

DESCRIPTIONS OF SIX NEW MAMMALS FROM NORTH AMERICA.

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AMONG the collections of mammals lately made by the writer in the southwestern part of the United States are several forms that appear to be new to science. These are described in the present paper, together with an apparently new species of wood rat, sent to me for determination by Doctor J. A. Allen, curator of mammals in the American Museum of Natural History, New York.

THOMOMYS FULVUS INTERMEDIUS, new subspecies.

INTERMEDIATE POCKET-GOPHER.

Type.—No. $\frac{21473}{36697}$, U.S.N.M. (Collection International Boundary Commission). Adult male, from the aspen and spruce zone at the summit of the Huachuca Mountains, Arizona; altitude, 9,000 feet. Collected by Mr. E. X. Holzner, September 6, 1893. Original number, 1013.

Description of type.—Slightly smaller than *Thomomys fulvus*, equaling *T. peregrinus*. General color mars brown, with a broad dorsal area of plumbeous black extending from nose to rump. Feet and tail soiled white. When the pelage is worn, the plumbeous underfur shows through between the tips of the hairs of the under surface. Length, 220 mm.; tail, 66; hind foot, 24. Skull, 31.5 by 22.

Geographical range.—The Boreal Zone of the chain of mountains connecting the Colorado Plateau with the Plateau of Mexico.

Remarks.—This form is intermediate between *Thomomys fulvus* (Woodhouse) and *T. peregrinus*, Merriam, though in some respects peculiar.

DIPODOMYS MITCHELLI, new species.

TIBURON ISLAND KANGAROO RAT.

Two specimens of a new kangaroo rat, closely related to *Dipodomys merriami simiolus*, Rhoads, have recently been sent me by Mr. J. W. Mitchell, who trapped them on Tiburon Island, in the Gulf of California, Mexico. Mr. Mitchell has, for some time past, been engaged in making

explorations in western Sonora, and visited Tiburon Island in company with Mr. W J McGee, of the Bureau of Ethnology, in December, 1895. With a meager supply of traps, Mr. Mitchell succeeded in capturing two species of small mammals—a *Dipodomys* and a *Peromyscus*—both of which differ from the forms found on the adjacent mainland of Sonora, though plainly showing that they originated from them.

Type.—No. 63188, U.S.N.M. (Collection International Boundary Commission). Adult female, skin and skull, from Tiburon Island, Gulf of California, Mexico. Collected by Mr. J. W. Mitchell, December 23, 1895. Original number, 3.

Description of type.—Similar to *Dipodomys merriami simiolus*, Rhoads, but slightly smaller, with much shorter ears and stronger coloration. As in the case of the Tiburon Island mouse, described beyond, the tail is much more heavily coated than that of the corresponding mainland species; the dark band on its upper and under surfaces being jet black in *D. mitchelli*, mostly light drab in *D. m. simiolus*. The ears are more densely clothed than in *D. m. simiolus*, and are almost black instead of buffy white. The dark stripe on the under side of the hind foot of *D. merriami* (typical) is obsolete in the subspecies *simiolus*, but in the present species reappears, and it is intensely black. The body is colored like *simiolus*, except that the sides are more of an ochraceous buff, and the back has more black admixed; the under pelage having a darker slate color. The tail is bushier at the extremity than in the several forms of *D. merriami*.

A second specimen (No. 63187, U.S.N.M., adult male) agrees in size and coloration with the type. Length of tail vertebrae, 140 mm., hind foot, 38.5; skull, 36.5 by 22.5; nasal bones, length, 13.3.

Remarks.—I have compared this insular form with *Dipodomys merriami melanurus*, described by Doctor Merriam¹ from San José del Cabo, Lower California, and found it to be quite different. It is easily distinguished from it by its paler and different coloration, and by the smaller amount of black on the tail.

PEROMYSCUS TIBURONENSIS, new species.

TIBURON ISLAND DESERT MOUSE.

Type.—No. 63186, U.S.N.M. (Collection International Boundary Commission). Adult male, skin and skull, from Tiburon Island, Gulf of California, Mexico. Collected by Mr. J. W. Mitchell, December 23, 1895. Original number, 1.

Description of type.—Smallest of the desert mice, its hind foot measuring but 19 mm., and ear from notch, 16; skull, 24 by 12 mm. Color above, drab gray, thickly mixed with black; sides, ochraceous cinnamon; under parts white; ears purplish black, almost naked; tail quite densely coated with blackish hairs. Compared with *Peromyscus eremi-*

¹Proc. Cal. Acad. Sci., 2 ser., III, June 5, 1893, p. 345.

cus its skull is smaller, higher posteriorly, narrower and depressed anteriorly. The audital bullae are much less developed, and the incisive foramina and interpterygoid fossa wider. The teeth are considerably smaller. This species was taken on Tiburon Island by my friend, Mr. J. W. Mitchell, who accompanied Mr. McGee, of the Bureau of Ethnology, on his exploration in the region inhabited by the Seri Indians, during the season of 1895-96. This insular form was evidently derived from the *Peromyscus eremicus* of the adjacent mainland, from which it differs in being much smaller, with a darker coloration, more hairy tail, and in having certain cranial peculiarities.

