

## Journal of the Arkansas Academy of Science

---

Volume 68

Article 23

---

2014

# New Records of Ectoparasites and Other Epifauna from *Scalopus aquaticus* and *Blarina carolinensis* in Arkansas

M. B. Connior

*South Arkansas Community College*, [mconnior@nwacc.edu](mailto:mconnior@nwacc.edu)

L. A. Durden

*Georgia Southern University*

C. T. McAllister

*Eastern Oklahoma State College*

Follow this and additional works at: <http://scholarworks.uark.edu/jaas>

 Part of the [Animal Diseases Commons](#), and the [Animal Studies Commons](#)

---

### Recommended Citation

Connior, M. B.; Durden, L. A.; and McAllister, C. T. (2014) "New Records of Ectoparasites and Other Epifauna from *Scalopus aquaticus* and *Blarina carolinensis* in Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 68 , Article 23.

Available at: <http://scholarworks.uark.edu/jaas/vol68/iss1/23>

This article is available for use under the Creative Commons license: Attribution-NoDerivatives 4.0 International (CC BY-ND 4.0). Users are able to read, download, copy, print, distribute, search, link to the full texts of these articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author.

This General Note is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Journal of the Arkansas Academy of Science by an authorized editor of ScholarWorks@UARK. For more information, please contact [scholar@uark.edu](mailto:scholar@uark.edu), [ccmiddle@uark.edu](mailto:ccmiddle@uark.edu).

## New Records of Ectoparasites and Other Epifauna from *Scalopus aquaticus* and *Blarina carolinensis* in Arkansas

M.B. Connior<sup>1\*</sup>, L.A. Durden<sup>2</sup>, and C.T. McAllister<sup>3</sup>

<sup>1</sup>*Health and Natural Sciences, South Arkansas Community College, El Dorado, AR 71730*

<sup>2</sup>*Department of Biology, Georgia Southern University, Statesboro, GA 30458*

<sup>3</sup>*Science and Mathematics Division, Eastern Oklahoma State College, Idabel, OK 74745*

\*Correspondence: mconnior@southark.edu

Running Title: Ectoparasites of Soricomorpha in Arkansas

Compared to its surrounding states, little is known about the ectoparasites infesting the wild mammals of Arkansas (Schiefer and Lancaster 1970, Whitaker and Wilson 1974, Whitaker et al. 2007, McAllister et al. 2013). Recently, McAllister et al. (2013) suggested that additional ectoparasite surveys on mammals should be undertaken, particularly on insectivores. Here, we report information on some ectoparasites and other epifaunistic arthropods collected from the eastern mole, *Scalopus aquaticus*, and southern short-tailed shrew, *Blarina carolinensis*, from Arkansas. Ectoparasites have previously been reported from eastern moles by Whitaker and Schmelz (1974), Whitaker and Wilson (1974), Whitaker et al. (2007) and others and from southern short-tailed shrews by Whitaker et al. (1994), Nims et al. (2004, 2008), Whitaker et al. (2007) and Sylvester et al. (2012).

Twenty-four southern short-tailed shrews were collected using live traps between August 2012 and April 2013 from Union Co. and 3 eastern moles were collected using kill traps between May 2013 and June 2014 from Union ( $n=2$ ) and Benton ( $n=1$ ) cos. After being euthanized following American Society of Mammalogists guidelines (Sikes et al. 2011), individuals were examined for ectoparasites following standard methods (Gardner 1996). Ectoparasites and other arthropods were processed and identified using appropriate guides (Peck 1982, Whitaker 1982, Benton 1983, Lukoschus et al. 1988). Voucher specimens of hosts are deposited in the mammal collection at Henderson State University (HSU) in Arkadelphia, Arkansas. Representative ectoparasites are deposited in the General Ectoparasite Collection in the Department of Biology at Georgia Southern University, Statesboro (accession nos. L3564; L3569; L3584; L3587-L3589; L3680). We provide a taxonomic summary of the ectoparasites and other epifauna collected below.

### Coleoptera: Leptinidae

*Leptinus* spp. beetles are epifaunistic arthropods of small mammals in the Holarctic region (Peck 1982). They are not true ectoparasites because they feed on dead host skin, sebaceous secretions and material in host mammal nests. In North America, *L. americanus* occurs west of the Mississippi River and east of the Rocky Mountains, whereas *L. orientamericanus* Peck occurs east of the Mississippi River and *L. occidentamericanus* Peck is found west of the Rocky Mountains (Peck 1982). *Leptinus americanus* has been reported previously from Washington County, Arkansas, from a tree stump ( $n=2$ ) and from a mammal nest ( $n=28$ ) (Peck 1982). We collected *L. americanus* from one of 24 southern short-tailed shrews and 2 of 3 eastern moles. This species has previously been reported from *Scalopus aquaticus* (Whitaker and Schmelz 1974), but *B. carolinensis* represents a newly reported host record. Whitaker et al. (1994) reported *L. americanus* from *B. carolinensis* from South Carolina; however, since 1982, beetles east of the Mississippi River have been treated as *L. orientamericanus* as detailed by Peck (1982).

