
MAMMALS

FIRST RECORD OF PREBLE'S SHREW IN PRAIRIE CANADA

Ray G. Poulin¹, D. Tim Schowalter²

¹Royal Saskatchewan Museum, Regina, SK; E-mail: <RPoulin@cyr.gov.sk.ca>

²Box 202, Delia, AB, T0J 0W0

As a group, shrews are widespread and abundant in Saskatchewan, but their secretive nature, small size, and the difficulty in catching individuals and distinguishing species has left the distribution of Saskatchewan's shrew species poorly documented. In the summer of 2008, the Royal Saskatchewan Museum initiated a study to use the contents of owl pellets to document the distribution of small mammal species across southern Saskatchewan. Through this project, the identity and location of tens of thousands of small mammals have been documented. From one of the very first pellet samples collected, we found the remains of a Preble's shrew (*Sorex preblei*). This is the first record of this species from the Canadian Prairie provinces. The specimen has been added to the collections of the Royal Saskatchewan Museum (RSM #20300).

The appearance of a Preble's shrew is very typical of a *Sorex* species; it tends to have grayish pelage on the back and silvery pelage on the undersides.¹ It has a long pointed snout and small eyes. Although size is difficult to use as a diagnostic feature, Preble's shrew is a very small species, even for a shrew. Ranges of measurements include: 77–95 mm (total length), 28–38 mm (tail), and a mass of 2.1–4.1 g. As a comparison,

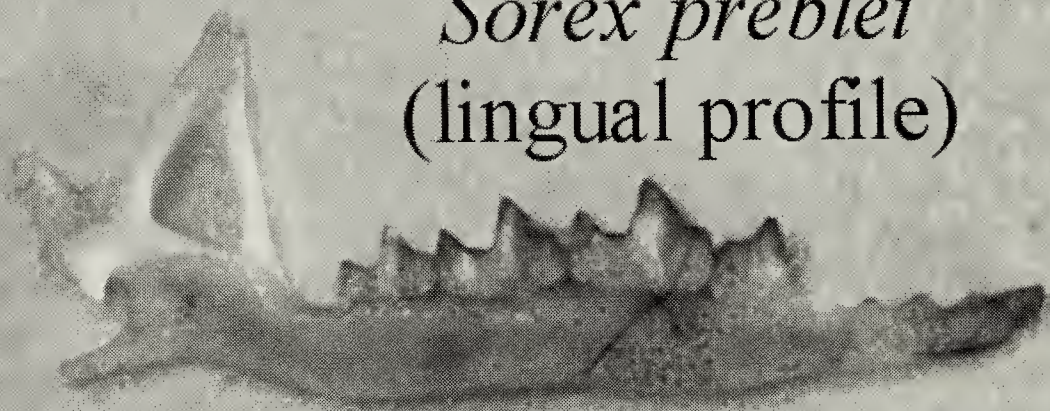
the cinereus shrew (also known as the common shrew, *S. cinereus*) has measures of: 83–100 mm (total length), 29–41 mm (tail), and a mass of 2.5–6 g.

As with most species of shrews, the best way to identify a Preble's shrew is through careful cranial measurements. Carraway (1995) published a detailed account of the measurements necessary to distinguish shrews by their mandibles.² Based on more obvious characteristics, the mandibles we discovered could have only been from Preble's shrew or a prairie shrew (*S. haydeni*). According to Carraway (1995), compared to the mandibles of a prairie shrew, the mandibles of a Preble's shrew have a shorter height of the coronoid process (<3.2 mm) and shorter distance between teeth c1 and m3 (<4.1 mm).² In the specimen we found, the coronoid process measured 2.7 mm and the length of c1 to m3 was 3.3 mm (Fig. 1; see also inside back cover, bottom). To further our confidence in our diagnosis of a Preble's shrew, we sent photographs of the mandibles to Dr. Carraway at Oregon State University. Dr. Carraway's conclusion was that the specimen is from a Preble's shrew "based on the angle of the i1, straight anterior edge of the coronoid process, and the depth of dentary beneath m1 (about the same as height of the m1)".

Sorex haydeni



Sorex preblei
(lingual profile)



Sorex preblei
(labial profile)



Figure 1. Comparison of a mandible from a typical *Sorex haydeni* (top) to the *S. preblei* mandibles described in this paper (centre and bottom).

We cannot determine in which microhabitat the shrew was living when it was captured or the time of year that it was captured. The great horned owl pellets that contained the mandibles were collected from a small farm building on the Val Marie PFRA pasture on 25 April 2008, about 16 km northwest of the town of Val Marie, SK. The site had obviously been used as an owl roost for quite some time, as there were many dozens of pellets scattered throughout the area. From the pellets collected at that site on that day (and we did not collect all of them), we recorded 423 individual small mammals (mostly mice, shrews, and voles). The home range of great horned owls on short-grass prairie can approach 1000 ha or more.³ The habitat within 2 km of the owl roost included a treed farm yard, native grass pasture (dominated by *Stipa comata*, *Bouteloua gracilis*, and *Agropyron smithii*), irrigated hay fields (dominated by alfalfa), steep coulee slopes (dominated by *Juniperus horizontalis*, *Chrysothamnus nauseosus*, and *Artemisia fridiga*), a reservoir, the Frenchman River, and dense stands of shrubs along the riparian areas of the river.

Although this is the first record of this species from the prairie provinces, the find is not completely unexpected. A specimen was captured in the Frenchman River Valley in Montana, 82 km south of the collection location of our specimen (and 25 km south of the Saskatchewan–Montana border). It is also possible, if not probable, that Preble's shrews are found in other parts of southern Saskatchewan, but they have yet to be discovered. There is a record of a Preble's shrew captured only 13 km south of the Saskatchewan–Montana border, south of the town of Minton, SK. As with so many of our less charismatic species in Saskatchewan, there is much work to be done on even the most basic understanding of their natural history.

1. Cornely JE, Carraway LN, Verts BJ (1992) *Sorex preblei*. *Mammalian Species* 416:1-3.

2. Carraway LN (1995) A key to recent Soricidae of the western United States and Canada based primarily on dentaries. *Occasional Papers of the Natural History Museum, University of Kansas* 175:1-49.

3. Frank RA, Lutz RS (2001) Great horned owl (*Bubo virginianus*) productivity and home range characteristics in a shortgrass prairie. In: Duncan JR, Johnson DH, Nicholls TH (eds) *Biology and Conservation of Owls of the Northern Hemisphere*, 2nd International Symposium, p 185-189.



CALL FOR SUBMISSIONS:

Nature is replete with strange and wondrous plants and critters. We'd love to see YOUR photos and hear your stories. Please submit any potential photos, articles, notes, letters, photo notes, or any interesting observations to the editors at <kjoss@sasktel.net>.