Drawn on Stone by R. Trembly

Chipping Squirrel, Hackee.

Drawn from Nature by J.J. Audubon F.R.S., F.L.S.

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from that genus, no doubt naturalists will arrange them in the genus *TAMIAS*.

When this genus was first established by ILLIGER, but a single species was satisfactorily known, and naturalists were unwilling to separate it from the squirrels, to which it bears so strong an affinity; but we are now, however, acquainted with six species, and doubt not that a few more years of investigation will add considerably to this number. We have consequently adopted the genus *TAMIAS* of that author.

The word *Tamias* is derived from the Greek *ταμίας*, (*tamias*), a keeper of stores—in reference to its cheek-pouches.

One species of this genus exists in the Northern portions of the Eastern continent; four in North, and one in South, America. We also possess an undescribed species, the habitat of which is at present unknown to us.

TAMIAS LISTERI.—RAY.

CHIPPING SQUIRREL, HACKEE, &c.

PLATE VIII.—MALE, FEMALE, AND YOUNG (First Autumn).

T. dorso fusco-cinereo, striis quinque nigris, et duobus luteo-albis longitudinalibus ornato; fronte et natibus fusco-luteis; ventre albo.

CHARACTERS.

Brownish gray on the back; forehead and buttocks brownish orange; five longitudinal black stripes and two yellowish white ones on the back; under surface white.

SYNONYMES.

ECUREUIL SUISSE, Sagard Theodat, Canada, p. 746, A. D. 1636.

GROUND SQUIRREL, Lawson's Carolina, p. 124.

“ “ Catesby, Carol. vol. ii., p. 75.

EDWARDS, vol. iv., p. 181. Kalm, vol. i., p. 322.

SCIURUS LISTERI, Ray, Synops. Quad., p. 216, A. D. 1693.

LE SUISSE, Charlevoix, Nouv. Fr., vol. v., p. 196.

STRIPED DORMOUSE, Pennant, Arc. Zool., 4 vols., vol. i., p. 126.

SCIURUS CAROLINENSIS, Brisson, Reg. Anim., p. 155, A. D. 1756.

ECUREUIL SUISSE, (Desm. Enc. Mamm.,) Nota, p. 339, Esp., 547.

SCIURUS STRIATUS, Harlan, Fauna, p. 183.

“ “ Godman, Nat. Hist., vol. ii., p. 142.

SCIURUS (TAMIAS) LYSTERI, Rich., F. B. A., p. 181, plate 15.

“ “ “ Doughty's Cabinet Nat. Hist., vol. i., p. 169, pl. 15.

SCIURUS STRIATUS, DeKay, Nat. Hist. of N. Y., part 1, p. 62, pl. 16, fig. 1.

DESCRIPTION.

Body, rather slender; forehead, arched; head, tapering from the ears to the nose, which is covered with short hairs; nostrils, opening downwards, margins and septum naked; whiskers, shorter than the head. A few bristles on the cheeks and above the eye-brows; eyes, of moderate size; ears, ovate, rounded, erect, covered with short hair on both surfaces, not tufted, the hair on those parts simply covering the margins. Cheek-pouches, of tolerable size, extending on the sides of the neck to a little below the ear, opening into the mouth between the incisors and molars. Fore-feet, with four slender, compressed, slightly-curved claws, and the rudiment of a thumb, covered with a short blunt nail; hind-feet, long and slender, with five toes, the middle toe being a little the longest. Tail, rather short and slender, nearly cylindrical above, dilated on the sides, not bushy, sub-distichous. Hair on the whole body short and smooth, but not very fine.

COLOUR.

A small black spot above the nose; forehead, yellowish brown; above and beneath the eyelids, white; whiskers and eyelashes, black; a dark brown streak running from the sides of the face through the eye and reaching the ear; a yellowish brown stripe extending from near the nose, running under the eye to behind the ear, deepening into chesnut-brown immediately below the eye, where the stripe is considerably dilated.

