

Orthoptera and allies in the Maritime provinces, Canada: new records and updated provincial checklists

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Abstract

We provide an updated checklist of Orthoptera and their allies for each Maritime province of Canada with details for 21 new species records. Drumming Katydid (*Meconema thalassinum*), recorded from Nova Scotia (NS) and Prince Edward Island (PEI), and Sprinkled Grasshopper (*Chloea conspersa*), recorded from New Brunswick (NB) are reported for the first time from the Maritimes as a whole. We report range extensions in the Maritime region for Australian Cockroach (*Periplaneta australasiae*; NB), Treetop Bush Katydid (*Scudderella fasciata*; NS), Short-legged Camel Cricket (*Ceuthophilus brevipes*; PEI), Spotted Camel Cricket (*Ceuthophilus maculatus*; PEI), Roesel's Shield-backed Katydid (*Roeseliana roeselii*; NS), and Black-horned Tree Cricket (*Oecanthus nigricornis*; PEI). Short-winged Mole Cricket (*Neoscapteriscus abbreviatus*; NB) and European Mole Cricket (*Gryllotalpa gryllotalpa*; NS) are reported as adventives (non-native species that are believed to be not yet established), new to Canada from the Maritimes. Other new records for species not known to be established are Lined Earwig (*Doru taeniatum*; NS), Australian Cockroach (*Periplaneta australasiae*; PEI), American Cockroach (*Periplaneta americana*; NB), Brown Cockroach (*Periplaneta brunnea*; PEI), Smooth Cockroach (*Nyctibora laevigata*; NB), West Indian Leaf Cockroach (*Blaberus discoidalis*; NB), an unidentified *Parcoblatta* species (NB), Brown-banded Cockroach (*Supella longipalpa*; PEI), Praying Mantis (*Mantis religiosa*; NB), and American Bird Grasshopper (*Schistocerca americana*; NS).

Key words: Orthopteroid; Orthoptera; Dermaptera; Blattodea; Mantodea; Maritime provinces; new species; range extensions

Introduction

A comprehensive treatment of Canada's Orthoptera and allies (orthopteroids), including Canadian range maps for all reported species, was published in 1985 (Vickery and Kevan 1985). This was quickly followed by an update of the Canadian fauna with provincial-level checklists (Vickery and Scudder 1987). Since then, reports of new orthopteroid records for the Maritime provinces have appeared in several publications, most notably Catling *et al.* (2013) with ten new provincial records. Other recent reports include Chandler (1992), Catling *et al.* (2009), McAlpine (2009), Scudder and Vickery (2010), McAlpine and Ogden (2012), Clements *et al.* (2013), and McAlpine *et al.* (2015).

In this paper, we add to this growing body of work with 21 new provincial records and provide updated provincial checklists to reflect the additions since 1987.

Although only species with an extant or previously established population should be considered part of the region's fauna, we follow Vickery and Scudder (1987) and report non-native species that have been collected in a jurisdiction but are not believed to be established there. These are adventive species and include intercepts taken from shipped goods and vehicles.

Vouchers reported here have been deposited in the New Brunswick Museum (NBM, with accession number indicated), the Atlantic Forestry Centre (AFC), the Université de Moncton (UDM), the Nova Scotia Museum (NSM), the Nova Scotia Department of Natural Resources collection at Shubenacadie (NSNR), the private collection of J.B.O. (JBO), and Agriculture and Agri-food Canada, Charlottetown (AACC). Common names are from CESSC (2016), except where mentioned in Table 1.

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TABLE 1. Orthoptera and allies (Orthopteroids) in the Maritime provinces of Canada: New Brunswick (NB), Prince Edward Island (PEI), and Nova Scotia (NS).

