Further to N, in the basement of the Pannonian Basin this pattern is completely changed due to intervening of the large Tisia Megaterrane. Small displaced Neotethyan remnants can be followed from the NW Dinarides (Medvednica, Kalnik Mts. in NW Croatia) through the Mid-Hungarian Zone up to the Bükk-Darnó area in NE Hungary and Jaklovce Subunit of Meliaticum in SE Slovakia (Zagorje-Bükk-Gemer Composite Terrane). Another branch of these remnants can be followed E of the Tisia Megaterrane to the Transylvanides of Romania.

On the other hand, the northern part (Mecsek Zone) of the Tisia Megaterrane was formed on the Variscan Moldanubian Zone, whereas its southern part on more southern Variscan crystalline—granitoid complexes comparable with those of the Eastern Alps and West Carpathians (Mediteranean Crystalline Zone). It was part of Europe until early Middle Jurassic and became separated from there in the Bathonian due to the beginning of Penninic rifting.

The present terrane pattern of the Pannonian basement was then formed later due to late Mesozoic and early Tertiary rotational and strike slip movements. As a result of them, units/terranes of opposite origin became juxtaposed in the central part of the Pannonian basement, thus this area can be considered as a school example of exotic teranes. On the other hand, small Neotethyan remnants (Meliatic, Transylvanide), which became separated from the main Neotethyan trunk already in the Late Jurassic to Early Cretaceous times and became involved in Middle to Late Cretaceous nappe stackings of the Carpathians, represent typical disrupted terranes.

Metaophiolite association in the Rhodope Massif as a stratigraphical and structural marker

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The paper is a brief survey of the geological setting and metamorphism of the Metaophiolite Association within the metamorphic basement of the Rhodope Massif on Bulgarian territory. It emphasizes the stable stratigraphic level of metaophiolites in the lower layers of the Variegated Formation of the Rhodopian Supergroup. Usually, they crop out in deep tight synclinal folds between anticlinal structures. On the basis of new geological arguments and lithological analysis that take into consideration the syn-metamorphic deformation and metamorphic changes, an attempt is made to reconstruct the primary lithostratigraphy of the metamorphic complex. In addition, some corrections of the current stratigraphic column and geological map of the Rhodope Massif are also made. The view that fold structures dominate instead of thrusts is affirmed. Geological relationships assume that the most likely way for the integration of serpentinites into the Variegated Formation of the Rhodopian Supergroup was obduction of fragments of serpentinized oceanic crust onto an ancient continent consisting of gneisses of the Prarhodopian Supergroup. The ophiolites have undergone various metamorphic changes: hydrothermal ocean and regional metamorphism in the amphibolite facies, culminating in migmatization. It is suggested that eclogitization occurred in local shear zones within the crust, and not along thrust surfaces or within subduction zones to mantle depth. The Metaophiolite Association is an important marker for the stratigraphic correlation of the metamorphic terranes as well as for the structural and metamorphic evolution of the Rhodope massif basement.