NEW CANADIAN AND ONTARIO ORTHOPTEROID RECORDS,  
AND AN UPDATED CHECKLIST OF THE ORTHOPTERA OF  
ONTARIO  

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Abstract  

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The following seven orthopteroid taxa are recorded from Canada for the first  
time: Anaxipha species 1, Cyrtoxipha gundlachi Saussure, Chloroscirtus  
forcipatus (Brunner von Wattenwyl), Neoconocephalus exiliscanorus  
(Davis), Camptonotus carolinensis (Gerstaeker), Scapteriscus borellii  
Linnaeus, and Melanoplus punctulatus griseus (Thomas). One further  
species, Neoconocephalus retusus (Scudder) is recorded from Ontario for the  
first time. An updated checklist of the orthopteroids of Ontario is provided,  
along with notes on changes in nomenclature.

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Introduction  

Vickery and Kevan (1985) and Vickery and Scudder (1987) reviewed and listed  
the orthopteroid species known from Canada and Alaska, including 141 species from  
Ontario. A further 15 species have been recorded from Ontario since then (Skevington  
et al. 2001, Marshall et al. 2004, Paiero et al. 2010) and we here add another eight species  
or subspecies, of which seven are also new Canadian records. Notes on several significant  
provincial range extensions also are given, including two species originally recorded from  
Ontario on bugguide.net. Voucher specimens examined here are deposited in the University  
of Guelph Insect Collection (DEBU), unless otherwise noted.

New Canadian records  

Anaxipha species 1 (Figs 1, 2) (Gryllidae: Trigidoniinae)  

This species, similar in appearance to the Florida endemic Anaxipha calusa  

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Walker & Funk, is here recorded as new to Canada based on specimens found in 2013 in the Wings of Paradise Butterfly Conservatory, Cambridge, Ontario. Numerous individuals (including nymphs, adult males and females) were observed at that time, and discussions with the conservatory staff indicate that this *Anaxipha* species has been established there for some time. Two other Ontario butterfly houses were contacted to determine if this species had been introduced elsewhere in the province, but no further populations were reported. *Anaxipha* “species 1” is an undescribed species, probably the same as an unnamed species known to occur in Central America (Funk, pers. comm.; see also [http://entnem.ifas.ufl.edu/walker/buzz/SM_AcalusaRelatives.pdf](http://entnem.ifas.ufl.edu/walker/buzz/SM_AcalusaRelatives.pdf)) and was probably accidentally introduced with shipments of butterfly pupae from Central America. If it is indeed this tropical species, it is unlikely to become established outdoors in natural habitats in Canada. Distinctive dark markings on the fore wings distinguish males (Fig. 1) of *Anaxipha* “species 1” from other

Ontario cricket species. The pale veins bordering infuscate cells make the females (Fig. 2) easy to separate from *A. exigua* (Say).

Specimen Records: ONTARIO: Wellington Co., Cambridge, Wings of Paradise Butterfly Conservatory, 43°27’7”N 80°22’2”W, in butterfly greenhouse, 20 April 2013, Paiero & Zinger (2 ♂♂); 3 July 2013, Paiero & Jackson (1 ♀, debu00367134); 22 May 2014, Paiero & Zinger (2 ♂♂; additional males and females from this collection were sent to Funk for further examination).

*Cyrtoxipha gundlachi* Saussure (Gryllidae: Trigidoniinae)

*Cyrtoxipha gundlachi* (Fig. 3), a species native to Florida and parts of the Caribbean (Eades et al. 2013), was found at the Cambridge Wings of Paradise Butterfly Conservatory and the Niagara Butterfly Conservatory. During visits to both sites, nymphs and adults were observed on foliage. No native *Cyrtoxipha* species occur in Canada but *Cyrtoxipha columbiana*, which is similar in appearance to *C. gundlachi*, is found as far north as New Jersey (Walker 1969) and southern Ohio (Walker and Moore 2012). *Cyrtoxipha columbiana*, like *Anaxipha* species 1, may have been introduced with shipments of butterfly pupae, but it may have also been brought in with plants used within the greenhouses as both greenhouses have previously received plants from Florida.

