

# The Albian/Cenomanian Boundary Event (OAE1d) reflected in ammonite-rich layers in central Serbia (Topola area)

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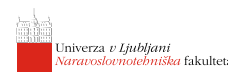
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Occurrences of the Albian/Cenomanian Boundary Event (OAE1d, namely Breistroffer Level), reflected in a series of four distinct positive  $\delta^{13}\text{C}$  excursions (peak in the latest Albian) are until now not described in Serbia even various associations of late Early Cretaceous ammonite faunas are known from several locations in central Serbia. These ammonite-bearing sedimentary rocks are exposed in the narrow belt of the Belgrade-Kosmaj-Topola-Gledić Mts. above shallow-water orbitolinid foraminifera-bearing limestones (carbonate ramp deposits).

Near village Kotraž (22 km SE of Topola) a roughly 20 m thick sedimentary succession of sand- and siltstones, marls and claystones with intercalated volcanic rocks and two distinct ammonite bearing horizons is preserved (“Stragari facies” in the Serbian literature). In the lower (roughly 11 m thick) and more coarse-grained part of the succession, beside belemnites, gastropods, and plant remains, a rich, but poor to moderately preserved ammonite fauna occur in slump deposits together with coarse eruptive volcanic material: *Kosmatella agassiziana*, *Puzosia (Puzosia) mayoriana*, *Mortoniceras (Subschloenbachia) perinflatum*, *Anisoceras perarmatum*, *Anisoceras* sp., *Idiohamites elegantulus*, *Mariella* sp., *Ostlingoceras cf. puzosianum*, and *Scaphites (Scaphites)* sp. The occurrence of *Praeschloenbachia perinflatum* indicates the Upper Albian *Mortoniceras perinflatum* Zone. Upsection a fining-upward trend indicates ongoing deepening of the depositional realm due to the stepwise sea-level rise from the late Albian onwards and the decrease of the or-

bitolinid-bearing carbonate ramp. In the more fine-grained and slightly organic-rich silt to fine-sand layers approx. eight meters above the first ammonite-bearing level following ammonite fauna indicate the uppermost Albian to lowermost Cenomanian (*Arrhaphoceras briacensis* Zone or *Stoliczkaia dispar* Zone): *Phylloceras (Hypophylloceras) velleidae*, *Kosmatella agassiziana*, *Puzosia (Puzosia) mayoriana*, *Beudanticeras* sp., *Mortoniceras* sp., *Stoliczkaia (Stoliczkaia) dispar*, *Mariella* sp., and *Scaphites (Scaphites)* sp.

Whereas in the Western Tethys Realm the latest Albian OAE1d is mainly characterized by the deposition of organic-rich fine-grained sediments, in central Serbia west of the Drina-Ivanjica continental realm more coarse-grained sediments were deposited. However, the occurrence of the younger ammonite-rich interval in slightly organic-rich sedimentary rocks mirror the global late Albian OAE1d, whereas the older ammonite-rich interval is a precursor event associated with intense volcanic activity near to the study area. This intense volcanic activity led to the regional drowning of the shallow-water orbitolinid foraminifera-bearing carbonate ramp and creates relief as indicated by the slump deposits. It is proposed that in central Serbia regional and global events work in concert to form in the late Albian deeper-water environment ammonite-rich horizons, which have the potential for a correlation of late Albian events in the Dinarides and adjacent areas.

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