

Conditions of formation of the kharbey complex metamorphic rock (The Polar Urals)

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The kharbey metamorphic complex is located in the southern Sobsky rise part in the Polar Urals. The complex age is considered to be early proterozoic on available dating and the highly metamorphosed rocks composing it – amphibolites, schists and plagiogneiss. The purpose of this paper is to reconstruct geodynamic conditions of rocks protoliths formation of the kharbey complex.

We have previously studied in detail amphibolites and amphibole schists, resulting in their formation from basalts and andesite-basalts of the marginal (backarc) sea was set. In this paper we'll take a look more closely at various plagiogneiss.

Plagiogneiss are interbedded in accordance with massive amphibolites, have clear contacts with them, gneissoid texture and lepidonematogranoblastic structure. Amphibole-biotite-epidote, amphibole-clinzoisite-muscovite, garnetiferous two-mica, chlorite-muscovite plagiogneiss intersperse with schistose amphibolites in the central and north-western complex parts.

The plagiogneiss composition points have been located in the area of thin clay and clay graywackes and subgraywackes. Several points of the compositions have come to a syenites field possibly due to Predovsky rocks granitization.

The composition points of the studied rocks have been located in fields or near fields of the continental festoon islands and dynamic continental margin on M.R. Bhatia graphs.

Thus, we can conclude that plagiogneiss protoliths of the kharbey complex were immature siltstone-aleurolite rocks of mainly greywacke composition formed in geodynamic conditions of the dynamic continental margin, in particular the marginal sea, a demolition source of which were both continental slope volcanites and, perhaps, the island arcs formation.

The work was supported by the Basic Research Program of RAS № 12-И-5-2022.

[1] Ulyasheva N.S. The kharbey complex metabasites (The Polar Urals) / Ex. ed. A.M. Pystin. Syktyvkar, 2012. 98 p.