

Stratigraphy of the Lower Cretaceous Dabeigou Formation from Luanping Basin, North China: implications from non-marine ostracod biostratigraphy

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The Dabeigou Formation of the Luanping Basin in northern Hebei is well known for its continuous non-marine Lower Cretaceous deposits and the preservation of the earliest Jehol Biota, including abundant ostracod fossils (YANG, 1984; PANG et al., 2002). However, it has been suggested that the species diversity of non-marine Early Cretaceous ostracods, particularly among the Superfamily Cypridoidea, has been greatly exaggerated in general (SAMES & HORNE, 2012), which also applies to those in northern Hebei as well as in the adjacent western Liaoning region (YANG, 1984; WANG et al., 2015). In addition, the biostratigraphic age given for the Dabeigou Formation (?Upper Jurassic, Valanginian–Hauterivian) based on the ostracod fauna is in conflict with the published isotope and magnetostratigraphic ages. Detailed lithostratigraphic analysis of the newly exposed Yushuxia section of the Luanping Basin suggests that the Dabeigou Formation can be subdivided into three members and 46 layers. The First Member mainly consists of tuffaceous and coarse clastic of fan delta front, while the Second and Third Member are mainly composed of grey to dark grey fine clastic of semi-deep lake facies. Ostracod analysis on samples from the Dabeigou Formation revealed 15 species of nine genera. Biostratigraphically, the ostracods of the Dabeigou Formation belong to the *Luanpingella-Eoparacypris-Pseudoparacypridopsis* zone (PANG et al., 2002), which can be divided into two subzones: the *Luanpingella postacuta* subzone, and the *Torinina obesa* subzone which is here revised to *Pseudoparacypridopsis* aff. *mountfieldensis* subzone. Most of the species range from the latest Jurassic to the earliest Cretaceous. However, some species show a closer relation with ostracods from the later Lower Cretaceous (Hauterivian to Aptian) Dadianzi Formation, the Yixian Formation of North China, and the Purbeck-Wealden Group of Britain. Combined with the U-Pb age (135–130 Ma) given by LIU et al. (2003), it is suggested that the ostracod fauna of the Dabeigou Formation might be of Early Cretaceous age entirely.

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