Specimen Records: ONTARIO: Wellington Co., Cambridge, Wings of Paradise Butterfly Conservatory, 43°27’7”N 80°22’2”W, in butterfly greenhouse, August 2013, S.M. Paiero (3 ♂♂, 3 ♀♀, debu00367122-27); Niagara Reg., Niagara Falls, Niagara Butterfly Conservatory, 43°10’37”N 70°3’20”W, 22 June 2013, S.M. Paiero (2 ♀♀, debu00367135-36); same as previous except 8 August 2013 (1 ♂, 3 ♀♀, debu00367150-53); same as previous except 7 October 2013 (4 ♂♂, 2 ♀♀, debu00367128-133)

*Neoconocephalus exiliscanorus* (Davis) (Tettigoniidae: Conocephalinae)

*Neoconocephalus exiliscanorus* (the Slightly Musical Conehead) is here recorded from Canada for the first time, from a marsh adjacent to the Wheatley Provincial Park campgrounds. Although Vickery and Kevan (1985) indicate that *N. exiliscanorus* was expected to occur in Canada, the new Wheatley record is about 250 km north of the most northerly previous record. Its apparent preference for marsh habitat may be why this species had not previously been found. If *N. exiliscanorus* is established in extreme southern Ontario, additional populations may occur in similar habitats or along the shores of Lake Erie (e.g., Point Pelee).

Specimens examined: ONTARIO: Kent Co., Wheatley Provincial Park, 42°5’25”N 82°26’50”W, 10-11 August 2007, S.M. Paiero (2 ♂♂, debu00286872-73); same as previous except 7 September 2007, S.M. Paiero (2 ♂♂, debu00291156-57).

*Neoconocephalus retusus* (Scudder) (Tettigoniidae: Conocephalinae)

*Neoconocephalus retusus* (the Round-tipped Conehead) is an eastern North American species here newly recorded from Ontario on the basis of observations and collections from the Haldimand-Norfolk region. Gartshore and Carson (pers. comm.) have heard this species singing at the same site in successive years, suggesting that the species is established in Ontario. If *N. retusus* was previously overlooked in Ontario it may be either due to its later emergence (Rehn & Hebard 1915) or because it has a restricted distribution in
the Norfolk area or because it was only recently established. Catling et al. (2009) previously recorded this species as new to Canada on the basis of specimens from Nova Scotia, but suggested that the species was adventitious rather than established.

Specimens examined: ONTARIO: Hald.-Norfolk Reg., Walshingham, ~5km SW, Pterophyla, 42°38’27”N 80°34’29”W, 31 August 2010, M. Gartshore, (1 ♂, debu00340774, one of several males heard singing by M. Gartshore and P. Carson), 27 September 2014, Gartshore & Carson (2 ♂♂).

Chloroscirtus forcipatus (Brunner von Wattenwyl) (Tettigoniidae: Phaneopterinae) (Fig. 4)

Chloroscirtus forcipatus is a Central American species that has established a population at the Niagara Butterfly Conservatory, likely being transported there in shipping materials. Feeding and oviposition by this exotic phytophagous species has caused significant damage to a wide variety of cultivated plants at the conservatory and discussions with staff indicate that it has been present there for many years.

Chloroscirtus forcipatus (Fig. 4) is superficially similar to the common bush katydids in the genus Scudderia but the hind femur has no spines on the lateral genicular lobe (Nickle 1992a), the eyes are more pronounced with the hind margin somewhat angled, the fore wings are more strongly microreticulate, the femora are shorter (only extending 2/3 length of fore wings; Scudderia extend to 4/5 or more), and the male cerci are distinct (Fig. 5). It will key out in Walker and Moore (2012) as Turpilia rostrata (Rehn & Hebard) although T. rostrata has spines on the lateral genicular lobe of the hind femur.

Specimens examined: ONTARIO: Niagara Reg., Niagara Falls, Niagara Butterfly Conservatory, 43°10’37”N 70°3’20”W, 22 June 2013, S.M. Paiero (2 ♀♀, debu00367137-38); 8 August 2013 (1 ♂, 2 ♀♀, debu00367154-56); 7 October 2013 (5 ♂♂, 3 ♀♀, debu00367160-67).

Camptonotus carolinensis (Gerstaeker) (Gryllacrididae)

Also known as the Carolina Leaf-rolling Cricket, C. carolinensis (Fig. 6) is here newly recorded from Canada on the basis of a specimen from Point Pelee National Park. Since C. carolinensis is the only representative of this group in North America, it represents a new family record for Canada. This predaceous species was previously known from Indiana to Florida (Walker and Moore 2012). Camptonotus carolinensis is easily overlooked as it is nocturnal and creates a leaf shelter in which to hide during the day, which might explain why it was not found earlier in Ontario.

