



## On the composite nature of the holotype of *Loxodontomys pikumche* Spotorno *et al.*, 1998 (Rodentia, Cricetidae, Sigmodontinae)

PABLO TETA<sup>1</sup>, ULYSES F. J. PARDIÑAS<sup>1</sup> & GUILLERMO D'ELÍA<sup>2</sup>

<sup>1</sup>Unidad de Investigación Diversidad, Sistemática y Evolución, Centro Nacional Patagónico, Casilla de Correo 128, 9120 Puerto Madryn, Chubut, Argentina. E-mail: [anthea@yahoo.com.ar](mailto:anthea@yahoo.com.ar)

<sup>2</sup>Instituto de Ciencias Ambientales y Evolutivas, Universidad Austral de Chile, Campus Isla Teja s/n, Valdivia, Chile

Central Chilean populations of the mouse *Loxodontomys* Osgood were traditionally (e.g., Pine *et al.*, 1979) included as part of the single species recognized in the genus, *L. micropus* (Waterhouse). Later, Spotorno *et al.* (1998) considered that they belong to an up to then undescribed species for which they coined the name *L. pikumche*. This taxon, with type locality in "... Cajón del Río Maipo, sector Cruz de Piedra (34° 10' S 69° 58' W, 2.450 msnm), a 55 km S de la Central Hidroeléctrica de Las Melosas... en la Cordillera de la Región Metropolitana" is characterized by a 2n = 32 (NF = 34) and some subtle morphological differences with *L. micropus* (that, in turn, has a 2n = 34, NF = 36; Spotorno *et al.*, 1998; Teta *et al.*, 2009). More recently, Novillo *et al.* (2009) reported the first record of *L. pikumche* in the Argentinean province of Mendoza and added some putative morphological differences with *L. micropus* to those previously listed by Spotorno *et al.* (1998). As discussed by Cañon *et al.* (2010), the morphological characters documented as differences by Novillo *et al.* (2009) have some degree of variation within populations of *L. micropus* s.s. (e.g., zygomatic plate morphology, lateral profile of nasals, development of posterior palate process; see Hershkovitz, 1962; Steppan, 1995) or were based on misinterpretation of some features (e.g., both specimens studied by Novillo *et al.* [2009] has posteriorly divergent toothrows, and not only that of *micropus*). Indeed, the distinction of *L. pikumche* was recently put in interdict by Cañon *et al.* (2010) on the base of molecular and morphological evidence. These authors remarked that several putative diagnostic characters (e.g., molar root numbers, incisor orientation, shape of upper incisor dentine fissure) vary within and among populations of *L. micropus* s.s. Further, Cañon *et al.* (2010) suggested that *L. pikumche* may be a junior synonym of *L. m. alsus* (Thomas, 1919).

Additional studies tending to solve the taxonomic status of northern populations of *Loxodontomys*, allowed us to uncover a major, though not yet discussed, issue related to the nature of the type series of *L. pikumche*. The observation of the holotype figures in the original description as well as a recent inspection of the skin, mandible and skull of specimen LCM [Laboratorio de Citogenética, Facultad de Medicina, Universidad de Chile] 1759, selected as the holotype of *pikumche* by Spotorno *et al.* (1998: figure 5), allow us to state that it is a composite. The skin (Fig. 1) is clearly referable to the genus *Loxodontomys* owing to the following characters (cf. Braun, 1993; Steppan, 1995): tail length (shorter than the head and body length), shape and length of ear (rounded and small), and hindfoot morphology (soles naked and slightly scutellated). However, the skull and mandible corresponds to a subadult specimen of *Phyllotis* Waterhouse. In fact, many anatomical traits of skull and mandible of LCM 1759, including the degree of molar hypsodonty, upper third molar reduction, orientation of molar toothrows, bullae development, degree of anterior expansion of nasal bones and orientation of the condyloid process of the mandible (cf. Steppan, 1995; Fig. 2), are undistinguishable from those of specimens of *P. xanthopygus* (Waterhouse). In addition, at least another specimen (LCM 1761) listed among the hypodigm of *L. pikumche* by Spotorno *et al.* (1998) in the description of *L. pikumche* (1998:362) is referable to the abrotrichine *Chelemys macronyx* (Thomas). In sum, specimens conforming the hypodigm of *L. pikumche* correspond to at least three genera of Sigmodontinae (i.e., *Chelemys*, *Loxodontomys* and *Phyllotis*).

In view of the composite nature of the holotype of *L. pikumche* a nomenclatorial action is needed to solve this issue. The consequences of restricting the name to the skin or to the skull and mandible are markedly dissimilar. The selection of the skull and mandible as the type would imply the need to include *L. pikumche* as subjective junior synonym of *P. xanthopygus*. Meanwhile, the restriction of the name to the skin would allow maintaining it associated to *Loxodontomys*.

We here restrict the name *Loxodontomys pikumche* to the skin of specimen LCM 1759 even when for taxonomic purposes this material might be less informative than the skull and mandible. Our choice is based on different lines of arguments. For nomenclatural stability reasons, we feel that is more appropriate to retain the name *pikumche* allied to