

**NOTE****New and noteworthy records of Orthoptera from Maritime Canada**

Donald F. McAlpine and Jeffrey B. Ogden

Although Vickery and Kevan (1985) provided an exhaustive synopsis of the grasshoppers, crickets and related insects of Canada, some of which can have significant negative economic impact, reference to their distribution maps suggests that Prince Edward Island, and New Brunswick in particular, have been poorly collected for these taxa. More recently, Scudder and Vickery (2010) reviewed the Orthoptera of the Maritime region, noting the need for increased monitoring of these insects to document shifting populations and distribution in response to anticipated changes in climate. They provide a list of 21 species that occur in neighbouring Maine and Quebec, some or all of which may be anticipated to occur in the Maritime Provinces, may already be present, or may be spreading in the region. Here we briefly report on six species of Orthoptera recently encountered in New Brunswick or on Prince Edward Island, several for the first time. Most collections reported here were made during surveys specific for Orthoptera, some in the course of biotic inventories now underway in several Protected Natural Areas (PNA) in New Brunswick. Maps below have been reproduced from Vickery and Kevan (1985) to provide context but have been modified to incorporate new specimen records. Specimen vouchers have been deposited in the collection of the New Brunswick Museum (NBM), Nova Scotia Department of Natural Resources (NSDNR) and the private collection of J.B. Ogden.

Metrioptera roeselii (Hagenbach, 1822)

NEW BRUNSWICK: Queens County: Lower Cambridge-Narrows (45.75594°N, 66.01433°W), 15 August 2009, D.F. McAlpine, old field mix of grasses and *Solidago* sp., net sweeping (7♀, 4♂, NBM 28305); **Charlotte County:** Wood Island, Hardwood Cove (44.62202°N, 66.82668°W), 3 September 2011, D.F. McAlpine, coastal old field habitat, net sweeping and by hand (2♀, NBM 32506); S. of Greens Landing, Wood Island, (44.628804° N, 66.825365° W), 3 September 2011, D.F. McAlpine, coastal old field habitat, net sweeping and by hand (1♀, 1♂, NBM 32507); **Kent County:** Pelerin, (46.368763°N, 64.82048°W) 7, 28 September 2011. D. Doucet, old field habitat (1♀, photo only; Figure 1).

McAlpine (2009) reported this species in the Maritimes for the first time from Saint John, New Brunswick. *Metrioptera roeselii* (Orthoptera: Tettigoniidae) is a European introduction first detected in North America in the Montreal area in 1952 (Vickery 1965). The species has spread rapidly and is now widespread across southern Quebec, southeastern Ontario, and New England south to Pennsylvania (Nickle 1984; Capinera et al. 2004). Records reported above indicate *Metrioptera roeselii* is widespread in southern New Brunswick and should be expected to occur elsewhere in the Maritimes (Figure 2). That the species now occupies old field habitat on Wood Island in the Grand Manan Archipelago (Figure 3), a seasonally inhabited island with no regular transportation connection to the mainland and some 25 km offshore in the outer Bay of Fundy, attests to the dispersal abilities of this orthopteran.

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Figure 1. *Metrioptera roeselii* at Pelerin, Kent County, New Brunswick. **Photo credit:** D. Doucet.



Figure 2. Collection localities for *Metrioptera roeselii*, map modified after Vickery and Kevan (1985; ●). Open circles (○) plot Maritime Canadian specimens, including McAlpine (2009); triangle (▲) plots photo record reproduced in Figure 1.

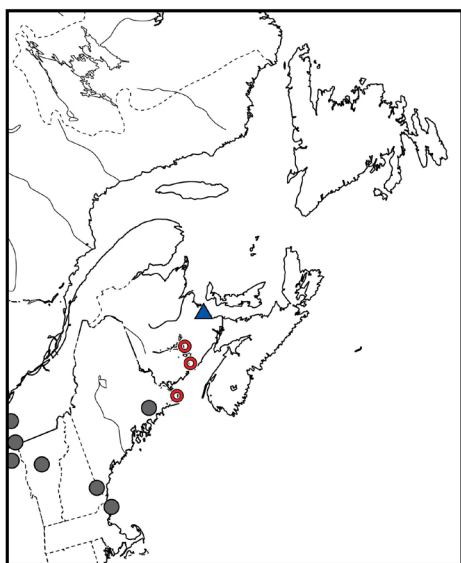


Figure 3. Old field habitat on Wood Island, New Brunswick; habitat for *Metrioptera roeselii*. **Photo credit:** D. McCurdy.



