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***Elaeophora schneideri* in Moose (*Alces alces*) from Colorado**

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ABSTRACT: Two adult moose (*Alces alces*) from Colorado (USA) were naturally infected with *Elaeophora schneideri*. Both animals had patent infections indicating that moose may serve as definitive hosts. Gross and histological lesions were characterized by fibromuscular intimal proliferation within the carotid arteries and rete mirabile cerebri. This is the first report of *Elaeophora schneideri* in moose from Colorado.

Key words: elaeophorosis, *Elaeophora schneideri*, arterial nematodes, moose, *Alces alces*, case reports.

To reestablish a permanent moose population in north central Colorado, the Colorado Division of Wildlife released 24 moose (*Alces alces*) along the Big Bottom area of the Illinois River (40°22'N, 106°02'W) in North Park, Colorado (USA) during 1978–1979. The moose were translocated from the north slope of the Uinta Mountains (40°54'N, 110°40'W) in Utah (12 moose) and from Moran Junction, Wyoming (43°47'N, 110°34'W) (12 moose). The current population in North Park is estimated to be 200 moose.

In November 1989, an adult female moose from North Park was observed to be ataxic and wandering in circles. The moose died and 3 days later was presented to the Colorado State Diagnostic Laboratory (College of Veterinary Medicine, Colorado State University, Fort Collins, Colorado 80523, USA). At necropsy, 40 adult *Elaeophora schneideri* (29 females and 12 males) were recovered from the terminal branches of the carotid arteries. One female *E. schneideri* was found in a pulmonary artery of the right lung. The tips of both ears had sloughed and the animal was in poor body condition. A 1.5 cm abscess was present in the liver. No observable lesions were found in the intestinal

tract and the moose was not pregnant. The animal was in a state of advanced autolysis. Selected tissues including the carotid arteries, rete mirabile cerebri, brain, facial skin and ears were preserved in 10% buffered formalin for histologic examination.

Histopathologic examination revealed mild to moderate fibromuscular intimal proliferation of the carotid arteries and of arteries within the rete mirabile cerebri. Two areas within the rete mirabile cerebri contained dead or degenerated parasites surrounded by an accumulation of lymphocytes and fibroplasia. The residual margin of the skin of the ears had a thickened layer of epidermis covering connective tissue and an arterial thrombus was present. Lesions were not observed in the brain; however, extensive autolysis precluded detailed examination.

A hunter killed an apparently healthy adult bull moose from North Park in December 1989. The caped head along with portions of the carotid arteries were examined for *E. schneideri*. The antlers had been removed via a frontal plane section through the calvarium. Therefore, only the base of the brain was present. Despite the limited tissue available, four female and five male *E. schneideri* were recovered from the carotid arteries. Histologic sections of the carotid arteries and rete mirabile cerebri revealed moderate fibromuscular proliferative plaques within the intima.

The adult female nematodes were confirmed as gravid containing ensheathed microfilariae. Representative specimens of nematodes have been deposited in the U.S. National Parasite Collection (Beltsville, Maryland 20705, USA; accession number 81114).

A variety of wild and domestic ruminants are hosts for *E. schneideri* throughout the United States (Hibler and Adcock, 1971; Worley et al., 1972; Worley, 1975; Robinson et al., 1978; Pence and Gray, 1981). *Elaeophora schneideri* has been reported in moose only from Montana (Worley et al., 1972; Worley, 1975). This is the first report of *E. schneideri* from moose in Colorado.

Elk and moose are considered abnormal hosts for *E. schneideri* (Jensen et al., 1982). In elk, *E. schneideri* do not develop to patency (Hibler and Adcock, 1971). Gravid females of *E. schneideri* were found in one of four moose from Montana (Worley et al., 1972). Detection of patent infections in moose suggests that moose are normal definitive hosts for the parasite and may serve as reservoirs of infection for other cervids and bovids.

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LITERATURE CITED

- HIBLER, C. P., AND J. L. ADCOCK. Elaeophorosis. In Parasitic diseases of wild mammals, J. W. Davis and R. C. Anderson (eds.). Iowa State University Press, Ames, Iowa, pp. 263-278.
- JENSEN, L. A., J. C. PEDERSON, AND F. L. ANDERSEN. 1982. Prevalence of *Elaeophora schneideri* and *Onchocerca cervipedis* in mule deer from central Utah. *Great Basin Naturalist* 42: 351-352.
- PENCE, D. B., AND G. G. GRAY. 1981. Elaeophorosis in Barbary sheep and mule deer from the Texas panhandle. *Journal of Wildlife Diseases* 17: 49-56.
- ROBINSON, R. M., L. P. JONES, T. J. GALVIN, AND G. M. HARWELL. 1978. Elaeophorosis in Sika deer in Texas. *Journal of Wildlife Diseases* 14: 137-141.
- WORLEY, D. E. 1975. Observations on epizootiology and distribution of *Elaeophora schneideri* in Montana ruminants. *Journal of Wildlife Diseases* 11: 486-488.
- , D. E., C. K. ANDERSON, AND K. R. GREER. 1972. Elaeophorosis in moose from Montana. *Journal of Wildlife Diseases* 8: 242-244.

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