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*** START OF THE PROJECT GUTENBERG EBOOK TWO NEW POCKET GOPHERS FROM
WYOMING AND COLORADO ***

Two New Pocket Gophers from Wyoming and Colorado

BY

E. RAYMOND HALL and H. GORDON MONTAGUE

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Two New Pocket Gophers from Wyoming and Colorado

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E. RAYMOND HALL AND H. GORDON MONTAGUE

In the academic year of 1947-48 Montague studied the geographic variation in *Thomomys talpoides* of Wyoming. His study was based upon materials then in the University of Kansas Museum of Natural History. Publication of the results was purposely delayed until previously reported specimens from certain adjacent areas, especially in Colorado, could be examined. In the autumn of 1950 one of us, Hall, was able to examine the specimens from Colorado; also, the specimens from Wyoming accumulated in the past two seasons of field work in Wyoming were examined by Hall. A result of these studies is the recognition of two heretofore unnamed subspecies of the northern pocket gopher in southeastern Wyoming.

Grateful acknowledgment is made of the opportunity to study the Colorado specimens in the Biological Surveys Collection of the United States National Museum, and of the financial assistance from the Kansas University Endowment Association which permitted the field work in Wyoming.

Descriptions and names for the two new subspecies are given below:

***Thomomys talpoides rostralis* new subspecies**

Type.—Female, adult, skull and skin, no. 17096 Mus. Nat. Hist., Univ. Kansas; from 1 mi. E Laramie, 7164 ft., Albany County, Wyoming; obtained on July 16, 1945, by C. Howard Westman; original no. 320.

Range.—Southern Wyoming and south in the mountains of Colorado to the Arkansas River but not including the Colorado River drainage except in Grand County and part of Routt County.

Diagnosis.—Size medium (see measurements); upper parts ranging from between Cinnamon-Rufous and Hazel (capitalized terms are of Ridgway, Color Standards and Color Nomenclature, Washington, D. C., 1912) in the eastern part of the range to between Argus Brown and Brussels Brown in the western part of the range; sides Cinnamon-Rufous; throat whitish; remainder of under-parts whitish, in many specimens tipped with Ochraceous-Buff; feet and tail whitish; rostrum long; nasals ordinarily truncate posteriorly; temporal ridges nearly parallel; interpterygoid space broadly V-shaped.

Comparisons.—From *Thomomys talpoides clusius* (topotypes), *T. t. rostralis* differs in: Body longer; color more reddish (lighter with less brownish and more ochraceous); rostrum both longer and broader, actually and also in relation to length of the skull; skull broader interorbitally; upper molariform tooth-row longer; tympanic bullae less inflated. For comparison with *T. t. attenuatus* to the east, see the account of that subspecies.

From *Thomomys talpoides macrotis* (topotypes) to the southeast, *T. t. rostralis* differs in: Body shorter; upper parts slightly more ochraceous and less grayish; skull averaging smaller in all measurements except that interorbital region is broader and rostrum and upper molariform tooth-row are longer; nasals truncate versus emarginate, and consistently shorter; basilar length consistently less in specimens of equal age; mastoidal breadth less in 16 of 17 specimens of *rostralis*; temporal ridges parallel instead of divergent posteriorly; exposed parts of upper incisors shorter; tympanic bullae more angular antero-laterally.

From *Thomomys talpoides fossor* (specimens from Rico, Silverton, Hermit and Pagosa Springs, all in Colorado), the subspecies to the southward, *T. t. rostralis* differs in: Longer body; lighter color of upper parts; nasals truncate rather than rounded posteriorly; temporal ridges more nearly parallel (less divergent posteriorly); rostrum longer (averaging longer and broader); skull wider across zygomatic arches in 11 of 12 specimens of

Remarks.—Geographic variation is evident in the material examined. In the initial study, one of us, Montague, separated the material from the Medicine Bow Range in Wyoming as a subspecies different from that at Laramie and the adjoining mountains to the eastward because of the darker color of the western animals and the smaller size of males. Acquisition of more material from still farther west (Sierra Madre) in Wyoming and the examination of material in the United States Biological Surveys Collection from Colorado discloses that there is a cline of increasing intensity of color from the geographic range of *T. t. cheyennensis* at Pine Bluffs, Wyoming, westward to the eastern side of the Sierra Madre at a locality three miles east and five miles north of Savery, Wyoming. A further deterrent to setting apart the animals of the Medicine Bow Mountains as a separate subspecies is the large size of males from the North Platte River Valley southeast of Saratoga. The males from the valley of the North Platte are intermediate in size between those from the Medicine Bow Mountains and those from the Laramie River Valley. Females from the same places are available in longer series and show less variation. If there is a difference in size in the females, those from the mountains are larger than those from lower elevations on either side.