Order	Family	Subfamily	Species*	Common name†	NB	PEI	NS
Dermaptera	Spongiphoridae Forficulidae	Labinae Forficulinae	<i>Labia minor</i> (L. 1758)	Lesser Earwig	N		N
			<i>Forficula auricularia</i> L. 1758	European Earwig	N-9	N-6	N
Mantodea	Mantidae	Mantinae	<i>Doru taeniatum</i> (Dohrn 1862)	Lined Earwig	A-6		A-11
			<i>Mantis religiosa</i> (L. 1758)	Praying Mantis	A/N-11		A/N-4
Blattodea	Blattidae	Blattinae	<i>Blatta orientalis</i> L. 1758	Oriental Cockroach			N
			<i>Periplaneta americana</i> (L. 1758)	American Cockroach	A/N-11		N
			<i>Periplaneta australasiae</i> (Fabricius 1775)	Australian Cockroach	N-11	A/N-11	N
			<i>Periplaneta brunnea</i> Burmeister 1838	Brown Cockroach		A/N-11	N-4
			<i>Nyctibora laevigata</i> (Beauvois 1805)	Smooth Cockroach ^a	A-11		
			<i>Eurycotis floridana</i> (Walker 1868)	Skunk Cockroach ^a			A
	Blaberidae		<i>Blaberus discoidalis</i> Serville 1839	West Indian Leaf Cockroach ^a	A-11		
			<i>Panchlora nivea</i> (L. 1758)	Green Banana Cockroach ^a	A		A
	Epilampridae		<i>Rhyarobia maderae</i> (Fabricius 1781)	Madera Cockroach ^a	A		A
			<i>Colapteroblatta nigra</i> (Brunner von Wattenwyl 1892)	Round-backed Cockroach ^a			
	Ectobiidae		<i>Supella longipalpa</i> (Fabricius 1798)	Brown-banded Cockroach		A/N-11	N-4
			<i>Blattella germanica</i> (L. 1767)	German Cockroach	N	N	N
	Rhaphidophoridae		<i>Ectobius lapponicus</i> (L. 1758)	Dusky Cockroach	N-7	N-1	N-7
			<i>Ceuthophilus brevipennis</i> Scudder 1862	Short-legged Camel Cricket	X	X-11	X
	Tettigoniidae		<i>Ceuthophilus guttulatus</i> Walker 1869	Speckled Camel Cricket			X
			<i>Ceuthophilus maculatus</i> (Harris 1841)	Spotted Camel Cricket	X	X-11	X
			<i>Scudderia curvicauda</i> (De Geer 1773)	Curve-tailed Bush Katydid	X	X	X
			<i>Scudderia fasciata</i> (Beutenmüller 1894)	Treetop Bush Katydid	X-10		X-11
			<i>Scudderia fuscata</i> Brunner von Wattenwyl 1878	Fork-tailed Bush Katydid	X-8	X-6	X
			<i>Scudderia pistillata</i> Brunner von Wattenwyl 1878	Broad-winged Bush Katydid	X	X-6	X
			<i>Scudderia septentrionalis</i> (Serville 1839)	Northern Bush Katydid	X-10		
			<i>Roeseliana roeselii</i> (Hagenbach 1822)	Roesel's Shield-backed Katydid	N-3		N-11
			<i>Conocephalus brevipennis</i> (Scudder 1862)	Short-winged Meadow Katydid	X-5		
			<i>Conocephalus fasciatus</i> (De Geer 1773)	Slender Meadow Katydid	X	X	X
			<i>Neononocephalus ensiger</i> (Harris 1841)	Sword-bearing Conehead Katydid	X		N
			<i>Neononocephalus retusus</i> (Scudder 1878)	Round-tipped Conehead Katydid			V-2
			<i>Orchelimum gladiator</i> Bruner 1891	Gladiator Meadow Katydid	X-6	X-5	
			<i>Meconema thalassinum</i> (De Geer 1773)	Drumming Katydid		N-11	N-11
	Gryllotalpidae		<i>Gryllotalpa gryllotalpa</i> (L. 1758)	European Mole Cricket ^b			A-11
			<i>Neoscapteriscus abbreviatus</i> (Scudder 1869)	Short-winged Mole Cricket ^b	A-11		
	Gryllidae		<i>Acheta domestica</i> (L. 1758)	House Cricket		N	N
			<i>Gryllus pennsylvanicus</i> Burmeister 1838	Fall Field Cricket	X	X	X
			<i>Allonemobius allardi</i> (Alexander and Thomas 1959)	Allard's Ground Cricket	X		X

TABLE 1. (continued)

