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The distribution of the Bulletin in signatures has been discontinued.

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BULLETIN
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AMERICAN MUSEUM OF NATURAL HISTORY.

VOLUME XII, 1899.

**Article I.—ON MAMMALS FROM THE NORTHWEST
TERRITORY COLLECTED BY MR. A. J. STONE.**

By J. A. ALLEN.

The collection of mammals forming the basis of the present paper is one of unusual interest ; although the number of specimens and species represented is small, several of the species are new to science, and all are new to the Museum collection. They were collected in the Deese Lake region and on the extreme headwaters of the Liard River, by Mr. A J. Stone, of the 'Recreation' Northland Expedition.

Mr. Stone set out on his expedition in June, 1897, with the intention of spending three years or more in exploring the lesser known parts of the Northwest Territory and Alaska. The present collection, made in 1897, is the first installment that has reached the Museum, but other important collections are either on the way or await opportunity for shipment.

The expedition was primarily organized under the auspices of the magazine 'Recreation,' but later Mr. James M. Constable, one of the Trustees and the First Vice-President of this Museum, has contributed, in the interest of this Institution, very liberally in aid of Mr. Stone's work, in return for which Mr. Stone is to collect specimens of the larger mammals of the regions visited, and incidentally as many of the smaller species as circumstances will permit. The results of Mr. Stone's expedition will thus doubtless prove of great importance to this Museum.

[*March, 1899.*]

[1]

1

The measurements (in millimetres) given are those made by the collector from fresh specimens, unless otherwise stated.

1. *Ovis stonoi* Allen. STONE'S MOUNTAIN SHEEP; BLACK SHEEP.—Mr. Stone has sent three additional examples of this fine Sheep (see this Bulletin, Vol. IX, 1897, pp. 111-114), an adult female, a yearling male, and a kid, two of which have been mounted, making a series of five now on exhibition, showing both sexes and young of different ages.

In his report of progress, dated June 30, 1898, he gives the following important information respecting the range of this animal. He writes: "I traced the range of *Ovis stonoi* or Black Sheep throughout all the mountainous country of the headwaters of the Stickeen and south to the headwaters of the Nass, but could obtain no reliable information of their occurrence further south in this longitude. They are found throughout the Cassiar Mountains, which extend north to 61° north latitude and west to 134° west longitude; how much further west they may be found I have been unable to determine; nor could I ascertain whether their range extends from the Cassiar Mountains into the Rocky Mountains to the north of Francis and Liard Rivers. But the best information obtained led me to believe that it does not. They are found in the Rocky Mountains to the south as far as the headwaters of the Nelson and Peace Rivers, in latitude 56° . But I proved conclusively that in the main range of the Rocky Mountains very few of them are found north of the Liard River. Where this river sweeps south through the Rocky Mountains to Hells Gate, a few of these animals are found as far north as Beaver River, a tributary of the Liard. None, however, are found north of this, and I am thoroughly convinced that this is the only place where these animals may be found north of the Liard River.

"I find that in the Cassiar Mountains and in the Rocky Mountains they everywhere range well above timber line, as they do in the mountains of the Stickeen, the Cheonnees, and Etsezas.

"Directly to the north of the Beaver River, and north of the Liard River below the confluence of the Beaver, we first meet with *Ovis dalli*."

2. *Ovis dalli* (Nelson). NELSON'S MOUNTAIN SHEEP ; WHITE SHEEP.—Two specimens of this species have been received, taken by Mr. Stone in the Nahanna Mountains, a spur of the Rockies on the eastern slope, about 61° N. They were killed the latter part of May, 1898, with the old coat about half shed. The two coats thus represented being both white, shows that the species is always white.

As stated above, Mr. Stone first met with this species just north of the Beaver River, and north of the Liard River below its confluence with the Beaver. He adds : " This is their southernmost range, whence it extends north almost to the Arctic coast. I made very careful inquiry of the Indians of the Ettshotas, Takullas, and Spatotimas tribes, who hunt this region, and they were unanimous in their declaration that the Black and White Sheep never mingle together ; that the Black are never found north of the Beaver River and that the White Sheep are never found south of it. This information was substantiated by the testimony of the Histolenas or Mountain Indians and that of the Schotinas of the Liard River."

