

LOUSE FLIES: DIPTERA: HIPPOBOSCIDAE

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The louse flies are a group of medium-sized ectoparasitic flies. Most are dark brown, flattened, leathery and infest birds. Some species are winged, some are not and others, as the deer ked, Lipoptena cervi, shed their wings once a host is located. The sheep ked is a common and widespread pest of sheep.

Since the bird hosts of many hippoboscid flies travel great distances, their occurrence in Vermont may reflect certain ornithological activities, as banding nest surveys, etc. in Vermont rather than true distribution of the fly. Table I present a species list for other New England, and northeastern states, Ontario and Quebec.

The following is a provisional list of the louse flies (Hippoboscidae) of Vermont.

Data is very incomplete for this group. Some may be anecdotal when originally collected/recorded. Hosts and collection specifics (date, localities, collector, etc.) are given whenever available.

Family Hippoboscidae
Subfamily **Ornithoicinae**
Genus Ornithoica Rondani 1878.

Ornithoica vicina (Walker) 1849.

Hosts: Cyanocitta c. cristata (L.) - Northern blue jay
Junco h. hyemalis (L.) - Slate-colored junco
Melospiza m. melodia (Wilson) - Eastern Song Sparrow

Barre, Washington Co. (E.M. Drew)

Passerculus sandwichensis savanna (Wilson) - Eastern Savannah Sparrow

Wells River, Orange Co., 4 Sept. (W.P. Smith)

Subfamily **Ornithomyiinae**
Tribe Ornithomyiini
Genus Ornithomyia Latreille 1802.

Ornithomyia fringillaria Curtis 1836.

Hosts: Cyanocitta c. cristata (L.) - Northern blue jay
Dendrocopos V. villosus (L.) - Eastern hairy woodpecker
Dendrocopos pubescens medianus (Swainson) - Northern downy woodpecker
Dumtella carolinensis (L.) - Catbird
Junco h. hyemalis (L.) - Slate-colored junco
Melospiza m. melodia (Wilson) - Eastern Song Sparrow
Passerculus samdwojemsos savanna (Wilson) - Eastern Savannah Sparrow
Spizella p. passerina (Bechstein) - Eastern Chipping Sparrow
Turdus m. migratorius L. - Eastern (American) Robin
Zonotrichia albicollis (Gmelin) - White-throated Sparrow

- Orange, Rutland, Washington, and Windsor Counties.

Genus Lynchia Weyenbergh 1881.

Lynchia americana (Leach) 1817.

Hosts: Accipiter striatus velox (Wilson) - Sharp-shinned Hawk
Buteo l. lineatus (Gmelin) - Northern Red-shouldered Hawk
Bonasa u. umbellus (L.) - Eastern Ruffed Grouse

- Addison and Windham Counties.

Tribe Olfersiini

Genus Olfersia Leach 1817.

Olfersia fumipennis (Sahlberg) 1886.

Hosts: Coragyps a. atratus (Bechstein) - Northern Black-headed Vulture

- Windsor County

Nearly worldwide in distribution, occurring wherever its regular breeding host, the osprey, (Pandion Laliaetus carolinensis), breeds. Occasionally found on the bald eagle. The only record on a vulture is from Vermont. (This must be investigated further.)

Olfersia bisulcata Macquart 1847.

Although listed for Vermont by Bequaert (1957, pg. 530) under the state species summaries, it is evident from the information given under the species (ibid, pg. 458) that the listing is erroneous. Possibly it is confused with the O. fumipennis record. O. bisulcata is essentially a tropical insect, a central and South American species, with a northernmost record from 29°15'N, (southernmost 23°10'S) Bequaert (1957) states there are 10 verified records for Coragyps a. atratus (black vulture). Where it is found O. bisulcata is a common hippoboscid infesting most vultures examined. "The only two captures of this fly under natural conditions in the U.S. are from extreme southeastern Texas and they may have been accidental occurrences", states Bequaert (1957).

This record is very doubtful for Vermont unless it was collected from a museum specimen or captive vulture.

Subfamily **Melophaginae**

Tribe Lipoptenini-

Genus Lipoptena Nitsch 1818.

Lipoptena cervi (Linnaeus) 1758. The deer-keed.

Hosts: Odocoileus virginianus borealis Miller - Northeastern Virginia Deer (whitetailed)

Cervus canadensis Erxleben Windsor County (White River Drainages) G.R. Nielsen, Nov. 1985.

An accidental introduction from Europe, possibly as early as 1907. The deer-keed was well established on native North American hosts in Massachusetts, New Hampshire, New York and Pennsylvania by 1953.

The deer-keed, Lipoptena cervi, is reportedly a common species in Europe, attacking primarily deer and European elk but also occasionally dogs, horses, cattle and sheep.

Tribe Melophagiini

Genus Melophagus Latreille 1802

Melophagus ovinus (Linnaeus) 1758. The sheep ked.

Hosts: Domestic sheep, perhaps domestic goats.

Vermont: 1880 or earlier. (Perkins, 1880).

In North America, as elsewhere, the sheep ked sometimes occurs on domestic sheep gone feral. It occasionally passes temporarily to other hosts, as possibly native wild sheep, mule deer, wolf and coyote as well as cattle, horses and man.

European immigrant found from Alaska to the Falkland Islands in the New World, throughout all areas but the tropical lowlands.