### Siphonaptera: Ctenophthalmidae

*Ctenophthalmus pseudagyrtis* is a common flea on shrews, moles, and other small mammals throughout much of North America although most records are from eastern States and Provinces (Hopkins and Rothschild 1956, Durden et al. 2012). We collected *C. pseudagyrtis* from both individuals of *S. aquaticus* (one male, one female flea) from Union Co. and from one of 24 individuals of *B. carolinensis* (one male flea) from Union Co. This species has been previously collected from *S. aquaticus* from Arkansas (Schiefer and Lancaster 1970); *B. carolinensis* is a new host record. It has also been recorded previously from

nearby Missouri and Texas (Kollars et al. 2007, McAllister and Wilson 2012).

One of 24 southern short-tailed shrews was infested with two *Doratomyella blarinae* (one male, one female). Whitaker et al. (1994) reported this species from *B. carolinensis* in South Carolina but this collection represents a new state record for Arkansas. This flea appears to be widely distributed as an ectoparasite of *Blarina* spp., mostly in eastern North America (Hopkins and Rothschild 1956, Whitaker et al. 1994, Ritzi et al. 2005, Durden et al. 2012).

#### Acari: Laelapidae

*Echinonyssus blarinae* was collected from one of 24 southern short-tailed shrews. This mite has previously been reported from seven species of insectivores (including both *B. carolinensis* and *S. aquaticus*) and from at least 16 States and Provinces combined (Whitaker and Wilson 1974, Ritzi et al. 2005, Whitaker et al. 1994, 2007, Nims et al. 2008, Sylvester et al. 2012). However, this is the first record from Arkansas.

*Haemogamasus harperi* is a relatively large mite that is ectoparasitic mainly on shrews and moles (Whitaker and Wilson 1974, Whitaker et al. 2007). It has previously been reported from both *S. aquaticus* and *B. carolinensis* (Whitaker and Schmelz 1974, McAllister and Wilson 2012, Sylvester et al. 2012). One of two moles was infested with two *H. harperi* (both females) in this survey. This collection represents a new state record for this mite from Arkansas.

#### Acari: Listrophoridae

*Olistrophorus blarina* was collected from one of 24 southern short-tailed shrews. This tiny fur mite has previously been collected from *B. brevicauda*, *B. carolinensis* and *B. hylphaga* 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). However, this represents the first record of this mite from Arkansas.

#### Acari: Glycyphagidae

One hypopial deutonymph of *Glycyphagus hypudaei* was collected from one of 24 *B. carolinensis*. This tiny fur mite has been collected from more than

70 species of mammals (including *B. carolinensis*), mainly rodents and insectivores, in North America with previous records from more than 25 States and Provinces combined (Whitaker and Wilson 1974, Whitaker et al. 1994, 2007, Nims et al. 2004, Ritzi et al. 2005). Nevertheless, this represents the first record of *G. hypudaei* from Arkansas.

#### Acari: Myobiidae

One of 24 southern short-tailed shrews was infested with 2 fur mites, *Protomyobia blarinae*. This small mite has previously been recorded from *B. brevicauda*, *B. carolinensis* and *B. hylphaga* from the States/Provinces of Georgia, Indiana, Kansas, Manitoba, New Brunswick, New York, Ontario and South Carolina (Whitaker et al. 1994, 2007, Ritzi et al. 2005, Nims et al. 2008). However, this is the first record of *P. americana* from Arkansas.

In conclusion, we record 2 species of fleas and 5 species of mites from 2 species of soricomorphs in Arkansas with all 7 of these arthropod species representing new state records. Whitaker and Wilson (1974) summarized 8 species of ectoparasitic/epifaunistic mites from mammals in Arkansas and Whitaker et al. (2007) added a ninth species to the state list. Based on the examination of just 26 soricomorph specimens, we have increased the Arkansas list by 56%. Clearly, the ectoparasite fauna, particularly the mite fauna, of Arkansas mammals is inadequately documented. Therefore, we recommend additional ectoparasite surveys of Arkansas mammals.

#### Acknowledgments

We thank Dr. Renn Tumblison (HSU) for expert curatorial assistance. The Arkansas Game and Fish Commission issued a Scientific Collecting Permit to MBC.

#### Literature Cited

- Benton AH.** 1983. An illustrated key to the fleas of the eastern United States. Marginal Media (Fredonia, NY). 34 p.
- Durden LA, N Wilson, RP Eckerlin and WW Baker.** 2012. The flea (Siphonaptera) fauna of Georgia, USA: hosts, distribution and medical-veterinary importance. Annals of Carnegie Museum 80:83-113.

