



Dermacentor albipictus (Acari, Ixodidae) on Captive Reindeer and Free-ranging Woodland Caribou

Authors: Welch, D. A., Samuel, W. M., and Wilke, C. J.

Source: Journal of Wildlife Diseases, 26(3) : 410-411

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-26.3.410>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

***Dermacentor albipictus* (Acari, Ixodidae) on Captive Reindeer and Free-ranging Woodland Caribou**

D. A. Welch, W. M. Samuel, and C. J. Wilke, Department of Zoology, University of Alberta, Edmonton, Alberta, Canada T6G 2E9

ABSTRACT: Infestations of winter ticks (*Dermacentor albipictus*) on two captive reindeer (*Rangifer tarandus tarandus*) are reported and may be associated with increased grooming and alopecia. Over 400,000 ticks were recovered from one reindeer. Few ticks (<25 ticks/animal) were found on three free-ranging woodland caribou (*Rangifer tarandus caribou*).

Key words: Winter tick, *Dermacentor albipictus*, woodland caribou, reindeer, *Rangifer tarandus*, translocation.

The winter tick (*Dermacentor albipictus*) is a common parasite of moose (*Alces alces*) in North America (Anderson and Lankester, 1974), but has seldom been reported on caribou (*Rangifer tarandus*) (Bishopp and Trembley, 1945; Gregson, 1956; Martell et al., 1969). We report infestations of winter ticks on woodland caribou (*Rangifer tarandus caribou*) and captive reindeer (*Rangifer tarandus tarandus*) in Alberta and discuss possible management implications of these findings.

Hides of two reindeer from the Valley Zoo (Edmonton Parks and Recreation, Box 2359, Edmonton, Alberta, Canada T5J 2R7) were examined for the presence of ticks. Each hide was dissolved in a solution of potassium hydroxide and the recovered exoskeletons of ticks were counted (Welch and Samuel, 1989).

A 2-yr-old female reindeer died on 3 April 1988. It was emaciated and carried 4,446 winter ticks. No mites or other ectoparasites were found. Two other reindeer in the same pen were observed to groom extensively in early April 1988. One reindeer had extensive hair-loss on its neck similar to that caused by *D. albipictus* on moose (McLaughlin and Addison, 1986; Samuel et al., 1986).

A total of 411,661 winter ticks (25 ticks/cm²) were collected from a 2½-yr-old male reindeer that died in November 1988. The

largest infestation previously reported for *D. albipictus* was 178,000 ticks on a moose (Samuel and Barker, 1979). The large number of ticks on the reindeer may have been due to unnaturally high rate of transmission in captivity. During autumn (when larval ticks infest hosts) the reindeer was confined to a pen that had been used by infested reindeer during the previous spring (when engorged female ticks leave the host). The hair coat was not disturbed despite the large number of winter ticks.

These results, although limited, suggest that winter ticks may affect the health and survival of translocated reindeer. Numerous reindeer have been moved from northern herds, where no ticks occur, to commercial game farms in southern latitudes within the range of winter ticks. These captive animals could be exposed to local epizootics of winter ticks unless appropriate control measures are taken.

Infestation of reindeer by winter ticks led us to question the importance of this parasite to woodland caribou. In Alberta, woodland caribou share range with moose (Banfield, 1981) and could become naturally exposed to ticks. Hides from two caribou found dead near Grande Cache Alberta (53°53'N, 119°05'W) and one found near Fox Creek Alberta (54°23'N, 116°50'W) in autumn 1988 were examined. Dates of death were unknown. However, the carcasses were not badly decomposed suggesting recent deaths in November following the autumn peak of tick transmission (Drew and Samuel, 1985).

Four, 8, and 132 ticks (0.0005–0.01 ticks/cm²) were found on the caribou hides, respectively. These limited observations do not imply that ticks are presently a problem in that population. However, in recent years, western Canada has experienced

long, warm autumns and early spring snowmelts, conditions that enhance survival and transmission of winter ticks (Drew and Samuel, 1985, 1986). If these weather conditions continue, some populations of woodland caribou may be exposed to increasing numbers of ticks. We recommend the continued examination of caribou hides to monitor populations of this parasite and its potential adverse effects.

Hides were provided by the Edmonton Valley Zoo and by Alberta Fish and Wildlife Division. A Natural Sciences and Engineering Research Council of Canada grant to W. M. Samuel supported the work financially. J. C. Holmes and M. J. Pybus provided valuable comments on earlier drafts of this note.

LITERATURE CITED

- ANDERSON, R. C., AND M. W. LANKESTER. 1974. Infectious and parasitic diseases and arthropod pests of moose in North America. *Le Naturaliste Canadien* 101: 23-50.
- BANFIELD, A. W. F. 1981. The mammals of Canada. University of Toronto Press, Toronto, Ontario, Canada, 438 pp.
- BISHOPP, F. C., AND H. L. TREMBLEY. 1945. Distribution and hosts of certain North American ticks. *The Journal of Parasitology* 31: 1-54.
- DREW, M. L., AND W. M. SAMUEL. 1985. Factors affecting transmission of larval winter ticks, *Dermacentor albipictus* (Packard), to moose, *Alces alces* L., in Alberta, Canada. *Journal of Wildlife Diseases* 21: 274-282.
- , AND ———. 1986. Reproduction of the winter tick, *Dermacentor albipictus*, under field conditions in Alberta, Canada. *Canadian Journal of Zoology* 64: 714-721.
- GREGSON, J. D. 1956. The Ixodidae of Canada. Canadian Department of Agriculture publication number 930, Ottawa, Ontario, Canada, 92 pp.
- MARTELL, A. M., R. E. YESCOTT, AND D. G. DODDS. 1969. Some records for Ixodidae of Nova Scotia. *Canadian Journal of Zoology* 47: 183-184.
- McLAUGHLIN, R. F., AND E. M. ADDISON. 1986. Tick (*Dermacentor albipictus*)-induced winter hair-loss in captive moose (*Alces alces*). *Journal of Wildlife Diseases* 22: 502-510.
- SAMUEL, W. M., AND M. J. BARKER. 1979. The winter tick, *Dermacentor albipictus* (Packard, 1869) on moose, *Alces alces* (L.), of central Alberta. *Proceedings of the North American Moose Conference Workshop* 15: 303-348.
- , D. A. WELCH, AND M. L. DREW. 1986. Shedding of the juvenile and winter hair coats of moose (*Alces alces*) with emphasis on the influence of the winter tick, *Dermacentor albipictus*. *Alces* 22: 345-360.
- WELCH, D. A., AND W. M. SAMUEL. 1989. Evaluation of random sampling for estimating density of winter ticks (*Dermacentor albipictus*) on moose (*Alces alces*) hides. *International Journal for Parasitology* 19: 691-693.

Received for publication 6 December 1989.