

ON FORMATION OF GOLD, PLATINUM AND DIAMOND PLACERS DURING QUATERNARY IN BALTIC SHIELD

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Small placers of gold and platinum are known since the end of XIX century in Finland and Norway (Nurmi, 1991; Often, 1995). The non-significant gold placers were known in lower reaches of Ponoj, Paz and Kola Rivers in Kola Peninsula, Russia (Fersman, 1945). The signs of diamonds were found in alluvium of Paz River and in beach sands of Tersky Coast of White Sea. For accumulation of placer Au, PGE and diamonds in Baltic Shield and for their conservation under numerous exarations the combination of a number of placer-forming factors is necessary. They are formational, paleogeographic and tectonic. The analysis of these factors was applied to Kola Peninsula. The placer-forming formations in region are: for Au - gold-quartz, gold-sulfide-quartz; for PGE - low-sulfide Pt-Pd in gabbro-norites, Ir-Ru-Pt in dunites and chromites; for diamonds - kimberlitic. The level of erosion is of 300-500 m. Neogene weathering crusts were the potential intermediate collectors for placers of different morphogenic type. The highest concentrations of Au are confined to bedrock facies of Late Pleistocene alluvium terraces; of Pt, Ir - to eluvial and slope Late Oligocene - Early Pleistocene deposits; of diamonds - to sand-and-gravel glacial-marine facies of buried paleovalleys in White and Barentz Seas. The majority of established placer-controlling morphostructures is located in SE part of Kola Peninsula. Most important of them are the Varzuga lowland with beach-related zircon-ilmenite placers, the Purnach highland with alluvial gold placers, the potentially diamondiferous Pyalitzha-Pulonga depression with adjacent White Sea shelf. The location of these morphostructures is the result of SE orientation of main geological units of Kola Peninsula, which has determined the exarative-and-accumulative activity of Scandinavian glaciers.