

Late Jurassic to Early Cretaceous dasycladales and benthonic foraminifera in the Mirdita Zone (Albania) from the Munella carbonate platform

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In the context of Mediterranean plate tectonics, the Albanides form an integral part of the Dinaride-Albanide-Hellenide orogenic belt, subdivided into the Internal and External Albanides. The internal Albanides are formed by the Mirdita Zone, stretching in northwestern directions into the territory of Serbia-Montenegro. There, two Cretaceous units were established: the Metohija Unit in the east and the Kukes Unit, said to be larger exposed on the Albanian territory. One of these sedimentary cycles comprises the Tithonian to Valanginian interval, the other should start in the Hauterivian. Allochthonous Neocomian limestones of Metohija Unit are the type-locality of the dasycladales *Zujovicella gocanini* (Radoicic) and *Furcoporella vasilijesimici* Radoicic.

Correlations including lithostratigraphic units, micropalaeontological inventory or overall biostratigraphic context between Serbia-Montenegro and Albania are missing. The Mirdita Zone of Albania comprises ophiolites, which derive from the Neotethys (Vardar segment) Ocean, associated with radiolarian cherts and flyschoid chaotic sequences (“ophiolitic mélanges”) incorporated within calpionellid-bearing limestones in the higher parts.

Large areas consist of Early Cretaceous shallow-water limestones (“Munella platform”). These shallow water carbonates were deposited in a mobile tectonic environment of an active convergent regime sealing the Middle to Late Jurassic palaeorelief. Dasycladales and benthic foraminifera are reported from Late Jurassic to Early Cretaceous mass-flows in the area of Kurbneshand from two Early Cretaceous intervals in the Munella Mountains and Mali i Shejtit: Berriasian-Valanginian and Barremian?-Aptian. The Early Cretaceous microfossils were detected in both, clasts and autochthonous platform carbonates. These assemblages, most of them Berriasian-Valanginian in age, dominate in the external peri-reefal settings.

This shallow-water limestones can directly be compared with mass-flows (“ophiolitic mélange”) containing Berriasian-Valanginian carbonate clasts resedimented in front of an accretionary prism in the Subpelagonian Zone of Greece. Comparable associations were furthermore reported from the Mirdita Zone of Serbia-Montenegro, the Early Cretaceous of the Friouli Platform/N-Italy and the Nikšić area of Croatia both should belong to the Adriatic carbonate platform sensu Vlahovic et al. (2005). In addition, comparable Neocomian assemblages of dasycladales

and benthic foraminifera were reported from Kurilovo, Vardar Zone of East Serbia. A diversified assemblage of dasycladales was described from the Late Barremian-Early Aptian of the Vardar Zone of Macedonia.

In conclusion, the installation of Dasycladale-bearing shallow-water platform carbonates in the Mirdita-Zone of Albania occurred on top of an accretionary prism that acted as a tectonically source area (including ophiolites) for the clasts incorporated in the “ophiolitic mélangé”. At the western part of the Munella Mts. Late Berriasian-Valanginian limestones occur as several superimposed slices tectonically covering the ophiolitic mélangé with thrusting, which was considered as post-Valanginian. The superimposed slices of Valanginian platform carbonates are obviously missing at the eastern part of the Munella platform suggesting thrusting from east to west. The duration of the stratigraphic gap (“Mirditian tectonic movements” or “Mirditian orogeny”), which corresponds to the gap termed a “lost sequence”, however, is so far unknown. In the Serbia-Montenegro territory this discontinuity was seen as a consequence of the “main Cimmerian events”. As a preliminary result, the situation in the Mirdita Zone of Albania can generally be compared with the Neocomian “deformational” and “post-deformational” cycles for the Mirdita Zone of Montenegro. In the latter area, however, a new cycle started already in the Hauterivian (after the Tithonian-Valanginian cycle) perhaps earlier than more to the south in the Albanian territory.

The new data from Albania add knowledge about the paleogeographical distribution of these taxa and their biostratigraphic significance. Detailed comparisons between the Mirdita Zone of Serbia-Montenegro and Albania would represent an interesting topic of future investigations.

Vlahovic, I., Tišljarić, J., Velic, I. and Maticević, D., 2005: Evolution of the Adriatic Carbonate Platform: Palaeo-geography, main events and depositional dynamics. *Palaeogeogr., Palaeoclimatol., Palaeoecol.*, **220**: 333–360.