



NOTE

New Orthoptera records for Prince Edward Island and New Brunswick

John Klymko, Robert W. Harding, Barry Cottam

A checklist of the Orthoptera of the three Maritime provinces was published by Klymko et al. (2018). Even while it was in press, the Spring Field Cricket (*Gryllus veletis*) was added to the collective list (Lewis et al. 2019), and discoveries continue to be made. Here we present the first Prince Edward Island records of the Treetop Bush Katydid (*Scudderia fasciata*), the Roesel's Shield-backed Katydid (*Roeseliana roeselii*), and the Sphagnum Ground Cricket (*Neonemobius palustris*) and the first New Brunswick records of the Drumming Katydid (*Meconema thalassinum*). Also presented are recent data for the occurrence of the Wingless Mountain Grasshopper (*Booneacris glacialis*) on Prince Edward Island, a species otherwise known only from historical records on the Island. Specimens reported here have been deposited in the collection of the New Brunswick Museum, and museum accession numbers are given for all specimens (e.g., NBM-070089).

NEW PROVINCIAL RECORDS

TRIGONIDIIDAE

Nemobiinae

Neonemobius palustris (Blatchley 1900), Sphagnum Ground Cricket — **PRINCE EDWARD ISLAND: Kings County:** Corraville, Buckskin Road Bog, 46.3056°N, 62.6328°W, collected with pitfall trap, 12 August 2017, C.F. Harding (NBM-070089); Cardross, Sigsworth Road Bog, 46.2583°N, 62.6263°W, 16 August 2017, R.W. Harding (NBM-070092); Kingsboro, 2.8 km east-southeast of Route 304/Tarantum Road junction, open bog, 46.4107°N, 62.1210°W, 1 October 2020, J. Klymko (NBM-070098); **Queens County:** Mount Albion, Sphagnum bog along east side of Klondyke Road near Route 5 (48 Road), 46.2305°N, 62.9235°W, 20 August 2017 (NBM-070093); Johnston's River Wildlife Management Area, east side of Route 21 at Murnaghan Road intersection, hand capture on bog mat, 21 August 2017 (NBM-070094), both R.W. Harding.

This small cricket is widespread in northeastern North America, where it is restricted to peatlands (Vickery and Kevan 1985). Given its limited dispersal capability, it is assumed this species has long been established on Prince Edward Island, and recent records reflect greater survey effort. The discovery of the species on PEI was previously noted in the Nature PEI newsletter (Harding 2019).

TETTIGONIIDAE

Tettigoniinae

Roeseliana roeselii (Hagenbach 1822), Roesel's Shield-backed Katydid — **PRINCE EDWARD ISLAND: Kings County:** Corraville, 46.3189°N, 62.6154°W, 27 July 2015 (photo record, see Figure 1A), 20 July 2018 (photo record, see Figure 1B), both B. Cottam; Summerville, 3505 Route 3, 46.2109°N, 62.7307°W, 15 July 2017, attracted to porch light, C.F. Harding, 31 July 2017, 12 August 2017, 14 August 2017, all R.W. Harding (NBM-070087, NBM-070088, NBM-070090, and NBM-070091, respectively); Pooles Corner, 46.2104°N, 62.6723°W, 4 July 2020, R. Gallant (photo record,

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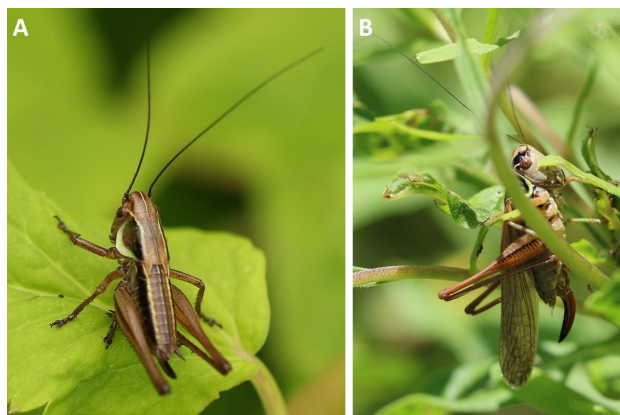
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see <https://inaturalist.ca/observations/51898069>); **Prince County**: North Carleton, southern terminus of Pioneer Cemetery Road, 46.2756°N, 63.7048°W, 9 July 2019, R.W. Harding (photo record, see <https://inaturalist.ca/observations/28596880>); **Queens County**: Charlottetown, 46.2589°N, 63.1808°W, 30 July 2019, C. Taylor (photo record, see <https://inaturalist.ca/observations/29877932>).

Roeseliana roeselii, a Eurasian species, was first documented in New Brunswick in 2008 (McAlpine 2009) and in Nova Scotia in 2016 (Klymko et al. 2018). Its occurrence on Prince Edward Island was not unexpected. The earliest records were previously noted in the Nature PEI newsletter (Harding 2020). The spread of *Roeseliana roeselii* beyond its native range in Europe has been the subject of research (e.g., Holma 2009, Kaňuch et al. 2014), and it has been blamed for the decline of *Metrioptera brachyptera* (Linnaeus 1761) in Sweden (Berggren and Low 2004). The ecological consequences of this omnivorous species' colonization of the Maritimes are not known, but they are presumably limited by its apparent affinity for anthropogenic grassland habitat.

