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The cranial anatomy of the Early Jurassic turtle *Kayentachelys aprix*

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The fossil turtle Kayentachelys aprix is known from Early Jurassic sediments of the Kayenta Formation, Arizona, USA. The detailed description of this taxon's cranium offered in this paper demonstrates that this turtle presents a mixture of primitive and derived character states. Among others, the presence of an interpterygoid vacuity, a basipterygoid process, a prootic that is exposed in ventral view, and a foramen posterius canalis carotici interni that is formed entirely by the basisphenoid are generally considered primitive for turtles. On the other hand, the presence of an undivided apertura narium, a well developed cavum tympani, an incipient cavum postoticum, and an unpaired vomer are considered to be derived. *Kayentachelys aprix* has previously been hypothesized to be the oldest stem cryptodiran turtle because of the presence of a flat, vertical plate on the processus pterygoideus externus, and the presence of a processus trochlearis oticum. However, the presence of these characters cannot be confirmed in the available specimens. Other putative stem-cryptodiran characters, such as the prefrontal-vomer contact and the presence of an epipterygoid, are herein corroborated as being symplesiomorphies, because they generally appear to be present in basal turtles.

Key words: Testudines, Cryptodira, cranial morphology, turtle evolution, stem turtles, Jurassic, Kayenta Formation.

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