PEROMYSCUS STEPHENSI, new species.

PALM DESERT MOUSE.

Type.—No. 61026, U.S.N.M. (Collection International Boundary Commission). Adult female, skin and skull, from the lowest water, on the wagon road, in a canyon, at the eastern base of the Coast Range Mountains, San Diego County, California, near the Mexican boundary line. Collected by Doctor Edgar A. Mearns, May 9, 1894. Original number, 3512.

Description of type.—Similar externally to *Peromyscus eremicus*, but smaller, with a longer tail and much paler coloration. Upper surface grayish cream buff, deepening to a pale ochraceous buff on sides and rump; tail slightly dusky above, white below, hairy at end; feet and under surface white; whiskers mostly colorless; ears and soles naked, the former slightly pubescent. Length, 193 mm.; tail vertebrae, 108 (to end of hairs, 114); ear from crown, 16; ear from notch, 18.5; distance between eyes, 8; diameter of eye, 3.8; length of longest whisker, 39; from tip of nose to eye, 11.8; to center of pupil, 14; to ear, 20; to tip of ear, 40; to occiput, 26.5; to end of outstretched hind limb, 125; fore limb, measured from olecranon to end of longest claw, 21; length of hand, 9.7; its longest claw, 1.4; hind limb, measured from knee-joint to end of longest claw, 38; length of hind foot, 19; longest claw of pes, 1.7. The skull is strongly depressed anteriorly, with the rostrum produced and the nasals projecting. The zygomatic arches are incurved and convergent anteriorly to meet the sloping zygomatic processes, this feature recalling the configuration of young skulls of the other species of *Peromyscus* in which the brain-case has outgrown the face, though in this case we have the opposite condition, the facial portion being unusually elongated. Named for Mr. Frank Stephens, of California.

NEOTOMA ATTWATERI, new species.

ATTWATER'S WOOD RAT.

Doctor J. A. Allen recently sent me seven skins and five skulls of what proves to be a new species of *Neotoma*, with permission to compare them with the material in the United States National Museum

and determine them, as he was of the opinion that they were not *Neotoma mexicana* to which he had previously with much doubt provisionally referred them. This surmise is quite correct. The specimens in question represent a wholly different group of round-tailed wood rats, not closely related to *N. mexicana* or to any of the western species of the Mexican boundary region. A glance suffices to show that it is not the Texan wood rat (*N. micropus*, Baird). In coloration it resembles *N. leucodon* of Merriam, from farther south, in San Luis Potosi, Mexico; but it is less reddish, and has smaller ears than that species. Compared with *N. leucodon*, its skull exhibits important differences in the size and shape of the post-palatal notch, in the teeth, and in the much greater length of the nasal bones and rostrum. Comparison with the members of the *N. floridana* group from the neighboring States—Louisiana, Mississippi, Indian Territory, and Kansas—shows it to be a closely related form. The skull, including the teeth, agrees almost exactly with *N. floridana*. Externally it differs only in having a softer and finer coat, a much more hairy tail, and a paler and grayer coloration. Members of the *floridana* group have been described from Nebraska and Kansas, under the names *Neotoma baileyi*, Merriam,¹ and *N. campestris*, Allen.² From these, *N. attwateri* differs in several minor cranial characters, as well as in the color and texture of the furry coat. It is not improbable, however, that all of these forms may prove to be but geographic races of *N. floridana*.

Type.—No. $\frac{116954}{10102}$, Am. Mus. Nat. Hist. Adult female, collected December 10, 1895, at Lacey's ranch ("high land, covered with oak, and rocky"), on Turtle Creek, Kerr County, Texas, by Mr. H. P. Attwater. Original number, 113.

Description.—No. 12294 (Collection of the American Museum of Natural History, New York) is a fine old male, in perfect winter pelage, killed February 3, 1896. The ears are small, like those of *N. floridana*. Tail well covered with hair. Pelage long, dense, and soft. Upper surface of body ochraceous buff, mixed with grayish above and strongly lined with black; sides clearer ochraceous buff. Outer surface of limbs light gray. Under surfaces creamy white. Feet all white but the heel, which is light plumbeous. Whiskers black or colorless, and very long (80 mm.). Upper side of head smoke gray. The under pelage is dark plumbeous on the upper and white on the lower side of the body. The tail, which is sharply bicolored, is mouse gray above and white below.

The type is patchy, having small areas of smoke gray in the general yellowish brown of the upper surface. Mr. Attwater's measurements are: Length, 387 mm.; tail vertebrae, 178; hind foot, 39.4.

