Anticheta (Key to species) <u>A. borealis Foote</u> <u>A. canadensis (Curran)</u> <u>A. fulva Steyskal</u> <u>A. johnsoni (Cresson)</u> <u>A. melanosoma Melander</u> <u>A. robiginosa Melander</u>

Atrichomelina

A. pubera (Loew)

Colobaea

C. americana Steyskal

Dictya (Key to species)

- D. atlantica Steyskal
- <u>D. borealis Curran</u>
- D. expansa Steyskal
- D. gaigei Steyskal
- D. hudsonica Steyskal
- D. laurentiana Steyskal
- D. oxybeles Steyskal
- D. pictipes (Loew)
- D. steyskali Valley
- D. umbroides Curran

Dictyacium (Key to species) <u>D. ambiguum (Loew)</u> <u>D. firmum Steyskal</u> Ditaeniella D. parallela (Walker)

Elgiva (Key to species) <u>E. connexa (Steyskal)</u> <u>E. solicita (Harris)</u>

Euthycera E. flavescens (Loew)

Hedria H. mixta Steyskal

Hoplodictya <u>H. setosa (Coquillett)</u>

Limnia (Key to species) <u>L. boscii (Robineau-Desvoidy)</u> <u>L. conica Steyskal</u> <u>L. fitchi Steyskal</u> <u>L. lindbergi Steyskal</u> <u>L. loewi Steyskal</u> <u>L. ottawensis Melander</u> <u>L. sandovalensis Fisher and Orth</u> L. sparsa (Loew)

Oidematops O. ferrugineus Cresson Pherbecta <u>P. limenitis Steyskal</u>

Pherbellia (Key to species) P. albocostata (Fallén) P. albovaria (Coquillett) P. anubis Knutson P. argvra Verbeke *P. beatricis* Steyskal *P. griseicollis* (Becker) P. griseola (Fallén) P. luctifera (Loew) P. nana nana (Fallén) P. obscura (Ringdahl) P. paludum Orth P. prefixa Steyskal P. quadrata Steyskal P. schoenherri maculata (Cresson) P. seticoxa Steyskal P. similis (Cresson) P. suspecta Orth and Steyskal P. tenuipes (Loew) P. vitalis (Cresson)

Poecilographa <u>P. decora (Loew)</u>

(Continues on next page.)

Pteromicra (Key to species)

P. albicalceata (Cresson)

P. anopla Steyskal

P. pectorosa (Hendel)

- P. pleuralis (Cresson)
- P. similis Steyskal

P. sphenura Steyskal

P. steyskali Foote

Renocera (Key to species)

<u>R. cressoni Mathis and Knutson</u>

<u>R. johnsoni Cresson</u>

<u>R. longipes (Loew)</u>

R. striata (Meigen)

Sciomyza (Key to species)

- S. aristalis (Coquillett)
- S. simplex Fallén

S. varia (Coquillett)

Sepedon (Key to species)

<u>S. americana Steyskal</u>

- S. armipes Loew
- S. borealis Steyskal

S. fuscipennis Loew

S. gracilicornis Orth

S. lignator Steyskal

S. neili Steyskal

Tetanocera (Key to species) T. annae Steyskal T. clara Loew T. ferruginea Fallén T. fuscinervis (Zetterstedt) T. kerteszi Hendel T. latifibula Frey T. loewi Steyskal T. melanostigma Steyskal T. mesopora Steyskal T. montana Day *T. oxia* Steyskal T. phyllophora Melander T. plebeja Loew T. plumosa Loew T. robusta Loew T. rotundicornis Loew T. silvatica Meigen T. spirifera Melander T. valida Loew T. vicina Macquart

Trypetoptera

T. canadensis (Macquart)



Poecilographa decora

Poecilographa decora

1	Body and wings spotted exactly as in the above photographs. Males and females identical except for postabdomen.	Poecilographa One species, <u>P. decora</u> <u>(Loew)</u>
1'	Wings spotted or not, thorax and abdomen never with a pattern of prominent circular spots as in the above photographs.	<u>2</u>



2(1)	Lunule broadly exposed, dark and shining, between anterior margin of dull frons and base of antennae. Scutellum shining, usually dark brown (best observed from behind), contrasting with lighter-colored mesonotum. Wing with distinctive pattern of oval clear spots extending to margins as in above image.	<i>Euthycera</i> One species, <u><i>E.</i></u> <u>flavescens (Loew)</u>
2'	Lunule hidden or nearly hidden, not dark and shining, concolorous with frons. Scutellum not shining, concolorous with mesonotum. Wing with or without oval clear spots but if with such spots, pattern not matching that shown above.	<u>3</u>





Oidematops ferrugineus



face with large, rounded, tumor-like swelling (visible in profile)





4(3)	Face with a large, rounded, tumor-like swelling (visible in profile, just below antennae). Arista white. Proepisternum with one seta, foretibia with two preapical setae.	<i>Oidematops</i> One species, <u><i>O. ferrugineus</i></u> <u>Cresson</u>
4'	Face without a prominent tubercle. Either proepisternum without a seta OR foretibia with only a single seta OR arista black.	<u>5</u>





Sciomyza







Back to couplet



7(6)	Frons entirely shiny. Forefemur usually with an anteromedial ctenidium (short series of closely spaced spinules). Mesonotum shiny black or brown.	<u>Pteromicra 37</u>
7'	Frons not shiny. Forefemur without a ctenidium; sometimes with normal setae. Mesonotum dull, not shining.	<u>8</u>





Ditaeniella parallela

Pherbellia

Back to couplet







Back to couplet





11(10)	Subalar sclerite without setae.	<u>12</u>
11'	Subalar sclerite with setae.	<u>17</u>









14(13)	Anepisternum and anepimeron with setae. <u>One fronto-orbital seta</u> or 3 dorsocentral setae.	<u>15</u>
14'	Anepisternum and anepimeron bare or with setae. Two fronto-orbital setae and 1 or 2 dorsocentral setae.	<u>16</u>



Back to couplet



15(14)	Face white, without central black spot; 2 fronto-orbital setae, 3 dorsocentral setae. Katepisternum with distinct setae. Coastal marshes.	Hoplodictya One species, <u>H. setosa</u> (Coquillett)
15'	Face white, with central black spot; 1 fronto-orbital seta, 2 dorsocentral setae. Katepisternum with setulae but without setae. Females in our area are unidentifiable to species.	<u>Dictya 45</u>



60		arista white
Pherb	arista black wing cells with several confluent, widely separated spots wing patterned with many small white patches	Limnia
17(11)	Arista black. Wing cells with several confluent, widely separated spots forming interrupted transverse bars. Vein R ₂₊₃ with several weak, irregular undulations. Prescutellar acrostichal setae present or absent. Prosternum bare.	<i>Pherbecta</i> One species, <u><i>P.</i></u> <u><i>limenitis</i> Steyskal</u>
17'	Arista white and Prosternum bare or setulose, or arista black and prosternum setulose. Wing with or without pattern. Vein R_{2+3} without undulations. Prescutellar acrostichal setae present.	<u>18</u>















22(21)	In lateral view, pedicel approximately 2.5X as long as width at base; in anterior view flattened, not tubular.	<u>Sepedon fuscipennis Loew</u>
22'	In lateral view, pedicel 4X or more as long as width at base; in anterior view tubular, not flattened.	Sepedon gracilicornis Orth







Posterior view of abdomen of female Sepedon armipes: all posterior tergites are inverted-V shaped along the hind margin.

