

Traces of explosive volcanic eruptions in the Upper Ordovician of the Siberian Platform

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Abstract

© 2014, Estonian Academy Publishers. All rights reserved. Ordovician K-bentonite beds have a long history of investigation all around the world. They have been reported from Gondwana, the Argentine Precordillera, the Yangtze Platform, Laurentia, Baltica, and numerous terrains between Gondwana and Baltica, which now constitute a part of Europe. In recent years several K-bentonite beds have also been discovered in the Upper Ordovician of the Siberian Platform. This discovery is significant not only for their value in local and regional chronostratigraphic correlation but also for global geochronology, paleogeography, paleotectonic and paleoclimatic reconstructions. All in all, eight individual K-bentonite beds have been identified in the Baksian, Dolborian and Burian regional stages, which correspond roughly to the Upper Sandbian–Katian Global Stages. Zircon crystals from the uppermost K-bentonite bed within the Baksian regional stage provide a $^{206}\text{Pb}/^{238}\text{U}$ age of 450.58 ± 0.27 Ma. We will present preliminary results of the study of the three lowermost beds from the Baksian Regional Stage and suggest that the Taconic–Enisej (also spelled Yenisei or Yenisey) volcanic arc was continuous along the western margin of Siberia.

<http://dx.doi.org/10.3176/earth.2014.26>

Keywords

K-Bentonites, Paleogeography, Siberia, Upper Ordovician, Volcanism