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**Reappraisal of the parrots (Aves: Psittacidae) from
the Mascarene Islands, with comments on
their ecology, morphology, and affinities**

JULIAN PENDER HUME



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Abstract

The parrots (Psittacidae: *Lophopsittacus*, *Psittacula*, *Necropsittacus*, *Mascarinus*) of the Mascarenes (Mauritius, Réunion, Rodrigues) have been relatively poorly studied. Most analyses have been based on a few skins, insufficient fossil material, and unreliable contemporary accounts and illustrations, which have led to erroneous interpretations. The discovery of new fossil remains of parrots and new interpretations of contemporary descriptions and illustrations has clarified many issues. One problematic species, *Lophopsittacus bensoni* is here removed to the genus *Psittacula*. A detailed comparative analysis of fossil skeletal elements indicates that the affinities of the Mascarene parrots lie within the Psittaculini, a wide ranging tribe of parrots that occurs mainly in Southeast Asia and Australasia. The Mascarenes are remote volcanic islands and biogeographical evidence presented here suggests that parrots reached this isolated group by island-hopping from India, probably during low sea level stands.

Key words: Mascarene parrots, extinction, affinities, morphology, ecology, biogeography, Psittaculini, *Psittacula bensoni* new comb

Introduction

The Mascarene Islands, comprising Mauritius, Réunion, and Rodrigues, lie on the southern edge of the tropics in the western Indian Ocean. The nearest large land mass is Madagascar, some 665 km to the west of Réunion, whilst the continental land mass of Australia is situated 4800 km east of Rodrigues. Mauritius (20.25° S 57.5°E) lies 164 km ENE of Réunion (21° S 55.5°E) and Rodrigues (19.75°S 63.5°E) is situated 574 km to the east of Mauritius (Fig.1).

The isolation of the Mascarenes has resulted in high faunal endemism, although adaptive radiation, particularly among birds, is extremely low. Terrestrial mammals and amphibians are absent, but endemic reptiles (Arnold 1979; 2000; Bour 1981) and fruit bats of the genus *Pteropus* (Cheke & Dahl 1981; Cheke 1987) are diverse. Mascarene environments remained pristine until comparatively recently. The first serious human activity did not occur until the late 16th century (Moree 1998), so that early travellers were able to provide a number of contemporary accounts and illustrations (Cheke 1987), which, although generally crude, give some indication as to the original ecology. The subsequent discovery of fossil material has allowed some corroboration of species described in early accounts. Because parrots were considered 'preferred game' to early mariners visiting the islands, most accounts unfortunately refer only to the ease with which they could be taken for the pot (Strickland & Melville 1848; Cheke 1987). Intense hunting led to their depletion or rapid extinction so that most species of parrots disappeared before they could be described scientifically except from fossil remains (see Table 1). In attempting to determine the original composition of the Mascarene parrot fauna, some influential works (Rothschild 1907a, b; Hachisuka 1953) confused rather than clarified the situation, with some parrots being based on inadequate evidence. Nevertheless, the number of species is remarkable for such a small archipelago and endemism is high. Because of the paucity of fossil parrot remains, the number of species may well have been higher than recognised here.

TABLE 1. Parrots of the Mascarenes and their status.

Species	Distribution	Types of evidence
† <i>Lophopsittacus mauritianus</i>	Mauritius	Fossil record, contemporary illustrations and accounts
† <i>Necropsittacus rodericanus</i>	Rodrigues	Fossil record and contemporary accounts
† <i>Psittacula bensoni</i> new comb.	Mauritius	Fossil record, contemporary illustrations and accounts
† <i>Psittacula cf. bensoni</i>	Réunion	Based on reliable contemporary accounts
<i>Psittacula echo</i>	Mauritius	Extant. Skins, fossil record and contemporary accounts
† <i>Psittacula eques</i>	Réunion	Contemporary illustrations and accounts
† <i>Psittacula exsul</i>	Rodrigues	Skins, fossil record, contemporary illustrations and accounts
† <i>Mascarinus mascarinus</i>	Réunion	Skins, fossil record, contemporary illustrations and accounts
† <i>Necropsittacus(?) borbonicus</i>	Réunion	Hypothetical, based on one reliable account. Indeterminate genus.
† <i>Necropsittacus francicus</i>	Mauritius	Invalid taxon based on misinterpretation of accounts