Anterior portion of the back, hoary gray, this colour being formed by a mixture of gray and black hairs. Colour of the rump, extending to a little beyond the root of the tail, hips, and exterior surface of the thighs, reddish fawn, a few black hairs sprinkled among the rest, not sufficiently numerous to give a darker shade to those parts. A dark dorsal line commencing back of the head is dilated on the middle of the back, and runs to a point within an inch of the root of the tail; this line is brownish on the shoulder, but deepens into black in its progress downwards.

On each flank there is a broad yellowish-white line, running from the shoulder to the thighs, bordered on each side with black. The species may be characterized by its having five black and two white stripes on a gray ground. The flanks, sides, and upper surface of feet and ears, are

reddish-gray; whole under surface white, with no line of demarcation between the colours of the back and belly. Tail, brown at its root, afterwards grayish-black, the hair being clouded and in some places banded with black; underneath, reddish-brown, with a border of black, edged with light gray.

There are some varieties observable among specimens procured in different States of the Union. We have noted it, like the Virginian deer, becoming smaller in size as it was found farther to the South. In Maine and New Hampshire it is larger than in the mountains of Carolina and Louisiana, and the tints of those seen at the North were lighter than the colouring of the Southern specimens we have examined. We possess an albino, sent to us alive, snow-white, with red eyes; and also another specimen jet-black. We have, however, found no intermediate varieties, and in general we may remark that the species of this genus are not as prone to variations in colour as those of the true Squirrels.

DIMENSIONS.

							Inches.	Lines.
Length of head and body	-	-	-	-	-	-	6	3
“ head	-	-	-	-	-	-	1	6
“ tail (vertebræ)	-	-	-	-	-	-	3	7
“ tail, including fur	-	-	-	-	-	-	4	7
Height of ear	-	-	-	-	-	-	0	4
Breadth of ear	-	-	-	-	-	-	0	3½

HABITS.

The Chipping Squirrel, as this little animal is usually called, or Ground Squirrel, as it is named almost as frequently, is probably, with the exception of the common flying squirrel, (*Pteromys volucella*,) one of the most interesting of our small quadrupeds. It is found in most parts of the United States, and being beautifully marked in its colouring, is known to every body. From its lively and busy habits, one might consider it among the quadrupeds as occupying the place of the *wren* among the feathered tribes. Like the latter, the Ground Squirrel, full of vivacity, plays with the utmost grace and agility among the broken rocks or uprooted stumps of trees about the farm or wood pasture; its clucking resembles the chip, chip, chip, of a young chicken, and although not musical, like the song of the little winter wren, excites agreeable thoughts as it comes on the air. We fancy we see one of these sprightly Chipping Squirrel as he runs before us with the speed of a bird, skimming along a log o

fence, his chops distended by the nuts he has gathered in the woods; he makes no pause till he reaches the entrance of his subterranean retreat and store-house. Now he stands upright, and his chattering cry is heard, but at the first step we make towards him, he disappears. Stone after stone we remove from the aperture leading to his deep and circuitous burrow; but in vain is all our labour—with our hatchets we cut the tangled roots, and as we follow the animal, patiently digging into his innermost retreat, we hear his angry, querulous tones. We get within a few inches of him now, and can already see his large dark eyes; but at this moment out he rushes, and ere we can “grab” him, has passed us, and finds security in some other hiding place, of which there are always plenty at hand that he is well accustomed to fly to; and we willingly leave him unmolested, to congratulate himself on his escape.

The Chipping Squirrel makes his burrow generally near the roots of trees, in the centre of a decayed stump, along fences or old walls, or in some bank, near the woods whence he obtains the greater portion of his food.

Some of these retreats have two or three openings at a little distance from each other. It rarely happens that this animal is caught by digging out its burrow. When hard pressed and closely pursued it will betake itself to a tree, the trunk of which it ascends for a little distance with considerable rapidity, occasionally concealing itself behind a large branch, but generally stopping within twelve or fifteen feet of the ground, where it often clings with its body so closely pressed to the trunk that it is difficult to detect it; and it remains so immovable that it appears like a piece of bark or some excrescence, till the enemy has retired from the vicinity, when it once more descends, and by its renewed clucking seems to chuckle over its escape.

