

FERSMAN MINERALOGICAL MUSEUM EXHIBIT DEVOTED TO THE 125th ANNIVERSARY OF A.N. LABUNTSOV

Elena N. Matvienko, Elena L. Sokolova, Elena A. Borisova, Tatyana M. Pavlova
IRAS Fersman Mineralogical Museum, RAS, Moscow, mineral@fmm.ru

In 2009, Fersman Mineralogical Museum of Russian Academy of Sciences celebrated the 125th anniversary of Alexander Nikolaevich Labuntsov, a remarkable mineralogist, the discoverer of the huge Khibiny apatite deposits. Being a great expert and collector of minerals, Labuntsov had worked in the Museum for about 35 years, organized field expeditions of wide geographic scope, and contributed to various museum collections with more than two thousand objects. The exhibit organized at the Museum by this date presents specimens collected by A.N. Labuntsov, his working materials, personal items, photographs, published works, and documents (including those found in the Archive of Russian Academy of Sciences).
13 figures, 7 references.

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On September 25th, 2009, Fersman Mineralogical Museum of Russian Academy of Sciences celebrated 125th birthday of a remarkable person and scientist — Alexander Nikolaevich Labuntsov (1884–1963). Labuntsov (Fig. 1), who had worked in the Museum for about 35 years, was the outstanding mineralogist with an incredibly wide scope of scientific interests, co-worker of A.E. Fersman, and the discoverer of the gigantic Khibiny apatite deposits (Kornetova, 1986). The Museum held a seminar and a special opening ceremony for the exhibit. Among the presenters there was Marina Alexandrovna Labuntsova, the scientist's daughter, Ph.D. in Biological Sciences, a Member of the Friends of Mineralogy Club. Labuntsova maintained long-lasting friendship with the Museum staff members and took active part in the preparation of the jubilee celebration. Being the keeper of the family archive, she handed over very interesting materials for the exhibit, including documents and some personal things that belonged to her father. The speech of Gleb Borisovich Udintsev, corresponding member of RAS, dedicated to a several pages of the White Army history, has caused a great interest of audience.

The jubilee exhibit includes a showcase with the mineral and rock specimens collected by Alexander Nikolaevich and his co-workers of the Khibiny and other expeditions, his working materials, personal items, and two stands with Labuntsov's published works and documents (including those found in the Archive of Russian Academy of Sciences). The exhibit is supplemented by the photographs from A.N. Labuntsov's and A.E. Fersman's archives.

Alexander Nikolaevich Labuntsov had an unusual destiny (Labuntsova, 2001). When he came to work in the Mineralogical Museum of the Academy of Sciences in 1922 being 38 years old, his life took a completely new turn. By that time, Labuntsov, following his family tradition, had already built a brilliant military career, had a title of Georgiy Cavalier, went through battles and wounds of three wars, miraculously surviving in the last one — Civil War.

At the same time, Labuntsov was interested in minerals since early years. He managed to find time for college mineralogy classes and for stone collecting during the years of his military service. In 1924, he graduated from the Natural Science Division of the Department of Physics and Mathematics of Leningrad State University.

Since the first years of his employment as a geologist-mineralogist at the Museum, Alexander Nikolaevich showed exceptional scientific intuition and special talent in organizing and leading the field expeditions. The geography of his trips is extremely wide: Labuntsov explored the alkaline massifs of Khibiny and Lovozero (Kola Peninsula), pegmatites of the Northern Karelia, Ilmen Mountains (South Urals), Western Pamir, Badakhshan (Afghanistan), South and Central Urals, Vaigach Island, Baikal Region, Central Asia (Kyrgyzia, Kazakhstan), and Donets Basin (Ukraine). In those cruel years of Russian history, frequent travel and life away from the capital cities were beneficial for Labuntsov, who had a "dark spot" on his biography as a participant of White movement, colonel of Kolchak's Division. At that time, he supplied more than 2000 specimens to the Museum collections.

The mineralogical material collected by A.N. Labuntsov reflects the wide geographic spread of his scientific work, and it is the main content of the exhibit. The specimens are placed in territorial and chronological order.

More than two thirds of Labuntsov's field stock is represented by minerals from Northern Karelia and Khibiny, the regions he studied mostly.

After Labuntsov joined the Museum staff, he was involved by academician A.E. Fersman into exploration of the Kola Peninsula. The contribution that Alexander Nikolaevich made to the study and development of the Khibiny area is hard to overestimate. As early as in 1923, he was the first who had realized the extraordinary importance of the apatite-nepheline rocks as a new type of natural resource, investigated the deposits, and pushed for the acknowledgment of his discovery. This story is told by the documents presented at the exhibit stands, in particular, recently published Transactions of the First Polar Conference on Complex Utilization of Khibiny Apatite-Nepheline Rock (1932), where Labuntsov was one of the main speakers (First Polar... 2009, p. 20), as well as the minutes protocol of the Leningrad District Council of National Economy of 23rd of May, 1930, in which it was emphasized that: "the survey, which was carried on in very hard conditions of the arctic circle, resulted in the brilliant discovery of the richest apatite-nepheline deposit by geologist A.N. Labuntsov". There are also photographs of the first stacks of apatite ore, quarried from Khibiny (1928), and the first construction site at the place of today's city of Kirovsk (1931).

