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Capybaras, size, shape, and time: A model kit

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The capybaras (Hydrochoeridae) are outstanding rodents for their large size and euhypsodont and multilaminated cheek teeth. Although today they are represented by a single species, it was generally thought that their past diversity was much higher, especially during the late Miocene-early Pliocene. Such diversity is here analyzed taking into account the ontogenetic variation of the p4-m3 in different populations. Numerous isolated teeth of different size found in the upper levels of the Puerto Madryn Formation (late Miocene, Peninsula Valdés, Argentina) were interpreted as members of an ontogenetic series of a new species here described, *Cardiatherium patagonicum.* They provided clues to evaluate ontogenetic variation and a new framework to analyze the family diversity. In this context, it is proposed that multiple species described from the Ituzaingó Formation (late Miocene, Entre Ríos, Argentina) based on lower teeth, may actually represent specimens of different stages of the ontogenetic trajectory of a single species. Likewise, we found that several nominal taxa from other localities were based on juvenile specimens. According to these results, the diversity of the Hydrochoeridae during the late Miocene and early Pliocene was drastically reduced. The validity of the subfamily Cardiatheriinae is debated. Finally, it is suggested that the whole family should be revised taking into account the ontogenetic variation.

Key words: Rodentia, Hydrochoeridae, Cardiatherium, tooth development, allometry, Miocene, Puerto Madryn Forma– tion, Argentina.

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