J. Acad. Entomol. Soc. 5: 1-2 (2009)

NEW RECORDS

First occurrence of Roesel's Bush Cricket, *Metrioptera roeselii*, (Hagenbach), (Orthoptera: Tettigoniidae), in New Brunswick

Donald F. McAlpine

First reported in North America in 1952, Roesel's bush cricket, *Metrioptera roeselii*, (Hagenbach, 1822), (Orthoptera: Tettigoniidae) is believed to have been introduced by air into the Montreal area from Europe (Kevan 1961; Vickery 1965). The species spread rapidly and is now widespread across southern Quebec, southeastern Ontario, and the New England States south to Pennsylvania (Capinera et al. 2004; Nickle 1984), much as Vickery (1965) forecast. There is also an isolated population in Illinois, first reported in 1999 (Eades and Otte, n.d.). Although predicted to occur in the Maritimes (G.G.E. Scudder, Department of Zoology, University of British Columbia (UBC), personal communication), Roesel's bush cricket has not been reported in the region until now. Here I document the first occurrence of this alien in New Brunswick, as it apparently continues to expand its North American range.

On 29 July 2008, Adin Mattson (a 3-year-old budding entomologist!) collected an orthopteran in a suburban yard in Saint John, New Brunswick (31 Jean Street; 45.2881°N, 66.0347°W), that I identified as Roesel's bush cricket. About 30 minutes of random transects using a sweep net in a tall-grass old field (45.28854°N, 66.03364°W) about 100 m from the initial capture site on 6 August 2008 produced 3 specimens. About 2 hours of additional sweep netting at this site on 8 and 21 August, combined with the capture of calling males, produced 8 additional *M. roeselii* for a total of 12 specimens (8 ♂♂; 4 ♀♀). All are of the brachypterous form and are now deposited in the New Brunswick Museum insect collection (NBM 22264 -22267).

The old-field site occupies an area of about 18.2 ha and is dominated by common timothy (*Phleum pretense* L.), redtop (*Agrostis gigantea* Roth), tickle grass (*Agrotis scabra* Willdenow), red fescue (*Festuca rubra* Linnaeus) (Poacea); fall dandelion (*Leontodon autumnalis* Linnaeus), black starthistle (*Centaurea nigra* Linnaeus), common tansy (*Tanacetum vulgare* Linnaeus) (Asteraceae); and white clover (*Trifolium repens* Linnaeus) (Fabaceae) (Figure 1). The site is bordered by suburban housing, but institutional, commercial-retail and light to heavy industrial development occur within 5 km. Associated orthopterans collected at the site included slender meadow grasshopper (*Conocephalus fasciatus* (DeGeer, 1773) (Tettigoniidae)), Carolina grasshopper (*Dissosteira carolina* (Linnaeus, 1758)), two-striped grasshopper (*Melanoplus bivittatus* (Say, 1825)), red-legged grasshopper (*Melanoplus femurrubrum* (DeGeer, 1773)), and slantfaced pasture grasshopper (*Orphulella speciosa* (Scudder, 1862)) (Acrididae).

Kevan (1961) noted the predominance of the normally rare macropterous form in *M. roeselii* populations near Montreal in 1960-61. However, within five years brachypterous individuals were most common in areas of establishment. Vickery (1965) believed that the winged-form is a dispersal phase. If this is the case, the apparent lack of such forms in Saint John suggests a well-established population and/or local conditions favourable for the species. In Sweden, where *M. roeselii* has recently been introduced, Berggren and Low (2004) suggest that tall-grass highway verges facilitate the species dispersal. In the United Kingdom the rapid spread of *M. roeselii* over the past decade has been attributed to ameliorating climate (Hannah et al. 2004). The species is also believed to be displacing at least one native orthopteran in Sweden (Berggren and Low 2004). Although Vickery (1965) felt *M. roeselii* was unlikely to become an agricultural pest in

Received 8 January 2009. Accepted for publication 25 February 2009. Published on the Acadian Entomological Society website at www.acadianes.org/journal.html on 31 March 2009.

Donald F. McAlpine: New Brunswick Museum, 277 Douglas Avenue, Saint John, New Brunswick, Canada, E2K 1E5.

Corresponding author (email donald.mcalpine@nbm-mnb.ca).

Figure 1. Tall grass, old-field site of collection of *Metrioptera roeselii* in Saint John, New Brunswick.

North America, its impacts or potential response to climate change on this continent have not been studied. Further collecting of orthopterans in New Brunswick may show *M. roeselii* to be established more widely than the single site from which the species is now known in the province.

ACKNOWLEGEMENTS

I am grateful to Don Mattson, who ensured that the first New Brunswick specimen came to my attention. Adin Mattson and his mother, Elizabeth Manley, assisted with initial field investigations. Gart Bishop generously identified grasses and some forbs from the site. Summer students Ellen Boyd, Joseph Pratt, Manuel Reyes, and Xuan Yang assisted with additional collecting.

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.

Capinera, J.L., Scott, R.D., and Walker, T.J. 2004. Field guide to grasshoppers, katydids and crickets of the United States. Cornell University Press.

Hannah, L., Lovejoy, T.E., and. Schneider, S.H. 2004. Biodiversity and climate change in context. *In* Climate change and biodiversity. *Edited by* T.E. Lovejoy and L.J. Hannah. Yale University Press, New Haven, CT. pp. 3-14.

Kevan, D.K. McE. 1961. *Metrioptera* (*Roeseliana*) *roeseli* (Hagenbach, 1822) *f. diluta* (Charpentier, 1825) in the Montreal area (Orthoptera: Tettigoniidae). The Canadian Entomologist **93**: 605-607.

Nickle, D.A. 1984. *Metrioptera roeseli*, a European katydid found for the first time in Pennsylvania, (Orthoptera: Tettigoniidae: Decticinae). Proceedings of the Entomological Society of Washington **86**: 744.

Eades, D.C., and Otte, D. n.d. Orthoptera Species File Online. version 2.0/3.4 Available from < http://Orthoptera. Speciesfile.org>. [accessed 28 December 2008].

Vickery, V.R. 1965. Factors governing the distribution and dispersal of the recently introduced grasshopper, *Metrioptera roeseli* (Hgb.) (Orthoptera: Ensifera). Annals of the Entomological Society of Quebec **10**: 165-171.