



## New feather mites of the subfamily Pterodectinae (Acari: Astigmata: Proctophyllodidae) from passerines (Aves: Passeriformes) in Mato Grosso do Sul, Brazil

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## Abstract

Four new species of the genus *Pterodectes* Robin, 1877 and three new monotypic genera of the feather mite subfamily Pterodectinae (Astigmata: Proctophyllodidae) are described from various passerines captured in Mato Grosso do Sul (Brazil). The following new species are described: *Pterodectes paroariae* **sp. n.** from *Paroaria capitata* (Orbigny et Lafresnaye, 1837) (Emberizidae), *P. tangarae* **sp. n.** from *Tangara cayana* (Linnaeus, 1766) (Thraupidae), *P. molothrus* **sp. n.** from *Molothrus bonariensis* (Gmelin, 1789) (Icteridae), *P. pitangi* **sp. n.** from *Pitangus sulphuratus* (Linnaeus, 1766) (Tyrannidae), *Tyrannidectes berlai* gen. n., **sp. n.** from *Myiarchus tyrannulus* (Muller, 1776) (type host) and *M. ferox* (Gmelin, 1789) (Tyrannidae), *Metapterodectes furnarius* gen. n., **sp. n.** from *Furnarius rufus* (Gmelin, 1788) (Furnariidae), and *Nanodectes formicivorae* gen. n., **sp. n.** from *Formicivora rufa* (Thamnophilidae). Brief comments on the taxonomic structure of the subfamily Pterodectinae and species content of the genus *Pterodectes* are given. The two newly described genera, *Tyrannidectes* gen. n. and *Metapterodectes* gen. n., are close to the genus *Pterodectes*. The genus *Tyrannidectes* gen. n. differs from the latter genus by loss of setae *sR* on trochanters III, and *Metapterodectes* gen. n. differs by loss of setae *sR* on trochanters III and Solenidion  $\sigma 1$  on genua III. In *Pterodectes*, setae *sR*III and solenidion  $\sigma 1$  are present on legs III. The genus *Nanodectes* gen. n. is close to *Proterothrix* Gaud, 1968 and differs from that genus by the loss of idiosomal setae *d1*, *d2*, *e2*, *f2* that is a unique combination of lost setae among all pterodectines; in closely related *Proterothrix*, only idiosomal setae *c1* may be absent.

**Key words:** Acari, Astigmata, feather mites, Proctophyllodidae, systematics, Aves, Passeriformes, Brazil

## Introduction

Feather mites are diversiform and highly specialized grouping of astigmatan mites permanently dwelling on the plumage or skin of birds. These mites count about 2500 species, which according to modern taxonomic concepts constitute at least three separate superfamilies within the supercohort Psoroptidia (OConnor 1982; Gaud & Atyeo 1996; Dabert & Mironov 1999). The Pterodectinae is one of the three subfamilies of Proctophyllodidae (Astigmata: Analgoidea) currently including over 120 species in 13 genera (Park & Atyeo 1971; Gaud & Atyeo 1996; Mironov & Fain 2003; Hernandez & Valim 2006; Mironov 2006). Pterodectines are typical inhabitants of feathers with well developed and large vanes, such as the primary and secondary flight feathers and the tail feathers, where they are located in corridors on the ventral side of vanes. They are highly adapted to these microhabitats and commonly have a strongly elongated and slightly flattened body, with well developed dorsal shields and with most dorsal setae significantly reduced in size. Mites of this subfamily are widely distributed on passerines (Passeriformes) and hummingbirds (Apodiformes: Trochilidae), several species occur on the representatives of Piciformes and Coraciiformes, while host associations with Musophagiformes (Trouessart 1885) and Gruiformes (Aty eo & Gaud 1977) are exceptions and quite probably the results of host shifting.

Taxonomic biodiversity of pterodectines was most extensively studied in the past fifty years in Africa (Gaud 1952, 1953, 1957, 1964; Till 1954, 1957; Gaud & Mouchet 1957; Gaud & Till 1961; Mironov & Kopij 1996a, 1996b, 1997; Mironov & Fain 2003) and South America (Berla 1958, 1959a–1959c, 1960; Černý 1974; OConnor *et al.* 2005; Hernandez & Valim 2005, 2006; Valim & Hernandez 2006). In much lesser extent these mites were explored in other areas of the Old World (Sugimoto 1941; Gaud & Petitot 1948, Gaud 1962, 1968, Mironov 1996, 2006; Kuroki *et al.* 2006; Mironov *et al.* 2008). A detailed revision of Pterodectinae, including renewed generic diagnoses, key to genera, and a review of their species content, was carried out by Park and Atyeo (1971). Nevertheless, the most species-rich genera of this subfamily, *Montesauria* Oudemans, 1905, *Pterodectes* Robin, 1877, and *Proterothrix* Park et Atyeo, 1971, need taxonomic revisions and construction of keys to species to stimulate subsequent investigation of these mites. Taking into consideration a great number of potential but yet unexplored passerine hosts of pterodectines, it is possible to expect a vast fauna, several times greater than what is currently known.