

Article X.—DESCRIPTIONS OF NEW AMERICAN MAMMALS.

By J. A. ALLEN.

During the last few months the Museum has acquired several quite important collections of mammals, which will later form the basis of special papers. As several months will elapse before their publication, it seems advisable to publish in advance descriptions of the several forms contained in these collections which appear to be new.

***Lepus aquaticus attwateri*, subsp. nov.**

ATTWATER'S SWAMP HARE.

Type, No. ~~7744~~⁷⁷⁴⁴, ♀ ad., Medina River, 18 miles south of San Antonio, Texas, May 8, 1894; H. P. Attwater.—Above pale buffy gray, heavily lined with black, paler on the sides, which are whitish gray with a faint tinge of buff; median dorsal area more strongly tinged with yellowish, increasing slightly in intensity on the rump; nuchal patch, the fulvous ocular region, the pectoral band, and the outer surface of fore and hind limbs many shades paler than in *L. aquaticus*; ventral surface and inside of fore and hind limbs white, the fur ashy plumbeous basally.

Measurements (from the fresh specimen by the collector).—"Nose to end of tail, 520; tail [to end of hairs], 83; hind foot, 105. Weight, $5\frac{1}{4}$ lbs. Contained 3 large embryos." Ear from notch (measured from skin), 65.

Skull.—Total length (from posterior edge of occipital crest to front edge of nasals), 87; basal length (posterior border of occipital condyles to front of intermaxillaries), 79; zygomatic breadth, 40; mastoid breadth, 32; least interorbital breadth, 32; length of nasals, 35; greatest posterior breadth of nasals, 18; length of lower jaw, 63; height at coronoid process, 37.

In a former paper on Texas mammals (this Bulletin, VI, 1894, p. 171) reference was made to two specimens of an aquatic hare collected at San Antonio by Mr. Attwater, which on comparison with specimens from Louisiana and the coast of Texas (Mata-gorda Bay region) proved to be much lighter colored than the latter. Mr. Attwater has since sent four others, making a series of six, taken as follows: one in March, three in April, one in May, and one in June. On comparison with a strictly comparable

series from the vicinity of Lake Catharine, Louisiana, the contrast in color is very striking, the San Antonio specimens being many shades paler throughout, lacking almost entirely the rich rusty fulvous tint of the Gulf Coast specimens. This is shown quite as strongly in a young specimen, apparently not more than three weeks old, as in the adults. Fortunately there is a specimen of nearly the same age in the Louisiana series, so that both young and adults of the two forms are available for comparison. In short, the difference between *L. aquaticus* and *L. a. attwateri* is quite as strong as between the Atlantic coast forms of the *L. sylvaticus* group and their representatives in the arid interior.

I take pleasure in naming this strongly marked subspecies in honor of Mr. H. P. Attwater, in recognition of his intelligent and persistent efforts to extend our knowledge of the mammal fauna of Texas. His experience with this inland form of Swamp Hare is detailed in the following note.

"Swamp Rabbits are becoming very scarce, being much less numerous than they were ten years ago. Those I have met with were found in the drift piles and old fallen tree-tops in the most tangled parts of the San Antonio and Medina river bottoms. When frightened from their hiding places and chased by dogs they take refuge in hollow trees and in holes in the river bluffs. The dogs seem to have more difficulty in trailing them than they do the Cottontails and Jack Rabbits, the Swamp Rabbits often eluding the hounds by taking to water. I have seen them on several occasions swimming across the river while the dogs were hunting for them on the other side. I have not heard of their occurrence north of San Antonio, and Mr. Lacey has not met with them on the Guadalupe River in Kerr County."

***Reithrodontomys australis*, sp. nov.**

IRAZÚ HARVEST MOUSE.

Very similar in coloration and proportions to adults of *Reithrodontomys longicauda* in winter pelage from California, but larger.

