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Eperythrozoon in Captive Juvenile Collared Peccaries in Texas

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A variety of endo- and ecto-parasites (Hellgren et al., 1984, Proc. Helminthol. Soc. Wash. 51: 160–161; Corn, 1983, unpubl. Master's Thesis, Texas Tech Univ., Lubbock, Texas, 49 pp.; Samuel and Low, 1970, J. Wildl. Dis. 6: 16–23) have been described from the collared peccary (*Tayassu tajacu*), but there are no published reports of blood parasites in this species. This paper describes infections of *Eperythrozoon* in 6-wk-old captive collared peccaries.

Eperythrozoon is a pandemic rickettsial blood parasite which is transmitted by blood sucking arthropods and which either attaches to the surface of the red blood cell or floats freely in plasma (Kreier and Ristic, 1968, *In* Infectious Blood Diseases in Man and Animal, Vol. 2, Weinman and Ristic (eds.), Academic Press, New York, pp. 387–472). Organisms range in size from 0.8–1.0 μm (Smith, 1980, *In* Diseases of Swine, Lehman (ed.), Iowa State University Press, Ames, Iowa, pp. 598–602). Infections of *Eperythrozoon* in most species are considered nonpathogenic, but *Eperythrozoon suis* in swine (*Sus scrofa*) can cause fever and ictero-anemia (Splitter, 1950, Am. J. Vet. Res. 11: 324–329). Young swine with no previous exposure are especially susceptible to primary infections which may be fatal if left untreated (Splitter, 1950, op. cit.). In all species, high parasitemias generally follow initial infection; parasite numbers then decrease to undetectable levels, increasing only when the animal is stressed (Smith, 1980, op. cit.). Clinical infections of eperythrozoonosis can be reduced with tetracyclines, neoarsphenamine, or sodium cacodylate (Kreier and Ristic, 1968, op. cit.), but once infected, animals remain carriers for life (Smith, 1980, op. cit.).

Seven collared peccaries were born between May and August of 1984 in captivity at Texas A&M University, three from wild-bred females trapped in McMullen County, Texas, and four from captive-bred females. At 6 wk of age, 2 ml of whole blood were collected in EDTA from each piglet and transported to the Texas Veterinary Medical Diagnostic Laboratory for hematological analyses. Examination of blood smears revealed infections of *Eperythrozoon* in five of these animals (Fig. 1), with *Eperythrozoon* bodies ranging in size from 0.3 to 0.8 μm. Four of the five infected animals were neutropenic (range 1,846–2,714/μl) when compared to normal captive adult female peccaries (n = 16, $\bar{x}$ = 7,400/μl) (Lochmiller et al., 1985, J. Wildl. Manage. 49: 66–71). One infected and two noninfected individuals had neutrophil counts ranging from 6,080 to 7,738/μl. These were on par with adults, but lower than values reported for 6-wk-old peccaries (n = 3, $\bar{x}$ = 9,869/μl) (Lochmiller, 1984, Ph.D. Dissertation, Texas A&M Univ., College Station, Texas, 261 pp.). Blood serum from two infected individuals sent to the University of Illinois, Urbana, was negative for the indirect hemagglutination (IHA) test (Smith and Rahn, 1975, Am. J. Vet. Res. 36: 1319–1321) for *Eperythrozoon suis*. Following an intramuscular injection of oxytetracyc-

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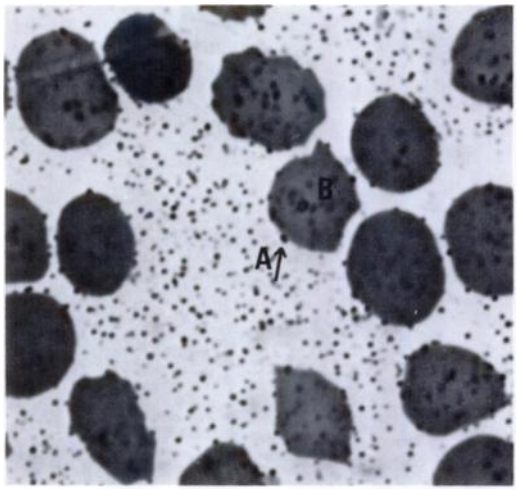

FIGURE 1. Blood smear showing *Eperythrozoon* infection in a 6-wk-old collared peccary. *Eperythrozoon* organisms (A) are attached to the perimeter of the erythrocytes (B) and measure 0.3 to 0.8 μm. Note also the numerous free floating forms between erythrocytes. Difquick, ×1,016.

line (20 mg/kg body weight), parasite numbers in juvenile animals dropped to undetectable levels and neutrophil counts returned to normal.

Source of infection in the captive peccary herd may have been animals in a swine research facility, located 0.5 km from the peccary enclosure. Based on examination of Giemsa-stained blood smears, *Eperythrozoon* organisms were observed in 86% of clinically normal domestic boars tested in Texas (Lawhorn, pers. comm.). Species of *Eperythrozoon* are considered host specific, and *E. suis* which occurs frequently in domestic swine, has been reported only once in feral swine (Smith, 1980, J. Am. Vet. Med. Assoc. 181: 1281–1284). However, *E. ovis* has been reported in both sheep and goats (Daddow, 1979, Aust. Vet. J. 55: 605–606). The species of *Eperythrozoon* observed in this study is believed to be *E. suis*, however it could be an undescribed species. Negative IHA tests probably resulted from failure of peccary antibody to react in a test developed with swine *Eperythrozoon* antigen. This hypothesis should be tested by preparation of peccary *Eperythrozoon* antigen and testing it against both peccary and domestic swine sera. Peccaries and swine share susceptibility to several parasitic and non-parasitic diseases (Dardiri et al., 1969, Proc. U.S. Anim. Health Assoc. 73: 437–452; Hellgren et al., 1984, op. cit.; Corn, 1983, op. cit.; Sprent, 1982, J. Helminthol. 56: 275–295; Harwell et al., 1977, J. Wildl. Dis. 13: 445–447; Samuel and Low, 1970, op. cit.) indicating some degree of physiological similarity. Infections of *Eperythrozoon* in the collared peccary are probably of little importance in the wild. Examination of 120 blood smears collected from wild peccaries from Zavalla, La Salle, and Dimmit counties in southern Texas revealed no cases of parasitemia.