

## Micropaleontological changes at the Cenomanian- Turonian boundary in the Bohemian Cretaceous Basin, Czech Republic

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Initial transgressive Cretaceous deposits of the Bohemian Cretaceous Basin are represented by siliciclastic sediments of the Cenomanian age (Peruc-Korycany Formation with three members: Peruc, Korycany and Pecínov) and hemipelagic marlstones and limestones of the Turonian age (Bílá Hora Formation). Transgressive successions include fluvial, marsh, estuarine, inner shelf and open marine facies assemblages (Čech et al., 2005). Generally, character of calcareous nannofossils, foraminifers and palynological assemblages reflects depositional conditions near the Ce-Tu boundary.

Biostratigraphically important angiosperm pollen *Complexiopollis vulgaris* appears in late middle Cenomanian (A. jukes-brownei Zone) (Uličný et al. 1997). Halophyte pollen of *Classopollis/Corollina* is important component of the coastal marshes. *Palaeohystrichophora infusorioides*, *Spiniferites ramosus* becomes the most common types and characterize near shore deposition. The first sparse occurrence of agglutinated foraminifers was recognized in the upper part of the Cenomanian sandstones of Korycany Member. In the inner shelf facies of calcareous clayey glauconitic siltstones of the Pecínov Member mostly agglutinated species and calcareous benthos with sporadic representatives of planktonic genera *Hedbergella* and *Whiteinella* were found. Stratigraphically important species *Gavelinella cenomanica* indicates Cenomanian stage of sediments which belong to planktonic interval and partial range zone *Whiteinella archaeocretacea* (upper part of Upper Cenomanian to the lowermost part of Lower Turonian) sensu Robaszynski & Caron (1995). Lithological changes and low oxygen content of the Pecínov Member are reflected in well-pronounced variation within palynological record. Poor dinocyst assemblage, abundant foraminiferal chitinous linings, scolecodonts (jaw apparatus of worms) and amorphous organic matter characterize the uppermost part. Dinocyst species *Epelidosphaeridia spinosa* was found together with *Praeactinocamax plenus* (Upper Cenomanian, *M. geslinianum* Zone). Upper Cenomanian foraminiferal assemblage with rare occurrence of planktonic species, a low diversity of dinocyst species, relatively frequent acritarchs and prasinophytes and poor nannofossils assemblages with higher numbers of *Watznaueria barnesae*, *Broinsonia signata*, and strongly etched specimens, indicate shallow marine conditions at the beginning of transgression (upper part of the Peruc-Korycany Fm.).

Influx of abundant nanoflora, very rich, highly diversified dinocyst assemblage supports Turonian transgression and change to neritic conditions. More diverse foraminiferal assemblages with abundance of planktonic keeled type of tests and juvenile specimens with calcareous tests give evidence for conditions of the open sea in the Lower Turonian. These foraminiferal assemblages belong to *Helvetoglobotruncana helvetica* Zone (Robaszynski & Caron 1995) due to the occurrence of *H. helvetica*. Also the presence of calcareous benthos as *Cassidella tegulata*, *Fronicularia inversa* and agglutinated *Gaudryina angustata*, *G. folium* is characteristic for the foraminiferal assemblage of this planktonic zone. The lowermost Turonian is well evidenced by FO *Eprolithus octopetalus* followed by LO *Helenea chiastia* and FO *Eprolithus moratus*. First appearance of nanofossil species *Eprolithus moratus* coincides with first occurrence of foraminiferal planktonic species *Helvetoglobotruncana helvetica* in hemipelagic sediments of the Bílá Hora Formation. Dinocyst assemblage with increasing gonyaulacean types such as *Surculosphaeridium? longifurcatum*, *Oligosphaeridium complex*, *Achomosphaera ramulifera*, *Pervosphaeridium pseudhystrichodinium*, *Hystrichodinium pulchrum* and especially open marine form *Pterodinium cingulatum* are most abundant. *Complexiopollis* and *Atlantopollis* are most common angiosperm pollen in Lower Turonian sediments.

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