

First occurrence of rodingite in Central Serbia

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During the field geological mapping and accompanied laboratory studies of the samples for the Basic Geological Map in the wider area of the town of Valjevo (Central Serbia) were distinguished serpentinites, gabbros, peridotites, andesites, diabases and amphibolites. In addition, at one locality within the area (i.e. the village of Danilović, site Suva česma), there was detected one unusual rock in the contact with serpentinite, which is in this paper further determined by the optical microscopic, XRPD and chemical methods, as rodingite.

Rodingite is characterized with a massive structure and granoblastic texture. It has mostly white color, with unevenly distributed concentrations of a green mineral.

Rodingite dominantly consists (over 80 %) of macroscopically white, microscopically transparent, and slightly anisotropic grossular, close to the end member with Grs98Adr2 composition. Grossular appears in a coarse-grain granular form, with size from 0.5 to 1.5 mm.

Green Mg-Al-Fe chlorite occupies interstitials between the grossular grains. This chlorite was most probably formed as secondary phase replacing pyroxene, which is preserved as relic pseudomorphic forms with size up to about 0.5 mm.

Up to now, there were not registered the appearances of such kind of rocks on the territory of Serbia. Nearest sites of rodingites have been previously registered in Bosnia and Herzegovina (11 localities from Brnača at NW to Rijeka at SE; belonging to the Outer Ophiolite Zone), and in FYR Macedonia (1 locality-Raduša; which belongs to the Inner Ophiolite Zone).

According to this classification, discovered rodingite in the area of Valjevo also belongs to the Inner Ophiolite Zone. It occurs in contact with gabbro and peridotite rocks, and most probably originated from veined gabbro by subsequently metasomatic processes.

Unraveling the time of formation of potassic-alkaline rocks in the Variscan edifice in Stara planina, Bulgaria: ID – TIMS and LA – ICP-MS study

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Vaiscan magmatism is ubiquitous in Western and Central Stara planina, Bulgaria. Its composition is calc-alkaline and essentially acid, as granitoids predominate. Occasionally but with outstanding position, in the Variscan orogenic edifice in the Stara planina, are the rocks of the potassic-alkaline association. From west to east three alkaline plutons crop out: Svidnya, Buhovo–Seslavitzi and Shipka. The plutons intrude Ordovician, Silurian and Devonian low-grade metasediments. The plutonic rocks comprise potassic monzonites and syenites, evolving toward peralkaline acid species (quartsyenite and granite). Based on the isotope and trace elements composition, an enriched source was supposed for the magmas. Their geodynamic position is assumed as postcollisional.

In order to establish the time of formation of the rocks from mentioned plutons ID – TIMS and LA – ICP-MS comprehensive study on zircons were performed.

ID – TIMS analyses for plutonic rocks (syenite) from Buhovo-Seslavitzi display clustering around 340 - 325 Ma, and no reliable isochrone can be defined. LA – ICP-MS analyses yield similar results: 350 – 325 Ma. For the peralkaline dykes from Buhovo-Seslavitzi ID – TIMS age determinations cluster in two time intervals: 318 – 312 Ma and 460 – 435 Ma, with a substantial discordance. LA – ICP-MS results for the dyke rocks are mainly in the interval 470 – 430 Ma, as one analysis gives 310 – 303 Ma. Intrusive rocks from