

## Natural History.

### THE PORCUPINE.

THE remarks of "Lotor" about the porcupine rolling itself into a little ball were read with interest, as also the pertinent reply of "Backwoodsman," in your issue of May 23. I most heartily indorse "Backwoodsman" in his assertions, but want to add a few observations carefully made during the last twenty years. He says he has seen thousands of them in the pine woods, but does not give his address so we may understand where these improperly-called hedgehogs are so numerous. I live in Michigan, and though I have been a close observer, not over twenty-five porcupine have come to my notice altogether, and I have hunted and collected in both peninsulas.

The common porcupine (*Erethozon dorsatus*) is well known to persons living in wild and unsettled portions of the Union east of the Mississippi River and north of 43° north latitude. To the east it is getting scarce, and even in this State is now very rarely taken south of 42°, although formerly quite common here at Kalamazoo, 42° 20'. I am informed that it is still found in some parts of northern Pennsylvania, and, as is well known, it is abundant in Maine, northern New York, Vermont and New Hampshire in the wilder portions, while in Wisconsin and Michigan north of 44° it is a familiar rodent.

I am not aware that the porcupine ever feeds on any substances not vegetable, and therefore cannot indorse "Backwoodsman's" assertions that it will devour almost anything around camp. His observations were undoubtedly made during the winter months, as he embraces old boot packs in the porcupine's menu, and as my notes were mostly made in the spring and fall it follows that I may not understand the predilections of this strange creature at other times. That the animal is mischievous and disposed, like a colt, to investigate and mutilate, is true, and this characteristic may account for the habits observed around camp, when it apparently attacked anything available. In careful dissections made upon both young and old specimens, I have found the stomach to contain only vegetable matter. Leaves generally compose the fare from May till August, and I doubt not that the animal could live entirely upon this diet. The bill of fare is often varied with tender bark of young trees and shrubs, and frequently by bark not so tender, as I have seen them feeding on the inner bark of the white oak (*Quercus alba*). In season the acorns of this oak furnish food for the needle-backs, and in the fall I have shot them from immense timber-land oaks fully 75ft. from the ground. These oaks, all of 50ft. without a limb and 30in. in diameter, would seem insurmountable to animals apparently so clumsy formed, but the unwieldy creatures scale the rough-barked trees with ease, if not with the activity of a squirrel, at least with much greater ease than the woodchuck (*Arctomys monax*). The porcupine feeds largely on grass and clover when it can get it, and in this respect much resembles that other destructive rodent, the woodchuck, which has come to almost entirely select clover fields for his burrows, moving about as the farmer shifts his crops from field to field.

It is when the young are with the old one that grass and the foliage of shrubs, as well as roots, are chosen, for I do not think the young mount into trees of any size until quite half grown; at least I have never met with small ones in trees nor have I learned of their being taken there. I have never seen young so small that they were still nursing, but have thrice taken them when still in company with their mother, though they had adopted a vegetable diet. The young are undoubtedly brought forth in burrows, though as to this I cannot attest. At least they quickly hide in burrows when disturbed, as do the old ones also, although, if alone, the old ones evidently prefer hollow trees. One place that I know of where these strange animals are to be found is in a huge hollow sycamore, intricately connected with other and smaller trees by huge roots, which contain a labyrinth of passages. This sycamore is so smooth that a squirrel could hardly mount it, yet the old porcupine has been seen at the top. It always seemed to me that the animal must have climbed to the top by way of the hollow.

I have once found two young in company with the old one, and twice only one young. The litter undoubtedly consists of at least two and probably more, for I do not know of one species of Michigan rodents which brings forth less than two, and generally there are three or more in a litter.\* The young run along after the mother in her search for food, and are exact counterparts of the parent when only 8 to 10in. long. At this length they are provided with spines, and will throw themselves into a defensive posture if an intruder comes suddenly on the scene, as does a kitten when disturbed by a dog.

