

Upper Cretaceous planktonic stratigraphy of the Göynük composite section, western Tethys (Bolu province, Turkey)

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Upper Cretaceous strata exposed at Göynük (Mudurnu-Göynük basin, Bolu Province, Northwestern Anatolia, Turkey) provide a composite geological record from the Upper Santonian to the Maastrichtian. Deposits in this area originate from the Sakarya continent, therefore, a western Tethyan palaeogeographic setting with a palaeolatitude of a bit less than 30 degrees north can be reconstructed.

Grey shales and clayey marls are exposed at Göynük and do frequently show volcanic intercalations in the oldest parts of the section, while the uppermost layers depict a more complete deeper-marine record. The pelagic palaeoenvironment, microfossil indicators point towards a distal slope setting, at the Göynük section comprises rich low-latitude planktonic foraminiferal and calcareous nannoplankton assemblages. Benthic foraminifera are scarce, however, some biostratigraphically indicative taxa were recovered.

The three sections sampled for this study reveal a composite record from the Campanian *Contusotruncana plummerae* planktonic foraminifera Zone to the Maastrichtian *Racemiguembelina fruticosa* planktonic foraminifera Zone. The oldest sub section („GK-section“) yields the „mid“ Campanian *Contusotruncana plummerae* or *Globotruncana ventricosa* Zones and is followed by the „GC-section“. The oldest strata in latter record the *C. plummerae* Zone, the *Radotruncana calcarata* Zone, *Globotruncanita havanensis* as well as the *Globotruncana aegyptiaca* Zone and are overlain by the youngest section examined in this study („GS -section“). In the latter, we recognize the *G. aegyptiaca* Zone in the lowermost part, the upper Campanian/lower Maastrichtian *Gansserina gansseri* Zone, and the Maastrichtian *Racemiguembelina fruticosa* Zone. Nannofossil standard zones UC15b to UC18 are recorded within the composite section.

The planktonic foraminiferal assemblages assessed in the Göynük area feature a well preserved, diverse plankton record that can be correlated to other western Tethyan sections from the Upper Cretaceous. Especially the Austrian Alpine sections (i.e. Northern Calcareous Alps and Ultrahelvetics) show similar environmental and palaeolatitude settings and feature a well established biostratigraphical and cyclostratigraphic record. Comparing the multi-proxy record assessed in these sections to the biostratigraphic data from the Göynük region provides useful insights into planktonic foraminiferal palaeoecology and the multistratigraphic high-resolution correlation in the Upper Cretaceous Tethyan realm.