developing the methods for their extraction.

First, this is a sample of britholite-(Ce), described by the researcher as lessingite-(Ce), from the Mochalin Log near Kyshtym, Chelyabinsk region, Southern Urals (Fig. 8). It is noteworthy because this specimen represents the first find of this mineral in Russia. The studies of Mochalin Log provided an analytical foundation for the discovery of Russia's first potentially commercial deposit of rare earth elements (Silbermintz, 1928 a,b; Silbermintz, 1929). Britholite-(Ce) was given by Silbermintz in 1935 to the funds of the Mineralogical Museum of the Moscow Exploration Institute (MGRI, now in funds of GGM RAS). The sample is small (3 cm x 3 cm x 1.5 cm). It is a fragment of a prismatic crystal with a rounded hexagonal cross section. Britholite-(Ce) is red-brown in color, with a resinous luster.

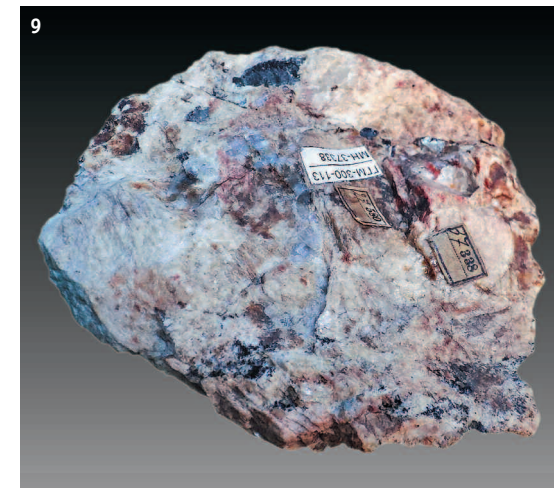
Second, this is a specimen of chevkinite-(Ce) from the Ilmeny Mountains (Fig. 9). It was presented by Silbermintz in 1928 to the Mineralogical Museum of Moscow State University (now in the collection of the GGM RAS). The find was made in the pegmatite vein of Mine No. 17. The sample is an accumulation of tabular and irregular in shape grains (up to 0.7 cm) of resin-black chevkinite-(Ce) in the aggregate of quartz and feldspars with black amphibole.

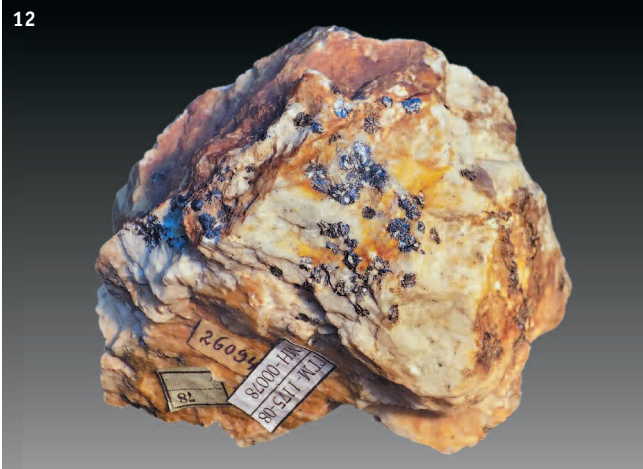
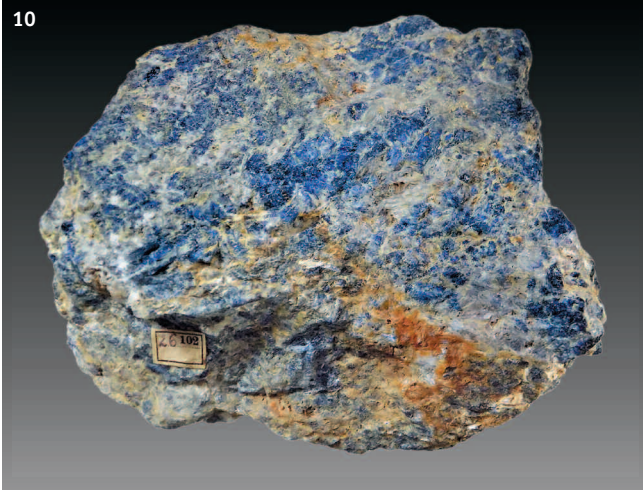
Of the other samples collected in the Southern Urals, there is a large sample of sapphire-like corundum from the Kyzyl-Tash deposit (Fig. 10), presented by Veniamin Arkadyevich to the Museum in 1928. There is also attractive bright pink microcline

8. A fragment of **britholite-(Ce)** crystal. Mochalin Log, Kyshtym, South Urals, Russia. 3 x 3 x 1.5 cm. GGM, MH-42605, V.A. Silbermintz.



9. **Chevkinite-(Ce)** in quartz-feldspar pegmatite. 10 x 9 x 3 cm. The Ilmeny Mountains, South Urals, Russia. GGM, MH-37338, V.A. Silbermintz.





10. **Corundum**. 14 x 11 x 6 cm. Kyzyl-Tash, South Urals, Russia. GGM, MH-09111, V.A. Silbermintz.

11. **Microcline**. 14 x 13 x 7.5 cm. Kurochkin Log, Vishnevy Mountains, South Urals, Russia. GGM, MH-29321, V.A. Silbermintz.

