

Notes

First Records of the Tundra Shrew (*Sorex tundrensis*) in British Columbia

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Five Tundra Shrews (*Sorex tundrensis*) were collected near Haines Road in northwestern British Columbia. These are the first records of the Tundra Shrew outside the boundaries of the Beringian Refugium, and they extend the range of this shrew about 500 km south of its known limits.

Key Words: Tundra Shrew, *Sorex tundrensis*; new records, British Columbia, Beringian Refugium.

The Arctic Shrew (*Sorex arcticus*)¹ and the Tundra Shrew (*Sorex tundrensis*)¹ are boreal and tundra forms of the *Sorex arcticus* group described by Jackson (1928). The two taxa are allopatric in distribution (Figure 1). The Arctic Shrew inhabits the southern Yukon, southwestern Northwest Territories, central and eastern Canada, and north central United States. The Tundra Shrew is restricted to Alaska, northern Yukon, and Northwest Territories. As there are few records from the Yukon and Northwest Territories, the limits of the geographic ranges of these two shrews are poorly known.

During field studies in 1978 and 1979, one of us (D. Jones) collected five specimens of the *S. arcticus* group near Haines Road, Cassiar District, British Columbia. These specimens are deposited in the collections of the Department of Mammalogy, Royal Ontario Museum (ROM Nos. 82833, 82834, 83471, 83497, 83498). Based on cranial measurements from the five specimens (Table 1) and pelage of a skin prepared from 83471, we identified these shrews as Tundra Shrews. These represent the first records for this shrew in British Columbia.

Five Tundra Shrews were trapped at three sites. In August 1978 two specimens were taken in an alpine willow community (59°41'N, 136°34'W) at an elevation of 1037 m adjacent to a stream. The community

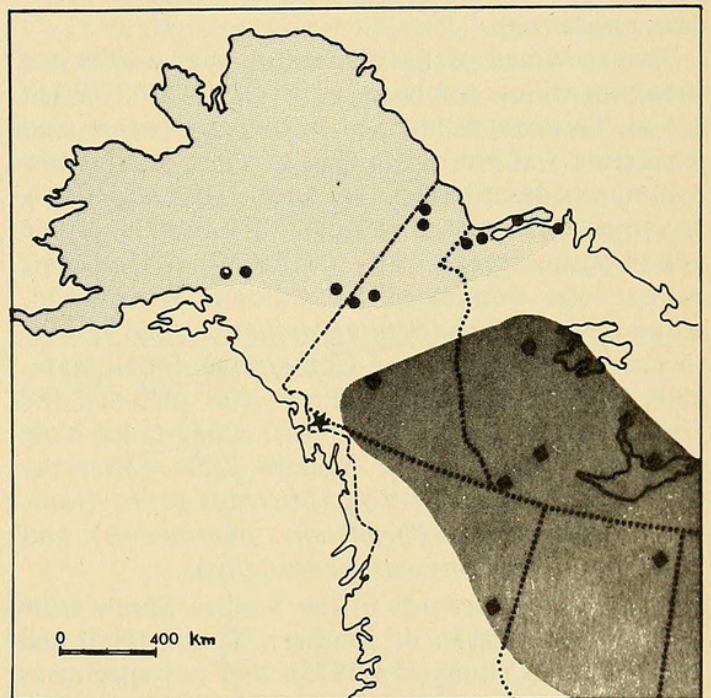


FIGURE 1. Distributions of the Tundra Shrew (light gray) and Arctic Shrew (darker gray) in northwestern North America (modified from Hall and Kelson 1959 and Youngman 1975). Diamonds are peripheral records for the Arctic Shrew, dots are peripheral records for the Tundra Shrew, and the star indicates the Tundra Shrew records from northwestern British Columbia.

¹Although the Tundra Shrew has a smaller skull, shorter tail, and lighter ventral pelage than the Arctic Shrew, the taxonomy has been problematic and the Tundra Shrew has been regarded as a subspecies of the Arctic Shrew, *Sorex arcticus tundrensis* (Bee and Hall 1956; Banfield 1974) and as a distinct species, *Sorex tundrensis* (Jackson 1928; Youngman 1975; C. G. van Zyll de Jong, personal communication).

was dominated by willows (*Salix* sp.), about 1.5 m tall, and various species of bryophytes and Gramineae. Other plants included horsetails (*Equisetum* sp.), sedges (*Carex* sp.), yarrow (*Achillea* sp.), Burnet (*Sanquisorba stipulata*), Larkspur (*Delphinium glaucum*), Wormwood (*Artemisia arctica*), Indian Paint-

TABLE 1—Comparison of means (ranges) in millimetres of selected cranial measurements of the five Tundra Shrews from British Columbia with Tundra Shrews from Alaska and Arctic Shrews from the Northwest Territories and Yukon.

