

THE JURASSIC-CRETACEOUS BOUNDARY IN THE AUSTRIAN KLIPPEN BELT (NUTZHOF, LOWER AUSTRIA): IMPLICATIONS ON MICRO- AND NANNOFACIES ANALYSIS

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Limestones studied at the Nutzhof section in the Klippen belt of Lower Austria are wackestones, packstones or mudstones in their structures. Fine-grained micrite with pelagic microfossils (calpionellids, calcareous dinoflagellates, radiolarians and nannofossils) are common in open-marine environments. Rare skeletal debris derived from fragmented and disintegrated shells of invertebrates (benthic foraminifers, echinoderms, molluscs) coming from shallower environments. Microfacies are typical for basinal settings which could be situated also in tectonically influenced subsiding shelf areas. The stratigraphic investigation of the micro- and nannofauna revealed that the Nutzhof section comprises sedimentary sequence of Early Tithonian to Middle Berriasian in age. Following dinoflagellate and calpionellid associations and zones (Reháková 1995, 1998, 2000a, b, 2002) were recognized.

The following microfossil zones from Early Tithonian to Middle Berriasian could be detected from Nutzhof:

Tithonica Zone (the interval limited by samples 18,0 – 17,2). Early Tithonian
 Malmica Zone (the interval limited by samples 17,0 – 14,8). Early Tithonian
 Semiradiata Zone (samples 14,6 – 11,8). Early Tithonian

Chitinoidea Zone (samples 11,6 – 11,0).

Middle Tithonian

Praetintinnopsella Zone (samples 10,8 – 10,4). Earliest Late Tithonian

Crassicollaria Zone, Remanei Subzone (samples 10,2 – 10,1). Late Tithonian

Crassicollaria Zone (samples 10,0 – 7,2). Late Tithonian

Calpionella Zone, Alpina Subzone (samples 7,0 – 5,6). Lower Berriasian – J/K boundary

Calpionella Zone, Ferasini Subzone (samples 5,4 – 4,4). Lower Berriasian

Calpionella Zone, Elliptica Subzone (samples 4,2 – 0,0). Middle Berriasian

The correlation of microfossils shows good results what concerning distribution, environmental conditions and stratigraphy of the Jurassic – Cretaceous boundary interval. Similar results were also documented by Michalik et al. (2007).

The following nannofossil zones from Early/Middle Tithonian to Middle Berriasian could be detected from Nutzhof:

No 18,0. *Conusphaera mexicana mexicana* Zone NJ-20

Range: Lower to Middle Tithonian

17,0. *Conusphaera mexicana mexicana* Zone NJ-20

Range: Lower to Middle Tithonian

16,0. *Conusphaera mexicana mexicana* Zone
NJ-20

Range: Lower to Middle Tithonian

15,0. *Conusphaera mexicana mexicana* Zone
NJ-20

Range: Lower to Middle Tithonian

14,0. *Conusphaera mexicana mexicana* Zone
NJ-20

Range: Lower to Middle Tithonian

13,0

Conusphaera mexicana mexicana Zone NJ-20

Range: Lower to Middle Tithonian

12,0. *Conusphaera mexicana mexicana* Zone
NJ-20

Range: Lower to Middle Tithonian

11,0. *Conusphaera mexicana mexicana* Zone
NJ-20

Range: Lower to Middle Tithonian

9,0. ?*Microstaurus chiastius* Zone NJK,
Bralower et al. 1989

Range: Upper Tithonian to lowermost
Berriasian, Chron M 20 - M 17

8,0

Microstaurus chiastius Zone NJK, Bralower et
al. 1989

Range: Upper Tithonian to lowermost
Berriasian, Chron M 20 - M 17

7,0

Microstaurus chiastius Zone NJK, Bralower et
al.

Range: Upper Tithonian to lowermost
Berriasian, Chron M 20 - M 17

6,0

Microstaurus chiastius Zone NJK, Bralower et
al.

Range: upper Tithonian to lowermost
Berriasian, Chron M 20 - M 17.

5,0

Microstaurus chiastius Zone NJK, Bralower et
al. 1989

Range: Upper Tithonian - lowermost
Berriasian, Chron M 20 - M 17

4,0

Nannoconus steinmannii steinmannii Zone NK-
1 Bralower et al., 1989

Range: Middle Berriasian, Chron M 17 to M 16.
3,0

Nannoconus steinmannii steinmannii Zone NK-
1 Bralower et al., 1989

Range: Middle Berriasian, Chron M 17 to M 16.
2,0

Nannoconus steinmannii steinmannii Zone NK-
1 Bralower et al., 1989

Range: Middle Berriasian, Chron M 17 to M 16.

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