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Erysipelothrix rhusiopathiae Serotype 5 Isolated from a White-tailed Deer in Iowa

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Naturally occurring infections of *Erysipelothrix rhusiopathiae* have been reported in a wide variety of domestic and wild animals (Wood and Shuman, 1981, *In* Infectious Diseases of Wild Mammals, Davis et al. (eds.), Iowa State University Press, Ames, Iowa, pp. 297–305; Carter, 1984, *In* Diagnostic Procedures in Veterinary Bacteriology and Mycology, 4th Ed., Thomas, Springfield, Illinois, pp. 196–201). The most common reports are of swine erysipelas. However, *E. rhusiopathiae* has also been isolated from turkeys, ducks, cattle, sheep, horses, dogs, reindeer, dolphins (*Tursiops truncatus* Montagu, *Stenella plagiodon* (Cope), *Grampus griseus* (Cuvier), *Lagenorhynchus obliquidens* Gill), least chipmunks (*Eutamias minimus* (Bachman)), other rodents, marine and freshwater fishes, and man. Isolation of *E. rhusiopathiae* has also been reported from soil, sewage, processed meat, decomposing animal carcasses, and streams. There are no reported isolations of *E. rhusiopathiae* from non-captive white-tailed deer (*Odocoileus virginianus* Zimmermann) in the United States.

A wild 3-wk-old white-tailed deer was presented to the Department of Veterinary Pathology at Iowa State University approximately 24 hr after being found dead. Post-mortem evaluation revealed multifocal areas of necrosis 1 cm in diameter throughout the liver. Some autolysis was present in all tissues. Bacteriological culturing under capneic (5% CO_2 in air) conditions was attempted from the lung, liver, spleen, kidney, and the small and large intestines. Normal flora were isolated from the intestinal tissues. Post-mortem contaminants were cultured from the other tissues with the exception of the liver from which a pure culture of *E. rhusiopathiae* was isolated.

The liver isolate was a small alpha (green) hemolytic colony after 24 hr incubation at 37 C on 5% bovine blood agar. A gram stain of the organism revealed a short gram-positive rod. Preliminary identification was made using a Kligler iron agar slant. The isolate reacted in a characteristic manner: slight yellowing of the slant and butt, hydrogen sulfide production along the stab line. Further biochemical identification was made as follows: catalase (−); oxidase (−); indole (−); glucose (acid); lactose (acid); sucrose (−); nonmotile. The serotype of the isolate was determined by testing an autoclaved extract against reference sera representing the 22 known types of *E. rhusiopathiae*, using agarose gel double diffusion (Wood and Harrington, 1978, Am. J. Vet. Res. 39: 1833–1840). This extract reacted with the serotype 5 antisera. A mouse-protection test was conducted using hyperimmune equine anti-erysipelas serum (Wood and Packer, 1972, Am. J. Vet. Res. 33: 1611–1620). The isolate killed mice within 4 days, and mice were completely protected by hyperimmune anti-erysipelas serum.

This deer was diagnosed as having acute multifocal necrotic hepatitis caused by serotype 5 *Erysipelothrix rhusiopathiae*. Transmission of this infection is possible through numerous vectors and fomites.

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Ectoparasites and other arthropod vectors have been incriminated as carriers of this organism. Soil, grass, drinking water, and decomposing animal carcasses are also a source of *E. rhusiopathiae* (Wood and Shuman, 1981, op. cit.). The isolate we cultured from the fawn may have been transmitted by biting flies, including species of *Stomoxys* or *Tabanus*, if the flies had recently fed on an infected animal.

As no further isolations have been made from other white-tailed deer in this locality, we believe that this is an isolated event rather than an indication of an outbreak of *E. rhusiopathiae* in deer in Iowa.

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Dermatophilosis in a Mule Deer, *Odocoileus hemionus* (Rafinesque), from Wyoming

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Dermatophilus congolensis Van Saceghem, 1915 causes contagious exudative dermatitis in cattle, horses, sheep, goats, dogs, humans and 25 species of wild animals including white-tailed deer (*Odocoileus virginianus* Zimmermann) (Pier, 1981, *In* Tropical Diseases of Cattle, Pistia (ed.), W. Junk, The Hague, Netherlands, pp. 367–376; Richard, 1981, *In* Infectious Diseases of Wild Mammals, Davis et al. (eds.), Iowa State University Press, Ames, Iowa, pp. 339–346; Salkin and Gordon, 1981, *In* Diseases and Parasites of White-tailed Deer, Davidson et al. (eds.), Tall Timbers Research Station, Tallahassee, Florida, pp. 168–174). The agent was first described in 1915 by Van Saceghem in Africa. First isolations of the organism in the United States were reported in 1961 from white-tailed deer and horses in New York and cattle in Texas (Bentinck-Smith et al., 1961, Cornell Vet. 51: 334–339; Bridges and Romane, 1961, J. Am. Vet. Med. Assoc. 138: 153–157; Dean et al., 1961, N.Y. State J. Med. 61: 1283–1287). A previous description of "mycotic dermatitis," a common term for dermatophilosis, in a female mule deer in Wyoming was reported in 1957 (Post and Winter, 1957, Federal Aid in Fish and Wildlife Restoration, Project FW3-R-4, Wyoming Game and Fish Comm., Cheyenne, p. 16). The purpose of the present communication is to report the first culturally verified case of *D. congolensis* infection in a mule deer and the first isolation from Wyoming.

In September 1983 a doe and two fawns on a ranch near Clearmont, Wyoming were observed to be in poor nutritional condition; the doe also had a rough hair coat. Several days later, one of the fawns was found dead and partially decomposed and the second fawn was caught manually and euthanized. Necropsy of both fawns revealed numerous tapeworms (*Monezia expansa* (Rudolphi, 1810)) in the small intestine and evidence of diarrhea. Scabs and crusts were on the skin of the ears, the chin, and axilla of the fawn that was euthanized. Many nymphal ear ticks (*Otobius* sp.) were in the external meatus of both fawns. Besides several minor abra-

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