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Sorex merriami in Nebraska

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ABSTRACT — We report the capture of a second specimen of Merriam's shrew from the northwestern comer of Nebraska from dry grassland of sage and rabbitbrush. The first specimen, captured in 1965, is a more eastern record in what today is Sandhills prairie.

Key words: *Sorex merriami*, Merriam's shrew, Nebraska

Merriam's shrew (*Sorex merriami*) is rare in Nebraska. It is a member of the Great Basin faunal element (Armstrong et al. 1986) and is found in drier habitats than most other *Sorex* (Armstrong and Jones 1971). Stands of sagebrush (*Artemisia*) in eastern Washington, California, Colorado, Montana, Utah, and Wyoming have produced the greatest number of specimens (Brown 1967,MacCracken et al. 1985). Merriam's shrews have been trapped in runways of the sagebrush vole, *Lemmiscus curtatus*, and may be associated with that species.

The first specimen of Merriam's shrew from Nebraska was found three miles south of Rushville in Sheridan County in 1965 (McDaniel 1967). This record extended the known range 100 miles east of records in eastern Wyoming. Curiously, this specimen was taken at the lower end of a wet meadow along Rush Creek together with three masked shrews (*S. cinereus*). Although sagebrush was listed by McDaniel as being in a drier site next to the capture site, we retrapped both wet and dry sites at Rush Creek in June 1989 and were struck by how it resembled the Sandhills prairie. Fringed sage (*Artemisia frigida*) occurred on the hilltop east of the wet meadow, but the hill is dominated by grama (*Bouteloua*) and buffalo grass (*Buchloe dactyloides*) with patches of sand between the plants. Although Rush Creek had no running water in it, there were pools of water with cattails. We captured masked shrews as well as jumping mice (*Zapus hudsonius*) and meadow voles (*Microtus pennsylvanicus*) in the wet meadow. The dry hillside nearby yielded thirteen-lined ground squirrels (*Spermophilus tridecemlineatus*), deer mice (*Peromyscus maniculatus*), western harvest mice (*Reithrodontomys megalotis*), and prairie voles (*Microtus ochrogaster*), but no Merriam's shrews.

We captured a second specimen of Merriam's shrew in June 1989 in a pitfall trap with a drift fence 16 miles N and 8 miles W of Harrison in Sioux County. The site is about a half mile east of the Wyoming border on land belonging to the Schnurr Ranch. The microhabitat is more typical of that described for Merriam's shrew in

that it was a dry site dominated by sage and rabbitbrush (*Chrysothammus*). The specific trap station was on a tongue of land between two converging arroyos. One arroyo drained a ponderosa pine (*Pinus ponderosa*) ridge to the west and the other drained a sage grassland to the northwest. The slope leading to the pine ridge was covered with sagebrush. Plants nearby were big sage (*Artemisia tridentata*), fringed sage, rabbitbrush (*Chrysothammus* sp.), skunkbrush (*Rhus aromatica*), snakeweed (*Gutierrizia sarothrae*), needle-and-thread grass (*Stipa comata*), western wheat-grass (*Agropyron smithii*), and buffalo grass. Other plants in the area included sedges (*Carex* sp.), silver sage (*Artemisia ludoviciana*), saltgrass (*Distichlis spicata*), and blue grama grass (*Boutelona gracilis*). In general, the area was the eastern edge of a community dominated by sage. At trapping stations east of this site, grasses were more dominant and more typical of short-grass prairie.

Features that distinguish Merriam's shrew from the similarly-sized masked shrew are not subtle (Junge and Hoffman 1981). The venter, feet, and ventral surface of the tail are buffy white; and the dorsum is a light grey brown. Males have well-developed glands on their flanks that are quite obvious on our specimen. This is the first male taken in the state. The skull is broad compared to that of masked shrews, both across the rostrum and across the braincase (Fig. A, B). The first upper incisor lacks the medial tine, and the condylobasal length is 15.9 mm. In addition, the third upper unicuspid is greater than the fourth upper unicuspid (Fig. 1C). Like other members of the subgenus *Sorex*, our specimen has a well-developed post-mandibular foramen and no pigmented ridges on the lingual face of the unicuspids (Junge and Hoffman 1981). External measurements were: headand body 86.0mm, tail 35.0 mm, hindfoot 11.0 mm, ear 7.0 mm, and weight 3.6 g. Our specimen compared well in cranial and dental features and in measurements of the body with the specimen of Merriam's shrew from Rushville that is housed at the University of Kansas. A second specimen of Merriam's shrew further substantiates that the eastern edge of the species occurs in Nebraska. Perhaps future work will document the presence of sagebrush voles, a species not yet recorded from the state.