Sepedon armipes



Posterior view of abdomen of female Sepedon borealis: only anteriormost of posterior four tergites is inverted-V shaped; the rest are circular or evenly curved along the hind margin (similar in S. lignator Steyskal and S. neili Steyskal).

Sepedon borealis; similar in S. lignator and S. neili

Back to couplet







Sepedon neili



Sepedon lignator

Back to couplet








Sciomyza aristalis

Sciomyza simplex

Back to couplet





30(29)	Anterior margin of frons dull; usually 2 fronto-orbital setae, anterior seta often minute. Arista sparsely plumose with short setulae. Prosternum usually with long setae.	<u>Renocera striata</u> <u>(Meigen)</u>
30'	Anterior margin of frons shiny; 1 fronto-orbital seta. Arista plumose, with setulae sparse or dense. Prosternum usually bare (<i>R. longipes</i> rarely with short setae).	<u>31</u>



31' Arista sparsely plumose. First flagellomere parallel sided, paddle shaped, not narrowed strongly beyond base of arista, dorsal margin nearly straight. Prescutellar acrostichal setae usually present. <u>Renocera longipes</u> (Loew)







33(32)	One pair of fronto-orbital setae; entire body blackish; aristal setulae short, dense, black.	<u>Anticheta</u> <u>melanosoma</u> <u>Melander</u>
33'	Two pairs of fronto-orbital setae; body blackish (in part) or not; aristal setulae variable.	<u>34</u>





	Image: With State	(specimen had wings removed)
36(35)	Mesonotum mostly reddish-brown. First flagellomere blackish on apical half. Distal portion of foretibia and entire tarsus black in female, infuscated (darkened with a brownish or reddish-brown tinge) in male. <u>Rip₁, Rip₂, Rip₃, and Rip₄ WIPs in cell r₄₊₅. Com₁, Com₂, and Com₃ WIPs in cell dm.</u>	<u>Anticheta borealis</u> <u>Foote</u>
36'	Mesonotum mostly cinereous blue with 2 narrow, brownish stripes bordered by much broader, pruinose, cinereous-blue stripes. First flagellomere usually tinged with black on apical half, occasionally only lightly tinged with brown. Distal portion of foretibia and entire tarsus reddish-brown in male and female. <u>Rip₁ and Rip₂ WIPs in</u> <u>cell r₄₊₅. Com₁ and Com₂ WIPs in cell dm.</u>	<u>Anticheta robiginosa</u> <u>Melander</u>



Anticheta borealis



Anticheta robiginosa

Back to couplet











Pteromicra pectorosa

Pteromicra pleuralis

Back to couplet



41(38)	One pair of fronto-orbital setae; frons blackish with yellowish triangle reaching from anterior ocellus to frontal margin; aristal hairs brown, long plumose; first flagellomere usually darkened only apicodorsally.	[<u>Pteromicra sphenura</u> <u>Steyskal]</u>
41'	Two pairs of fronto-orbital setae, anterior pair short and fine; frons color, aristal hair length and color, and first flagellomere color variable (<i>P. albicalceata</i> , <i>P. similis</i>).	<u>42</u>









45' Ventral process of hypandrium without preterminal lobe, simply tapering to tip, which may be somewhat recurved.





47' Ventral process of hypandrium with small preterminal lobe.







	Dictya hudsonica	Dictya ox	ybeles	
49(47)	Prosternum with a few setae.		<u>Dictya I</u> Steyska	<u>hudsonica</u> al
19'	Prosternum bare (coastal marshes).		<u>Dictya</u> Steyska	oxybeles al





51(50)Prosternum with setae.Dictya umbroides
Curran51'Prosternum bare.52











Dictya laurentiana

Dictya gaigei

Back to couplet
















Limnia lindbergi



Limnia ottawensis

Back to couplet





62'

epandrium no papilla on right side of epandrium (Steyskal, 1959)

Tetanocera annae

Loew

Steyskal

Tetanocera robusta



Tetanocera robusta



Tetanocera annae

Back to couplet



Tetanocera robusta

Tetanocera annae

Back to couplet















Tetanocera montana

Tetanocera rotundicornis

69(68)	Crossvein dm-cu S-curved; vein M without stump veins.	<u>Tetanocera montana</u> <u>Day</u>
69'	Crossvein dm-cu straight or nearly so; vein M often with stump veins.	<u>Tetanocera</u> <u>rotundicornis Loew</u>



70(68)	Wing with strong pattern in anterior half of wing.	<u>71</u>
70'	Wing without pattern in anterior half of wing except sometimes a dark streak in cell R_{4+5} and a dark cloud distal to crossvein dm-cu.	<u>72</u>



Tetanocera clara

Tetanocera valida

71(70)	No spots along vein CuA_1 ; cell r_1 without or with a few indistinct dark spots.	<u>Tetanocera clara</u> <u>Loew</u>
71'	Distinct spots along both sides of vein CuA_1 ; cell r_1 with 4–7 discrete, dark, ovoid spots.	<u>Tetanocera valida</u> Loew



72(70)	Frontal vitta lacking; a broad, triangular, dully shining area visible anterior to ocelli.	<u>Tetanocera</u> <u>fuscinervis</u> (Zetterstedt)
72'	Frontal vitta distinct, shining, sharply demarcated, almost parallel sided.	<u>73</u>



13(12)	vitta and parafrontal stripes and forming a shape like the number 3 or the letter E in lateral view or like the letter W in anterior view.	<u>Tetanocera silvatica</u> <u>Meigen</u>
73'	Anterior margin of frons matt, not inflated.	<u>74</u>





Tetan	ocera ferruginea	Tetanocera plebeja	
74(73)	Frontal vitta ending well before anterior anterior of frons distinct, longer than distinct, surstylus with thin, erect, mediobasal	r margin of frons; setulae on ameter of an ocellus. carina (flange).	<u>Tetanocera ferruginea</u> <u>Fallén</u>
74'	Frontal vitta reaching or nearly reaching setulae on anterior frons indistinct, sho ocellus. <u>Surstylus without thin, erect mages</u>	ng anterior margin of frons; orter than diameter of an nediobasal carina.	<u>75</u>









browning, not including stigma; Com₁ and Com₂ WIPs in cell dm.



Tetanocera kerteszi

Tetanocera spirifera Melander

Tetanocera kerteszi Hendel [formerly T. ornatifrons Frey]



Tetanocera spirifera

Tetanocera kerteszi

Back to couplet





Back to couplet





Tetanocera oxia

Tetanocera melanostigma

Back to couplet





81(80)	Wings not patterned. Epandrium quadrate in lateral view, ventral margin straight. Females are unidentifiable.	<u>Pherbellia quadrata</u> <u>Steyskal</u>
81'	Wings usually patterned. Epandrium not quadrate in lateral view, ventral margin convex.	<u>82</u>



Pherbellia schoenherri maculata

Pherbellia nana nana

82(81)	Wing with dark spots in every cell.	<u>Pherbellia</u> <u>schoenherri maculata</u> (Cresson)
82'	Wing without dark spots in every cell, at most with broad clouds on crossveins and in distal half of costal margin and with a few spots in cell r_{4+5} .	<u>83</u>



Pherbellia nana nana

Pherbellia sp.

