Ostracod faunas from the Devonian-Carboniferous transitional intervals in Xainza and Nylam regions, Tibet

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Abstract

Late Devonian to Early Carboniferous strata are well preserved in Tibet Plateau, China, but the fossils were poorly studied. Previous research on conodonts and spores from the Yali and Chaguoluoma sections enabled to approximately locate the Devonian-Carboniferous boundary in Xainza and Nylam regions. At Yali, three spore assemblages, including *Retispora lepidophyta–Verrucosisporites nitidus* (LN), *Vallatisporites verrucosus–Auroraspora incohatus* (VI) and *Cingulizonates bialatus–Auroraspora macra* (BM), and conodonts from the *Protognathodus kockeli* to *Gnathodus pseudosemiglaber* zones were reported, and the Devonian-Carboniferous boundary was placed at the base of the Goulongri Member of the Yali Formation. At Chaguoluoma, the occurrence of the conodont *Protognathodus* fauna was used to locate the DCB, but no photos of any specimen were provided. Our recent studies focus in the ostracod faunas from these two sections; 24 and 53 species were recognized at Yali and Chaguoluoma sections, respectively. Ostracods from the Yali section include *Bairdiocypris elliptica*, *Acratinella valida* and *Bairdiacypris wuxuanensis*etc. The *Bairdia magna* and *Paraparchites longmenshanensis*, which were firstly reported in Tournaisian, are found in the Goulongri Member of Yali formation. However, our new conodont collections recover both *Pr. kockeli* and *Siphonodella sulcata* below the Goulongri Member, lowering the DCB to the upper part of the Yalidonggou Member. Ostracods from the Chaguoluoma section include *Acratinella valid*, *Bairdia cestriensis* and *Microcheilinella cordata*, typically Late Devonian to early Carboniferous in age. Two early Carboniferous representative species, i.e. *Necrateria rectagona* and *Microcheilinella bushminae*, were firstly found 10.5 m above the base in the Chaguoluoma section. Moreover, major changes of ostracods abundance occur within the basal 8-10 m of the Chaguoluoma formation, more than 50 species are recorded within the lower 2-7 m while less than 5 species are found in the basal 8-10m. This change may be related to the Hangenberg extinction event in Tibet. In conclusion, the ostracod faunas have great potential to precisely locate the Devonian-Carboniferous boundary in theTibet Plateau.

Keywords: Ostracods, Devonian, Carboniferous boundary, Tibet

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