

DURATION OF THE PALEOZOIC MAGMATISM IN THE NORTHEASTERN BALTIC SHIELD (RB-SR AND U-PB ISOTOPIC DATA)

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Northeastern Baltic Shield includes more than forty alkaline massifs, the largest of which are Khibiny and Kovdor. The Khibiny ijolite yielded a Rb-Sr age of 371 ± 6 Ma and U-Pb baddeleyite age of 382 ± 3 Ma. These ages coincide with the data of Kramm (360-380 Ma (Kramm et al., 1993)). Ultrabasic and alkaline syenites from the Kurga massif have been analysed by Rb-Sr and U-Pb methods. The Rb-Sr isochron (WR and minerals) gives an age of 404 ± 8 Ma; a concordant U-Pb age of zircons is 387 ± 7 Ma (Arzamastsev et al., 1997). The Seblyavr alkaline ultrabasic massif with carbonatites has been also studied by Rb-Sr and U-Pb methods. The Rb-Sr isochron (WR and minerals) yields an age of 406 ± 6 Ma; a concordant U-Pb age of baddeleyite is 378 ± 4 Ma. U-Pb zircon and baddeleyite ages of the alkaline massifs are slightly younger than the Rb-Sr mineral and WR ages. This age difference can be explained by a suggestion that zircon and baddeleyite were formed at a post-magmatic stage of the alkaline massif formation.

Thus, Rb-Sr (WR and minerals) and U-Pb (baddeleyite and zircon) isotopic data shows that the duration of the Paleozoic magmatism in the northeastern Baltic Shield is more than 40 Ma.