I subjoin the measurements of six additional adult specimens collected in July and August, 1898, by Mr. Stone, but not yet forwarded. They were taken in the Rocky Mountains, in latitude 65° 45', near where the Carcass River leaves them.

MEASUREMENTS OF OVIS DALLI.

	♂ ad.		♂ ad.		♂ ad.		♀ ad.		♀ ad.		♀ ad.	
	Inches.	Mm.	Inches.	Mm.	Inches.	Mm.	Inches.	Mm.	Inches.	Mm.	Inches.	Mm.
Length	58.5	1476	57.5	1360	56	1422	53.75	1355	51	1295	54	1372
Tail	4	102	4	102	4	102	3.5	89	3	76	3.5	89
Tarsus	16.5	419	16	406	15.5	394	14.75	365	15.5	394	15	381
Femur to humerus..	36	914	33.5	751	32	813	32	813	27.5	698	33	838
Width of chest.....	10.5	267	10	254	10	254	8	203	7.75	197	9.25	235
Height at shoulder..	39	991	34.5	866	36.5	928	33.5	851	34.75	783	33.5	851
" " elbow.....	22	539	22	539	21.5	527	20.75	526	20	508	20.5	521
Depth of body.....	18	457	16.5	419	17.5	443	15	381	14.75	375	15.5	394

3. *Zapus saltator*, sp. nov.

ARCTIC JUMPING MOUSE.

About the size of *Z. hudsonius*, with much heavier dentition. Pelage very long and thick. Above about equally varied with chrome yellow and black

over the whole dorsal area; sides chrome yellow heavily lined with black; below pure white, the white of the lower parts separated from the color of the dorsal surface by a pale yellow prominent lateral line; feet soiled whitish; tail bicolor, blackish above, gray below, nearly naked to near the tip, with a well developed apical tuft. Ears small, colored like the back, narrowly edged with yellowish.

Total length (of type and only specimen), 216; tail, 140; hind foot, 32; ear (from crown, measured from dry skin), 8.

The skull is too imperfect for satisfactory measurement. Compared with average examples of *Z. hudsonius* it is noticeably larger, with much heavier dentition.

Type, No. 14,408, ♀ ad., Telegraph Creek, N. W. T., Aug. 23, 1897. Collected by A. J. Stone.

This species differs markedly from even late fall specimens of *Z. hudsonius* in its very thick, long pelage, somewhat larger size, much heavier dentition, and the peculiar, pale tint of the yellow of the upper parts, in this respect resembling *Z. princeps*.

4. *Lemmus helvolus* (Richardson). RICHARDSON'S LEMMING.—Represented by a single specimen, taken in the Cassiar Mountains, Sept. 16, 1897.

5. *Phenacomys constablei*, sp. nov.

CONSTABLE'S VOLE.

Above brown with a slight tinge of pale chestnut, varied with black-tipped hairs, brighter and more yellowish chestnut on the face and top of the head as far back as the ears; sides lighter; under parts grayish white with plumbeous underfur; feet brownish white; tail bicolor, blackish above, gray below; inner surface and edges of ears with a faint reddish tinge; a whitish tuft at posterior base of the ears.

A young adult is grayish brown, lacking in great degree the pale chestnut suffusion of the adult. The tail is also darker, being quite blackish above.

Total length (of type), 124; tail vertebrae, 32; hind foot, 19.

Type, 14,406, ♀ ad., Telegraph Creek, N. W. T., Aug. 25, 1898. Collected by A. J. Stone.

Named for James M. Constable, Esq., First Vice-President of the American Museum of Natural History, to whose liberality the Museum is indebted for the valuable collections gathered by Mr. Stone in the Northwest Territory.