The examination that one of us, Hall, has made of the related materials from Colorado reveals, as we supposed would be the case, that a large area formerly assigned to the geographic range of *Thomomys talpoides fossor* is to be assigned to the geographic range of the newly named *Thomomys talpoides rostralis*. It should be added that, at this writing, the lack of ideally complete material from southwestern Colorado leaves some doubt as to the range of variation properly to be included within the geographic range of *T. t. fossor*. Consequently, study of a larger number of specimens from more localities in Colorado may show that the boundary between the geographic ranges of *T. t. fossor* and *T. t. rostralis* should be shifted from where we have tentatively placed it.

Specimens examined.—Total number, 168. Unless otherwise indicated, those from Colorado are in the United States National Museum, Biological Surveys Collection, and those from Wyoming are in the Museum of Natural History of the University of Kansas.

Colorad. *Routt Co.*: Hahns Peak, 2; Hayden, 1. *Jackson Co.*: Pearle, North Park, 9000 ft., 2; Canadian Creek, North Park, 6; 5 mi. E Canadian Creek, 1; Rabbit Ear Mts., Arapaho Pass, 5. *Larimer Co.*: Elkhorn, 7000 ft., 1; Estes Park, 7. *Grand Co.*: Coulter, 4. *Boulder Co.*: Longs Peak, 3; Gold Hill (the skin only; skull does not belong), 1; 3 mi. S Ward, 9000 ft., 10 (K. U.); 5 mi. W Boulder, 7. *Gilpin Co.*: Blackhawk (U. S. N. M.), 2. *Jefferson Co.*: Golden, 1; Golden foothills, 7300 ft., 1. *Park Co.*: Como, South Park, 9800 ft., 1. *El Paso Co.*: Cascade, 1 (too young for certain sub-specific identification).

Wyoming. *Carbon County*: 13 mi. E and 6 mi. S Saratoga, 8500 ft., 1; 14 mi. E and 6 mi. S Saratoga, 8800 ft., 1; 7 mi. S and 11 mi. E Saratoga, 5; 8 mi. S and 6 mi. E Saratoga, 10; 10 mi. N and 14 mi. E Encampment, 8000 ft., 2; 10 mi. N and 16 mi. E Encampment, 8000 ft., 1; 8 mi. N and 16 mi. E Encampment, 8400 ft., 10. *Albany Co.*: 2 ¼ mi. ESE Browns Peak, 10300 ft., 7; 3 mi. ESE Browns Peak 10000 ft., 5; 2 mi. S Browns Peak, 10600 ft., 7; 3 mi. S Browns Peak, 1; 2 mi. E and ½ mi. S Medicine Bow Peak, 10800 ft., 2; 5 mi. N Laramie, 7200 ft., 1; 1 mi. E Laramie, 7164 ft., 18; Laramie Mts., 10 mi. E Laramie (8500 ft., 2; 9000 ft., 1), 3 (U. S. B. S.); 5 ½ 9; mi. ESE Laramie, 8500 ft., 4; 8 mi. E and 4 mi. S Laramie, 8600 ft., 5; 8 mi. E and 6 mi. S Laramie, 8500 ft., 1; 15 mi. SE Laramie, Pole Mtn., 8200 ft., 3 (U. S. B. S.); 1 mi. SSE Pole Mtn., (8250 ft., 4; 8350 ft., 6), 10; 1 mi. S Pole Mtn., 8350 ft., 2; 2 mi. SW Pole Mtn., 8300 ft., 6; 2 ½ mi. S Pole Mtn., 8340 ft., 1; 3 mi. S Pole Mtn., 1; Woods P. O., 2 (U. S. N. M.); Fort Russell, 1 (U. S. N. M.); Sherman, 2 (U. S. N. M.).

Additional records.—Bailey (N. Amer. Fauna, 39:101, 112, November 15, 1915) has recorded the following specimens, which on geographic grounds, would presumably be referable to *Thomomys talpoides rostralis*. COLORADO: Estes Park (referred by Bailey, p. 101, to *T. t. clusius*), 1; Colorado City, 1; Colorado Springs, 2 ½ mi. N, 6000 ft., 1; Colorado Springs, east of Palmer Park, 1; Montgomery, 3; Nederland, 4; Teller County Divide, 1. These specimens have not been examined by us.

