

THE PUEZ REGION (DOLOMITES, ITALY) AS A NEW KEY-SECTION OF THE TETHYS REALM: A NEW INTEGRATED FWF PROJECT

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The Mediterranean palaeogeographic domain is characterized by microplates located in the middle of the Tethyan oceanic corridor between the African and European landmasses. The Southern Alps are a Northern Italian chain that emerged during the deformation of the passive continental margin of the Adriatic. Lower Cretaceous deposits form an important element of the Southern Alps and especially of the Dolomites. Surprisingly, one of the most complete, most fossiliferous and best outcropping Lower Cretaceous localities of Europe has not yet been studied sufficiently. We would like to take the opportunity to extract information from this exciting, unique section by using modern integrative methods. The main, starting locality within the herein proposed project is located in huge outcrops located at the southern margin of the Puez Plateau. It is located within the area of the Puez-Geisler Nature park in the northern part of the Dolomites (Trentino – Alto Adige; South Tyrol).

The main investigation topics of the submitted project within the above-described framework are the biostratigraphic, palaeoecological, palaeobiogeographic, lithostratigraphic, cyclostratigraphic and magnetostratigraphic development of the Early Cretaceous of the Puez area. This area is ment to have the potential to become a key section within the Dolomites and has a connecting and intermediate position on the Alpine-Carpathian

microcontinent and furthermore an intercessional position in the European Tethyan Realm. Further topics of investigation are the original position and environmental conditions of the sedimentation area. This raises the question of whether the ammonite levels are autochthonous or allochthonous. The answers we expect are essential to reach geodynamic, palaeoceanographic and palaeobiological conclusions. This further leads to the question of the original water depths during the formation of the sediments. Finally, a new understanding about the habitat and the palaeobiology of Alpine Cretaceous ammonites is expected. As a multitasking project, one aim is to underline a crucial fact in working within Lower Cretaceous sediments worldwide: interdisciplinary collaboration with other scientists is essential. Producing major results with a broad impact requires using tools such as isotopes, magnetostratigraphy, cyclostratigraphy along with specific macrofossil groups like ammonites, belemnites, brachiopods, microfossil groups like radiolarians and foraminiferans, as well as nanofossils. This combination will provide a picture of the Lower Cretaceous sea level changes, allow conclusions to be drawn on palaeoclimate and yield results on the biostratigraphic age coupled with more stable, exact ages resulting from the well-established techniques of magnetostratigraphy. In line with the integrative starting point of the proposed

project, the ultimate aim is to establish a new European key section for Cretaceous workers through the full range of interdisciplinary fields of palaeontology in the heart of Europe.

We will combine investigations on different fossil groups within fields of isotopic, magnetostratigraphic, cyclostratigraphic and

geochemical analysis to extract the Early Cretaceous history of environmental changes as displayed by the sea level and climate; they combined this with calibrating ammonite biostratigraphy and magnetostratigraphy through isotopes.

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