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Features of Geology of Kodatski Rapids Location

Coordinates of center of Kodatski (Kadatski, Kaydatski, Kodatski) is 48°23'12"N 35°8'51"E. On the right bank of the Dnieper near the rapids borders Starokodaski granite quarry is located, and Lyubimovski granite quarry is located on the left bank. Downstream from submerged rapids a rock is seen on the right bank, and a system of partially submerged gorges is located on the left bank. The system is situated perpendicularly to the Dnieper.

The rapids area corresponds to selvedges of local abnormalities of gravity of linear form of high and medium intensity (up to 2 – 3 mgl) following by magnetic response of honeycombed structure which intensity is up to 1.0 – 2.0 thousand nTl. The rapids area is limited to zones of faults documented on linear structures of gravity field (with 1.0 mgl intensity) and magnetic one (with up to 500 nTl intensity), and with course of lineations within 0° and 347° azimuths.

Granitoids of Dnepropetrovsk complex (Ar₁dn) of Palaeoarchean period formed 3.2 to 3.4bln years ago are seen in erosions at the rapids. The three rock types are shown megascopically on composition, and structural and textural features among them.

Biotitic granites mainly with massive and equigranular texture belong to the first type.

Biotite-corniferous granitoids with gneissoid, laminated structure and unequigranular structure belong to the second type. Among them xenoliths of amphibolites in which biotite practically replace amphibole are sometimes found. Except that crystals of biotite are oriented subparallelly along the rapids direction.

Both in the first and the second rock types microclinization zones are developed. They are formed subparallelly oriented along the rapids direction veins of microcline composition mainly.

Deeply modified and mouldy granitoids with numerous dispersive runs forming orthographic superimposed zones of microclinization, silicification and epidotization belong to the third group. When areas of epidotization coalesce and occupy considerable volume the rock may be classified as epidosite.