83(82)	Wing patterned, with dark areas of wing restricted to distal half of cell r_1 and preapical tip of cell r_{2+3} , forming a broad, blackish crescent; 3–6 dark transverse bars in cell r_{4+5} ; and both crossveins clouded.	<u>Pherbellia nana nana</u> <u>(Fallén)</u>
83'	Wing either hyaline or with dark areas of wing not restricted to distal half of cell r_1 and preapical tip of cell r_{2+3} ; crossveins clouded or not.	<u>84</u>









Pherbellia seticoxa

Rip ₁	Rip ₂	Rip ₃	Rip ₄
------------------	------------------	------------------	------------------

$[Com_1]$ $[Com_2]$ $[Com_2]$	om ₃	Con	Com ₂	Com ₁	



Pherbellia griseola

Back to couplet








Pherbellia sp.



89(88)	Anepimeron with setae only, all subequal in length; katepisternum with dorsal setae equal to or longer than length of central setae. Females are unidentifiable beyond this point.	<u>90</u>
89'	Anepimeron with 2 (rarely 3) setae and several setulae; katepisternum with only setulae dorsally.	<u>91</u>





91(89)	Vein R_1 reaching costal margin distal to position of crossvein r-m.	<u>Pherbellia griseicollis</u> (Becker)
91'	Vein R_1 reaching costal margin at or near position of crossvein r-m.	<u>92</u>





Pherbellia sp.

Back to couplet







Pherbellia argyra

Pherbellia anubis

Back to couplet





95(84)	Arista almost bare. Distal portion of vein M with supernumerary vein on posterior side.	<u>Pherbellia tenuipes</u> (Loew)
95'	Arista pubescent to short plumose. Distal portion of vein M without supernumerary vein on posterior side.	<u>96</u>



Pherbellia beatricis

Pherbellia sp.

96(95)	Wing with large, diffuse, brown clouds on crossveins and a broad, brown seam in distal half of cell r_1 .	<u>Pherbellia beatricis</u> <u>Steyskal</u>
96'	Crossveins with scant or indistinct clouding; cell r_1 uniformly subhyaline.	<u>97</u>



Anticheta borealis Foote



Anticheta borealis is a multivoltine Nearctic species known from northern California east to Quebec and New York. It is newly recorded from Ontario. B.A. Foote reared it from floating overwintered puparia collected from permanent marshes in early spring. Adults occur from May to June. Adult females deposit an egg on an egg mass of pulmonate terrestrial host snails of the genera *Catinella* and *Oxyloma*, and larvae apparently feed exclusively on the eggs (Robinson and Foote 1978).

Anticheta borealis Foote



Anticheta canadensis (Curran)



Anticheta canadensis is a Nearctic species known from Alberta and Idaho east to Ontario, Wisconsin and Michigan. Their larvae feed on egg masses of the pulmonate freshwater snail *Aplexa hypnorum* exposed by falling water levels. Adults occur from May to July. Foote (unpubl.) reared larvae exclusively on eggs of *Aplexa*. Nothing is known of its biology or overwintering.

Anticheta canadensis (Curran)



Anticheta fulva Steyskal



Anticheta fulva is an univoltine Nearctic species known from Alberta, Idaho, Ohio, and New York. The flight period occurs from May to July. Foote and Keiper (2004) reported that larvae prey on eggs of pulmonate freshwater snails of the genus *Lymnaea* exposed by dropping water levels in vernal pools and freshwater marshes. Pupae overwinter in leaf litter; most records seem to be of adults reared from floating pupa found in spring.





Anticheta johnsoni (Cresson)



Anticheta johnsoni is a Nearctic species with a spotty distribution including Ontario, New York, New Hampshire, and Massachusetts. Adults occur during June and July. Nothing is known of its biology or overwintering, but known Anticheta larvae are predators of eggs of pulmonate freshwater snails.

Anticheta johnsoni (Cresson)



Anticheta melanosoma Melander



Anticheta melanosoma is an univoltine Nearctic species. It is transcontinental from Alaska east to Quebec, and south to California (in mountains), Nebraska, and New Jersey. It is found on vegetation in or near vernal and temporary woodland pools and in areas in large freshwater marshes where water levels drop seasonally (Robinson and Foote 1978). Adults occur from late May to mid-August. Larvae prey on exposed eggs of pulmonate freshwater snails (Knutson and Abercrombie 1977), primarily *Aplexa hypnorum* but also *Physa* (*Physella*) species (Robinson and Foote 1978). Overwintering habits are unknown.

Anticheta melanosoma Melander



Anticheta robiginosa Melander



Anticheta robiginosa is a Nearctic species known from Nova Scotia, Washington, Oregon, California, and Idaho. Adults occur from May to August. Nothing is known of its biology or overwintering, but known Anticheta larvae feed on exposed eggs of pulmonate freshwater or terrestrial snails.

Anticheta robiginosa Melander



Atrichomelina pubera (Loew)



Atrichomelina pubera, the only species in this monotypic genus, is a multivoltine Nearctic species. It is transcontinental from northern Ontario south to Guatemala. Adults occur from April to November. It can be found on vegetation in or near almost any wetland except for coastal salt marshes. Foote et al. (1960) recorded the larvae as predators/scavengers of stranded pulmonate freshwater snails of five genera, including putrefying snails. Reproduction is continuous in warmer regions; in colder climates, pupae overwinter either within or away from the shell of a prey snail.

Atrichomelina pubera (Loew)



Colobaea americana Steyskal



Colobaea americana, eastern Canada's only species of *Colobaea* and, at 1.2–2.0 mm in length, the smallest of all marsh flies, is a multivoltine Nearctic species previously known from Montana, Alberta, Manitoba, Quebec, and New York, and here newly recorded from Ontario. Adults occur from July to September. It is found on vegetation in or near small, permanent, exposed ponds, in vernal swamps, and in freshwater marshes bordering rivers. Larvae are parasitoids exclusively of the pulmonate freshwater snail *Gyraulus parvus*. Pupae overwinter in the shell of the host snail (Knutson, unpubl.).

Colobaea americana Steyskal



Dictya atlantica Steyskal



Dictya atlantica is a multivoltine northeastern Nearctic species known from Missouri east to Quebec and Nova Scotia, south to North Carolina (in mountains). It is found on vegetation, especially *Eleocharis*, in or near open or shaded freshwater marshes and in swamp woods. Adults occur from May to August. Larvae prey on a variety of pulmonate freshwater snails. Overwintering takes place either as an adult or as a pupa within a floating puparium (Valley and Berg, 1977).

