

PROCEEDINGS
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SIX NEW GROUND SQUIRRELS OF THE *CITELLUS*
MOLLIS GROUP FROM IDAHO, OREGON,
AND NEVADA.

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An examination of the large series of Ground Squirrels of the *mollis* group in the collection of the U. S. Biological Survey indicates the existence of half a dozen apparently well marked forms which hitherto have escaped recognition. Unfortunately, most of the specimens were collected in late spring or early summer, so that the seasonal pelages can not be determined with certainty. In all the forms, however, there appear to be two color phases—gray, and buffy or buffy fulvous. The gray is commonest in adults, especially in early spring; the buffy in the young when first attaining the pelage of the adult, and in adults in early summer. Specimens in winter pelage, collected just before the animals den up in fall, and when they first come out in spring, are badly needed.

The new forms may be known from the following descriptions:

***Citellus idahoensis* sp. nov.**

Type from Payette, at junction of Payette and Snake River, Idaho. No. 168,290 ♀ ad., U. S. Nat. Museum, Biol. Survey Coll. Collected April 23, 1910, by S. G. Jewett. Original No. 17.

Characters.—Largest of the *mollis* group. Similar in general to *mollis* but larger, with much stronger tendency to dappling, especially in young; tail longer, broader, and darker; eyelids white; anterior rim of ear usually white. Skull large and massive, with outstanding and outbowed zygomatica.

Color.—*Gray pelage*: pale hoary grayish, faintly suffused with pale buffy and more or less dappled on back and rump; end of nose dull fulvous, contrasting strongly with grizzled gray of top of head; feet soiled whitish. *Buffy pelage*: very much darker throughout and strongly suf-

fused with pale buffy fulvous; dappling of back very distinct, in some cases amounting almost to spotting; dull fulvous of nose showing less contrast with top of head (which in this pelage is redder); tail much darker fulvous, almost ferruginous, with subapical black band broad and distinct; feet washed with buffy.

Young.—The young, when first assuming the adult pelage, are strongly dappled from behind the shoulders to base of tail. The pelages of the young may be known as *first* and *second*.

First coat.—Pelage long, silky, rather sparse, buffy-yellowish in color, soon (before the hairs of the second coat appear) becoming indistinctly dappled on the back.

Second coat.—The new coat comes in first on the head, a little later on hinder part of back (from middle of back to base of tail) leaving the neck and shoulders covered with the long silky hairs of the first pelage. This area (anterior half of back) is gradually covered by the second coat, mainly by the forward-creeping of the line of new hairs from the middle part of the back. The dappling is always pronounced and is strongest on the hinder part of the back, very rarely reaching so far forward as the shoulders.

The second pelage, which is attained when the animal is little more than half grown, resembles that of the adult. Its general tone may be either gray or buffy-fulvous, usually the latter. Of two young collected by Jewett at Mountain Home, Idaho, on the same day, May 25, 1911, one (No. 171,329) is gray; the other (No. 171,327) buffy-fulvous. But in our large series of young from several localities the gray pelage is rare.

Cranial characters.—Skull large, broad and massive, with prominent zygomata, large bullae, and heavy teeth. Compared with *mollis* (from type locality, Fairfield, Utah): Skull larger and more massive; rostrum and nasals longer; zygomata more spreading throughout; jugal much broader and more massive; maxillary roots of zygomata (viewed from in front) larger, broader, and more massive; anterior frontal region including orbital shelf of frontal, more elevated; upper (superior) face of premaxillary larger and usually reaching farther posteriorly; bullae larger; teeth heavier, the toothrow longer (8.5 mm.). Skulls of adults vary in the degree of bowing of the zygomata. The shorter skulls have the arches strongly outbowed; the longer ones have them much less prominent.

Measurements.—Average of 8 from type locality: Total length, 256; tail vertebrae, 62.5; hind foot, 35.5.

Remarks.—*Citellus idahoensis* inhabits the sagebrush plains of west-central Idaho north of Snake River. The Biological Survey has large series of specimens, collected mainly by S. G. Jewett, from Payette, Nampa, Kuna, Orchard, and Mountain Home.

***Citellus leurodon* sp. nov.**

Type from Murphy, in hills of southwestern Idaho west of Snake River. No. 169,031 male young-adult, U. S. Nat. Museum, Biol. Survey Collection. Collected May 30, 1910, by S. G. Jewett. Original No. 112.

Characters.—Size rather large, about equaling *idahoensis* from the

opposite side of Snake River, but with shorter tail. Color gray, not dappled except in the young. Teeth very large, equaling maximum of *idahoensis* (upper molariform series 8.5 mm.).