Order	Family	Subfamily	Species*	Common name†	NB	PEI	NS
Acrididae	Oecanthinae	Cyrtacanthacridinae	<i>Allonemobius fasciatus</i> (De Geer 1773)	Striped Ground Cricket	X	X	X
			<i>Eunemobius carolinus</i> (Scudder 1877)	Carolina Ground Cricket	X	X	X
			<i>Neonemobius palustris</i> (Blatchley 1900)	Sphagnum Ground Cricket	X-5	X	X
			<i>Oecanthus nigricornis</i> Walker 1869	Black-horned Tree Cricket	X-4	X-11	X-5
			<i>Schistocerca nitens</i> (Thunberg 1815)	Gray Bird Grasshopper ^b			A
			<i>Schistocerca americana</i> (Drury 1773)	American Bird Grasshopper			A-11
			<i>Booneacris glacialis</i> (Scudder 1863)	Wingless Mountain Grasshopper	X	X	X
			<i>Melanoplus bivittatus</i> (Say 1825)	Two-striped Grasshopper	X	X	X
			<i>Melanoplus borealis</i> (Fieber 1853)	Northern Grasshopper	X	X	X
			<i>Melanoplus fasciatus</i> (Walker 1870)	Huckleberry Grasshopper	X	X	X
	Melanoplinae		<i>Melanoplus femurrubrum</i> (De Geer 1773)	Red-legged Grasshopper	X	X	X
			<i>Melanoplus keeleri</i> Thomas 1874	Keeler's Grasshopper	X	X	X
			<i>Melanoplus punctulatus</i> (Scudder 1862)	Grizzly Grasshopper	X		
			<i>Melanoplus sanguinipes</i> (Fabricius 1798)	Migratory Grasshopper	X-6		
			<i>Melanoplus stonei</i> Rehn 1904	Stone's Grasshopper	X	X	X
			<i>Camnula pellucida</i> (Scudder 1862)	Clear-winged Grasshopper	X	X-6	
			<i>Chorthopaga viridifasciata</i> (De Geer 1773)	Green-striped Grasshopper	X	X	X
			<i>Dissosteira carolina</i> (L. 1758)	Carolina Grasshopper	X	X-6	X
			<i>Pardalophora apiculata</i> (Harris 1835)	Coral-winged Grasshopper	X	X	X
			<i>Spharagemon bolli</i> Scudder 1875	Boll's Grasshopper	X	X	
	Gomphocerinae		<i>Trimerotropis verruculata</i> (Kirby 1837)	Crackling Grasshopper	X	X	X
			<i>Stethophymia gracile</i> (Scudder 1862)	Graceful Sedge Grasshopper	X	X	X
			<i>Stethophyma lineatum</i> (Scudder 1862)	Striped Sedge Grasshopper	X	X	X
			<i>Chloaelis conspersa</i> (Harris 1841)	Sprinkled Grasshopper	X	X	X
			<i>Pseudochorthippus curtipennis</i> (Harris 1835)	Marsh Meadow Grasshopper	X-11	X	X
			<i>Orphulella speciosa</i> (Scudder 1862)	Pasture Slant-faced Grasshopper	X	X	
			<i>Nomotettix cristatus</i> (Scudder 1862)	Crested Pygmy Grasshopper	X	X	X
			<i>Tetrix arenosa</i> Burmeister 1838	Obscure Pygmy Grasshopper	X		X
			<i>Tetrix brunneri</i> (Bolivar 1877)	Brunner's Pygmy Grasshopper	X	X	X
			<i>Tetrix ornata</i> (Say 1824)	Ornated Pygmy Grasshopper	X	X	X
Tetrigidae			<i>Tetrix subulata</i> (L. 1761)	Granulated Pygmy Grasshopper	X	X	X
			<i>Tettigidea lateralis</i> (Say 1824)	Black-sided Pygmy Grasshopper	X	X	X
		Batrachideinae					

*Dermoptera, Mantodea, Blattodea, and Orthoptera names follow Hopkins *et al.* (2017), Otte *et al.* (2017), Beccaloni (2014), and Cigliano *et al.* (n.d.), respectively.

†Common names are from CESC (2016), except where indicated with superscripts: a. Beccaloni (2014), b. Cigliano *et al.* (n.d.).

‡A = adventive, a non-native species that has been reported from, but not become established in a region; A/N = questionable adventive, used for non-native species when it is not clear whether it has become established; N = non-native, established; V = vagrant, present only as transients away from the species' normal range; X = native. The justification for the occurrences can be found in Vickery and Kevan (1985) and Vickery and Scudder (1987), and in the following citations, noted after the type of occurrence: 1. Chandler (1992); 2. Catling *et al.* (2009); 3. McAlpine (2009); 4. Scudder and Vickery (2010); 5. McAlpine and Vickery (2010); 6. Catling *et al.* (2013); 7. Clements *et al.* (2013); 8. McAlpine *et al.* (2015); 9. Tournear (2017); 10. Lewis and McAlpine (2018); 11. Klymko *et al.* (current article).

New Provincial Records

DERMAPTERA

FORFICULIDAE

Forficulinae

Doru taeniatum (Dohrn 1862), Lined Earwig — **Nova Scotia**: Colchester County: Truro, 4 September 1991, T.D. Smith (NSNR).

