Zootaxa 2840: 1–414 (2011)
www.mapress.com/zootaxa/

Monograph

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

ZOOTAXA

2840

Quill mites (Acari: Syringophilidae) of the Palaearctic region

MACIEJ SKORACKI
Department of Animal Morphology, Adam Mickiewicz University, Faculty of Biology, Umultowska 89, 61–614 Poznan, Poland.
E–mail: skoracki@amu.edu.pl

Magnolia Press
Auckland, New Zealand

Accepted by A. Bochkov: 12 Jan. 2011; published: 29 Apr. 2011

MACIEJ SKORACKI
Quill mites (Acari: Syringophilidae) of the Palaearctic region
(*Zootaxa* 2840)

414 pp.; 30 cm.

29 Apr. 2011

ISBN 978-1-86977-677-0 (paperback)

ISBN 978-1-86977-678-7 (Online edition)

FIRST PUBLISHED IN 2011 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

http://www.mapress.com/zootaxa/

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

Table of contents

Abstract

The fauna of quill mites of the family Syringophilidae (Acari: Prostigmata: Cheyletoidea) of the Palaearctic Region is comprehensively revised. The external morphology of adults and immature instars was studied in detail. All known 118 species grouped in 32 genera and 2 subfamilies occuring in the Palaearctic Region are examined and keyed. Critical reviews of host associations, occupying habitat, and distribution are given for all mite species. Six new genera are proposed,

4 in the subfamily Syringophilinae: *Betasyringophiloidus* **gen. nov.**, *Krantziaulonastus* **gen. nov.**, *Paraniglarobia* **gen. nov.**, *Pteroclidisyringophilus* **gen. nov.;** and 2 in the subfamily Picobiinae: *Neopicobia* **gen. nov.**, and *Rafapicobia* **gen. nov.** Twenty five new species are described in the subfamily Syringophilinae: *Aulobia leucostictus* **sp. nov.**, *Aulonastus lanius* **sp. nov.**, *A. loxius* **sp. nov.**, *A. anthus* **sp. nov.**, *A. fringillus* **sp. nov.**, *Betasyringophiloidus saxicolus* **sp. nov.**, *B. phoenicurus* **sp. nov.**, *Krantziaulonastus oryzivorus* **sp. nov.**, *K. lonchurus* **sp. nov.**, *Meitingsunes columbicus* **sp. nov.**, *Neoaulonastus remizus* **sp. nov.**, *N. caligatus* **sp. nov.**, *N. aegithalos* **sp. nov.**, *N. picidus* **sp. nov.**, *N. riparius* **sp. nov.**, *Selenonycha chradriiformicus* **sp. nov.**, *Syringophiloidus philomelosus* **sp. nov.**, *S. petronicus* **sp. nov.**, *S. parapresentalis* **sp. nov.**, *S. coccothraustes* **sp. nov.**, *Syringophilopsis idunae* **sp. nov.**, *S. muscicapus* **sp. nov.**, *S. passericus* **sp. nov.**, *S. nucifragus* **sp. nov.**, *Torotrogla pycnonotus* **sp. nov.** and five new species are described in the subfamily Picobiinae: *Picobia cetti* **sp. nov.**, *P. riparius* **sp. nov.**, *P. eremophila* **sp. nov.**, *P. galerida* **sp. nov.**, and *Rafapicobia zirnitra* **sp. nov.** The following new combinations are proposed: *Aulobia stachyris* (Bochkov *et al.*, 2000) **comb. nov.**, *Betasyringophiloidus motacillae* (Bochkov and Mironov, 1998) **comb. nov.**, *B. schoeniclus* (Skoracki, 2002) **comb. nov.**, *Columbiphilus alectoris* (Fain *et al*., 2000) **comb. nov.**, *Columbiphilus polonica* (Skoracki *et al.*, 2001) **comb. nov.**, *C. pteroclesi* (Skoracki and OConnor, 2010) **comb. nov.**, *Cuculisyringophilus chirovi* (Bochkov and Mironov, 1998) **comb. nov.**, *Krantziaulonastus buczekae* (Skoracki, 2002) **comb. nov.**, *Krantziaulonastus galbulicus* (Skoracki, 2008) **comb. nov.**, *Neoaulonastus bisetatus* (Fritsch, 1958) **comb. nov.**, *Neopicobia anthi* (Fritsch, 1958) **comb. nov.**, *Neopicobia cardinalis* (Skoracki *et al.*, 2010) **comb. nov.**, *N. carpodacus* (Skoracki *et al*., 2010) **comb. nov.**, *N. epthianura* (Skoracki *et al*., 2008) **comb. nov.**, *N. glossopsitta* (Skoracki *et al.*, 2008) **comb. nov.**, *N. locustella* (Skoracki *et al*., 2004) **comb. nov.**, *N. modularis* (Skoracki and Magowski, 2001) **comb. nov.**, *N. pyrrholaemus* (Skoracki and Glowska, 2008) **comb. nov.**, *N. troglodytes* (Skoracki *et al*., 2010) **comb. nov.**, *N. zumpti* (Lawrence, 1959) **comb. nov.**, *Paraniglarobia calidridis* (Bochkov and Mironov, 1998) **comb. nov.**, *Paraniglarobia skorackii* (Bochkov and Galloway, 2004) **comb. nov.**, *Pteroclidisyringophilus re* (Skoracki and OConnor, 2010) **comb. nov.** Three species are considered as *incertae sedis*: *Picobia brotogeris* Fain *et al*., 2000, *P. leucophaeus* Skoracki *et al.*, 2010, *P. poicephali* Skoracki and Dabert, 2002. Keys to the syringophilid genera and all Palaearctic species are provided. Main aspects of host–parasite relationships are discussed.

