

A new docodont mammal from the Late Jurassic of the Junggar Basin in Northwest China

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Fieldwork in the early Late Jurassic (Oxfordian) Qigu Formation of the Junggar Basin in Northwest China (Xinjiang Autonomous Region) produced teeth and mandibular fragments of a new docodont. The new taxon has a large 'pseudotalonid' on the lower molars, and by retention of crest b-g exhibits closer affinities to *Simpsonodon* and *Krusatodon* from the Middle Jurassic of Europe than to the other known Asian docodonts *Tashkumyrodon*, *Tegotherium*, and *Sibirotherium*. It differs from the *Haldanodon*-*Docodon*-lineage by the 'pseudotalonid' and large cusps b and g. A PAUP analysis based on lower molar characters produced a single most parsimonious tree with two main clades. One clade comprises *Docodon*, *Haldanodon*, and *Borealestes*, and the other *Dsungarodon*, *Simpsonodon*, and *Krusatodon* plus the Asian tegotheriids. Analysis of the molar occlusal relationships using epoxy casts mounted on a micromanipulator revealed a four-phase chewing cycle with transverse component. The molars of the new docodont exhibit a well developed grinding function besides cutting and shearing, probably indicating an omnivorous or even herbivorous diet. A grinding and crushing function is also present in the molars of *Simpsonodon*, *Krusatodon*, and the Asian tegotheriids, whereas *Borealestes*, *Haldanodon*, and *Docodon* retain the plesiomorphic molar pattern with mainly piercing and cutting function.

Key words: Docodonta, *Dsungarodon*, occlusion, Jurassic, Qigu Formation, Junggar Basin.

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