

Palaeoceanographic implications for the closure of the eastern Tethys Ocean based on calcareous nannofossils from southern Tibet

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The India-Asia collision led to the demise of the Tethys Ocean, and the subsequent uplift of the Qinghai-Tibet Plateau had a profound impact on Cenozoic topography, oceanography and climate. A wide range of collision times has been proposed due to the different collision definitions and methodologies used by various researchers. The cessation of marine deposition can be used to constrain the minimum age of collision. The Enba and Zhaguo Formations of the Qumiba section, located in the Tethys-Himalaya of Tibet, represent the youngest marine sequences of the eastern Tethys Ocean. From these sequences, 36 samples were systemically collected from the same location as Hu et al. (2012). Although we observed high numbers of Early Cretaceous–Paleocene reworked nannofossil assemblages (>70%), nannofossils indicative of Zone NP11 (*Toweius gammation*, *Discoaster barbadiensis*, *D. kuepperi*, *Sphenolithus arthurii*, *S. orphanknolensis*, *S. radians*, *S. conspicuus* and *Tribrachiatulus orthostylus*) were detected at the cessation of marine sequences in the eastern Tethys Ocean. Based on the reworked nannofossil assemblages, a tectonic evolution model was constructed for the duration of the deposition in the Qumiba section, where increasing numbers of reworked fossils upsection suggest the increased weathering and uplift of older sequences.

References

Hu, X., Sinclair, H.D., Wang, J., Jiang, H. & Wu, F. 2012. Late Cretaceous–Palaeogene stratigraphic and basin evolution in the Zhepure Mountains of southern Tibet: Implications for the timing of India–Asia initial collision. *Basin Research*, **24**: 520–543.