Presumably this is an adventive occurrence. This earwig is considered adventive in New Brunswick (NB) and Ontario (ON), the only other provinces where this species has been reported (Vickery and Scudder 1987; Catling *et al.* 2013).

MANTODEA

MANTIDAE

Mantinae

Mantis religiosa (L. 1758), Praying Mantis — **New Brunswick**: Saint John County: Saint John, August 1979 (NBM-44584); Westmorland County: Moncton, 2 September 1994, "Terry M." (UDM).

It is unclear if *M. religiosa* is established anywhere in the Maritimes, despite attempts made to introduce the species in Atlantic Canada (Vickery and Kevan 1985). The species has been taken recently in the Annapolis Valley, Nova Scotia (NS), but it is unclear if a sustaining population exists there (Scudder and Vickery 2010). The NB specimens are likely from releases and not established populations.

BLATTODEA

BLATTIDAE

Blattinae

Periplaneta americana (L. 1758), American Cockroach — **New Brunswick**: Saint John County: Saint John, 10 June 1902, W. McIntosh (NBM-30126), 29 August 1980, in shipment (NBM-31836); York County: Fredericton, [no date], C.C. Smith (AFC); Nashwaaksis IGA, "Bananas imported", 21 March 1967 (AFC); Restigouche County: Dalhousie, "ex. auto from Cuba", 8 August 1966 (AFC).

This cosmopolitan species has been found in buildings across Canada, but there are no previous records for NB (Vickery and Kevan 1985; Vickery and Scudder 1987). It is not known if the 1902 Saint John record and undated Fredericton record represent adventive occurrences or established populations.

Periplaneta brunnea Burmeister, 1838, Brown Cockroach — **Prince Edward Island**: Prince County: O'Leary, "Packed in with Bananas", 1992, J.G. Stewart (AACC); Queens County: Charlottetown, "Found in apt.", 15 April 1991, J.G. Stewart (AACC); Kings County: Souris, December 1985, L.S. Thompson (AACC).

In Canada, *P. brunnea* is often considered an adventive species (Vickery and Scudder 1987), although Scudder and Vickery (2010) report that it has become

established, at least temporarily, in NS. In Prince Edward Island (PEI), the O'Leary record appears to have been an interception of insects on imported goods; it is not known if established colonies existed at Charlottetown or Souris.

Periplaneta australasiae (Fabricius 1775), Australian Cockroach — **Prince Edward Island**: Queens County: Charlottetown, January 1986, L.S. Thompson (AACC); 1988, F. Legault (AACC). **New Brunswick**: Westmorland County: Sackville, Mount Allison Campus, Flemington Building, 45.9001°N, 64.3726°W, 9 March 2017, found dead, N.A. Donaher, J. Klymko (NBM-53103), 17 May 2017, found alive, P.J. Cormier, J. Klymko (NBM-53104).

This exotic species is established at Mount Allison University in Sackville, NB, and has been since at least 2006 when J.K. saw a live individual. It is not known if this species is established in PEI. It has been considered established elsewhere in Canada, including NS (Vickery and Kevan 1985; Vickery and Scudder 1987).

BLABERIDAE

Blaberinae

Blaberus discoidalis Serville 1839, West Indian Leaf Cockroach — **New Brunswick**: Saint John County: Saint John, 28 April 1981, found in fruit shipment in grocery store, C. Bree (NBM-30033; Figure 1).

In Canada, this species occurs in greenhouses and has been used in laboratory study (Vickery and Kevan

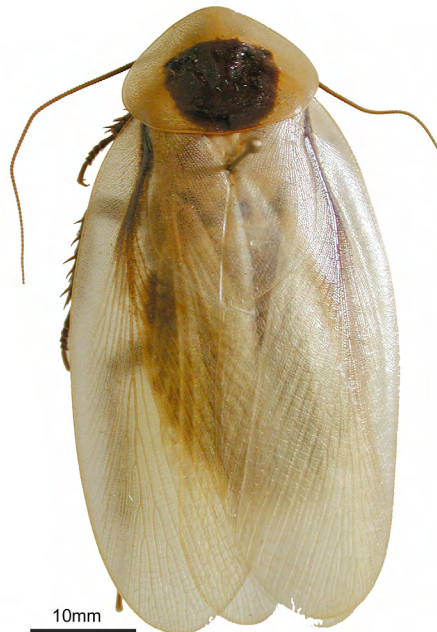


FIGURE 1. West Indian Leaf Cockroach (*Blaberus discoidalis*). Specimen in New Brunswick Museum. Collected in Saint John, New Brunswick, in late April 1981 by C. Bree. Photo: P.M. Catling in 2011.