We are doubtful whether this species can at any time be perfectly tamed. We have preserved it in cages from time to time, and generally found it wild and sullen. Those we had, however, were not young when captured.

At a subsequent period we obtained in the State of New-York five or six young ones almost half grown. We removed them to Carolina, where they were kept during winter and spring. They were somewhat more gentle than those we had formerly possessed, occasionally took a filbert or a ground-nut from the fingers, but never became tame enough to be handled with safety, as they on more than one occasion were disposed to test the sharpness of their teeth on our hand.

The skin which covered the vertebræ of their tails was so brittle that nearly all of them soon had mutilated them. They appeared to have some

aversion to playing in a wheel, which is so favourite an amusement of the true squirrels. During the whole winter they only left their nest to carry into it the rice, nuts, Indian corn, &c., placed in their cage as food.

Late in the following spring, having carried on our experiments as far as we cared to pursue them, we released our pets, which were occasionally seen in the vicinity for several months afterward, when they disappeared.

We were once informed of a strange carnivorous propensity in this species. A lady in the vicinity of Boston said to us, "We had in our garden a nest of young robins, (*Turdus migratorius*,) and one afternoon as I was walking in the garden, I happened to pass very close to the tree on which this nest was placed; my attention was attracted by a noise which I thought proceeded from it, and on looking up I saw a Ground Squirrel tearing at the nest, and actually devouring one of the young ones. I called to the gardener, who came accompanied by a dog, and shook the tree violently, when the animal fell to the earth, and was in an instant secured by the dog." We do not conceive that the unnatural propensity in the individual here referred to, is indicative of the genuine habit of this species, but think that it may be regarded as an exception to a general rule, and referred to a morbid depravity of taste sometimes to be observed in other genera, leading an individual to feed upon that which the rest of the species would loathe and reject. Thus we have known a horse which preferred a string of fish to a mess of oats; and mocking-birds, in confinement, kill and devour jays, black-birds, or sparrows.

We saw and caught a specimen of this beautiful *TAMIAS* in Louisiana, that had no less than sixteen chinquapin nuts (*Castanea pumila*) stowed away in its cheek-pouches. We have a specimen now lying before us, sent from Pennsylvania in alcohol, which contains at least one and a half table-spoonfuls of Bush trefoil (*Hedysarum cannabinum*) in its widely-distended sacks. We have represented one of our figures in the plate with its pouches thus filled out.

This species is to a certain extent gregarious in its habits. We had marked one of its burrows in autumn which we conceived well adapted to our purpose, which was to dig it out. It was in the woods on a sandy piece of ground and the earth was strewn with leaves to the depth of eight inches, which we believed would prevent the frost from penetrating to any considerable depth. We had the place opened in January, when the ground was covered with snow about five inches deep. The entrance of the burrow had been closed from within. We followed the course of the small winding gallery with considerable difficulty. The hole descended at first almost perpendicularly for about three feet. It then

continued with one or two windings, rising a little nearer the surface until it had advanced about eight feet, when we came to a large nest made of oak leaves and dried grasses. Here lay, snugly covered, three Chipping Squirrels. Another was subsequently dug from one of the small lateral galleries, to which it had evidently retreated to avoid us. They were not dormant, and seemed ready to bite when taken in the hand; but they were not very active, and appeared somewhat sluggish and benumbed, which we conjectured was owing to their being exposed to sudden cold from our having opened their burrow.