Also there is exhibited the copy of the map of the apatite-nepheline deposits in Khibiny of 1926–1927, which was made by Alexander Nikolaevich by eye survey. Among the Khibiny



Fig. 1. Alexander N. Labuntsov is the 1st Moscow Cadet Corps graduate. 1901. Moscow.

photographs, there is also his picture of the Tietta Research Mining Station of the Academy of Sciences. By assignment from academician A.E. Fersman, Labuntsov chose the site for the station, prepared the sketches for the construction project. The opening of the station was held in conjunction with the aforementioned First Polar Conference – the second-day sessions, April 10, 1932, were hosted there (First Polar... 2009, p. 120–124).

A.N. Labuntsov worked at Kola Peninsula for many years. He is one of the authors of the fundamental mineralogical study of the Khibiny and Lovozero (1937). In Khibiny, Alexander Nikolaevich discovered a new mineral – fersmanite



Fig. 2. Labuntsovite. Khibiny, Kola Peninsula, Russia. Anonymous presenter. 9 cm. FMM No 88495. Photo: Elena N. Matvienko.



Fig. 3. Fersmanite. Khibiny, Kola Peninsula. 7 cm. FMM No 41088.



Fig. 4. Eudialyte. Khibiny, Kola Peninsula. 11 cm, up to 4 cm. FMM No 25963, 36859.



Fig. 5. Lamprophyllite with aegirine. Lovozero, Kola Peninsula. 11 cm. FMM No 25962.



Fig. 6. Lorenzenite (ramsayite) with author's label. Lovozero, Kola Peninsula. Crystal size up to 2 cm. FMM No K2249, K2236.



Fig. 7. Oligoclase (belomorite). Northern Karelia, Russia. 11 cm. FMM No 25946.



Fig. 8. Monazite-(Ce). Chornaya Salma Vein, Northern Karelia. FMM No K3584.

Photo: Elena N. Matvienko



Fig. 9. Lazurite. Lazorevaya-river, Baikal region. 10 cm. FMM No 20999. Photo: Elena N. Matvienko.

Fig. 10. Graphite. Botogol Massif, East Sayan. 12 cm. FMM No 41982. Photo: Elena N. Matvienko.

(1929) — and also was the first who described the titanium elpidite as a mineral variety (1926). The copies of the published articles on those subjects are presented at the exhibit. Later, titanium elpidite was identified as a new mineral (Semenov and Burova, 1955) and named *labuntsovite* (Fig. 2). Labuntsov's specimens displayed at the Museum, both rock-forming minerals and rare species, thoroughly characterize the mineralogy of the Khibiny alkaline massif. In addition to apatite, the exhibit includes fersmanite (Fig. 3), manganoneptunite, large crystals of eudialyte (Fig. 4), and well cut pseudooctahedral crystals of zircon up to 2 cm in size, and astrophyllite. Among the demonstrated Lovozero specimens, one can observe lamprophyllite (Fig. 5) and beautiful crystals of lorezenite (Fig. 6) and zircon.

From 1924 to 1947, Alexander Nikolaevich repeatedly visited Northern Karelia and studied about 200 pegmatite bodies, in which he described in detail 60 minerals (Labuntsov, 1939). The Karelian specimens make up almost a half of all of them that he brought to the Museum. Some rock-forming minerals presented at the exhibit include crystals of mica (biotite and muscovite), oligoclase, and apatite. The famous oligoclase variety — belomorite — with irization on cleavage planes (Fig. 7) is especially attractive. Labuntsov's trip to the Sinyaya Pala vein was shared with Fersman, who described that "lunar mysterious flickering stone" in his story "Belomorite" (Fersman, 1940). The exhibit also includes minerals of rare and radioactive elements: monacite (Fig. 8), xenotime-(Y), and uraninite with rutherfordine. Labuntsov was very interested in such minerals, and there are many of them in his collections. The scientist also studied more complex polymineral radioactive substances (e.g. gummite, carbocer, etc.), which are rich in rare earth elements. A piece of paper from Labuntsov's notebook shows his neat small

handwriting of the results of the chemical analysis of uraninite and gummite from several North Karelian pegmatite veins. The Karelian ores explored by Labuntsov in 1925 were the first uranium ores discovered in the USSR.

Alexander Nikolaevich took many trips to the South Urals. In 1938, he explored the Akhmatovskaya and Ereemevskaya mines in the Nazyam Mountains and, in 1940s, he studied pegmatites in the Ilmen Mountains. This work of him is illustrated by the specimens of Nazyam clinocllore and Ilmen crystals of corundum, columbite, and samarskite-(Y), malacon, and a pseudomorph of limonite after pyrite crystal. The geological map of Atlyan-Miass region (scale 1:50000, 1949) drawn by Labuntsov's hand is also exhibited here.

