

VOLCANIC ASSOCIATIONS OF THE TAGUIL PALEOZONE OF SUBDUCTION

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Volcanic associations of the Taguil paleozone of subduction NARKISOVA, V.V., NOSOVA, A.A. Scientific-Industrial Center for Superdeep Drilling and Comprehensive Studies of the Earth's Interior Nedra, Yaroslavl, Russia. The Ural Superdeep Well penetrated a structure of the Taguil paleoarc (O3-S1) to a depth of 5.4 km. Geochemically volcanic associations of the paleoarc are of a calc-alkaline island arc character (Ti, Zr and others are deficit) with increase of REE fractionation degree from the early Kabanian complex (Ce/Yb=7-10; Total REE=43-54 ppm; positive Eu anomaly) to the late Imennovian complex (Ce/Yb=11-17; Total REE=50-70 ppm) at corresponding K/Rb decrease from 600-1000 to 200-500. Between the Kabanian and Imennovian volcanites there are Pavdian volcanites which are close to high-magnesium andesite-basalt boninite associations. A specific feature of Pavdian volcanites is their lower grade of REE fractionation (Ce/Yb=6-9; Total REE=31-43 ppm; negative Eu anomaly) and a higher Sm/Nd ratio (0.3-0.5) compared with the one of the volcanites from the Kabanian and Imennovian associations (0.2-0.3). It can be connected with a depth of a source of magma generation. Occurrence of riftic volcanism took place in an early stage of development of the island arc (split of the Kabanian protoarc) and in its late stage. A riftic part of the Kabanian volcanites is a transitional one to tholeiite ferrobasalts (TiO₂ 1%, K₂O 0.5%) typical for the least uncovered part of the rift. The Imennovian ferroandesite testifies of the split of a mature island arc: at REE rise (70-90 ppm) their fractionation is lower (Ce/Yb=11-13). Volcanic evolution of the Taguil paleozone of subduction took place during a complex change of regimes of total compression and local extension. The island arc matured alongside with its destruction in intra-arc rifts.