Adult.—(Type.) Above warm yellowish brown, sparingly lined with black, darker medially and lighter and more yellowish on the sides, but without a

distinct fulvous lateral line ; beneath ashy plumbeous with a faint wash of buff, giving the effect of soiled ashy plumbeous, the fur being plumbeous at base. Feet grayish ; ears blackish, well haired ; tail sharply bicolor, dusky brown above, whitish below, quite hairy, but the annuli not wholly concealed.

Total length (measurements from skin), 158 ; tail vertebræ, 80 ; hind foot, 18 ; ear from crown, 10.

Skull.—Total length, 23 ; basal length, 20 ; greatest cranial breadth, 11 ; greatest zygomatic breadth, 10 ; least interorbital breadth, 3.7 ; length of nasals, 8.

Type, No. $\frac{11291}{9555}$, ad., Volcan de Irazú, Costa Rica, June, 1892 ; George K. Cherrie.

This species is based on a single specimen (sex not indicated), received from Mr. A. Alfaro, labeled as above. In coloration and in general external features it bears a surprising similarity to *R. longicauda*.

In this connection it is of interest to recall Mr. Tomes's record (P. Z. S., 1861, p. 284) of '*Reithrodon longicauda*' from Dueñas, Guatemala.

Among other interesting mammals received from Mr. Alfaro, and by him kindly presented to the Museum, may be mentioned a good series of *Geomys cherriei* Allen¹ (this Bulletin, V, 1893, p. 337), described originally from a single specimen, which show that the white crown spot is a constant and normal character. He has also sent a single specimen of *Echimys semispinosus* Tomes (P. Z. S., 1860, p. 265), described from Ecuador, but since recorded from Nicaragua and Costa Rica (Pacuare) by Mr. F. W. True (Proc. U. S. Nat. Mus., 1888, p. 467). The specimen is labeled "'Suerre,' Costa Rica, alt. 1500 ft., July, 1895. A. Alfaro."

***Oryzomys cherriei*, sp. nov.**

CHERRIE'S COTTON RAT.

Pelage rather coarse ; size medium ; tail rather short, considerably less than half the total length.

Adult.—Above yellowish brown, varied with blackish tipped hairs, darkest along the middle of the back, lighter and grayer on the sides ; below whitish gray, the fur dusky at base and tipped with whitish. The color of the lower surface passes gradually into the grayish brown of the flanks. Feet and ears

¹ *Macrogeomys cherriei* Merriam, N. Am. Fauna, No. 8, 1895, p. 194, pl. xv, fig. 1.

gray; tail nearly naked, indistinctly bicolor—dusky brown above, lighter, grayish brown below.

Half-grown young are wholly plumbeous below, and darker and less washed with yellowish brown above than adults.

Measurements (average of 16 adults, 10 ♂♂, 6 ♀♀).—Total length, 214; tail vertebræ, 92 (collector's measurements from fresh specimens). Hind foot, 23; ear from crown, 12 (measurements from skins).

Skull.—The skull differs from that of *O. palustris* in no very important feature except in being much smaller. Total length (occipital plane to front border of nasals), 30; basal length (occipital condyles to front edge of intermaxillaries), 28; greatest zygomatic breadth, 16; greatest breadth of braincase, 13; least interorbital breadth, 6.

Type, No. $\frac{11297}{9557}$, ♂ ad., Boruca, Costa Rica, Dec. 10, 1891; George K. Cherrie.

Based on a series of 21 specimens (16 adult, 5 juv.), collected at Boruca, Costa Rica, Nov. 19–Dec. 10, 1891, by Mr. George K. Cherrie, for whom the species is named.

Oryzomys cherriei needs comparison with no other species known to me. In general appearance it most resembles *O. palustris*, but it is fully one-third smaller than any of the known forms of this species, from all of which it also differs decidedly in coloration. It has no close relation to any other described Central American species of the genus.

***Peromyscus attwateri*, sp. nov.**

ATTWATER'S CLIFF MOUSE.

