

February 17, 1997

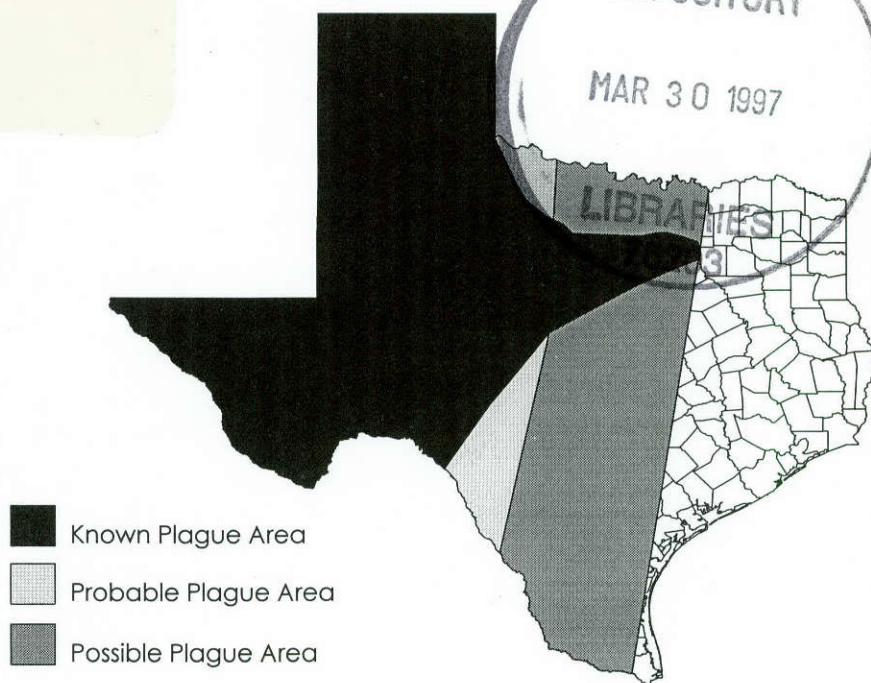
Vol. 57, No. 4

97-352

Health Risks Associated with Exotic Pets

As the popularity of unusual or "exotic" pets has grown during the past few years, so has the number of reports of human infections acquired from these pets, such as salmonellosis from hedgehogs and tuberculosis from brushtail possums. (See the 7/10/95 and 11/14/95 issues of *Disease Prevention News* for more information.) Although exotic animals may make fascinating and enjoyable pets, some of them are capable of transmitting pathogens that pose serious health risks to their owners. (See Table 1 for the types of diseases exotic pets can cause.)

Figure 1. Plague in Texas



Reptiles and Salmonellosis

Reptiles (snakes, lizards, turtles, and iguanas) are increasingly being recognized as a source of *Salmonella* infections in children and adults, a trend that closely parallels the growing popularity of reptiles as pets. Certain *Salmonella* serotypes are associated almost exclusively with reptiles and are present in the normal intestinal flora of over 90% of all reptiles. The Centers for Disease Control and Prevention estimate that 50,000 to 100,000 cases of reptile-associated salmonellosis occur annually in the United States, with young children, elderly people, and immunocompromised persons at highest risk. Infants can acquire the infection indirectly through fomites or from a person who has touched the animal or its feces. Fecal cultures of infected reptiles often yield false-negative results. Animals that are treated with antibiotics may temporarily stop shedding the organism, but typically return to a state of chronic shedding. Therefore, antibiotic treatment of the animal is not recommended.

Prairie Dogs and Plague

As cute and curious creatures, prairie dogs seem like ideal small pets. However, surveillance data indicate that the plague organism, *Yersinia pestis*, is widespread and firmly entrenched in wild rodent populations throughout most of the western United States, the prairie dog's natural habitat. Pet prairie dogs in Texas are commonly sold through newspaper classified ads and flea markets after having been trapped in the western two-thirds of Texas, which is a plague-enzootic area (Figure 1). *Y. pestis* can be transmitted to humans through direct contact with the

Continued

Also in this issue:

- Salmonella arizonae* Bacteremia Associated with Ingestion of Cooked Rattlesnake
- Subscription Reminder
- Perspectives in Public Health Conference Registration Form

Table 1. Human Diseases Transmitted by Four Exotic Pet Species

Pet	Disease	Transmission	Prevention
Reptiles	Salmonellosis	Fecal-oral	Wash hands after handling animal or its feces. Do not allow animal in food preparation areas. Do not keep reptiles in child-care centers. Do not keep reptiles in households with infants or immunocompromised persons.
Prairie dogs	Plague	Fleas or direct contact	Do not keep prairie dogs or other wild rodents as pets.
Macaque monkeys	Herpes B infection	Bite	Obtain medical consultation from TDH at (800) 252-8239. Laboratory assistance is available from the Southwest Foundation for Biomedical Research (210) 674-1410 or the Viral Reference Laboratory (210) 614-7350.
Wolf-dog hybrids	Rabies Wounds	Bite	Do not keep as pets. Confine animal and contact local rabies control authority immediately.

infected animal or its tissue or when they are bitten by infected fleas. Although there is no state law prohibiting their ownership, prairie dogs, like other feral animals, are best left in the wild.

