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

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*Rionegrochelys caldiero*i 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 caldiero*i similar to that of the extant pelomedusid *Pelomedusa subrufa*
among the extant pleurodires. *Rionegrochelys caldiero*i 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
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