	Sample size	Condylbasal length	Cranial breadth	Palatal length	Maxillary tooththrow length
Tundra Shrew					
Haines Road,					
British Columbia	5	18.1 (17.8–18.3)	8.9 (8.7–9.0)	7.3 (7.1–7.4)	6.3 (6.2–6.4)
Northeastern Alaska*	13	17.9 (17.2–18.5)	9.1 (8.7–9.4)	7.3 (7.0–7.5)	6.6 (6.4–6.8)
Arctic Shrew					
Fort Norman, Northwest Territories*	4	18.9 (18.7–19.2)	9.4 (9.1–9.5)	7.8 (7.6–8.1)	7.0 (7.0–7.0)
Yukon Crossing, Yukon*	1	20.3	10.4	8.6	7.8

*Measurements denoted by an asterisk are from Youngman (1975).

brush (*Castilleja unalaschcensis*), Bluebell (*Mertensia paniculata*), and Northern Grass-of Parnassus (*Parnassia palustris*).

Two specimens were collected in August 1979 in a subalpine willow community (58°48'N, 136°37'W) at 885 m. This community also bordered a stream, and vegetation was similar to that of the alpine willow community described above. Another Tundra Shrew specimen was trapped in June 1979 in a subalpine grass community (59°49'N, 136°36'W) at 885 m. This habitat was dominated by willows, Wormwood, sedges, Dwarf Birch (*Betula glandulosa*), and various species of Gramineae and Compositae. Small mammals trapped at Tundra Shrew sites included the Dusky Shrew (*Sorex monticolus*), Long-tailed Vole (*Microtus longicaudus*), Tundra Vole (*Microtus oeconomus*), Meadow Vole (*Microtus pennsylvanicus*), Heather Vole (*Phenacomys intermedius*), and Deer Mouse (*Peromyscus maniculatus*).

There are no records of the Tundra Shrew from southeastern Alaska or southern Yukon (Hall and Kelson 1959; Youngman 1975), and our specimens extend the range of this species about 500 km south of its known limits (Figure 1). Other populations of Tundra Shrews may occur in alpine habitats in the Coast Mountains of southern Alaska and northwestern British Columbia. Rand (1954), Hoffman and Peterson (1967), and Youngman (1975) hypothesized that the Tundra Shrew was isolated in an unglaciated region of Alaska and the Yukon (Beringian Refugium) during the Wisconsin glaciation, and Youngman (1975) noted that the present distribution of this species is completely within the boundaries of Beringia. Our records from northwestern British Columbia, however, are 450–550 km south of the limits of the Beringian Refugium (as mapped by Prest et al. 1968). Presumably this population in British Columbia resulted from postglacial dispersion.

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Literature Cited

- Banfield, A. W. F. 1974. The mammals of Canada. University of Toronto Press, Toronto. 438 pp.
- Bee, J. W., and E. R. Hall. 1956. Mammals of northern Alaska on the arctic slope. University of Kansas, Publications in Natural History 8. 309 pp.
- Hall, E. R., and K. R. Kelson. 1959. The mammals of North America. Vol. 1. The Ronald Press Co., New York. 546 pp.
- Hoffman, R. S., and R. S. Peterson. 1967. Systematics and zoogeography of *Sorex* in the Bering Strait area. Systematic Zoology 16(2):127–136.
- Jackson, H. H. T. 1928. A taxonomic review of the American long-tailed Shrews (genera *Sorex* and *Microsorex*). United States Department of Agriculture Biological Survey. North American Fauna 51. 238 pp.
- Prest, V. K., D. R. Grant, and V. N. Rampton. 1968. Glacial map of Canada. Geological Survey of Canada, Map 1253 A.
- Rand, A. L. 1954. The Ice Age and mammalian speciation in North America. Arctic 7(1): 31–35.
- Youngman, P. M. 1975. Mammals of the Yukon Territory. National Museums of Canada. Publications in Zoology 10. 192 pp.

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