Dictya atlantica Steyskal



Dictya borealis Curran



Dictya borealis is a multivoltine Nearctic species known from Alberta east to Ontario and Ohio, south to North Carolina (in mountains). It is found on vegetation near ponds and roadside ditches. Adult occur from May to early September. Larvae probably prey on a variety of pulmonate freshwater snails. Pupae overwinter within a floating puparium.

Dictya borealis Curran



Dictya expansa Steyskal



Dictya expansa is a multivoltine Nearctic species, known from British Columbia east to Ontario and New Jersey, and south to southernmost USA. It is found on vegetation in or near freshwater marshes, marshy borders of lakes, roadside ditches, bogs, and swamps. Adults occur from April to early October. Larvae prey on a variety of pulmonate freshwater snails. Overwinters either as an adult or as a pupa within a floating puparium (Valley and Berg, 1977).

Dictya expansa Steyskal


Dictya gaigei Steyskal



Dictya gaigei is a multivoltine species known only from the Michigan and Ontario shorelines of eastern Lakes Superior, northern Lake Michigan, northern Lake Huron, and islands in those lakes. It is found on vegetation such as *Eleocharis*, *Juncus*, and *Carex* along the shoreline or sandy margin. The flight period occurs from June to September. Larvae prey on a variety of pulmonate freshwater snails including *Lymnaea* spp. (Valley and Berg, 1977). Overwintering probably takes place as a pupa.

Dictya gaigei Steyskal



Dictya hudsonica Steyskal



Dictya hudsonica is a multivoltine Nearctic species known from British Columbia east to Quebec and New Brunswick, south to Tennessee and West Virginia (in mountains). It is found on vegetation in or near shaded freshwater marshes and swamps and sphagnum bogs. Adults occur from June to September. Larvae prey on a variety of pulmonate freshwater snails, including snail eggs (Valley and Berg 1977). Pupae overwinters within a floating puparium.

Dictya hudsonica Steyskal



Dictya laurentiana Steyskal



Dictya laurentiana is a multivoltine Nearctic species found throughout southern Ontario and occuring north to James Bay. It is found on vegetation in or near brackish and freshwater marshes and swamps. Adults occur from May to August. In the laboratory larvae prey on pulmonate freshwater snails of the genera *Biomphalaria, Gyraulus, Physella,* and *Stagnicola* (Valley and Berg 1977). Pupae probably overwinter within a floating puparium.

Dictya laurentiana Steyskal



Dictya oxybeles Steyskal



Dictya oxybeles is a multivoltine Nearctic species restricted to coastal brackish and salt marshes from Nova Scotia south, along the coasts of the Atlantic Ocean and the Gulf of Mexico, to Louisiana. It is found primarily on vegetation in or near in water-filled channels and depressions in extensive salt marshes dominated by *Spartina* spp. Adults occur from late March to early September. Regarding larvae, Valley and Berg (1977) stated that operculate, brackish-water snails such as *Bittium* sp., *Cingula* sp., and *Hydrobia* sp. "probably are their food snails in nature."

Dictya oxybeles Steyskal



Dictya pictipes (Loew)



Dictya pictipes is a multivoltine Nearctic species known from Saskatchewan east to Quebec and Maine, and south to Colorado and Alabama. It is found on vegetation in or near freshwater marshes and swamps and is taken very commonly in wet, deciduous (especially beechmaple) woods. Adults occur from May to early October. Larvae prey on a variety of freshwater snails, terrestrial snails of the genus *Oxyloma*, as well as on the slug *Deroceras laeve* (Valley and Berg 1977). Pupae overwinter within a floating puparium.

Dictya pictipes (Loew)



Dictya steyskali Valley



Dictya steyskali is a multivoltine Nearctic species known from Ontario and south to Pennsylvania. It is found in grass-sedge and *Equisetum* and *Schoenoplectus* margins of small ponds, bogs, fens, and freshwater marshes and in wet woodlands. Adults are recorded from June to early October. Larvae prey on a variety of pulmonate freshwater snails. Pupae overwinter (Valley and Berg 1977).

Dictya steyskali Valley



Dictya umbroides Curran



Dictya umbroides is a multivoltine Nearctic species previously known from Alaska and the Northwest Territories and south to New Mexico (in mountains). In the east, it is known from Michigan, Ohio and Newfoundland. It is newly recorded here from Ontario, Manitoba and Quebec. At 4.5–5.3 mm in length, *Dictya umbroides* is amongst the smallest species of *Dictya*. It is found on vegetation in or near bogs or wet sedge meadows and on grasses and sedges bordering springs and streams. Adults occur from July to August. Larvae prey on a variety of pulmonate freshwater snails (Valley and Berg 1977). Pupae probably overwinter within a floating puparium.

Dictya umbroides Curran



Dictyacium ambiguum (Loew)



Dictyacium ambiguum is a Nearctic species known from Ontario, Quebec, and Nova Scotia south to West Virginia (in mountains). It is found in open coniferous forests and areas with cottonwood and paper birch saplings. Adults occur from July to early October. Nothing is known about its biology, larval prey, or overwintering.

Dictyacium ambiguum (Loew)



Dictyacium firmum Steyskal



Dictyacium firmum is a Nearctic species known from British Columbia east to Nova Scotia and West Virginia (in mountains), and in the west south to California. Adults occur from July to early September. It is found in grasses in bogs and fens surrounded by forest (Marshall, 2006) and in open coniferous forest. Fisher and Orth (1983) described the habitat where they collected this species in northern California as "an open to shaded sedge meadow near a beaver pond." Nothing is known of its biology, larval prey, or overwintering.

Dictyacium firmum Steyskal



Ditaeniella parallela (Walker)



Ditaeniella parallela is Canada's only species of Ditaeniella. Until 1987 it was included in the large genus Pherbellia, from which it differs in having only one fronto-orbital seta. It is found in diverse habitats, mostly on vegetation in or near moist or semiaquatic sites and in freshwater marshes. Adults occur from mid-May to mid-September. Larvae of this transcontinental, wide-ranging (Canada to Costa Rica and northern Caribbean islands; introduced to Hawaii) species are predators/parasitoids of pulmonate freshwater snails stranded on shorelines (Bratt et al. 1969). Reproduction is continuous in warmer regions; in colder climates pupae overwinter in leaf litter or in the shells of host snails.

Ditaeniella parallela (Walker)



Elgiva connexa (Steyskal)



Elgiva connexa is a multivoltine northern Nearctic species known from Alaska and Northwest Territories east to northwestern Ontario. It is found on vegetation in or near ponds, shallow freshwater marshes, bogs, fens, and swamps. Adults occur from June to mid-September. Larvae prey on a variety of pulmonate freshwater snails (Knutson and Berg 1964). Probably overwinters as a diapausing adult or as a pupa within a floating puparium (Berg et al. 1982).



Elgiva solicita (Harris)



Distribution map

Elgiva solicita is a multivoltine Holarctic/Afrotropical species found throughout the Nearctic from Alaska south to New Mexico (in mountains) and east to New York and Quebec. It is found on vegetation in or near ponds, shallow freshwater marshes, fens, roadside ditches, and swamps. Adults occur from late-April to early-October. Larvae prey on at least eight genera of pulmonate freshwater snails (Knutson and Berg 1964). Overwinters as a diapausing adult or as a pupa in the shell of the host snail or within a floating puparium (Berg et al. 1982).