Specimens examined: ONTARIO: Essex Co., Point Pelee Natl. Pk., West Beach, 41°59’0”N 82°32’50”W, wooded area, Malaise & pan traps, 10-23 September 1999, O. Lonsdale (1 ♂, debu00013739).

Melanoplus punctulatus griseus (Thomas) (Acrididae)

New records of M. punctulatus griseus from southern Ontario represent the first Canadian records of this subspecies, previously known from nearby Michigan (Vickery and Kevan 1985, Bland 2003). Melanoplus punctulatus punctulatus (Scudder), the other subspecies in Ontario, is widespread and extends east into Quebec. Bland (2003) reviewed the differences between the two subspecies.

Specimens examined: ONTARIO: Kent Co., Rondeau Prov. Pk., South Point Trail, nr. East
parking lot, oak savannah, 42°15’42”N 81°50’49”W, 10 October 2003, S.A. Marshall (1 ♂, 1 ♀, debu01134545-46); Essex Co., Point Pelee National Park, Visitor Centre, malaise & pans, O. Lonsdale, 11-18 August 2000 (2 ♂♂, debu01004046-47); same as previous except 5-26 September 2000 (2 ♂♂, debu01006370, debu01006376); same as previous except 27 August-5 September 2000 (1 ♂, debu01006403).

Scapteriscus borellii Linnaeus (Gryllotalpidae)

We identified one specimen of *S. borellii* from an Oakville bakery and it almost certainly represents an adventitious individual. *Scapteriscus borellii* is a Neotropical species (Nickel 1992b) that has become established in the southeastern U.S with its northernmost limit in North Carolina.

Specimen Examined: ONTARIO: Halton Reg., Oakville, found in a bakery, 13 October 1983, R. Ostrow (1 ♂, debu01076772).

Significant provincial range extensions

*Meconema thalssinum* (deGeer) (Tettigoniidae: Meconematinae)

*Meconema thalssinum* (the Drumming Katydid) was originally recorded in Canada in 2004 (Marshall *et al.* 2004) on the basis of specimens from Harrow, and it has since been recorded in British Columbia as well (Cannings *et al.* 2007). This European species appears to have become widespread and established in Ontario from Windsor to Toronto, in both rural and urban environments.


*Neoxabea bipunctata* (deGeer) (Gryllidae)

This Carolinian species was originally recorded from Ontario on the basis of specimens from Essex County (Marshall *et al.* 2004). The more recent records presented here suggest that *N. bipunctata* now has a much more extensive range in southern Ontario.

Specimens examined: ONTARIO: Brant Co., Newport Forest, 30 July 2009, S.A. Marshall (1 nymph, photographed); Elgin Co., Springwater Forest, 3 October 2013, J. Allair (1 ♂, Allair 2013); Essex Co., Wheatley Prov. Pk., 1 Sep 2007, S.M. Paiero (1 ♀, debu00291096); Hald.-Norfolk Reg., Walshingham, ~5km SW, Pterophyla, 42°38’27”N 80°34’29”W, 31 August 2013, at light sheet, Carson & Gartshore (2 ♂♂, 2 ♀; observed); same data as previous except 1 September 2013 (2 ♂♂, 2 ♀; photograph/observed); same
data as previous except 3 September 2013 (1♀; observed); Halton Reg., Oakville, nr. Hwy. 25 & Burnthamthorpe Rd., 29 August 2014, S.M. Paiero (1♂); Kent Co., Rondeau Prov. Pk., campground, 42°19’4”N 81°50’41”W, 25-26 September 2009, S.M. Paiero (1♀, debu00318141); Middlesex Co., London, Environmental Sciences Western Field Station, 43°4’29”N 81°20’13”W 13 September 2013, L. Des Marteaux (1♀, photograph).

Myrmecophila pergandei (Bruner) (Myrmecophilidae)

Although this species was first formally recorded from Canada during an insect survey of Ojibway Prairie, Windsor, Ontario (Paiero et al. 2010), the earliest Canadian collection of *M. pergandei* (the Eastern Ant Cricket) was from Ancaster, Ontario (Borer’s Falls Conservation Area) in 2006, and we have also found it at Wheatley Provincial Park, Ontario. *Myrmecophila pergandei* is rarely encountered outside of ant colonies and most of the specimens we have observed were found in slave-maker ant colonies (*Formica* species) in Ancaster. Specimens from Wheatley Provincial Park and Ojibway Prairie Provincial Nature Reserve were found at night on the bark of trees, walking with foraging carpenter ants (*Camponotus* species).


