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## A New Host Record for the Bat Bug, *Cimex adjunctus* (Insecta: Hemiptera) from Eastern Small-footed Myotis, *Myotis leibii* (Chiroptera: Vespertilionidae)

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## A New Host Record for the Bat Bug, *Cimex adjunctus* (Insecta: Hemiptera) from Eastern Small-footed Myotis, *Myotis leibii* (Chiroptera: Vespertilionidae)

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Running Title: New Host Record for *Cimex adjunctus*

The eastern small-footed myotis, *Myotis leibii* (Audubon and Bachman) is one of the rarest North American bats (Best and Jennings 1997). It occurs from Ontario, Canada to New England south to Georgia and Alabama and west into eastern Oklahoma (Reid 2006). In Arkansas, *M. leibii* occurs in scattered locales in the Ozarks and the western Ouachita Mountains (Sasse et al. 2013). It is ranked S1 (critically imperiled) in Arkansas by NatureServe (2016).

Little is known about the ectoparasites of *M. leibii*. As far as we can determine, only 2 species of chiggers, including *Euschongastia hamiltoni* Brennan and *Trombicula myotis* Ewing, have been reported infesting *M. leibii* from New York and Tennessee, respectively (Brennan 1947, Neuhauser 1971).

On 24 August 2015, the senior author (DBS) collected an adult female *M. leibii* from a crevice between sections of concrete guardrails on a bridge over Interstate 49 in Washington County at 35.81908°N 94.19147°W. It was found to have a single female bat bug on its left wing (Fig. 1A). The specimen was collected and shipped to CTM who identified it as belonging to the genus *Cimex*. It was subsequently placed in a vial of 70% ethanol and forwarded to LAD for specific identification.

The single adult bat bug was identified as *Cimex adjunctus* Barber using keys in Usinger (1966). A small amount of blood was present in the midgut of the specimen. The voucher specimen is deposited in the General Ectoparasite Collection in the Department of Biology at Georgia Southern University as L3726.

The senior author captured and examined small-footed bats in similar roosts in the Ozarks 461 times from 2013–2015 and associated bat bugs were only observed on two other occasions – a male bat captured at a bridge in Madison County on 28 August 2014 and a female bat captured in the same bridge on 5 September 2014, each had one *Cimex* sp., which was

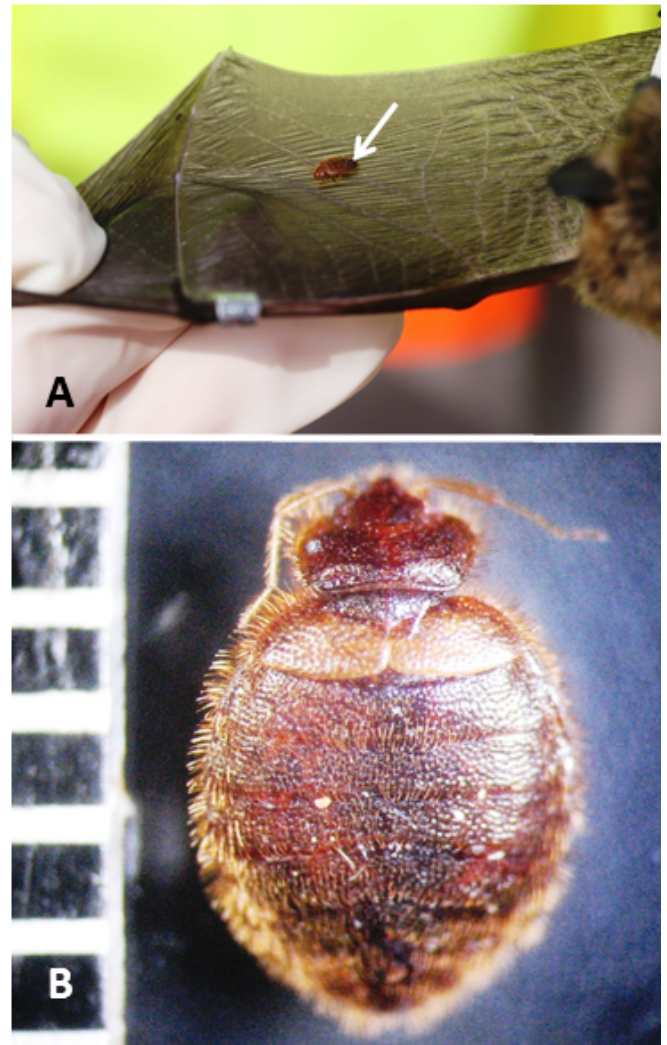


Figure 1. *Cimex adjunctus* from *Myotis leibii*. A. Bat bug (arrow) on wing. B. Stereoscopic view of *C. adjunctus*. Each scale bar on B = 1 mm.

not identified to species, on their left wings.

This bug has been previously reported from at least 11 bat species ranging in southeastern Canada and eastern United States, to as far west as Colorado

(Usinger 1966, Bowles et al. 2013, Grilliot et al. 2014). In Arkansas and Texas, *C. adjunctus* was recently reported by Grilliot et al. (2014) from Rafinesque's big-eared bats, *Corynorhinus rafinesquii*.

*Cimex adjunctus* is common on big brown bats, *Eptesicus fuscus*, (Bowles et al. 2013) which were occasionally captured in similar roost sites on bridges used by small-footed bats. On 16 September 2015, a male big brown bat was captured in between sections of concrete guardrails in a bridge over the White River in Madison County at 35.82828°N 93.8324°W and 2 *C. adjunctus* were collected from under the right wing and one from the top of the left wing and one was seen on top of the left wing and two additional specimens were found under the right wing of a female big brown bat captured at the same location. Specimens from the male bat were sent to CTM and LAD for identification and represent the first record of this parasite on big brown bats in Arkansas (voucher specimen L3729).

Interestingly, earlier reports of bat bugs on Arkansas bats were of the closely related species *C. pilosellus* Horvath (see Price et al. 1982, Steward et al. 1986). We document *C. adjunctus* in Arkansas for the second time and provide a new host record from *M. leibii*. This marks the first record of a bat bug parasitizing *M. leibii*.

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