

Andalusite, Sillimanite (Fibrolite), Cyanite and Corundum  
From Quartz Veins of the South Urals

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According to the geologist B. M. Pobedonostsev, fine crystals of andalusite are to be found in quartz veins embedded in quartz-micaceous schists, which occur near Mikhaylovka a village in Kochkarsk Rayon of the South Urals. According to the information of the geologist P. G. Sharmanov, south of the village Mikhaylovka (10 to 15 kilometers) in the quartz veins of the Svetlinsk mines one encounters a great quantity of crude crystals of andalusite and fibrous aggregates of sillimanite. In studies of P. G. Sharmanov's collections and in field observations geologists have found corundum together with andalusite and sillimanite, but cyanite was observed in the outcroppings of one of the veins. Now, quartz veins with pockets containing crystals of smoky rock crystals, which (veins) are embedded in the exo-contact zone of the Kochkarsk granite massive among quartz-micaceous schists can be considered as veins of the Alpine type rich in aluminum, unusual <sup>in</sup> with respect to the paragenesis of minerals.

The quartz veins of the Svetlinsk deposit possess a lenticular form frequently rather complex. The strike of the veins is meridional and conformable with the schistosity of the enclosing rocks; the dip is opposite to the quartz-micaceous schists. The angle of intersection of the veins and rocks varies between the limits 60° to 85°. The walls of the veins are rather irregular; acute-angled boundaries of rock are often observed in the form of inclusions in the vein quartz. The length of the quartz according to strike and dip varies within wide limits. Judging from the form and conditions of the beds where the veins occur they are full of fissures.

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