Prairie Dogs
(Pseudo-odontomas and other diseases)

Prairie dogs (Cynomys ludovicianus) are indigenous to the western United States. They belong to the order rodentia and share many anatomic and physiologic characteristics with other herbivorous members of this order, such as chinchillas. These include the presence of open-rooted front teeth and hind-gut fermentation. When confined to zoological collections there are few disease problems encountered other than infection by Yersinia sp. Since their increase in popularity in the pet trade, numerous inter-related syndromes have been reported. These syndromes include: respiratory disease, obesity, cardiac disease and oral neoplasia. The potential for a causal relationship between the captive pet environment and these diseases is discussed in the current literature. Compilation of clinical statistics and controlled research in the future will better elucidate the etiologies of disease in captive prairie dogs. In the interim, the practitioner must find the most effective means of treating affected pet prairie dogs.

Common Disease Syndromes and Appropriate Therapeutics
Pseudo-odontomas or Tooth Root Hyperplasia:
Since prairie dogs have become popular as pets in captivity, a very high percentage of these animals have suffered from moderate to severe respiratory disease at a relatively young age – often between two and five years. The cause of this was undetermined.

In the mid-1990s, studies demonstrated that the primary underlying reason for this respiratory distress is the development of severe hyperplasia (thickening and overgrowth) of their incisor tooth roots. The cause of this is theorized to be the unnatural materials (metal, wire, hard plastic) of which their enclosures are made. These materials are much harder than the grasses, clay, sand and stems on which they would normally chew in the
wild. The constant, concussive force on the teeth of these prairie dogs causes the roots (or apices) to react, become irregular and thickened. As the roots increase in size, they begin to fill the nasal area. Since prairie dogs breathe only through their noses (called obligate nasal breathers) this increase in tooth size makes breathing difficult. This condition is worsened by obesity, which is very common in captive prairie dogs. Secondary nasal an lower respiratory infections often occur, and treatment for these can be helpful. However, the major anatomical problem of decreased to absent air flow through the nose is extremely debilitating to the prairie dog. They often become unwilling to move around, or even to eat or drink, since it is difficult or impossible to perform these simple functions and still get sufficient air to survive.

Prevention is obviously the best treatment for this condition. Although fascinating creatures, most individuals owners are not able to provide the acreage of protected outdoor environment that would be required for an optimal life. Additional reasons that these animals should not be kept as pets include their recent endangered status (from poisoning that is occurring in the south and south west where the highest population density of these creatures is maintained). Additionally, most prairie dogs that are sold have been vacuumed out of their burrows in the wild, gathered and shipped to pet stores. Often the mistaken impression is that these animals are captive raised, when in fact they were abducted from their wild habitats. Besides the questionable ethics of this procedure, several diseases that are potentially contagious to human can be carried by these wild prairie dogs, including tularemia and bubonic plaque.

Surgical treatment of pseudo-odontomas, or tooth root hyperplasia, can be considered, but the procedure does carry considerable risk. Unlike rabbits, the tooth roots of these prairie dogs are extremely thick, irregular and calcified into the surrounding bone. Severe hemorrhage and even fracture of the hard palate can occur when attempts are made to remove these teeth.

A temporary measure that may last for months can be employed in some cases in order to provide some respiratory relief. With this procedure, a stent (artificial hole) is surgically implanted on the flat part of the nose, slightly in front of the eyes. This is past
the point where the tooth roots turn inward, and often allows the prairie dog to breathe through this hole with much more ease. This procedure too has some risk of hemorrhage and anesthesia in the already compromised prairie dog, but is much less extensive than the total removal of the front incisor teeth.

Medical treatment to decrease infection and increase respiratory ease may temporarily alleviate the symptoms.

**Cardiac**

Dilated cardiomyopathy is a frequent finding in captive prairie dogs over the age of three or fours years. The cause is not known. Accompanying upper and lower respiratory disease is often present. Treatment of cardiac disease has been reported on numerous occasions. Radiographs and echocardiography may be necessary to determine the type and severity of a prairie dog’s heart condition, and to institute appropriate therapy.

**Dermatologic**

Prairie dogs are susceptible to both Microsporum canis and Trichophyton mentagrophytes infestation (two types of ringworm fungus). Clinically these usually present with hair loss and scaling with little or no associated pruritis (itching).

Barbering may also occur, either self-barbering or from a cage mate. Treatment for this is environmental manipulation.

Pruritis is generally associated with flea infestation. On occasion, a pustular dermatitis may occur due to Staph aureus, generally resulting from poor hygiene. Bumble foot (decubital lesions of the feet, again involving Staph aureus infection) may also be present.