CIHM
Microfiche
Series
(Monographs)

ICMH
Collection de
microfiches
(monographies)

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

Technical and Bibliographic Notes / Notes technique et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

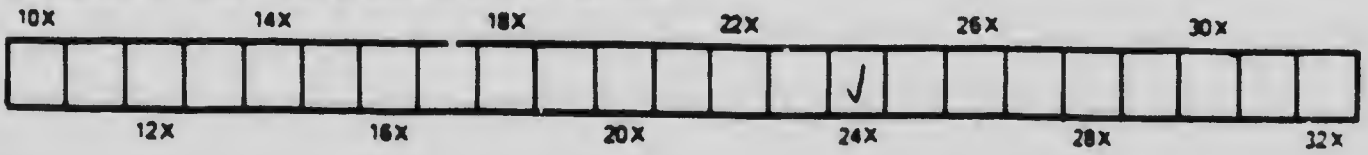
- [x] Coloured covers / Couverture de couleur
- [ ] Covers damaged / Couverture endommagée
- [ ] Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- [ ] Cover title missing / Le titre de couverture manque
- [ ] Coloured maps / Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- [ ] Bound with other material / Relié avec d'autres documents
- [ ] Only edition available / Seule édition disponible
- [ ] Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- [ ] Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

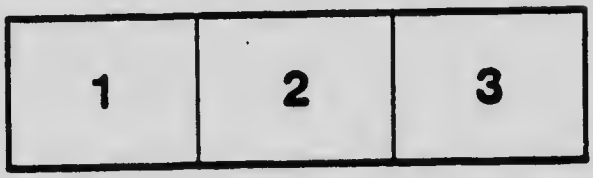
L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modifications dans la méthode normale de filmage sont indiqués ci-dessous.

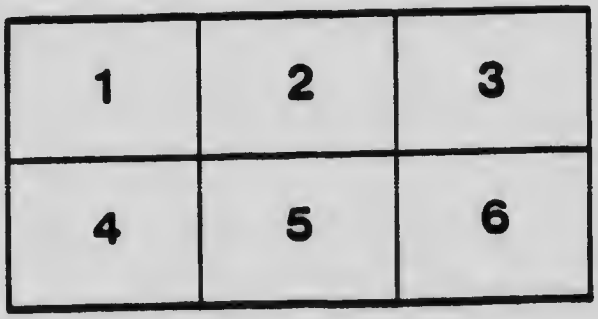
- [ ] Coloured pages / Pages de couleur
- [ ] Pages damaged / Pages endommagées
- [ ] Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- [ ] Pages detached / Pages détachées
- [x] Showthrough / Transparence
- [ ] Quality of print varies / Qualité inégale de l'impression
- [ ] Includes supplementary material / Comprend du matériel supplémentaire
- [ ] Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une peiure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- [ ] Opposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleur image possible.

- [x] Additional comments / Commentaires supplémentaires: Pagination is as follows: p. 29-33.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

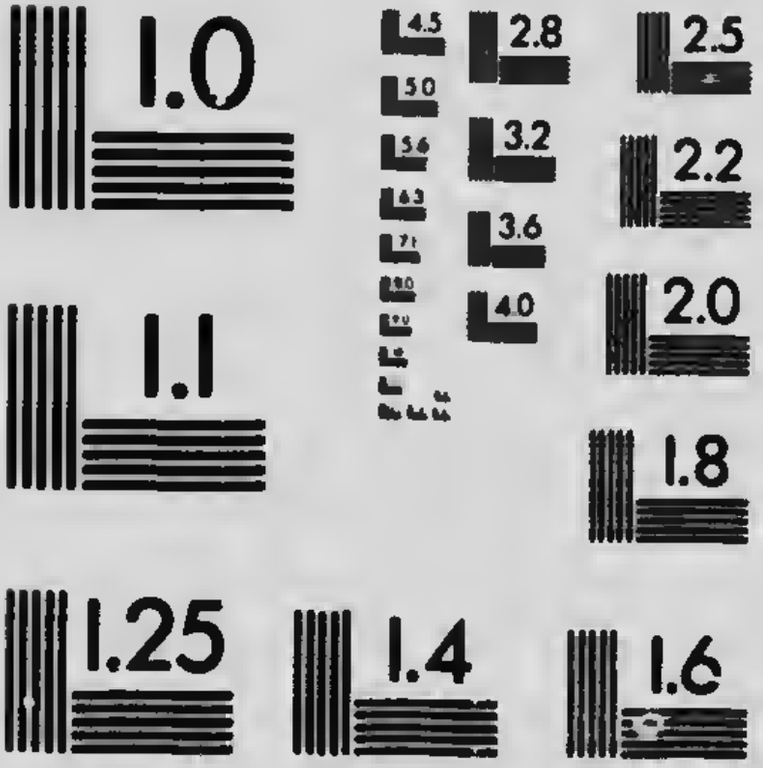






MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1653 East Main Street
Rochester, New York 14609 USA
(716) 482 - 0300 - Phone
(716) 288 - 5989 - Fax

FROM THE TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA.
THIRD SERIES—1909-1910
VOLUME III SECTION IV

The Canada Porcupine, Erethizon dorsatum (F. Cuvier)

By
ROBERT BELL, M.D., D.Sc., F.R.S.

