

VIVIANITE IN SOUTHERN URALS

Sergey V. Kolisnichenko,

collector, author of many publications for mineral collectors, Sanarka@mail.ru

The first time I saw vivianite in nature at the classic deposit of this mineral at Kerch Peninsula (Crimea, Ukraine). Knowing those ore quarries of Kamysh-Burunskoe iron ore deposit as a source of this mineral we travelled there in 1989. Back then I was leader of a club young geologists in the Palace of Pioneers in Chelyabinsk in southern Urals. These quarries were already abandoned and vivianite represented itself as very much oxidized to black color kertchenite. The best and very much wished to find was a small cavity with radial crystals sprays of vivianite in two open halves of clam fossil. A little bit worse was crystals on «beans»: meaning loose iron ore. These specimens were falling apart easily, but even that was very a rarity to wait for.

In the autumn of 2012 I got several specimens of vivianite and a short message about the find from a R. Husnutdinov, geologist of Svetlinskoye gold ore deposit in Chelyabinsk region (South Urals). These specimens were bright green and bluish radial spray aggregate of vivianite crystals on milky quartz. This information was mentioned in our the book (Kolisnichenko *et al.*, 2014). We need to mention that for southern Urals, this mineral is not common at all, and before it was found only in thin soil like film on Baikalskiy Iron ore deposit.

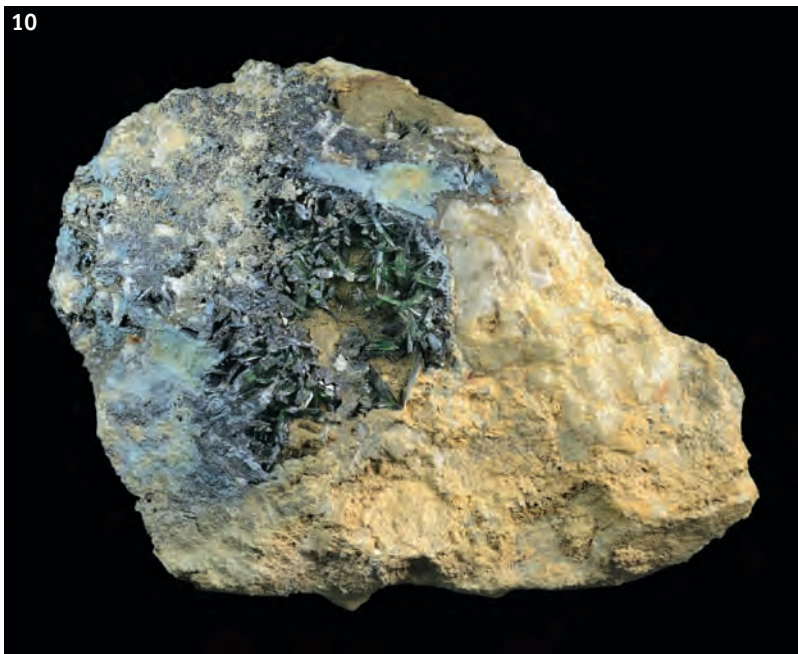
In the summer 2013 again we got the information of vivianite finding at Svetlinskoye deposit. We got an invitation at visit this quarry for studies which was gladly and enthusiastically accepted by us. Myself and K. Zakharov emergently left Verkhnyaya Sanarka. It is only 17 km away.



1. **Vivianite**, crystals up to 8 cm.
Svetlinskoye deposit, southern Urals, Russia.
Private collection.
Photo: S.V. Kolisnichenko.



9. **Vivianite** crystals (up to 3 cm) of two generations. Private collection. Svetlinskoye deposit, Southern Urals, Russia. Photo: S.V. Kolisnichenko.



10. Crystals of **vivianite** in the ore. 27 x 22 cm. Svetlinskoye deposit, Southern Urals, Russia. Museum of Natural History of Ilmeny State Natural Reserve, # 17379. Photo: M.B. Leybov.

vivianite concentration were quartz veins about 1 meter thick. Quartz veins are represented of a total breccia where the yellowish brownish aggregates of siderite is the cementing material. As a thin crystal crust it penetrates in all cracks of the walls of hollows of breccia and broken milky quartz creating special encrustation of cavities.

Vivianite in some spots fill cavities and cracks completely.

Vivianite is growing with dense radial sprays crystal aggregates, single crystals, druses, dense microcrystalline aggregates. At the same time the size of some crystals reaches 8 by 2.5 by 1 cm.

Crystals have lustreous faces, bright («bottle») green color and completely transparent.

Very often vivianite has oxidation marks which is expressed in the change of color from green to blue and sometimes black. Such crystals and aggregates usually occurred in the cracksystems where intense water flow occurred.

Specimens of vivianite on milky quartz and encrustation of siderite represent unforgettable esthetic visual impact. The fact that vivianite particularly concentrated not in the clay mass of bark weathering but in the secondary holows inbetween milky quartz gives a special Ural signature.

The typical specimens of vivianite were delivered to Museum of Natural History of Ilmen Governmental Natural Reserve (in the city of Miass,) central Siberian geological Museum IGiM SO Russian Academy of Sciences (Novosibirsk), Ural Geological Museum of Ural Mining Akademie (Ekaterinburg), Mineralogical Museum RAN im. A.E. Fersman (Moscow), Mineralogical Museum MGRI (Moscow).

References

Kolisnichenko S.V., Popov V.A., Epantsintsev C.G., Kusnetsov A.M. (2014) All Minerals in southern Urals, Chelyabinsk: Sanarka, 624 pages.

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