The porcupine is a muscular but very clumsy animal. With great strength, both of jaw and limb, and undoubtedly capable of making a good defense if it were gifted with activity and courage, it is as great a coward as exists, and if prevented from seeking safety in flight offers no offensive resistance, but squats down and waits the expected onslaught, with elevated back and erected bristles. If not molested it will, upon the slightest chance being given it, shuffle off to a place of security. When in this position, although not in shape like a ball, as described by "Lotor," it rests upon its feet, which are drawn in under the body, with its head turned down, offering the best position to repel attack. Against a hunter this position does not afford it safety, as a smart blow with a stick will turn it heels up, when it may be quickly despatched; but to a dog or other animal the defense is practically complete, and the porcupine is as safe behind its impenetrable *chevaux de frise* as if it was in its burrow or in the top of a tree. Woe to the dog that ignorantly bites at that animal in an attempt to worry it. The result is a mouthful of sharp, bearded spines or quills, from 1 to 3in. long, which are readily detached from the integument and as readily penetrate the lining of the mouth and the nose of its luckless assailant. Sometimes as many as fifty or more quills may be found sticking in the mouth and muzzle of an uneducated dog, which, maddened with pain after his first mouthful, has renewed his attack, thoroughly enraged at his quiet enemy. These quills must be drawn out, and the sooner the better for the sufferer, as they cannot be removed by the dog and will lead to frightful suppuration, and usually to death.

\*Of imported rodents, I have repeatedly known of instances where the Guinea-pig produced but one at a birth.

Wildcats and even the cougar or American lion are said to have been found dead with quill-filled mouths, the result of hunger-inspired attacks on the porcupine. These quills, largest and most numerous on the back and rump, are the natural covering of certain parts of the animal and, like the intermingled hairs, spring from follicles in the creature's skin. They are readily reproduced and are undoubtedly intended for a protection of an otherwise defenseless animal. They may be readily disengaged from the integument, and the removal quickly follows the tension made on them after the point of the quill is driven into the flesh and is held there by the barbs, small and numerous, which press backward against the penetrated skin or other integument. I am thus explicit, and perhaps unnecessarily diffuse, as read by those who have examined the arrangement, because I want to mention a mooted question. There are still many who firmly believe that porcupines throw their quills, and though it is almost too simple a subject to discuss, a word may not come amiss. There are many intelligent people who could not be brought near to one of these inoffensive animals, firmly believing that the creature has the power of shooting the quills to quite a distance and with great accuracy. I have been told repeatedly, and by men of undoubted veracity, that they had often seen men, fences, dogs and trunks of trees filled with the thrown quills of the hedgehog. They were simply telling what they had often heard and had come to sincerely believe,

"Like one  
Who, having unto truth, by telling of it,  
Made such a sinner of his memory  
To credit his own lie."

These people would be hard to convince of their error under any circumstances, and yet I have much sympathy for them, for there are numerous stories at present going the rounds which are much more ridiculous.

The porcupine when assailed elevates its back and makes the skin tense, so that the quills are erect and in the best position for defense. This position is followed, when an attack is made on the creature, by quick elevations or jerks upward and sideways of head and body, accompanied by floppings of its armed tail, which are made to inflict injury on the enemy, the animal in the meantime looking about for an advantage or chance for safety. There is no other time when a wild animal will fight as it will when found in company with its young, and the efforts of a female porcupine to protect her single young one called forth my admiration. The old one kept its front toward its offspring, which it placed beside a log and partially covered with its foreparts, and in addition to its bristling armor it also used its teeth, savagely biting a stick when pushed away. This old one weighed 21lbs., and its stomach contained over 1½lbs. of green vegetable material ground up as fine as good teeth could chew it. The small one weighed 4lbs., and its paunch was distended with the same food.

The senses of the porcupine are evidently very dull or else it is conscious of no danger, deeming its protection sufficient guarantee for its safety. I have more than once discovered them by the dropping of bark or acorns from the limbs where they were feeding, and have then watched their actions for some time as they continued to feed, wholly ignoring my presence. If shot at when feeding in a large tree, say 60ft. from the ground, they are not easily brought down, and when resting on a limb three or four inches in diameter, which protects the head and vitals, a good many shots are required to bring it off its perch. The quills offer strong protection against anything but very coarse shot, and even with Bs it is not readily dislodged, as it possesses great vitality and will hang till the last gasp. One that was well riddled, after falling fully 70ft., escaped me in a piece of dense undergrowth.

Having a true hunter's appetite, with addition of a great amount of curiosity, I have been in the habit of testing the edible qualities of many of the wild birds and mammals not generally in demand. Among others I tried some porcupine stew, being led to believe that it would be palatable and gamy, as it is said to be quite often eaten by our red brothers. Now, woodchuck, coon and possum go well, and I have nothing particular to say against some other animals not generally chosen, but as to porcupine, excuse me. After cooking for five hours, and still finding it not done, it was thrown to the dogs, which discreet animals elevated their noses to heaven and gave a dismal howl.

