**CEPHALOPOD ACCUMULATIONS LINKED TO CONDENSATION EPISODES IN THE JURASSIC OF THE SUBBETIC (SOUTHERN SPAIN) AND IN THE SILURIAN OF THE CARNIC ALPS (AUSTRIA)**

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Cephalopod accumulations of the Subbetic Jurassic are linked to three main episodes of reduced net sedimentation : (1) Pliensbachian, (2) Lower-Middle Jurassic and (3) Middle-Upper Jurassic. Lower and/or upper surfaces of cephalopod beds usually coincide with stratigraphic discontinuities. These beds are discontinuous and of variable thickness, which indicates that the sea bottom was irregular at that time. Except for the Middle-Upper Jurassic discontinuity, a varied invertebrate fauna (bryozoa, brachiopods, gastropods, crinoids, serpulids, corals) occurs together with cephalopod remains. A typical feature is the presence of limonitic crusts which may appear either encrusting the discontinuity surface or coating the remains of cephalopods. In this last case, encrusters (mainly serpulids) can be found within the laminae.

A study of the particular preservation of the nautiloid cephalopod fauna within the condensed Lower Silurian sequences from the Cellon and Rauchkofel Boden sections in the Carnic Alps has highlighted interesting similarities with cephalopod preservation in Jurassic sequences in Spain. The beds are separated by thin laminated iron-rich layers or 'crusts' within which the nautiloids are sometimes apparently preserved. Iron-rich coatings and infillings of the fauna are common in certain levels. Concentrations of juvenile and equidimensional articulate brachiopods, nautiloids and small gastropods alternating with the nautiloid beds occur from about mid-way to the top of the sequence. Levels of trace fossils (*Thalassinoides-chondrites*) are also seen. Several gaps in sedimentation have been noted in recent studies on the sections which may reflect eustatic sea -level changes in an overall shallow water environment.

Cephalopods are the most conspicuous elements of the association and provide essential clues about taphonomic processes (reworking, dissolution, encrustation). Within each bed, cephalopods typically exhibit different taphonomic signatures, which allow differences to be inferred in the number of reworking events, from 3-4 to none (judging also from the polarity of geopetal infillings of the chambers). The depositional environment was relatively high energy and this caused fossil remains to be exhumed, transported and, to a minor extent, fragmented. Burial at shallow depths (centimetres) within the sediment caused dissolution and, probably, coating of the fossil remains with limonitic laminae. Some fossils were affected by several of such cycles. Fossils, whether they were coated or not, were finally trapped in small depressions developed in the former topography ; the levelling process culminated when normal pelagic sedimentation was restored. Further diagenetic processes of stylolithic dissolution modified the original appearance of the discontinuities and, probably, originated characteristic stratiform ferruginous crusts.