Euthycera flavescens (Loew)



Distribution map

Euthycera flavescens (previously named *Euthycera arcuata (Loew)*), Canada's only species of *Euthycera*, is an univoltine Nearctic/Neotropical species known from Ontario, throughout the northeastern USA and south to Mexico. It is found on vegetation in or near moist deciduous forests, especially in floodplains. Adults occur from late May to early September. Foote and Keiper (2004) recorded nearly mature larvae feeding within several species of terrestrial snails, and Trelka and Foote (1970) noted a larva in the laboratory attacking *Pallifera* and *Philomycus* spp. slugs. Pupae overwinter within partially consumed terrestrial snails in soil or woodland litter.

Euthycera flavescens (Loew)



Hedria mixta Steyskal



Hedria mixta, the only species in this univoltine, transboreal Nearctic genus, is known from the Northwest Territories east to Maine. This species is newly recorded from Ontario here. Adults occur from August to October. It has been found on vegetation (*Equisetum*, *Typha*, *Calamagrostis*, and *Impatiens*) in or near drainage ditches. Its biology is unknown except that larvae submerge voluntarily to prey on submerged pulmonate freshwater snails. Foote (1971) suspected that the species overwinters within the egg membrane.

Hedria mixta Steyskal



Hoplodictya setosa (Coquillett)



Distribution map

Hoplodictya setosa is the only one of the four extant Hoplodictya species (all Nearctic) known from the Northeast; its range extends south along the Atlantic coast from Nova Scotia to Florida. It is not known from Ontario; earlier records from Ontario of the western species, *H. acuticornis*, were in error. It is restricted to rocky shorelines, coastal islands, and salt marshes, where the larva apparently preys exclusively on the operculate snail *Littorina littorea* (common periwinkle). Overwinters as a diapausing adult or as a pupa within a puparium in a hollow plant stem (Neff and Berg 1962).

Hoplodictya setosa (Coquillett)



Limnia boscii (Robineau-Desvoidy)



Limnia boscii is an univoltine Nearctic species known from North Dakota, Ontario, and Quebec, and south to Tennessee. It is found on vegetation, especially grasses, in or near freshwater marshes, fens, and swamps. Adults occur from June to early September. The food of newly hatched larvae remains unknown, but third instars killed and ate snails of the genus *Succinea* (Steyskal et al. 1978), and secondand third-instars prey on a variety of pulmonate freshwater snails (B.A. Foote, unpubl.). Overwinters as an adult or fully formed first instar in the egg membrane.

Limnia boscii (Robineau-Desvoidy)



Limnia conica Steyskal



Limnia conica is an univoltine Nearctic species known from Ontario, Vermont, Massacheusettes and Rhode Island, south to Alabama. It is found most often on grasses in moist, old fields with forbs and on the margin of fens and freshwater marshes. Adults occur from mid-June to early-September. The food of newly hatched larvae remains unknown, but second- and third-instars prey on a variety of terrestrial snails and slugs. Nothing is known about its overwintering.

Limnia conica Steyskal



Limnia fitchi Steyskal



Limnia fitchi is a Nearctic species occurring across southern Canada from British Columbia east to Nova Scotia. It is found on grasses and vegetation in and around freshwater marshes. Adults occur from June to early-September. The food of newly hatched larvae remains unknown, but second- and third-instars probably prey on a variety of pulmonate freshwater snails. Nothing else is known about its biology or overwintering.

Limnia fitchi Steyskal


Limnia lindbergi Steyskal



Limnia lindbergi is a Nearctic species known from Alaska and Northwest Territories east to Ontario. It is found on grasses and vegetation in terrestrial habitats including aspen groves. Adults occur from June to late-August. The food of newly hatched larvae remains unknown, but second- and third-instars probably prey on a variety of terrestrial snails. Nothing is known about biology or overwintering.



Limnia loewi Steyskal



Limnia loewi is a Nearctic species known from southwestern Ontario, south to Kentucky. It is found in freshwater marshy areas in floodplain forests and in swamps. Adults occur from late July to early September. The food of newly hatched larvae remains unknown, but secondand third-instars probably prey on a variety of pulmonate freshwater snails. Nothing else is known about its biology or overwintering.

Limnia loewi Steyskal



Limnia ottawensis Melander



Limnia ottawensis is a widespread Nearctic/Neotropical species known from Alberta east to Massachusetts and south to northern Mexico. It is found on vegetation in or near the grassy margin of ponds, bogs, freshwater marshes, and swamps and in the West in ponderosa pine forests and cottonwood groves. Adults occur from May to early-October. The food of newly hatched larvae remains unknown, but second- and third-instars probably prey on a variety of pulmonate freshwater snails. Nothing else is known about its biology or overwintering.

Limnia ottawensis Melander



Limnia sandovalensis Fisher and Orth



Limnia sandovalensis is a widespread, northern Nearctic species known from Alaska east to Nova Scotia, and from Pennsylvania south to New Mexico (in mountains). It is found on vegetation, especially grasses, in or near freshwater marshes, fens, and swamps. Adults occur from June to late-August. The food of newly hatched larvae remains unknown, but second- and third-instars probably prey on a variety of pulmonate freshwater snails. Nothing else is known about its biology or overwintering.

Limnia sandovalensis Fisher and Orth



Limnia sparsa (Loew)



Limnia sparsa is a widespread Nearctic species known from British Columbia east to Quebec and Maine, and south to North Carolina. It is found on vegetation in or near freshwater marshes. Adults occur from May to late-August. The food of newly hatched larvae remains unknown, but second- and third-instars probably prey on a variety of pulmonate freshwater snails. Nothing else is known about its biology or overwintering.

Limnia sparsa (Loew)



Oidematops ferrugineus Cresson



Oidematops ferrugineus, the only species in this monotypic, Nearctic genus, is an univoltine, parasitoid species known from Ontario east to Maine and south to Georgia (in mountains) (Foote 1977). Adults occur during May and June. It is found on vegetation only in or near lowland deciduous forests within the range of its nonoperculate terrestrial host snail, *Stenotrema hirsutum*. Diapausing pupae overwinter within a puparium inside the shell of its host snail (Foote 1977).

Oidematops ferrugineus Cresson



Pherbecta limenitis Steyskal



Pherbecta limenitis, the only species in this monotypic Nearctic genus, and can be locally abundant on vegetation in or near fens (alkaline peatlands with some flow) and bogs with orchids, pitcher plants, etc. (Knutson 1972). It is known from Ontario, Quebec, Massachusetts, and New York. Adults occur from July to early-October. Nothing is known of its biology except that in the laboratory they feed on neither snails nor fingernail clams (Knutson 1972).



0

370

740

1110 km

Pherbellia albocostata (Fallén)



Pherbellia albocostata is an univoltine Holarctic species known from Alaska and most of Canada, east to Ontario, Quebec, Nova Scotia and Newfoundland. It is found on vegetation in or near coniferous and deciduous forests, where the larvae are parasitoid on terrestrial snails of the genus *Discus*. Adults occur from June to late-August. Overwinters as a quiescent, not diapausing, pupa, not in the shell of its host snail (Bratt et al. 1969).

