

New genus of Eugaleaspidiforms found in China

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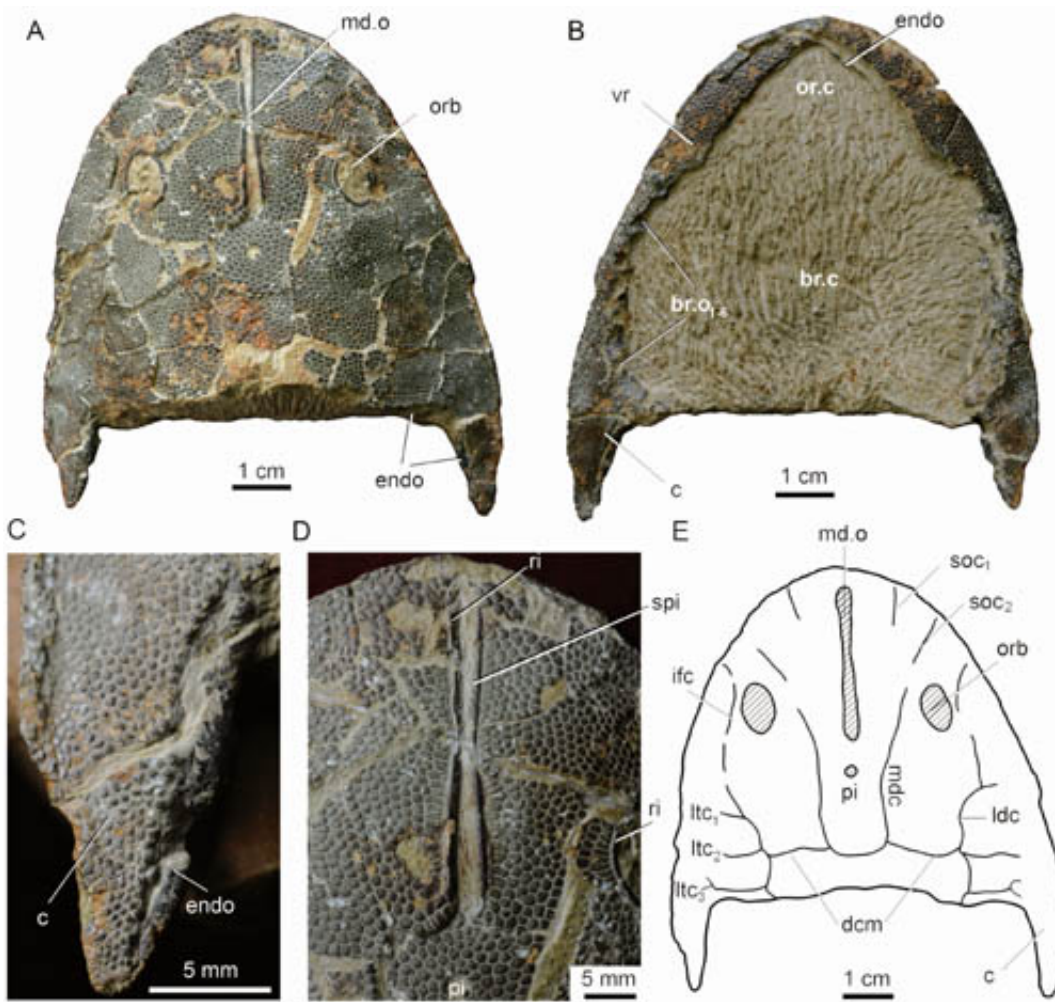


Fig.1: Cephalic shield of *Dunyu longiforus* gen. et sp. nov. (holotype IVPP V 17681). A. dorsal view; B. ventral view; C. close-up view of the left corner; D. close-up view to show the regional variation of polygonal tubercles, and minute spines on the inner surface of the dermal rim encircling the median dorsal opening; E. illustrative drawing in dorsal view. (Image by ZHU Min)

In a study published in the latest issue of *Vertebrata Palasiatica* [2012(1)], paleontologists from Institute of Vertebrate Paleontology and Paleoanthropology (IVPP), Chinese Academy of Sciences in Beijing reported a new genus and species of the *Eugaleaspidiformes* (Agnatha: Galeaspida), *Dunyu longiforus* gen. et sp. nov., from the Ludlow (Silurian) Kuantu Formation of Qujing, Yunnan, southwestern China, in association with the oldest near-complete gnathostome *Guiyu oneiros* of the Xiaoxiang Vertebrate Fauna, providing new thread into this taxonomic puzzle.

The new genus is most suggestive of *Eugaleaspis* of the *Eugaleaspididae* by the absence of inner corners, in addition to the diagnostic features of the family, such as only 3 pairs of lateral transverse canals from lateral dorsal canals, and the U-shaped trajectory of median dorsal canals. They differ in that the new genus possesses a pair of posteriorly extending corners, the breadth/length ratio of the shield smaller than 1.1, and the posterior end of median dorsal opening beyond the posterior margin of orbits.

Dr. ZHU Min, lead author of the study, and his colleagues reexamined the type specimen of *Eugaleaspis xiushanensis* from the Wenlock Huixingshao Formation of Chongqing, and observed a pair of posteriorly extending lobate corners and three (instead of four in the original description) pairs of lateral transverse canals. Thus, they re-assigned it to *Dunyu*. The new species differs from *Dunyu xiushanensis* in its large cephalic shield which is longer than broad, spine-shaped corners, anteriorly positioned orbits, the length ratio between preorbital and postorbital portions of the shield less than 0.75, and large polygonal, flat-topping tubercles exceeding 2.0 mm in length.

"The discovery of the new form from the Xiaoxiang Vertebrate Fauna

might provide new thread into this taxonomic puzzle", said study coauthor LIU Yuhai, an emeritus professor of the IVPP. "In overall, the new form resembles *E. xiushanensis* in many aspects, such as the posteriorly extending corner and the breadth/length ratio of cephalic shield less than 1.1. However, compared with *E. xiushanensis*, the new form morphologically deviates more from the Devonian *Eugaleaspis* species. If we continue to assign this new form to *Eugaleaspis*, the diagnosis of the genus has to be further modified to cover a larger morphospace, e.g. the breadth/length ratio of cephalic shield ranging from 0.9 to 1.5."

"In order to maintain the diagnostic stability of *Eugaleaspis*, which is the first genus of the Galeaspida described in the literature, a new [genus](#) (*Dunyu* gen. nov.) encompassing the new form and *E. xiushanensis* is a reasonable treatment. Among the *Eugaleaspidae*, *Dunyu* is more closely related to *Eugaleaspis* than either to other genera by the absence of inner corners", said ZHU Min.

Provided by Institute of Vertebrae Paleontology and Paleoanthropology

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