

ECTOPARASITES OF BIRDS AND MAMMALS OF BRITISH COLUMBIA

IV: The Parasite of Bats

by G. J. Spencer*

Of a list, recently compiled by Dr. Ian McTaggart Cowan, of the Provincial Museum, of about eighteen species of bats of British Columbia, I have examined specimens of the following, distributed as shown:-

The Little Brown Bat, *Myotis lucifugus* (Le Conte); common in at least the southern part of the Dry Belt.

The Alaskan Little Brown Bat *Myotis lucifugus alascensis* Miller; in Vancouver.

Millers Bat, *Myotis lucifugus saturatus* Miller; in Vancouver.

Silver-haired Bat, *Lasionycteris noctivagans* (Leconte); from Osoyoos, Agassiz and Vancouver.

The Big Brown Bat, *Eptesicus fuscus fuscus* (Beauvois); widely distributed.

Hoary Bat, *Nycteris cinerea* (Beauvois); from Alta Lake and White Rock.

The Lump-nosed Bat, *Corynorhinus rafinesquii townsendi* (Cooper); in the Lower Fraser Valley.

The California Mastiff Bat, *Eumops perotis californica* (Merriam); one record from New Westminster.

From limited numbers of these species, obtained by personal collecting or from others, the following ectoparasites were taken, arranged here somewhat in the order of their frequency of occurrence and numbers:-

MITES

Generally occurring on the wing membranes, not on the bodies of their hosts, are Parasitid mites, sub-family Spinturnicinae, genus *Spinturnix* (formerly called *Pteroptus*), a genus apparently distributed on bats the world over. In North America many species have been named but, as is common with most mites, few experts are willing to pin a specific name definitely on any specimens submitted. *Spinturnix* is about the ugliest, most bristly and most repulsive mite to be found anywhere. The abdomen is much reduced in the female and is practically wanting in the male. The genus is remarkable because the six-legged larval stage is passed in the body of the mother and the young is already eight-legged when born.

Greatly outnumbering these *Spinturnix* and occurring both on the wing membranes and on the body, are specimens of two much smaller, smoother mites, an undetermined species of *Liponyssus*, and *Ceratomyssus occidentalis* Ewing. Sometimes this latter species occurs in large numbers at the base of the wing membranes. In all cases observed, the mites do not seem to harm their hosts much. I have looked very carefully for lesions or punctures both on the delicate wing membranes and on the body, but have found none.

BED-BUGS

Next in frequency of occurrence is the bed-bug *Cimex pilosellus* Horvath. Upon their return from the south, those of our bats which

* The Department of Zoology, University of British Columbia, Vancouver, B.C.

migrate, especially *Eptesicus fuscus*, the Big Brown Bat, often bring back with them from three to ten female bed-bugs which cling to the necks of their hosts by inserting their beaks in the skin. These bugs from the south are always larger than those that breed up here in bats' nests. I cannot say if the bats on returning south carry a supply of the small northern-bred bed-bugs with them, clinging in the fur. During the summer months in this Province, one never finds a bed-bug clinging to a bat away from its nest; how then do the southern bugs know that the bats are going north? If the reverse was the case, it would probably be a temperature reaction brought on by increasing cold. From an abandoned dugout cellar on a farm between Lytton and Lillooet, I once took a colony of *C. pilosellus* from a nest of *E. fuscus* whose nest in turn was immediately below that of a colony of the subterranean termite *Reticulotermes hesperus* Banks. The bed-bugs were living in the honey-combed substance of the termites' nest whence I obtained many eggs, all stages of nymphs, and some adults of both sexes.

Where bats form large colonies in buildings, as occurred for several years in a deserted house in Nicola and in a well-known summer lodge beside one of the lakes in the Nicola country, the bed-bugs apparently occur in large numbers and at times overflow from the bats' nests into the rest of the house. Careful enquiries elicited the fact that, although the bugs were a nuisance, they had never attacked human beings. Moreover, they do not seem to harm any of their hosts much because even large bugs leave no noticeable feeding punctures on adults or young, for the bats may be breeding at the time and carrying their young in various stages of development.

I have records of these bugs from the Big Brown Bat, the Little Brown Bat and the Silver-haired Bat.

FLEAS

Fleas are not common on our bats and when present are always few in number. I have records of two species only—*Rhinolophopsylla palposus* Roth—occurring on a Big Brown Bat a Kamloops together with two species of mites, and a couple of records of *Myodopsylla gentilis* J. and R. from Okanagan Landing and from Cowichan, on an undetermined species of bat, probably one of the commoner forms.

PUPIPARA

The last group of ectoparasites I have from bats in this Province, is rarest of all, belonging to the Louse-fly family *Nycteribiidae*. These are small, wingless, flat, long-legged flies having the head carried in a groove on top of the thorax. For twelve years I had only one specimen, given to me by the late Ken Auden in 1925, taken apparently from a Little Brown Bat in the Midday Valley, Nicola. It is *Basilia forcipata* Ferris, reported as being not uncommon on several species of bats in the southern States. However, in 1938, Mr. W. Tomkinson, a pre-medical student of the University, gave me a bat which he had collected in a ward of Essondale Asylum, and which Dr. Ian McTaggart Cowan identified for me as a male *Eumops perotis californica* (Merriam), the California Mastiff Bat. It had on it a lone Nycteribiid which Professor G. F. Ferris considers a new species of *Basilia*. The bat was 1300 miles out of its territory, having been hitherto found in "southern

California and Arizona east into southern Texas, in the Lower Sonoran zone; rather local in its distribution. Only the one species of **Eumops** is found as far north as the United States; this genus is southern in its distribution." (Anthony). It is very common even in California and, so far north of its furthest recorded limits, it is fitting that it should have flown into a lunatic asylum; it is also fitting that it should have had on it a new species of louse fly.

TICKS

The only record I have of ticks on bats is that of three nymphs, which Dr. R. A. Cooley thinks belong to the genus **Ornithodoros**. If this turns out to be the case, it is the first record of ticks of this genus being found in Canada. The specimens lacked mouth parts, thus preventing specific identification. They were collected by Mr. Tomkinson from the unique California Mastiff Bat, mentioned above.

SUMMARY

From somewhat sketchy collecting from eight out of the eighteen species of bats so far listed from British Columbia, I have recorded the following parasites:-

Mites:	Spinturnix sp.
	Liponyssus sp.
	Ceratomyssus occidentalis Ewing.
Bed-bugs:	Cimex pilosellus Horvath.
Fleas:	Rhinolophopsylla palposus Roth.
	Myodopsylla gentilis J. and R.
Louse Flies:	Basilia forcipata Ferris.
	Basilia n. sp. undescribed.
Ticks:	Ornithodoros sp.

Without question, intensive collecting in the future will reveal further and more interesting records.

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