



Transition from SSZ to MORB composition in Albanian Ophiolites: Evidence from small ophiolites intermediate between the eastern and the western belt (Albania)

V. Hoeck (1), **F. Koller** (2), K. Onuzi (3), E. Kloetzli-Chowanetz (2) and C. Ionescu (4)

(1) Department of Geography, Geology and Mineralogy, University of Salzburg, Austria (2) Department for Lithosphere Research, University of Vienna, Austria (friedrich.koller@univie.ac.at) (3) Institute of Geological Research, Tirana, Albanien (4) Department of Geology, Babes-Bolyai University Cluj-Napoca, Romania

The Albanian ophiolites are a continuation of the Dinaride ophiolite belt towards the south. Their division in MORB and SSZ-type ophiolites was largely based on the assumption that the western belt is build up mainly of lherzolites, troctolites, clinopyroxene-gabbros and MOR-type basalts, while the eastern ophiolite belt exhibit predominantly harzburgites, norites and clinopyroxene-gabbros, island arc volcanics ranging from basalts to rhyolites. In the last few years, the evidence for a more complex picture in particular in the Southern Albania increased, as harzburgites and SSZ volcanics were proved to occur also in the western belt.

Well-developed extrusive and intrusive sequences associated with mantle tectonites are rare in both belts. A volcanic succession could be proved only for the massifs of Rehove and Voskopolja. Volcanics assigned so far to ultramafics in the other massifs such as Shpati/Kuterman in the west and Shebenik in the east, are most likely part of the underlying mélangé. These two massifs are separated by a sedimentary sequence ranging stratigraphically from the Cretaceous to the Neogene. Within the area of the sediments, two other small ophiolite bodies, the Luniku and the Stravaj respectively, appear as windows. They comprise ultramafics, gabbros, in some parts sheeted dykes as well as massive and pillowed volcanics. Petrological and geochemical investigations on sheeted dykes and lavas revealed a wide range of compositions.

These include MOR and SSZ-type basalts, andesites and a considerable amount of boninites. The variable compositions of the magmas are transitional between the island arc-dominated extrusives in the eastern belt, occurring mainly in Northern Albania, and the MOR, sometimes SSZ-type lavas in Voskopoja and Rehove massifs in Southern Albania.

These new findings indicate an overall magmatic activity, from the west to the east, with an increasing island arc component in the same direction. Petrological but also geophysical evidence support the idea that, at least in Southern Albania, the eastern and the western belt are connected beneath the sediments, and form a continuous single sheet of ophiolite. In an E-W cross section, including Shpati and Shebenik massifs, the ophiolite is composed of these two peridotite massifs which were already exhumed in an oceanic realm. They are connected by the N-S trending small volcanic zone of Luniku and Stravaj. Such relations can be explained by an origin of the whole ophiolite complex in a back-arc basin.