PTEROMYS VOLUCELLA.—GMEL.

COMMON FLYING-SQUIRREL.

PLATE XXVIII.—MALES, FEMALES, AND YOUNG.

Pt. *Tamias Lysteri* magnitudine, supra ex fusco-cinereo et albido, infra ex albo.

CHARACTERS.

Size of Tamias Lysteri; above, brownish-ash tinged with cream colour; beneath, white.

SYNONYMES.

- ASSAPANICK, Smith's Virginia, p. 27, 1624.
 SCIURUS AMERICANUS VOLANS, Ray, Syn. Quad.
 FLYING SQUIRREL, Lawson's Carolina, p. 124.
 LA PALATOUCHE, Buff., X., pl. 21.
 SCIURUS VOLUCELLA, Pallas, Glires, p. 353, 359.
 " " Schreber, Säugethiere, p. 808, 23, t. 222.
 " " Gmelin, Linn., Syst. Nat., p. 155, 26.
 SCIURUS VIRGINIANUS, Gmelin, Syst. Nat.
 " " Shaw's Gen. Zool., vol. ii., p. 155, t. 150.
 FLYING SQUIRREL, Catesby's Carolina, vol. ii., p. 76.
 " " Pennant's Quadrupeds, p. 418, 283.
 PTEROMYS VOLUCELLA, Desm., Mamm., p. 345, 554.
 " " Harlan, p. 187.
 " " Godman, vol. ii., p. 146.
 " " Emmons, Report, p. 69.
 " " Dekay, p. 65.

DESCRIPTION.

Head, short and rounded; nose, blunt; eyes, large and prominent; ears, broad and nearly naked; whiskers, numerous, longer than the head; neck, short; body, rather thicker than that of the chipping squirrel. The flying membrane is distended by an additional small bone of about half an inch in length, articulated with the wrist. The fur on the whole body is very fine, soft and silky; legs, rather slender; claws, feeble, compressed, acute, and covered with hair; tail, flat, distichous, rounded at the tip, and very thickly clothed with fine soft fur. Ten mammæ.

Drawn on Stone by R. Tremblay

Common Flying Squirrel.

1, 2 Males, 3, 4 Females, 5 Young

Drawn from Nature by J. J. Audubon FRS, ELS.

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COLOUR.

A line of black around the orbits of the eye; whiskers, nearly all black, a few are whitish toward their extremities. Ears, light-brown. In most specimens there is a light-coloured spot above the eyes; sides of the face and neck, light cream-colour; fur on the back, dark slate-colour, tipped with yellowish-brown. On the upper side of the flying membrane the colour gradually becomes browner till it reaches the lower edge, where it is of a light cream-colour; throat, neck, inner surface of legs, and all beneath, white; with occasionally a tint of cream-colour. The upper surface of the tail is of the colour of the back; tail, beneath, light fawn.

DIMENSIONS.

Length of head and body	-	-	-	-	-	5 $\frac{1}{4}$ inches.
“ head	-	-	-	-	-	1 do.
“ tail (vertebræ)	-	-	-	-	-	4 do.
“ tail, including fur	-	-	-	-	-	5 do.

Of a specimen from which one of our figures was drawn.

From nose to eye	-	-	-	-	-	$\frac{5}{8}$ inches.
“ “ opening of ear	-	-	-	-	-	1 $\frac{3}{4}$ do.
“ “ root of tail	-	-	-	-	-	5 $\frac{1}{4}$ do.
Tail (vertebræ)	-	-	-	-	-	3 $\frac{3}{4}$ do.
Tail, to end of hair	-	-	-	-	-	4 $\frac{1}{2}$ do.
Breadth of tail, hair extended	-	-	-	-	-	1 $\frac{3}{8}$ do.
Spread of fore-legs to extremity of claws	-	-	-	-	-	6 $\frac{7}{8}$ do.
Spread of hind-legs	-	-	-	-	-	7 do.