1985). The only previous occurrence in Canada was in Quebec (QC) where it was reared in laboratories (Vickery and Scudder 1987). The Saint John specimen is presumably an intercept. The species is widespread in the Greater Antilles and northern South America (Rehn and Hebard 1927), where many Canadian fruit imports originate.

ECTOBIIDAE

Blattellinae

Parcoblatta sp. — **New Brunswick**: Kings County; Clifton Royal, October 1992, R. Perry, abundant in trailer from southeastern USA (NBM-52790).

The only specimen available is a female, which is morphologically unidentifiable to the species level. We attempted species-level identification with DNA barcoding; however, several attempts at polymerase chain reaction amplification were unsuccessful. The specimen presumably originated in the southeastern United States of America (USA), where eight *Parcoblatta* species occur (Beccaloni 2014). No *Parcoblatta* species have been reported from the Maritimes, although *P. pennsylvanica*, *P. virginica*, *P. uhleriana*, and *P. caudelli* have been reported elsewhere in Canada (Vickery and Scudder 1987).

Nyctiborinae

Nyctibora laevigata (Beauvois 1805), Smooth Cockroach — **New Brunswick**: Saint John County: Saint

John, 30 June 1900, P.R. McIntosh (NBM-31837; Figure 2).

This species is native to the Caribbean and perhaps Panama, and it has been reported as an adventive in the USA, Canada, and Europe (Gutiérrez and Pérez-Gelabert 2000). In Canada, it has been recorded in ON and QC (Vickery and Scudder 1987). We assume that the Saint John specimen was intercepted.

Pseudophyllodromiinae

Supella longipalpa (Fabricius 1798), Brown-banded Cockroach — **Prince Edward Island**: Queens County: Charlottetown, “Found in home, family from Ontario”, March 1986, L.S. Thompson (AACC).

It can be inferred from the label that the Charlottetown specimen was part of an adventive population. In Newfoundland and Labrador it is considered adventive (Vickery and Scudder 1987) whereas in NS and several more western provinces it is considered established (Scudder and Vickery 2010). Where it occurs in Canada, it is domiciliary (Vickery and Kevan 1985).

ORTHOPTERA

RHAPHIDOPHORIDAE

Ceuthophilinae

Ceuthophilus brevipes (Scudder 1862), Short-legged Camel Cricket — **Prince Edward Island**: Queens County: Uigg, MacPhail Woods Ecological Project, pit-



FIGURE 2. Smooth Cockroach (*Nyctibora laevigata*). Specimen in New Brunswick Museum. Collected in Saint John, New Brunswick, on 30 June 1900 by P.R. McIntosh. Photo: D.F. McAlpine in 2018.

fall trap, 46.1594°N, 62.8213°W, 24 August, 2 September 2015, N.D. Brown (NBM-53087, 53088).

This northeastern flightless species was expected on PEI; it is also known from other islands including Newfoundland, Anticosti Island, and Cape Breton (Vickery and Kevan 1985).

Ceuthophilus maculatus (Harris 1841), Spotted Camel Cricket — **Prince Edward Island**: Queens County: Rice Point, December 1982, “found in Fulton’s basement”, L.S. Thompson (AACC); Donagh, 46.26029°N, 62.97452°W, July 2016, J.D. McAskill (NBM-53089).

Vickery and Kevan (1985) note that the species is sometimes found in cellars, as is the case for the earliest PEI record. The record from Donagh is from a natural forest habitat. Unlike *C. brevipes*, *C. maculatus* is not known from other major Canadian islands, such as Newfoundland, Anticosti Island, and Cape Breton (Vickery and Kevan 1985).

TETTIGONIIDAE

Phaneropterinae

Scudderia fasciata (Beutenmüller 1894), Treetop Bush Katydid — **Nova Scotia**: Cumberland County: 1.1 km southwest of Mosleys Pond, open spruce (*Picea* spp.) forest with Eastern White Pine (*Pinus strobus* L.), swept from heather (*Ericaceae*) understorey, 45.9135°N, 64.0984°W, 13 September 2016, J.K. (NBM-53094).

