

ORIGIN OF THE VARIEGATED FORMATIONS FROM THE AVREN SYNFORM, EAST RHODOPES (THRACIAN MICROPLATE), BULGARIA

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The Variegated Formations from the Av-ren synform are built up by alternating sediments and igneous rocks with high temperature amphibolite overprint. Numerous ophiolite bodies of different composition with high pressure overprint are associated with them. Flysch character is typical for the sedimentary rocks - terrigenous sediments alternate with pelites and carbonates. Mafic rocks - orthoamphibolites with transitions to metagabbros are the most abundant igneous components of the Formations. Often the orthoamphibolites intersect the ophiolite. The mafic magmatism has multistage character. The metama-fics are built up by hornblende, clinozoisite-epidote, plagioclase, quartz, chlorite, garnet. On the discrimination diagrams involving TiO_2 , Zr, CaO/TiO_2 , Al_2O_3/TiO_2 and the Mg# the investigated rocks fall within the fields of the boninites and arc tholeiites. The flysch character and presence of carbonate rocks in the sedimentary section, as well as the boninitic and arc tholeiitic affinities of the igneous rocks, indicate that the Formations were generated in an immature island-arc setting. The establishment of the ophiolite - island-arc assemblage in the East Rhodope is significant for clarifying the structure of the Thracian entity. This concept could be useful for elucidating the evolution of the rest of the microplates built up by high grade metamorphics - Kazdag, Menderes, Bitlis, etc., distributed together with the Thracian one to the Northwest of the Arabian plate.