There was about a gill of wheat and buckwheat in the nest; but in the galleries we afterwards dug out, we obtained about a quart of the beaked hazel nuts, (*Corylus rostrata*), nearly a peck of acorns, some grains of Indian corn, about two quarts of buckwheat, and a very small quantity of grass seeds. The late Dr. JOHN WRIGHT, of Troy, in an interesting communication on the habits of several of our quadrupeds, informs us, in reference to this species, that "It is a most provident little creature, continuing to add to its winter store, if food is abundant, until driven in by the severity of the frost. Indeed, it seems not to know when it has enough, if we may judge by the surplus left in the spring, being sometimes a peck of corn or nuts for a single Squirrel. Some years ago I watched one of these animals whilst laying up its winter store. As there were no nuts to be found near, I furnished a supply. After scattering some hickory nuts on the ground near the burrow, the work of carrying in was immediately commenced. It soon became aware that I was a friend, and approached almost to my feet for my gifts. It would take a nut from its paws, and dexterously bite off the sharp point from each end, and then pass it to its cheek-pouch, using its paws to shove it in, then one would be placed on the opposite side, then again one along with the first, and finally, having taken one between its front teeth, it would go into the burrow. After remaining there for five or ten minutes it would reappear for another load. This was repeated in my presence a great number of times, the animal always carrying four nuts at a time, and always biting off the asperities."

We perceive from hence that the Chipping Squirrels retire to winter quarters in small families in the early part of November, sooner or later according to the coldness or mildness of the season, after providing a store of food in their subterranean winter residence. When the snows are melted from the earth in early spring, they leave the retreat to which they had resorted during the first severe frosts in autumn. We have seen them sunning themselves on a stump during warm days about the last of February, when the snows were still on the earth here and there

in patches a foot deep; we remarked, however, that they remained only for half an hour, when they again retreated to their burrows.

The young are produced in May, to the number of four or five at a birth, and we have sometimes supposed from the circumstance of seeing a young brood in August, that they breed twice a year.

The Chipping Squirrel does but little injury to the farmer. It seldom disturbs the grain before it is ripe, and is scarcely more than a gleaner of the fields, coming in for a small pittance when the harvest is nearly gathered. It prefers wheat to rye, seems fond of buckwheat, but gives the preference to nuts, cherry-stones, the seeds of the red gum, or pepperidge, (*Nyssa Multiflora*,) and those of several annual plants and grasses.

This species is easily captured. It enters almost any kind of trap without suspicion. We have seen a beautiful muff and tippet made of a host of little skins of this *TAMIAS* ingeniously joined together so as to give the appearance of a regular series of stripes around the muff, and longitudinally along the sides of the tippet. The animals had in most cases been captured in rat-traps.

There is, besides, a simple, rustic, but effectual mode of hunting the Ground Squirrel, to which we are tempted to devote a paragraph.

Man has his hours of recreation, and so has the school-boy; while the former is fond of the chase, and keeps his horses, dogs and guns, the latter when released from school gets up a little hunt agreeable to his own taste and limited resources. The boys have not yet been allowed to carry fire-arms, and have been obliged to adhere to the command of a careful mother—"don't meddle with that gun, Billy, it may go off and kill you." But the Chip Muck can be hunted without a gun, and Saturday, the glorious weekly return of their freedom and independence from the crabbed schoolmaster and the puzzling spelling-book, is selected for the important event.

There are some very pleasing reminiscences associated with these little sports of boyhood. The lads, hurried by delightful anticipations, usually meet half an hour before the time appointed. They come with their "shining morning faces" full of glee and talking of their expected success. In lieu of fire-arms they each carry a stick about eight feet long. They go along the old-fashioned worm-fences that skirt the woods,—a crop of wheat or of buckwheat has just been gathered, and the little Hackee is busily engaged in collecting its winter store.

In every direction its lively chirrup is heard, with answering calls from adjacent parts of the woods, and here and there you may observe one mounted on the top of a fence-stake, and chipping away as it were in exultation at his elevated seat. One of the tiny huntsmen now places his

pole on a fence rail, the second or third from the bottom, along which the Ground Squirrel is expected to pass; a few yards behind him is another youngster, ready with his stick on another rail, in case the Chip Muck escapes the first enemy. One of the juveniles now makes a circuit, gets behind the little Hackee and gives a blow on the fence to drive him toward the others, who are eagerly expecting him. The unsuspecting little creature, with a sweep of his half-erected tail, quickly descends from the top of the fence along a stake, and betaking himself to some of the lower rails, makes a rapid retreat. If no stone-heaps or burrows are at hand, he runs along the winding fence, and as he is passing the place where the young sportsmen are lying in wait, they brush the stick along the rail with the celerity of thought, hitting the little creature on the nose, and knocking him off. "He is ours," is the exulting shout, and the whole party now hurry to the spot. Perhaps the little animal is not dead, only stunned, and is carried home to be made a pet. He is put into a calabash, a stocking, or a small bag prepared for the occasion by some fond little sister, who whilst sewing it for her brother half longed to enjoy the romp and the sport herself. Reader, don't smile at this group of juvenile sportsmen; older and bigger "boys" are often engaged in amusements not more rational, and not half so innocent.