Above tawny brown, darker and much mixed with blackish along the median dorsal area, more golden on the sides, the lower edge of the dorsal area forming a strongly defined golden lateral line. Below pure white, the base of the fur plumbeous. Fore feet white to slightly above the wrists; hind feet white nearly to the tarsal joint, soles naked nearly to the heels. Ears very large, nearly naked, dusky, faintly edged with whitish. Tail sharply bicolor, dusky above, grayish below, moderately well haired (the annulations showing through more or less towards the base), and generally well tufted at the end.

Measurements.—Average of 10 adult specimens, measured in the flesh: Total length, 196 (187–216) mm.; tail vertebræ, 100 (96–110); hind foot, 21 (20–23); ear from notch (measured from the skins), 16 (15–17). The type, a breeding female, is rather above the average of the series, measuring as follows: Total length, 216; tail vertebræ, 110; hind foot, 23; ear, 17.

Skull (of type), total length, 28 ; basilar length, 26 ; greatest cranial breadth, 14 ; least interorbital breadth, 5 ; length of nasals, 9.5.

Type, No. $\frac{10401}{8712}$, ♀ ad., Turtle Creek, Kerr Co., Texas, March 12, 1895; H. P. Attwater.

This species is based on a series of 14 specimens collected on Turtle Creek, Kerr Co., Texas, May 24, 1894, and March 9-13, 1895, and on 3 from San Geronimo Creek, Medina Co., Texas, April 23, 1895. Several are in the nearly uniform dark gray pelage of the young, others are more advanced but still immature, while about one-half are 'young' adults, only a few being 'old' adults. One only (the type) has a very small spot of bright fulvous on the breast.

Peromyscus attwateri finds its nearest affines in *Peromyscus rowleyi* and *P. eremicus*, but seems to be clearly different from either.

This species is named for the collector, Mr. H. P. Attwater, who contributes the following interesting field notes.

"I call these mice 'Cliff Mice,' to distinguish them from the other form (*P. mearnsii*), because they are found in large numbers in the cracks and cavities of the rocky cliffs that border the rivers and smaller streams in the counties directly north and west of San Antonio. Though most numerous along the sides of cañons, they are also found in hollow trees, logs, fences, and cultivated fields, and about ranch buildings in the valleys, as well as in the cedar 'brakes' on the divides and high ground.

"The southern limit of the range of this species, in this part of Texas, is about ten or twelve miles north and west of San Antonio. I have not found it at San Antonio or south of it, and do not think it will be found east of Bexar or Comal Counties. The short tailed form (*P. mearnsii*) doubtless extends up the valleys into the range of the Cliff Mice, but the latter seem to restrict themselves to the rocky country.

"They feed on the different nuts and seeds which grow in endless variety all over this region, though their favorite food seems to be acorns and cedar berries. I believe they also prey extensively on birds' eggs."

***Neotoma cinnamomea*, sp. nov.**

FULVOUS WOOD RAT.

Similar to *N. rupicola* Allen, but larger, coloration much deeper, and the ears darker.

Adult.—Above, in summer, buffy-ochraceous, with often a tinge of vinaceous; middle of dorsal region finely lined with black; sides clear strong ochraceous buff; feet and ventral surface pure white to the base of the hairs; tail bushy, dusky gray above, pure white below; ears brownish, thinly haired.

Young.—The young in first pelage are ashy above, with a tinge of fulvous, conspicuously varied with black, especially over the middle of the dorsal region; below white, with a tinge of ashy along the sides of the abdomen, owing to the slight plumbeous cast of the underfur. Tail terete, ashy white above, a little clearer white below.

From this stage they pass into the autumn coat, in which the upper parts are cream buff with an ashy shade, strongly lined with black; below white, with the basal portion of the fur on the sides of the abdomen ashy or pale plumbeous. Tail colored nearly as in the adult, but much less bushy.

Measurements.—Total length (average of 6 adult males), 364 (356-368); tail vertebrae, 158 (151-163); hind foot, 41 (40-43); ear from notch (measured from dry skins), 27 (25-28). Four adult breeding females, average slightly smaller, as follows: Total length, 343 (337-351); tail vertebrae, 148 (144-150); hind foot, 39 (37-41); ear from notch (from dry skins), 27 (26-28).

