



Porcupine

by Chuck Fergus

The porcupine is a blackish, quill-armed, slow-moving rodent with an appetite for tree bark and salt. It lives in forests and often can be seen hunched into what appears to be a black ball high in a tree. While it doesn't occur in all parts of Pennsylvania, the porcupine is one of our best-known and most easily identified wild animals.

Its taxonomic name is *Erethizon dorsatum*. The word "porcupine" comes from two Latin words, *porcus* ("swine") and *spina* ("thorn"), which also reflect the species' colloquial name, quill pig. In the East, porcupines inhabit Canada and New England south into Pennsylvania; they range through the northern Midwest and the Pacific Northwest, south in the forested Rocky Mountains nearly to Mexico, and north to Alaska. They live at all elevations from sea level to timberline.

Biology

Adult porcupines are about 30 inches in length, including a 6- to 10-inch tail. They weigh 9 to 15 pounds, with bigger, older adults weighing up to 20. Males are larger than females. The porcupine is North America's second largest rodent; only the beaver is bigger. A porky has four incisors, two above and two below; they are bright orange, strong and adapted to gnawing.

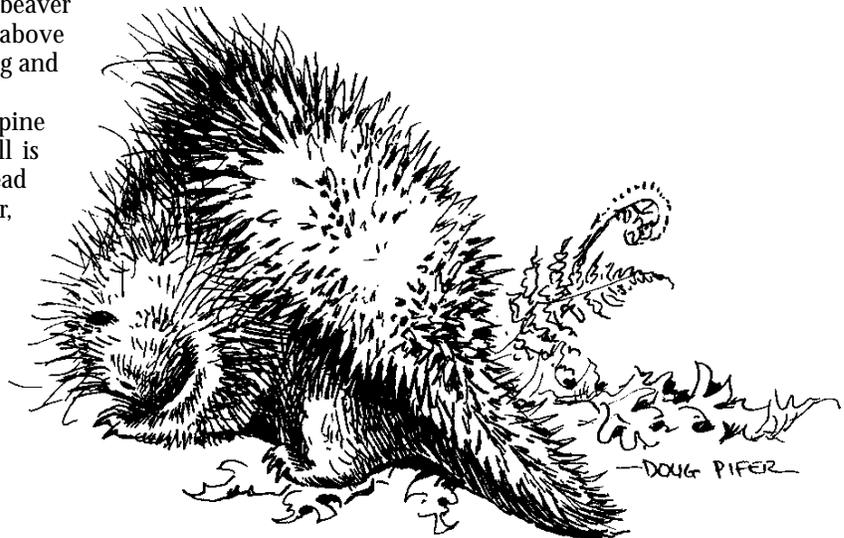
Short-legged and stout of body, a porcupine has a pronounced arch to its back. Its skull is heavily constructed; the small, rounded head has a blunt muzzle, ears almost hidden in fur, and dull black eyes. The front and back feet bear long, curved claws, and the soles of the hind limbs are thick-skinned and callused. The tail is short and club-shaped.

Porcupines vary in color from salty-black to brownish-black, sprinkled on the sides and belly with yellow- or white-tipped hairs. The summer sun bleaches the guard hairs of some porkies, giving them a grizzled appearance. Albinism sometimes occurs.

The most distinctive aspect of a porcupine's appearance is its coat of quills. Quills cover the animal's upper parts and sides from the crown of its head to the tip of its tail. They're 1 to 4 inches long (those on the animal's back are longest), yellow or white tipped with black, and lined with a foam-like material composed of many tiny air cells. An individual porky may have up to 30,000 quills.

When a porcupine is relaxed, the quills lie smoothly along its body, but when it feels threatened, muscle contractions cause the shafts to rise. In reality, quills are specialized hairs. The rest of the pelt consists of long, stiff guard hairs and soft, wooly underfur. Two molts occur each year: in spring, short hairs replace winter underfur; and in fall, the long, insulating underfur grows back in. At all times, quills are present and are replaced as they fall out.

To defend itself, a porcupine turns its back to a potential enemy, tucks its head between its front legs (or under a convenient shrub), and flails its quill-studded tail back and forth. It may back toward an adversary, chattering its teeth.



Porcupines cannot throw their quills, but because the quills are loosely attached, they dislodge easily on contact and stick in a victim's flesh. A single quill has a needle-shaped tip covered with hundreds of minute, overlapping, diamond-shaped scales. The scales slant backward and act as barbs. When a quill lodges in tissue, actions of the victim's muscle fibers engage the tips of the scales, drawing the quill or quill fragment inward up to an inch a day. A wild animal badly impaled in the body will suffer intensely; quills may pierce its heart, arteries, or lungs and cause death, or they may sever the optic nerves and cause blindness.

