Parasitic Acari from Four Oklahoma Vertebrates (Aves, Mammalia), Including New State Records for Mites (Laelapidae, Listrophoridae, Macronyssidae)

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Over the last decade, our community collaborative efforts have provided several new records for mites (including chiggers), ticks, lice, and fleas parasitizing Oklahoma vertebrates (McAllister et al. 2013b, c, 2014a, b, 2015; Connior et al. 2015). To that end, we report additional ectoparasite records for a bird and three mammalian hosts from the state.

Collections were made between July 2014 and April 2017 from sites in McCurtain County and hosts and/or their nests were examined for ectoparasites as follows: a road-killed eastern gray squirrel, *Sciurus carolinensis* was taken on 2 July 2014 from Broken Bow off Memorial Drive (34° 00' 41.8566"N, 94° 44' 53.7972"W); a nuisance adult Virginia opossum (*Didelphis virginiana*) was killed on 7 March 2016 by a local landowner in Idabel off Chico Road (33° 53' 12.2028"N, 94° 54' 48.5598"W); three southern short-tailed shrews (*Blarina carolinensis*) were collected by hand on 29 November 2016 from Hochatown on Halibut Bay Road (34° 10' 16.2114"N, 94° 45' 7.6278"W); and a barn swallow (*Hirundo rustica*) nest was examined on April 2017 from the same locale in Hochatown. Mites and ticks were collected and placed in vials containing 70% ethanol and shipped to the junior author for specific identification. Ectoparasites were processed and identified using appropriate guides (Whitaker 1982; Benton 1983; Keirans and Litwak 1989; Keirans and Durden 1998). Voucher specimens of ectoparasites were deposited in the General Ectoparasite Collection in the Department of Biology at Georgia Southern University, Statesboro, Georgia. Voucher hosts were deposited in the Henderson State University (HSU) collection, Arkadelphia, Arkansas.

Acari: Laelapidae

***Echinonyssus blarinae* (Herrin) – No common name (NCN)**. Seven female *E. blarinae* (accession no. L-3800A) were collected from two of three *B. carolinensis*. This mite has previously been reported from seven species of soricomorphs (including *B. carolinensis*) and from at least 17 States and Canadian Provinces (Whitaker and Wilson 1974; Ritzi et al. 2005; Whitaker et al. 1994, 2007; Nims et al. 2008; Sylvester et al. 2012; Connior et al. 2014). However, this is the first record from Oklahoma.

Listrophoridae

***Olistrophorus blarina* (Fain and Hyland) – NCN.** Six adult *O. blarina* (L-3800B) was collected from two of three *B. carolinensis.* This is a very small fur mite which has previously been collected from northern short-tailed shrew (*B. brevicauda*), *B. carolinensis*, and Elliot's short-tailed shrew (*B. hylophaga*), and has been reported from eight U.S. States (Whitaker and Wilson 1974; Whitaker et al. 1994, 2007; Ritzi et al. 2005; Nims et al. 2008; Connior et al. 2014). However, we document the first record of this mite from Oklahoma.

Macronyssidae

***Ornithonyssus bursa* (Berlese) – tropical fowl mite.** Hundreds of *O. bursa* (males, females, and larvae, L-3805) were found in a nest of *H. rustica*. The tropical fowl mite is almost entirely restricted to warm tropical and subtropical regions of most biogeographical realms. It is a hematophagous mite commonly found on a variety of wild and domestic birds, including canaries, caracara, chickens, common sparrow, ducks, English and European starlings, kingbird, meadowlark, pigeons, red-eyed vireo, turkey, and wood thrush, and other wild birds; they also occasionally bite humans (Denmark and Cromroy 2015). It is rarely found on mammals, but where infested birds are nesting in close proximity to humans, these mites may enter homes and bite its inhabitants. This is the first time, to our knowledge, that *O. bursa* has been reported from Oklahoma.

