

New cursorial hyena found from the late cenozoic Zanda Basin of Tibetan Plateau

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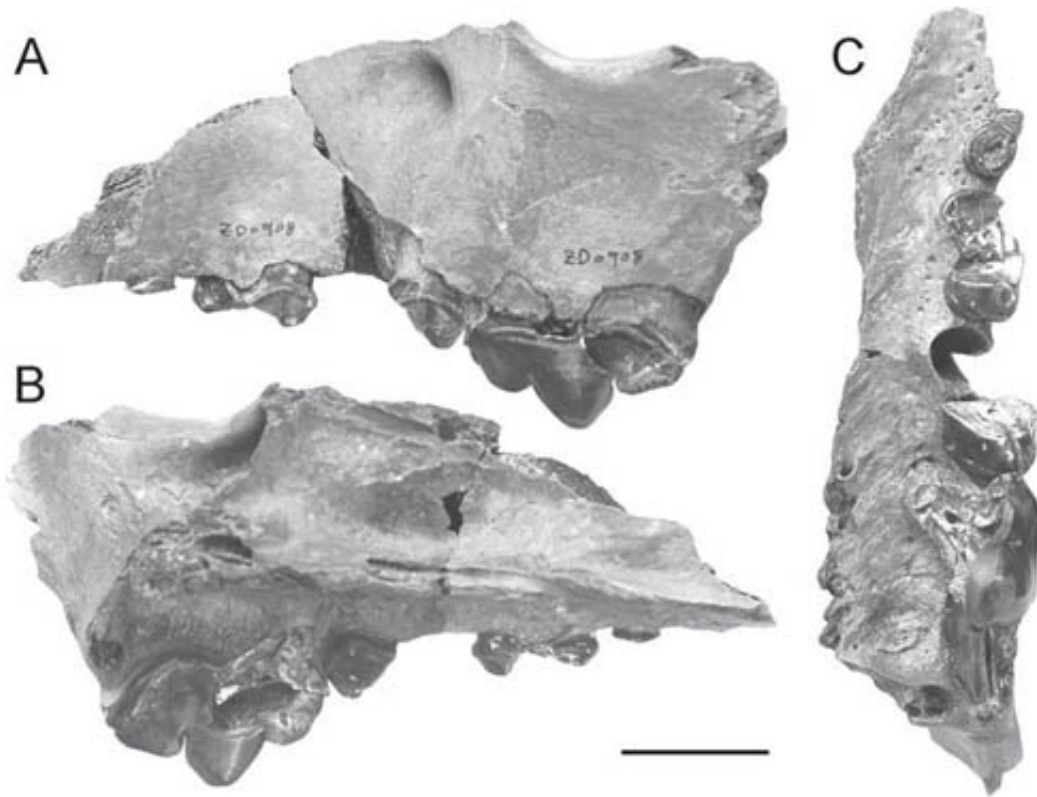


Fig.1 Partial left maxilla of *Chasmaporthetes gangsriensis* (IVPP V18566.1). A, lateral view; B, medial view; C, occlusal view. Scale bar equals 20 mm. Credit: Zhijie Jack Tseng

During the 2009 field season, an international team led by Dr. LI Qiang, Institute of Vertebrate Paleontology and Paleoanthropology (IVPP), Chinese Academy of Sciences, discovered skull fragments of a fossil

hyaenid from a gully off the northern trail of Zandagou in the late Cenozoic Zanda Basin in southwestern Tibetan Plateau. Researchers described it as a new species of the cursorial hyaenid *Chasmaporthetes*, *C. gangsriensis*, in the latest issue of *Journal of Vertebrate Paleontology*. The first occurrence of the cursorial hyena *Chasmaporthetes* on the Tibetan Plateau provides additional evidence for open environments in the western Himalayan foothills no later than the Pliocene, and helps better understand its character evolution during the late Neogene.

The new materials, including partial lower jaws, maxillae, and toe bones, were unearthed from the early Pliocene lower part of the middle Zanda sequence, about 4.89–4.08 million years ago based on paleomagnetic and biostratigraphic correlations. *Chasmaporthetes gangsriensis* is smaller than other Plio-Pleistocene Eurasian records of the genus. The relatively undifferentiated premolars and the short and wide m1 of this [new species](#), along with its smaller size, distinguish it from all known materials in the genus *Chasmaporthetes*. Metatarsal and phalangeal elements referred to *C. gangsriensis* are long and gracile, indicating cursorial abilities typical of *Chasmaporthetes*.

