

New hadrosauroid dinosaur found from the late Cretaceous of Shanxi, China

March 31 2016

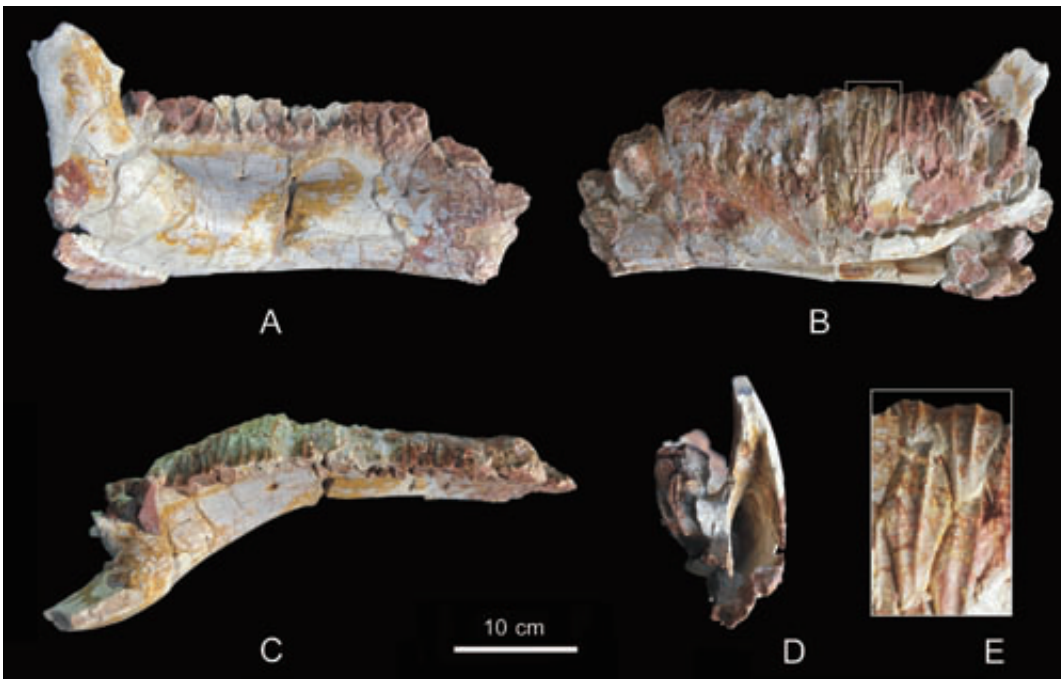


Fig. 1 Photos of right dentary of *Datonglong tianzhenensis*. A, lateral view; B, medial view; C, dorsal view; D, caudal view; E, close-up of partial dentition in B. Credit: XU Shichao

In the evolution from non-hadrosaurid hadrosauroids to hadrosaurids, their dentaries acquired several key innovations. A new non-hadrosaurid hadrosauroid dinosaur, reported in the latest issue of *Vertebrata Palasiatica*, provides numerous important anatomical features to depict its taxonomic status and systematic relationship, implying incredible

diversities and attempts close to the origin of Hadrosauridae.

The new taxon is recovered from the Upper Cretaceous Huiquanpu Formation of Tianzhen County, Shanxi Province in northern China by the Shanxi Museum of Geological and Mineral Science and Technology (now Shanxi Museum of Geology) in 2008, and represented by an almost complete right dentary with dentition.

"Based on our anatomical observation and taxonomic comparison, the new specimen is distinct from all previous known hadrosauroid dinosaurs, represents a new taxon, *Datonglong tianzhenensis*, and belongs to an advanced non-hadrosaurid hadrosauroid", said Dr. YOU Hailu, Corresponding author of the study at the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP), Chinese Academy of Sciences.

Datonglong possesses two functional teeth in each alveolus, and the pattern of ridge development on the lingual surface of its dentary crown shows a unique combination of character states, for example, distally offset primary ridge, well-developed secondary ridge, no additional ridges, and slightly distally curved apical half of primary ridge.

Comparative studies indicate advanced non-hadrosaurid hadrosauroids experienced a complex pattern in the evolution of their dentary, especially dentary dentition. Derived hadrosaurid features occurred frequently in these taxa, such as high height/width ratio of tooth crown in *Bactrosaurus*, one primary and one faint ridges in *Gilmoreosaurus*, median placed primary ridge in *Zhanghenglong*, rostrally inclined coronoid process in *Nanningosaurus*, and two functional teeth in each alveolus in *Datonglong*.

"Our study implies incredible diversities and attempts close to the origin of Hadrosauridae, thus it needs more findings to elucidate their

phylogenetic relationships", said YOU.

This work was supported by the Hundred Talents Project of the Chinese Academy of Sciences, the National Natural Science Foundation of China, and the Department of Land and Resources of Shanxi Province.

More information: A new hadrosauroid dinosaur from the Late Cretaceous of Tianzhen, Shanxi Province, China.

www.ivpp.cas.cn/cbw/gjzdwxb/xb ... 0229559242531386.pdf

Provided by Chinese Academy of Sciences

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