Pherbellia albocostata (Fallén)



Pherbellia albovaria (Coquillett)



Pherbellia albovaria is a widespread univoltine Nearctic species known from Ontario and Quebec, south to North Carolina. It is found on vegetation in or near beech-maple and moist boreal hardwood forests (K.N. Barber, unpubl.). Adults have been collected from May to August. Larvae are parasitoids of small, pulmonate terrestrial snails of the genera *Anguispira*, *Discus*, *Triodopsis*, and *Zonitoides* (Bratt et al. 1969). Pupae overwinter within the shell of its host snail.

Pherbellia albovaria (Coquillett)



Pherbellia anubis Knutson



Pherbellia anubis is known from most of Canada and the northern USA. It is found primarily on vegetation in or near partially shaded margins of *Carex* marshes. Adults occur from late-April to August. Larvae are parasitoids of pulmonate freshwater snails exposed on shorelines by dropping water levels. Pupae overwinter in shoreline leaf litter or occasionally in the host's shell (Bratt et al. 1969).

Pherbellia anubis Knutson



Pherbellia argyra Verbeke



Pherbellia argyra is a widespread, multivoltine Holarctic species known in the Nearctic from Alaska south to California, and throughout Ontario. It is found on vegetation in or near permanent ponds, freshwater marshes, and other freshwater situations, especially those in which water levels drop as summer progresses (Bratt et al. 1969). Adults occur from May to early October. Larvae are parasitoids of pulmonate freshwater snails and possibly of terrestrial snails on occasion. Pupae probably overwinter in the shell of its host snail.

Pherbellia argyra Verbeke



Pherbellia beatricis Steyskal



Pherbellia beatricis is a multivoltine Nearctic species known from Ontario and Ohio. It is found on vegetation in or near fens and other alkaline areas. Adults occur from late May to early October. Larvae are parasitoids of stranded freshwater snails of the genera *Aplexa* and *Physa* (Bratt et al. 1969). Overwintering habits are unknown.

Pherbellia beatricis Steyskal



Pherbellia griseicollis (Becker)



Pherbellia griseicollis is an infrequently collected but widespread, probably univoltine Holarctic species known in the Nearctic region from Alaska south to Utah, and east to Manitoba and Ontario, where it is found on vegetation in or near moist boreal habitats. According to Knutson (1970), larvae attack exposed freshwater snails and behave as predators, but Rozkošný (1984) thought that their mode of life is unlikely to differ from other species of the genus, which are parasitoids. Adults occur from May to late-July. Pupae overwinter within a puparium formed outside the host shell, in litter.

Pherbellia griseicollis (Becker)



Pherbellia griseola (Fallén)



Pherbellia griseola is a widespread, multivoltine, boreal Holarctic species. It has a transcontinental Nearctic distribution across Canada, south to California and Utah (in mountains), east to Ontario and New York. It is found on vegetation in or near freshwater marshes, woodland vernal pools, and swamps. Adults occur from early May to late-September. Larvae are parasitoids of stranded pulmonate freshwater snails (Bratt et al. 1969). Pupae overwinter, usually in the shells of host snails (Rozkošný 1984).

Pherbellia griseola (Fallén)



Pherbellia luctifera (Loew)



Pherbellia luctifera is a Nearctic species known from the Yukon, Ontario and Quebec, south to California in the west (in mountains) and Georgia in the east (in mountains), with most records being boreal. It is found on vegetation in or near fens and freshwater marshes or as B.A. Foote wrote, a "somewhat moist area with dense herbaceous vegetation." Adults occur from early-May to late June. Larvae are probably parasitoids of exposed freshwater snails. Overwintering habits are unknown.





Pherbellia nana nana (Fallén)



Pherbellia nana nana is a widespread, multivoltine Nearctic/Neotropical subspecies. In the Nearctic it is transcontinental ranging east to Ontario, Quebec, Massachusetts and Rhode Island, and south to central Mexico. Adults are found on vegetation in or near freshwater marshes, swamps, margins of lakes, and roadside drainage ditches from early May to early October. Larvae prey on stranded or shoreline pulmonate freshwater snails (Bratt et al. 1969). Pupae overwinter within a puparium, inside the shell of its host snail or in leaf litter.

Pherbellia nana nana (Fallén)



Pherbellia obscura (Ringdahl)



Pherbellia obscura is a multivoltine, boreal Holarctic species. In the Nearctic it is known from Alaska, Yukon, Northwest Territories, British Columbia, east to Ontario. It is found in grasses, including shaded grasses, along the margins of lakes and woodland streams. Adults occur from May to late July. Larvae probably live as parasitoids in *Lymnaea* spp. (Rozkošný 1984). Pupae overwinter within a puparium formed outside the shell of its host snail (Bratt et al. 1969).

Pherbellia obscura (Ringdahl)



Pherbellia paludum Orth



Pherbellia paludum is a boreal Nearctic species known from Alaska, Northwest Territories and Alberta, east to Quebec. Adults occur from August to late-September. Nothing is known of its biology, but larvae of its closest relatives are parasitoids of stranded freshwater snails and overwinter as pupae within puparia.

Pherbellia paludum Orth


Pherbellia prefixa Steyskal



Pherbellia prefixa is a multivoltine, boreal Nearctic species known from Alaska, Northwest Territories and British Columbia, east to Ontario and New Brunswick. It is found on vegetation in or near open, unshaded freshwater marshes, particularly those with lush stands of *Eleocharis-Carex*. This species is the only *Pherbellia* whose larvae are known to attack exposed operculate snails (as predator/parasitoid), specifically the freshwater operculate snail *Valvata sincera* (Foote 1973). Adults occur from June to late-August. Pupae probably overwinter within a puparium, like other species of *Pherbellia*.

Pherbellia prefixa Steyskal



Pherbellia quadrata Steyskal



Pherbellia quadrata is a multivoltine, boreal Nearctic species known from Alaska and the Northwest Territories south to British Columbia, Idaho, and Montana and east to Ontario and New York. It is found on vegetation in or near sedge marshes, vernal woodland swamps with *Typha*, and herbaceous vegetation, shrubs, and trees bordering shallow, shaded ponds (Bratt et al. 1969). Adults occur from June to early-October. Larvae are parasitoids of a wide range of pulmonate freshwater snails. Quiescent pupae probably overwinter within a puparium.

Pherbellia quadrata Steyskal



Pherbellia schoenherri maculata (Cresson)



Pherbellia schoenherri maculata is a multivoltine Nearctic subspecies. It is transcontinental across Canada including Ontario, Quebec, and the Maritimes in the east. It is found on vegetation in or near freshwater marshes, drainage ditches, and shorelines. Adults occur from late-July to early-September. Larvae are parasitoids of semiterrestrial snails ("amber snails") of the family Succineidae (Bratt et al. 1969). Overwinters as an adult or as a pupa within a puparium in leaf litter or in the shell of its host snail.