Ectobius lapponicus (Linnaeus) (Ectobiidae)

This species, previously recorded in Canada from the Maritimes (Chandler 1992, Clements et al. 2013), is here recorded from Ontario for the first time although it appears to have been established in the province at least since 2006. Several specimens were collected during a 2014 “Bioblitz” in Toronto’s Humber Valley and the species appears to be well established in the area. Several *Ectobius* nymphs collected during a 2013 “Bioblitz” in the nearby Rouge Valley are also likely to be *E. lapponicus*. Hoebeke and Carter (2010) gave features to separate this species from other introduced *Ectobius* in the northeast.

Specimen data: ONTARIO: Muskoka Dist., Gravenhurst, Muskoka Lake, 1 July 2006, on tree leaf, J.S. Maclvor, (1 ♂ debu01040861); same as previous except 2 July 2006 (1 ♀ debu01040862); Peel Reg., Mississauga, nr. Mississauga Rd. & Dundas Rd., 18 July 2008, S.M. Paiero, (1 ♂ debu00302523); York Reg., McMichael Canadian Art Gallery, 43°50’30”N 79°37’2”W, nymphs collected on gravel nr. lights, 24 May 2014, S.M. Paiero (5 ♂ 3 ♀♀ 3 nymphs); Halton Reg., Oakville, nr. Hwy.25 & Burnhamthorpe Rd., 25 June 2014, S.M. Paiero (1 ♂); same as previous except 1 July 2014 (1 ♂).

Ectobius lucidus (Hagenbach) (Ectobiidae)

Hoebeke and Carter (2010) reviewed the distribution of *Ectobius* in northeastern North America and gave characteristics to separate this species from other northeastern *Ectobius*, but did not record *E. lucidus* from Ontario. *Ectobius lucidus*, like *E. lapponicus*, was first recorded from Ontario (Orillia, 20 June 2008, “helmetinthebush”, 1 ♀; Barrie, Ontario, 25 June 2005, “shemiles”, 1 ♂) on the basis of images posted to and identified
on BugGuide.net. The additional specimen records below confirm the establishment of *E. lucidus* in Ontario, and further suggest that this species has been here since at least 1973.

Specimen data: ONTARIO: Simcoe Co., Barrie, 2 August 1973, R.J. Hellewell, (1 ♂, debu01035451); Barrie, 11 July 2010, “vireo” (1 ♂, photo posted on bugguide.net); Midhurst, Neretra St., 2 July 2007, A. Brunke, (1 ♂, debu01035452); Simcoe Co., Georgian College, u.v. light, 20 July 1977, E.R. Fuller (1 ♂, ROM); Simcoe Co., S of Washago, mixed forest, 23 July 1992, L.D. Coote (1 ♂, ROM); Middlesex Co., London, Public Submission, 12 June 2001, T.A. Zowinski (1 ♂ 1 ♀).

**Dubious record**

*Orocharis saltator* Uhler (Gryllidae: Eneopterinae)

The University of Guelph Insect Collection has a specimen of *O. saltator* (the Jumping Bush Cricket) labelled as “Brant Co.?” without a collector or date. As no other Brant County exists in Canada or the United States, it is presumed that this locality refers to Ontario where it would be both a new species and subfamily record for Canada. The northern limit of the range of this species is close to southern Ontario but we have not included it in the checklist because the single record is doubtful.

**Complete checklist of Ontario Orthoptera**

Table 1 is a list of all 134 species and two additional subspecies of Orthoptera recorded from Ontario, including native species (125, including multiple subspecies), introduced species occurring outdoors (2), introduced species only found indoors (6), and adventitious species (7, including intercepted material). Table 2 is a list of the 36 other orthopteroids recorded from Ontario, including native species (6), introduced species occurring outdoors (8), introduced species only found indoors (8), adventitious species (9), and cultured species (5). Cultured species used in the pet trade were not treated as provincial records, as they are not known to occur in Ontario outside of captivity. Nomenclature follows Eades *et al.* (2013) for the Orthoptera, Beccaloni (2014) for the Blattodea, Deem (2014) for the Dermaptera, Otte *et al.* (2014) for the Mantodea, and Brock (2014) for the Phasmda.

