



Ptilopachinae: a new subfamily of the Odontophoridae (Aves: Galliformes)

RAURI C.K. BOWIE^{1,3}, CALLAN COHEN² & TIMOTHY M. CROWE²

¹Museum of Vertebrate Zoology and Department of Integrative Biology, University of California, 3101 Valley Life Science Building, Berkeley, CA 94720, USA

²Percy FitzPatrick Institute, DST/NRF Centre of Excellence, University of Cape Town, Private Bag X3, Rondebosch 7701, Cape Town, South Africa

³Corresponding author. E-mail: bowie@berkeley.edu

The use of DNA sequences of diverse genetic loci has revolutionized our understanding of the systematic relationships among many different organisms. One such unexpected discovery was that two African galliform species, the Stone Partridge *Ptilopachus petrosus* Gmelin, 1789, and Nahan's Francolin *Francolinus nahani* Dubois, 1905, represent a relictual clade sister to the New World Quail (Odontophoridae) and hence are only distantly related to other Old World Galliformes (Crowe *et al.* 2006, Cohen *et al.* 2012). Almost as unexpected was the recovery of the sister relationship between *P. petrosus* and *F. nahani*, which had never been considered close relatives, much less placed in the same genus (Crowe *et al.* 2006, Cohen *et al.* 2012). Previously unrecognized vocal and behavioral similarities between *P. petrosus* and *P. nahani* supported the genetic data and the transfer of *nahani* to *Ptilopachus* (Crowe *et al.* 2006, Cohen *et al.* 2012). Intriguingly, both species occupy areas suggested to serve both as centres of species diversification and places where relictual taxa persist (Kingdon 1989, Fjeldså & Bowie 2008, Fjeldså *et al.* 2012): *P. nahani* in dense primary forest in the vicinity of the Albertine Rift and *P. petrosus* in rocky outcrops of the Sahel.

Cohen *et al.* (2012) suggested that the African *Ptilopachus* diverged from the New World quail some 37.4 Ma (95% HPD 31.7-43.0) in the Oligocene, and from each other some 9.6 Ma (95% HPD 5.8-14.0). Given the considerable time since *Ptilopachus* diverged from the remaining members of the Odontophoridae (genera *Dendroortyx*, *Oreortyx*, *Callipepla*, *Philortyx*, *Colinus*, *Odontophorus*, *Dactylortyx*, *Cyrtonyx*, and *Rhynchortyx*), as well as the clear disjunction of Old World taxa from New World taxa, we recommend that all New World species of Odontophoridae be placed in the subfamily Odontophorinae Gould, 1844, and in accordance with the International Code of Zoological Nomenclature (1999; Art. 13.1.1), erect and provide a formal definition below of a new subfamily to encompass the two African species of the genus *Ptilopachus*.

Family: Odontophoridae Gould, 1844

Subfamily: Ptilopachinae Bowie, Cohen and Crowe, subfam. nov.

Type genus: *Ptilopachus* Swainson, 1837

Description: Small African-endemic galliform birds (Aves: Galliformes) that have bare red skin around the eye, lack tarsal spurs, and are not sexually dimorphic. Both taxa regularly cock their tails, a character shared by only one other African galliform, *Dendroperdix sephaena* Smith. The calls of both taxa consist of a series of whistles increasing in volume and likely comprise duets. Field observations suggest that both taxa live in small family groups.

Diagnosis: The Ptilopachinae is circumscribed within Galliformes via analysis of both maternally inherited molecular markers (mitochondrial DNA) and biparentally inherited molecular markers (several nuclear genes; see Crowe *et al.* 2006, Cohen *et al.* 2012 for details). It can be defined as the clade originating with the most recent common ancestor of *Ptilopachus petrosus* and *P. nahani*. All members of the Odontophorinae of the New World, sister group to the Ptilopachinae, are reported to share a single unambiguously derived character, namely, the presence of serrations on the cutting edge of the lower mandible (the tomium; Dyke *et al.* 2003). Serrations are not present on the tomium of either *P. petrosus* or *P. nahani*; bills of these taxa are instead typical of the broader Phasianioidea. Thus, within the