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NATURAL RESOURCES SURVEY
A New Genus and Species of Quill Mites (Acarina: Syringophilidae) from Colinus virginianus (Galliformes: Phasianidae) With Notes on Developmental Chaetotaxy

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Introduction

The cheyletoid family Syringophilidae Lavoipierre, 1953, includes 17 described genera known to parasitize ten orders of birds (Kethley, 1970). For the most part, the genera appear to be specific at the ordinal level of avian host. The adaptive strategy of quill mites to exploit the volume of the quill has resulted in a restriction of mite species to specific feather tracts (Kethley, 1971). Consequently, it is possible to find two or more different quill mite species, usually representing different genera, parasitizing the same host individual.

At present, two or more syringophilid genera per host order are only known for three bird orders (Charadriiformes, Columbiformes, Passeriformes). A new genus and species from Colinus virginianus, described below, represents the second syringophilid genus from a galliform host.

The terminology employed in the description follows that used in a former paper (Kethley, 1970). All measurements are in microns.
Colinophilus, new genus

Species of Colinophilus may be distinguished from all other species of Syringophilidae by the presence of \( v s ^ { 2 } H \), having setae \( l 2, d 3 \) in a longitudinal row, and the presence of lateral hypostomal teeth. This new genus appears most similar to Stibarokris, but is also closely related to Syringonomus. These large-sized mites (800-1,100\( \mu \)) are found in the primaries of galliform birds of the family Phasianidae. The name Colinophilus means lover of colinus.

Type species.—Colinophilus wilsoni, new species, ex. Colinus virginianus (L.), Phasianidae, Galliformes.


Colinophilus wilsoni new species. Figures 1—4.

FEMALE (holotype). Length 1,097\( \mu \); width 312\( \mu \), Gnathosoma: Hypostomal apices fleshy, hyaline lobes, unornamented, with smooth margins. Lateral hypostomal apodemes (teeth) present (fig. 3A) with greatest development ventrad; setae \( a 0 1, a 0 2 \) subequal in length, extending to margin of hypostomal apices, Length of stylophore 355, Peritremes (fig. 3B), each lateral branch with 9-10 chambers; each longitudinal branch with 16-18 chambers, Dorsal idiosoma: Propodosomal sclerite not divided, rectangular in outline, bearing setae \( v i, v e, s c i, d 1, l 1 \); ratios of \( v i : v e : s c i : s c e, 1:1 1/2:2:2; d 1, l 1, s e i \) subequal in length; distance between setal bases—\( v i \) to \( v e 29, v i \) to \( s c e 90, v i \) to \( s c e 103, v i \) to \( l 1 \) 166, \( v i \) to \( d 1 \) 166, \( v i \) to \( v e 120, v e \) to \( v e 142, s c i \) to \( s c e 154, s c e \) to \( s c e 142, l 1 \) to \( l 1 \) 107, \( d 1 \) to \( d 134 \). Weak hysterosomal sclerite present, extremely weak in young females, bearing \( l 2, d 3, l 3, d 4, d 5; l 2, d 3, l 3 \) each 1.72 time length of \( v i \); ratios of \( d 4; l 4; d 5; l 5 \),
FIG. 1. *Colinophilus wilsoni*, n. sp. Female, dorsal aspect. Line scale equals 100μ.
8:14:2:1; d4 three times length of vi; distance between setal bases—l2 to d3 56, l2 to l3 166, d3 to l3 110, l2 to l2 81, d3 to d3 61, l3 to l3 123. Ventral idiosoma: As in Figure 2. Legs: Solenidia sigma, phi, omega of leg I as in Figure 3E, F, G; setae dF, dG, dT of legs I and II smooth, dGI shorter than dTI, dGII shorter than dTII; a’ and a” I-IV each with 10-12 times, a’1 1/2 length of a”1 (fig. 3C, H, I); 3b, 4b subequal, 1/2 length of respective coxae, 3c three times length of 3b, extending to base of 4c, 4c longer than 3c; sc3, sc4 subequal, extending to distal margin of respective tibiae; FII extending to tip of empodium; tc’ll, tc’lV subequal, each 1/2 length of tc”III, tc”IV.