**Changes in status**

*Melanoplus differentialis differentialis* (Thomas) was considered by Vickery and Scudder (1987) to be an introduced species. We consider it to be a native species as its occurrence in Ontario is close to the northern limit of its historical range. *Syrbula admirabilis* (Uhler) was also treated as an invasive by Vickery and Scudder (1987), but this species too has a historical range with Ontario being its northern limit. Although there are no recent Ontario records of *S. admirabilis*, historical records from southwestern Ontario are consistent with the overall range of the species, and it is here considered as native to the province. Similarly, *Parcoblatta caudelli* Hebard was treated by Vickery and Kevan (1987) as an adventitious species in Ontario but, based on the overall distribution of this species and its occurrence in Rondeau Provincial Park, we treat it as a native species. *Psinidia fenestralis fenestralis* (Audinet-Serville) was treated by Vickery and Scudder (1987) as “expected to occur in Ontario”, but we have not included it in the checklist because we have yet to see a verifiable Ontario record of this species. *Schistocera americana* (Drury) was treated by Vickery and Scudder (1987) as an adventitious species not established in Ontario.
TABLE 1. Checklist of Ontario Orthoptera. (* denotes an introduced species occurring outdoors; $ denotes an introduced species only found indoors; ‡ denotes an intercepted or adventitious species).

ACRIDIDAE – Grasshoppers (52 species + 1 subspecies)
Acridinae (1 species)
*Melanoplus bruneri* Scudder
*Melanoplus confusus* (Scudder)
*Melanoplus dawsoni* (Scudder)
*Melanoplus differentialis differentialis* (Thomas)
*Melanoplus eurycerus* Hebard
*Melanoplus fasciatus* (F. Walker)
*Melanoplus femurrubrum* (DeGeer)
*Melanoplus huroni* Blatchley
*Melanoplus islandicus* Blatchley
*Melanoplus keeleri luridus* (Dodge)
*Melanoplus maurus* Smith
*Melanoplus punctulatus griseus* (Thomas)
*Melanoplus punctulatus punctulatus* (Scudder)
*Melanoplus sanguinipes* (Fabricius)
*Melanoplus scudderi scudderi* (Uhler)
*Melanoplus stonei* Rehn
*Melanoplus walshii* Scudder
*Paroxya hoosieri* (Blatchley)

Oedipodinae (16 species)
*Arphia conspersa* Scudder
*Arphia pseudonietana* (Thomas)
*Arphia sulphurea* (Fabricius)
*Cannula pellucida* (Scudder)
*Chortophaga viridifasciata* (DeGeer)
*Dissostheria carolina* (Linnaeus)
*Encoplotopus sordidus* (Burmeister)
*Pardalophora apicalata* (Harris)
*Spharagemon bolli* Scudder
*Spharagemon collaris* Scudder
*Spharagemon marmorata marmorata* (Harris)
*Stethophyma gracile* (Scudder)
*Stethophyma lineata* (Scudder)
*Trimerotropis huronia* E.M. Walker
*Trimerotropis maritima* (Harris)
*Trimerotropis verruculata verruculata* (Kirby)

Melanoplinae (23 species + 1 subspecies)
*Booneacris glacialis canadensis* (Walker)
*Booneacris variegata* (Scudder)
*Dendroctettix quercus* Packard
*Melanoplus angustipennis* (Dodge)
*Melanoplus bivitattus* (Say)
*Melanoplus borealis borealis* (Fieber)
TABLE 1 continued...

**GRYLLIDAE – Crickets (23 species)**

*Gryllinae* (4 species)
- *Acheta domesticus* (Linnaeus)
- *Gryllodes sigillatus* (F. Walker)
- *Gryllus pennsylvanicus* Burmeister
- *Gryllus veletis* (Alexander & Bigelow)

*Nemobiinae* (6 species)
- *Allonemobius allardi* (Alexander & Thomas)
- *Allonemobius fasciatus fasciatus* (deGeer)
- *Allonemobius griseus griseus* (E.M. Walker)
- *Allonemobius maculatus* (Blatchley)
- *Eunemobius carolinus carolinus* (Scudder)
- *Neonemobius palustris* (Blatchley)

**Oecanthinae** (10 species)
- *Neoxabea bipunctata* (deGeer)
- *Oecanthus argentinus* Saussure
- *Oecanthus exclamationis* Davis
- *Oecanthus fultoni* T.J. Walker
- *Oecanthus laricix* T.J. Walker
- *Oecanthus latipennis* Riley
- *Oecanthus nigricornis* F. Walker
- *Oecanthus niveus* (DeGeer)
- *Oecanthus pini* Beutenmüller
- *Oecanthus quadripunctatus* Beutenmüller

