Late Jurassic Clastic Sediments on top of the Luniku Ophiolite Sequence: Southern Albania

Volker Höck[1], Friedrich Koller[2], Johann Hohenegger[3], Antonio Briguglio[3], Corina Ionescu[4] & Kujtim Onuzi[5]

[1] *University of Salzburg, 34 Hellbrunnerstr., A-5020 Salzburg, Austria*
[2] *University of Vienna, 14 Althanstr., A-1090 Vienna, Austria (E-mail: friedrich.koller@univie.ac.at)*
[3] *University of Vienna, 14 Althanstr., A-1090 Vienna, Austria.*
[4] *Babes-Bolyai University Cluj-Napoca, 1 Kogalniceanu Str., RO-400084 Cluj-Napoca, Romania.*
[5] *Instituti i Gjeoshkencave, Universiteti Politeknik i Tiranes, Albania*

In a classical view, the Albanian ophiolites consist of two belts, the eastern one and the western one. The western belt was supposed to consist predominantly of MORB-type ophiolites with lherzolites, troctolites, gabbros and basalts. However, recent investigations have showed that petrography and geochemistry of the western belt is more complex. The Luniku ophiolite is situated between the northern ends of the Kuterman/Shpati (W) and the Shebenik (E) massifs. A Middle Jurassic age of 165–162 Ma can be assumed for the formation of the ophiolites. The Luniku ophiolite complex is build up by isotrope gabbros, a well developed sheeted dike sequence and a volcanic section. The latter consists of massive lava flows and pillow lavas and ranges from basalts to dacites. The more evolved volcanics are concentrated in the upper part of the pillow sequence. The studied volcanics show both MOR- and SSZ-related composition. On the top of the pillow lavas a coarse conglomerate rich in serpentinite clasts is deposited. In turn, it is overlain by microconglomerates. The latter have predominantly ophiolite-derived components in the lower part and carbonate-derived components in the upper part. The lower microconglomeratic layer consists of serpentinite, gabbro and volcanic clasts, embedded in a groundmass of carbonate and detrital ophiolitic material. The upper microconglomeratic layer consists of micritic limestones clasts and a carbonate matrix. Oolithic components are common. Both microconglomerate layers are rich in microfossils, which are in part well preserved. The presence of the index foraminifer *Alveosepta jaccardi* (Schrodt) in both microconglomerates suggests a Late Oxfordian–Early Kimmeridgian age (i.e. ~157 to ~153 Ma). High amounts of detrital chromite grains with an average size below 100 µm occur in both microconglomerate layers. Some of the carbonatic ooliths may also contain cores of chromite. A Cr# ranging from 55 to 80 and Mg# between 40 and 63 in detrital chromites indicate a highly depleted harzburgite/dunite source. By contrast, chromites from the serpentinite pebbles in the ophiolite-derived microconglomerate display a lherzolithic affinity. The Late Oxfordian-Early Kimmeridgian age of the sediments indicates that the reworking of the ophiolites resulting in clasts and matrix of conglomerates/microconglomerates took place in a time span less than 10-15 Ma after the formation of the oceanic crust.

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