

**AMERICAN
NATURAL HISTORY.**

BY
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— TO WHICH IS ADDED

HIS LAST WORK,

THE RAMBLES OF A NATURALIST.

WITH

A BIOGRAPHICAL SKETCH OF THE AUTHOR.

IN TWO VOLUMES.

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CHAPTER XXVI.

GENUS XXVII.—MARMOT ; *Arctymos* ; GMEL.

Germ. Marmelthier.
Ital. Marmotto.

Fr. Marmotte.
Swed. Mormoldjuret.

GENERIC CHARACTERS.

THE head, which is thick and flattened, has a blunt and somewhat compressed snout, with eyes of a moderate size, and short ears. The trunk of the body is thick, the limbs short, and the feet robust. The fore feet have four digits, not united by membrane, and a rudimental thumb. The posterior extremities have five digits, which are also free ; all the toes are furnished with strong, hooked, compressed nails. The tail is short, or of moderate length, and covered with hair.

Dental System.

$$\begin{array}{l}
 22 \text{ Teeth : } \left\{ \begin{array}{l} 12 \text{ Upper } \left\{ \begin{array}{l} 2 \text{ Incisive} \\ 10 \text{ Molar.} \end{array} \right. \\ 10 \text{ Lower } \left\{ \begin{array}{l} 2 \text{ Incisive} \\ 8 \text{ Molar.} \end{array} \right. \end{array} \right.
 \end{array}$$

IN THE UPPER JAW the incisive is rounded and smooth in front, and rises from the anterior and inferior part of the maxillary bone above the first molar. The first molar is a simple tubercle with one root ; the three following, which are of the same size, are divided transversely by two depressions, which produce three prominences ; the first of these depressions traverses the tooth entirely, but the second is obstructed by a spine or internal spur, which unites the two posterior prominences. These teeth have three roots, two external and one internal. The last, or fifth, resembles the others, except in its posterior promi-

nence, which is extended posteriorly in a sort of spur, which corresponds to the root analogous to the second external root of the preceding molars.

IN THE LOWER JAW the incisive is similar to that of the upper jaw, and rises below the last molar. The four molars are of equal size and entirely similar in form. They present a groove on their outside, on the inside a depression which comprises the whole width of the tooth, and at their antero-inferior edge a narrow and very salient tubercle, which diminishes in size from the first to the last. The first of these teeth has, besides, at its neck and on its anterior face, a hollow bordered by a small spine.

When these teeth are worn to a certain degree, all their projections disappear, and their crowns become entirely smooth; but both subsist during the whole life of the animal.

Species of this genus are found in various parts of the old continent, and in the Bahama islands. In this country the greater numbers of species are found far to the north. The habits of the genus are detailed at length in describing the following species:

SPECIES I.—*The Maryland Marmot.*

Arctomys MONAX; GMEL.

- Bahama Coney*: CATESBY, *Carolina*, ii. 79. *Marmota Americana*: IBID. App. 28.
Monax, or Marmotte of America: EDWARDS, *Nat. Hist.* ii. 104.
Glis Fuscus: *Marmota Bahamensis*: BRISS. *Reg. An.* 4to. 163. *Marmota Americana*: IBID. 164.
Maryland Marmot: PENN. *Synops.* 270. *Quad.* ii. 396. *Arc. Zool.* i. 111. Shaw's *Zool.* iii. 117.
Le Monax ou Marmotte du Canada: BUFF. *Hist. Nat.* xiii. 136. *Supp.* iii. 175. pl. 23. Ed. Sonnini. xxxii. 22.

As the *Maryland Marmot* is no where more common than in Virginia, New Jersey, Pennsylvania, and indeed all the temperate parts of this country, we state the fact in commencing the history of this interesting species, to prevent readers from drawing the erroneous conclusion that the name is a correct indication of the place to which the animal exclusively belongs. In doing this we cannot refrain from once more expressing our unavailing regret that the importance of bestowing right names is still so little felt or understood, and that in heedless haste an original observer should be allowed permanently to establish designations, which uniformly betray the ignorant into error, and prove

sources of vexation to all who feel their inappropriateness. The abuse of terms, however, has long been justly esteemed as one of the most abundant sources of human mistake and suffering, and if with all advantages of knowledge men persist in occasionally calling brutal rudeness by the name of *candour* and *bluntness*,—swaggering, *courage*,—and a destitution of good breeding and honesty, *imprudence*, the student of natural history can scarcely expect that much attention will be paid to the evils he endures from the impediments thrown in his way by the same prolific source of mischief.

The scientific name of the genus to which the Maryland marmot belongs is excellent, if the species now under consideration be taken in illustration, for a first glance at the animal is sure to bring to mind the idea of a bear and a rat, of both of which this creature is a curious miniature resemblance. The thickness of its body, entirely plantigrade walk, posture when engaged in listening, and heavy gait, are such as vividly to excite a recollection of the bear, while the form of the head, teeth, position and appearance of the eye, and general aspect, equally remind the observer of the rat. In some of its actions it more nearly resembles the squirrel, especially when in feeding it employs the fore paws, yet in this it also exhibits a marked similitude to the bear, as it frequently uses one paw at a time with the same awkward facility that appears so singular in bruin. Among the country-people it bears the name of *wood-chuck* and *ground-hog*, the latter being expressive of its habits of burrowing and peculiar voracity.