**Trigonidiinae** (3 species)
- *Anaxipha* species 1
- *Anaxipha exigua* (Say)
- *Cyrtoxipha gundlachi* Saussure

**GRYLLOTALPIDAE – Mole Crickets (2 species)**
- *Neocurtilla hexadactyla* (Perty)
- *Spergilla borelli* Linnaeus

**RHAPHIDIPHORIDAE – Camel Crickets**

(9 species + 1 subspecies)
- *Aemodogryllinae* (1 species)
- *Diestrammena asynamora* (Adelung)

**CEUTHOPHILIDAE** (8 species + 1 subspecies)
- *Ceuthophillus brevipes* Scudder
- *Ceuthophillus divergens* Scudder
- *Ceuthophillus guttulosus guttulosus* F. Walker
- *Ceuthophillus guttulosus thomasi* Hubbell
- *Ceuthophillus latens* Scudder
- *Ceuthophillus maculatus* (Harris)

*Ceuthophillus meridionalis* Scudder
*Ceuthophillus pallidipes* E.M. Walker
*Ceuthophillus uhleri* Scudder

**CEUTHOPHILIDAE** (Leaf-rolling Crickets (1 species))
- *Camptonotus carolinensis* (Gerstaecker)

**TETTIGONIIDAE – Katydid (35 species)**

**Conocephalinae** (20 species)
- *Conocephalus attenuatus* (Scudder)
- *Conocephalus brevipennis* (Scudder)
- *Conocephalus fasciatus* (DeGeer)
- *Conocephalus nigropleurum* (Bruner)
- *Conocephalus saltans* (Scudder)
- *Conocephalus strictus* (Scudder)
- *Neoconocephalus ensiger* (Harris)
- *Neoconocephalus exiliscanorus* (Davis)
- *Neoconocephalus lyristes* (Rehn & Hebard)
- *Neoconocephalus retusus* (Scudder)
- *Neoconocephalus robustus* (Scudder)
- *Neoconocephalus triops* (Linnaeus)
- *Orchelimum campestrum* Blatchley
- *Orchelimum concinnum* Scudder
- *Orchelimum delicatum* Bruner
- *Orchelimum gladiator* Bruner
- *Orchelimum nigripes* Scudder
- *Orchelimum silvicicum* McNeill
- *Orchelimum volcanum* McNeill
- *Orchelimum vulgare* Harris

**Meconematinae** (1 species)
- *Meconema thalassinum* (DeGeer)

**Phaneopterinae** (9 species)
- *Amblycorypha oblongifolia* (DeGeer)
- *Chloroscirtus forcipatus* (Brunner von Wattenwyl, 1878)
- *Microcentrum rhombifolium* (Saussure)
- *Scudderia curvicauda* (DeGeer)
- *Scudderia fasciata* Beutenmüller
- *Scudderia furcata furcata* Brunner von Wattenwyl
- *Scudderia pistillata* Brunner von Wattenwyl
- *Scudderia septentrionalis* (Audinet-Serville)
- *Scudderia texensis* Saussure & Pictet

**Pseudophyllinae** (1 species)
TABLE 1 continued...

Pterophylla camellifolia camellifolia (Fabricius)  * Roeseliana roselii roselii (Hagenbach)
(Tettigoniinae (4 species))  Sphagniana sphagnorum (F. Walker)
Atlanticus davisi Rehn & Hebard
Atlanticus testaceus (Scudder)

TABLE 2. Checklist of Ontario’s other orthopteroids (Blattodea, Dermaptera, Mantodea, Phasmatodea). (* denotes an introduced species occurring outdoors; $ denotes introduced species only found indoors; ‡ denotes an intercepted or adventitious species, % denotes a species that is reared in cultures in Ontario but not known to be established outside of these cultures).