Several species of hawks are successful in capturing the Chipping Squirrel. It furnishes also many a meal for the hungry fox, the wild cat, and the mink; but it possesses an enemy in the common weasel or ermine, (*mustela erminea*) more formidable than all the rest combined. This blood-thirsty little animal pursues it into its dwelling, and following it to the farthest extremity, strikes his teeth into its skull, and like a cruel savage of the wilderness, does not satiate his thirst for blood until he has destroyed every inhabitant of the burrow, old and young, although he seldom devours one fifth of the animals so wantonly killed. We once observed one pursue a Chipping Squirrel into its burrow. After an interval of ten minutes it reappeared, licking its mouth, and stroking its fur with its head by the aid of its long neck. We watched it as it pursued its way through a buckwheat field, in which many roots and stumps were yet remaining, evidently in quest of additional victims. On the following day we were impelled by curiosity to open the burrow we had seen it enter. There we found an old female ground squirrel and five young, half-grown, lying dead, with the marks of the weasel's teeth in their skulls.

GEOGRAPHICAL DISTRIBUTION.

The Chipping Squirrel has a pretty wide geographical range. It is common on the northern shores of Lakes Huron and Superior; and has

been traced as far as the fiftieth degree of north latitude. In the Eastern, Northern, and Middle States, it is quite abundant; it exists along the whole of the Alleghany range, and is found in the mountainous portions of South Carolina, Georgia, and Alabama. In the alluvial districts of Carolina and Georgia it disappears. We have never found it nearer the seaboard of South Carolina than at Columbia, one hundred and ten miles from Charleston, where it is very rare. It is found in Tennessee and throughout Louisiana.

GENERAL REMARKS.

We have at the head of this article endeavoured to preserve *TAMIAS* as a valuable genus distinct from *SCIURUS*. We hope we have offered such reasons as will induce naturalists to separate this interesting and increasing little group, mostly of American species, from the squirrels, to which they bear about the same affinity as do the marmot squirrels (*SPERMOPHILUS*) to the true marmots (*ARCTOMYS*). We will now inquire whether the present species (*Tamias Lysteri*) is a foreigner from Siberia, naturalized in our Western world; or whether it is one of the aborigines of our country, as much entitled to a name as the grisly bear or the cougar.

Two of our American naturalists, HARLAN and GODMAN, supposed that it was the Asiatic species, the *S. striatus* of KLEIN, PALLAS, SCHREBER, and other authors; Dr. RICHARDSON (1829) believed that the descriptions given of *Sciurus striatus* did not exactly correspond with American specimens, and as he had no opportunity of instituting a comparison, he adopted the specific name of RAY, *Sciurus (TAMIAS) Lysteri*, for our species; and quoted what PALLAS had written in regard to the habits of the Asiatic animal, as applying to those of our little Chipping Squirrel. Very recently (1842) Dr. DEKAY, in the work on American quadrupeds, published by order of the State of New-York, has again referred it to *S. striatus* of LINNÆUS, and endeavoured to prove the identity of the two species from European writers. We suspect he had no opportunity of making a comparison from actual specimens.