HABITS.

It has sometimes been questioned whether the investigation of objects of natural history was calculated to improve the moral nature of man, and whether by an examination into the peculiar habits of the inferior animals he would derive information adapted to the wants of an immortal being, leading him from the contemplation of nature up to nature's God.

Leaving others to their own judgment on this subject, we can say for ourselves that on many occasions when studying the varied characters of the inferior creatures, we have felt that we were reading lessons taught us by nature, that were calculated to make us wiser and better. Often, whilst straying in the fields and woods with a book under our arm, have we been tempted to leave HOMER or ARISTOTLE unopened, and attend to

the teachings of the quadrupeds and birds that people the solitudes of the wilderness. Even the gentle little Flying-Squirrel has more than once diverted our attention from the pages of GRIESBACH and MICHAELIS, and taught us lessons of contentment, of innocence, and of parental and filial affection, more impressive than the theological disquisitions of learned commentators.

We recollect a locality not many miles from Philadelphia, where, in order to study the habits of this interesting species, we occasionally strayed into a meadow containing here and there immense oak and beech trees. One afternoon we took our seat on a log in the vicinity to watch their lively motions. It was during the calm warm weather peculiar to the beginning of autumn. During the half hour before sunset nature seemed to be in a state of silence and repose. The birds had retired to the shelter of the forest. The night-hawk had already commenced his low evening flight, and here and there the common red bat was on the wing; still for some time not a Flying-Squirrel made its appearance. Suddenly, however, one emerged from its hole and ran up to the top of a tree; another soon followed, and ere long dozens came forth, and commenced their graceful flights from some upper branch to a lower bough. At times one would be seen darting from the topmost branches of a tall oak, and with wide-extended membranes and outspread tail gliding diagonally through the air, till it reached the foot of a tree about fifty yards off, when at the moment we expected to see it strike the earth, it suddenly turned upwards and alighted on the body of the tree. It would then run to the top and once more precipitate itself from the upper branches, and sail back again to the tree it had just left. Crowds of these little creatures joined in these sportive gambols; there could not have been less than two hundred. Scores of them would leave each tree at the same moment, and cross each other, gliding like spirits through the air, seeming to have no other object in view than to indulge a playful propensity. We watched and mused till the last shadows of day had disappeared, and darkness admonished us to leave the little triflers to their nocturnal enjoyments.

During the day this species avoids the light, its large eyes like those of the owl cannot encounter the glare of the sun; hence it appears to be a dull and uninteresting pet, crawling into your sleeve or pocket, and seeking any dark place of concealment. But twilight and darkness are its season for activity and pleasure. At such times, in walking through the woods you hear a rattling among the leaves and branches, and the falling acorns, chesnuts, and beech-nuts, give evidence that this little creature is supplying itself with its food above you.

This is a harmless and very gentle species, becoming tolerably tame in a few hours. After a few days it will take up its residence in some crevice in the chamber, or under the eaves of the house, and it or its progeny may be seen in the vicinity years afterwards. On one occasion we took from a hollow tree four young with their dam; she seemed quite willing to remain with them, and was conveyed home in the crown of a hat. We had no cage immediately at hand, and placed them in a drawer in our library, leaving a narrow space open to enable them to breathe; next morning we ascertained that the parent had escaped through the crevice, and as the window was open, we presumed that she had abandoned her young rather than be subject to confinement in such a narrow and uncomfortable prison. We made efforts for several days to preserve the young alive by feeding them on milk; they appeared indifferent about eating, and yet seemed to thrive and were in good order. A few evenings afterwards we were surprised and delighted to see the mother glide through the window and enter the still open drawer; in a moment she was nestled with her young. She had not forsaken them, but visited them nightly and preserved them alive by her attentions. We now placed the young in a box near the window, which was left partly open. In a short time she had gained more confidence and remained with them during the whole day. They became very gentle, and they and their descendants continued to reside on the premises for several years.