***Ornithonyssus wernecki* (Fonseca)** – NCN. Two female *O. wernecki* (L-3740) were found on *D. virginiana*. This mite is primarily an ectoparasite of New World marsupials and has been recorded from the eastern U.S., Brazil, Panama, Surinam, and Venezuela (Fonseca, 1948; Micherdzinski, 1980). Although there is a record from northern raccoon (*Procyon lotor*) and a few records from rodents, the latter hosts are likely considered accidental (Yunker et al. 1990). In the U.S., this mite has been reported previously from *D. virginiana* from Georgia, New Jersey, Tennessee, and West Virginia (Whitaker et al. 2007) (Fig. 1). We provide the first record of *O. wernecki* from west of the Mississippi River and, as such, this also represents a new state record for Oklahoma.

Ixodidae

***Amblyomma americanum* (Linnaeus) – Lone star tick.** A single nymphal *A. americanum* (L-3724) was taken from *S. carolinensis*. This is one of the most abundant tick species in the eastern United States and adults parasitize a variety of medium to large-sized mammals, especially white- tailed deer (*Odocoileus virginianus*), whereas immatures feed on various birds and mammals (Cooley and Kohls 1944; McAllister et al. 2016). There is a record of *A. americanum* from an eastern fox squirrel (*Sciurus niger*) in Arkansas (McAllister et al. 2016) and Durden et al. (2004) reported this tick from *S. carolinensis* in Georgia. However, this is the first time this tick has been reported from *S. carolinensis* in Oklahoma.

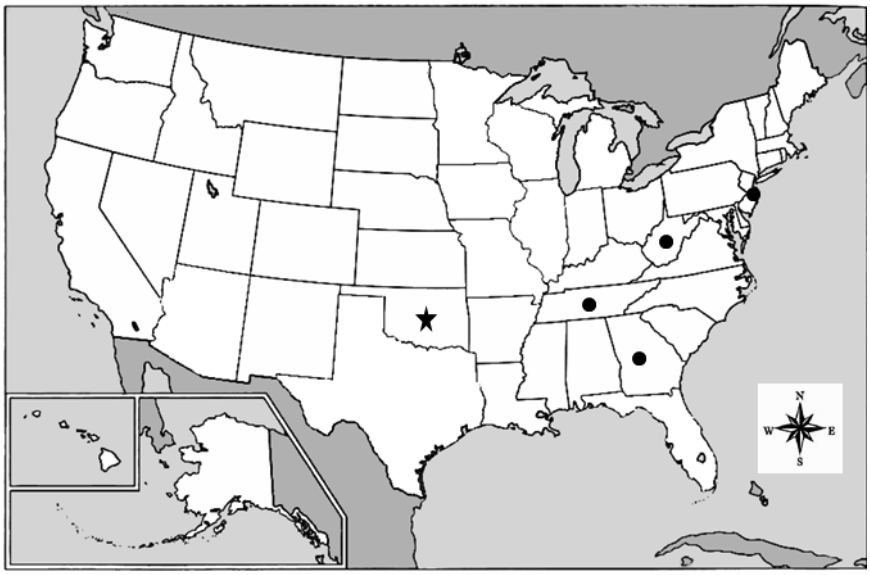

Figure 1. Records of *Ornithonyssus wernecki* from five states. Dots = previous records; star = new state record.

***Dermacenter variabilis* (Say) – American dog tick.** An unengorged female *D. variabilis* (L-3724) was taken from *S. carolinensis*. This tick is widely distributed in the eastern United States and in some western states (Strickland et al. 1976; McAllister et al. 2016). Adult *D. variabilis* usually infest dogs, raccoons, foxes, opossums, and humans; however, it is unusual to find this tick on a squirrel. McAllister et al. (2013a) reported one larval and two male *D. variabilis* on *S. niger* from Arkansas, but here, we document a new host record for *S. carolinensis*.

Oklahoma supports at least 106 species of mammals with nearly half of these being rodents (Caire et al. 1989). Although we have provided several new host and distributional records over the last decade, progress can be made when surveying additional potential hosts with the distinct possibility of discovering new ectoparasite records.

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