



Systematics of the ectoparasitic quill mites of the genus *Aulobia* Kethley, 1970 (Acari: Syringophilidae) with the description of a new species

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Abstract

A new species of the genus *Aulobia* is described and figured: *A. cardueli* **sp. nov.** found inside the quill feathers of the Lesser Goldfinch *Carduelis psaltria* (Say) (Passeriformes: Fringillidae) from the USA. Additionally, *A. dendroicae* (Clark, 1964) is redescribed and *Syringophilopsis sylviettae* Fain *et al.*, 2000 is transferred to the genus *Aulobia*. A key to all named species is given. Distribution and host association of mites of this genus are summarized in tabular form.

Key words: Acari, Syringophilidae, *Aulobia*, quill mites, ectoparasites

Introduction

Syringophilid mites (Acari: Prostigmata: Cheyletoidea) are a diverse group of obligatory and permanent bird ectoparasites. They live and reproduce inside the quills of most types of feathers: primaries, secondaries, coverts, tail and body feathers. Quill mites feed on soft-tissue fluids of their hosts by piercing through the calamus wall with their long and flexible chelicerae (Kethley 1971). Transmission of these mites is mainly vertical from parents to their offspring, but horizontal transfer, from one adult host to another during molt, is also possible. There is still not sufficient data on the pathogenicity and negative impact on bird fitness, but some authors suggest that they may be potential enzootic vectors for pathogens (Skoracki *et al.* 2006).

At present, the family is subdivided into 2 subfamilies, Syringophilinae Lavoipierre with 37 genera and Picobiinae Kethley et Johnson with 2 genera. Syringophilids have a wide host range and at this time they have been noted from representatives of 19 bird orders (Skoracki & OConnor 2010).

The genus *Aulobia* was established by Kethley (1970) who placed it in the subfamily Syringophilinae. Members of this genus are uniform, medium-sized mites with the lengths of females and males from 700–1050µm and 400–600µm, respectively. The genus *Aulobia* has well defined characters, which distinguish this taxon from the closely related genus *Syringophiloides* Kethley, 1970. Females of *Aulobia* have a hypostomal apex with two pairs of unequal finger-like lips (absent in males); movable cheliceral digits are dentate and ornamented by two teeth each (edentate in males); the propodotum bears six pairs of smooth setae; the hysteronotum is covered by a more-or-less sclerotized hysteronotal shield, which can be reduced to a small sclerite near the bases of setae *d1* or may be represented by a large shield fused to the pygidial shield; aggenital series (*ag*) is represented by three pairs of setae (2–3 pairs in males); pseudanal (*ps*) and genital (*g*) series is represented by two pairs of setae; legs are with full complement of setae (for Syringophilidae); apodemes of legs I are not fused to apodemes II, but often may be adjoining to them.

In his diagnosis of this genus, Kethley (1970) noted that these mites (females) have edentate movable cheliceral digits and an ornamented hypostomal apex. Analyses of the type species of this genus, *A. dendroicae* (Clark, 1964), show that the chelicerae are dentate, each with two minute teeth. The hypostomal apex is smooth with two pairs of the finger-like lips reaching above the hypostomal apex.