



Faunal survey, endemism and possible species loss of Scarabaeinae (Coleoptera: Scarabaeidae) in the western slopes of the moist South Western Ghats, South India

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Abstract

Species composition, distribution patterns and endemism are outlined for the dung beetles in the ecoregions of the western slopes of the moist South Western Ghats, South India. Among the 142 dung beetle species known, 35 are endemic to the Western Ghats; 29 are endemic to the moist South Western Ghats; 25 are regionally endemic to the South Western Ghats montane rain forests ecoregion; and one each to the Malabar Coast moist deciduous forest ecoregion and the South Western Ghats moist deciduous forests ecoregion. Five species, including the 3 flightless species, are local endemics to the upper montane tropical montane cloud forests. The montane rain forests ecoregion has the highest number of endemics in the moist south Western Ghats and the moist deciduous forests ecoregion and Malabar Coast moist deciduous forest ecoregion have the lowest levels of endemism. Of the 137 dung beetle species known prior to the deforestation and habitat modification of the region, only 87 have been collected recently.

Key words: Dung beetles, check list, the Western Ghats, local endemism

Introduction

The Western Ghats is a global hotspot of biodiversity in the southwest of the Indian subcontinent and is well known for the high endemism and species richness (Myers 2003). This area is divided into drier dipterocarp dominated North Western Ghats ecoregion and *Cullenia* forest dominated South Western Ghats ecoregion with Wyanad as the transition area (Rodgers & Panwar 1988, Wikramanayake *et al.* 2002). The South Western Ghats montane ecoregion, especially its moist western slopes, is considered as a region with the highest regional endemism and faunal diversity in the entire Western Ghats (Wikramanayake *et al.* 2002). A search for data on the biogeographic distribution patterns, endemism and flightless montane dung beetles in the South Western Ghats and in the adjoining Malabar Coast moist deciduous forest ecoregion revealed the high occurrence of dung beetles (Arrow 1931, Balthasar 1963) prior to extensive deforestation from 1970–1980 (Nair 1991). However, the use of imprecise locality names dating to the British administration makes it difficult to determine endemism using earlier publication such as Arrow (1931), Paulian (1945), Balthasar (1963, 1974) and Cambefort (1985). There are no data on the extent of species loss between 1970 and 1980 in the Western Ghats or on the current status of Scarabaeinae in the region. Hence it was considered useful to publish an updated checklist of the dung beetles in the moist South Western Ghats, following the classification system of Löbl and Smetana (2006). In addition, details are given of the distribution patterns, endemism, and probable species loss based on recent collection efforts across the ecoregion (Sabu & Vinod 2005; Anu 2006; Sabu *et al.* 2006, 2007; Vinod & Sabu 2007; Vinod 2009; Sabu 2011; Latha *et al.* 2011).

Study region

The study region consists of the windward moist western slopes of the south Western Ghats and the adjoining southern part of the Malabar Coast lying between the South Western Ghats and the Arabian Sea (Fig. 1). Wikra-