Reasoning from analogy in regard to the species of birds or quadrupeds found to be identical on both continents, we should be compelled to admit that if our species is the *S. striatus* of Asia, it presents a solitary exception to a long-established general rule. That many species of water-birds, such as geese, ducks, gulls, auks, and guillemots, which during the long days of summer crowd toward the polar regions to engage in the duties and pleasures of reproduction, should be found on both continents, cannot be a matter of surprise; and that the ptarmigan, the white

snow-bird, Lapland long-spur, &c., which resort annually to them, should at that season take wing and stray to either continent, is so probable a case, that we might think it strange if it were otherwise. Neither need we regard it as singular if a few quadrupeds, with peculiar constitutions and habits suited to the polar regions, should be inhabitants of the northern portions of both continents. Thus the polar bear, which delights in snow and ice, and which is indifferent as to whether it is on the land or on an iceberg at sea; the reindeer, which exists only in cold regions, and which by alternately swimming and walking can make its way over the icy waters in winter, and over rivers and arms of the sea in summer, and which migrates for thousands of miles; the beaver, which is found all over our continent, on the banks of the Mackenzie river leading into the polar sea in latitude 68° , and in the Russian settlements near Behring's Straits; the ermine, which riots in the snow-drifts, and has been found as far to the north as man has ever travelled; and the common wolf, which is a cosmopolite, exhibits itself in all colours, and strays from the tropics to the north pole; may be found on both continents without surprising us: but if this little land-animal, the Chipping Squirrel, which is unable to swim, and retires to the earth in cold weather, should be found both in Asia and America, it would oppose all our past experience in regard to American quadrupeds, and be the only exception to a long and universally admitted theory. The highest northern range in which this species has ever been seen is above Lake Huron, as far as latitude 50° ; from thence there is a distance of more than 90° of longitude and 18° of latitude before we reach its Asiatic range, and in its migrations either way it would have to cross Behring's Straits, and traverse regions which even in summer are covered with snow and ice. From the above facts and from our knowledge of the adaptation of various animals for extensive migrations, we must conclude that this species cannot possibly exist on both continents, even admitting the correctness of the supposition that these continents had in some former age been united.

Dr. RICHARDSON says, (p. 181,) "I am not aware that the identity of the species on the two continents has been established by actual comparison." In this he was quite correct. At the period when his valuable work on American quadrupeds was published, nearly all the figures and many of the descriptions of *Tamias striatus* of the Eastern continent were taken from American specimens of *Tamias Lysteri*; and the authors supposing them to be identical, were not sufficiently cautious to note this important fact.

In 1838 we carried to Europe, American specimens of nearly all those

species which had their congeners on the Eastern continent. We were surprised at finding no specimen of the *T. striatus* in the museums of either England or France. At Berlin, however, an excellent opportunity was afforded us for instituting a comparison. Through the kindness of Dr. LICHTENSTEIN, superintendent of the museum, we were permitted to open the cases, examine several specimens in a fine state of preservation, and compare them with our American species, which we placed beside them. The differences, at first sight were so striking that we could only account for their ever having been considered identical, from the fact that the descriptions of the old authors were so loose and unsatisfactory that many minute but important characteristics had not been noted. The following memorandum was made by us on the occasion:—"The *Tamias striatus* differs so widely from our American Chipping Squirrel or Hackee, that it is unnecessary to be *very* minute in making the comparison. The two species can always be distinguished from each other by one remarkable characteristic, which I have observed running through all the specimens. The stripes on the Asiatic (*T. striatus*) running over the back extend to the root of the tail; whilst those on the American (*T. Lysteri*) do not reach so far by a full inch. There are many other differences which may as well be noticed. *T. striatus* is a little the largest, the stripes on the back are situated nearer each other, and are broader than in the other species; the stripes on each side of the back are nearly black instead of yellowish-brown; on each side of the black stripe on the centre of the back of *Tamias Lysteri*, there is a broad space of reddish-gray. In *T. striatus* this part of the animal is yellowish; being an alternate stripe of black and yellowish-white. The tail of the latter is black towards the extremity, and tipped with white; its tail and ears also are larger than those of *T. Lysteri*: in short, these two species differ as widely from each other as *Tamias Lysteri* differs from the four-lined ground squirrel of SAX, (*T. quadrivittatus*.)

Audubon, John James and Bachman, John. 1851. "Tamias Listeri, Chipping Squirrel — Hackee, &c [Pl. VIII, male, female and young (first autumn)]." *The quadrupeds of North America* 1, 65–75. <https://doi.org/10.5962/p.322588>.

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