

Biostratigraphy and correlation of nautiloid cephalopods from the Llandovery (Telychian) of the Cellaon Section (Carnic Alps, Austria)

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The Cellaon Section located near the Austrian/Italian border is renowned for the almost continuous fossiliferous sequence of Paleozoic age (Ordovician - Permian) preserved there and as the stratotype for the Silurian of the Eastern and Southern Alps is critical for biostratigraphic studies for global correlation (Corradini et al., 2015). Differing from other areas along the North Gondwana Margin nautiloid faunas are found throughout the shallower Silurian successions there and not only within the Cephalopod Limestone Biofacies. An ongoing study at this section includes systematic bed by bed collection for nautiloids within 11 stratigraphic divisions ranging from the Llandovery to the Pridoli using the established standard Silurian conodont/graptolite/chitinozoan biozones for constraint. A summary of the various findings is given in Histon (2012). The results of a newly collected fauna representing the first early Silurian incursion of nautiloid faunas preserved within the Llandovery sequences at this section are presented in this paper. Correlation at both regional and global scales using multidisciplinary approaches of the variety of geodynamic events and paleogeographic settings during the Late Ordovician and early Silurian intervals has become a key goal in Lower Paleozoic research over the last decade. For example, evidence from Ordovician/Silurian boundary graptolite assemblages in the Carnic Alps has highlighted affinities with Chinese faunas rather than those commonly found along the North Gondwana sector (Štorch & Schönlaub, 2012). Therefore, comparison of the findings from this detailed study of the Telychian nautiloids at the Cellaon Section with Llandovery faunas from the British Isles, Baltica, Siberia and S.China and in particular from Iran may also have critical relevance within the context of identification of bioevents and migrational pathways within the Peri-Gonwanide area. Furthermore the nautiloid dataset representing a pelagic macrofauna may provide an additional biostratigraphical contribution within multidisciplinary investigations towards the deciphering, timing and elaboration of the Lower Paleozoic geodynamic events in this region (Von Raumer et al., 2013).

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