Key words: Acari, Syringophilidae, quill mites, systematics, ectoparasites, Palaearctic region, birds

Introduction

The family Syringophilidae is a group of parasitic, highly specialised mites inhabiting the feather quills. These mites are mono- or oligoxenous permanent parasites associated with birds of different orders throughout the World. To date this family includes more than 240 species of 52 genera described from all zoogeographical regions. This number of syringophilid species is only a small part of their actual biodiversity, because the wide spectrum of the avian hosts are still largely unexplored. The actual number of the extant syringophilid species is at least 5000 as it was estimated based on species numbers of their potential hosts (Johnston & Kethley 1973).

The Palaearctic fauna includes most recognized syringophilid species and is in needs of a comprehensive revision. In this work, I provide such revision of the Palaearctic syringophilids, including redescriptions of all species, keys and analysis of host-parasite relationships.

1. Historical review

According to the current phylogenetic conception (Bochkov 2002, 2008; Bochkov *et al*. 2008), the family Syringophilidae belongs to the superfamily Cheyletoidea (order Acariformes, suborder Trombidiformes, infraorder Prostigmata, parvorder Eleutherengona, sectio Raphignathae—according to the system by Mironov & Bochkov 2009). Different authors included in this superfamily up to eight families (Table 1). Phylogenetical hypothesis of the superfamily Cheyletoidea has been proposed by Bochkov (2002, 2008). According to this hypothesis, the superfamily Cheyletoidea includes five families and consists of two monophyletic lineages: (i) Cheyletidae-Syringophilidae and (ii) Harpirhynchidae (Demodicidae-Psorergatidae). The families Cheyletidae and Syringophilidae are closely related and, probably, diverged from a common cheyletoid-like ancestor, which had lived in bird's nests (Fain *et al.* 2000; Bochkov 2002, 2008).

All members of the superfamily Cheyletoidea, excluding the family Cheyletidae, are permanent and highly specialized parasites: Harpirhynchidae (ectoparasites of birds and snakes), Demodicidae and Psorergatidae (endoparasites of mammals); the family Cheyletidae includes both free-living predators and highly specialized ectoparasites of birds and mammals (Bochkov 2008).