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Abscesses in a Free-ranging Bison in Alaska

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A 4- to 5-mo-old female bison (*Bison bison*) was observed near Delta Junction, Alaska (64°N, 145°45'W) on 23 October 1982. This animal was part of a herd of approximately 400 bison which is commonly found within 25 km of the town. The calf was limping, and at times attempted to balance on its front legs and walk without using its hind legs. It was killed and at necropsy, three large subcutaneous abscesses (5–10 cm diameter) were found on its hind legs, involving the left fetlock and the hocks of both legs. No abnormalities of the joint capsule or joint surfaces were observed. A fibrotic capsule enclosed each abscess. The lesions had a fetid odor. Pus from the different lesions ranged in color from light yellow to light green and in consistency from creamy to thick paste. The abscesses were incised and sterile swabs were used to collect specimens for bacteriologic culture. There was mild hepatomegaly and adhesions of the spleen and lung to the parietal peritoneum and parietal pleura, respectively. The absence of significant perirenal, pericardial, and mesenteric fat deposits indicated that the animal was in poor overall body condition. There was no evidence of predisposing injury.

Preliminary bacterial isolation was performed by Dr. Robert Dieterich and his staff (Institute of Arctic Biology, University of Alaska, Fairbanks, Alaska 99701, USA). A pure culture was obtained from the abscesses and was submitted to the National Veterinary Services Laboratories for identification. The isolate was subcultured onto brain heart infusion agar with 5% bovine blood. Pinpoint, transparent colonies were visible after 24 hr incubation. At 1 wk, colonies were 1 mm, opaque, white, and beta hemolytic. Stained smears showed small Gram positive coryneform rods. The organism was not motile. Acid was produced from D-glucose, D-xylose, maltose, and lactose. No acid was produced from mannitol or sucrose. The organism was negative on the following tests: catalase, urease, oxidase, and aesculin hydrolysis. Nutrient gelatin was liquefied and litmus milk peptonized. Based on these results, the isolate was identified as *Corynebacterium pyogenes*.

This bacterium is a common inhabitant of the mucous membranes of animals and can spread to other areas of the body via the bloodstream. The organism may also enter the body via contamination of a wound or the umbilicus shortly after birth (Gillespie and Timoney, 1981, Hagen and Bruner's Infectious Diseases of Domestic Animals, 7th ed., Cornell Univ. Press, Ithaca, New York, 851 pp.). Among common domestic animals, cattle and swine are most commonly infected, followed by sheep and goats (Purdom et al., 1958, Vet. Rev. Annot. 4: 55). Abscessation in joints is not uncommon (Gillespie and Timoney, 1981, op. cit.). Abscessation of the brain and spinal cord of muskox (*Ovibos moschatus*) by *C. pyogenes* has been reported (Beckley and Dieterich, 1970, Vet. Med. Sm. Anim. Clin. 65: 1063–1067). Abscesses have also been previously reported in moose (*Alces alces*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), bighorn sheep (*Ovis canadensis*), and pronghorn (*Antilocapra*

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americana) (Thorne, 1982, Diseases of Wildlife in Wyoming, 2nd ed., Wyo. Game and Fish Dept., Cheyenne, Wyoming, 353 pp.). These abscesses were found most commonly between large muscles of the legs. The condition is not readily transmissible from one individual to another.

This is the first report of *C. pyogenes* from *B. bison*. The hepatomegaly and adhesions observed in the present case are believed to be a result of the infection. It appears as if the current case was an isolated incident with few serious implications for the health and welfare of the Delta Junction bison herd.

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Dirofilaria immitis in Red Foxes (*Vulpes vulpes*) in an Endemic Area Near Sydney, Australia

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The prevalence of heartworms (*Dirofilaria immitis*) in foxes has been reported in several countries (Jones and Aulerick, 1981, Bibliography of Foxes, Journal Article No. 9871, Michigan Agricultural Experiment Station, East Lansing, Michigan, USA, pp. 45–73). While there are no reports of heartworms in foxes in Australia, this parasite is endemic in dogs in many urban and semi-rural areas, particularly the east coast where prevalences may be as high as 85% (Kelly, 1978, Refresher Course on Canine Heartworm Disease, Post-Graduate Committee in Veterinary Science, University of Sydney, Sydney, Australia, Proc. No. 40, pp. 5–34). Prevalences of heartworms in foxes vary between 0% and 50% elsewhere (Hubert et al., 1980, J. Wildl. Dis. 16: 229–232), although the importance of this animal as a reservoir host of this parasite has been questioned by some authors (Kazacos and Edberg, 1979, J. Am. Vet. Med. Assoc. 175: 909–910; Otto, 1969, J. Am. Vet. Med. Assoc. 154: 370–373), based on the size of worms recovered and the absence of developing embryos within the worms. A previous suggestion that foxes may have an innate physiological resistance to *D. immitis*, based on lack of infection in 48 gray foxes (*Urocyon cinereoargenteus*) and two red foxes in a hyperenzootic area for canine heartworm (Walton, 1963, J. Parasitol. 49: 526) is yet to be substantiated.

In the present study, six of 68 (8.8%) foxes shot in the Sydney area in May and June 1982 and 1983 had *D. immitis* in their right ventricles. The proximal end of the pulmonary artery was also examined in each case but the lungs were not examined. Three hearts contained worms of both sexes (4 females and 2 males, 5 females and 1 male, and 3 females and 1 male, respectively) (South Australian Museum, Adelaide, South Australia, accession numbers V3114 and V3115). The three other infected hearts contained worms of only one sex (2 female worms, 1 female worm, and 2 male worms, respectively), most of which were in the mature size

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