

Prehensile-Tailed Porcupine

Coendou prehensilis

Class: Mammalia **Order:** Rodentia (rodents) **Family:** Erethizontidae

(New World porcupines)

Other names: Brazilian Prehensile-Tailed Porcupine; Brazilian porcupine; Prehensile tailed porcupine

Other subspecies:

Other Relatives: There are 4 species listed in *Coendou*



Zoo Porcupines

Pepper 1.0 – male, DOB: 9/23/2001; Aq: 5/6/2002

Prickles 0.1 – female, DOB: 11/26/2009; Aq: 3/4/2011

Harriet 0.1 – female, DOB: 9/22/1994; Aq: 9/22/1994

About our porcupines

Pepper was born at Memphis Zoo, but is on loan from Buffalo Zoo. Pepper weighs about 12.75 lbs.

Prickles was born at Zoo Miami, but is on loan from Buffalo Zoo. Prickles weighs just under 15 lbs.

Harriet was born here at Brandywine Zoo, both her parents were on loan from Buffalo Zoo (Dam: Matilda, Sire: Albert). Harriet weighs 9.5 lbs.

Pepper and Prickles are exhibit animals, Harriet is a program animal and not on public display.



Status

Least Concern [1]

Geographic Region

This species is broadly distributed from Colombia and Venezuela south to northern Argentina; occurring in Argentina, Bolivia, Brazil, Colombia, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad and Tobago, and Venezuela [1]

Habitat

Lives in dry and wet forests, disturbed and undisturbed forests [1]

Characteristics

Size: *Weight range:* 10 – 11 lbs.

Body length: 1 – 2 ft. (head to base of tail)

Tail length: 12-19"

Longevity: **Wild** 15-17 years [2]

Captivity 27 in captivity [2]

Physical Description

- Porcupine **quills** are modified hairs. Just like human hair, they are made out of **keratin**. The semi-hollow quills are tricolored and are barbed at the end like a fishing hook – this helps the spines to stick into a predator when the porcupine must defend itself.
- The **dorsal** side is covered with short spines. Coloration of dorsal side varies from yellow to black, while the underneath is usually gray.
- Equipped with a long, muscular **prehensile** tail. No spines are found on the tail, which is long (330-485 mm) and used for stabilization when climbing.
- The feet have long-clawed digits which assist in climbing trees.
- The young have a dense covering of reddish brown guard hairs (each about 35 millimeters in length) on their heads and bodies that will later harden to quills [2].
- Adult Brazilian porcupines have skin varying in hue from yellow-orange rust to brownish-black and is covered with long quills on the dorsal side. The yellow-orange hue is due to a pungent waxy substance exuded from the sebaceous glands of both males and females. [2]
- Like other rodents, porcupines possess constantly growing rootless incisors that have a hard enamel layer on the front of each tooth and softer dentine behind.

Dimorphism

Males: males are slightly larger than females

Females:

Diet: Herbivore

Diet in the Wild: The diet is primarily vegetation, including leaves, tender, stems, fruits, blossoms, and roots. They get at the cambium layer of trees by peeling away the bark. They also have been found to raid guava, bananas, and corn from plantations.

Diet in the Zoo: corn, bananas, apples, sweet potatoes, leafy greens, peanuts, and leaf-eater biscuits

Behavior

- *Nocturnal* – night active and *arboreal*.
- During the day, individuals rest in trees in hollows or other shaded areas. Their prehensile tail is used to help hold onto tree branches.
- They spend over 85% of their time in trees where they sleep, forage, and interact with other porcupines. [2]

Social Structure & Communication

- Brazilian porcupines are socially tolerant, especially when mates and food are abundant, but prefer small groups or a completely solitary lifestyles. [2]
- They communicate in a variety of ways including acoustic, chemical, and visual forms. Long moans, yelps, grunts, clicks, mews, hisses and squeaks are the main auditory communications of Brazilian porcupines. Scent marking is done by “anal rubbing”, where prehensile-tailed porcupines use a large, naked glandular patch surrounding the genital region to mark a substrate. They may also stamp their feet and rattle their quills when agitated. [2]

Defense Mechanisms

- Despite what movies and cartoons present, porcupines *cannot* shoot their quills. Spines only come off when shedding (like hair) or when the tip is stuck into something like a predator.
- When frightened, porcupines can make their spines stand up, called *piloerection* – just like we when get goose bumps or a scared cat’s hair stands up on end. [2]
- They may bite or attempt to injure adversaries with their spines. They can shake their quills to make a rattling sound to scare off predators. If they are caught, they will roll into a ball to defend their vulnerable underside.
- To appear even larger and more dangerous in the face of a threat, prehensile-tailed porcupines will turn themselves sideways to the direction of the threat. [2]