***Thomomys talpoides attenuatus* new subspecies**

Type.—Male, adult, skull and skin, no. 15095 Mus. Nat. Hist., Univ. Kansas; from 3 ½ mi. W Horse Creek Post Office, 7000 ft., Laramie County, Wyoming; obtained on July 16, 1945, by Henry W. Setzer; original no. 629.

Range.—Southeastern Wyoming from Niobrara County south into Weld County, Colorado.

Diagnosis.—Size small; color pale (whitish); skull smooth and, relative to its length, slender; rostrum relatively long; nasals truncate posteriorly; middle parts of zygomatic arches straight; temporal ridges low and more widely separated in middle extent than at anterior or posterior ends; tympanic bullae rounded and moderately inflated; interpterygoid space V-shaped.

Comparisons.—From *Thomomys talpoides bullatus* (topotypes) to the northward, *T. t. attenuatus* differs in smaller size, lighter (less brownish, more whitish) color, smaller and slenderer skull. In detail, some cranial features diagnostic of *attenuatus*, when compared with *bullatus*, are: Anterolateral angle of zygoma less nearly a right angle; temporal ridges bowed outward at middle, instead of straight, and farther apart posteriorly than anteriorly instead of nearly parallel; sides of basioccipital nearly straight instead of concave.

From *Thomomys talpoides cheyennensis* (holotype and Wyoming specimens from: Pine Bluff; 1 mi. W Pine Bluffs, 5000 ft.; 12 mi. N and ½ mi. W Pine Bluffs) to the eastward, *T. t. attenuatus* differs in smaller size throughout and more slender skull. The two subspecies are indistinguishable in color.

From *Thomomys talpoides macrotis* (topotypes) to the southward, *T. t. attenuatus* differs in smaller size, slightly lighter (less brownish and more whitish) color, smaller and slenderer skull.

From *Thomomys talpoides rostralis* (specimens from the type locality) to the westward, *T. t. attenuatus* differs in smaller size; lighter (gray, less brownish) color, smaller and less angular skull.

From *Thomomys talpoides clusius* (topotypes) to the northwestward, *T. t. attenuatus* differs in shorter body, slightly grayer color, less width across mastoid region of skull, smaller tympanic bullae, and more obtuse anterolateral angle on zygoma.

Remarks.—This subspecies is of smaller size than any of the geographically adjoining subspecies. Intergradation with *T. t. cheyennensis* is shown by specimens from two miles south and nine and one-half miles east of Cheyenne, Wyoming. Intergradation with *T. t. bullatus* or *T. t. clusius* or both is suggested by the larger size of the specimen from five miles southwest of Wheatland, Wyoming. Although large, this skull has the slender proportions of *attenuatus* to which the specimen is tentatively referred. Although the specimens from Avalo, Colorado, are typical *attenuatus*, the specimen from Pawnee Buttes, Colorado, is somewhat larger than typical *attenuatus* and suggests intergradation with the subspecies to the southward, for example, at Flagler, Colorado.

Specimens examined.—Total number, 44, and unless otherwise indicated in the Museum of Natural History of the University of Kansas.

Wyoming. *Niobrara County:* 10 mi. N Hatcreek Post Office, 5300 ft., 1. *Platte Co.:* 5 mi. SW Wheatland, 1 (U. S. B. S.). *Goshen Co.:* Little Bear Creek, 20 mi. SE Chugwater, 1 (U. S. B. S.). *Laramie Co.:* 5 mi. W and 1 mi. N Horse Creek P. O., 7200 ft., 1; 3 ½ mi. W Horse Creek P. O., 7000 ft., 6; 2 1/5 mi. W Horse Creek P. O., 6600 ft., 1; 2 mi. W Horse Creek P. O., 6600 ft., 2; Horse Creek 6500 ft., 1; 3 mi. E Horse Creek P. O., 6400 ft., 5; 6 mi. W Islay, 2 (U. S. B. S.); 2 mi. S and ½ mi. E Pine Bluffs, 5200 ft., 1; 7 mi. W Cheyenne, 6500 ft., 1; Cheyenne, 7 (U. S. N. M.); 1 mi. S and 4 ½ mi. E Cheyenne, 5200 ft., 1; 2 mi. S and 9 ½ mi. E Cheyenne, 5200 ft., 3; Arcola, 5200 ft., 4.