In 1920s, (1924, 1926), A.N. Labuntsov was a participant of Sayan expeditions of the Mineralogical Museum. At the exhibit, one's attention is captured by a bright piece of lazurite from the classical domestic deposit of this mineral in the vicinity of the Malaya Bystraya River (Fig. 9). Beside it, pages of Labuntsov's field journal show his pencil-written descriptions of the character of lazurite occurrence and the parent rocks. The materials from Botogol Golets feature a remarkable selection of graphite of various morphology (Fig. 10).

After these expeditions, in 1928, A.N. Labuntsov as an expert in domestic lazurite was sent to Afghanistan for studying the famous Badakhshan deposit. Because of the tense political situation in that region, he could not reach his destination, but along the way, was able to study the Kukhi-Lal deposit in the Western Pamir and brought some specimens (namely, gummite and spinel) from there.

In 1939, Labuntsov traveled in Ukraine: visited Donetsk Basin's salt mines and Esaul deposit, collecting there some beautiful specimens of



Fig. 11. Boulangerite, sphalerite, quartz upon ankerite. Nagol'nyi Kryazh, Donbas, Ukraine. 25 cm. FMM No 42598. Photo: Elena N. Matvienko.



Fig. 12. Evansite. Karatau Range, Kazakhstan. 3 cm. FMM No 43924, 43926. Photo: Elena N. Matvienko.

boulangerite and sphalerite (Fig. 11), quartz crystals with boulangerite inclusions, and other minerals.

The activities of A.N. Labuntsov at a number of Central Asian deposits of rare elements are reflected in his specimens of evansite (Fig. 12) and a signed by him photocopy of his paper "Colloid Minerals from Northern Karatau". From his trip to Karatau (Kazakhstan), Labuntsov brought a whole collection of phosphate silica gels — semitransparent, sometimes brightly colored, previously unknown formations. He began studying colloid minerals, and that material was later used by academician F.V. Chukhrov in his work.

At last, the gold washed by A.N. Labuntsov from the glacier deposits in Moscow region, also presented at the exhibit, is the result of his later work, already after his retirement. In those years, Labuntsov arranged the new exhibit in the Mineralogical Museum entitled "Minerals of Moscow Region" using material of his own collections. He was really good at dredging, studied the Jurassic placers with diamonds and platinumoids in the Central Urals in 1940.

Crystals and crystallography were the subjects of special attention and passion for Alexander Nikolaevich. Well-shaped crystals of different minerals take an honorable place among his materials. In one of the photographs, Labuntsov is pictured with an improved by him goniometer, which he used for measuring and indexing faces of numerous crystal specimens. A.N. Labuntsov created a special exhibit "Crystals", which is mainly preserved in its original order and still attracts attention of Museum visi-

tors. The anniversary exhibit also contains boxes with home collections of small crystals (Fig. 13). Taking care of his mineral collection was Labuntsov's favorite hobby during his free time.

In addition to documents, field journals, the exhibit includes some scientific instruments and tools that belonged to A.N. Labuntsov: welding torch, small hammer, magnifying glass.

At stands there are also the photographs of A.N. Labuntsov's parents, grandfather, and wife — Ekaterina Evtikhievna Kostyleva-Labuntsova, who was his all-time companion, a participant of the Khibiny expeditions, also a remarkable mineralogist and scientist of the Mineralogical Museum. Young Alexander Labuntsov is pictured with his family at the time when he studied at the 1st Moscow Cadet Corps. There are also photographs of the award list attached to the complete works of Russian poet A.N. Maikov, which was presented to A.N. Labuntsov "for excellent discipline and high achievements in sciences" after his graduation. Another image shows the Emperor's IV Degree Saint Georgiy Military Order that Alexander Nikolaevich was awarded for the battle of August 15, 1914.

The documents from the Archive of Russian Academy of Sciences, first made available to the public at this exhibit, tell us about the hardships and obstacles that awaited the White Army officer Labuntsov on his way to become a scientist in Soviet Russia. These are the letters of Alexander Nikolaevich to academician V.I. Vernadsky written during the period of 1935 – 1939. Apart from purely scientific matters, there is an appeal from Labuntsov on his re-employment, a request to support the approval by the Qualifying Com-

Fig. 13. Labuntsov's home collection.
Box size 16×18 cm.
Photo: Elena N. Matvienko.



mittee of his science degree (1938). The stand also contains an excerpt from the minutes protocol of the meeting of the Presidium of Gosplan of the RSFSR (the Russian Federation) of October 4th, 1929. The decision was taken at this meeting to honor the merits of the scientists doing research on Khibiny apatites and especially to acknowledge the roles of geologist Labuntsov and academician Fersman. A list of scientific works of A.N. Labuntsov is presented. The letters and related documents are published for the first time in this magazine issue in the rubric "Personalities".

On a final note, the above-reviewed anniversary exhibit was the first public show that nicely illustrated all sides of life and scientific career of the outstanding geologist and mineralogist A.N. Labuntsov, who made significant contributions to the collections of Fersman Mineralogical Museum and to the development of the national mineral resources.

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