Table I

Species that may be found in Vermont:Family Hippoboscidae

	<u>N. England</u>						<u>Northeast</u>			<u>Canada</u>	
	V	C	M	M	N	R	N	N	P	P	O
	T	T	E	A	H	I	Y	J	A	Q	N
Subfamily Ornithoicinae											
<u>Ornithoica vicina</u> (Walker) 1949.	X	X	X	X	X	-	X	X	X	X	X
Subfamily Ornithomyiinae											
Tribe Ornithomyiini											
<u>Ornithomyia fringillaria</u> Curtis 1836.	X	X	X	X	X	-	X	X	X	X	X
<u>Ornithoctona erythrocephala</u> (Leach) 1817.	-	X	X	X	X	-	X	X	X	X	X
<u>O. fusciventris</u> (Wiedemann) 1830.	-	X	-	X	-	-	X	X	X	X	X
<u>Stilbometopa fulvifrons</u> (Walker) 1849.	-	-	-	-	-	-	-	X	-	-	-
<u>Lynchia albipennis</u> (Say) 1823.	-	-	-	-	X	X	X	X	X	X	X
<u>L. americana</u> (Leach) 1817.	X	X	X	X	X	X	X	X	X	X	X
<u>L. angustifrons</u> (Wulp) 1903.	-	-	-	X	-	-	-	X	-	-	-
<u>L. holoptera</u> (Lutz, Neiva & Lima) 1915.	-	-	-	-	-	-	X	X	X	X	-
<u>L. nigra</u> (Perty) 1833.	-	-	-	-	-	-	-	-	-	-	-
<u>L. wolcotti</u> (Swenk) 1916.	-	-	-	-	X	X	-	-	-	-	-
* <u>Pseudolynchia canariensis</u> (Macquart) 1839.	-	X	-	X	-	-	X	X	X	-	-
<u>P. brunnea</u> (Latreille) 1812.	-	-	-	X	-	-	X	-	-	-	X
Tribe Olfersiini											
<u>Olfersia fumipennis</u> (Sahlberg) 1886	X	-	-	-	X	-	X	X	X	X	-
<u>O. bisulcata</u> Macquart 1847.	X	-	-	-	-	-	-	-	-	-	-
Subfamily Melophaginae											
Tribe Lipoptenini											
* <u>Lipoptena cervi</u> (Linnaeus) 1758.	X	-	-	X	X	-	X	-	X	-	-
Tribe Melophaqiini											
* <u>Melophaqus ovinus</u> (Linnaeus) 1758.	X	X	X	X	X	X	X	X	X	X	X
	V	C	M	M	N	R	N	N	P	P	Q
	T	T	E	A	H	I	Y	J	A	Q	N
Total #Species Recorded (Bequaert 1952-1957)	7	7	5	13	10	2	10	10	12	9	9
** G.R. Nielsen record											
* Introduced from Old World											

References:

- Bequaert, Joseph C.
1953 The Hippoboscidae or Louse-flies (Diptera) of Mammals and Birds. Part I. Structure, physiology and natural history. Ent. Amer. (1952) v. 32 (n.s.):1-209, 19 figs.; (1953), v. 33 (n.s.):211-442, figs. 20-21.
- Bequaert, Joseph C.
1954-1957 The Hippoboscidae or Louse-flies (Diptera) of Mammals and Birds. Part II. Taxonomy, evolution and revision of American genera and species. Ent. Amer. (1954) v. 34 (n.s.):1-232, figs. 22-24, 1954; (1955) v. 35 (n.s.):233-416, figs. 45-82, 1955; (1956) v. 36 (n.s.):417-611, figs. 83-104, 1957.
- Bequaert, Joseph C.
1965 Family Hippoboscidae, pp. 916-921. In: Stone, Alan, et al. A Catalog of the Diptera of America North of Mexico. USDA, ARS, Ag. Handbook 276, 1696 pp., Washington, Aug. 1965.
- Johnson, C.W.
1922 Notes on distribution and habits of some of the bird-flies, Hippoboscidae. Psyche, 29, pt. 2, pp. 79-85.
- Johnson, C.W.
1925 Fauna of New England. 15. List of the Diptera or two-winged flies. Occas. Papers Boston Soc. Nat. Hist., 7, pp. 1-326 (Hippoboscidae: pp. 293-294).
- Johnson, C.W.
1929 Some notes on certain of the hippoboscid flies. Bull. Northeastern Bird-Banding Assoc., 5, pp. 49-52.
- Perkins,
1880 ("Sheep-tick") 6th Rpt. Vt. Bd. Agric. p. 58, fig. 2
- Peters, H.S.
1933 External parasites collected from banded birds. Bird-Banding, 4, pp. 68-75.
- Peters, H.S.
1936 A list of external parasites from birds of the eastern part of the United States. Bird-Banding, 7, pp. 9-27.

Other Sources/Collections etc.:

- Carl T. Parsons Entomological Collection, Zadock Thompson Zoological Collections, University of Vermont.
- Gordon R. Nielsen Insect Collection, Hinesburg, VT.
- MCZ, Harvard Univ. Cambridge, MA. (needs to be checked for Bequaert's VT records.)

Vermont Faunal List

VFL-DI-4, "Louse Flies:Diptera:Hippoboscidae"

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