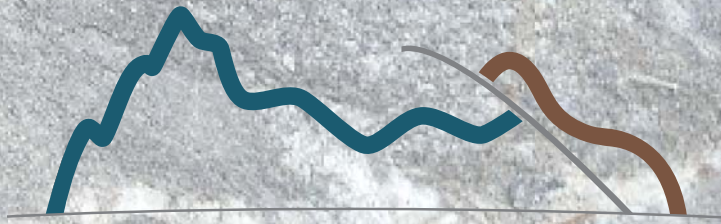


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13<sup>th</sup>  
**Workshop  
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September 7<sup>th</sup>-18<sup>th</sup> 2017  
Zlatibor Mts. (Serbia)

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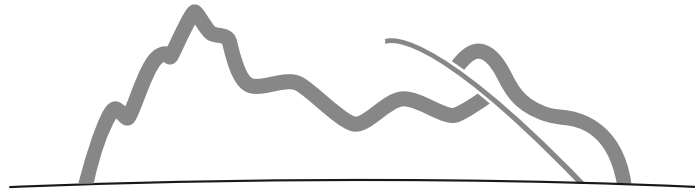


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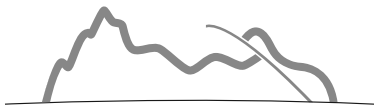
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## Ophiolite complex of Demir Kapija-Gevgelija

Blažo Boev<sup>\*</sup>, Ivan Boev

Faculty of Natural and Technical Sciences, Goce Delčev University Štip, Republic of Macedonia; <sup>\*</sup> blazo.boev@ugd.edu.mk

Ophiolite complex of Demir Kapija-Gevgelija is the largest block of the Vardar oceanic lithosphere preserved and situated in the central subzone of the Vardar zone. The complex has a NW-SE strike dipping towards northwest. In the territory of the Republic of Macedonia, it is 50 km long and 25 km wide. The complex extends further south in the territory of neighbouring Greece where it is known as Gevgelli series. The northwest position of the complex situated in Macedonia is covered by Upper Eocene – Pliocene layers of the Tikvesh valley. Towards southeast it is covered, in part, by Pliocene – Quaternary layers extending further south to the territory of Northern Greece. Investigations carried out so far on the geology, tectonics and lithostratigraphy of the ophiolite complex determined the following geologic structure: a formation of gabbros and accompanying plutons; a vein complex; a formation of massive basalts; a formation of spilitized pillow basalts; a spilite – keratophyre level; a basalt chert formation; a flysch formation and carbonate formation of Upper Tithonian age.

The gabbroic formation is composed predominantly of fine-grained and medium-grained clinopyroxene gabbros, rarely of olivine gabbros, pyroxene gabbros with olivine, troctolites and amphibole gabbros and quite rare are serpentinized dunites and hornblende peridotites as well as dykes of basalts, gabbropegmatites, aplites, granite – porphyry and quartzdiorites. The presence of various types of intrusive and vein type rocks are a result of magmatic differentiation and the processes of amphibolitization.

Ultrabasics are present as tectonically forced masses along fault structures or occur along with troctolites. They are present as serpentinized dunites, amphibolized peridotites as well as websterites. They are made up of hornblende, serpentine, actinolite, olivine and accessory magnetite.

A vein complex occurs in the contact parts of the gabbroic formation and the formation of massive basalts as a well developed 200 to 300 (maximum 500) meters zone made up of basalt – dolerite dykes and segmented gabbro masses. The mineralogical composition is similar to the massive basalt and gabbroic mass.

Massive basalts are found in the central and eastern portions of the ophiolite complex. They are present as fine-grained ophiolite and intersertal composition with occasional occurrences of entire recrystallization of the glass groundmass. They are altered rocks in which feldspars are heavily albitized. Basic plagioclases occur as relic (labradorite – bytownite). Femic minerals are augite, hornblende, secondary chlorite, epidote, magnetite, and apatite.

Spilite – keratophyre level occurs in the top most portions of the formation of basaltic pillow lavas. It is present as a concentration of dykes and outpourings of keratophyre masses, quartzkeratophyres, rhyolites and seldom andesites which form keratophyre level together with spilitized basalts. These acid differentiates occur as pink to red, grey – green to grey – white rocks with micro porphyritic to porphyritic structure composed of altered feldspathic masses with relics of plagioclase (oligoclase – albite), K – feldspar, also chlorite, quartz, epidote, seldom crystals of hornblende, chloritized biotite and calcite.

The upper parts of the ophiolitic complex are composed of chert formations, flysch formations covered by the massive Upper Tithonian reef limestones.