Scudderia fasciata was first reported from the Maritimes based on NB records by Lewis and McAlpine

(2018). Our NS record, and additional NB records reported below under Other Notable Records, demonstrate how widespread the species is. *Scudderia fasciata* is associated with treetops, especially those of conifers (Himmelman 2009), where it would be out of sight of collectors. Perhaps that is the reason that this large species eluded detection in the Maritimes in the past.

Tettigoniinae

Roeseliana roeselii (Hagenbach 1822), Roesel’s Shield-backed Katydid — **Nova Scotia**: Colchester County: Five Islands Provincial Park, swept from small wet meadow, 45.4058°N, 64.0221°W, 13 August 2016, J.B.O. (JBO; Figure 3).

This exotic species was first documented in North America at Montréal, QC, in 1952 (Urquhart and Beaudry 1953). Since that time, it has become established through much of the northeast, including NB (McAlpine 2009; Catling *et al.* 2013), and its spread into other Maritime provinces was anticipated (McAlpine and Ogden 2012).

Meconematinae

Meconema thalassinum (De Geer 1773), Drumming Katydid — **Prince Edward Island**: Prince County: Borden-Carleton, flower garden, 46.2548°N, 63.6954°W, 18 September 2013, J.K. and S.L.R. (NBM-46201); Queens County: Brackley Beach, PEI National Park,



FIGURE 3. Roesel’s Shield-backed Katydid (*Roeseliana roeselii*). Specimen in the private collection of J.B.O. Collected in Five Islands Provincial Park, Nova Scotia, on 13 August 2016 by J.B. Ogden. Photo: J.B. Ogden in 2018.

inside park entrance kiosk, 46.4277°N, 63.1997°W, 16 August 2016, D.J. Terstege (photo record, see www.inaturalist.org/observations/3901605); Tea Hill, on window screens at house, 46.2033°N, 63.0571°W, 18 August 2016, 19 August 2016, A.Y. Laurin (photo records, see www.inaturalist.org/observations/5419927, www.inaturalist.org/observations/5419996); Mount Stewart, Allisary Creek, 46.3703°N, 62.8494°W, 20 August 2016, R.W.H. (NBM-53090); Stanhope, PEI National Park, attracted to light at campground, 46.4217°N, 63.1106°W, 27 August 2016, R.W.H. (photo record, see <https://www.inaturalist.org/observations/4000961>); Mount Stewart, under canopy at gas station, 46.3672°N, 62.8751°W, 19 September 2016, R.W.H. (NBM-53091);

Cavendish, attracted to lights at campground, 46.48 41°N, 63.3653°W, 28 July 2017, J.B.O. and N. Ogden (NSNR); Kings County: Summerville, attracted to light, 46.2110°N, 62.7301°W, 30 August 2015, 2 September 2015, R.W.H. (Figure 4); **Nova Scotia**: Halifax County: Halifax, Victoria Park, 44.6410°N, 63.5796°W, 29 August 2016, S.L.R. (NBM-53092); Dartmouth, Elliot Street, 44.6707°N, 63.5602°W, 2 September 2016, S.L.R. (NBM-53093).

Meconema thalassinum, which is native to Europe, was first reported in North America in 1960 from Long Island, New York, where it had been established since at least 1957 (Gurney 1960a,b). Since then, records have been published for New York State (Sismondo 1978;