In dentition and coloration *Phenacomys constablei* is allied to the *P. ungava* group, but in size it agrees with *P. preblei*. The type is a breeding female.

6. **Evotomys alascensis** *Miller*. ALASKAN RED-BACKED VOLE.—Three specimens, from Liard River, Dec. 7-11, 1897. Measurements: Total length, 110 (108-111), tail vertebræ, 24 (21-27); hind foot, 16.6 (14.7-17.5).

7. **Evotomys dawsoni** *Merriam*. DAWSON'S RED-BACKED VOLE.—Six specimens, from the following localities: Cheonnee Mountains, July 31; Telegraph Creek, Aug. 25 and 26; Cassiar Mountains, Sept. 16. Measurements: Total length, 122 (116-127); tail vertebræ, 27 (24-31); hind foot, 18.5 (16-19.5).

E. alascensis is not only smaller than *E. dawsoni*, but the color is quite different, in the latter the sides and lower parts being much more fulvous, and the dorsal band light yellowish chestnut instead of very dark deep chestnut, more varied with black-tipped hairs. There are also well marked cranial differences, as in the form of the posterior border of the nasals, which in *E. dawsoni* are evenly rounded, and in *E. alascensis* end in a pointed extension. The audital bullæ are also smaller and more spherical in *E. dawsoni*, the dentition is weaker, and the whole skull less massive.

8. **Microtus stonei**, sp. nov.

STONE'S VOLE.

Size small, tail short, m^2 with five closed triangles, as in *M. pennsylvanicus*.

Above dark brown, slightly suffused with very pale fulvous, the median dorsal area, from between the eyes posteriorly, blackish brown, due to the great prevalence of black-tipped hairs; sides paler and grayer; below clear whitish gray with plumbeous underfur, which more or less tinges the surface, especially over the pectoral region. No yellowish eye-ring; ears small, scantily haired externally, clothed within and on the edge with hairs colored like the adjoining surface; no grayish or rufous patch behind the ear; feet grayish brown; tail nearly naked, the scales distinctly visible, penicillate at the tip, blackish brown above, grayish beneath.

Total length, 143; tail, 35; hind foot, 19; ear from crown (in dry skin), 8.5.

Skull narrow, slender; general form and dentition much as in *M. pennsylvanicus*, but nearly one-half smaller in general bulk. Length, from front edge of nasals to occipito-interparietal suture (occipital and basioccipital regions lacking), 23; zygomatic breadth, 13.6; width of brain-case, 12; interorbital breadth, 3; length of nasals, 7; incisors to postpalatal notch, 7. The interorbital region has a strongly developed median longitudinal furrow.

Type (and only specimen), No. 14,404, ♀ ad., Liard River, N. W. T., May 17, 1898. Collected by A. J. Stone, for whom the species is named.

This species appears to bear a close resemblance to *M. fontigenus* Bangs, from Lake Edward, Quebec, in its small size, nearly naked tail, and dark coloration, but it appears to be still smaller, with a shorter tail and smaller hind foot, and the under parts are not "olive gray" but clear whitish gray. The skull shows the type of *M. stonei* to be an old adult.

M. stonei seems also to resemble the *Arvicola noveboracensis* of Richardson (Fauna Bor.-Am., I, 1829, p. 126), renamed *Arvicola drummondi* by Audubon and Bachman (Quad. N. Am., III, 1854, p. 166). There are, however, unreconcilable differences in the coloration as given by Richardson, and still greater as redescribed by Audubon and Bachman. Although their figure and description were based on one of the specimens "obtained by Drummond," it is not at all certain that it was the specimen described by Richardson. Mr. Rhoads has attempted (Proc. Acad. Nat. Sci. Phila., 1894, p. 287) to reinstate the *Arvicola drummondi* of Audubon and Bachman (= *A. noveboracensis* Richardson, not of Rafinesque), taking his "topotype" from Lac La Hache, British Columbia, although, as Mr. Rhoads says, the real type of *A. drummondi* must have come from "a locality far north of that from which my [his] specimen came, also a less aquatic environment, and a somewhat different faunal region." In view of the very unsatisfactory and discordant descriptions given, respectively, by Richardson and by Audubon and Bachman, and the absence of any type locality more definite than "on the Rocky Mountains" (Richardson); or "valleys of the Rocky Mountains" (Aud. & Bach.), it seems better to let the name lapse as unidentifiable than to revive it for a form from a very different region, and very probably unlike the form to which the name *A. drummondi* was originally given. In view of this Mr. Rhoads's provisional name *microcephalus* (" *Arvicola (Mynomes) microcephalus*," *l. c.*, p. 286) for the Lac La Hache form may well be recognized for that species, which will stand as *Microtus microcephalus* (Rhoads).

