



A Santonian - Campanian boundary locality from North-western Turkey

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A Santonian - Campanian boundary section, close to the village of Göynük in North-western Turkey (Bolu province), was recorded and examined in respect to nannofossil and foraminiferal biostratigraphy, magnetic susceptibility, as well as magnetic polarity.

During the Late Cretaceous, the Mudurnu-Göynük basin was located in the northern Tethyan Ocean, on the Sakarya continent (between the Intra-Pontide Ocean and northern branch of the Tethys). The section yields reddish hemipelagic to pelagic deposits. The stratigraphically older part is characterised by uniform limestone. Towards the top, the section displays marls and marly limestones with frequent tuff intercalations.

The section represents a hemipelagic to pelagic environment. Planktonic foraminifera prevail in numbers and represent a typical Santonian to Campanian foraminifera community. Benthic foraminifera are sparse. Biostratigraphic data suggest an age from the late Santonian *Dicarinella asymetrica* to the early Campanian *Globotruncanita elevata* planktonic foraminifera zone (nannofossil zones CC16-CC18).

By investigation of magnetic polarity, the older part of the section can be assigned to the Santonian C34 normal, while the base-Campanian reversal C33r is evident in the upper part of the section.

Results from the assessment of magnetic susceptibility give evidence for Milankovitch cycles. We witness a strong signal for what would presumably be the 400 kyr eccentricity cycle. The Campanian interval measured at this section gives results of unusually high values for magnetic susceptibility. Compared to the older part of the section, we find values twice as high in the younger interval. As evidence for volcanic activity is frequent in the Campanian part of the section, the abrupt shift in the magnitude of magnetic susceptibility values may be explained by volcanic admixture.

Apart from implications for biostratigraphy and palaeoenvironments, the record of frequent volcanic activities in this Santonian - Campanian boundary section might also provide insights in the history of volcanic events in the North-western Tethyan realm.