In nearly every specimen that I have examined, the intestines as well as stomach were found to be suffering from the ravages of a peculiar parasite, and, strange to say, these entozoans of singular habit were always found attacking the external lining of the tissues and were not found within the alimentary canals of the otherwise apparently healthy animal.

In conclusion, a word in regard to hedgehogs. This animal is only found on the Eastern Continent and islands. It belongs to the order *Insectivora*, and has teeth formed much after the fashion of the mole. The porcupine, so often incorrectly called hedgehog, belongs to the *Rodentia*, or gnawers, and its teeth are formed more like those of the rat, squirrel and woodchuck. It is several times the size of the little hedgehog. The name hedgehog, therefore, in no way applies to our American porcupine.

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### WHALE, WALRUS AND SEAL.

EARLY in July, 1889, the small schooner *Nicoline*, registering about forty tons and drawing only 5ft. of water, left San Francisco for the mouth of the Mackenzie River in search of the bowhead or Polar whale. The vessel was commanded by Capt. Louis Herendeen, whose brother, Edward P. Herendeen, a correspondent of *FOREST AND STREAM*, accompanied him as first mate. The crew comprised nine men, and additional help was to be obtained among the Esquimaux at Point Barrow or Herschell Island, all of whom are excellent and fearless whalers.

Many whalers believe that the bowhead breeds at the mouth of the Mackenzie. Although many whales pass into the Arctic through Bering Strait in the spring, very few are seen to return southward in the fall during the stay of the whalers. Of course they all come south later, Mackenzie saw a great many whales at the mouth of the river bearing his name during his Arctic explorations. Near Point Barrow whales have been killed with old irons

of the Greenland whalers imbedded in their blubber. When stationed at Point Barrow with the Signal Service expedition of 1882-1883, Capt. E. P. Herendeen traveled far to the eastward and learned from the natives that whales are abundant in the locality in which the *Nicoline* and other vessels are now operating. The *Nicoline* was selected because of the advantage a vessel of light draft would have in following small leads in the ice near shore. She reached Herschell Island about last August, and the steamer *George W. Hume* and another vessel or vessels were there at the same time. While at Point Barrow illness forced Capt. E. P. Herendeen to abandon the voyage to the eastward, and he returned to San Francisco. He has taken steps, however, to secure information for *FOREST AND STREAM* and collections of natural history objects, which we hope to report upon after the return of his brother during the coming fall.

In conversation with the Captain recently we have obtained some additional interesting notes on the whale, walrus and seal, which we give herewith.

Capt. Herendeen has seen whale calves only a few days old at Point Barrow—so small that their flukes were not yet straightened out and the whole calf could be taken into a single *vomiak*, or skin boat. The very young calves are not timid and are easily caught by the natives, who delight in eating them. In a short time the cows teach them to sink in times of danger and their capture becomes difficult. The whales commence going to the east at Point Barrow about April 15 and the young accompany them; they continue running until June and are seen occasionally as late as June 15.

Walrus breed on the ice and live along its southern edge, coming furthest south in winter. When the whalers catch the pups in June and July they find them pretty well grown and bearing little tusks. Natives informed Capt. Herendeen that walrus, some time ago, were taken as far north as Point Barrow in winter, and that they have breathing holes in the ice just like seals. A herd of 1,000 walrus was driven ashore and captured at Point Moller years ago; from these were obtained 8,000lbs. of ivory. A pod of 40 was started inland and kept moving for some time by pricking those that turned, in the nose with a sharp iron-pointed pole. Finally, however, they became utterly unwilling to go further from the sea and every one of the lot dug his snout deep into the moist sand, completely protecting the only tender portion, plowing as much as one foot deep, and it was impossible to turn a single individual. When walrus haul out on the land the near approach of good weather may be confidently expected; they love to lie in close contact like pigs and frequently one will partially overlap another.

