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**Systematics, morphology, and ecological history of the Mascarene starlings  
(Aves: Sturnidae) with the description of a new genus and species from Mauritius**

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## Abstract

Two endemic starlings, both extinct, have been described from the Mascarene Islands of Réunion and Rodrigues: the Hoopoe Starling, Huppe or Réunion Crested Starling *Fregilupus varius*, which is known from 19 skins and a single Holocene proximal end of a fossil femur, and the Rodrigues Starling *Necropsar rodericanus*, which is known as specimens only from fossils of most skeletal elements. Both were recorded alive in early accounts of Mascarene faunas. A third species of starling *Cryptopsar ischyrrhynchus* **gen. nov. sp. nov.** is described herein from fossils from Mauritius, but was never reported in the early literature. This paper provides an analysis of the Sturnidae of the Mascarene Islands based on newly discovered fossil remains, and details historical reports and accounts. Their ecology and extinction are interpreted from historical evidence. *Necropsar*, *Cryptopsar* and *Fregilupus* clearly form part of the same clade, but morphological analysis shows that *Necropsar* and *Cryptopsar* are more closely related to each other than to *Fregilupus* and may have been part of a different colonisation event. All three genera appear to have their origins in SE Asia and have morphological similarities with the SE Asian sturnid genera, *Sturnia* and *Gracupica*, so they presumably colonised the islands via island-hopping during lower sea level stands.

**Key words:** Mascarene starlings, Sturnidae, *Fregilupus*, *Necropsar*, *Cryptopsar*, extinction, affinities, ecology

## Introduction

The starlings are a wide-ranging group of birds restricted to the Old World and have been divided into 32 genera (Craig & Feare 2009). They are extremely varied in plumage colouration and morphology, and some species are strikingly sexually dichromatic. The greatest diversity occurs in the Indo-Malayan and Afro-tropical regions, whereas only a few genera have colonised the Southwest Indian Ocean islands (Fig. 1). Two distinct, but now extinct starlings were described from the Mascarene Islands of Réunion (21° S, 55.5° E) (Fig. 2) and Rodrigues (19.75° S, 63.5° E) (Fig. 3). A third species of starling, endemic to Mauritius (20.25° S, 57.5° E) (Fig. 4), is described herein. The Réunion Crested Starling (or Bourbon Crested Starling, after the former name of the island), Hoopoe Starling, or Huppe, *Fregilupus varius* Boddaert, 1783 (Figs. 5, 6, 7, 8), last reported c.1860, is known from 19 museum skins and from a single fragment of fossil femur collected from a cave deposit on Réunion (Mourer-Chauviré *et al.* 1999). The Rodrigues Starling, *Necropsar rodericanus* Günther & Newton, 1879, last reported 1725–26, was described from subfossil remains collected by George Jenner and Henry. H. Slater during the 1860s and early 1870s (Günther & Newton 1879). The Réunion Crested Starling was mentioned a number of times by early visitors to the island (Cheke & Hume 2008), whereas the Rodrigues Starling was described only once (Hume & Walters 2012). The Mauritius Starling is known from Holocene fossil remains only.

**TABLE 2.** Nomenclatural status of real and supposed Mascarene starlings.

Species	Distribution	Types of evidence
† <i>Fregilupus varius</i>	Réunion	Skins, fossil record, contemporary illustrations and accounts
† <i>Cryptopsar ischyrrhynchus</i> nov.gen. & sp.	Mauritius	Fossil record
† <i>Necropsar rodericanus</i>	Rodrigues	Fossil record, single contemporary account
<i>Necropsar leguati</i>	Rodrigues	Skin. Based on misidentification and erroneous provenance. Synonymised under <i>Cinclocerthia gutturalis</i> (Olson <i>et al.</i> 2005)
<i>Orphanopsar leguati</i>	Mauritius	Based on misinterpretation of account and erroneous provenance. Synonymised under <i>Cinclocerthia gutturalis</i> (Olson <i>et al.</i> 2005)
<i>Testudophaga bicolor</i>	Rodrigues	Based on misinterpretation of account. Synonymised under <i>Necropsar rodericanus</i>

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