



New feather mites of the genera *Aniacarus* and *Aniibius* (Acariformes: Pterolichidae) from two cuckoo species (Cuculiformes: Cuculidae) in Brazil

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Abstract

Five new species of the family Pterolichidae are described from two common non-parasitic cuckoo species of the subfamily Crotophaginae (Cuculiformes: Cuculidae) in Brazil: *Aniacarus ani* sp. n. from the Smooth-billed Ani, *Crotophaga ani* Linnaeus, *A. simplex* sp. n., *A. robustus* sp. n., *A. coronatus* sp. n. and *Aniibius guirae* sp. n. from the Guira Cuckoo, *Guira guira* (Gmelin). A key to all known species of *Aniacarus* is provided. All four pterolichid species associated with the *G. guira* can occur simultaneously on one host individual. A brief review of studies of feather mites associated with Cuculidae is given.

Key words: Acari, feather mites, Pterolichidae, systematics, Cuculiformes, Brazil

Introduction

Feather mites are a vast group of ectoparasitic or commensal astigmatan mites (Acari: Astigmata: Analgoidea and Pterolichoidea) permanently living on birds (Gaud & Atyeo 1996; Mironov 2003; Proctor 2003; OConnor 2009). At present, these mites have been recorded from representatives of all recent bird orders (Gaud & Atyeo 1996; Proctor 2003; Mironov & Proctor 2008), although many major groupings of birds still remain quite poorly explored in relation to their specific feather mite fauna.

The family of cuckoos (Cuculiformes: Cuculidae) currently includes 145 species in 24 genera (Clements *et al.* 2014) and their feather mite fauna is relatively poorly explored compared to that of many other groups of birds, for instance the orders Charadriiformes and Psittaciformes (Gaud and Atyeo, 1996). Among birds, the cuckoo family is most famous for its brood-parasitic species, like the Common cuckoo *Cuculus canorus* Linnaeus, and therefore the specificity and transmission of feather mites associated with such hosts are particularly interesting. Nevertheless, there are many species of cuckoos that raise their own young as most other birds do. Table 1 summarizes the data on feather mite species recorded from cuckoos of the world, including species described in the present paper. In total, 20 feather mite species of 11 genera and 7 families have been recorded so far from 31 cuckoo species of 12 genera.

The most extensive investigation of feather mites associated with cuckoos has been carried out in Africa (Gaud 1966). Based on a vast museum material and works of previous investigators (Trouessart 1885, 1887; Dubinin 1956), Gaud (1966) reported nine feather mite species of five genera from African cuckoos: *Scutalges* Gaud, 1966 (Analgidae), *Xolalges* Trouessart, 1885 (Xolalgidae), *Allanalges* Trouessart, 1887 (Trouessartiidae), *Coccylichus* Gaud, 1966 (Pterolichidae), and *Coraciacarus* Dubinin, 1956 (Gabuciniidae).

In Eurasia, a common and widely distributed cuculid species, *Cuculus canorus* Linnaeus, bears only two species: *Coraciacarus cuculi* (Mégnin and Trouessart, 1884) (Gabuciniidae) and *Xolalges scaurus* Trouessart, 1885 (Xolalgidae) (Trouessart 1885; Dubinin 1956; Gaud 1966). Dubinin (1956) reported *C. cuculi* from four cuckoo species occurring in the Russian Far East. In the checklist of ectoparasitic arthropods of birds of

Differential diagnosis. The new species *Aniibius guirae* sp. n. differs from *A. drepanophorus* Gaud and Atyeo, 1990 by having the following features: in males, setae *ps1* are filiform, setae *f2* are spiculiform, and the anterior end of genital apparatus does not extend to the level of epimerites IIIa (Figs. 13A, 15E); in females, the hysteronotal shield is split by a wide area of striated tegument into an anterior hysteronotal piece (proper hysteronotal shield) and the pygidial shield, setae *e1* are situated approximately at the level of the hysteronotal gland openings *gl*, and setae *ps1* are situated on the posterior margin of opisthosoma, at the level of macrosetae *h3*. In males of *A. drepanophorus*, setae *ps1* are foliform, setae *f2* are narrowly lanceolate, and the anterior end of the genital apparatus extends to the level of epimerites IIIa; in females, the hysteronotal shield is entire, setae *e1* are situated anterior to the level of the openings *gl*, and setae *ps1* are situated at the level of setae *h2*.

Remark. In the original description of the previously known *A. drepanophorus*, the authors of this species stated that the supranal concavity in males is absent (Gaud and Atyeo 1990). However, they depicted on the ventral side of the male a well sclerotized ovate structure between the adanal suckers, that is quite certainly a supranal concavity rather than the anal opening, which is always slit-like in astigmatan mites.

Etymology. The specific epithet is derived from the generic name of the type host and is a noun in the genitive case.

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