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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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