

PROTEROZOIC METAMORPHIC EVOLUTION IN THE WESTERN PART OF THE EAST EUROPEAN CRATON

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Palaeoproterozoic terranes with different pressure-temperature evolutions compose the western part of the East European Craton. In the southeasternmost Central Belarus terrane, 2.0-Ga volcanics that were buried to 30 km reached a peak of ca. 7400 C simultaneously with emplacement of 1.90-Ga tonalite-trondjemite melts at a subductional stage. Retrograde reworking lasted until 1.7-1.67 Ga. To the west, the Belarus-Baltic Granulite Belt has undergone a subductional/collisional metamorphism. The peak of 750-8000C at 7-8 kb triggered by the postcollisional 1.8 Ga bimodal magmatism followed amphibolite-facies metamorphism. A retrograde stage ceased at 1.72 Ga. Neighboring rocks of the East Lithuanian Domain underwent similar (8 kbar) pressure but amphibolite facies metamorphism. To the west, conditions were 500-580o C at 3-4 kbar but pressures elevated to ca. 6 kbar at the Domain western boundary. Temperature increases up to 700o C in the close vicinity to the anorogenic, ca. 1.5 Ga intrusions in the south. Metapelites of the westernmost West Lithuanian Granulite Domain were hidden to ca. 35 km by subduction driving forces and attained a peak of 850-900o C at 8-10 kbar ca. 1.8 Ga ago. Partial melting, tectonic uplifts and multiple magmatic emplacements accompanied the metamorphism up to ca. 1.5 Ga. Metamorphic evolutions and structural fabrics are similar in the three eastern terranes but differs in the westernmost one. That implies subsequent, westwards younging accretion of the three terranes onto edge of Sarmatia and accretion of the West Lithuanian Domain onto the pre-existing Fennoscandia .