

Late Hercynian-Early Cimmerian ore-bearing magmatism of the Central sector of Russian Arctic

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In the northern Siberian plate of the Russian Arctic, Late Paleozoic-Early Mesozoic magmatism (granitoids and flood basalts) was widespread in Taimyr. Late Paleozoic diorite-granodiorite massifs (I-type) and stocks of mildly alkaline granites (A-type) associated with Cu and Mo, document consolidation of the Kara block at 340-256 Ma. Late Paleozoic Early Triassic flood gabbrodolerite dike swarms (249-251 Ma), Middle-Late Triassic (Early Cimmerian) ring shaped gabbro-monzonite-granosyenite and minor intrusions of latite series (231-244 Ma), and camptonite-monchikite lamprophyres, indicate intrusion into a rigid crustal block.

In the Byrranga mountains, Early Cimmerian folding is characterized by Late Permian-Early Triassic (pre-orogenic) flood basalt magmatism related to the Siberian Superplume. In Middle-Late Triassic formation of syn- and post-orogenic lavas, massifs and dikes of schriesheimite-plagioclite-ferrogabbrodolerite-monzonites (240-245 Ma), trachyandesite-trachytes (236-245 Ma), monzodiorite-granosyenites (231-244 Ma), bostonites, lamproites, nepheline syenites, diamond-bearing alnöites (226-229 Ma) and fluid-explosive injective crustal carbonatites (219-238 Ma) was typical. This stage is connected with formation of the Fadyukuda-Kotuy "Taimyr Hot spot".

This diverse intraplate magmatism accompanies heterogeneous mineralization: titanomagnetite, sulfide-Cu-Ni, fluorite-barite-REE, Ag-Pb-Zn, Au-bearing Cu-Mo-porphyric, Au-Sb-Hg-As. Early Cimmerian occurrences of potentially diamondiferous rocks are also likely.