

Morphological homology, evolution, and proposed nomenclature for bear dentition

Qigao Jiangzuo, Jinyi Liu, and Jin Chen

Acta Palaeontologica Polonica 64 (4), 2019: 693-710 doi:<https://doi.org/10.4202/app.00629.2019>

Bears are a group of carnivores with diverse diets and complicated dental structure. Several large rearrangements of dental structures are known in different lineages of bears, making the homology of dental structures between the different bears difficult to evaluate. By tracing the evolutionary processes of the two lineages of bears with the most complicated dental structure, i.e., the giant panda lineage (Ailuropodinae) and cave bear lineage (Ursinae), we were able to clarify the homology of dental structures of the two subfamilies. We define a new assemblage of dental nomenclature (based mainly on the homology to the giant panda) that can be very useful to infer the evolution of fossil bears. The evolutionary positions of some fossil bears are reviewed based on our results.

Key words: Mammalia, Ailuropodinae, Ursinae, dentition, homology, Pleistocene, China.

Qigao Jiangzuo [qjiangzuo@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 and Center for Excellence in Life and Palaeoenvironment, Beijing, 100044, China; University of Chinese Academy of Sciences, Beijing, 100049, China; Division of Paleontology, American Museum of Natural History, New York, 10024, USA. Jinyi Liu [liujinyi@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 and Center for Excellence in Life and Palaeoenvironment, Beijing, 100044, China. Jin Chen [chenjin@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.

Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(817.0 kB\)](#)