Microtus microcephalus, *M. fontigenus*, and *M. stonei* apparently form a rather closely related group, the two latter being possibly merely subspecies of *M. microcephalus*.

10. *Microtus vellerosus*, sp. nov.

Pelage very soft, long and thick. Above gray, varied over the median area with black-tipped hairs, and with a slight suffusion of pale yellowish brown; sides gray, gradually passing into the color of the back; ventral surface strongly whitish gray; tail bicolor, heavily clothed, dark brown above, grayish white below; feet grayish; ears light brown, nearly naked on both surfaces; no eye-ering, nor any touches of rufous on the cheeks or about the ears or nose.

Length, 173; tail vertebrae, 59; hind foot, 19; ear from crown (in skin), 8.

Skull, total length, 26.5; zygomatic breadth, 15; mastoid breadth, 12; interorbital breadth, 3.5; length of nasals, 8.5. General form of skull much as in *M. pennsylvanicus*, but middle upper molar with only four angles.

Type, 14,403, ♀ ad., Liard River, N. W. T., Nov. 29, 1898. Collected by A. J. Stone.

11. *Microtus cautus*, sp. nov.

Similar to *M. vellerosus* but less pale and not so gray, with more brownish suffusion above, tail more sharply bicolor (clear white below), and size rather less, with well marked cranial differences.

Length, 165; tail, 54; hind foot, 20.5; ear from crown (in skin), 6.

Skull, total length, 25.5; zygomatic breadth, 15; mastoid breadth, 11.7; interorbital breadth, 3.2; length of nasals, 6.7. Skull similar in general form to that of *M. vellerosus*, but brain case flatter and less deep; basioccipital and postpalatal region broader; postpalatal border with a median notch instead of being evenly U-shaped; the front loop or trefoil of the first lower molar is fluted on the antero-inner border so as to form an incipient angle, making six inner angles, instead of five, as in *M. vellerosus*, and in most other forms of the genus. The teeth are also much weaker throughout the dentition.

Type, No 14,405, ♀ ad., Hells Gate, Liard River, N. W. T. Collected by A. J. Stone.

It is impossible to correlate either of the three species of *Microtus* here described with any of the five species recognized by Richardson in the 'Fauna Boreali-Americana,' owing to his wholly insufficient descriptions and the indefiniteness of his localities. Fortunately he ventured to name as new only one of his species, namely, his *Arvicola borealis*, which is certainly not one of these here described. One or more of them may be covered by his "*A. riparius* Ord?," or his "*A. pennsylvanicus* Ord." His *A. noveboracensis* (ex Raf.) is clearly different, though unidentifiable (see above, p. 6).

12. *Peromyscus texanus arcticus* (Mearns).**ARCTIC WHITE-FOOTED MOUSE.**

Hesperomys leucopus arcticus MEARNS, Bull. Am. Mus. Nat. Hist. II, No. 4, 1890, 285.

? *Hesperomys maniculatus* WAGNER, Wieg. Arch. 1845, i, 148 (Labrador).

? *Peromyscus maniculatus* BANGS, Am. Nat. XXXII, July, 1898, 496 (Labrador).

