

Note

New records of grasshoppers (Orthoptera) from the Northwest Territories

PAUL M. CATLING^{1,*}, BRENDA KOSTIUK¹, and TERRY ARMSTRONG²

¹170 Sanford Avenue, Ottawa, Ontario K2C 0E9 Canada

²Environment and Natural Resources, Northwest Territories, P.O. Box 900, Fort Smith, Northwest Territories X0E 0P0 Canada

*Corresponding author: brenda.kostiuk@gmail.com

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Abstract

We provide information on two additions to the fauna of Northwest Territories, Canada: Two-striped Grasshopper (*Melanoplus bivittatus*) and Huron Short-winged Locust (*Melanoplus huroni*). We suspect that both are long established but were overlooked in the past as a consequence of general rarity.

Key words: Orthoptera; grasshoppers; distribution; ecology; Northwest Territories; new records; range extensions; Two-striped Grasshopper; *Melanoplus bivittatus*; Huron Short-winged Locust; *Melanoplus huroni*

Recent updating of information on Northwest Territories (NWT) grasshoppers has included (1) a 700-km extension to the northwest of the range of Graceful Sedge Grasshopper (*Stethophyma gracile* (Scudder, 1862)) which was reported in Catling *et al.* (2017), and (2) unexpected range extensions into the tundra for Northern Grasshopper (*Melanoplus borealis* (Fieber, 1853)), Bruner Spur-throated Grasshopper (*M. bruneri* Scudder, 1897), Club-horned Grasshopper (*Aeropedallus arcticus* Hebard, 1935), and Crackling Grasshopper (*Trimerotropis verruculata* (Kirby, 1837)), all outlined by Catling *et al.* (2018a). Here we report the addition of Two-striped Grasshopper (*Melanoplus bivittatus* (Say, 1825)) and Huron Short-winged Locust (*Melanoplus huroni* Blatchley, 1898) to the NWT fauna. Both of these species were expected to be found in the NWT (Working Group on General Status of NWT Species 2016) and were described and included in the key of Catling (2008). The names and subfamily classification follow Cigliano *et al.* (2020).

ACRIDIDAE

Melanoplinae

Melanoplus bivittatus (Say, 1825), Two-striped Grasshopper

The first locations in the NWT for this large grasshopper are 425 km to the north-northwest of the near-

est site to the south at Fort McMurray, Alberta. These Slave River sites were in native prairies (Catling *et al.* 2018b) dominated by either graminoids, such as Wheat Sedge (*Carex atherodes* Sprengel), Kentucky Bluegrass (*Poa pratensis* L.), Canada Wildrye (*Elymus canadensis* L.), and/or reedgrasses (*Calamagrostis* spp.), or by forbs including Biennial Ragwort (*Artemisia biennis* Willdenow), Yellow Avens (*Geum alepicum* Jacquin), Blue Lettuce (*Mulgedium pulchellum* (Pursh) G. Don), Silverweed (*Potentilla anserina* L.), and Common Dandelion (*Taraxacum officinale* F.H. Wiggers). A drier site (Figure 1) was dominated by Clustered Field Sedge (*Carex praegracilis* W. Boott), Balsam Groundsel (*Packera paupercula* (Michaux) Á. Löve & D. Löve), and Kentucky Bluegrass (*Poa pratensis* L.).

At both the Grande Detour Prairie and Kim's Bison Prairie sites (see *Voucher specimens*), Red-legged Grasshopper (*Melanoplus femurrubrum* DeGeer, 1773) was very abundant with up to 100 flying up with each step we took. Migratory Grasshopper (*Melanoplus sanguinipes* (Fabricius, 1798)) and Two-striped Grasshopper were much less common, with fewer than 50 confirmed at each of the two sites.

The pair of pale dorsal lines is distinctive. The male cerci with a ventral lobe resulting in a boot-shape is a characteristic possessed only by two other

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FIGURE 1. Habitat (foreground) of Two-striped Grasshopper (*Melanoplus bivittatus*) in a drier portion of Kim's Bison Prairie in the Slave River Lowland, Northwest Territories, Canada. The site has a boundary of Trembling Aspen (*Populus tremuloides* Michaux) and the open foreground is dominated by Clustered Field Sedge (*Carex praegracilis*), Balsam Groundsel (*Packera paupercula*), and Kentucky Bluegrass (*Poa pratensis*). Photo: P.M. Catling.

species of *Melanoplus*, both found in eastern Canada (Vickery and Kevan 1985).

