

Scientific Note
**The Occurrence of the Bat Bug,
Cimex pilosellus (Horváth)
(Hemiptera: Cimicidae), in Manitoba,
Canada**

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Although bats are an ecologically important component of the mammalian fauna in much of Canada, their ectoparasites are seldom collected and poorly known. Many cimicids are blood-feeding ectoparasites of bats, and are found most frequently in the cracks and crevices in roosting areas of their hosts, rather than on the hosts themselves. Usinger's 1966 monograph of the cimicids is still, taxonomically and biogeographically, the most comprehensive treatment of the group. Apart from this monograph, most of the work on bat bugs is anecdotal and much of the information is widely scattered in the literature.

Four of the seven species of cimicids recorded in Canada by Maw *et al.* (2000) are ectoparasites of bats. *Cimex latipennis* Usinger and Ueshima is western and recorded only from British Columbia (Maw *et al.* 2000). *Cimex brevis* Usinger and Ueshima is found in midwestern and northeastern North America, and has been reported from Quebec (Usinger 1966) and Ontario (Bower and Woo 1981a, b) in Canada. *Cimex adjunctus* Barber is mainly an eastern and midwestern species, and in Canada has been recorded from Newfoundland, Quebec, Ontario, and Manitoba (Maw *et al.* 2000). *Cimex pilosellus* (Horváth) is found in western North America, primarily on bats in the genera *Antrozous*, *Eptesicus*, *Lasionycteris*, *Myotis*, and *Pipistrellus* (Usinger 1966; Chilton *et al.* 2000), and has been recorded from British Columbia (Horváth 1910; Spencer 1934; Anonymous 1964b, 1965; Usinger 1966; Chilton *et al.* 2000), Alberta (Banfield 1948) and Saskatchewan (Anonymous 1964c). There are several records for *C. pilosellus* from Ontario and Quebec

(e.g. Stirrett 1936; Dymond 1938; Judd 1950; MacNay 1953; Anonymous 1964a), but these are almost certainly in error and are probably records for *C. brevis* and/or *C. adjunctus*. In more recent checklists (e.g. Usinger 1966; Froeschner 1988; Maw *et al.* 2000), there is no reference to these records as being *C. pilosellus*. Dood and Kurta (1982) considered specimens previously identified as *C. pilosellus*, from the Upper Peninsula of Michigan (see Lawrence *et al.* 1965) were probably *C. brevis* or *C. adjunctus*, though based on the known distributions at the time.

As a result of requests for fleas from bats, several specimens of cimicids were collected incidentally by several contributors from the field. Seven specimens were collected at four localities in Manitoba, from three different species of bats. All cimicids were *C. pilosellus* and they represent a substantial eastern extension in the known range of the species. Specimens are deposited in the J.B. Wallis Museum of Entomology (Department of Entomology, University of Manitoba) and the N. Wilson collection (Department of Biology, University of Northern Iowa).

NEW RECORDS: Manitoba: University of Manitoba Field Station, Delta, 28.viii.1981, from silver-haired bat, *Lasionycteris noctivagans*, 1♂ (coll. R. Barclay); same data, except 1.viii.1982, 1♂. Red Rock Lake, near Rennie, 1.vii.1988, from hoary bat, *Lasiurus cinereus*, 2♀ (coll. J.E. Christie). Mulvihill, 26.v.1990, from little brown bat, *Myotis lucifugus*, 1♀ (coll. J. Dubois). Taiga Biological Station, Wallace Lake, east of Bissett, 28.vi.1990, from *M. lucifugus*, 1♂, 1♀ (coll. D.D. Keam).

Cimicids typically spend most of their time hiding in and around the roosting areas of their hosts, making repeated visits to the host for a blood-meal. Consequently, they are usually most abundant in situations where there is a frequently available and reliable food source. Colonially roosting bats provide such a source, and may be present in large numbers of individuals as well. Therefore, it was not surprising that *C. pilosellus* was found in association with the colonial little brown bat. The hoary and silver-haired bats are solitary, tree-roosting species, shifting their roosting sites frequently. This behaviour pattern is not generally considered conducive to successful parasitism by cimicids, though *C. pilosellus* has been collected previously on *L. noctivagans* in British Columbia by Spencer (1934) and by Chilton *et al.* (2000).

Cimex brevis and *C. adjunctus* are the two bat cimicids reported from midwestern and northeastern North America (Froeschner 1988; Dood and Kurta 1982; Maw *et al.* 2000). Therefore, it is interesting to find *C. pilosellus* in eastern Manitoba, rather than *C. brevis* or *C. adjunctus*. The record of *C. pilosellus* nearest to Manitoba is in Saskatchewan. It is reasonable to expect that *C. brevis* will eventually be discovered in Manitoba, and that *C. brevis*, *C. adjunctus* and *C. pilosellus* may be broadly sympatric over parts of their ranges.

The occurrence of *C. pilosellus* in Manitoba raises some interesting questions regarding biogeography and overlap with other species of cimicids associated with bats. Clearly, there is a need for fundamental investigations on this group of ectoparasites.

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