

Calcareous nannofossil biostratigraphy of the External Dinarides Flysch (Vrčić-Staravasa Pag Island, Croatia): Key to an Eocene tectonostratigraphic and palaeoenvironmental interpretation

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The calcareous nannofossil biostratigraphy and palaeoecology were studied from two turbiditic successions that are exposed on Pag Island (Croatia), the age of which is still a matter of debate. The age assignment for the deposition of the turbiditic succession has important implications for understanding the geodynamic and palaeoenvironmental evolution of the External Dinarides (Vlhanovic et al., 2012; Babić & Zupanic, 2016). We collected samples from well-exposed sedimentary sections in the southwestern limb of the Pag anticline, and performed quantitative calcareous nannofossil analyses that revealed abundant and highly-diverse species. Age-diagnostic species indicated the presence of the CNE14–CNE15 biozones, so the flysch deposition occurred in the Lutetian–Bartonian, and the age could possibly be further restricted to the lower part of CNE15 (43–39.7 Ma). This result contrasts with the Miocene age proposed by Mikes et al. (2008) for the same section. The vertical facies variation and palaeoecological indications suggest an increasing palaeobathymetric depth during deposition. Implications for our new data on the evolution of the External Dinarides will be discussed. The calcareous nannofossils provided an age assignment of the flysch that is comparable with the Middle Eocene Climatic Optimum (MECO). This is consistent with the MECO in the presence of common warm-water taxa, which were also recorded in the Tethyan basin in central Italy (Jovane et al., 2007).

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