During the first winter they were confined to the room, boxes were placed in different parts of it containing Indian meal, acorns, nuts, &c. As soon as it was dark they were in the habit of hurrying from one part of the room to the other, and continued to be full of activity during the whole night. We had in the room a wheel that had formerly been attached to the cage of a Northern gray squirrel. To this they found an entrance, and they often continued during half the night turning the wheel; at times we saw the whole group in it at once. This squirrel, we may conclude, resorts to the wheel not from compulsion but for pleasure.

In an interesting communication which we have received from GIDEON B. SMITH, Esq., M. D., of Baltimore, he has given us the following details of the singular habits of this species:—

“After having arrived at the top of a tree from which they intend to make their airy leap, they spring or jump, stretch their fore-legs forward and outward and their hind-legs backward and outward, by this means expanding the loose skin with which they are clothed, and which forms a sort of gliding elevator. In this way they pass from tree to tree, or to any other object, not by flying as their name imports, but by descending from a high position by a gliding course; as they reach the vicinity of

the earth, their impetus, aided by their expanded skin, enables them to ascend in a curved line and alight upon the tree aimed at, about one-third as high from the ground as they were on the tree they left. On reaching a tree in this manner they run briskly up its trunk as high as they wish to give them a start for another; in this way they will travel in a few minutes, from tree to tree or object to object, a quarter of a mile or more. There is nothing resembling flying in their movements.

"They are gregarious, living together in considerable communities, and do not object to the company of other and even quite different animals. For example, I once assisted in taking down an old martin-box, which had been for a great number of years on the top of a venerable locust tree near my house, and which had some eight or ten apartments. As the box fell to the ground we were surprised to see great numbers of Flying-Squirrels, screech-owls, and leather-winged bats running from it. We caught several of each, and one of the Flying-Squirrels was kept as a pet in a cage for six months. The various apartments of the box were stored with hickory-nuts, chesnuts, acorns, corn, &c., intended for the winter supply of food. There must have been as many as twenty Flying-Squirrels in the box, as many bats, and we know there were six screech owls. The crevices of the house were always inhabited by the Squirrels. The docility of the one we kept as a pet was remarkable; although he was never lively and playful in the day-time, he would permit himself to be handled and spread out at the pleasure of any one. We frequently took him from the cage, laid him on the table or on one hand, and exposed the extension of his skin, smoothed his fur, put him in our pocket or bosom, &c., he pretending all the time to be asleep.

"It was a common occurrence that these Squirrels flew into the house on a summer's evening when the windows were open, and at such times we caught them. They were always perfectly harmless. Although I frequently seized them in my hand I was never bitten. We caught so many of them one season that the young girls bordered their winter capes with their tails, which are very pretty. It was a curious circumstance that the Flying-Squirrels never descended to the lower parts of the house, and we never knew of any rats in the upper rooms. Whether the Squirrels or the rats were the repulsive agents I do not know; certain it is they never inhabited the lower location in common."

The Flying-Squirrel, as is shown above, is gregarious. In Carolina, we have generally found six or seven in one nest; it is difficult, however, to count them, as on cutting down a tree which they inhabit, several escape without being noticed. In New Jersey, Pennsylvania, and Virginia, they appear to be more numerous, and the families are larger.

The Flying-Squirrels never build their nest of leaves on the trees during summer like the true squirrels, but confine themselves to a hollow, or some natural cavity in the branches or trunk. We have very frequently found them inhabiting the eaves and roofs of houses, and we discovered a considerable number of them in the crevices of a rock in the vicinity of the Red Sulphur Springs in Virginia.