Conocephalus brevipennis (Scudder, 1862)

NEW BRUNSWICK: Queen County: Route 7 above Welsford along Nerepis River (45.47678°N, 66.33128°W), 12 September 2008, D.F. McAlpine, riparian overgrowth of *Solidago* sp., *Aster* sp., *Rubus* sp., and grasses (Figure 4), net sweeping (1♂, NBM 23212); **Queens County:** Lower Cambridge-Narrows (45.75594°N, 66.01433°W), 28 August 2011, D.F. McAlpine, old field mix of grasses and *Solidago* sp., net sweeping (1♀, 1♂, NBM 32508).

Vickery and Kevan (1985) showed the distribution of *Conocephalus brevipennis* (Orthoptera: Tettigoniidae) as ranging across southern Ontario and Quebec and through Maine to the southwestern New Brunswick border (Figure 5). The records above are not unexpected; this is likely not a recent arrival to the Maritimes and has simply been overlooked in the past, at least in New Brunswick. However, current records are too few to judge how widespread this species currently is in the region.

Figure 4. Old field-riparian habitat along the Nerepis River, New Brunswick; habitat for *Conocephalus brevipennis* and *Oecanthus nigricornis*.

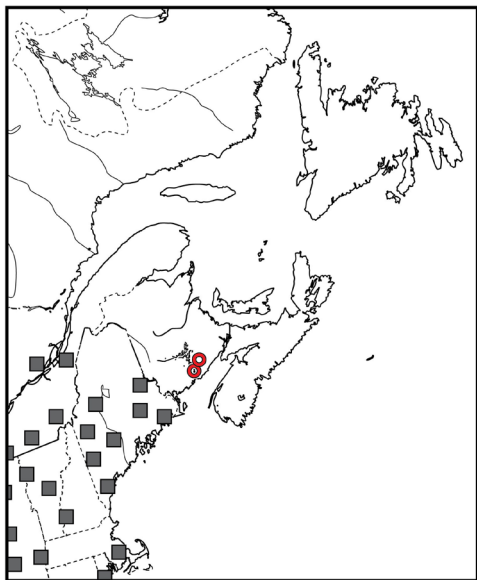


Orchelimum gladiator Bruner, 1891

PRINCE EDWARD ISLAND: Prince County: Cape Egmot (46.39967°N, 64.09010°W), elevation 9 m, 12 August 2011, D.F. McAlpine, old field habitat backing beach dunes and marshy area, net sweeping (1♂, NBM 32509).

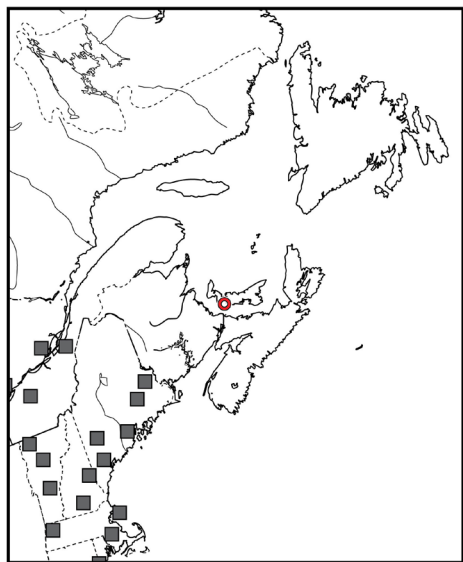
As is the case for *Conocephalus brevipennis*, Vickery and Kevan (1985) showed the distribution of *Orchelimum gladiator* (Orthoptera: Tettigoniidae) ranging across southern Maine north to the border region adjacent to

Figure 5. Collection localities for *Conocephalus brevipennis*, map modified after Vickery and Kevan (1985; ■). Open circles (○) plot new Maritime Canadian specimen records cited in text.



extreme southwestern New Brunswick (Figure 6). That this species should be first recorded in the Maritimes from Prince Edward Island suggests this species is more widespread in the region than the single record indicates.

