

## Integrative taxonomy resolves three new cryptic species of small southern African horseshoe bats (*Rhinolophus*)

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### Abstract

Examination of historical and recent collections of small *Rhinolophus* bats revealed cryptic taxonomic diversity within southern African populations previously referred to as *R. swinnyi* Gough, 1908 and *R. landeri* Martin, 1832. Specimens from Mozambique morphologically referable to *R. swinnyi* were phylogenetically unrelated to topotypic *R. swinnyi* from the Eastern Cape Province of South Africa based on cytochrome *b* sequences and showed distinctive echolocation, baculum and noseleaf characters. Due to their genetic similarity to a previously reported molecular operational taxonomic unit (OTU) from north-eastern South Africa, Zimbabwe and Zambia, we recognize the available synonym (*R. rhodesiae* Roberts, 1946) to denote this distinct evolutionary species. This new taxon is genetically identical to *R. simulator* K. Andersen, 1904 based on mtDNA and nuclear DNA sequences but can easily be distinguished on morphological and acoustic grounds. We attribute this genetic similarity to historical introgression, a frequently documented phenomenon in bats. An additional genetically distinct and diminutive taxon in the *swinnyi* s.l. group (named herein, *R. gorongosae* sp. nov.) is described from

Gorongosa National Park, central Mozambique. Specimens from Mozambique referable based on morphology to *R. landeri* were distinct from topotypic *landeri* from West Africa based on mtDNA sequences, and acoustic, noseleaf and baculum characters. This Mozambique population is assigned to the available synonym *R. lobatus* Peters, 1952.