**BLATTODEA – Cockroaches (22 species)** (Infraorder ISOPTERA)
and Termites (3 species)
**Blattidae (4 species)**  Kalotermitidae (1 species)
$Blatta orientalis$ Linnaeus  ‡Cryptotermes brevis (F. Walker)
$Periplaneta americana$ (Linnaeus)  Rhinotermitidae (2 species)
$Periplaneta australasiae$ (Fabricius)  *Reticulitermes flavipes* (Kollar)
%Shelfordella lateralis (Walker)  ‡Reticulitermes virginicus (Banks)

**Ectobiidae (5 species)**
*Ectobius lapponicus* (Linnaeus)
*Ectobius lucidus* (Hagenbach)
‡Nyctibora laevigata (Palisot de Beauvois)
‡Nyctibora noctivaga Rehn
‡%Symplote pallens (Stephens)

**Blatellidae (7 species)**
$Blatella germanica$ Linnaeus  DERMAPTERA – Earwigs (8 species)
‡Cariblatta sp. A  Anisolabididae (2 species)
Parcoblatta caudelli Hebard  *Anisolabis maritima* (Bonelli)
Parcoblatta pennsylvanica (DeGeer)  $Euboriella annulipes$ (Lucas)
Parcoblatta uhleriana (Saussure)  Forficulidae (4 species)
Parcoblatta virginica (Brunner von Wattenwyl)  ‡Chelidurella acanthopygina (Gene)
$Supella longipalpa$ (Fabricius)  Doru aculeatum (Scudder)
‡Cariblatta sp. A  ‡Doru taeniatum (Dohrn)
Parcoblatta caudelli Hebard  *Forficula auricularia* Linnaeus
Parcoblatta pennsylvanica (DeGeer)  Spongiphoridae (2 species)
Parcoblatta uhleriana (Saussure)  *Labia minor* (Linnaeus)
Parcoblatta virginica (Brunner von Wattenwyl)  $Marava arachidis$ (Yersin)
$Supella longipalpa$ (Fabricius)  MANTODEA – Praying Mantids (2 species)
Blaberidae (6 species)  Mantidae (2 species)
%Blaberus discoidalis Serville  *Mantis religiosa* Linnaeus
%Blaberus giganteus (Linnaeus)  *Tenodera sinensis* Saussure
%Blaptica dubia (Serville)
%Gromphadorhina portentosa (Schaum)
‡Panchlora nivea (Linnaeus)
$Pycnoscelis surinamensis$ (Linnaeus)  PHASMATODEA – Walkingsticks (1 species)

**Sphagniana sphagnorum** (F. Walker)
**Tettigoniinae (4 species)**  Heteronemiiidae (1 species)
Atlanticus davisi Rehn & Hebard
Atlanticus testaceus (Scudder)

Diapheromera femorata (Say)
Since *S. americana* has a historical eastern North American range within flying distance of Canada, we consider it to be a native, albeit migrant, species. *Pycnoscelis surinamensis* was also recorded by Vickery and Kevan (1987) as an adventitious species in Ontario but this species is now well established in many greenhouses.

**Nomenclatural changes**

Nomenclatural changes since Vickery and Scudder (1987) are summarized below.

**Acrididae**

*Schistocerca emarginata* (Scudder) is now treated as a synonym of *S. lineata* Scudder (Song 2004).

*Stethophyma* was previously treated within the Acrididine (Vickery and Kevan 1985) and Oedopodinae (Vickery, 1985; Scudder 1987); it is now treated in the Oedopodinae (Chapco and Contreras 2007).

*Chorthippus curtipennis curtipennis* (Harris) is now treated as *Pseudochorthippus curtipennis curtipennis* (Harris) (Défaut 2012).

*Arphia pseudonietana pseudonietana* (Thomas) is now treated as *A. pseudonietana*; no subspecies are recognized (Otte 1984).

*Orphulella pelidna pelidna* (Burmeister) is now treated as *O. pelidna*; subspecies are no longer recognized (Eades *et al.* 2013).

*Spharagemon bolli bolli* Scudder is now treated as *S. bolli* Scudder; subspecies are no longer recognized (Otte 1984).

*Trimerotropis verruculata* (Kirby) is now treated as *Trimerotropis verruculata verruculata* (Kirby) because an additional subspecies is now recognized (*T. verruculata suffusa*; Eades *et al.* 2013).

*Trimerotropis maritima interior* Walker is now treated as *T. maritima* (Harris); subspecies are no longer recognized (Otte 1984).

*Melanoplus viridipes eurycercus* Hebard is now treated as a separate species, *M. eurycercus* Hebard (Otte 2002).

*Melanoplus femurrubrum femurrumbrum* (DeGeer) is now treated as *M. femurrubrum*; subspecies are no longer recognized (Eades *et al.* 2013).