Half-grown young are smoke gray above, drab gray on the sides, and white below; upper side of tail, mouse gray.

The skull of the type measures 52 by 27 mm. in its greatest diameters.

¹Proc. Biol. Soc. Wash., IX, July 2, 1891, p. 123.

²Bull. Am. Mus. Nat. Hist., VI, November 7, 1891, p. 322.

It is similar in shape, and in its dental characters, to that of *Neotoma floridana*, from which it differs only in being rather high in the frontal region, with the zygomatic arches more prominent posteriorly. The five skulls examined have a prominent crest on the basioccipital bone, which is absent in *N. floridana*. The rostral portion of the skull is as long as that of *N. floridana*, the nasal bones measuring 20 mm. in length. The teeth agree closely with those of *N. floridana*.

For the materials used in making these comparisons I am indebted to Doctor C. Hart Merriam and the authorities of the United States National Museum.

This species is named in honor of Mr. H. P. Atwater, of San Antonio, Texas.

ERETHIZON EPIXANTHUS COUESI, new subspecies.

ARIZONA PORCUPINE.

In 1887 I collected a small porcupine in the Mogollon Mountains of central Arizona, which differed in important respects from both the Canadian porcupine (*Erethizon dorsatus*) and the Pacific Coast species (*Erethizon epixanthus*); but owing to the lack of materials for a satisfactory comparison, I abstained from naming the new form. At the present time, owing largely to the efforts of Mr. Frederick W. True, curator of the department of mammals, the United States National Museum is possessed of a very respectable series of American porcupines from localities extending from Labrador to Pennsylvania in the East, and from Alaska to Arizona in the West. The Arizona porcupine differs so widely from *E. dorsatus* that comparison is unnecessary. *E. epixanthus* was described by Brandt¹ from five specimens from the west coast of North America (California and Unalaska) in the museum at St. Petersburg. The fine series of skins and skulls from Alaska and northern California, collected by Messrs. McKay, Townsend, True, Prentiss, and others, furnish excellent material for comparison of the Arizona form with true *Erethizon epixanthus*, which latter is a much larger, yellower, and more richly colored animal.

The name *Hystrix pilosus*, applied by Doctor Woodhouse to the porcupine of New Mexico,² is preoccupied by the *Hystrix pilosus* of Richardson.³

For reasons not apparent, Gray's name, *Erethizon (Echinoprocta) rufescens*, based on an animal from "Columbia," has long figured in our mammalogies as a synonym of *Erethizon epixanthus* Brandt.

Having exhausted the list of synonyms without finding a name that can be applied to the Arizona porcupine, I take pleasure in naming it in honor of Doctor Elliott Coues, who collected the type specimen (No. $\frac{7}{6} \frac{2}{5} \frac{1}{0} \frac{1}{1}$, U.S.N.M.), at Fort Whipple, Arizona.

¹ Mém. Acad. St. Petersburg, 1835, IX, pl. 1 (animal), figs. 4-4 (skull).

² Sitgreaves's Expedition down the Zuñi and Colorado Rivers, 1853, p. 51.

³ Fauna Boreali-Americana, I, 1829, p. 244.

Description.—Smaller than *Erethizon epixanthus*, with larger external and internal organs of hearing and a much paler and duller coloration. Dorsum covered with white quills, which are narrowly pointed with brown and mixed with very long and rigid hairs, many of which are broadly tipped or banded at base with whitish; color darkest on middle of rump. Muzzle, feet, and under surface of body, brown, with more or less admixture of gray-tipped hairs.

Two specimens (Nos. $\frac{3.18}{1262}$ and $\frac{3.19}{1263}$, U.S.N.M.) collected by Doctor C. B. R. Kennerly, on Bill Williams's Fork, an Arizona tributary of the Colorado River, are in good winter coat, having been killed in December or January of the year 1853 or 1854. The long, coarse hair is yellowish instead of grayish white, and the quills of the dorsal surface are concealed by dense, woolly underfur, which is absent in the Fort Whipple specimen, which appears to have been killed in summer. A specimen collected by the writer in the Mogollon Mountains, Yavapai County, Arizona (No. 2404, Collection of the American Museum of Natural History, New York), agrees with the above except that it is paler and grayer, having a dusty appearance.

Cranial characters.—The skull shows the type specimen to have been nearly adult, the teeth being mature, although the cranial sutures are quite evident and the osseous crests but slightly developed. Selecting for comparison a specimen of similar age from northern California, collected by Mr. Charles H. Townsend, the most striking difference, aside from the much larger size of the California specimen—which measures 98 mm. in total length against 86 in the type of the subspecies *couesi*—is the enormous development of the audital bulla in the Arizona animal, in which it measures 21 by 16.7 mm. against 19 by 15 in the Californian. Other skulls from Arizona and New Mexico bear out these characters, though I am unable to detect any other cranial differences. None of the specimens examined were measured when fresh.