**MALE** (paratype). As in female except: Length 843; width 282, Gnathosoma: Hypostomial apices unornamented; length of stylopore 295. Dorsal idiosoma: Propodosomal sclerite bearing setae vi, ve, sci, d1; ratios of vi:ve:scisi:see, 1:1.4:1.2:1.2; d1, II subequal, 1.5 times length of vi; hysterosomal sclerite absent, l2 0.85 length of vi; d3, l3, subequal, 0.30 length of vi; ratios of d4:l4:al:gl, 4:19:2:1; d4 0.30 times length of vi; ratios of pg1:pg2:pg3, 1.5:1:1.25, pg1 slightly shorter (0.92) than vi, Ventral idiosoma and aedeagus: As in Figures 4A-D. Legs: Setae 3b, 4b subequal to length of respective coxae, 4c shorter than 3c; sc3, sc4 extending at most to basal half of respective tibiae; tc’ll, tc’lV subequal, each .33 times length of tc”III, tc”IV.

**Type material.**—From the primary flight feathers of *Colinus virginianus* (L.), Phasianidae: holotype female, 9 female paratypes, 3 male paratypes, Tall Timbers Research Station, Leon County, Florida; Feb. 8, 1971, F. E. Kellogg leg.

**Additional material.**—From primary number 6 of *Colinus virginianus*, 2 females, Graves County, Kentucky, Nov. 28, 1969, T. Peterle leg.

The holotype, one male paratype, and two determined females are in the collections of Field Museum of Natural History; two paratypes (one male, one female) each to be deposited with the United States National Museum, Washington, D. C. and the British Museum (Natural History), London; one female paratype in each of the following collections; The Acarology Collection, Department of Entomology, University of Georgia, Athens; the Institute of Acarology, Ohio State University, Columbus; the remaining four paratype females, larvae and nymphs in the author’s collection.

**DEVELOPMENT CHAETOTAXY**

The developmental stages of *Colinophilus wilsoni* are typical for the family, comprising the egg, larva, and two nymphaal stages prior to the adult. The deutonymphal stage is apparently absent in all known syringophilids. A complete series of immatures leading to the adult female of *C. wilsoni* was observed. The developmental pattern of the leg setation of *C. wilsoni* exactly parallels that of *Syringophilus bipectinatus* Heller, 1880 (Kethley, 1970).
Fig. 2. *Colinophilus wilsoni*, n. sp. Female, ventral aspect. Line scale equals 100μ.
A description of the developmental chaetotactic pattern for the opisthosomal region has not been given for any syringophilid species. All ambulatory stages of *C. wilsoni* possess setae l2, l3, d3. In addition to these dorsal setae, the larva possesses l4, l5, d5 in the dorsal series; a1 in the anal series; g1 in the genital series; no setae are present in the paragenital series. In the protonymph, a2 is added to the anals and pg1 to the paragenitals. The dorsal series is completed in the tritonymph with the addition of d5, and a second pair (pg3) is added to the paragenital series. The adult female differs from the tritonymph in the presence of pg2 and g2. Although a male tritonymph was not present in the series examined, representatives of the following transitional stages were observed: a larva containing a fully developed protonymph within the larval cuticle, a protonymph containing a fully developed female tritonymph within the protonymphal cuticle, and female
FIG. 4. Colinophilus wilsoni, new species. Male, A, ventral aspect; B, opisthosoma, lateral aspect; C, opisthosoma, dorsal aspect; D, aedeagus, lateral aspect. Line scale equals 100μ each—upper scale applies to A–C, lower scale applies to D.
tritonymph containing a fully developed adult female within the tritonymph cuticle.

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REFERENCES

KETHLEY, J. B.