In the winter of 1885 a number of seals were killed by Esquimaux while traveling over the snow from the frozen rivers to the sea. Capt. Herendeen saw the tracks of four or five that were escaping from their imprisonment in this way. About 30 miles inland, southeast of Cape Smythe, he found a seal that had been killed by a native when going out with his dog team. The seals go into the rivers for whitefish, trout, smelt and other fish; they find open holes full of food and continue their feast until the ice freezes up everything solid, and then they are forced to travel overland. The Esquimaux say they never make a mistake and go the wrong direction; the course to the sea is laid along the nearest route.

T. H. BEAN.

RECENT ARRIVALS AT THE PHILADELPHIA ZOOLOGICAL GARDEN.—Purchased—One *Huidobolus*'s saki (*Pithecia monachus*), one grizzly bear cub (*Ursus arctos horribilis*), one golden cat (*Felis moenjensis*), one prong-horned antelope (*Antilocapra americana*), two white-bellied hairy seals (*Zalophus cavirostris*), one red-billed hornbill (*Trochus erythropterus*), two Orinoco geese (*Chenalex jubata*), and 2, five European widegones (*Marca penelope*), 2 3 and 3 2, five black snakes (*Bascantium constrictor*), one glass snake (*Ophisaurus ventralis*), seven king snakes (*Ophibolus getulus*), three ground rattlesnakes (*Crotalophis mitchrilli*), three tree snakes (*Ptyophis melanoleucus*), three chicken snakes (*Coluber quadripunctatus*), four coach-wasp snakes (*Bascantium constrictor flagelliforme*), one Indigo snake (*Spilotes erchevianus*), one common hog-nosed snake (*Heterodon platyrhinus*), one black hog-nosed snake (*H. platyrhinus ammodens*), two garter snakes (*Eutania sirtalis*), and one boa (*Boa constrictor*). Presented—One Barbary ape (*Macaca matus*), twelve opossums (*Didelphis virginiana striata*), three raccoons (*Procyon lotor*), one prairie wolf (*Canis latrans*), one red fox (*Canis vulpes fulvus*), one gray hawk (*Falco sparverius*), one mockingbird (*Turdus polyglottus*), two barred owls (*Syrnium nebulosum*), six alligators (*Alligator mississippiensis*), six musk turtles (*Amblocheilus odoratus*), one yellow whip-snake (*Bascantium flagelliforme testaceum*), one Say's king snake (*Ophibolus getulus sayi*), one Holbrook's water snake (*Tropidonotus thomasi*), two Woodhouse's water snakes (*T. sipedon woodhousei*), one red fox (*Canis vulpes fulvus*), one blue snake (*Ptyophis melanoleucus*), and three garter snakes (*Eutania sirtalis*). Born—One Virginia deer (*Cervinus virginianus*), one fallow deer (*Cervus dama*), one bactrian camel (*Camelus bactrianus*), one black lemur (*Lemur macaco*), one llama (*Lama peruviana*), one American elk (*Cervus canadensis*), and six garter snakes (*Eutania sirtalis*). Exchange—Four Bell's painted terrapin (*Chrysemys bellii*), one unarmed soft-shelled turtle (*Myda mutica*), and one Kobben Island snake (*Coronella plicocorum*).

## Game Bag and Gun.

THE FULL TEXTS of the game laws of all the States, Territories and British Provinces are given in the *Book of the Game Laws*.

### ANOTHER OLD STORY.

*Editor Forest and Stream:*

Old Captain Prout, for whom Prout's Neck, now a well-known summer resort, is named, was a noted gunner in the days when waterfowl were plenty in that vicinity. "Early one spring, 1860 or thereabouts," said an old settler to me, "he brought home from the West Indies a gun, the like of which had never been seen by the natives. It was a muzzleloader, about a 2-gauge, and weighed some 80lbs. Soon after its arrival there came a heavy storm, and the next morning a pond a couple of acres in extent back of the Captain's barn was covered with ducks so thick that another one could not possibly have been squeezed in. Here was an opportunity to try the new gun, and loading it with the regulation charge, of ½lb. powder and ½lb. shot, he sallied forth. At the corner of the barn he cocked the piece and stepped out with it held in readiness. When within about 40yds. all the ducks jumped as one bird. The Captain aimed at the middle of the mass and fired."

Here my informant stopped as if expecting some encouragement, and somewhat against my will I felt constrained to ask, "How many did he get?" "Wal," he replied, "he didn't get any, he undershot but he picked up three bushels of ducks' legs."

MAINE. E. W. L.