Sedimentation on the northern Tethys margin during the Campanian–Maastrichtian Boundary Event: case study from the Skole Nappe of the Polish Carpathians

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The Skole Nappe of the Polish Carpathians is built of sediments deposited on the northern margin of the Tethys ocean. The sediments were deposited in the Skole Basin bordered directly by the shelf of the European Platform, which was the main source area. During the late Campanian-early Maastrichtian, the Skole Basin provided accommodation for the Kropiwnik Fucoid Marl (KFM) succession characterized by thinly-bedded, soft to hard turbiditic marlstones alternated in various proportions with thinly-bedded turbiditic sandstones, subordinate conglomerates, and turbiditic to hemipelagic muddy to clayey shales. Previous interpretations on the origin of the KFM indicated sedimentation control by regional tectonic factors. Lithofacies and calcareous nannofossil analysis by the authors suggests that fluctuations in marlstone distribution in the KFM succession were controlled mainly by eustatic sea-level changes and associated changes in oceanographic conditions, both resulting from global climate alteration within the Campanian-Maastrichtian Boundary Event. A tentative palaeoceanographic model has been proposed (KEDZIERSKI & LESZCZYŃSKI, 2013) to show the sedimentation control. Moreover, recent detailed sedimentological studies have revealed sediment supply from intrabasinal source(s). These, most probably, were blind anticlines resulting from ongoing Laramian compression. Consequently, the KFM succession exemplifies a combined effect of climatic. oceanographic and tectonic changes that took place during the Campanian-Maastrichtian Boundary Event.

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