A New Species of Chigger (Acari: Trombiculidae) from Rafinesque's Big-Eared Bat (Chiroptera: Vespertilionidae) in Georgia, USA[1]

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Abstract A new species, *Hoffmanniella solickiana* (Acari: Trombiculidae), is described from specimens of *Corynorhinus rafinesquii* Lesson, 1827 (Chiroptera: Vespertilionidae) collected in southeastern counties of Georgia, USA. The new species differs from congeners by a different pattern of unbranched leg setae, number of body setae, and highly branched sensillae.

Key Words mite, parasite, *Hoffmanniella solickiana*, *Trombicula*

During a survey of *Corynorhinus rafinesquii* Lesson, 1827 in southeastern Georgia, USA, chiggers (larval Trombiculidae) and other mites were removed from their wings and ears. Among these collections, we identified an unnamed species of the trombiculine genus *Hoffmanniella*. This is the first record of the genus from the United States.

Hoffmanniella solickiana Crossley and Clement, n. sp.

Description. (Terminology of Goff et al. 1982)

Idiosoma—Holotype 520 × 370 μm engorged. Eyes 2/2, anterior larger, on indistinct ocular plate. 28 plumose dorsal setae arranged 2-8-6-6-4-2, length 45–72 μm. 22 plumose ventral setae, 2-2-6-6-4-2, length 22–35 μm. Total idiosomal setae 50.

Gnathosoma—Palpal setal formula N/N/NNN/5BS (Fig. 1A); galeal seta branched. Palpal claw three-pronged. Cheliceral base with scattered punctae, blade 40 μm with tricuspid cap. Gnathobase with paired branched setae.

Scutum (Fig. 1B)—Scattered punctae on anterior two-thirds. Anterior margin straight, posterior margin slightly convex, lateral margins concave. Scutal setae plumose; sensillae with numerous fine branches. Scutal measurements (holo-

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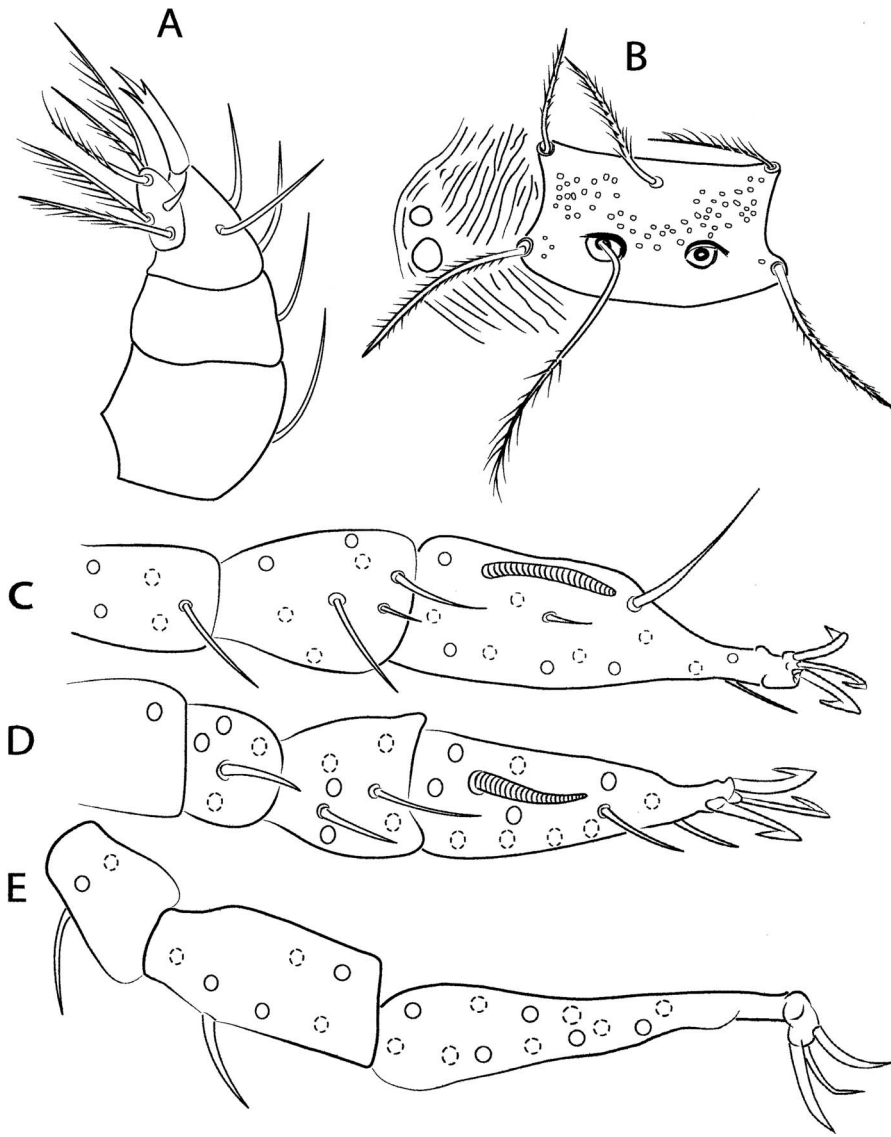