Figure 6. Collection localities for *Orchelimum gladiator*, map modified after Vickery and Kevan (1985; ■). Open circle (○) plots new Maritime Canadian specimen record cited in text.



Neonemobius palustris (Blatchley, 1900)

NEW BRUNSWICK: Albert County: 5.7 km NNE of Riverside-Albert, Caledonia Gorge Protected Natural Area (CG PNA) (45.78715°N, 64.78457°W), 12 September 2011, D.F. McAlpine, sphagnum bog (“bog 2”) (Figure 7), by hand (1♀, NBM 32510); 5.5 km NNE of Riverside-Albert, Caledonia Gorge Protected Natural Area (CG PNA) (45.78646°N, 64.78931°W), 12 September 2011, D.F. McAlpine, sphagnum bog (“bog 4”), by hand (2♀, NBM 32511).

Figure 7. Small bog (“bog 2”) on a plateau region in the Caledonia Gorge Protected Natural Area; habitat for *Nemobius palustris*.



Neonemobius palustris (Orthoptera: Gryllidae) occurs in scattered colonies and is confined to sphagnum bogs (Vickery and Kevan 1965). In the Maritime Provinces, this small cricket has been recorded previously from a limited number of mainland Nova Scotia locations, but is also present in Maine and southern Ontario and Quebec (Vickery and Kevan 1985) (Figure 8). Further investigation of sphagnum bog habit is required to determine the distribution of this species in the Maritimes. At both sites in New Brunswick where *Neonemobius palustris* was recorded, it was taken together with *Allonemobius fasciatus* (De Greer 1773) (Orthoptera: Gryllidae), an association reported by Vickery and Kevan (1985).

Oecanthus nigricornis F. Walker, 1869

NEW BRUNSWICK: Queens County: Route 7 above Welsford along Nerepis River (45.47678°N, 66.33128°W), 12 September 2008, D.F. McAlpine, riparian overgrowth of *Solidago* sp., *Aster* sp., *Rubus* sp., and grasses (Figure

Figure 8. Collection localities for *Neonemobius palustris*, map modified after Vickery and Kevan (1985; ■). Open circle (○) plots new Maritime Canadian specimen record cited in text.

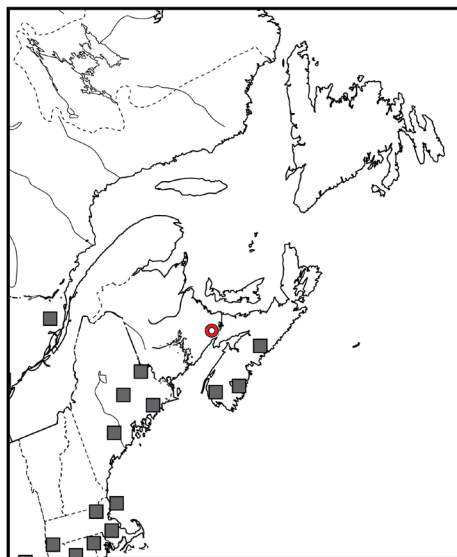
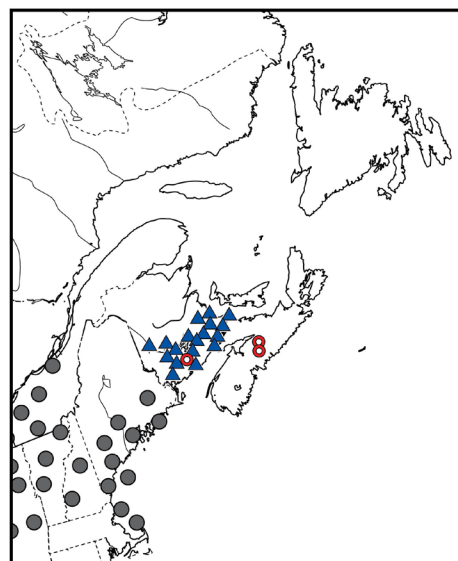


Figure 9. Collection localities for *Oecanthus nigricornis*, map modified after Vickery and Kevan (1985; ●). Open circles (○) plot new Maritime Canadian specimen records cited in text. Triangles (▲) plot observational records mapped by Christie (2002).