The Arctic White-footed Mouse is represented by 23 specimens, all but three of which are fully adult and remarkably uniform in coloration. They were collected as follows: Hells Gate, Liard River, April 23–May 4, 1897—8 specimens; Fort Liard, May 17—2 specimens; Liard River, June 3—2 specimens; Cheeonnee Mountains, July 31—3 specimens; Telegraph Creek, Aug. 19–25—9 specimens.

The 20 adults measure as follows: Total length, 160 (149–174); tail vertebræ, 73.5 (65–87); hind foot, 20.3 (19–20.5). The prevailing color above is blackish, suffused with pale fulvous, black predominating over the median area, the sides lighter and more distinctly fulvous.

These specimens are somewhat larger and much blacker than the form heretofore referred by me to *arcticus* from Montana, North Dakota, and the Saskatchewan region, which should be separated as a strongly marked form intermediate between true *arcticus* and *nebrascensis*.

13. *Neotoma drummondi* (Richardson). DRUMMOND'S WOOD RAT.—Three specimens, Telegraph Creek, Aug. 20 and 30, 1897.

14. *Mus musculus* Linn. HOUSE MOUSE.—Four specimens from Telegraph Creek show that this ubiquitous exotic has made its way far to the northward in the interior, through man's unintentional assistance. Richardson states that he "saw a dead mouse [of this species] in a storehouse at York Factory filled with packages from England," and adds that the species may have been introduced into all the ports on the shore of Hudson Bay, but that he "had never heard of its being taken in the fur countries at a distance from the sea-coast." During the seventy years that have since elapsed it has certainly become widely dispersed in the interior.

15. *Tamias quadrivittatus borealis* (Allen). NORTHERN CHIPMUNK.—Four specimens, all males, from Telegraph Creek, taken August 10–26, 1897. Measurements: Total length, 194 (184–203); tail vertebræ, 82 (79–86); hind foot, 30.

16. *Sciurus hudsonicus* (Pallas).—Represented by 6 specimens, all males, taken on Liard River, Dec. 5 and 11, 1897. There is no trace of a black lateral line in any of them. The

collector's measurements, from the fresh specimens, are as follows: Total length (from nose to end of the tail vertebræ), 317 (302-329); tail vertebræ, 119 (114-124); hind foot, 47 (45-51).

17. *Sorex sphagnicola* Coues.—A small Shrew collected on Liard River, Nov. 29, 1897, is provisionally referred to this species, with which it very well agrees, except in its very small size. Total length, 90; tail vertebræ, 36.6; hind foot, 12.7. It is, however, adult, but not old.

NOTE ON THE GRAY PHASE OF ***Evotomys gapperi* (Vigors).**
—A single specimen of the gray phase of *Evotomys gapperi* has been received from Red River, Alberta, Canada, taken Oct. 10, 1898. In color it closely resembles specimens of the gray phase of this animal from Trousers Lake, New Brunswick (= *Evotomys fuscodorsalis* Allen). In size, cranial characters, and dentition it is indistinguishable from ordinary *E. gapperi*. As Mr. Bailey reports (Proc. Biol. Soc. Wash., XI, 1897, p. 124) 46 specimens of this species from various localities in Alberta, all representing the red phase, it is of interest to record the gray phase from the same general region, the gray phase having been previously known from only two points—New Brunswick and the north shore of Lake Superior—widely separated from each other and from the present locality. I am indebted to Mr. G. F. Dippie of Toronto for opportunity of examining and recording the present specimen.

Since the above was written, Mr. Vernon Bailey, in reply to my inquiry as to whether other specimens were known to occur than those he had already recorded, kindly replied as follows: "Last winter while working over the old lot of *Microtus* in the U. S. National Museum, I came across a typical '*fuscodorsalis*,' with blackish back and grayish sides, from Fort Churchill, H. B. T. . . . This fills in the gap and seems to indicate that the form runs clear across the northern edge of the range of *gapperi*" (V. Bailey, in letter, Feb. 2, 1899).