Type, No. $\frac{11092}{8887}$, ♂ ad., Kinney Ranch, Bitter Creek, Wyoming, July 9, 1895; Walter W. Granger.

This species is based primarily on a series of 31 specimens, collected by Mr. Granger at Kinney Ranch, Bitter Creek, Wyoming, July 6-Aug. 6; to which are also referred 2 specimens taken on the Uncompahgre Indian Reservation, Utah, April 2 and 9, and 3 taken on the Little Snake River, near the Colorado-Wyoming boundary line, Aug. 26. The adults of both sexes are well represented, as are the immature stages, from quarter-grown young to full-grown young of the year.

This species belongs to the same group of bushy-tailed Wood Rats as *N. orolestes* Merriam and *N. rupicola* Allen, being intermediate between them in size, but quite different from either in coloration. It is much smaller than *N. orolestes*, which it appears to most resemble in color. It differs from *N. rupicola* in its considerably larger size, and in its much deeper and more vinaceous buff shade of coloration, and much darker ears at all ages.

Microsciurus, subgen. nov.

Skull short, broad, the dorsal outline very convex, postorbital processes placed slightly behind the widest part of the malar, which is remarkably expanded. Premolars $\frac{3}{2}$.

In regard to external characters, the tail is narrow, and the ears are very small; the pelage is short and close.

Type, *Sciurus (Microsciurus) alfari*, sp. nov.

This group of Squirrels, which will probably be found to include all of the Guerlinguets (as *Sciurus pusillus* Desm., and *S. chrysuros* Puch.), is exceptional for the peculiar form of the malar and the relatively great breadth and convexity of the skull.

***Sciurus (Microsciurus) alfari*, sp. nov.**

ALFARO'S SQUIRREL.

Total length (measurements from dry skins), 290; head and body, 145; tail vertebrae, 105; tail to end of hairs, 145; hind foot, 35; ear from crown, 9.

Above, including upper surface of both fore and hind feet, dark olivaceous brown, minutely punctated with yellowish rusty, the hairs being blackish, slightly tipped with yellowish rusty, giving a dusky olivaceous general effect, becoming, however, more reddish brown on the head; below and inside of limbs fulvous gray, varying in different specimens from buff to strong fulvous, and even rufous.

Upper surface of tail uniform in color with the back; lower surface similar, hence much darker than ventral surface of the body, with which it is in strong contrast. The hairs of the lower surface of the tail are individually dark reddish brown or deep chestnut, with three narrow bands of black, the outer much broader than the others. Whole front of head washed with dark rufous, strongest on the sides of the head. Ears small, rounded, showing but little above the surrounding pelage.

In two old females the space enclosing each nipple is gray.

Skull.—Total length (front border of nasals to occipital crest), 36; basal length (front border of intermaxillaries to occipital condyles), 32; greatest zygomatic breadth, 22; least interorbital breadth, 13; nasals, 10.

Type, $\frac{11290}{8854}$, ♀ ad., Jiménez, Costa Rica, Jan. 24, 1894; George K. Cherrie.

Based on three females, two of which are adult, and the other about two-thirds grown, collected by Messrs. Anastasio Alfaro and George K. Cherrie.

This species should be compared with *Sciurus pusillus* Desm. and *S. chrysuros* Puch., from either of which, judging from descriptions, it differs quite markedly in color, and from the former also in size.

***Tamias pricei*, sp. nov.**

PRICE'S CHIPMUNK.

Intermediate in size and coloration between *T. merriami* and *T. hindsi*, but very different and about equally distinct from either.

