

Main features of the structure and age of the crystalline basement of the Fore Range of the Northern Caucasus

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Somin M. IPE RASA feature of the structure of the Fore Range of the Greater Caucasus is its nappe structure. The rocks of the crystalline basement are overlapped here with a pack of thrust sheets, including island-arc complexes (Urup nappe), ophiolites (Maruha nappe), granofels (Atsgara nappe). In the upper part of the section there are the Early Carboniferous molasses.

The crystalline basement of the Fore Range zone is represented by several different-sized salients, the largest of which is the Blyb salient. A Precambrian basement and a middle Paleozoic Armov cover overlapping it are distinguished within the Blyb salient. The basement is composed of the Balkan essentially mafic formation and the Balkan massif of quartz metadiorites. Three U-Pb ages (SHRIMP II) of magmatic zircons from rocks of the Balkan massif gave ages of 574.1 ± 6.7 , 567.9 ± 6.9 , 549 ± 7.4 Ma, (10 zircon grains in the probe) that corresponds to the Late Vendian.

The Armov nappe has a middle Paleozoic age of the protolith and is composed of garnet-mica schist and kyanite gneiss. Within the nappe, there are also large bodies of hyperbasite and sheets of amphibolized eclogite. Thus, for the paragneisses of the Big Blyb stream, an age of 374 ± 2 Ma (LA-ICP-MS, 25 grains) was obtained.

Near the boundary between the basement and the Armov nappe, in the northern part, a thick packet (more than 50 meters) of blastomylonites is present. The orientation of planar structures in the underlying and overlapping rocks are different, which is confirmed by the anisotropy of the magnetic susceptibility. Only near the Markopidzh peak is the orientation of the textures in the underlying and overlapping rocks close.

The theory of a dome structure for the central part of the Blyb salient, put forward by A.A. Samokhin (1957), is not confirmed by field data. Planar structures of the Armovka rocks dip mainly to NNE with angles of 20-50° both in the western and the eastern parts of the district.

Based on geochronological studies, we also identified a Hercynian magmatic event within the Fore Range zone basement. The age of granitoids of the nameless intrusion located in the southern part of the complex is Early Carboniferous (319 ± 3.8 Ma).

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