Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 21	Graz 2015
STRATI 2015	Graz, 19 – 23 July 2015		

Upper Lochkovian to lower Famennian evolution of the Carnic Alps: perspectives from the 'transitional facies'

PONDRELLI, Monica[1], CORRADINI, Carlo[2], SPALLETTA, Claudia[3], SUTTNER, Thomas J.[4], SCHÖNLAUB, Hans P.[5], PAS, Damien[6], KIDO, Erika[4], CORRIGA, Maria, G.[2], MOSSONI, Angelo[2], SIMONETTO, Luca[7], POHLER, Susanne[8], PERRI Maria C.[3], FARABEGOLI, Enzo[3], DA SILVA, Anne-Christine[6, 9], DOJEN, Claudia[10], HÜNEKE, Heiko[11]

[1] IRSPS, Università d'Annunzio, viale Pindaro 42, 65127 Pescara, Italy
[2] DSCSG, Università di Cagliari, via Trentino 51, I-09127 Cagliari, Italy
[3] BiGeA, Alma Mater Studiorum-Università di Bologna, Via Zamboni 67, I-40126 Bologna, Italy
[4] University of Graz, NAWI-Graz, Institute for Earth Sciences (Geology & Paleontology), Heinrichstrasse 26, A-8010 Graz, Austria
[5] Austrian Academy of Sciences, Commission for Geosciences, Dr. Ignaz Seipel-Platz 2, A-1010 Vienna, Austria
[6] Sedimentary Petrology, B20, University of Liège (ULg), Sart-Tilman, 4000 Liège, Belgium
[7] MFSN, via Marangoni 39-41, I-33100 Udine, Italy
[8] Institut für Geologie und Mineralogie, Universität zu Köln, Zülpicher Str. 49a, D50674 Köln, Germany
[9] Paleomagnetic Laboratory 'Fort Hoofddijk' | Department of Earth Sciences |Utrecht University, Budapestlaan 17, 3584 CD Utrecht, The Netherlands
[10] Landesmuseum für Kärnten, Museumsgasse 2, 9021 Klagenfurt, Austria
[11] Institute of Geography and Geology, University of Greifswald, D-17487 Greifswald, Germany

The Carnic Alps correspond to the non- to low-metamorphic portion of the Variscan substratum of the Southern Alps, and display an Upper Ordovician to Upper Carboniferous succession that represents the best preserved example of Variscan succession within the Alps. The Pragian to Frasnian stratigraphic interval is characterized by the differentiation of the basin in shallow water, including carbonate buildups, and pelagic parts, and the so-called 'transitional facies' represent a sort of 'connection' between these two parts. We analyzed the depositional evolution of the basin through these facies because they 1. reflect well the depositional dynamics; 2. are datable using conodonts, unlike the shallow water units; 3. are less subject to tectonic elisions/repetitions than the basinal units.
We performed geological mapping, measured stratigraphic sections of all the units and dated by conodonts all the lithostratigraphic transitions, in order to infer the lateral correlations throughout the basin, also supported by some marker beds/levels. The depositional environments of the different units have been recognized.
The main aspects of the basin evolution can be summarized as follows. A transgression between the uppermost Lochkovian and the basal Pragian drowned the first patch reefs recorded in the Carnic Alps. The margin was ramp-type until the Emsian with patch reefs and shoreface deposits distally passing to tempestite and pelagic sediments. During the Emsian, a by pass slope margin separating the shallow water and the basin started to develop as shown by the increasing amount of gravitative-driven deposits that persisted until the lower Famennian. In the lower Givetian the gravitative-driven deposits show their maximum progradation on top of the basinal deposits. From the Frasnian, a transgression, possibly enhanced by extensional or transtensional tectonic activity, led to progressively drowning of the carbonate buildups.
The depositional evolution appears to follow the supra-regional eustatic trends until the Frasnian. From the Frasnian, the evolution differentiates from the eustatic supra-regional trends, suggesting the importance of a local tectonic control.