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Authors: Murray J. Kennedy, Robert A. Newman, and G. A. Chalmers

Source: Journal of Wildlife Diseases, 23(3) : 506-507

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-23.3.506>

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## First Record of *Lipoptena depressa* (Diptera: Hippoboscidae) from Alberta, Canada

Murray J. Kennedy,<sup>1</sup> Robert A. Newman, Alberta Agriculture, Pathology Branch, 6909 - 116 Street, Edmonton, Alberta, Canada T6H 4P2; and G. A. Chalmers, Alberta Agriculture, Regional Veterinary Laboratory, Postal Bag 3014, Lethbridge, Alberta, Canada T1J 4C7. <sup>1</sup> Author to whom reprint requests should be addressed.

**ABSTRACT:** *Lipoptena depressa* is reported for the first time from Alberta on a 2½-mo-old white-tailed deer fawn. This ked fly is one of four species occurring on deer in North America. The fawn had severe hemorrhagic enteritis of undetermined cause.

**Key words:** *Odocoileus virginianus*, white-tailed deer, *Lipoptena depressa*, Hippoboscidae, ked, case report.

*Lipoptena depressa* (Say, 1823) Sacken, 1878 is reported from mule deer (*Odocoileus hemionus*) (Bequaert, 1935, 1937, 1942, 1957; Spencer, 1938a, b; Cowan, 1943, 1946) and white-tailed deer (*Odocoileus virginianus*) (Bequaert, 1957) from British Columbia. *Lipoptena depressa* is reported also from Washington, Oregon, California, Idaho, Montana and South Dakota (Bequaert, 1937, 1942), Colorado (Eads and Campos, 1984), and Utah (Tip-ton and Saunders, 1971). Bequaert (1942) suggested that *L. depressa* may occur in Alberta, but apparently it is not previously reported in Canada east of the Rocky Mountains. Maa (1969) erected two subspecies of *L. depressa* to include specimens from the eastern slopes of the Rocky Mountains in Montana, Wyoming, South Dakota, and Nebraska (*L. depressa depressa*), and those from the western slopes in British Columbia, Washington, Oregon, Idaho, and California (*L. depressa pacifica*).

On 22 August 1986 a 2½-mo-old white-tailed deer fawn was found dead 9 km south of Cypris Hills, Alberta, Canada (49°33'N, 114°14'W) by a local rancher who contacted personnel of the Fish and Wildlife Division, Department of Energy and

Natural Resources. The fawn was submitted to the Regional Veterinary Laboratory, Animal Health Division, Lethbridge, Alberta for examination. It had a severe hemorrhagic enteritis of undetermined cause. Bacteriological examinations of intestinal contents were negative for *Salmonella* spp., *Campylobacter* spp., and *Yersinia* spp. and for toxins of *Clostridium perfringens* Type C. Numerous keds (Hippoboscidae) were found on the skin. Representative samples were removed and stored in 70% ethanol for subsequent identification. Specimens were mounted and cleared in Berlese fluid and identified as *Lipoptena depressa* following the descriptions of Bequaert (1937) and Maa (1969). Three female and two male specimens were sent to Dr. R. V. Peterson, Systematic Entomology Laboratory, U.S. National Museum of Natural History, Washington, D.C. who confirmed the identification. Voucher specimens are deposited in the U.S. National Museum of Natural History, but they were not assigned accession numbers.

Three additional species of ked flies occur on deer (*Odocoileus* spp.) in North America. *Lipoptena cervi*, introduced into the northeastern United States, is reported from Massachusetts, New Hampshire, and Pennsylvania (Bequaert, 1942). *Lipoptena mazamae* occurs in the southeastern United States (Texas, Florida, Georgia, and South Carolina) and Central and South America (Bequaert, 1942; Samuel and Trainer, 1972). *Neolipoptena ferrisi* occurs in southern British Columbia, Oregon, Colorado, California, North Dakota and Montana (Maa, 1969).

*Lipoptena depressa* is distributed primarily in the coastal region of British Columbia on *O. hemionus columbianus*. Apparently, *N. ferrisi* is distributed more commonly in the interior of British Columbia (Spencer, 1938a) on *O. hemionus hemionus* and *O. hemionus columbianus*. Spencer (1938a, b) and Cowan (1946) recovered low numbers of specimens from *O. hemionus columbianus* in the coastal regions of British Columbia. Spencer (1938a) believed that the distribution of the two species (*L. depressa* on the coast and *N. ferrisi* in the interior) probably resulted from climatic factors, rather than from host specificity. When both species occur on the same animal in the coastal regions *L. depressa* usually greatly outnumber *N. ferrisi* (Spencer, 1938b).

The effects of this parasite on the fawn were not determined. It is conceivable that heavy infections could serve as an additional stress, contributing to poor condition or death of the host.

We thank Mr. Leo Dube, Fish and Wildlife Division, Lethbridge, Alberta for bringing this case to our attention.

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Received for publication 17 November 1986.