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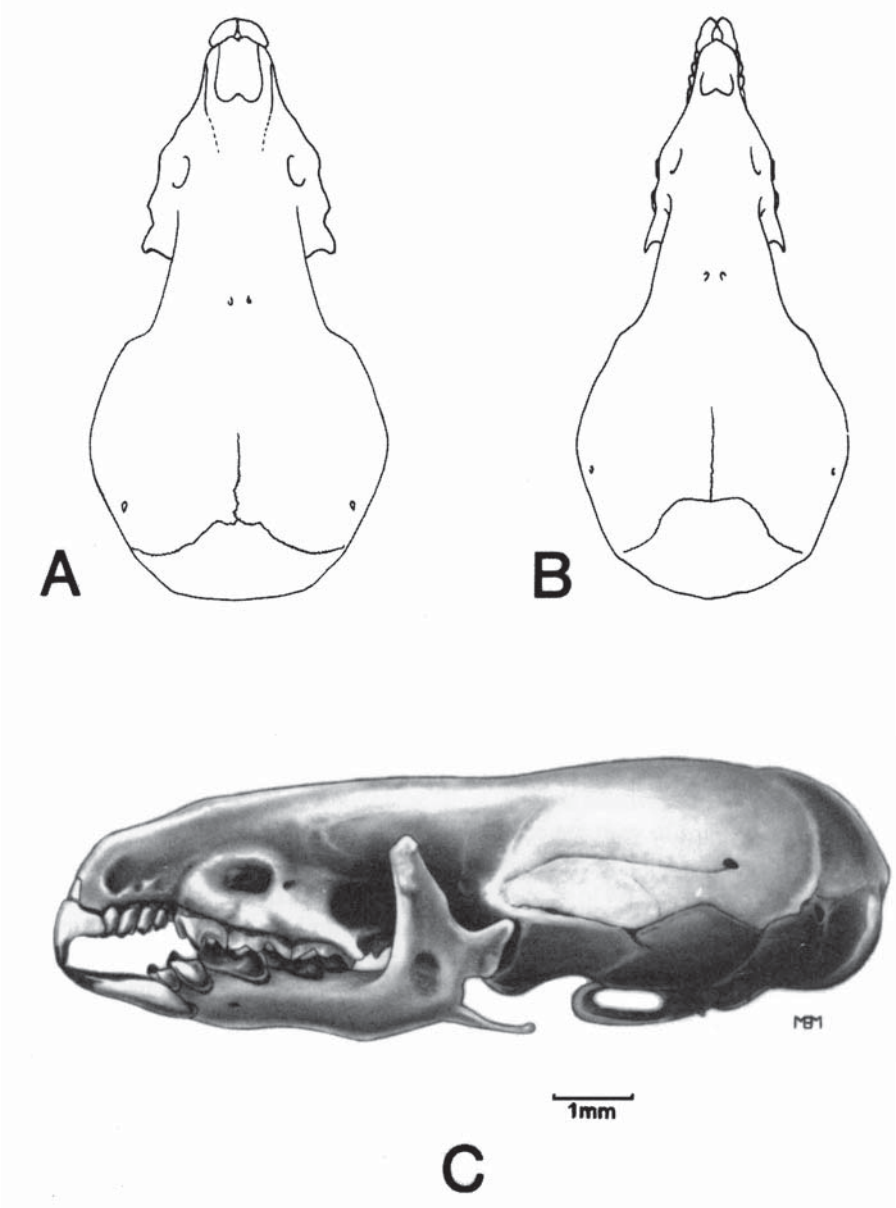

Figure 1. Cranial outlines of the new specimen of *Sorex merriami* from Sioux County, Nebraska (A; UNSM 17036 male) and *Sorex cinereus* (B; UNSM 17035 male). The unicuspid teeth of the new specimen of *S. merriami* can be seen in the lateral view, part C.

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