Figure 1. *Roeseliana roeselii* photographed by B. Cottam on Prince Edward Island. **A.** Nymph female, Kings County: Corraville, 46.3189°N, 62.6154°W, 27 July 2015. **B.** Adult female, same location, 20 July 2018.

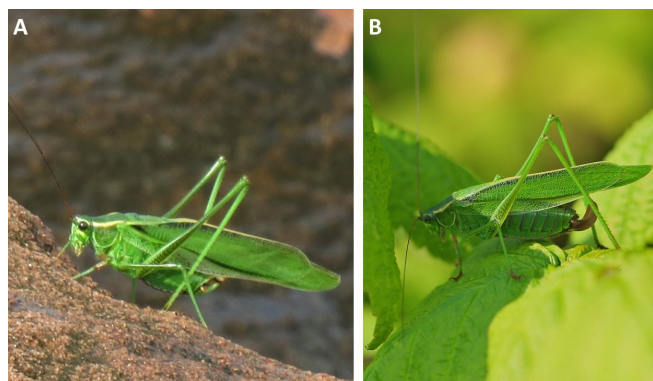


Phaneropterinae

Scudderia fasciata (Beutenmüller 1894), Treetop Bush Katydid — **PRINCE EDWARD ISLAND: Kings County**: Cable Head Beach, 46.4672°N, 62.5869°W, 16 August 2014 (photo record, see Figure 2A), 28 August 2018 (photo record, see Figure 2B), both B. Cottam; Riverton, 46.3108°N, 62.6997°W, 22 August 2020, 26 August 2020, both J.W. Harding (photo records, see <https://inaturalist.ca/observations/65751124>, <https://inaturalist.ca/observations/65785799>); **Queens County**: West Covehead, 46.3921°N, 63.1328°W, 7 September 2018, Jill Blaquiere (photo record, see <https://inaturalist.ca/observations/16333436>); Belfast, 46.0781°N, 62.8768°W, 11 September 2020, P. Lopes (photo record, see <https://inaturalist.ca/observations/59206338>).

Scudderia fasciata was first detected in the Maritimes in New Brunswick in 2008 and in 2016 it was collected in Nova Scotia (Klymko et al. 2018). Given how widespread it has proven to be in the Maritimes, and the recent dates of all known records, this relatively distinctive species may be a recent immigrant to the region.

Figure 2. *Scudderia fasciata* photographed by B. Cottam on Prince Edward Island. **A.** Adult male, Kings County: Cable Head Beach, 46.4672°N, 62.5869°W, 16 August 2014. **B.** Adult female, Corraville, 46.3189°N, 62.6154°W, 28 August 2018.



Meconematinae

Meconema thalassinum (De Geer 1773), Drumming Katydid — **NEW BRUNSWICK: Charlotte County**: St. Andrews, 45.0774°N, 67.0510°W, 25 August 2017, S. Paul and E. Head (photo record, see <https://inaturalist.ca/observations/8032063>); Roosevelt Campobello International Park, 44.8749°N, 66.9595°W, 13 October 2019, D.R. Angelini (photo record, see <https://inaturalist.ca/observations/34691228>); **York County**: Fredericton, 280 Church Street, 45.9548°N, 66.6377°W, 14 October 2018, J.K. Maurey (photo record, see <https://inaturalist.ca/observations/17535099>); Fredericton, 627 Churchill Row, 45.9564°N, 66.6420°W, 24 August 2019, "seanmrogers" (photo record, see <https://inaturalist.ca/observations/31409367>).

Meconema thalassinum was first reported from the Maritime provinces by Klymko et al. (2018). The earliest records they present are from 2013 on Prince Edward

Island and 2016 in Nova Scotia. Since that publication, a photographic record from Colchester County, Nova Scotia, from 31 July 2012 by Ian Bryson was posted to iNaturalist (see <https://inaturalist.ca/observations/8671597>) and a specimen labeled as collected on 19 August 2012 at Keppoch, Queens County, PEI, by Jessica Reardon was found in a small insect collection purchased by RWH at a yard sale (NBM-070097).

This recent arrival to the Maritime provinces is widespread in New Brunswick, as evidenced by the records from Fredericton and the southwest of the province. The ecological consequences of the introduction of this omnivorous species have not been studied in North America, and Cannings et al. (2007) note that it is not considered a pest in its native Europe or in North America. In the Maritime provinces it is nearly always found around anthropogenic habitats (e.g., around buildings), so the interaction with sensitive native species may be limited.

OTHER NOTABLE RECORDS

ACRIDIDAE

Melanoplinae

Booneacris glacialis (Scudder 1863), Wingless Mountain Grasshopper — **PRINCE EDWARD ISLAND: Kings County:** Corraville, east end of Buckskin Road, 46.3034°N, 62.6191°W, 2 September 2019, B. Cottam (photo record, see Figure 3); Red Point, bog southeast of Baltic Road, Rte 304 junction, 46.4047°N, 62.1469°W, 25 July 2020, J. Klymko and L.M. O'Connor (photo record, see <https://inaturalist.ca/observations/60530991>); **Queens County:** Point Deroche, 1.4km west of Feehans Pond, ombrotrophic bog, 46.3973°N, 62.8919°W, 9 August 2017, J. Miskelly (NBM-070095); Tenmile House, net sweep in ericaceous shrubs in clearing on Battery Road, 46.3221°N, 62.9826°W, 27 September 2018, R.W. Harding (NBM-070096).