Although the diet of this species generally consists of nuts and seeds of various kinds, together with the buds of trees in winter, yet we have known many instances in which it manifested a strong desire for animal food. On several occasions we found it caught in box-traps set for the ermine, which had been baited only with meat. The bait, (usually a blue jay,) was frequently wholly consumed by the little prisoner. In a room in which several Flying-Squirrels had been suffered to go at large, we one evening left a pine grosbeak, (*Corythus enucleator*,) a rare specimen, which we intended to preserve on the following morning. On searching for it however next day it was missing; we discovered its feet and feathers at last in the box of the Flying-Squirrels, they having consumed the whole body.

This species has from three to six young at a time. We have been assured by several persons that they produce young but once a year in the Northern and Middle States. In Carolina, however, we think they have two litters in a season, as we have on several occasions seen young in May and in September.

A writer in *LOUDON'S Magazine*, under the signature of D. W. C., says at p. 571, vol. ix., in speaking of the habits of this animal in confinement in England, "I found that as soon as the female was pregnant she would not allow any one to approach her; and as the time went on, she became more savage and more tenacious of the part of the cage which she had fixed upon for her nest, which she made of leaves put in for that purpose. Two of the females produced young last spring. I think the period of their gestation is a month; but of this fact I am not certain. The young are blind for three weeks after their birth, and do not reach puberty till the next spring. I never obtained more than two young ones at a time, nor more than one kindle in a year from the same female. The young were generally born in March or April. The teats of the female appear through the fur some time before she brings forth. One of them produced two young ones without making a distinct nest, or separating herself from the rest, but the consequence was that they disappeared on the third day."

"If on any occasion we disturbed the young in their nest, the mother removed them to another part of the cage. The common squirrel of this

country, (England,) is said to remove her young in the same manner, if disturbed. Finding this the case, we often took the young Squirrels out of their nest for the purpose of watching the mother carry them away, which she did by doubling the little one up under her body with her fore-feet and mouth till she could take hold of the thigh and the neck, when she would jump away so fast that it was difficult to see whether she was carrying her young one or not.

"As the young increased in size (which they soon do) and in weight, the undertaking became more difficult. We then saw the mother turn the young one on its back, and while she held the thigh in her mouth, the fore-legs of the young one were clasped round her neck. Sometimes when she was attempting to jump upon some earthen pots which I had placed in the cage, she was overbalanced and fell with her young to the ground, she would drop the young Squirrel, so as to prevent her own weight from crushing it, which would have been the case if they had fallen together. I have seen the young ones carried in this manner till they were half-grown."

GEOGRAPHICAL DISTRIBUTION.

This species is far more numerous than it is generally supposed to be; in traps set for the smaller rodentia in localities where we had never seen the Flying Squirrel, we frequently caught it. We have met with it in all the Atlantic States, and obtained specimens in Upper Canada, within a mile of the falls of the Niagara. In Lower Canada it is replaced by a larger species, (*P. sabrinus*), and we have reason to believe that it does not exist much to the north of the great lakes; we obtained specimens in Florida and in Texas, and have seen it in Missouri, and according to LICHTENSTEIN it is found in Mexico.

GENERAL REMARKS.

This species was among the earliest of all our American quadrupeds noticed by travellers. Governor SMITH of Virginia, in 1624, speaks of it as "a small beaste they call Assapanick, but we call them Flying Squirrels, because spreading their legs, and so stretching the largeness of their skins, that they have been seen to fly thirty or forty yards." RAY and LINNÆUS supposed it to be only a variety of the European *P. volans*, from which it differs very widely. LINNÆUS arranged it under *MUS*; GMELIN, PALLAS, CUVIER, RAY, and BRISSON, under *SCIURUS*; F. CUVIER and DESMAREST under *SCIUROPTERUS*; FISCHER under *PETAURISTUS*; and GEOFFROY and more recent naturalists, under *PTEROMYS*.

Audubon, John James and Bachman, John. 1851. "Pteromys Volucella, Common Flying Squirrel [Pl. XXVIII, males, females and young]." *The quadrupeds of North America* 1, 216–222. <https://doi.org/10.5962/p.322522>.

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