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New findings of galeaspids (Agnatha) from the Siluro-Devonian of China

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The Galeaspida is a clade of fossil, armored jawless vertebrates, or “ostracoderms”, known from the Telychian (Llandovery, Silurian) to the Late Devonian [1]. New findings of galeaspids (Agnatha) including *Dunyu longiforus*, *Rhegmaspis xiphoidea*, *Altigibbaspis huiqingae*, *Eugaleaspis changi*, and *Nanpanaspis microculus* are described from the Siluro-Devonian of China. The *Dunyu longiforus* is 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[3]. The *Altigibbaspis huiqingae* is from the lower part of the Xishancun Formation (early Lochkovian, Early Devonian) of Qujing City, Yunnan Province, China. The Polybranchiaspis-like is characterized by a blade-like median dorsal edge on the dorsal side of head-shield. The morphological disparity of the median dorsal ridge and spine in galeaspids indicates that some additional functions of these structures have been developed except for providing a directional stability. We suggest that a high upright and compressed spine may render galeaspid fishes an apparently larger size as seen by a predator, and a blade-like median dorsal ridge may serve a defensive function against the claws of large sea scorpions. The *Rhegmaspis xiphoidea* is from the Posongchong Formation (Pragian, Early Devonian), Zhaotong, Yunnan Province, China. The streamlined jawless fish displays an adaptation for a suprabenthic lifestyle with more active feeding behavior among galeaspids. The new form not only enriches the diversity of the Huananaspiformes, but also provides evidence for the last adaptive radiation of galeaspids by occupying an unexploited ecological niche during the Pragian of the Early Devonian.

References:

- [1] Gai et al. (2011) Nature, 476: 324—327
- [2] Zhu et al. (2009) Nature, 458: 469-473