OTTAWA
PRINTED FOR THE ROYAL SOCIETY OF CANADA
1910

III.—*The Canada Porcupine, Erethizon dorsatum (F. Cuvier).*

By ROBERT BELL, M.D., D.Sc., F.R.S.

(Read May 25th, 1909.)

The Canada porcupine has a very wide geographical range in North America. His food being almost exclusively the bark of the white spruce, his distribution coincides with the great region in which that tree grows. He is thus found everywhere across the continent, along the verge of the forest in the north, eastward to the Atlantic coast of Labrador and down to the New England States, and from the wide coniferous forests of the north, southwestward to the prairie regions of the west and to the deciduous forests around the Great Lakes of the St. Lawrence. Owing to the narrow limits of the extension of the white spruce in the Adirondacks and southward in the Appalachian range, as well as to the presence of the white man, the porcupine is nearly extinct in these regions. On account of his sluggish and non-migratory habits as well as his usual scarcity in any one locality, the actual presence of this animal had been noted only here and there in our vast north country in earlier times, but as it becomes more and more explored, the localities of his ascertained occurrence continue to increase and it may now be said that he is known to exist in small numbers in almost all parts of the white spruce territory. In addition to the bark of the white spruce, the porcupine occasionally eats the inner bark of the canoe birch.

Although the porcupine is neither gregarious nor migratory, he appears to become for some years more numerous in certain districts than the average in similar country. From 1850 to 1870 and probably for a long time prior to that period the porcupine was more common in the Gaspé peninsula than it was known to be in any other part of the continent and this relative abundance may still continue. Here the physical character of the country and the climate are congenial, its food is everywhere plentiful and here the porcupine seems to have his favourite home.

The writer having spent three seasons, surveying and exploring in this region during the above period, had good opportunities for observing the porcupine and he has since made many notes on its natural history in nearly all other parts of the Dominion where it is found. At the time referred to, many of the settlers around the coasts of the Gaspé peninsula depended largely on the porcupine for their fresh meat in winter. Around Gaspé bay, it was a common thing for a family to have

a small out-building called the "porcupine house" in wh[illegible] the numerous frozen carcasses brought in by toboggan from ti[illegible] at the conclusion of the hunts during the winter.

The body of an adult Canada porcupine averages about 20 inches in length exclusive of the tail which measures 10 to 12 inches. The males and females are of about equal size. The weight is from 20 to 30 pounds. The bark of the white spruce being constantly available for food, the animal is always in good condition. He eats the bark of only the upper half of the tree, including that of all its branches. He selects a bunch of rather young or half-grown trees, usually four to six in number, standing together, the bark of all of which he judges will suit his taste. After completely stripping the bark off the upper part of the first tree he attacks, he proceeds with the next and so on till he has finished all in the group.

He appears to be as active by night as by day and probably descends to rest and sleep whenever he feels so disposed at any time during the twenty-four hours. He seems to sleep a good deal, retiring for the purpose into a hollow log or a sheltered place among fallen rocks or tree trunks. In climbing up or coming down a tree, he does so quite leisurely but apparently without any apprehension of losing his hold, notwithstanding his clumsy build and his short legs, for the latter are very strong and his claws are long and sharp. After he has eaten all he considers fit for porcupine food in the bunch of spruces which he had selected, he ambles leisurely away to a considerable distance.

While moving about, always slowly, his broad squat body, short legs and straight tail give him much of the appearance of a large tortoise. The leaves of the spruces which he has killed turn light red and the small group of trees thus forms a conspicuous spot, its colour contrasting with the dark green of the forest around, and it is easily recognized by the voyageur as the work of "kag," the Ojibwé name for the porcupine.

It may require several weeks to eat the bark off one of these bunches of spruces, as the first two or three attacked have reddened considerably before the porcupine has finished his work on the remaining trees. If a voyageur, not in need of meat, should discover a porcupine only partly through with his selected bunch of spruces, he may leave him undisturbed in the expectation of enjoying his flesh on his return journey or later on.

The porcupine lives in dry, wooded, hilly, rocky or sandy regions where white spruce abounds and he is absent, as far as we know, from the prairies and swampy lands. In addition to the more tender spruce bark, it has been stated by writers that he eats the leaves of some low herbaceous plants in summer, and Sir John Richardson says he also eats the buds

of various species of willow. Along the Gaspé rivers, the writer has frequently seen porcupines crawling about among the green plants at high water mark, but he has not noticed them eating the leaves.