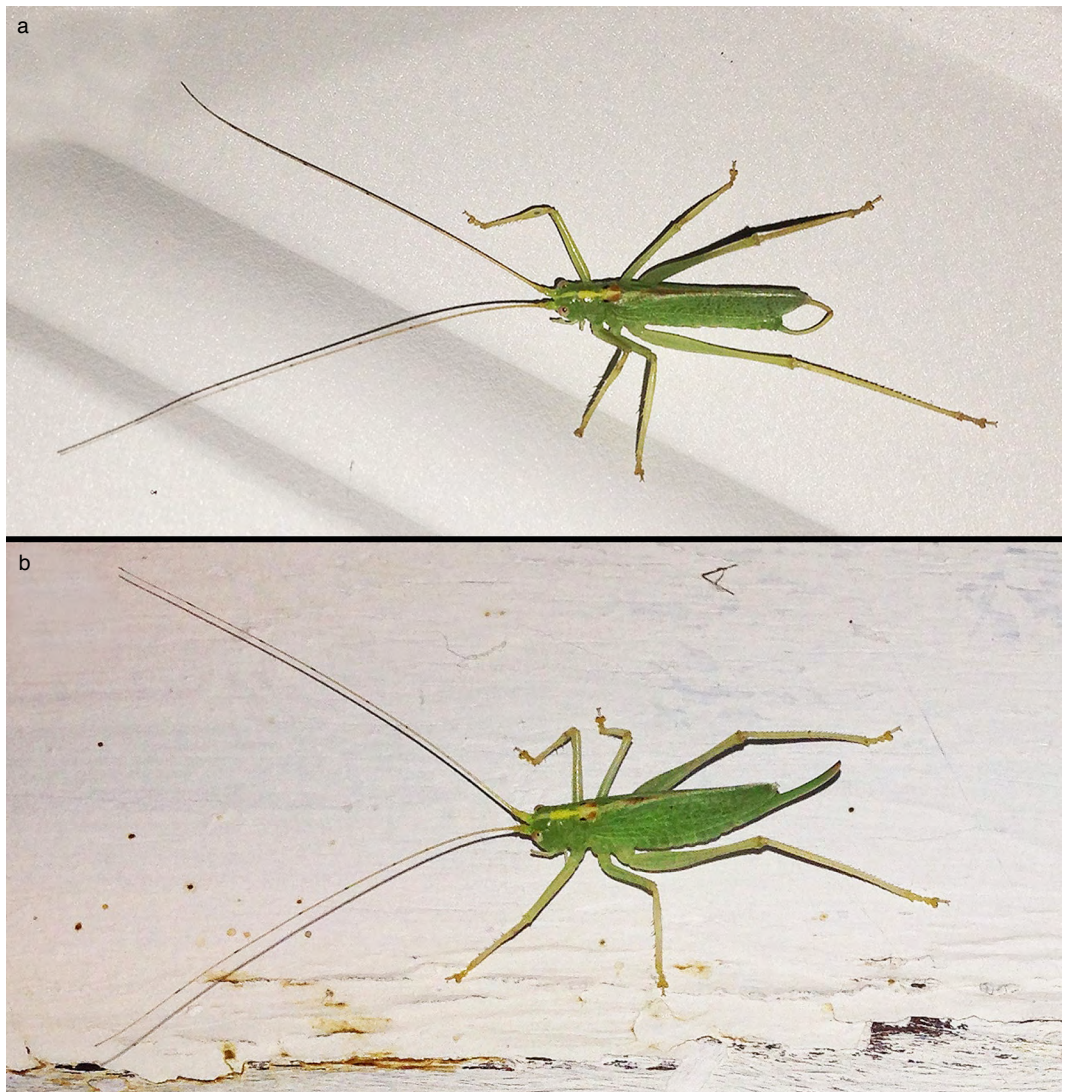


FIGURE 4. Drumming Katydid (*Meconema thalassinum*) at Summerville, Prince Edward Island. a. Male (30 August 2015). b. Female (2 September 2015). Photos: R.W. Harding.

Hoebeke 1981), Rhode Island (Hoebeke 1981), Michigan (Bland 2003), ON (Marshall *et al.* 2004), Connecticut (Maier 2005), British Columbia and Washington (Cannings *et al.* 2007), and Massachusetts (Himmelman 2009). Although it has not been reported for PEI in the primary literature, records were documented in Nature PEI's newsletter (Harding 2017). The closest known record to the Maritimes is at Mount Desert Island, Maine (2012 photo record by B. Woo, see bugguide.net/node/view/681733). The number of locations known for this species in PEI suggests that it has been established there for some time.

GRYLLOTALPIDAE

Gryllotalpinae

Neoscapteriscus abbreviatus Scudder 1869, Short-winged Mole Cricket — **New Brunswick**: Kings County: Grand Bay-Westfield, 45.3171°N, 66.2018°W, 25 October 1991, in home, family recently moved from Oakville, Ontario, D.F.M. (NBM-52789).

This South American native has been established in Florida since 1899 (Walker and Nickle 1981). The NB specimen was likely transported north in horticultural material, either to ON then NB, as the label suggests is possible, or directly to NB. The species has not previously been reported from Canada.

Gryllotalpa gryllotalpa (L. 1758), European Mole Cricket — **Nova Scotia**: Halifax County: Sackville, in delicatessen, 17 October 1988, G. MacLellan (NSM).

This Palearctic species is established in New Jersey, New York, Massachusetts, and possibly Florida, and it has been recorded as an intercept in Pennsylvania (Nickle and Castner 1984). Why the NS specimen was found in such an odd circumstance is unclear, but, like *Neoscapteriscus abbreviatus*, it may have been brought into the Maritimes in horticultural material. It has not previously been reported from Canada.

