
NATURE NOTE

Note on an Unusual Gastrolith in a Prehensile-Tailed Porcupine, *Coendu prehensilis* (Linnaeus 1758)

The prehensile-tailed porcupine *Coendu prehensilis* is a Neotropical mammal belonging to the Order Rodentia in the Family known as the Eritheodontidae. It is found throughout the tropical regions of northern South America as well as on the island of Trinidad.

It is almost totally arboreal in its habits as is attested to by the prehensile construction of its tail, which is not unlike the tails of some of the arboreal and prehensile-tailed primates that share its habitat. The porcupine will rarely come to the ground, except when there is no aerial connection of the branches, for it will usually, easily cross from tree to tree where the branches intertwine.

They feed entirely on vegetable matter which they cut up with their large upper incisor teeth. Like the feeding habits of other rodents in the Order — the squirrels (*Sciurus*), rats (*Rattus*), mice (*Mus*), pacas (*Agouti*) and agoutis (*Dasyprocta*) — the porcupine must gnaw on wood to wear down the large chisel-like incisors and must spend a considerable time doing this to keep them at the right size and functionality.

In captivity, this habit is attested to by the wear and tear to the climbing logs and nesting boxes supplied to these animals to make them feel secure and comfortable in their cages or enclosures.

The Emperor Valley Zoo, in Port of Spain has had on display many specimens of the porcupine over the years of the Zoo's existence.

In all zoos or animal menageries, animals whose diet cannot exactly be duplicated, substitute foods near as possible food eaten in the wild, are offered. The porcupines in the Emperor Valley Zoo were fed a mixture of fruits and hard, raw vegetables, which seemed to maintain them in healthy condition. This diet appeared satisfactory as the animals were able to reproduce in captivity.

When an animal dies in captivity and whenever possible, a necropsy was done to ascertain the cause of death. One such death in 1988 indicated a necropsy as a large mass could be seen in the abdominal area which, when palpated, was solid to the touch.

At necropsy, Dr. Charles DeGannes, the zoo's veterinarian, found a large stony mass occupying the entire area in the stomach that would normally be used to process the food eaten. Over the time of its formation the mass must have taken up more and more space until there was little or no room for digestion of the large amount of vegetable matter needed to keep the animal alive. Starvation or injuries sustained by a fall, when it could no longer climb around carrying the excess weight in its body cavity, were the probable causes of death.

This mass was approximately ovoid in shape measuring about 20 cm in its long axis. It felt like a large stone and must have weighed not less than a kilogram (see photo). There was no way that this animal could have ingested such an object and it was therefore formed in the stomach of the porcupine from the materials it had been eating over its lifetime. At present there is no information available to me whether any such gastroliths have ever been found in other Neotropical porcupines. In other deaths at The Emperor Valley Zoo there was nothing like this that could have caused the death of the animal.

A gastrolith is a stone or stony concretion found in the stomach of mammals and is not uncommon. The most famous are the bezoar stones, found in the digestive tracts of some animals (such as goats) which, at one time and in many countries, were held in great esteem as being an antidote to poison (Tichy 1977). Gastroliths are also found in the crops of some birds and gizzards of crocodilians. However, these are stones that have been purposely ingested to assist in the digestion and grinding up of their food.

REFERENCE

Tichy, W. 1977. Poisons, Antidotes & Anecdotes. New York: Sterling Publishing Co., Inc. 192 p.

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Necropsy of porcupine showing gastrolith and scale in inches and centimeters.