



Article

Description of a new shrew of the genus *Cryptotis* (Mammalia: Soricomorpha: Soricidae) from the Sierra de Aroa, an isolated mountain range in northwestern Venezuela, with remarks on biogeography and conservation

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Abstract

In South America, shrews of the genus *Cryptotis* have a primarily Andean distribution. Based on specimens from the non-Andean Sierra de Aroa in Venezuela, we name *Cryptotis aroensis* sp. nov., which we assign to the *C. thomasi* group of the genus owing to its possession of characters that include a relatively large body size, luxuriant fur, moderately enlarged forefeet with elongated and narrow claws, unicuspid teeth relatively narrow and concave on the posteroventral margin, ectoloph of first upper molar with the anterior element reduced relatively to the posterior element, and mandible with the articular process not robust, high, and broad, and with the coronoid process joining the ramus at a low angle. The new species can be differentiated from other members of the *C. thomasi* group on the basis of its possession of a unique combination of characters, that include a rich grayish brown pelage, a narrow palate at the level of the second upper molars (no overlap in this measurement observed with 146 specimens of 10 other species of the group), nasal cavity and ethmo-turbinals partially visible in occlusal view of palate, lacrimal foramina wide and deep, tympanic process of petromastoids showing a minute foramen, unicuspid teeth with posterolingual cuspules, fourth unicuspid tooth labially placed, third upper molar complex and nearly as wide as the second upper molar, and bicuspluate lower incisors. The new species is known from only 3 specimens obtained at the type locality, which is in a pristine patch of cloud forest at elevation 1730 m, and represents the first mammalian taxon known to be endemic to the Sierra de Aroa, a small and isolated mountain range that was previously reported to possess numerous biotic elements that are either exclusive, or shared with the much larger Cordillera de la Costa to the east. The clear morphological differentiation of the new species with respect to its Andean relatives suggests that its ancestors colonized the Sierra de Aroa several glacial maxima ago, when montane vegetation belts were lower than today. The presumably optimal habitat of the new species (cloud forests of the Sierra de Aroa above 1500 m) covers less than 40 km², and is threatened by deforestation and global climate change. Therefore, the new species can be categorized as endangered by application of criteria B2a and E of the current “Red List Categories and Criteria” of the International Union for Conservation of Nature.

Key words: climate change, elevation shifts, mountain endemics, Yaracuy

Introduction

The genus *Cryptotis* Pomel (Mammalia: Soricomorpha: Soricidae) is composed of 33 extant species of small to medium-sized shrews with reduced eyes and pinnae. Only 1 species, *Cryptotis parvus* (Say), with an ample distribution in México, occurs in the eastern half of the United States and adjacent Canada, 21 species occur only in México and Central America, and 11 species occur only in South America (Hutterer 2005; Woodman & Péfaur 2008; Woodman 2010; Quiroga-Carmona, 2011, in press). Based on morphological characters, extant species of *Cryptotis* are divided into 4 informal, but likely monophyletic, species groups, namely the *C. mexicanus* (Coues), *C. nigrescens* (J. A. Allen), *C. parvus*, and *C. thomasi* (Merriam) groups (Choate 1970; Woodman *et al.* 2003). Two of these species groups occur in South America: *C. nigrescens*, with 2 species (we do not count as South American *C. merus* Goldman, a member of the *C. nigrescens* group occurring in the Serranías de Darién and Pirre, along the