GRYLLIDAE

Oecanthinae

Oecanthus nigricornis Walker 1869, Black-horned Tree Cricket — **Prince Edward Island**: Kings County: Murray Harbour, Thomas Island, 46.0275°N, 62.5069°W, 1 September 2015, M.A. Arsenault (NBM-53096); Summerville, attracted to light, 46.2110°N, 62.7301°W, 19 September 2015, 20 September 2015, R.W.H. (photo records, see Harding 2016); Queens County: Mount Stewart, Allisary Creek, 46.3703°N, 62.8494°W, 27 August 2016, R.W.H. (NBM-53097).

Although it has not been reported in the primary literature, a PEI record was documented in Nature PEI's newsletter (Harding 2016). This Nearctic species, known from southern ON, southern QC, and much of the eastern USA (Capinera *et al.* 2004), was noticed in NB by naturalists in about 1990 or earlier, and, by the early 2000s, it was known to be widespread across southern NB (McAlpine and Ogden 2012). That this species, now common in the Maritimes, was not reported

in historical works (e.g., Vickery *et al.* 1974; Vickery and Kevan 1985) suggests that it may have colonized the area recently.

ACRIDIDAE

Cyrtacanthacridinae

Schistocerca americana (Drury 1770), American Bird Grasshopper — **Nova Scotia**: Halifax County: intercepted in vegetables originally from USA, 17 July 1983 (NSM); Lake Echo, flew in window, April 2008, L. MacDonald (NSM).

This species has a core range in the southeastern USA and much of Latin America. It is known to be a long-distance migrant, with presumed migrants reaching southern ON and Massachusetts (Vickery and Kevan 1985). It has also been recorded from numerous locations as an intercept, and it is assumed that the Lake Echo record was inadvertently carried in from elsewhere, given how early in the season it was recorded.

Gomphocerinae

Chloealtis conspersa (Harris 1841), Sprinkled Grasshopper — **New Brunswick**: Northumberland County: Portage Island, 47.1566°N, 65.03745°W, 6 August 2015, J.K. (NBM-53099); Charlotte County: Mill Cove Creek, Campobello Island, salt marsh, net sweeping, 44.9274°N, 66.9108°W, 26 September 2016, D.F.M. (NBM-52791).

This species was expected in NB and the Maritimes. Vickery and Kevan (1985) map a record from the area of Calais, Maine, which is adjacent to the NB border and close to the Charlotte County, NB, record.

Other Notable Records

ORTHOPTERA

Tettigoniidae

Phaneropterinae

Scudderia fasciata (Beutenmüller 1894), Treetop Bush Katydid — **New Brunswick**: York County: Fredericton, 26 September 2008, C.I.G.A. (photo record, see bugguide.net/node/view/228908); Kent County: Kouchibouguac National Park, 14 September 2012, D.A.D. (Figure 5).

Lewis and McAlpine (2018) reported the first Maritimes records of *S. fasciata* based on specimens collected in NB in 2013 and 2017. The photographic records reported here represent earlier NB records.

ACRIDIDAE

Melanoplinae

Booneacris glacialis (Scudder 1863), Wingless Mountain Grasshopper — **Nova Scotia**: Halifax County: Caribou Bog, NE of Dartmouth, 1967, P. Ward (NSM); Cumberland County: Amherst, 900 m south of Mosleys Pond, treed bog, 45.9126°N, 64.0924°W, 13 September 2016, J.K. (NBM-53101; Figure 6).



FIGURE 5. Treetop Bush Katydid (*Scudderia fasciata*), in Kouchibouguac National Park, New Brunswick, 14 September 2012. Photo: D.A. Doucet.



FIGURE 6. Wingless Mountain Grasshopper (*Booneacris glacialis*), near Amherst, Nova Scotia, 13 September 2016. Photo: J. Klymko.

Vickery (1961) reports that specimens taken in Shelburne County, NS, by C.E. Atwood had been misplaced at the Royal Ontario Museum. The species is listed as “X?” for NS in Vickery and Scudder’s (1987) Canadian checklist. The X is notation given to native species, and

the question mark either means they doubted the veracity of the record, or they doubt the species persists in the province. No other specimens had been found in NS despite many attempts to recapture the species, as reported by Vickery *et al.* (1974). The 1967 and 2016 records

confirm the species' presence in NS. *Booneacris glacialis* was also listed as "X?" for PEI in Vickery and Scudder's (1987) Canadian checklist, presumably because surveys to relocate the only known colony, one reported by Walker (1915) from Dundee, have proven unsuccessful (see Vickery *et al.* 1974).

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