Latest Early Cretaceous calcareous nanofossils from southern Tibet, China

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Cretaceous marine sediments are widely distributed in the Tethyan Himalayan region. They outcrop in the southern Tibet region of Tingri and consist of the following successions from the bottom upward: the Gucoucun, Gambacunkou, Jiubao, and Zhepure Shanpo Formations. The ages of these formations have been poorly constrained due to a scarcity of macrofossils. Fifty-one samples, which were collected from the Gangbacunkou Formation in the Kangsha Section, Tingri, are primarily gray calcareous marl and marly limestone. Routine calcareous nanofossil biostratigraphic examination, using the “double-slurry” technique, revealed that calcareous nanofossils occurred at varying abundances throughout the section. The most common taxa include Watznaueria barnesiae, Discorhabdus ignotus, Watznaueria fasscincta, Prediscosphaera columnata, Retecapsa sp., Biscutum constans, Braarudosphaera hockwoldensis, Hayesites irregularis, Tranolithus orionatus, Zeugrhabdotus diplogrammus, Zeugrhabdotus xenotus, Helenea chiastia, and Cylindricalithus sp. The co-occurrence of the marker species H. irregularis (last occurrence dated at 100.84Ma) and T. orionatus (first occurrence at 110.74Ma) constrains the study interval to nanofossil Subzones CC8b to CC9a, which fall within the middle-late Albian Stage. This study highlights the usefulness of calcareous nanofossils in dating lithological units in southern Tibet.

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