



Palaeocommunities, diversity and sea-level change from middle Eocene shell beds of the Paris Basin

Stefano Dominici (1) and Martin Zuschin (2)

(1) Museo di Storia Naturale, Università di Firenze, Via La Pira 4, 50121 Firenze, Italy (stefano.dominici@unifi.it), (2) Institut für Paläontologie, University of Vienna, Vienna, Austria (martin.zuschin@univie.ac.at)

The middle Eocene, a time of global transition from greenhouse to icehouse climate, was approached through high-resolution stratigraphy at a few classic localities of the Paris Basin. Quantitative data on the distribution of molluscan species abundance, collected at 12 different shell beds representative of the middle Lutetian and the lower Bartonian, formed the basis for a palaeoecological study. The succession can be subdivided into a hierarchy of depositional sequences, interpreted as the product of relative sea-level change. Abundance distributions are better correlated with 5th-order depositional sequences than geographic locality, suggesting that sea-level played an important role in the distribution of palaeocommunities. Rarefied diversities were measured and compared with analogous data from modern tropical and warm-temperate intertidal and subtidal communities. The palaeoecological analysis shows that sea-level variation is responsible for a major change in the upper part of the middle Lutetian, leading from high-diversity subtidal to low-diversity intertidal and shallow subtidal palaeocommunities. The study did not confirm that the stage-level drop in species richness documented in this basin is related to the global climatic deterioration. Instead, the global climatic signal might be obscured in the Paris Basin by facies control.