Slow and clumsy on the ground, porcupines are more at home in trees. A porky scales a tree by digging in with its sharp claws, pressing the rough, leathery soles of its feet against the bark, and bracing with its sturdy tail. It descends tail first.

On the ground, a porcupine can muster a top speed of about 2 mph over short distances. It waddles along in plantigrade fashion, on the soles of its feet with its heels touching the ground. Sensitive facial whiskers help it maneuver through thick underbrush.

A porky can see moving objects only at short range and is almost blind to stationary objects. Its hearing is probably inferior to that of most other mammals, but it has a keen sense of smell. A porcupine can swim, its air-filled quills helping to keep it afloat.

Porcupines are vegetarian. In winter, much of their diet consists of needles, twigs and small limbs of evergreens, especially hemlocks. They also eat the inner bark of trees: hemlock, spruce, white and pitch pine, basswood, sugar and striped maple, beech, birch, aspen, ash, cherry, apple and other species. In spring, summer and fall, porkies eat a wide variety of vegetation, including grasses, sedges, and the flowers, leaves, twigs, roots, buds, catkins and seeds of many other plants.

As a porcupine strips a tree of bark or foliage, small branches frequently fall to the ground; these trimmings play a minor role in providing food for other animals during winter.

In wild areas, porcupines gnaw on shed deer antlers. Closer to civilization, their chewing damages wooden buildings, telephone poles and ornamental trees.

Porcupines crave salt. They're attracted to and will gnaw on objects that have been in contact with human perspiration — axe handles, ropes, work gloves, leather boots, etc. They're occasionally seen along highways where salt has been used to melt ice. They're also said to relish the glue in plywood.

If a porcupine chews off an isolated section on a tree's

trunk, the bark will, in time, close over the wound. If a porcupine girdles the trunk, however, the tree will die. Trees with upper branches freshly "barked" (the newly exposed wood shows light against the bark) show that a porcupine's in the area. Beech trees are often damaged only at their bases, perhaps because porkies have a hard time climbing this smooth-barked species.

Although porcupines kill a few trees by girdling, most authorities agree the damage they cause over large areas is generally insignificant.

Porcupines grunt, groan, shriek, bark and whine; their calls may carry up to a quarter-mile. In breeding season, porkies are especially vocal.

Breeding takes place in September, October and into November, after a courtship often lasting several days. Courting porkies rub noses, chatter their teeth, walk on their hind feet or perform stylized, weaving body movements. Males are polygamous and play no part in rearing young. In females, estrus (the period when they're sexually receptive) repeats every 30 days until mating occurs or the breeding season ends.

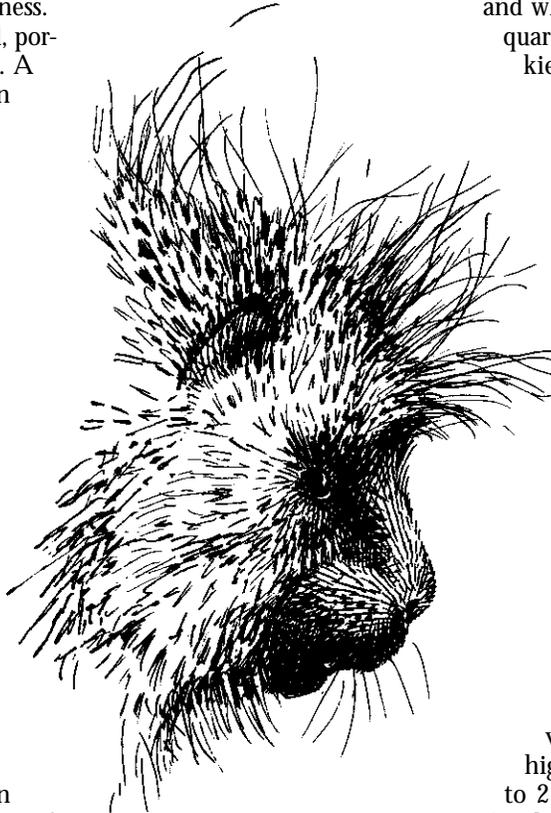
Unlike most rodents, porcupines are not prolific reproducers. Wildlife biologists have estimated that up to half of all adult females go unmated each year, and females that do become impregnated almost always produce just one offspring. The survival rate of young porcupines is high. After a gestation period of 205 to 217 days, the female gives birth in April, May or June. Birth may occur in a ground den, although the female doesn't generally select a particular site.

The young porcupine is called a "pup" or "porcupette." As might be expected after such a long gestation, it is precocial — it weighs about a pound, its eyes are open and it's about 10 inches long and fully furred. The quills are soft and hairlike, about a quarter-inch long, but they become hard and functional as they dry. Pups are able to climb trees and eat solid food within a few days. They nurse for about 50 days.

