
Pridoli conodont and ostracod biostratigraphy from Hazro, SE Anatolia, Turkey

Friedrich Wilhelm Luppold¹, Carlo Corradini*², Maria G. Corrigan³, and Claudia Dojen⁴

¹Neuwarmbücher Straße 10, D-30916 Isernhagen, Germany (formerly: Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) – Germany

²Dipartimento di Matematica e Geoscienze - Università di Trieste – Italy

³Dipartimento di Matematica e Geoscienze, Università di Trieste – Italy

⁴Kärnten Museum, Klagenfurt am Wörthersee – Austria

Abstract

This contribution is the result of a joint venture by the Research Center Julich and the Bundesanstalt f. Geowissenschaften u. Rohstoffe (BGR) established 2005 and extended with colleagues from Italy and Austria in 2022. Previous results were published by Kranendonck (2004), Luppold (2008), Dojen (2009) and Luppold et al. (2012).

The Hazro area in SE Anatolia, Turkey, is part of the Arabian Plate which adjoined the Tauride Block at the northern border. Both tectonic units strike the Assyrian/Zagros suture. The investigated succession is situated within the Border Fold zone and is part of the Hazro anticline, where Palaeozoic non-metamorphic sequences with a low thermal stage are exposed. The total thickness of the sequence is 700 m thick and includes Palaeozoic to Tertiary sediments.

The investigated Silurian carbonate sequence was deposited in an eroded anticline, which was deposited in a near shore environment at the northern margin of Gondwana. New biostratigraphic investigation enabled a new subdivision of formerly lithostratigraphic units. The lower part of the sequence is characterized by the Silurian Middle Dadas Formation (64 m) with black marl- and siltstones (Kranendonck 2004). The upper part of these sequence shows a biocalcareneitic limestone which grades to dolomitic limestone/claystone succession (12 m). The upper part belongs to the Devonian Upper Dadas Formation (54 m) represented by marl-, silt- and claystones and the Hazro Formation on top.

Beside the key section (Fetlika I) another section has been investigated only few meters away from the first one (Fetlika II). In contrast to Fetlika I, in Fetlika II there are some additional fossiliferous limestones above the biocalcareneitic limestone unit with frequent brachiopod shells which were preliminary determined as Pridoli/Lochkovian in age. The facies reconstruction comprises proximal to distal sequences of a middle to outer shelf (Kranendonck 2004).

The first report on conodonts in this area were made by Fontaine et al. (1980). Beside conodonts, our samples (3 to 11 kg) contains a rich well preserved ostracod-fauna of fine-grained pyrit. The preservation corresponds to the Colour Alteration Index (CAI) of less than 2, indicating a low-grade temperature. Most of the specimens show the white matter.

*Speaker

Twelve conodont species, belonging to 7 genera (*Coryssognathus*, *Oulodus*, *Ozarkodina*, "Ozarkodina", *Panderodus*, *Wurmiella* and *Zieglerodina*) were collected. The association can be referred to the lower-middle Pridoli "Oz." *eosteinhornensis* s.l. interval Zone and Lower *Oul. el. detortus* Zone.

Representatives of family Spatognathodontidae dominates the fauna, whereas conoform elements are very rare. The basal phosphatic quartz layers are of special interest, because the conodont faunas contain more frequent specimens, most of gerontic age as in other layers, so it seemed to be a horizon of assorting mechanism. Other comparable rich conodont faunas appear at the upper part of the section, in limestone layers of a distal environment. In these limestones ramiform elements are very common and of good preservation, because a quiet water environment is assumed.

References

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