

Seven species of quill mites (Acari: Syringophilidae) new to the Faroe Islands

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INTRODUCTION

The mites of the family Syringophilidae (Acari: Cheyletoidea), commonly known as quill mites, are permanently associated with birds, occurring exclusively inside the hollow cavities of feather quills. Here, the entire life cycle takes place, and both immature and adult mite stages can be found in this highly specialized microhabitat (Skoracki 2011). Approximately 400 species have been described to date, and the family is known from all biogeographic realms (Zmudzinski et al. 2023). However, the true global diversity has been estimated to include as many as 5000 species (Johnston & Kethley, 1973). The distribution of many species remains poorly known, with most studies focused on birds from mainland Europe. In contrast, the quill mite fauna of birds in the North Atlantic is generally understudied and has so far been investigated primarily in aquatic birds (Skoracki & Zawierucha 2016; Skoracki & Haarder 2024; Skoracki et al. 2022, 2024).

To address this knowledge gap, we surveyed the quill mite fauna of 37 bird species belonging to “terrestrial orders”—namely Columbiformes (2 species), Apodiformes (1), Falconiformes (1), Strigiformes (2), Passeriformes (30), and Piciformes (1)—from the Faroe Islands (located between Norway and Iceland on 62° N, 7° W) in the North Atlantic. The methodology for collecting and processing quill mites follows that described in Skoracki & Haarder (2024).

RESULTS AND DISCUSSION

From a total of 85 examined birds representing 37 species, quill mites were recovered from 7 individuals. In the discussion below, host and geographic distribution data follow Zmudzinski et al. (2023).

Peristerophila columbae (Hirst, 1920) is a cosmopolitan species occurring on various columbid hosts, including Rock dove, *Columba livia* Gmelin (Columbidae). *Syringophilopsis blaszaki* Skoracki & Dabert, 1999 and *S. kazmierski* Skoracki, 2004, found respectively on Meadow Pipit, *Anthus pratensis* (Linnaeus) (Motacillidae), and European Pied Flycatcher, *Ficedula hypoleuca* (Pallas) (Muscicapidae), exhibit a predominantly European distribution, whereas *Neosyringophilopsis troglodytis* (Fritsch, 1958) has been reported from a handful of European countries on Eurasian wren, *Troglodytes troglodytes* (Linnaeus), as well as from Northern House Wren, *T. aedon* Vieillot, in Canada (both Troglodytidae). The European Robin, *Erithacus rubecula* (Linnaeus) (Muscicapidae), is recorded here as a new host for *Rafapicobia zirnitra* Skoracki, 2011, a species previously known

from various muscicapid hosts across Europe and Asia. The findings of *Krantziaulonastus dubinini* Skoracki & Sikora, 2014 on House Sparrow, *Passer domesticus* (Linnaeus) (Passeridae), and *Syringophilopsis rusticus* Skoracki, 2004 on Barn Swallow, *Hirundo rustica* Linnaeus (Hirundinidae), represent the second known records for each species; both were previously reported from the same hosts in Russia and Poland, respectively.

Additionally, quills containing mite excrement—but no live specimens—were found on a primary wing feather of *P. domesticus* and a secondary wing feather of Red Crossbill, *Loxia curvirostra* Linnaeus (Fringillidae). Although speculative, it is likely that the former was infested by *Syringophiloides minor* Berlese, 1887, a species with a Holarctic distribution commonly found on *P. domesticus*. Two quill mite species have previously been recorded from the wing feathers of *L. curvirostra*: *Torotroglia cardueli* Bochkov & Mironov, 1999, which occurs on several fringillid species, and *Aulonastus loxius* Skoracki, 2011, a host specialist restricted to *L. curvirostra*.

These new distributional records of the understudied and cryptic quill mites contribute to a more comprehensive understanding of their biogeography, host associations, and potential conservation status. Continued sampling, particularly in remote or poorly studied regions such as the North Atlantic islands, is essential for uncovering the true diversity and ecological significance of this highly specialized mite group.

MATERIAL

Specimen data available at <https://doi.org/10.5886/utgtdk>

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Figure 1: Female of *Syringophilopsis blaszaki* from *Anthus pratensis*, specimen SH-FI-001.



Figure 2: Specimens of *Rafapicobia zirnitra* (top) inside quill of *Erithacus rubecula*.



Figure 3: Specimens of *Syringophilopsis rusticus* inside quill of *Hirundo rustica*.