The only historical record of *Booneacris glacialis* from Prince Edward Island was a specimen collected from a “black spruce swamp” at Dundee in 1912 (Walker 1915). Vickery et al. (1974) report that later searches to find the Dundee colony were unsuccessful, and they hypothesized that a forest fire around 1944 destroyed it. As a result, Vickery and Scudder (1987) listed *Booneacris glacialis* as “X?” for Prince Edward Island in their national checklist of orthopteroids, indicating uncertainty about the persistence of the species. The four records presented here suggest this flightless species, which in our region is restricted to peatlands and ericaceous shrublands, never disappeared from Prince Edward Island

as a whole. The 2017 and 2018 records were previously noted in the Nature PEI newsletter (Harding 2018).

Figure 3. Adult female *Booneacris glacialis* photographed by B. Cottam on Prince Edward Island in Kings County: Corraville, 46.3034°N, 62.6191°W, 2 September 2019.



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REFERENCES

- Berggren, A., and Low, M. 2004. Exclusion of the native bog bush cricket, *Metrioptera brachyptera* by the currently invading Roesel's bush cricket, *Metrioptera roeseli*. *Entomologisk Tidskrift* **125**: 125-132.
- Cannings, R.A., Miskelly, J.W., Schiffer, C.A.H., Lau, K.L.A., and Needham, K.M. 2007. *Meconema thalassinum* (Orthoptera: Tettigoniidae), a foreign katydid established in British Columbia. *Journal of the Entomological Society of British Columbia* **104**: 91-92.
- Harding, R.W. 2018. Re-discovered after a century: Wingless Mountain Grasshopper. *Island Naturalist* **228**: 4.
- Harding, R.W. 2019. First Prince Edward Island records of the Sphagnum Ground Cricket. *Island Naturalist* **229**: 6-7.
- Harding, R.W. 2020. First Prince Edward Island records of Roesel's Bush-cricket *Roeseliana roeselii* (Orthoptera: Tettigoniidae). *Island Naturalist* **233**: 11.
- Holma, F. 2009. Latitudinal Patterns in Body Size of Roesel's Bush Cricket *Metrioptera roeselii* within and outside the Continuous Area of its Distribution. MSc Thesis, Sveriges lantbruksuniversitet, Uppsala, Sweden, 23 pp.

- Kañuch, P., Berggren, Å., and Cassel-Lundhagen, A. 2014. Genetic diversity of a successful colonizer: isolated populations of *Metrioptera roeselii* regain variation at an unusually rapid rate. *Ecology and Evolution* **4**: 1117-1126.
- Klymko, J., Catling, P., Ogden, J.B., Harding, R.W., McAlpine, D.F., Robinson, S.L., Doucet, D.A. and Adam, C.I.G. 2018. Orthoptera and allies in the Maritime provinces, Canada: new records and updated provincial checklists. *Canadian Field-Naturalist* **132**: 319-329. <https://doi.org/10.22621/cfn.v132i4.1984>.
- Lewis, J.H., McAlpine, D.F., and Smith, A.B.T. 2019. *Gryllus veletis* (Orthoptera: Gryllidae) in New Brunswick: First detection in Maritime Canada. *Northeastern Naturalist* **26**: N18-N20.
- McAlpine, D.F. 2009. First occurrence of Roesel's Bush Cricket, *Metrioptera roeselii* (Hagenbach) (Orthoptera: Tettigoniidae), in New Brunswick. *Journal of the Acadian Entomological Society* **5**: 1-2.
- Vickery, V.R., Johnstone, D.E., and Kevan, D.K.M. 1974. The orthopteroid insects of Quebec and the Atlantic provinces of Canada. Lyman Entomological Research Museum and Research Laboratory Memoir No. 1 (Special Publication No. 7).
- Vickery, V.R., and Kevan, D.K.M. 1985. The Grasshoppers, Crickets, and Related Insects of Canada and Adjacent Regions — Ulonata: Dermaptera, Cheleutoptera, Notoptera, Dictuoptera, Grylloptera, and Orthoptera. Part 14 of The Insects and Arachnids of Canada. Agriculture Canada Research Branch Publication 1777. Agriculture Canada, Ottawa, Ontario, Canada.
- Vickery, V.R., and Scudder, G.G.E. 1987. The Canadian orthopteroid insects summarized and updated, including a tabular check-list and ecological notes. *Proceedings of the Entomological Society of Ontario* **118**: 25-45.
- Walker, E.M. 1915. Notes on a collection of Orthoptera from Prince Edward Island and the Magdalen Islands, Quebec. *The Canadian Entomologist* **47**: 339-344. <https://doi.org/10.4039/Ent47339-10>.