Breeding Pelage (April specimens).—General color above, dull grayish brown, or gray varied with hazel and brown. Flanks tawny; sides of shoulders and thighs strongly grayish; lower surface whitish, the abdominal area washed more or less strongly with dull yellowish brown; color of the flanks often encroaching considerably upon the sides of the ventral area. Dorsal stripes nine—five mixed hazel and black, and four clear ashy gray. The median dark stripe extends from the nape to the base of the tail; the anterior third is mainly brown, mixed more or less in different specimens with black; the posterior half or two-thirds mainly black, edged and more or less varied with hazel. The first lateral dark stripe on either side is similar to the median one, but is shorter, extending generally only from the shoulder to a little beyond the hip, and contains less black. The outer dusky stripe is still shorter and only slightly varied with black. Inner pair of light stripes gray; outer pair broader and clearer gray. Post auricular patches small, dull grayish white; light facial stripes clear gray; the dark ones dull hazel brown, lighter than in *T. hindsii*, but much darker than in *T. merriami*. Tail above pale, the color beneath the surface being clay color, which shows conspicuously through the surface, the individual hairs being black at the extreme base, and then ringed broadly and about equally with clay color and black and tipped with whitish gray; tail below centrally deep reddish chestnut, with a narrow border of black fringed with gray—about as in *T. hindsii*. Ears of medium size (much smaller than in *T. merriami*), externally blackish on the anterior portion and gray on the posterior third or half.

Measurements.—Average and extremes of 23 ♂♂: Total length, 252¹ (234-278); tail vertebræ, 119 (109-130); hind foot, 35 (32-37). Averages and extremes of 17 ♀♀: Total length, 256 (241-271); tail vertebræ, 122.5 (113-130); hind foot, 35 (32-37).

Type, No. $\frac{11888}{8888}$, ♂ ad., Portola, San Mateo Co., California, April 12, 1895; J. Diefenbach. Named for Mr. W. W. Price.

This very distinct form of *Tamias* is based on a series of 45 specimens taken at Portola, in the Santa Cruz Mountains, California, during the last week of March and the first two weeks of April, by Messrs. R. L. Wilbur and J. Diefenbach for Mr. W. W. Price, to whom I am indebted for the opportunity of examining a large collection of mammals from different localities in the Santa Cruz Mountains. *Tamias pricei* is almost exactly intermediate in all essential features between *T. hindsii* of the coast region of California north of San Francisco and *T. merriami* of the mountains of southern California (San Diego, and San Bernardino

¹ From nose to end of caudal vertebræ; about 30 mm. should be added for the extension of the hairs beyond the vertebræ.

Counties, etc.). The gap between *T. pricei* and these forms is so evenly balanced that it is difficult to say to which of them *T. pricei* is most closely allied. The line of separation from either, so far as present material goes, is so sharp that it seems best for the present to treat the new form as specifically distinct from either, although it seems not improbable that specimens from intermediate points between the present known ranges of the three forms may show their complete intergradation. As at present known, *T. pricei* is much more distinct from either *T. merriami* or *T. hindsii* than *T. obscurus* is from *T. merriami*, or than *T. townsendii* is from *T. hindsii*.

***Tamias wortmani*, sp. nov.**

WORTMAN'S CHIPMUNK.

Female, Breeding Pelage.—Above dull yellowish gray, with a slight vinaceous tinge. A narrow yellowish white band on either side from the ear to the hip, with no dusky band (or only a very slight trace of one) on the *innerside* of the white band; a short broad black band on the outside of the white band; sides of body below the black band yellowish white; sides of neck and shoulders scarcely more yellowish than the sides of the body; ventral surface whitish or grayish white, the dusky basal portion of the pelage more or less visible through the surface; tail above grizzled dusky and pale yellowish, the hairs being black, tipped and sub-basally ringed with pale fulvous; tail below, buff, with a broad subapical zone of black, and a narrow line of black near the base of the lateral hairs, visible only on parting the hairs; feet buffy gray. In several specimens the lower, as well as the usual upper, black band on the sides of the body is wholly wanting.

The male is probably similar, but doubtless a little brighter colored, especially on the sides of the shoulders. (The males when taken had already assumed the post-breeding pelage.)