Monkeys and Herpes B Infection

In macaque monkeys (any of 16 species of Asian monkeys, including rhesus monkeys), herpes B virus behaves similarly to herpes simplex virus types I and II (HSVI and HSVII) in humans. These viruses are widespread in their respective host populations. The associated diseases are usually latent; virus is shed only periodically for short durations of time. In macaques, viral reactivation (ie, shedding) of herpes B virus is visibly manifested as lesions in or around the mouth, very similar to "cold sores" in humans due to HSVI. In humans, however, herpes B virus (also known as monkey B virus, simian B virus, or *Herpesvirus simiae*) infection results in flu-like symptoms, possibly progressing to limb paresthesias, dysphagia, confusion, ataxia, and respiratory arrest. The usual mode of transmission is via a bite from a macaque which has virus in its saliva. Prior to 1987, the estimated case-fatality rate was greater than 80%. However, studies have shown that early initiation of antiviral therapy can reduce the case-fatality rate to about 20%. Investigation of monkey bites should include exami-

nation of the offending animal for oral lesions, collection of serum samples from the monkey to look for evidence of latent infection, and serial collections of sera from the exposed person. Antiviral therapy should be initiated if (as soon as) any herpes B virus antibody is detected in the human sample. In certain situations, such as a bite involving a monkey that has clinical findings suggestive of herpes B virus infection, prophylactic antiviral treatment should be initiated without waiting for serologic test results.

Wolf-Dog Hybrids and Bites

Despite strong evidence that wolf-dog hybrids can exhibit unpredictable behavior and pose a substantial threat for severe attacks on humans, the number of these animals kept as pets continues to surge. No USDA-licensed rabies vaccine is approved for wolf-dog hybrids since there is no proof that the canine vaccine is effective in the hybrid. Veterinarians who choose to vaccinate hybrids should obtain written consent from the owner authorizing off-label use of the vaccine. If a wolf-dog hybrid bites a person, the animal should be confined, and the local rabies control authority should be contacted immediately. Possession of wolf-hybrids as pets is prohibited or restricted in some states. Although state law in

Continued ☞

Texas does not regulate possession of these animals, some city or county regulations do. In its position statement, the American Veterinary Medical Association strongly opposes keeping hybrids of

wild and domestic canids as pets.



Prepared by Jane Mahlow, DVM, Acting Director, TDH Zoonosis Control Division.

***Salmonella arizonae* Bacteremia Associated With Ingestion of Cooked Rattlesnake**

From 1991 through 1995, the Texas Department of Health Laboratory reported an average of 12 *Salmonella arizonae* isolates per year. Although *S. arizonae* is rarely a human pathogen, it has been linked to the handling or ingestion of reptiles, particularly rattlesnakes. Rattlesnake ingestion, a known Mexican American folk remedy, may play a role in medical or dietary tradition in Texas. *S. arizonae* is a recognized source of serious reptilian zoonosis and opportunistic infection in patients with HIV infection, rheumatologic diseases, and malignancies. To my knowledge, this is the first report of species-specific *S. arizonae* sepsis related to rattlesnake ingestion in a child with chronic granulomatous disease (CGD).

The patient, a Hispanic boy from South Texas, had X-linked CGD. He developed *Nocardia pneumonitis*, confirmed by lung biopsy at age 4 years. Eleven months later, while on antinocardia treatment, he presented with fever, abdominal pain, and hepatosplenomegaly. *S. arizonae* bacteremia was diagnosed and treated with a 2-week course of intravenous ceftriaxone. Recurrent *S. arizonae* bacteremia with sepsis syndrome occurred 2 and 4 months later and was treated each time with a 2-week course of intravenous ceftriaxone. The patient's history disclosed ingestion of

fried rattlesnake, a family custom, but no intake of dried rattlesnake pills or raw meat. No other family members were ill; the parents' stool cultures were negative for *S. arizonae*. After treatment and clinical recovery from the third episode of bacteremia with *S. arizonae*, the patient took prophylactic doses of oral cefixime for 3 months. Following the treatment and prophylaxis described above and a diet free of rattlesnake, he has remained well.

Relapsing salmonellosis is a known complication in patients with CGD. This case illustrates that children with phagocytic defects are at risk for serious infections from reptile-associated *S. arizonae*, even with ingestion of cooked rattlesnake. Traditional customs or the practice of folklore medicine, such as the consumption of rattlesnake as a form of alternative medicine or nutritional supplement, may extend beyond cultural or geographic boundaries. A history that identifies traditional customs or dietary habits associated with reptile use is important for all patients with immunodeficiency.

Contact Dr. Lenora Noroski by electronic mail: inoroski@bcm.tmc.edu for further information.

Prepared by Lenora Noroski, MD, Texas Children's Hospital

Don't forget to send in your subscription renewal form by March 31!

If you have not yet received your renewal materials, please write us at DPN, Texas Department of Health, 1100 West 49th Street, Austin, Texas 78756-3199, or call (512) 458-7677. Be sure to provide all the required information. **Enter your personal account number in the appropriate space. DO NOT use the Budget # printed at the top of your renewal form as your account number!** Your account number is printed above your name on the envelope the renewal materials came in and on all mailing labels as of January 6, 1997.