## Ectoparasites of Soricomorpha in Arkansas

- Gardner SL.** 1996. Field parasitology techniques for use with mammals. *In:* DE Wilson, editor. Measuring and monitoring biological diversity. Standard methods for mammals. Smithsonian Institution Press (Washington, DC). p. 291-298.
- Holland GP.** 1985. The fleas of Canada, Alaska, and Greenland (Siphonaptera). *Memoirs of the Entomological Society of Canada*, 117, pp 3-632.
- Hopkins GHE and M Rothschild.** 1956. An illustrated catalogue of the Rothschild collection of fleas (Siphonaptera) in the British Museum (Natural History) with keys and short descriptions for the identification of families, genera, species and subspecies of the Order. Volume IV. Hystrichopsyllidae (Ctenophthalminae, Dinopsyllinae, Doratopsyllinae and Listropsyllinae). British Museum (Natural History), London. 445 p + 32 plates.
- Kollars TM Jr, LA Durden and JH Oliver Jr.** 1997. Fleas and lice parasitizing mammals in Missouri. *Journal of Vector Ecology* 22: 125-132.
- Lukoschus FS, GJ Jeucken and JO Whitaker Jr.** 1988. A review of the *Protomyobia americana* group (Acarina: Prostigmata: Myobiidae) with descriptions of *Protomyobia panamensis* n. sp. and *Protomyobia blarinae* n. sp. *Journal of Parasitology* 74:305-316.
- McAllister CT, MB Connior and LA Durden.** 2013. Ectoparasites of sciurid rodents in Arkansas, including new state records for *Neohaematopinus* spp. (Phthiraptera: Anoplura: Polyplacidae). *Journal of the Arkansas Academy of Science* 67:197-199.
- McAllister CT and N Wilson.** 2012. *Ctenophthalmus pseudagyrtis* (Siphonaptera: Ctenophthalmidae): new to the flea fauna of Texas. *Southwestern Naturalist* 57:345-346.
- Nims TN, LA Durden, CR Chandler and OJ Pung.** 2008. Parasitic and phoretic arthropods of the oldfield mouse (*Peromyscus polionotus*) from burned habitats with additional ectoparasite records from the eastern harvest mouse (*Reithrodontomys humulis*) and southern short-tailed shrew (*Blarina carolinensis*). *Comparative Parasitology* 75:102-106.
- Nims TN, LA Durden and RL Nims.** 2004. New state and host records for the phoretic fur mite, *Glycyphagus hypudaei* (Acari: Glycyphagidae). *Journal of Entomological Science* 39:470-471.
- Peck SB.** 1982. A review of the ectoparasitic *Leptinus* beetles of North America (Coleoptera: Leptinidae). *Canadian Journal of Zoology* 60:1517-1527.
- Ritzi CM, BC Bartels and DW Sparks.** 2005. Ectoparasites and food habits of Elliot's short-tailed shrew, *Blarina hylophaga*. *Southwestern Naturalist* 50:88-93.
- Schiefer BA and JL Lancaster, Jr.** 1970. Some Siphonaptera from Arkansas. *Journal of the Kansas Entomological Society* 43:177-181.
- Sikes RS, Gannon WL and the Animal Care and Use Committee of the American Society of Mammalogists.** 2011. Guidelines of the American Society of Mammalogists for the use of wild mammals in research. *Journal of Mammalogy* 92:235-253.
- Sylvester TL, JD Hoffman and EK Lyons.** 2012. Diet and ectoparasites of the southern short-tailed shrew (*Blarina carolinensis*) in Louisiana. *Western North American Naturalist* 72:586-590.
- Whitaker JO, Jr.** 1982. Ectoparasites of mammals of Indiana. *Indiana Academy of Science. Monograph No. 4.* 240 p.
- Whitaker JO, Jr, GD Hartman and R Hein.** 1994. Food and ectoparasites of the southern short-tailed shrew, *Blarina carolinensis* (Mammalia: Soricidae), from South Carolina. *Brimleyana* 21:97-105.
- Whitaker JO, Jr and LL Schmelz.** 1974. Food and external parasites of the eastern mole, *Scalopus aquaticus*, from Indiana. *Proceedings of the Indiana Academy of Science* 83:478-481.
- Whitaker JO, Jr., BL Walters, LK Castor, CM Ritzi and N Wilson.** 2007. Host and distribution lists of mites (Acari), parasitic and phoretic, in the hair or on the skin of North American wild mammals north of Mexico: records since 1974. *Faculty Publications of the Harold W. Manter Laboratory of Parasitology. Paper 1.* 173 p.
- Whitaker JO, Jr and N Wilson.** 1974. Host and distribution lists of mites (Acari), parasitic and phoretic, in the hair of wild mammals of North America, north of Mexico. *American Midland Naturalist* 91:1-67.