

A NEW RACE OF THE POCKET GOPHER
Geomys bursarius FROM MISSOURI

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During the preparation of a study of the taxonomy and zoogeography of *Geomys* of the central United States, it has become increasingly evident that the pocket gophers found in that part of eastern Missouri lying south of the Missouri River do not fit into our current knowledge of the races. Particular interest in this problem was kindled when specimens listed by C. H. Merriam (North Amer. Fauna, No. 8, 1895) from this area were examined and found to differ from the known races of *Geomys bursarius*. Additional specimens were collected from the state of Missouri south of the Missouri River. Critical examination of these new specimens, plus those already available, indicates that this area apparently supports a population of pocket gophers distinct from any described race. For this new race the following name is proposed:

Geomys bursarius missouriensis new subspecies

Type.—Female, adult, skin with skeleton, no. 9736, Museum of Natural History, University of Illinois; from 2 mi. north of Manchester, St. Louis County, Missouri, obtained April 10, 1955, by Charles A. McLaughlin, orig. no. 675. Measurements of type: total length, 235 mm.; tail length, 61 mm.; hind foot length, 29 mm.; basilar length of skull, 38.1 mm.; mastoidal breadth of skull, 23.2 mm.; zygomatic breadth, 26.0 mm.; fronto-palatal depth of skull, 15.7 mm.

Range.—Eastern Missouri south of the Missouri River and north of the Meramek River above the flood level in the river bottoms in St. Louis County. Formerly south into the Ozark Mountains in the vicinity of Hunter, Carter County, and Williamsville, Wayne County.

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Diagnosis.—Size medium; color of upper parts Cinnamon-Brown² to Russet, darkening in mid-dorsal region to give the appearance of a dark dorsal stripe; space between extensions of premaxillaries posterior to nasals, narrow.

Description.—Color. Dorsal region between Cinnamon-Brown and Russet, darkening in mid-dorsal region to between Bone Brown and Clove Brown, admixed with darker hairs, giving the appearance of a dark dorsal stripe as found in *Geomys bursarius dutcheri*, this stripe absent or very faint in some individuals. Some individuals tending toward melanism. Sides lightening to Tawny, continuing in most specimens onto and across the ventral surface, in some lighter, to a buffy white. Fore and hind feet white. Distal $\frac{1}{2}$ to $\frac{2}{3}$ of tail white. One specimen out of 29 examined from St. Louis area melanistic, dorsal region being considerably darker than Mummy Brown, approaching black, with Cinnamon-Brown extending onto belly, and only distal $\frac{1}{3}$ of tail white.

Size medium. Average of 4 adult males and 20 adult females, respectively: total length, 278.8 mm. and 244.4 mm.; tail length, 80.8 mm. and 71.7 mm.; hind foot, 32 mm. and 29.8 mm.

Skull. Females: nasal bones somewhat constricted in the middle to give them a slight, but conspicuous, hourglass shape; sagittal crest absent; palatine canals open ventrally for their entire length, appearing as continuous grooves; occiput nearly vertical when skull laid on its dorsal surface; posterior extensions of premaxillaries with convex medial borders, frequently touching each other at midline behind nasals. Males similar to females but more robust and with low sagittal crests developing with age. Size medium. Average measurements of 5 adult males and 17 adult females (or fewer as indicated in parentheses), respectively: basilar length, 46.98 mm. (4) and 38.55 mm. (14); mastoidal breadth, 28.28 mm. and 24.57 mm. (16); fronto-palatal depth, 18.74 mm. and 16.35 mm.; zygomatic breadth, 32.55 mm. (4) and 26.64 mm.; nasal length, 20.54 mm., and 16.02 mm. (14).

Comparisons.—From *Geomys bursarius majusculus*, *G. bursarius missouriensis* differs as follows: size smaller, total length averaging 279 mm. for males and 245 mm. for females rather than 287 mm. and 259 mm. as in *G. b. majusculus* from Douglas County, Kansas; dorsal coloration darker; nasals with constriction in the center rather than with straight or evenly curving sides; medial borders of premaxillaries

² All capitalized names for colors are those found in R. Ridgway's Color Standards and Nomenclature, Washington, D. C., 1912.

posterior to the nasals convex, frequently touching or considerably constricting the intervening space.

From *Geomys bursarius illinoensis*, *G. b. missouriensis* differs as follows: size smaller (*G. b. illinoensis* similar in size to *G. b. majusculus*); coloration brown rather than dark gray or black; palatine canals open rather than partially closed over ventrally; inner margins of posterior extensions of premaxillaries convex rather than straight sided.

From *Geomys bursarius dutcheri*, *G. b. missouriensis* differs as follows: size larger, total length averaging as above as compared with 235 mm. and 213 mm. for *G. b. dutcheri*; dorsal exposure of jugal greater rather than less than breadth of rostrum ventral to openings of infraorbital foramina; sides of zygomatic arches diverging anteriorly rather than being roughly parallel; color more reddish and less yellowish.

Remarks.—The pocket gophers in Missouri represent a zoogeographical enigma. Although large expanses of that state have soil texture and vegetation which seem well suited for habitation by pocket gophers, records have been very rare. The Ozark region, with some of the most unlikely terrain in the state, has in the past supported a sizeable population of these animals. C. H. Merriam (North Amer. Fauna, No. 8, 1895, p. 123) reported 12 specimens taken from near Hunter and Williamsville, Missouri. These specimens were collected by Mr. Dutcher of the U. S. Biological Survey in 1894 and were accompanied by excellent field notes.

Dutcher was explicit in that he found all the animals “. . . within 50 yards of the tracks” of the Frisco Railroad which ran between Hunter and Williamsville, but three separate attempts by the author to locate pocket gophers in the precise area described proved fruitless. In the middle 1930's these tracks were removed and all that remains is a dirt rut road running along the old right-of-way. The author traveled this road through much of its distance without discovering the slightest indication of pocket gophers. Local farmers, owning or working farms along the right-of-way and in the adjoining river bottoms, were questioned and none was found who even knew of the animals. If any part of the original population remains it is quite well hidden.

Various other localities throughout southeastern Missouri, where pocket gophers were supposed to have occurred, were examined by Dutcher, Preble and A. H. Howell of the U. S. Biological Survey, all without success. The author personally traveled through many areas which seemed excellent for supporting gophers in Franklin, Jefferson,

St. Genevieve, Perry, Cape Girardeau and Washington counties without sighting the slightest evidence of these rodents. A check of Lincoln, Montgomery, St. Charles and Warren counties, north of the Missouri River proved unsuccessful. The only pocket gophers noted were in St. Louis County above the flood plains of the Missouri and Meramek rivers. Here they are quite common in the rolling meadows of the western and southern suburbs of St. Louis.

The population of *G. b. missouriensis* is separated geographically from other populations of *G. bursarius* by a wide hiatus on the north, west and south. Only on the east does it approach the radically different *Geomys bursarius illinoensis*, which occupies the opposite bank of the Mississippi River in Madison and St. Clair counties, Illinois. The Mississippi River is an absolute barrier to the distribution of pocket gophers at this point, so there is no area of intergradation between neighboring races.

Specimens examined.—41 specimens, all from Missouri: *St. Louis County*: vicinity of St. Louis, 29 (22, Univ. Illinois; 4, U. S. Nat. Mus.; 1, Univ. Missouri). *Wayne County*: Williamsville, 8 (U. S. Nat. Mus.). *Carter County*: Hunter, 4 (U. S. Nat. Mus.).