This marmot is the cause of great injury, especially to the farmers engaged in the cultivation of clover, as their numbers become very considerable, and the quantity of herbage they consume is really surprising. They are more capable of doing mischief from the circumstance of their extreme vigilance and acute sense of hearing, as well as from the security afforded them by their extensive subterranean dwellings.

When about to make an inroad upon a clover-field, all the marmots resident in the vicinity quietly and cautiously steal towards the spot, being favoured in their march by their gray colour, which is not easily distinguished. While the main body are actively engaged in cropping the clover-heads and gorging their ample cheek-pouches, one or more individuals remain at some distance in the rear as sentinels.

These watchmen sit erect, with their fore paws held close to their breast, and their heads slightly inclined to catch every sound which may move the air. Their extreme sensibility of ear enables them to distinguish the approach of an enemy long before he is sufficiently near to be dangerous, and the instant the sentinel takes alarm he gives a clear shrill whistle, which immediately disperses the troop in every direction, and they speedily take refuge in their deepest caves. The time at which such incursions are made is generally about mid-day, when they are less liable to be interrupted than at any other period, either by human or brute enemies.

The habitations of this marmot are formed by burrowing into banks, the sides of hills, or other similar situations, and are generally inclined slightly upwards from the mouth, by which the access of water is prevented. In forming the burrow, where the ground is soft, the fore paws are the principal agents; the strength of the animal's fore limbs is very great. Where the soil is hard and compact the long cutting teeth are very freely and efficiently employed, and we have been surprised to see large stones and lumps of hardened clay dug out in this way. As the burrow is deepened the earth is brought out in the following manner:—The marmot first throws the earth, with his fore paws, under his belly, and when it has accumulated to a certain degree, he rests on his fore paws and kicks the dirt forcibly onwards with the hind ones, and thus going backwards to the mouth of his den he finally throws it to a considerable distance from the entrance. It is very easy to determine when one of these animals has been engaged in forming a new burrow, as his whiskers are worn close to the head in proportion to the hardness of the soil in which he has worked, and his teeth and the edges of his upper lip show evident marks of the hard service they have performed. The paws are admirably adapted for burrowing, both on account of the length of the toes and nails, and the peculiar arrangement of the skin of the palms and soles of the feet, which is extended between the toes so as to make them distinctly semi-palmated or webbed, especially in the hind feet. This circumstance is not commonly noted by the writers on natural history, but we have repeatedly examined the living animal, and find the character uniformly present. That this structure has reference to burrowing is evident, as the animal shows a great repugnance to water, very seldom

drinking, and then in but small quantity ; he suffers exceedingly from exposure to rain.

The burrows extend to great distances under ground, and terminate in various chambers, according to the number of inhabitants. In these, very comfortable beds are made by the marmot, of dry leaves, grass, or any soft dry rubbish to be collected. It is really surprising to see the vast quantity of such material an individual will cram into his mouth to carry off for this purpose. He first grasps with the teeth as much as he possibly can ; then sitting erect, with both fore paws he stuffs the mass projecting on each side deeper into the mouth, and having arranged it satisfactorily, takes up successive portions, which are treated in like manner ; during the whole time the head is moved up and down to aid in filling the mouth to the very utmost. This is repeated until every fragment at hand is collected, and the whole transferred to the sleeping apartment, into which the marmot retires towards the decline of the day, and remains there until the morning is far advanced. At some seasons of the year this marmot is seen out on moonlight nights at a considerable distance from the burrow, either in search of better pasture or looking for a mate ; on such occasions, when attacked by a dog, the marmot makes battle, and when the individual is full grown, his bite is very severe. The teeth of the dog give him vast superiority in the combat, as when once he seizes, he is sure of the hold until the parts bitten are torn through, while the marmot can merely pinch his foreteeth together, and must renew his attempts very frequently. The fight is also soon ended by the dog seizing the marmot by the small of the back, and crushing the spine so as to disable his antagonist effectually.

There is no animal so perfectly cleanly in its habits as this marmot ; not only the fragments of its food and the litter of its bed are carefully removed, but the loose earth about the mouth of the burrow is carefully scraped away. However numerous they may be in any vicinity, their excrement is not seen, nor any offensive odour perceived. Whenever the calls of nature are felt, this animal seeks a spot at some distance from his dwelling, and having dug a hole of two or three inches in depth, and performed his evacuations, he covers it up with extreme care, and not content with placing a thick layer of earth over it, he presses it, or rather rams it down with the end of his nose, strik-

ing with a force which seems very extraordinary when thus applied.