Reproduction

- *Iteroparous* : multiple reproductive cycles over the course of its lifetime.
- Little is known about courtship and mating interactions of these large rodents both in the wild and in captivity.
- Observations have been made of males spraying females and their young to mark them
- there is no breeding season, and females experience postpartum **estrus** and are able to copulate and conceive just 3 to 18 days after birthing a litter [2]
- Gestation lasts 195-210 days, after which one **precocial** young is born. Infant porcupines are called ‘*porcupettes*’.
- The porcupette is born with red hair and soft, flexible spines which harden a few days after birth. In addition to being born with this dense orange-red coat of **guard hairs**, **natal** quills up to 15 millimeters in length protect the young and will reach adult length after about 10 weeks. [2]
- Weaning occurs between 10-15 weeks, and maturity is reached around 19 months for females (males at an unknown time). [2]

Conservation

- **Use & Trade:**
- **Threats:** There are no immediate threats to the Brazilian prehensile-tailed porcupine populations because of their wide distribution, but deforestation of the rainforest is destroying much of their habitat. [1]
- **Predators:** With a covering of barbed quills that are effective at penetrating the flesh of predators, there are relatively few animals that prey on Brazilian porcupines. However, in the rural areas, people eat prehensile-tailed porcupines. During the summer months, free-ranging and feral dogs occasionally catch and consume prehensile-tailed porcupines. [2]

Did You Know?/Fun Facts

- Their tail has 30-32 vertebrae and is almost as long as their body
- “Porcupine” means “spiny pig” in Middle French
- Prehensile-tailed porcupines differ from North American porcupines in many respects. In addition to having smaller young that require an extended developmental period, Brazilian porcupines lack a distinct mantle of longer quills covering the nape, shoulders and upper backs of the adults. Also differing are the characteristics that mark them as arboreal porcupines, such as its prehensile tail and lack of emergent fur. North American porcupines are adapted to terrestrial as well as arboreal life and has an entirely fur covered body. [2]

Glossary: List of definitions of the most important recurrent technical terms used in the text.

Dorsal - of or relating to the upper side or back of an animal,

estrus - a recurring period of sexual receptivity and fertility in many female mammals; heat.

guard hairs - Most mammals have three distinct kinds of hairs: Guard hairs protect the rest of the *pelage* (fur) from abrasion and frequently from moisture, and they usually lend a characteristic color pattern. The thicker underfur (*down*) is primarily insulating and may differ in color from the guard hairs. The third common hair type is the *vibrissa*, or whisker, a stiff, typically elongate hair that functions in tactile sensory reception.

Iteroparous - offspring are produced in groups (litters, clutches, etc.) of more than one at a time and across multiple seasons (or other periods hospitable to reproduction). A species is considered semelparous if it is characterized by a single reproductive episode before death, and iteroparous if it is characterized by multiple reproductive cycles over the course of its lifetime. The term iteroparity comes from the Latin *itero*, to repeat, and *pario*, to beget.

Keratin - a family of fibrous structural proteins that compose the key structural materials found in human skin, hair and nails, as well as the scales, claws and shells of reptiles, the beaks, talons and feathers of birds, as well the hair and claws of mammals, among other things.

Natal – referring to features animals are born with that are different from their mature form.

Prehensile – chiefly referring to an animal's limb or tail that is capable of grasping.

Precocial - hatched or born in an advanced state and able to feed itself almost immediately

Quill – are hardened, semi-hollow spines that can be released by contact with them, or they may drop out when the porcupine shakes its body. Technically, *spines* are hard pointed, needle-like anatomical structure typically used for defensive projection. Spines are found in a wide range of animals, both vertebrate and invertebrate. Not all spines are capable of being released on contact like the porcupine's quills are.

References

- [1] J. Q. D. & E. L. Marinho-Filho, "Coendou prehensilis," The IUCN Red List of Threatened Species, 2008. [Online]. Available: <http://www.iucnredlist.org/details/5085/0>. [Accessed February 2015].
- [2] S. Andres, "Coendou prehensilis," Animal Diversity Web, 2014. [Online]. Available: http://animaldiversity.org/accounts/Coendou_prehensilis/. [Accessed February 2015].