Fig. 1. *Hoffmanniella solickiana*, n. sp. (A) Palpus; (B) scutum; (C) nude setae, leg I; (D) nude setae, leg II; (E) nude setae, leg III.

type) in micrometers: AW 67, PW 78, AP 28, SB 31, AM 50, AL 35, PL 60, SENS 85.

Legs (Fig. 1C–E)—Seven-segmented, with terminal claw and claw-like empodium. Leg I measurements (holotype) 245 μm; leg II, 200 μm; leg III, 210 μm. All legs bearing feathered setae; setal bases indicated on figures. Leg I with one genuala; two tibialae and one microtibiala; two tarsalae, one microtarsala, and

one pretarsala. Leg II with one genuala, two tibialae, two tarsalae, and one pretarsala. Leg III with one genuala and one tibiala.

Material Examined

Type data. Holotype and five paratypes from *Corynorhinus rafinesquii*, Moody Forest Natural Area, N 31°55′52.6″, W 82°17′3.4″, Appling Co., GA USA, 6 July 2008, Matthew J. Clement, collector. Ten paratypes from *Corynorhinus rafinesquii*, River Bend Wildlife Management Area, N 32°27′33.0″, W 82°50′27.4″, Laurens Co., GA USA, 19 June 2008, Matthew J. Clement, collector. Four paratypes from *Corynorhinus rafinesquii*, Little Satilla Wildlife Management Area, N 31°25′0.8″, W 82°3′5.9″, Wayne Co., GA USA, 26 June 2008, Matthew J. Clement, collector. Deposited in the Georgia Museum of Natural History, Athens, GA, USA.

Etymology

The species is named for Donald Solick, who first introduced me to bats and who remains a true friend (M.J.C.).

Taxonomic Remarks

All three known *Hoffmanniella* species are parasitic on bats. Vercammen-Grandjean (1960) created the genus *Hoffmanniella* for *Trombicula beltrani* Hoffmann, 1946, a parasite of *Lasiurus blossevillii* (Lesson & Garnot) (syn. *Nycteris borealis mexicana* [Saussure]) collected in the Mexican state of Puebla. Later, Goff (1988) added *H. transylvanica* parasitic on a vampire bat, *Desmodus rotundus* (Geoffroy), from Costa Rica. *Hoffmanniella solickiana* is, thus, the third species known for the genus and the first from the continental United States. It is readily separated from the other two by the pattern of specialized setae on the legs. According to Brennan and Goff (1977), *H. beltrani* has a papilliform microgenuala I, a seta missing in *H. solickiana*. *Hoffmanniella transylvanica* has three genualae I versus a single genuala I in *H. solickiana*. Further, the sensillae of *H. transylvanica* have fewer than a dozen prominent branches; sensillae of *H. solickiana* have >20 shorter branches. The three species also differ in numbers of idiosomal setae. Hoffmann (1949) illustrates numerous ventral setae on *H. beltrani*. *Hoffmanniella transylvanica* has 54 total idiosomal setae, whereas *H. solickiana* has but 50.

Biological Remarks

All collection sites were in bottomland hardwood forests along river floodplains. Collection occurred in low-lying areas supporting flood-adapted tree species, especially *Nyssa aquatica* L. and *Taxodium distichum* L. The host, *C. rafinesquii*, roosts inside large, hollow cavities that readily form in these tree species (Clement and Castleberry 2013). Concurrent surveys in additional counties in southern Georgia (Bleckley, Calhoun, Dougherty, Glynn, Pulaski, and Screven) did not

yield any *H. solickiana*. *Corynorhinus rafinesquii* have rarely been inspected for ectoparasites, but individuals captured in Tennessee yielded specimens of *Macronyssus crosbyi* Radovsky (Mesostigmata: Macronyssidae; Reeves et al. 2007). Additional references to *C. rafinesquii* or *Plecotus rafinesquii* in the ectoparasite literature appear to be synonyms for *C. townsendii* Cooper, 1837.

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