

Early Cretaceous paleoclimate and paleogeography in Tarim Basin, northwestern China: a palynological record

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The Early Cretaceous palynofloras from the Shushanhe Formation in the northern Tarim Basin and the Kizilsu Group in the southwestern and southeastern Tarim Basin of China are dealt with in this study. The palynoflora from the Shushanhe Formation is characterized by the predominance of Coniferales including Cheirolepidiaceae, Pinaceae and Podocarpaceae, and the subdominance of Filicales including Lygodiaceae, Schizaeaceae, Lyatheaceae and Osmundaceae. The palynofloras from the Kizilsu Group are characterized by the dominance of Coniferae, the abundance of Schizaeaceous ferns and the presence of primitive angiosperms.

The palynological evidence suggests that the Shushanhe Formation and the Lower Kizilsu Group should belong to Neocomian or Hauterivian to Barremian in age and the Upper Kizilsu Group should be of Aptian to Albian in age. The results of this study indicate that the early Early Cretaceous palaeoclimate in the Tarim Basin should belong to the arid or semi-arid type of subtropics, and the late Early Cretaceous palaeoclimate there should belong to the subtropical semi-arid type with relatively moist conditions.