Male, Post-breeding Pelage.—Middle of the dorsal region, from the nape to the tail, yellowish gray, varied with black-tipped hairs, and with a faint wash of vinaceous, bounded on either side by a broad line of yellowish white, extending from the shoulders to the hips; top of head more strongly vinaceous or rufescent; sides of neck and shoulders deep ochraceous, cutting off the lateral white line at the shoulders. Below the white lateral line is a short broad band of deep black; sides of body behind the shoulders straw yellow; below buffy white, with a tinge of dusky, due to the dusky basal portion of the pelage showing through the surface. Tail above dusky, edged and varied with fulvous; below pale fulvous, with a submarginal narrow black band, and a narrow dusky line at the extreme base of the lateral hairs, only seen on carefully parting the hairs.

The female at this stage is probably similar but paler, especially on the sides of the shoulders. (None of the adult females when taken had acquired the post-breeding dress.)

Young in First Pelage.—Pelage soft and thin; above dull yellowish gray-brown, with a well-defined narrow white lateral line, and below this a short, broad dusky band; sides of body and below grayish white; tail above grizzled fulvous and dusky, below fulvous centrally, submarginally dusky, and edged with pale fulvous.

Young in Molt.—A large series of young of the year show that the young molt directly from the first pelage into a dress similar to the post-breeding pelage of the adults. This series also shows that the females are much less richly colored than the males, particularly over the sides of the neck and shoulders.

Measurements.—Seven adult females give the following averages and extremes: Total length, 280 (271–292); tail vertebrae, 95 (87–100); hind foot, 42 (41–44). Four adult males give the following: Total length, 272 (260–282); tail vertebrae, 96 (92–101); hind foot, 43 (42–44).

Type, No. $\frac{11057}{9868}$, ♂ ad. (still partly in molt), Kinney Ranch, Bitter Creek, Wyoming, July 13, 1895; Walter W. Granger.

Named for Dr. J. L. Wortman, the Director of the American Museum Palaeontological Expeditions to the western Bad Lands, to whose interest in Mr. Granger's work is largely due his eminent success during the field seasons of 1894 and 1895.

This species is based on a series of 55 specimens collected by Mr. W. W. Granger, in the vicinity of Bitter Creek, Wyoming, July 5–Aug. 2, 1895. The series consists largely of young of the year, but includes about a dozen adults, representing both sexes. Both adult and young are in molt, but the greater part have nearly acquired the post breeding dress.

This species is perhaps most nearly related to *Tamias lateralis*, but combines in a singular manner the characters of the two 'couplets' into which Dr. Merriam, a few years since (N. Am. Fauna, No. 4, Oct., 1890, p. 18), separated the *T. lateralis* group. It differs from *T. lateralis* and *T. cinerascens* in having the whole under surface of the tail (except the submarginal black band common to all) uniform fulvous as in *T. castanurus* and *T. chrysodeirus*, but differs from the latter, and also from *T. lateralis* and *T. cinerascens* in the entire absence of the inner black lateral band. In the entire series of 55 specimens, made up of examples of all

ages and conditions of pelage, only three or four show even a trace of this inner black dorsal band—a feature sometimes lacking, it is true, in *T. lateralis*; but in *T. wortmani* its nearly uniform absence is combined with a fulvous lower tail surface.

***Spermophilus tridecemlineatus olivaceus*, subsp. nov.**

BLACK HILLS SPERMOPHILE.

Similar in size and markings to *S. tridecemlineatus pallidus*, but much darker, as regards the ground color of the upper parts, with the light stripes and spots pale yellowish olivaceous.

Breeding Pelage (July females).—Above ground color dusky brown or blackish, with no trace of ferrugineous or chestnut; flanks, stripes, and spots pale creamy buff with a slight olivaceous effect; below rather strong cream buff.

Post-breeding Pelage (July males).—Pelage longer and softer, but coloration not appreciably different.

Young of the year are similar in coloration to the adults.

Measurements.—Averages and extremes of 7 breeding adults (2 ♂♂ and 5 ♀♀): Total length, 252 (245–265); tail vertebræ, 89 (76–94); hind foot, 34.5 (33–37).

Type, No. $\frac{2271}{7888}$, ♀ ad., Custer, Black Hills, South Dakota, July 25, 1894; W. W. Granger.

