Geophysical Research Abstracts,
Vol. 11, EGU2009-2114, 2009
EGU General Assembly 2009

New data on the FWF project P20018-N10: The Puez key-section in the Dolomites (Southern Alps; N-Italy)

A. Lukeneder (1) and S. Mayrhofer (2)

(1) Geological and Palaeontological Department, Natural History Museum, Burgring 7, A-1010 Vienna, Austria (alexander.lukeneder@nhm-wien.ac.at / fax: +34 (1) 52177 - 459 / Phone: +34 (1) 52177 251), (2) Department of Palaeontology, Geozentrum, University of Vienna, Althanstrasse 14, A-1090 Vienna, Austria (SusanneMayrhofer@gmx.net)

Early Cretaceous ammonoids (n = 424) were collected at the Puez locality in the Dolomites of Southern Tyrol (Lukeneder and Aspmair 2006). The cephalopod fauna from the marly limestones to marls here indicates Late Valanginian to Early Aptian age. The underlying Biancone Formation (Maiolica Formation) is Early Valanginian. The deposition of the marly limestones and marls in this interval occurred during unstable conditions.
Ammonoids. The ammonoid fauna comprises 27 different genera, each apparently represented by 1-2 species. The complete occurrence at the Puez section is dominated by the Phylloceratina (30%) and the Ammonitina (34%). Phyllopachyceras (17%) and Phylloceras (13%) from the Phylloceratina are the most frequent components, followed by Lytoceras (12%) from the Lytoceratina, and Barremites (10%) and Melchiorites (8%) from the Ammonitina. Phylloceatidae and Desmoceratidae are dominating the cephalopod-fauna. Some ammonoid zones defined by Hoedemaeker et al. (2003) can be recognized. The following index fossils were examined within the collections of the NHMW (Austria) and the NMB (Italy): for the latest Valanginian Criosarasinella furcillata (C. furcillate Zone and Subzone), for the middle Early Hauterivian Olcostephanus (Jeannoticeras) jeannoti (O.(J.) jeannoti Subzone), and Heinzia sayni for the lowermost Upper Barremian (H. sayni Subzone; Reboulet and Hoedemaeker (reporters) et al., submitted). The ammonoid fauna contains only descendants of the Mediterranean Province (Tethyan Realm). Most affinities of the cephalopod fauna are observed with faunas from the adjacent areas of Italy (Lessini Mountains, Belluno, southern Trento Plateau), the Northern Calcareous Alps and the Bakony, Geresce and Mecsek Mountains of Hungary. This is explained by the neighbouring position of the latter areas during the Early Cretaceous on the Apulian/Adria block and the Alpine-Carpathian microplate. The frequency of the ammonoids and the richness of the fauna make this section especially suited to accurately study the vertical ammonite distribution. The main focus in the future will be to investigate in detail the stratigraphic framework of the Puez section. Bed-by-bed collecting is required to obtain crucial data on the ammonoid distribution and occurrence (range).
Epizoans. Lukeneder (2008) presented the most recent investigations on this topic. Lower Cretaceous (Valanginian – Aptian) deposits of the Puez locality in yield remarkable amounts of specimens of different ammonoid taxa (28 genera, n = 424) showing unique epifaunal encrustations by the scleractinian, ahermatypic solitary coral ?Cycloseris Lamarck, 1801. The pattern of infestation clearly documents a preference of the adherent taxa for the outer shell surface of the ammonoids, whereas the inner surface remains barren. Such a remarkable metabiotic dwelling palaeocommunity is described for the first time. The ammonoid shell of the dead animal sank to the sea bottom and became encrusted by the coral larvae, what is documented by the location of the epibionts only on one side of the deposited ammonoid shells. The relation between the latter fossil groups is reported for the first time. The exact stratigraphically dating of the ammonoid fauna allows synchronously to clear the age of the infested corals and the autecological history of this new ammonid/coral palaeocommunity. The symbiotic ammonoid-coral relation from the Dolomites exists from the Valanginian to Aptian times.
Future work. A cooperative project (FWF project P20018-N10; 22 international scientists): An Integrative High Resolution Project. Macro- and Microfossils, Isotopes, Litho-, Cyclo-, Magneto-and Biostratigraphy as Tools for Investigating the Lower Cretaceous within the Dolomites (Southern Alps, Northern Italy) –The Puez Area as a New Key Region of the Tethyan Realm), is on the way since 2008 by the Natural History Museum in Vienna and the Southern Tyrol ‘Naturmuseum Südtirol’ in Bozen.

References

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