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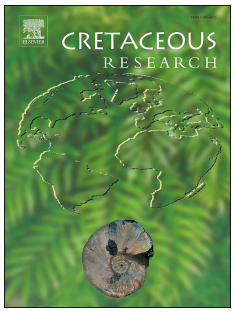

Understanding coleoid migration patterns between eastern and western Europe – belemnite faunas from the upper lower Maastrichtian of Hrebenne, southeast Poland

Zbyszek Remin

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Understanding coleoid migration patterns between eastern and western Europe – belemnite faunas from the upper lower Maastrichtian of Hrebenne, southeast Poland

Zbyszek Remin

Institute of Geology, University of Warsaw, ul. Żwirki i Wigury 93, 02-089 Warszawa, Poland; e-mail: zbyh@uw.edu.pl

A B S T R A C T

The belemnite record of the lower Maastrichtian (as traditionally understood) in Europe is dominated by common and diverse representatives of the genus *Belemnella* Nowak, 1913. However, our knowledge of species from the middle lower Maastrichtian, in particular from the *'Bln*. *sumensis*' belemnite zone, is severely limited, mainly because of a lack of outcrops of strata of this age. In order to understand the diversification and migratory patterns of belemnites from this interval better, I have combined available literature data with newly collected material. The present paper discusses the taxonomy, stratigraphy and palaeobiogeography of the late early Maastrichtian (*sumensis* Zone) *Belemnella* lineage, from the eastern part of the Roztocze Hills in southeast Poland. The belemnite material from Hrebenne comprises three species of *Belemnella*, namely *Bln. sumensis* Jeletzky, 1949, *Bln. praearkhangelskii* Naidin, 1964 and *Bln. kajnarensis* Naidin, 1964, in addition to a single specimen of *Belemnitella pulchra* Schulz, 1982. The taxonomic composition and diversification of this fauna is compared with contemporary assemblages from the upper *Bln. obtusa* Zone and the *Bln. sumensis* Zone of Kronsmoor (northwest Germany) and the Middle Vistula Valley section in central Poland. At a regional scale, the rich and diverse belemnite record of the Roztocze Hills and their simultaneous absence in the Nida Synclinorium is discussed in relation to palaeogeographical interpretations that assume the presence of the so-called Łysogóry-Dobrogea Land (or Krukienic Island) between those areas, which most likely governed the distribution of late early Maastrichtian belemnites in Poland. On a European scale, the taxonomic diversification and migratory pattern (if any) of representatives of the *Belemnella* stock are discussed and interpreted in comparison with forms known from western Europe and easterly areas as far the peri-Aralian Sea area of Kazakhstan.

Key words:
Coleoidea
Late Cretaceous
Biostratigraphy