Cranial characters.—Skull of medium size (larger than *mollis* and *canus*; slightly smaller than *idahoensis*), strongly built but slightly less massive than *idahoensis*; zygomata not spreading and not bowed outward; teeth large, broad and rounded—the toothrow equaling the largest *idahoensis* (longer than *mollis* and therefore much longer than *canus*).

The skull and teeth agree most closely with *idahoensis* from Payette, Idaho, but the skull is smaller and the zygomata are less spreading.

Measurements.—Type specimen (not fully adult): Total length, 233; tail, 47; hind foot, 33.

***Citellus canus vigilis* subsp. nov.**

Type from Vale, eastern Oregon. No. 168,361, female adult, U. S. Nat. Museum, Biol. Survey Coll. Collected April 29, 1910, by S. G. Jewett. Original No. 30.

Characters.—Similar in general to *canus*; color iron-gray, finely lined, much as in *canus*, but more hoary-whitish. Skull large and massive, much larger and heavier than *canus*—in fact decidedly larger than *mollis* and not materially smaller than *idahoensis*; zygomata broad and outbowed, much as in *idahoensis*; bullae large, as in *mollis*—decidedly larger than in *canus*; rostrum and nasals longer than in *canus*; toothrow (7.25–7.75) decidedly longer than in *canus* but shorter than in *mollis* and *idahoensis*.

Compared with *idahoensis* from the opposite (eastern) side of Snake River, *vigilis* is easily distinguished externally by the absence of dappling on the back and by shorter and paler tail; and cranially, by smaller bullae and shorter toothrow.

Measurements.—Average of 8 adults from type locality (Vale, Oregon): Total length, 207; tail vertebrae, 36; hind foot, 30.5. (Type specimen: 208, 33, 32.)

Remarks.—Specimens from Paradise Valley, northeastern Nevada, appear to be the same as those from Vale and Huntington, Oregon.

***Citellus mollis artemesiae* subsp. nov.**

Type from Birch Creek, Idaho. No. $\frac{23182}{30367}$, male adult, U. S. Nat. Museum, Biol. Survey Coll. Collected August 9, 1890, by Vernon Bailey. Original No. 1573.

Range.—Sagebrush plains of southeastern Idaho (north of the range of *mollis*; east of the range of *idahoensis*).

Characters.—Smallest of the known forms of the *mollis* group. Similar in general to *mollis*, but tail grayer, with less buffy fulvous; bullae and teeth much smaller.

Cranial characters.—Skull small, smaller and shorter than in *mollis*; rostrum rather short and slender; zygomata moderately bowed; bullae small—as small as in *canus*; molariform teeth decidedly smaller than in *mollis* (slightly larger than in *canus*). Compared with typical *mollis*, the rostrum is shorter, the zygomata more bowed, the bullae much

smaller. Skull very like that of *canus* but zygomata less outstanding anteriorly, braincase slightly less broad posteriorly, and toothrow a little longer; bullae of same size.

Measurements.—Average of 6 specimens from type locality (Birch Creek, Idaho): Total length, 182; tail, 37; hind foot, 29.5. Average of 5 from Blackfoot: 201, 43.5, 32.

***Citellus mollis pessimus* subsp. nov.**

Type from lower part of Big Lost River, east central Idaho. No. $\frac{2322}{1335}$ male adult, U. S. Nat. Museum, Biol. Survey Coll. Collected July 23, 1890, by C. P. Streater. Original No. 53.

Characters.—Similar to *artemesiac* (from Birch Creek) but somewhat larger and darker; tail longer, larger, and darker; rostrum larger.

Cranial characters.—Skull small like that of *artemesiac* but longer; rostrum and nasals longer and broader; toothrow longer. Compared with *mollis*, skull smaller; bullae and teeth decidedly smaller.

Measurements.—Average of 8 from type locality: Total length, 205; tail vertebrae, 46; hind foot, 33.

***Citellus mollis washoensis* subsp. nov.**

Type from Carson Valley, western Nevada. Type No. $\frac{16246}{3331}$, adult, U. S. Nat. Museum, Biol. Survey Coll. Collected May 23, 1889, by Charles A. Keeler. Original No. 31.

Characters.—Size large; coloration grizzled gray throughout, resembling *canus*. Skull large, long, and massive—nearly as large as that of *idahoensis* from Payette, Idaho, but narrower, with more slender rostrum, much more slender premaxillae, and shorter toothrow. Similar to *mollis*, but more massive; rostrum and palate longer. Compared with largest skulls of *canus*, the rostrum is much longer and more slender; superior surface of premaxillae much slenderer; palate much longer; bullae somewhat larger; toothrow decidedly longer.

Measurements of type specimen: Total length, 258; tail vertebrae, 50; hind foot, 35.