4), net sweeping (1♀, 1♂, NBM 22263). **NOVA SCOTIA: Colchester County:** Shubenacadie (45.09507°N, 63.39651°W) 19 September 2009, J.B. Ogden, net sweeping, (1 nymph, NSDNR collection); Shubenacadie (45.09507°N, 63.39651°W) 28 September 2009, net sweeping, (1 ♂, J.B. Ogden collection); **Halifax County:** Goffs, Halifax International Airport property (44.88270°N, 63.52013°W) 9 September 2011, alder sweeping (1♀, J.B. Ogden collection; 2♀, 4♂, NSDNR collection)

Scudder and Vickery (2010) note the presence of *Oecanthus nigricornis* (Orthoptera: Gryllidae) in New Brunswick on the basis of observations presented on-line by Christie (2002). To our knowledge, no confirmatory specimens from the region have been deposited in public insect collections, except those cited above. Information in Christie (2002) suggests observers first became aware of this species in New Brunswick about 1990 or earlier. The report of Christie (2002) suggests that *Oecanthus nigricornis* was, by then, widespread across the southern third of New Brunswick and probably elsewhere in the Maritimes. Here we can confirm that this species is now established at two localities on mainland Nova Scotia (Figure 9). While there is no reason to question the observations reported by Christie (2002), Scudder and Vickery (2010) note that other similar species may also occur in the region.

Stethophyma lineatum (Scudder, 1863)

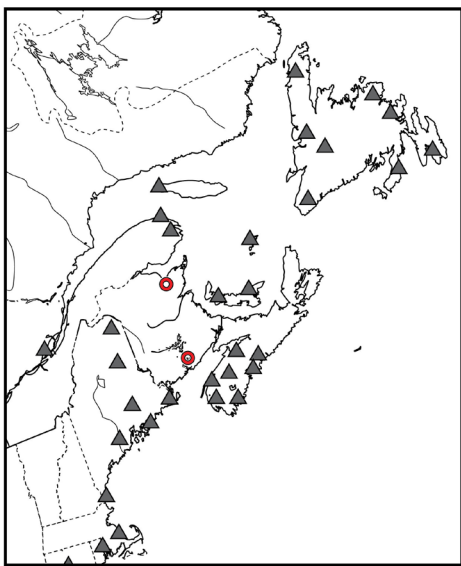
NEW BRUNSWICK: Saint John County: Saint John, (45.27°N, 66.05°W), 7 October 1899, Philip R. McIntosh (“P. R.M.”), (1♀, NBM 31570); **Restigouche County:** Belledune Pond, Jaquet River PNA, black spruce bog with sedges and ericaceous shrubs (Figure 10) (47.82072°N, 65.99543°W), 12 August 2010, D.F. McAlpine et al. (8♀, 16♂, NBM 31207)

Figure 10. Bog surrounding Belledune Pond, Jacquet River Gorge Protected Natural Area; habitat for *Stethophyma lineatum*.



Vickery and Kevan (1985) mapped collection localities for *Stethophyma lineatum* (Orthoptera: Acrididae) from Nova Scotia and Prince Edward Island, as well as adjacent Maine and Quebec, but surprisingly do not include New Brunswick (Figure 11). Obviously, they were unaware of the 1899 record from the New Brunswick Natural History Society Collection (now in the NBM, see Fairweather and McAlpine 2011) cited above. More recently, this species was found to be common in a bog surrounding Belledune Pond in the Jacquet River Gorge PNA, most notably in association with *Stethophyma gracile* (Scudder 1863) (Orthoptera: Acrididae) which was equally abundant.

Figure 11. Collection localities for *Stethophyma lineatum*, map modified after Vickery and Kevan (1985; ▲). Open circles (○) plot new Maritime Canadian specimen records cited in text.



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