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Re-evaluation of the taxonomy of the Sri Lankan pigmy shrew *Suncus fellowesgordoni* (Soricidae: Crocidurinae) and its phylogenetic relationship with *S. etruscus*

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Abstract

The taxonomy of the pigmy shrews *Suncus fellowesgordoni* and *S. etruscus* is unclear and their phylogenetic relationships are unknown. Using molecular and morphological data, we confirm the species status of *S. fellowesgordoni* as being distinct from *S. etruscus*, its probable sister species. *Suncus fellowesgordoni* is genetically distant from *S. etruscus* populations in Sri Lanka and India, and Europe with a percent pairwise uncorrected genetic distance of 7.9–8.2% and 9.2–9.3% for cytochrome-*b* (mitochondrial DNA), respectively. The genetic distance between *S. fellowesgordoni* and *S. etruscus* of Sri Lanka and India for Rag 1 (nuclear DNA, exon) is 1.3–1.7%. The two species are also morphologically distinct by *S. fellowesgordoni* being larger in all dimensions, darker in hue and having two denticulations on the lower incisors.

Key words: Sri Lanka, pygmy shrews, systematics, morphology, cytochrome-*b*, Rag 1

Introduction

The genus *Suncus* Ehrenberg 1832 comprises 18 species (Hutterer 2005) that are widely distributed across Africa, Europe and Asia. Five species are found in Sri Lanka, *S. zeylanicus*, *S. montanus*, *S. fellowesgordoni*, *S. murinus* and *S. etruscus*, of which the former three are endemic to the island (Phillips 1980; Meegaskumbura and Schneider 2008), while the latter two have a wider distribution in the old world. *Suncus murinus* is distributed in Asia and Africa while *S. etruscus* is distributed in Asia, Africa and Europe (Hutterer 2005).

Of the endemic species, *S. zeylanicus* Phillips 1928 is believed to be a very rare species (Meegaskumbura *et al*. 2010) recorded only from its type locality, Kitulgala (Phillips 1928) and Sinharaja rainforest in the Sabaragamuwa province (Wijesinghe and Brooke 2005). The only reference material available for this species is the holotype and the skull of a paratype deposited in the Natural History Museum, London. *Suncus montanus* Kelaart, 1850 is confined to the highland montane forests and rainforest in the southwestern and southern parts of Sabaragamuwa province in Sri Lanka (Phillips 1980; Meegaskumbura and Schneider 2008). Earlier it was believed to occur in India (Corbet and Hill, 1991) but now the Indian and Sri Lankan populations are known to constitute two distinct species (Meegaskumbura and Schneider 2008). *Suncus montanus* was initially classified as a subspecies of *S. murinus* (Phillips 1980) and later recognized as a distinct species based on the differences in size, colour and habitat (Corbet and Hill 1992; Hutterer 2005); the two species were also found to be genetically distinct (Meegaskumbura *et al*. 2010). *Suncus montanus* is known to hybridize with its sister taxon, *S. murinus*, in several regions where the two species occur in sympatry (Meegaskumbura *et al*. 2010). The Sri Lankan pygmy shrew, *Suncus fellowesgordoni* Phillips 1932, is confined to the highlands (1006–1828 m elevation) of Sri Lanka (Phillips 1928; 1980). However, its taxonomy is unclear and its phylogenetic relationship with *S. etruscus* Savi 1822, the Etruscan pygmy shrew, is not known.

The Sri Lankan pigmy shrew was first collected from Gammaduwa (elevation: 1006 m) and was referred to as *S. perrotteti* Duvernoy 1842 due to its similarity in size to the Indian highland pigmy shrew *S. perrotteti* (Phillips 1928). Later *S. fellowesgordoni* was recognized as a distinct species, based on it being larger than *S. perrotteti* in all

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