Melanoplus huroni Blatchley, 1898, Huron Short-winged Locust (Figure 2)

The first location for this species in the NWT is ~675 km north of the nearest location in the Peace River Prairies of Alberta. It is in an area of more or less burned Jack Pine (*Pinus banksiana* Lambert) parkland with prairie glades (Figure 3) that include disjunct plants and animals from the Canadian prairie region far to the south as well as some elements from unglaciated Beringia to the northwest. The dominant plants here include Cut-leaved Anemone (*Anemone multifida* Poiret), Common Bearberry (*Arctostaphylos uva-ursi* (L.) Sprengel), Purple Reedgrass (*Calamagrostis purpurascens* R. Brown), Downy Lyme-grass (*Elymus in-novatus* (Beal) Pilger), and Northern Bedstraw (*Galium boreale* L.).

Among the grasshoppers, Speckle-winged Rangeland Grasshopper (*Arphia conspersa* Scudder, 1875) of the Canadian prairies and unglaciated Beringia (Vickery and Kevan 1985) shares this unusual habitat in the NWT.

Key features in identifying the Huron Short-winged Locust include the short wings (to third or

fourth abdominal segment) with the outer wings (tegmina) spotted, male subgenital plate (rear view) with a pointed apical tubercle, male cerci becoming slender apically, and male furculae small and blunt (Vickery and Kevan 1985: figs. 449, 486, 522; Otte 2012: 146).

We suspect that both species reported here are long established in the NWT, but were overlooked in the past as a consequence of their local occurrence and limited search effort for orthopteroid insects in the north. Both occur in largely isolated patches of northern prairie and are likely to be absent from forested landscapes between the newly discovered sites and the previous northernmost records. Two-striped Grasshopper thrives in non-native vegetation and is readily transported by vehicles (Catling 2008). It moves along roads and may also be transported in hay, which was introduced in the Slave River lowlands (Catling *et al.* 2018b: 7–8). Sites where Two-striped Grasshopper was found in the Slave River lowlands do not have concentrations of introduced plants and are not known sites of hay introduction, nor are they connected to roads. Thus, we favour native status for this grasshopper. However, we anticipate that Two-striped Grasshopper will become more continuously distributed in the northern prairie prov-



FIGURE 2. Huron Short-winged Locust (*Melanoplus huroni*) from a native prairie glade in Jack Pine (*Pinus banksiana*) parkland northwest of Great Slave Lake, Northwest Territories, Canada. Photo: P.M. Catling.



FIGURE 3. Habitat of Huron Short-winged Locust (*Melanoplus huroni*) in Jack Pine (*Pinus banksiana*) parkland that was burned four years previously northwest of Great Slave Lake, Northwest Territories, Canada. Photo: P.M. Catling.

inces and southern NWT as a result of human activity. Its status in the NWT will then be “native and introduced”. Huron Short-winged Locust, as a native prairie

specialist, is much less likely to increase its range substantially, but it will probably be found in other prairies of the Great Slave Lake region.

Voucher specimens

Melanoplus bivittatus (Say, 1825)—CANADA, NORTHWEST TERRITORIES: Slave River Lowland, Grande Detour Prairie, 60.4036°N, 112.7291°W, 28 July 2018, *P.M.C., B.K., T.A.* Canadian National Collection of Insects (CNC 1009518); Kim's Bison Prairie, 60.9951°N, 112.8103°W, 28 July 2018, *P.M.C., B.K., T.A.* Canadian National Collection of Insects (CNC 1009519).

Melanoplus huronii Blatchley, 1898—CANADA, NORTHWEST TERRITORIES: open prairie-like glade in Jack Pine parkland on Hwy. 3 south of Rae/Edzo, 62.3842°N, 116.4989°W, 6 July 2019, *P.M.C., B.K.* Canadian National Collection of Insects (CNC 1009517).

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