

## New Early Cretaceous spalacotheriid "symmetrodon" mammal from Japan

Takehisa Tsubamoto, Guillermo W. Rougier, Shinji Isaji, Makoto Manabe, and Analía M. Forasiepi  
*Acta Palaeontologica Polonica* 49 (3), 2004: 329-346

We describe a new spalacotheriid (acute-angled) 'symmetrodon' (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 'symmetrodon'.

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

Takehisa Tsubamoto [[tsuba@pri.kyoto-u.ac.jp](mailto:tsuba@pri.kyoto-u.ac.jp)], Primate Research Institute, Kyoto University, Inuyama, Aichi 484–8506, Japan; Guillermo W. Rougier [[grougier@louisville.edu](mailto:grougier@louisville.edu)] and Analía M. Forasiepi [[amfora01@gwise.louisville.edu](mailto:amfora01@gwise.louisville.edu)], Department of Anatomical Science and Neurobiology, University of Louisville, Louisville, KY 40292, USA (corresponding author); Shinji Isaji [[isaji@chiba-muse.or.jp](mailto:isaji@chiba-muse.or.jp)], Department of Geology, Natural History Museum and Institute, Chiba, Chiba 260–8682, Japan; Makoto Manabe [[manabe@kahaku.go.jp](mailto:manabe@kahaku.go.jp)], Department of Geology, National Science Museum, Tokyo 169–0073, Japan.

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