Pherbellia schoenherri maculata (Cresson)



Phebellia seticoxa Steyskal



Pherbellia seticoxa is a widespread, multivoltine Nearctic species known from southwestern Ontario, Ohio and Michigan. It is found on vegetation in or near freshwater marshes, vernal woodland pools, and ponds. Adults occur from mid-May to mid-September. Larvae prey on a wide range of genera of stranded pulmonate freshwater snails as well as on a few genera of semiterrestrial and terrestrial snails (Bratt et al. 1969). Pupae overwinter within a puparium inside the shell of its host snail or in leaf litter.

Phebellia seticoxa Steyskal



Pherbellia similis (Cresson)



Pherbellia similis is a primarily univoltine Nearctic species known in the east from Minnesota, Illinois, Michigan, Pennsylvania, New York, and Ontario. It is found on vegetation in or near vernal woodland pools, buttonbush swamps, and fens (Bratt et al. 1969). Adults occur from late April to August. Larvae are parasitoids of the freshwater snail *Planorbula jenksii*. Pupae generally overwinter in diapause inside the floating shells of host snails.

Pherbellia similis (Cresson)



Pherbellia suspecta Orth and Steyskal



Pherbellia suspecta is a boreal Nearctic species known from the Northwest Territories, British Columbia and Alberta, east to Manitoba, Ontario and New York. Adults occur from May to late June. Nothing is known of its biology or overwintering.

Pherbellia suspecta Orth and Steyskal



Pherbellia tenuipes (Loew)



Pherbellia tenuipes is Nearctic species with a spotty distribution. It is known from Alaska, Yukon and British Columbia, east to Ontario, Quebec, Nova Scotia, Pennsylvania and Vermont. It is found on vegetation in or near sphagnum fens, in mixed forests, and has been swept from *Rubus*, *Ribes*, and vegetation beneath *Populus* (W.L. Murphy, unpubl.). Adults occur from May to early-October. Nothing is known about its biology or overwintering stages.

Pherbellia tenuipes (Loew)



Pherbellia vitalis (Cresson)



Pherbellia vitalis is a multivoltine Nearctic species known from Alaska south to Arizona, and in the east from Minnesota, Michigan, Ohio, Pennsylvania and Ontario. It is found on vegetation in a wide range of habitats, including freshwater marshes, swamps, shorelines, sagebrush, meadows, and tundra. Adults occur from late May to early October. Larvae are parasitoids of stranded pulmonate freshwater snails (Bratt et al. 1969). Pupae overwinter inside the shell of host snails or occasionally in leaf litter.

Pherbellia vitalis (Cresson)



Poecilographa decora (Loew)



Poecilographa decora, the only species in this monotypic genus is arguably the most attractive Nearctic marsh fly and also amongst the least known. This species is normally found on vegetation in or near wet fields, peatlands, and freshwater marshes and has a distribution apparently centered around the Great Lakes but extending east to the Atlantic coast and with scattered records as far south as Virginia. Adults occur from mid-May to early-September. Barnes (1988) described the larvae and puparia and speculated that larvae are probably parasitoids of terrestrial molluscs, but hosts remain unknown. Foote offered young larvae a wide variety of freshwater and terrestrial snails and slugs without eliciting any response.

Poecilographa decora (Loew)



Pteromicra albicalceata (Cresson)



Pteromicra albicalceata is a rare Nearctic species. Although it has not yet been collected in Canada, this species is known from Connecticut, Massachusetts, New Hampshire, and Maine. Nothing is known of its biology or overwintering.

Pteromicra albicalceata (Cresson)



Pteromicra anopla Steyskal



Pteromicra anopla is a Nearctic species known from Saskatchewan, Kansas, and Ontario. Adults occur from May to late-July. Larvae apparently are parasitoid on snails of the family Succineidae (Steyskal 1954). Pupae probably overwinter within a puparium inside the shell of its host snail.

Pteromicra anopla Steyskal



Pteromicra pectorosa (Hendel)



Pteromicra pectorosa is a widespread Holarctic species found in freshwater marshes from Alaska south to California (in mountains) and east to Quebec and Maine. Adults occur from June to mid-September. Larvae are predators/parasitoids of small pulmonate freshwater snails in the genera *Aplexa*, *Gyraulus*, and *Lymnaea* (also *Oxyloma* in the laboratory). Pupate in litter in the habitat of its host snail but its overwintering habits are unknown.

Pteromicra pectorosa (Hendel)



Pteromicra pleuralis (Cresson)



Pteromicra pleuralis is a boreal Nearctic species. It is transcontinental from Alaska east to New York, south to Wyoming and Pennsylvania. It is found on vegetation in or near freshwater marshes, fens, swamps, and especially shorelines of small, woodland ponds. Adults occur from early June to early October. Larvae are parasitoid on stranded pulmonate freshwater snails. Pupae overwinter within a puparium in the floating or stranded shell of its host snail.

Pteromicra pleuralis (Cresson)



Pteromicra similis Steyskal



Pteromicra similis is a multivoltine Nearctic species known in the east from Michigan, Ohio, Ontario, Connecticut, Massachusetts, and Pennsylvania. It is found on vegetation in or near freshwater marshes, fens, and woodland swamps. Adults occur from early May to mid-September. Larvae of this species (and, just to confuse us, those of the similarly named *Pherbellia similis*) are parasitoid on stranded *Planorbula armigera/jenksii*, a freshwater snail(s) (Bratt et al. 1969). Pupae overwinter within a puparium inside the shell of its host snail.

Pteromicra similis Steyskal



Pteromicra sphenura Steyskal



Pteromicra sphenura is a multivoltine Nearctic species known in the east from Illinois, Indiana, Michigan, Ohio, Pennsylvania and Ontario. It is found on vegetation in or near woodland pools. Adults occur from early June to early-September. Larvae are parasitoids/predators of stranded freshwater snails of the genera *Physa* and *Physella*. Pupae overwinter within a floating puparium.

Pteromicra sphenura Steyskal



Pteromicra steyskali Foote



Pteromicra steyskali is a Nearctic species known in the east from Manitoba, Ontario, Quebec, Iowa, Massachusetts, New York and Vermont. It is found in the coniferous forest habitat of its only host, the terrestrial snail *Discus cronkhitei*. Adults have been reared from larvae and puparia associated with *Discus cronkhitei* (Foote 1959). Adults occur from early-July to late-September. Pupae overwinter within a puparium inside the shell of its host snail.

Pteromicra steyskali Foote



Renocera cressoni Knutson, Mathis & Chapman



(Photo by Torsten Dikow, Smithsonian Institution USNM, USNMENT #01443700)

Renocera cressoni is an univoltine Nearctic species that was discovered in the early 2000s amongst museum specimens during a revision of the genus Renocera (Murphy et al. 2018). Previously it had been misidentified as *R. longipes*. It known from West Virginia, Pennsylvania, New York, and Vermont. It is found on vegetation in or near open, permanently wet freshwater marshes and swamps. Larvae submerge completely, unlike larvae of other genera, and feed only on fingernail clams (one species of Pisidium, three species of Sphaerium). This behavior is consistent with Foote's (1976) description of the immature stages (as "R. longipes") in which he noted that the puparia are poorly adapted for flotation. Pupae overwinter within a floating puparium or in shoreline debris (Foote 1976).

