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The Evolution of Benthic Carbonate Assemblages from the Late Paleocene to Middle Eocene in the Adriatic Carbonate Platform (Croatia)

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Along the 700 km eastern Adriatic coast (Croatia), Eocene deposits, which originated under the warmest climatic conditions of the Cenozoic, witnessed the end of the long-lasting platform conditions. The studied succession was deposited on the Adriatic carbonate platform, located in the central Tethys, at 32 ^{0}N paleolatitude. Study of the sedimentary record from sections in Istria and Central Dalmatia, resulted in discovery of community changes from the Late Paleocene to the Middle Eocene.

Traditionally, three main units are recognized. The first unit is early Thanetian (SBZ 4, *sensu* Serra-Kiel et al., 1998) to Cuisian in age (from SBZ 7 to SBZ 10). It is composed of foraminiferal wackestones – packstones with complex miliolids and conical agglutinated foraminifers, which imply sedimentation in innermost ramp settings with protected lagoons. The occurrences of “small” miliolids and discorbids with Characeans at the base of the unit within fenestral mudstones – wackestones suggests sedimentation, after the Late Cretaceous diachronic regression within brackish environments. Three microfacies types, defined according to sedimentological features and biotic components characterized this unit.

Foraminiferal packestones to grainstones characterized by fining upward structures, which were deposited from the Cuisian (SBZ 11) to the Early Lutetian (SBZ 13), comprise second unit. Miliolids and alveolinids are common at the base of the unit: alveolinids, obitolitids, nummulitids in the middle part, while nummulitids (*Nummulites*

spp., *Assilina* spp., *Operculina* spp.) and orthophragminids (*Orbitoclypeus* spp., *Asteroscyclina* spp.) are prominent at the top of the unit. This unit was deposited in low-energy inner to mid ramp settings, where episodic high energy events occurred. Based on textural characteristic of studied sediments and relative abundance of different biogenic components five microfacies types are recognized in all studied sections. The third unit is wackestone and mudstone where orthopragminids and nummulitids are predominant. The environmental reconstruction suggests the transition from mid to outer ramp setting starting from Early Lutetian (SBZ 11/12) and into the late Middle Lutetian (Barthonian, SBZ 17). The middle Lutetian carbonate platform is characterized by four microfacies types, which are dominant by ortophragminids and nummulitids (oerculinids in particular, Cosovic et al. 2004). Close to its top, larger foramifers show distinctive flattening of tests, reduced diversity of nummulitids (only *Operculina* spp.) and appearance of planktonic foraminifers.

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