

INTERESTING MINERAL FINDS IN THE PLAST DISTRICT (SOUTH URALS) IN 2018–2019

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Photo: Sergey V. Kolisnichenko,
unless otherwise mentioned.

Specimens: Plast district,
South Urals, Russia.

The South Urals within the Chelyabinsk region has 20 unique mineralogical districts including the world famous Ilmeny Mountains, the Vishnevye Mountains, and *Russian Brazil* (so named by academician Nikolay I. Koksharov as in the 19th century) which consists of the Kochakar gold and gem system in the Plast district. Both professional mineralogists and many mineral amateurs including students and pupils make ongoing mineralogical observations in these areas.

Below are described interesting mineral findings from this Plast district during 2018–2019; part of them can be considered as outstanding in the Urals.

The **Svetlinskiy pegmatite quarry** is located 9 km south-west of the Verkhnyaya Sanarka (Upper Sanarka) village. In 2018, mineral amateurs discovered a granitic pegmatite vein with mineralized cavities.

The thick outcrop of smoky vein quartz attracted attention in the beginning of field works in 2018. It was known previously and was found in dumps and sides of old trenches. Beryl fragments, large muscovite, and quartz were observed in dumps. Also new works showed that a horizontal quartz vein was branched into separate vertical quartz-muscovite bodies (“trails”), which contained variable in size morion cavities over the trench’s length.

These peculiar veins within pegmatite body reached 3–5 m in length.

The pegmatite was completely weathered and kaolinized on the surface, but its structural features are retained below: here microcline blocks up to 20–30 cm in size are penetrated by quartz ichtyogliptes (graphic granite) and sometimes muscovite was identified.

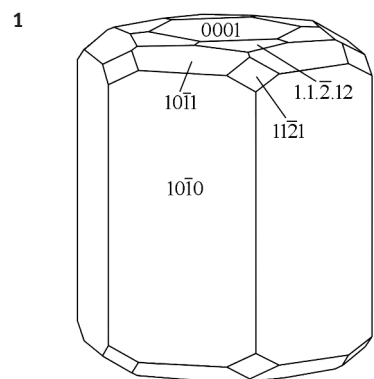
Mineralogy of the morion cavities was not quite usual in the Svetlinskiy pegmatite field. In addition to abundant well-shaped morion crystals distinguished by their clarity and large size (up 20 cm) and muscovite, individual beryl crystals and their varieties (heliodor, goshenite, and aquamarine), plus topaz, elbaite, columbite, and pyrite were found.

Beryl occurs as transparent regular shaped crystals up to 11 x 2.5–3 cm in size and in fan-like aggregates of crystals. The crystal tips are acute and are formed by dipyrramids and small pinacoids.

After faceting of one of the fragments of such crystals a gem (more than 20 carats) was obtained. Gem-quality beryl of such size is extremely rare at the deposit (Figs. 1, 2, 3, 4).

Columbite from the described vein occurs as crystals up to 1.5 x 1.8 cm in size. The crystal faces are smooth and mirrorlike with occasional slight stri-

1. Crystal of **beryl**.
Svetlinskiy pegmatite quarry.
Drawing by Vladimir A. Popov.



2. **Beryl** (aquamarine). 11 cm.
Svetlinskiy pegmatite quarry.
Finds by Alexander A. Albrecht.



3. **Beryl**. Intergrowth of crystals up to 6 cm.
Svetlinskiy pegmatite quarry.
Finds by Vyacheslav I. Boychenko.



4. **Beryl**, crystals up to 10 cm.
Svetlinskiy pegmatite quarry.
Finds by Sergey V. Nerevyatkin.

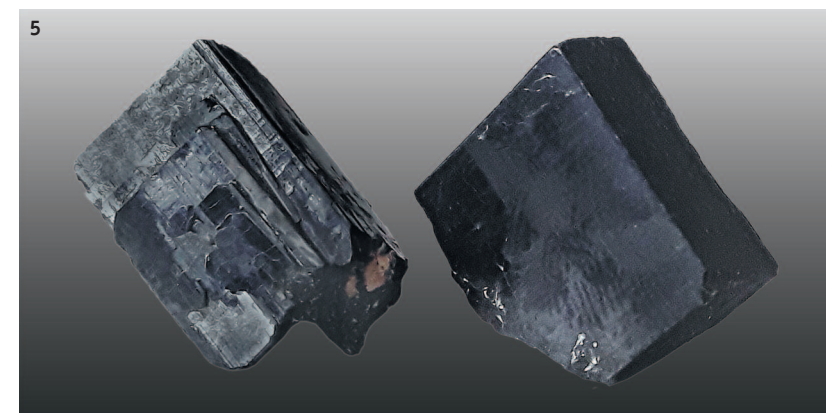
ations. The crystals are thick tabular, close to cubic. They grew in cavities together with a mineral of the microlite group and albite; the latter was weathered to kaolin clay. The columbite-group minerals are common at the deposit and are significantly variable in the both their Fe/Mn and Nb/Ta ratios. The chemical composition of each crystal should be measured to identify the mineral species: experience has shown we deal with tantalite-(Fe), tantalite-(Mn), columbite-(Fe), and columbite-(Mn). The richest in Mn columbite-tantalites occasionally have a reddish hue or are red-tinted¹ (Fig. 5).

Pyrite, as regular cubic crystals of 2 cm in size, and replaced by limonite was found in one of the pegmatite cavities (Fig. 6).

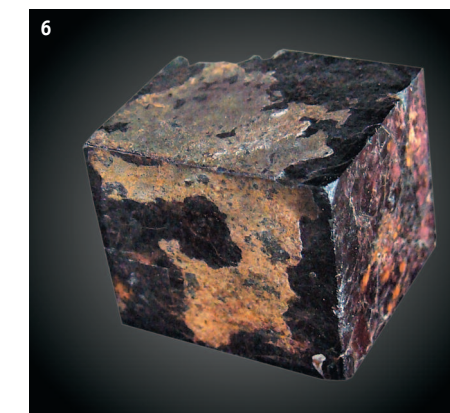
The cavity with topaz crystals can be considered as the most interesting finding in this pegmatite vein.

This cavity was found in the prospect pit at a depth of 1.2 m below the surface. It was loaf-like with a plane bottom and arched roof. The size of this cavity filled predominantly by clay was 0.6 x 0.6 x 0.3 m. A few crystals of morion and their clusters, more than 300 elbaite crystals and ten blue topaz crystals were mined from this cavity.

Elbaite in predominantly greenish black forms ideal crystals up to 10 cm in length with acute tips and lustrous smooth prismatic faces. Tourmaline crystals



5. **Columbite**. Crystals up to 1.8 cm.
Svetlinskiy pegmatite quarry.
Finds by Alexander P. Tsegipalo and Kirill A. Zakharov.



6. **Pyrite**. 2 cm. Svetlinskiy pegmatite quarry.
Finds by Vyacheslav I. Boychenko.