Researchers summarized available biostratigraphic and morphometric information regarding Eurasian species of *Chasmaporthetes*. "With an age of early Pliocene, *C. gangsriensis* is morphologically the most basal Pliocene *Chasmaporthetes* in China, and is consistent with the 'out of Tibet' hypothesis for some Pleistocene megafauna", said first author Dr. Zhijie Jack Tseng of Natural History Museum of Los Angeles County and University of Southern California.

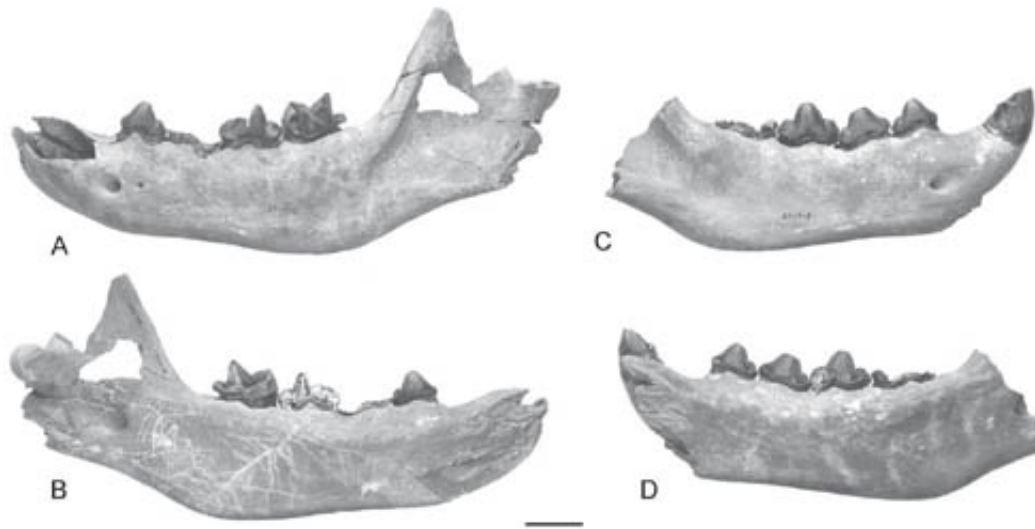


Fig.2 Left and right dentaries of *Chasmaporthetes gangsriensis* (IVPP V18566.3–4). A, lateral view of left dentary; B, medial view of left dentary; C, lateral view of right dentary; B, medial view of right dentary. Scale bar equals 20 mm. Credit: Zhijie Jack Tseng

An evaluation of the biostratigraphic relationships among Asian and North American occurrences of *Chasmaporthetes* indicates that the genus first dispersed into the New World during the early Blancan North American land mammal age (NALMA) with likely ancestry close to the heterogeneous sample of *C. lunensis* in Eurasia. The possibility of a second dispersal is indicated by a mixed sample of specimens with significantly smaller p4/m1 length ratio than other *Chasmaporthetes*.



Fig.3 Life reconstruction of a pair of *Chasmaporthetes gangsiensis* in the Pliocene Zanda Basin. Credit: Julie Selan

"Recent field work in the Zanda Basin in southwestern Tibetan Plateau has provided new fossil evidence of vertebrate faunas spanning the late Miocene to Pleistocene, which represents new occurrences hitherto unknown in that region of Asia and allows the establishment of a faunal sequence in the basin for the first time. The discovery of this cursorial hyaenid species provides additional evidence for open environments in the western Himalayan foothills no later than the Pliocene, as consistent with previous evidence from Zanda Basin's fossil horses and herbivore enamel isotope analyses", said coauthor Dr. LI Qiang of the IVPP.

More information: "A New Cursorial Hyena from Tibet, and Analysis of Biostratigraphy, Paleozoogeography, and Dental Morphology of *Chasmaporthetes* (Mammalia, Carnivora)." Zhijie Jack Tseng, Qiang Li,

and Xiaoming Wang. *Journal of Vertebrate Paleontology* 2013 33 (6), 1457-1471. doi: [dx.doi.org/10.1080/02724634.2013.775142](https://doi.org/10.1080/02724634.2013.775142)

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