Oligocene *Braarudosphaera bigelowii* blooms in Transylvania and Eastern Carpathians related to palaeoenvironmental changes

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Blooms of *Braarudosphaera bigelowii* are known to appear in several intervals, from Cretaceous up to the Holocene. It seems that this species is an opportunistic one that flourishes when the water surface salinity considerably changed.

In this paper we focus on the *Braarudosphaera bigelowii* occurrence in Romania in various Oligocene depositional settings. From the Eocene-Oligocene boundary, when the Tethyan Domain divided into the Mediterranean and the Paratethys, significant palaeogeographic changes took place in the Central and Eastern Europe, implying a restricted circulation for the later realm and occurrence of endemic faunas and floras. The salinity shifted in the whole Paratethyan regions, including the Transylvanian and Eastern Carpathians, where an anoxic setting occurred.

The analysis of the Lower Oligocene calcareous nannofossils from the aforementioned regions pointed out the occurrence of *Braarudosphaera bigelowii* with a very high frequency (representing over 80% of the total assemblages) within the upper part of the NP22 biozone. This interval contains, besides *Braarudosphaera bigelowii*, a small number of taxa (such as *Reticulofenestra bisecta*, *R. umbilica*, *R. hillae*, *R. lockeri*, *Cyclicargolithus floridanus* and *Sphenolithus moriformis*), showing a low abundance.

Bulk-sediment samples enriched in braarudosphaerids are characterized by increased values of $\delta^{18}O$. Above, within the NP23 biozone, the isotope $\delta^{18}O$ shows a

decrease, concomitantly with lithological changes, i.e., deposition of laminitic coccolithic limestone. We speculate that blooms of *Braarudosphaera bigelowii* mirrored a single palaeogeographic/palaeoclimate event, Early Oligocene (Rupelian) in age, linked to regional causes, i.e., the restricted circulation following the isolation of the Paratethys domain, but also global ones, related to the overall climate deterioration of those times.

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