

New Early Cretaceous spalacotheriid "symmetrodont" mammal from Japan

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We describe a new spalacotheriid (acute-angled) 'symmetrodont' (Mammalia, Trechnotheria), Symmetrolestes parvus gen. et sp. nov., from the Lower Cretaceous, likely Barremian, Kitadani Formation of the Tetori Group, central Japan. The specimen consists of a fragmentary right lower jaw with first incisor and five preserved postcanine teeth (interpreted as p5-m4). Symmetrolestes has acute-angled molariforms with complete shearing surfaces on the para- and protocristids, and relatively tall crowns, features that are referable to Spalacotheriidae. Symmetrolestes is more derived than zhangheotheriids in having complete shearing surfaces, taller crowns, and more complete cingulids. It differs from other spalacotheriids in having fewer molariforms (m1-4), higher number of premolariforms (p1-5), and gradual transition between premolariforms and molariforms. Our cladistic analysis of 29 characters shows Symmetrolestes as the sister group of the remaining Spalacotheriidae. This node is supported by only one character (Bremer support: 1) and therefore not particularly stable. The remaining spalacotheriids are arranged in a fully pectinated tree conforming to the topology of the previous researchers, in which Spalacolestinae occupy an apical position. The combination of the occurrences of a primitive spalacotheriid, Symmetrolestes, in Japan and of Zhangheotheriidae, which is the sister taxon of Spalacotheriidae, in China suggests a possibility for an East Asian origin of Spalacotheriidae, although it implies long ghost lineages for the latest Jurassic to Early Cretaceous East Asian 'symmetrodonts'.

Key words: Spalacotheriidae, "symmetrodonts", Symmetrolestes, Early Cretaceous, Tetori Group, Japan.

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