

THE METAMORPHIC ASPECT OF THE EARLY PRECAMBRIAN HISTORY OF THE URALIAN SEGMENT OF THE EARTH'S CRUST

A.M. PYSTIN, J.I. PYSTINA, V.L. PEASE, Institute Of Geology, Syktyvkar, Russia; Uppsala University, Sweden.

In the Urals, early Precambrian assemblages are distinguished from the younger Riphean and Palaeozoic rocks by a non-uralian orientation. The metamorphic aspect of the Early Precambrian history of the Uralian segment of the Earth's crust and isotope dates. An indirect evidence of their older age is the multiple metamorphic episodes that have left their traces in the rocks (polymetamorphism). U-Pb and Pb-Pb dates that we have obtained for zircon microsamples and data from previous researches suggest several stages in the metamorphic history of the rocks. The earliest metamorphic event has been recognized in the Taratash complex in the South Urals. Metamorphism of the granulitic facies took place about 2.6 bln years ago. The metamorphic stage to follow (2.3-2.1 bln years ago) also reached the grade of the granulitic facies. It is observed in the Alexandrov and Ilmenogor complexes in the South Urals, Saldin complex in the Middle Urals, Nyartyn complex in the Subpolar Urals, and Kharbey complex in the Polar Urals. Dates ranging 2.0-1.6 bln years ago are attributed to the amphibolite facies metamorphism and granitization. They have been obtained for many polymetamorphic complexes in the Urals. Later history of Precambrian metamorphism involved repeated activation of endogenic processes in the late Precambrian and Palaeozoic. It resulted in diaphthoresis which was of essentially local significance. Thus, formation and stabilization of the lower structural stage of the Uralian segment of the lithosphere was completed about 1.6 bln years ago, synchronous with the full cratonization of the East-European and Siberian platforms.