The Maryland marmot, as we have already mentioned, eats with great greediness and large quantities. To the wild animal red clover is a very favourite food, and, when it can be obtained, lettuce, cabbage, and various other garden vegetables. In captivity it eats almost every vegetable offered, is exceedingly fond of bread and milk, and will display the most violent anger, by erecting its hair, growling and yelping, if it see a cat or other animal fed with this substance. One which we kept for a long time in a state of domestication, would, on such occasions, become almost furious, and never desist from his efforts until he had broken his chain, when he would rush to the spot, drive off the cat by a severe bite, or bite the person who attempted to withhold him from the dish. Yet on other occasions he did not interfere with the cats, even when feeding within his reach, though he would at any time bite them if they came immediately in his way. This marmot would eat the parts about the joints of the legs of fowls, when thrown to him, and occasionally a small piece of salt-fish,—but, as a general rule, refused animal food of every description.

This individual was very tame, playful and cunning, having the freedom of the yard, and the privilege of performing all his operations unmolested. He was very fond of being handled and petted, and would play with great good humour, though in a clumsy and awkward manner. Every thing fit to make a bed of, that he could get at, was sure to be carried under ground, and when clothes were missed, which had been hung out to dry, it was only necessary to fasten a hook to a long stick and draw them out of his burrow. When this was to be effected, it was necessary to tie the marmot up short, as he appeared to understand perfectly what was to be done, and was by no means willing that his bed should be rendered less comfortable. Although he would not attempt to bite the person engaged in removing his plunder, he would rush to the entrance and endeavour to make his way in, as if to secure his prize, or remove it to a still greater distance. On one occasion he carried off and stowed at a distance of six feet from the entrance, eight pairs of stockings, a towel, and a girl's frock, and had he not been discovered in the act, would have made a still larger transfer of materials to form more luxurious bed.

In whatever action engaged, the vigilance of this animal was unceasing, and his ear appeared the sense almost exclusively relied on. By observing him closely it was evident that every variation of sound, however slight, or from whatever different sources, was immediately perceived. —While earnestly engaged in eating, and making no inconsiderable noise, in munching lettuce, or other crisp vegetables, the least noise would be sufficient to suspend his hunger and excite all his vigilance, and if it were one to which he was unaccustomed, or loud enough to alarm him, he would run with great precipitation until he arrived at the edge of his hole, where he would sit up for an instant in an attitude of the profoundest attention, and either return to his food, or take refuge in his hole, as he might feel satisfied that there was or was not danger to be apprehended.

To look at the ear of this marmot without close examination, placed on the side of the head, high up and far back, with very little external cartilaginous projection, and a wide orifice leading to the internal ear, it would seem very inappropriate to the subterranean mode of life, since it appears to be so placed as to allow the dirt ready access. But no such inconvenience takes place, as the ear is provided with a muscular apparatus, by which the upper portion is brought down, and the sides of the lower portion are so accurately pressed against each other, as effectually to exclude the smallest particles of dirt or dust.

At the commencement of the cold weather the marmot goes into winter quarters; having blocked up the door from within, he there remains until the return of the warm season revives him again to renew his accustomed mode of life. The female produces five or six young at a litter.

The body of the Maryland marmot is about the size of that of a rabbit, and covered by long rusty brown hair, generally gray at the tips; the face is of a pale blueish ash-colour. The ears are short, but broad, and as if they had been cropped at their superior edges; the tail is about half the length of the body, and covered with dark brown hairs, somewhat bushy at its extremity. The feet and claws are black; the claws are long and sharp.

All the figures which have been heretofore published of this animal, (with the exception of one given in the Eng-

lish translation of Cuvier, borrowed from a drawing by LESUEUR,) have been copied from Edward's, which is altogether unlike the animal.

SPECIES II.—*The Quebec Marmot.*

Arctomys Empetra; GM. SCHREB.

Marmotte du Canada: ENCYL. pl. 67, fig. 4.

Quebec Marmot: PENN. Synopsis, 270, pl. 24, fig. 2, Quad. ii. 397, pl. 412, ed. 3, ii. 129, pl. 741. ARCT. Zool. i. 111, Shaw's Zool. iii. 119.

Arctomys Empetra: SCHREB. Quad. 743, pl. 210. GMEL. Syst. Nat. i. 143. SABINE, App. to Franklin, p. 662. IBID. Trans. Lin. Society, xiii. 584.

Marmotte de Quebec: DESM. Nouv. Dict. d'Hist. Nat. xix. 314.

[*Called Siffleur by the Canadians.*]

The *Quebec Marmot* is found throughout the northern parts of this country, and in its habits closely resembles the preceding species. Its entire length, from the tip of the nose to the extremity of the tail, is about twenty-six inches, of which the tail forms six inches.

The general colour of the upper part of the body is grayish, the hairs being thus coloured; at the base they are dark, in the middle yellowish, near their tops black, and white at their tips; near the tail the white is not so remarkable. On the cheeks and chin the hair is short, and inclines to gray, on the nose dark or blackish, the top of the head is dark brown; the whiskers and long hairs growing over the eyes are black. The throat, legs, and all the under parts of the body are of a dark chesnut-colour. The hair on the tail is dusky throughout, longer than on the back and darker at the end. The toes are covered with short hairs, which are black. The inner toes on the hind feet and the outer on the fore feet, are shorter than the others; there is a rudimental fifth toe on the inside of the fore feet. All the toes are provided with long and sharp claws, those on the fore feet being longest and most arched.