12. A specimen of pegmatoid granite with stellate ingrowths of **graphite**. 8 x 6.5 x 6 cm. The Ilmeny Mountains, South Urals. GGM, MH-00078, V.A. Silbermintz. .

13. **Anapaite** in clay rock with limonite and siderite. 7 x 5 x 3 cm. Zheleznaya Balka, Taman Peninsula, Krasnodar Krai, Russia. GGM, MH-18911, V.A. Silbermintz.

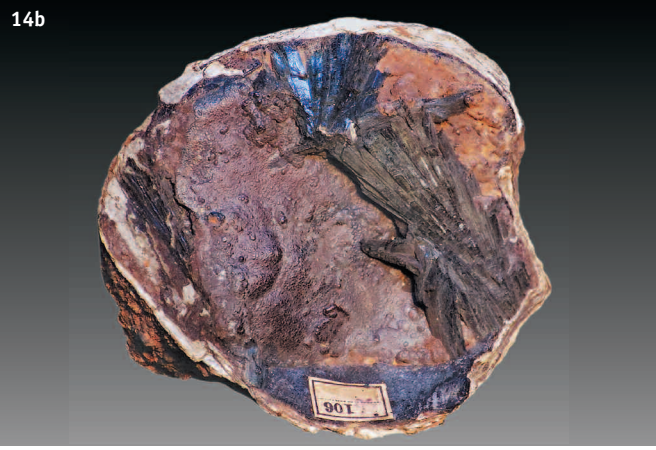
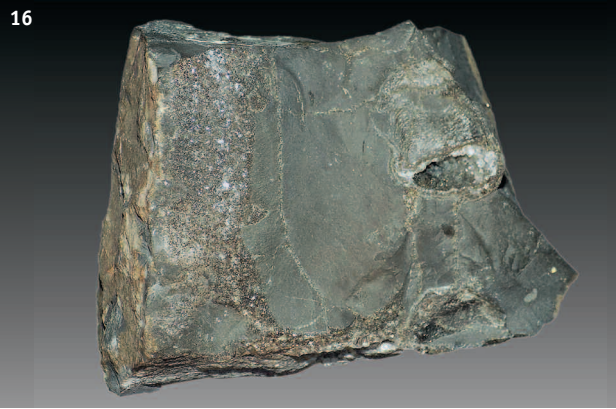
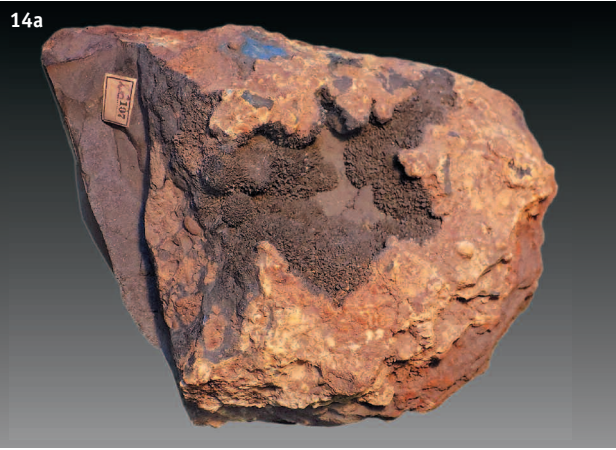


(Fig. 11) from Kurochkin Log in the Vishnevy Mountains and graphite from the Ilmeny Mountains (Fig. 12). In the latter, there are stellate graphite aggregates in pegmatoid granite.

During the 1928 expedition to study the distribution of potential ores of vanadium, arsenic and manganese in the Kerch-Taman area, Silbermintz collected samples, some of which were also transferred to the mineralogical museum of Moscow State University (now in the funds of GGM RAS). For example, very interesting is the sample of anapaite, which forms clusters of beautiful light greenish crystals (Fig. 13) and samples of vivianite of two different types. The first type is represented by a sample of black to black-brown partially oxidized vivianite in the form of small (fractions of mm) flattened crystals, forming spectacular radial-rayed aggregates that line the walls of large voids in brown ironstone (Fig. 14a). In the same sample, there are rare small dense solid masses of fine-grained blue vivianite. The second type is vivianite as a black sheaf-shaped aggregate of flattened prismatic crystals (up to 5 cm in length), partially oxidized, in the shell cavity of a bivalve (Fig. 14b). In the same "Crimean" collection, we noted a remarkable beauty of gypsum roses (the two most beautiful specimens on the photos) (Fig. 15).

14. **Vivianite**: (a) in the cavity of the brown ironstone, 13 x 11 x 6 cm, (b) in the shell cavity, 8 x 6 x 4 cm. Kamysh-Burun, Kerch Iron Ore Basin, Kerch Peninsula, Crimea. GGM, (a) MH-38840 and (b) MH-22261.

15. **Gypsum roses**. (a) 9 x 8 x 7 cm and (b) 8 x 6 x 5 cm. Tarkhan Tract, Kerch Peninsula, Crimea. GGM, (a) MH-40989 and (b) MH-41006, V.A. Silbermintz.



16. **Baryte** from Shvarino black limestone, Donbass, Rostov Oblast. 10 x 9 x 9 cm. GGM, MH-39938, V.A. Silbermintz.

17. Cleavage on jointing of transparent **halite** crystal. 6.5 x 3.5 x 3.5 cm. Artem deposit, Donetsk region. GGM, MH-20885, V.A. Silbermintz.