**Romaleidae**

*Romalea guttata* (Houttuyn) is now treated as *R. microptera* (Beauvois) (the Eastern Lubber Grasshopper); it is apparently occasionally carried north from the southeastern USA in plant shipments or as bait by fishermen, but is not established in Ontario.

**Tridactylidae**

*Ellipes minutus minutus* (Scudder) is now treated as *E. minuta* (Scudder) (spelling corrected); subspecies are no longer recognized (Eades *et al.* 2013).

**Tettigidae**

*Tettigidea lateralis* (Say) is now treated as *T. lateralis lateralis* (Say) as another subspecies is recognized (Rehn and Grant 1958). Vickery and Kevan (1985) recognized the
subspecies but it was omitted in Vickery and Scudder (1987).

Gryllidae
The Tropical House Cricket (Gryllodes sigillatus (F. Walker)) was previously confused with G. supplicans (F. Walker) (Otto 2006). G. sigillatus is occasionally brought into Canada as cultures and is commercially available as reptile food, but is not known to be established outside of cultures.

Rhaphidophoridae
Tachycines asynamorus Adelung is now treated as Diestrtrammena (Tachycines) asynamorus (Adelung); Tachycines has been lowered to subgeneric rank (Sugimoto 2002).

Tettigoniidae
Atlanticus davisi Rehn & Hebard was previously treated by some authors as a synonym of A. monticola Davis but its species status is here retained, following Eades et al. (2013). Roeseliana roeselii (Hagenbach) was placed in Roeseliana by Zeuner (1941) but has since been treated by most authors as belonging to Metrioptera or Sphagiana. Massa & Fontana (2011) reinstated Roeseliana as a valid genus. Multiple subspecies are also recognized and R. roeselii roeselli is the subspecies present in North America (Eades et al. 2013). Pterophylla camellifolia (Fabricius) is now treated as P. camellifolia camellifolia as several subspecies are recognized (Alexander 1968, Walker and Moore 2012).

Mantidae
Tenodera sinensis Saussure was originally treated as a subspecies of T. aridifolia Stoll; Ehrmann (2002) treated it as a separate species.

Discussion
Although the orthopteroids are relatively well studied in North America, further Canadian records are to be expected. Several species so far unknown from Canada have known ranges that almost reach the border, especially near southern Ontario. For example, Oecanthus forbesi Titus, morphologically indistinguishable from O. nigricornis F. Walker, likely occurs in southwestern Ontario based on range maps (Walker and Moore 2012) but has not yet been formally recorded from Canada. This species would be most effectively sought out on the basis of its song. Other species currently known from nearby localities just south of the border, such as Phyllophus pulchellus Uhler or Trachyrhachys kiowa (Thomas) are likely candidate additions to our fauna in response to a warming climate, and might already occur here as undocumented populations. There also remains some possibility of adding previously undescribed species to the provincial fauna. Several Anaxipha, for example, have only recently been described from the eastern USA (Walker and Funk 2014) and some of these may yet be discovered in southwestern Ontario. There is also a high probability of continued discoveries of newly introduced exotic species. Although most of the recently discovered introductions are of tropical species that are unable to survive
outside during the winter in Canada, several exotic orthopteroids (*Meconema thalassinum*, *Roeseliana roeselii roeselii*, *Ectobius lapponicus* and *E. lucidus*) have become successfully established in Ontario. And while the presence of *Anaxipha* species 1 is surprising, finding an undescribed tropical species in temperate climates is not unprecedented. Weissman *et al.* (2012) found a previously undescribed *Gryllus* species (*G. locorojo* Weissman & Gray, also known as the “crazy red”), apparently native to South America, being used as a feeder cricket in parts of Denmark, England and the United States.

The ongoing task of documenting the presence and ranges of orthopteroids (and other arthropods) in Canada is expedited by keys and photographic guides that enable amateurs and biologists without entomological training to recognize species. Vickery and Kevan (1985; available through the Entomological Society of Canada’s website) remains an important resource although can be difficult to use without access to an extensive reference collection. Bland (2003), Walker and Moore (2012) and Kirk and Bomar (2005) are more extensively illustrated guides that cover parts of Ontario’s fauna and supplement the keys given in Vickery and Kevan (1985). Correctly identified photos of most Canadian orthopteroid species can be found on bugguide.net ([http://bugguide.net/node/view/15740](http://bugguide.net/node/view/15740)) and Walker (2014) provided keys and songs to the Gryllidae and Tettigoniidae of North America.

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