

A new species of the “condylarth” *Hyopsodus* from the middle Eocene of the Erlian Basin, Inner Mongolia, China, and its biostratigraphic implications

Bin Bai, Yuan-Qing Wang, Xin-Yue Zhang, and Jin Meng

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The “condylarth” genus *Hyopsodus* is diverse and abundantly represented in Eocene mammalian faunas of North America. In contrast, fossil specimens of *Hyopsodus* are rather sparse in Eurasia. Only four species of *Hyopsodus* are known from Asia and two from Europe, as compared to the 17 species of *Hyopsodus* described from North America. Here, we report a new species of *Hyopsodus*, *Hyopsodus arshantensis* sp. nov., from the middle part of the Arshanto Formation in the Erlian Basin, Inner Mongolia, China. The holotype and only specimen of the new species, a right mandible with m1–m2, exhibits a unique combination of characters on m1–m2 not present in other species of *Hyopsodus*, including a moderately lophodont crown, a long trigonid without a paraconid, an obliquely aligned protolophid, an angle between the cristid obliqua and the posthypocristid slightly greater than 90°, a midline position of the hypoconulid, and a relatively large entoconid. The m1–m2 morphology of *H. arshantensis arshantensis* is intermediate between specimens of *Hyopsodus* from the Wasatchian and Uintan North American Land Mammal Ages (NALMA), and is comparable to that of *Hyopsodus* from the Bridgerian NALMA. Moreover, its relatively large size is near the size range present among specimens of the late Bridgerian *H. marshi*. Based on those similarities, in combination with a few fossil mammals from overlying layers, the middle part of the Arshanto Formation could be correlated in part to the late Bridgerian, and the upper part of the Arshanto Formation may bracket the time interval equivalent to the Bridgerian/Uintan boundary. That proposed correlation and somewhat different faunas recognized within the Arshanto Formation suggest that it may be necessary to subdivide the Arshantan Asian Land Mammal Age (ALMA) and/or redefine the Arshantan/Irdinmanhan ALMA boundary in future comprehensive studies.

Key words: Mammalia, *Hyopsodus*, “condylarth”, Eocene, Arshanto Formation, Erlian Basin, China.

Bin Bai [baibin@ivpp.ac.cn] (corresponding author), Key Laboratory of Vertebrate Evolution and Human Origins of Chinese Academy of Sciences, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing 100044, China; CAS Center for Excellence in Life and Palaeoenvironment, Beijing 100044, China. Yuan-Qing Wang [wangyuanqing@ivpp.ac.cn]

], Key Laboratory of Vertebrate Evolution and Human Origins of Chinese Academy of Sciences, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing 100044, China; CAS Center for Excellence in Life and Paleoenvironment, Beijing 100044, China; College of Earth and Planetary Sciences, University of Chinese Academy of Sciences Beijing 100049, China. Xin-Yue Zhang [zhangxinyue@ivpp.ac.cn], Key Laboratory of Vertebrate Evolution and Human Origins of Chinese Academy of Sciences, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing 100044, China; CAS Center for Excellence in Life and Paleoenvironment, Beijing 100044, China; University of Chinese Academy of Sciences, Beijing 100049, China. Jin Meng [jmeng@amnh.org], Division of Paleontology, American Museum of Natural History New York 10024, USA; Key Laboratory of Vertebrate Evolution and Human Origins of Chinese Academy of Sciences, Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing 100044, China; Earth and Environmental Sciences, Graduate Center, City University of New York, New York, 10016, USA.

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