After weaning, pups receive little attention from their mothers; females and young separate for good after about six months. Young are sexually mature at 15 to 16 months and breed in their second autumn.

Porcupines den in caves, rock crevices, hollow logs and trees, deserted fox dens, brushpiles and abandoned buildings. They have a habit of defecating at their den's entrance, and the resulting pile of droppings is a good indicator of the animal's presence.

In winter, porcupines take to their dens for protection from snow, wind and predators. Several porkies may use the same den site, together or at different times. An



individual generally becomes resident at a den in November and uses it off and on until May. During winter, a porky may spend its days asleep in the den or in the top of a conifer in which it's been feeding. Porcupines do not hibernate.

Winter dens are rarely used in summer; during the warm months, a porcupine may choose a large deciduous tree — often an oak — as a daytime rest site. Porcupines are solitary in summer. Throughout the year they do most of their feeding and moving about at dusk, during the night, and at dawn.

In Pennsylvania, porcupines are preyed upon by foxes, coyotes, bobcats, dogs and owls. The fisher, reintroduced in Pennsylvania in the mid-1990s, has mastered the technique of flipping a porcupine onto its back, exposing the rodent's unquilled, vulnerable belly, and killing it with a swift bite. Fishers also kill porcupines with repeated bites to the face and head. Also, coyotes have been known to work in pairs to maneuver a porcupine onto its back.

Porcupines have a 10- to 12-year life expectancy in the wild. Mortality factors include predation (primarily by man), accidents (many porkies are killed on the highways) and disease. Porcupines are parasitized by lice, ticks and mites, some are afflicted with mange, and many have tapeworms and other internal parasites.

Population

In our state, most porcupines live in areas of extensive forests. They inhabit the rugged mountains of northcentral

Pennsylvania; the timbered land in the northwest and northeast corners; and the wooded sections of the ridge-and-valley region. Few, if any, porkies live in the southwestern or southeastern parts of the state.

Mammalogists have theorized that the porcupine originated in South America, crossed the Isthmus of Panama during the Pleistocene period, and overspread North America. Today, three other genera of New World porcupines inhabit South America.

Porcupines seem to be holding their own. The species thrives in a variety of forest, terrain and climate types across the continent — and it has few enemies in the wild.

Habitat

Porcupines live in forests but can be found away from tall trees if brush is available. They do well in mixed hardwood — conifer woodlands with suitable den sites — rock crevices, caves, hollow trees, etc. — and they live in wooded valleys as well as on the mountaintops.

The winter range of a porcupine includes its den, coniferous feeding areas (primarily hemlocks), and the travel lanes linking them — up to about 20 acres. A single animal may spend several months feeding on only one or two trees and using the land between them and its den. Summer ranges are larger, between 15 and 65 acres, with an average of 45 acres in deciduous woods. The summer ranges may be a half-mile or farther from the winter ranges, as den sites and conifers aren't important components of summer territories. In summer, porcupines favor deciduous forests, especially areas with high concentrations of oaks.



Wildlife Notes are available from the
Pennsylvania Game Commission
Bureau of Information and Education
Dept. MS, 2001 Elmerton Avenue
Harrisburg, PA 17110-9797
www.pgc.state.pa.us

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Wildlife Notes

Allegheny Woodrat	Northern Cardinal, Grosbeaks, Indigo Bunting and Dickcissel
Bats	Opossum
Beaver	Otter
Black Bear	Owls
Blackbirds, Orioles, Cowbird and Starling	Porcupine
Blue Jay	Puddle Ducks
Bobcat	Raccoon
Bobwhite Quail	Rails, Moorhen and Coot
Canada Goose	Raptors
Chickadees, Nuthatches, Titmouse and Brown Creepers	Ring-necked Pheasant
Chimney Swift, Purple Martin and Swallows	Ruby-throated Hummingbird
Chipmunk	Ruffed Grouse
Common Nighthawk and Whip-Poor-Will	Shrews
Cottontail Rabbit	Snowshoe Hare
Coyote	Sparrows and Towhee
Crows and Ravens	Squirrels
Diving Ducks	Striped Skunk
Doves	Tanagers
Eagles and Ospreys	Thrushes
Elk	Vireos
Finches and House Sparrow	Vultures
Fisher	Weasels
Flycatchers	White-tailed Deer
Foxes (Red & Gray)	Wild Turkey
Gray Catbird, Northern Mockingbird and Brown Thrasher	Woodchuck
Hérons	Woodcock
Kingfisher	Wood Duck
Mallard	Woodpecker
Mice and Voles	Wood Warblers
Minks & Muskrats	Wrens