This strongly-marked subspecies is based on 7 adults and 12 young of the year, the latter one-half to two-thirds grown. It differs from *pallidus* in its much darker ground color and the olivaceous creamy white tint of the light stripes and spots.

***Spermophilus tridecemlineatus parvus*, subsp. nov.**

SMALL STRIPED SPERMOPHILE.

Much smaller than either *S. tridecemlineatus* or *S. t. pallidus*, and very different in coloration from either.

Breeding Pelage (April specimens).—Coloration, especially the ground color of the dorsal surface, much paler than in either *S. tridecemlineatus* or *S. t. pallidus*. Ground color above deep russet, slightly varied with blackish; the stripes and spots grayish white with a very faint tinge of cream color; feet and ventral surface white, the dusky basal portion of the hairs showing faintly through the surface.

Measurements.—Average and extremes of 5 specimens: Total length, 204 (200–207); tail vertebræ, 80 (75–86); hind foot, 30.6 (30–31).

Type No. $\frac{10888}{9188}$, ♂ ad., Uncompahgre Indian Reservation, northeastern Utah, May 2, 1895; W. W. Granger.

[December, 1895.]

This subspecies is based primarily on two specimens from the Uncompahgre Indian Reservation, in northeastern Utah, taken respectively April 4 and May 2, to which are also referred 8 specimens from the vicinity of Bitter Creek, in southwestern Wyoming, taken July 21–Aug. 5, all collected by Mr. W. W. Granger. The series is very uniform in coloration, the exception being one or two of the July specimens in which the light stripes and spots, and also the flanks, are slightly more tinged with a faint wash of creamy white.

The type of Mitchell's *Sciurus tridecemlineatus* came from "the sources of the Mississippi River," and hence from Central Minnesota. Professor Baird, writing in 1857 (Mam. N. Am., p. 317), observes that specimens "from Wisconsin are seen to differ quite materially from those [from] further west, in a considerably larger size and darker color," "the spots and lines," he adds, being "not so large in proportion as in the lighter prairie specimens." In 1874 I separated (Proc. Boston Soc. Nat. Hist., XVI, 1874, p. 291) the pale western form here referred to as *Spermophilus tridecemlineatus pallidus*, without, however, giving any diagnosis. This was supplied three years later in my monographic revision of the American Sciuridæ (Mon. N. Am. Roden., 1877, p. 873). As was customary at the time, no type was designated, but it was stated that "Among the smallest and palest examples are the specimens from Fort Union and the Yellowstone and Platte Rivers, an especially pale and small phase characterizing the Mauvaises Terres of the Upper Missouri."

In now separating additional forms of this group, I would restrict *pallidus* to the arid region of the Plains, from the Upper Missouri southward to eastern Colorado, western Kansas, etc., and designate as its type region the plains of the Lower Yellowstone River.

The four forms of *Spermophilus tridecemlineatus* here recognized may be diagnosed as follows, the characters being based in each case on *breeding specimens*:

Ground color of dorsal surface blackish chestnut—dark chestnut mixed with a profusion of black-tipped hairs, the black generally prevailing; light stripes and spots pale yellowish white, the light stripes less than half the width of the intervening dark spaces; lower parts buffy white, the hairs dusky basally. *tridecemlineatus*.

Ground color above clear chestnut, scantily varied with black-tipped hairs, the prevailing tone being rather light chestnut; light stripes and spots creamy white, the light stripes being nearly as wide as the intervening dark spaces; lower parts pale yellowish white to the base of the hairs. *pallidus*.

Ground color dusky yellowish gray, the dark tint being made up of an intimate mixture of yellowish gray and black-tipped hairs, generally wholly without chestnut or ferrugineous; light stripes and spots pale yellowish white with a tinge of olivaceous buff; below pale creamy white, the hairs not darker at the base *olivaceus*.

Ground color russet, sparingly varied with black-tipped hairs; stripes and spots grayish white with a faint creamy tinge; lower parts clear whitish gray. *parvus*.

Measurements.