Colorado. *Weld Co.:* Pawnee Buttes, 5300 ft., 1 (U. S. B. S.). *Logan Co.:* Chimney Canyon, 10 mi. NE Avalo, 5100 ft., 5 (U. S. B. S.).

Museum of Natural History, University of Kansas, Lawrence. Transmitted January 15, 1951.

Table 1. MEASUREMENTS, IN MILLIMETERS, OF TWO SUBSPECIES OF THOMOMYS TALPOIDES.

| Catalogue number or number of individuals averaged | Sex | Total length | Length of tail | Basilar length | Length of hind foot | Zygomatic breadth | Least interorbital constriction | Mastoidal breadth | Length of nasals | Breadth of rostrum | Length of rostrum | Alveolar length of maxillary tooth-row |
|--|-----|--------------|----------------|----------------|---------------------|-------------------|---------------------------------|-------------------|------------------|--------------------|-------------------|--|
| <i>T. t. rostralis</i> , from type locality | | | | | | | | | | | | |
| 17092 | ♂ | 220 | 56 | 28 | 33.2 | 23.7 | 6.4 | 19.5 | 15.5 | 8.1 | 17.5 | 8.2 |
| 17095 | ♂ | 228 | 68 | 30 | 33.3 | | 6.5 | 18.8 | 15.0 | 7.4 | 17.3 | 7.3 |
| 17091 | ♂ | 212 | 56 | 27 | 33.0 | 22.8 | 6.5 | 18.7 | 14.2 | 8.5 | 16.2 | 7.6 |
| Average | ♂ | 220 | 60 | 28.3 | 33.2 | 23.2 | 6.5 | 19.0 | 14.9 | 8.0 | 17.0 | 7.7 |
| 9 av. | ♀ | 214 | 56 | 27.1 | 31.6 | 22.4 | 6.5 | 18.5 | 14.4 | 7.8 | 16.8 | 7.9 |
| min. | ♀ | 198 | 45 | 25 | 30.0 | 20.7 | 6.2 | 17.7 | 13.2 | 7.4 | 15.4 | 7.1 |
| max. | ♀ | 230 | 72 | 28.5 | 33.5 | 23.3 | 7.0 | 19.8 | 14.9 | 8.1 | 17.7 | 8.4 |
| <i>T. t. attenuatus</i> , from type locality | | | | | | | | | | | | |
| 15095 | ♂ | 202 | 61 | 26 | 30.1 | 21.2 | 6.6 | 18.2 | 13.6 | 7.3 | 16.0 | 7.0 |
| 15094 | ♂ | 189 | 56 | 24 | 29.7 | 20.1 | 5.7 | 17.2 | 12.4 | 7.2 | 14.8 | 6.9 |
| from 2 ½ mi. W Horse Creek P. O., 6600 ft. | | | | | | | | | | | | |
| 15100 | ♂ | 196 | 58 | 27 | 30.2 | 21.7 | 6.1 | 18.4 | 14.5 | 7.5 | 16.3 | 7.0 |
| 3 av. | ♂ | 196 | 58 | 25.7 | 30.0 | 21.0 | 6.1 | 17.9 | 13.5 | 7.3 | 15.7 | 7.0 |
| from type locality | | | | | | | | | | | | |
| 15096 | ♀ | 203 | 59 | 26 | 30.0 | | 6.1 | 18.0 | 14.1 | 7.3 | 16.3 | 6.8 |
| 15098 | ♀ | 192 | 69 | 26 | 28.8 | 19.8 | 5.5 | 17.2 | 12.0 | 6.7 | 14.7 | 7.3 |
| Horse Creek, 6500 ft. | | | | | | | | | | | | |
| 15103 | ♀ | 181 | 58 | 25 | 29.6 | 19.5 | 5.9 | 16.3 | 13.0 | 6.9 | 15.2 | 7.0 |
| 3 mi. E Horse Creek P. O., 6400 ft. | | | | | | | | | | | | |
| 15107 | ♀ | 190 | 54 | 27 | 30.5 | 20.5 | 6.0 | 17.9 | 13.5 | 7.3 | 16.4 | 6.8 |
| 15106 | ♀ | 192 | 55 | 26 | 30.8 | 21.05 | 6.5 | 18.2 | 12.7 | 7.6 | 15.5 | 7.0 |
| 5 av. | ♀ | 192 | 59 | 26 | 29.9 | 20.3 | 6.0 | 17.5 | 13.1 | 7.2 | 15.6 | 7.0 |

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