

## **New data on the age of rock of the dolerite complex in the Central Pay-Khoy (Russia, Nenets autonomous district)**

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The age of magmatites hengur complex in Pay-Khoy was previously determined by structural relationships of rocks and K-Ar isotopic dating. As a result, previous researchers have received age-dating of  $455 \pm 25 - 249 \pm 11$  Ma, 362 - 200 Ma - for undifferentiated bodies and  $294 \pm 12 - 268 \pm 24$  Ma - for a differentiated body, and by the method of comparative dispersion of birefringence of clinopyroxene were obtained numbers: 344, 363, 387,  $434 \pm 15$  Ma.

Considerable variation of datings obtained using K-Ar method (Yushkin et al, 1972), are explained by metamorphic redistribution of argon, as the geological data contradict the polychronal basaltic magmatism which is considered to take place here. The better agreement is with the conclusions of a single manifestation of it during the Hercynian orogeny.

Nevertheless all researchers assumed heterochrony (polychronal) hengur complex with a probability of its units on the uneven phase, which has repeatedly been put forward in published papers. Namely B.A Ostaschenko (1979) obtained for the gabbro-dolerite Pay-Khoy isotope potassium-argon dating in the range 314-294 Ma, which is quite consistent with his proposed hypothesis of magmatic pulses. In the PhD thesis of O.V. Zaborin (Zaborin, 1975) have been mentioned that, according to paleomagnetic studies (on the conclusion of A.G. Komarov) hengur complex has an estimated age of pre-devonian ("at least the Silurian").

Based on the above interval introduction intrusions hengur complex covers the interval from the Upper Ordovician to Lower Triassic.

According to the latest schemes the age of gabbro-dolerite hengur complex is considered Late Devonian-Early Carboniferous (State..., 2000).

Our dating of zircons from the gabbro-dolerite hengur complex (U/Pb method, SHRIMP-II), localized in the Paleozoic sediments, is in agreement with the earlier data, as well as with the geological structure of the district. This significantly refining age, and is equal to  $369.8 \pm 2.27$  million years, belonging to the range of the Late Devonian.

Later, the dating of zircons obtained by U/Pb method (Shishkin et al, 2009) for differentiated and undifferentiated bodies, which are localized in the sediments of the Lower-Middle Ordovician occurrences for the "First", were obtained in the range of  $374.6 \pm 2.0$  Ma and  $381.4 \pm 2.0$  Ma (previous data from the potassium-argon method for this object, differed by 80 million years), in the range of the Late Devonian Frasnian stage. According to this the author concluded that "the moment of introducing sills is well correlated with the age of the outpouring of olivine basalts on Novaya Zemlya (reyskaya formation of the lower Frasnian) and the Upper gabbro-dolerite kostinsharskim complex of Novaya Zemlya and the epoch of kimberlite magmatism of Winter Beach. "

These numbers are in good agreement with each other, both by U-Pb isotopic dating and based on geological data, and probably are slightly rejuvenated as a result of metamorphic processes. The age can be assumed with high probability, Upper Devonian.

These data are unique confirming and complementing many of the known facts related to the magmatism and the time of the introduction of intrusive bodies in the Late Ordovician sediments in the Central Pay-Khoy.

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