	Total length.	Tail vertebræ.	Hind foot.
<i>S. tridecemlineatus</i> ¹	293 (283-314)	99 (90-112)	40 (38-42)
<i>S. t. pallidus</i> ²	227 (203-260)	73 (61- 89)	32.5 (31-34)
<i>S. t. olivaceus</i> ³	252 (245-277)	89 (76- 94)	34.5 (33-37)
<i>S. t. parvus</i> ⁴	204 (200-207)	80 (75- 86)	30.6 (30-31)

Blarina (Soriciscus) nigrescens, sp. nov.

Blarina micrura ALLEN, Bull. Am. Mus. Nat. Hist., V, 1893, p. 338, not
Sorex micrurus TOMES (= *Blarina micrura* ALSTON), from Dueñas,
Guatemala.

Pelage coarse, rather long, and not lustrous. Above dusky plumbeous, in some lights black; lower surface not appreciably different. Feet and tail blackish, nearly naked, the annulations of the latter being distinctly visible.

Measurements.—Head and body, 65; tail vertebræ, 22; hind foot, 12.

Skull, total length, 20; mastoid breadth, 9.5; length of nasals, 7; length of upper tooth row, 9; distance between outer edges of last molars, 6.3.

Type (and only specimen), No. $\frac{7}{8} \frac{8}{8} \frac{1}{2}$, adult, San Isidro (San José), Costa Rica, Sept. 5, 1891; George K. Cherrie.

This species is of about the size and proportions of *Sorex* [*i. e.*, *Blarina*] *micrurus* TOMES (P. Z. S., 1861, p. 279), described from Dueñas, Guatemala, but it is obviously very different in coloration,

¹ Fort Snelling, Minn., 11 ♂♂, 3 ♀♀—all adult breeding specimens, measured in the flesh by Dr. E. A. Mearns, U. S. A.

² From Allen, Mon. N. Am. Roden., p. 877—16 specimens, various localities, probably not all adult.

³ Custer, Black Hills, S. D.; 2 ♂♂, 5 ♀♀—all adult breeding specimens.

⁴ Bitter Creek, Wyo.; 5 specimens—all practically adult.

B. micrura being described as having the upper parts "darkish grey-brown, with a slight grisly appearance," and the "whole under surface" as "lightish grey-brown, tinged on the chin and along the middle of the abdomen with yellowish rufous," with the feet and tail "of a lightish grey colour."

***Blarina (Soriciscus) orophila*, sp. nov.**

Pelage glossy, very short, soft and velvety. Above dark brown (shading slightly on seal brown), becoming lighter on the sides, and passing gradually into smoke gray on the ventral surface, where the hairs are conspicuously tipped with whitish. Feet grayish brown; tail dusky above, distinctly lighter below, well clothed, and with a minute pencil at the tip. Ears rudimentary and not easily detected.

Measurements.—Head and body, 55; tail vertebræ, 21; hind foot, 11; head, 20.

Skull (too imperfect for complete measurements).—Length of nasals, 5; length of upper tooth row, 8; distance between outer borders of last molars, 5.5.

Type, No. $\frac{9649}{8888}$, adult, Volcan de Irazú, Feb., 1894; George K. Cherrie.

Based on two specimens, preserved in alcohol, one of which is adult, the other immature, collected as above, and kindly presented by Mr. Cherrie to the Museum. The description is based on the specimens in a dry state, after removal from alcohol, to which they have since been returned for safer preservation.

In color this species somewhat resembles *Blarina cinerea* but it is very much darker, and has a much longer tail. It is nearly one-third smaller (in actual bulk) than either *B. micrura* or *B. nigrescens*, and very different in color from either, particularly the latter, to which it has, for this group of animals, comparatively no resemblance.

Blarina orophila differs very strikingly from *B. nigrescens* in the entire structure of the first upper molariform tooth, the first outer cusp of which rises to the same height as the others, instead of being rudimentary and uncolored, as in *B. nigrescens*. There are also differences in every detail of structure between the two teeth, and also in the structure of the third upper molariform tooth, in the two species.