Zootaxa 3956 (1): 097–112
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3956.1.5
http://zoobank.org/urn:lsid:zoobank.org:pub:7AB41D77-AB4E-4659-8F0B-92383F92D9EC

Tachornithoglyphus gen. nov.—a new genus of nidicolous Pyroglyphidae (Acariformes: Astigmata)

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Abstract

Tachornithoglyphus **gen. nov**. (Acariformes: Pyroglyphidae) is established for *Tachornithoglyphus tachornis* (Cruz, Cuervo and Dusbabek, 1984), **comb. nov.** (transferred from *Guatemalichus*), collected from nests of the Antillean palm swift, *Tachornis phoenicobia* (Apodiformes: Apodidae) in Cuba. The new genus differs from the other four genera of the subfamily Guatemalichinae, *Guatemalichus* Fain and Wharton, 1970, *Pottocola* Fain, 1971, *Fainoglyphus* Atyeo and Gaud, 1977, and *Capitonocoptes* Fain and Gaud, 1984, mainly by having the length of solenidion *σ1* of genu I less than one-third that of the segment (vs. solenidion *σ1*I at least half as long as genu I), by the absence of famulus *ε* on tarsus I (vs. present), and by coxal apodemes Ia separated from each other and contiguous to the lateral parts of the epigynal arch (vs. posterior tips of apodemes Ia fused to each other and with the median part of the epigynal arch, or separated and contiguous to or fused with the median part of the epigynal arch). A detailed redescription of adults and tritonymphs of *T. tachornis* is provided.

Key words: Acari, nidicolous mites, Pyroglyphidae, systematics, *Tachornithoglyphus* **gen. nov.**

Introduction

With few exceptions, astigmatan mites (Acariformes: Astigmata) that are permanent parasites of warm-blooded vertebrates are grouped in the parvorder Psoroptidia (Mironov & Bochkov 2009; OConnor 2009). In this parvorder, only the family Pyroglyphidae includes free-living forms, mainly species inhabiting nests of birds, house dust and stored food products (Fain 1988). In addition, some species of the family are permanent external symbionts of birds. According to recent phylogenetic hypotheses for the Psoroptidia (Klimov & OConnor 2008, 2013; Bochkov & Mironov 2011), the root of the Pyroglyphidae lies within the non-pterolichoid Psoroptidia. Ancestral state reconstruction and other phylogenetically explicit statistical analyses suggest that nidicolous pyroglyphids evolved from a parasitic psoroptidian ancestor. Such transition from parasitic to nidicolous mode of live is violation of Dollo's Law (Klimov & OConnor 2013). In the process of subsequent evolutionary radiation, pyroglyphids colonized human habitations and are the cause of allergies, asthma, rhinitis and/or atopic dermatitis to humans. In addition they can cause damage to stored food products (Fain 1990).

To date the family Pyroglyphidae includes about 35 species belonging to 18 genera (Fain 1988; Fain & Atyeo 1990). Fain (1988) subdivided the Pyroglyphidae into five subfamilies: Pyroglyphinae, Dermatophagoidinae, Guatemalichinae, Onychalginae, and Paralgopsinae. Because this was not accompanied by a phylogenetic analysis, the limits and monophyly of these subfamilies, and even whether some of these taxa belong to the Pyroglyphidae, have been questioned (Fain 1988; Fain & Atyeo 1990; Gaud & Atyeo 1996; Klimov & OConnor 2008, 2013; Bochkov & Mironov 2011; Bochkov *et al*. 2014).

The subfamily Guatemalichinae includes four genera (Fain 1988; Gaud & Atyeo 1996): *Guatemalichus* Fain and Wharton, 1970 (2 species), *Fainoglyphus* Atyeo and Gaud, 1977 (1 species), *Pottocola* Fain, 1971 (1 species),

Accepted by O. Seeman: 14 Apr. 2015; published: 7 May 2015