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Unusual shell anatomy and osteohistology in a new Late Cretaceous panchelid turtle from northwestern Patagonia, Argentina

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Rionegrochelys caldieroi de la Fuente, Maniel, and Jannello gen. et sp. nov. is a Late Cretaceous turtle from Rio Negro Province, Argentina. The holotype and the referred specimens of this new species show an unusual shell morphology and microanatomy. The proportion between the carapace and plastron and the peculiar morphology of the shell such as the heart shaped carapace, a very deep nuchal notch, peripheral bones 2–11 with strongly gutter, the first vertebral scute twice as wide as long and subrectangular in shape, the posterior margin of vertebral scute 5 is three lobe shaped, and the unexpected osteohistology characterized by a massive structure, with higher compactness (80.6%) than other chelids, suggests beyond doubt that this turtle may be considered a new taxon. A semi-aquatic habitat with tendency towards terrestrial environments is inferred for *Rionegrochelys caldieroi* similar to that of the extant pelomedusid *Pelomedusa subrufa* among the extant pleurodires. *Rionegrochelys caldieroi* is recovered as a stem chelid. This new species seems to be closely related to *Bonapartemys bajobarrealis* and the clade formed by *Lomalatachelys neuquina* plus *Mendozachelys wichmanni*.

Key words: Testudines, Pleurodira, post-cranial morphology, paleohistology, Cretaceous, Argentina, Río Negro.

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