

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

Juliana Sterli and Walter G. Joyce

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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 basiptyergoid 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 eipterygoid, are herein corroborated as being sympleiomorphies, because they generally appear to be present in basal turtles.

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

Juliana Sterli julisterli@gmail.com, CONICET-Departamento de Paleontología, Museo de Historia Natural de San Rafael, Parque Mariano Moreno s/n, (5600) San Rafael, Mendoza, Argentina; Walter G. Joyce walter.joyce@yale.edu, Division of Vertebrate Paleontology, Yale Peabody Museum, 170 Whitney Avenue, P.O. Box 208118, New Haven, CT 06520, USA.

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