As a means of defence, the Canada porcupine depends entirely on the protection of its quills. These cover the whole of the back and upper side of the tail. They are about three or four inches long and as thick as a stout knitting needle. The tips are very sharp, covered with small barbs, and black in colour, while the rest of the quill is white. The hair is almost or quite black, coarse and stiff. On the back, it is rather longer than the quills, but not elsewhere. The abdomen is only thinly covered with hair.

When about to be attacked by a man or a dog, the porcupine stops immediately, lies flat on his belly, gathers in his nose and feet and erects all his quills, or "fixes a thousand bayonets," which he does by means of a wide sheet of muscle immediately under the skin. In this position and quite motionless he awaits the attack. An inexperienced dog will pounce upon him with open mouth, but usually retires immediately after the first bite, unable to close his mouth, which is bristling with the quills the porcupine has willingly parted with. But should the dog hesitate and again come up to the enemy, the porcupine will slap his tail violently from side to side and fill the dog's head and legs with his quills. In this kind of encounter, some of the quills are scattered upon the ground and this fact may have given rise to the vulgar notion that the Canada porcupine is able to throw his quills to a distance, like one of the African species.

It is doubtful if our porcupine is ever attacked by wolves, fishers, or pumas. It seems more probable that, like other wild animals, they have long ago learned to leave alone those enemies which experience has taught them to avoid as dangerous, unprofitable or very disagreeable to attack. The porcupine is instantly killed by a tap on the head with a stick or the back of a hatchet. As the quills are so easily detached, it is necessary to wrap the dead body in a sheet of birch bark in order to convey him safely to camp. With all care, quills frequently find their way into the human body. But in penetrating through it by the agency of the barbs, a quill seems to turn aside from all the organs and confine itself to the muscles until the point reaches the surface, often far from the place of entrance and the quill may then be easily pulled out.

In navigating the rivers of Gaspé at low water, we generally saw more porcupines on the wide open shores than our party required for food. We therefore selected only the best. In order to do this, as soon as a porcupine settled down to the defensive, one of our Indians would push the blade of a canoe paddle under his body and suddenly throw

him over onto his back. While holding him in that position with the paddle, he would see whether he was young and fat. If found satisfactory, he was despatched; if not he was allowed to go.

The period of gestation appears to be rather long, extending from about the end of September to about the end of May, or seven months. There are only two young ones at a birth. These are quite large for the size of the parents. The mother is well supplied with milk, which is not very sweet, but of excellent flavour. Notwithstanding this, the young ones seem to be so strongly imbued with the solitary instinct, that they appear to be in a hurry to get away from her. One day, about the end of July, while walking in the Gaspé woods, I happened on a young porcupine about the size of a woodchuck. He had climbed nearly to the top of a small white spruce tree, but had not yet gnawed any of the bark. On seeing me at the foot of the tree, he made haste to come down. He was quite black, and, although his short quills could not be seen, he felt quite prickly. On letting him go, he made better time over the moss than his parents could have done.

In Gaspé, during the hottest weather, I noticed that some of the porcupines had shed more or less of their hair and quills and I saw one individual going about on a wide, gravelly shore which was absolutely naked, having lost the whole of his hair and quills. His skin had the same appearance as that of the hairless Chinese dogs, being of a shiny leaden black colour. On the other hand, specimens of this species, taken in winter near the verge of the forest in the MacKenzie river region, have a thick, matted coat of wool through which the longest quills protrude only about a quarter of their length. Being well protected from the cold by hair and wool and having abundance of food always at hand, the porcupine does not require to hibernate and he has never been known to do so.

The porcupine is a cleanly animal. In the warm weather he is frequently seen swimming in the water. On one occasion on a calm summer evening, I saw a porcupine deliberately plunging off a rock into deep water swimming round a small circle and returning again and again to repeat the same thing, apparently for the purpose of thoroughly washing himself.

As might be expected of an animal which lives entirely on clean vegetable food of a pleasant flavour, the flesh is of excellent quality, resembling lamb and is much relished by any unprejudiced person who has tasted it. The fat is not oily, but rather of a firm gelatinous consistence when boiled. But good judges of the qualities of meats who have tried porcupine flesh prepared in various ways, consider that the best method of cooking the animal is to roast him whole with the skin on,

after having singed off the quills and hair. After a rather extensive experience, my own preference is for this style.

The yellow-haired porcupine is a species closely allied to the one above described, if not a mere variety of it. Its range is from the spruce belt which runs along the eastern slope of the Rocky mountains, westward to the Pacific ocean and from Alaska southward to the latitude of San Francisco. Like the Canada porcupine, it lives principally on spruce bark, but is said to also eat the bark of the tamarac or larch, and of two western species of pine.