Renocera cressoni Knutson, Mathis & Chapman



Renocera johnsoni Cresson



Renocera johnsoni is a widespread Nearctic species, known from Alaska south to New Mexico (in mountains) and east to Ontario, Quebec and Newfoundland. It differs in several important ways from other species of *Renocera* and might not belong in this genus. Unlike other species of *Renocera*, larvae probably prey on small, pulmonate aquatic snails instead of on fingernail clams. Adults occur from early-July to late-August. Probably overwinter as pupae.

Renocera johnsoni Cresson


Renocera longipes (Loew)



Renocera longipes is an univoltine Nearctic species known in the east from Ontario, Quebec New Brunswick and Newfoundland, south to Virginia. It is found on vegetation in or near freshwater marshes and swamps. Adults occur from early-May to late-July. Larvae prey on fingernail clams (Foote and Knutson 1970). Pupae overwinter.

Renocera longipes (Loew)



Renocera striata (Meigen)



Renocera striata (until recently treated as *R. brevis* Cresson) is a bi- or trivoltine Holarctic species. It is transcontinental from Alaska east to Newfoundland and south to California (in mountains), New Mexico, and Pennsylvania. Adults occur from early May to August. Larvae feed on fingernail clams (Foote and Knutson 1970). Pupae probably overwinter.



Sciomyza aristalis (Coquillett)



Sciomyza aristalis is a multivoltine, northeastern Nearctic species known in the east from Ohio, Ontario, Quebec, and the New England states. It is found on vegetation in or near floodplain forests and open swamp forests dominated by *Ulmus americana* and *Acer rubrum* and in freshwater marshes (Murphy et al. 2018). Adults occur from June to late-August. Adult females deposit the egg on the shell of a terrestrial snail of the genus *Succinea*, on which larvae are parasitoids/predators (Foote 1959). Pupae overwinter inside host shells.

Sciomyza aristalis (Coquillett)



Sciomyza simplex Fallén



Sciomyza simplex is a Holarctic species known from Alaska south to California and northeast to Ontario. It is found on vegetation in or near pond margins or open freshwater marshes (Rozkošný 1984). Adults occur from May to late August. Larvae are parasitoids/predators of terrestrial snails of the family Succineidae (Foote 1959) as well as of other species of terrestrial snails and species of the pulmonate freshwater genera *Lymnaea* and *Physa* (Knutson and Berg 1971). Pupae overwinter.

Sciomyza simplex Fallén



Sciomyza varia (Coquillett)



Sciomyza varia is an uni- or multivoltine Nearctic species. It is transcontinental from British Columbia east to Quebec and Rhode Island. It is found on vegetation in or near freshwater marshes, swamps, and woodland pools. Adults occur from June to late-August. As with other *Sciomyza* species, adult females deposit the egg on the shell of its host snail (Barnes 1990). Larvae are parasitoid on freshwater snails of the genus *Stagnicola*. Pupae overwinter within the shell of its host snail.

Sciomyza varia (Coquillett)



Sepedon americana Steyskal



Sepedon americana was until recently (2009) treated as a subspecies of the European S. spinipes. It is a widespread, multivoltine, boreal, transcontinental Nearctic species found south to California (in mountains) and east to Ontario, Quebec, Maine and Pennsylvania. It is found on vegetation in or near freshwater marshes and wet meadows (Neff and Berg, 1966). Adults are found throughout the year. Larvae prey on a wide range of pulmonate freshwater snails (Neff and Berg, 1966).

Sepedon americana Steyskal



Sepedon armipes Loew



Sepedon armipes is one of the most abundant sciomyzid species throughout North America. It is transcontinental, apparently absent only from Alaska, Newfoundland, and the Gulf States (Neff and Berg 1966). It is multivoltine and is found on vegetation in or near a wide variety of artificial or natural shallow waters such as freshwater marshes, marshy borders of ponds and lakes, drainage ditches, and riparian areas. Adults overwinter, and found are throughout the year. Larvae prey on pulmonate freshwater snails (Neff and Berg, 1966).

Sepedon armipes Loew



Sepedon borealis Steyskal



Sepedon borealis is a widespread, multivoltine Nearctic species ranging from Alaska south to California and as far east as Quebec and Maine. Adults are found throughout the year and are often seen on vegetation in or near open freshwater marshes, marshy borders of ponds and lakes, and drainage ditches. Larvae prey on pulmonate freshwater snails (Neff and Berg 1966).

Sepedon borealis Steyskal



Sepedon fuscipennis Loew



Sepedon fuscipennis is a multivoltine Nearctic species ranging from Alaska to the southern USA and east to Ontario and Maine. Adults are easily found on vegetation, especially in open *Typha* marshes, in or near a variety of shallow waters from very early spring on through the year as they overwinter as adults. Larvae prey on pulmonate freshwater snails.

Sepedon fuscipennis Loew



Sepedon gracilicornis Orth



Sepedon gracilicornis is a multivoltine, northeastern Nearctic species known from Alberta east to Quebec and south to Iowa and Virginia. It is found on vegetation in or near freshwater marshes and shrubby swamps. Adults occur throughout the year. Larvae prey on pulmonate freshwater snails (Murphy et al. 2018).

Sepedon gracilicornis Orth



Sepedon lignator Steyskal



Sepedon lignator is a mostly boreal, multivoltine Nearctic species. It is transcontinental, ranging from British Columbia east to Ontario and New York, and south to Ohio, where it is apparently associated with peatlands; label data also include fens, overgrown wet shrubby sphagnum bogs, sedge meadows, and *Equisetum* in a wet ditch (Murphy, unpubl.). Adults occur for most of the year, and probably overwinter. Larvae prey on pulmonate freshwater snails (Neff and Berg 1966).

Sepedon lignator Steyskal



Sepedon neili Steyskal



Sepedon neili is multivoltine, eastern Nearctic species. Although Foote and Keiper (2004) listed it as associated with freshwater marshes and fens, we have not found it in our extensive surveys of peatland arthropods in southern Ontario (i.e., Blades and Marshall 1994) or our extensive arthropod surveys of Ontario parks and protected areas, including extensive peatlands. Adults overwinter, and can be found most of the year. Larvae prey on pulmonate freshwater snails (Neff and Berg 1966).

Sepedon neili Steyskal



Tetanocera annae Steyskal



Tetanocera annae is an univoltine Nearctic species known to be transcontinental from British Columbia east to Prince Edward Island, and south to New Mexico (in mountains). It is found on vegetation in or near vernal woodland pools and buttonbush and floodplain swamps. Adutls occur from early May to early October. Larvae prey on pulmonate freshwater snails and on the semiterrestrial snail *Oxyloma effusa* (Foote 1999). Pupae overwinter within a floating puparium.

Tetanocera annae Steyskal



Tetanocera clara Loew



Tetanocera clara is a multivoltine Nearctic species known in the east from Ontario, Quebec, and New Brunswick, west to Minnesota and south to Georgia. It is found on vegetation in or near floodplain forests and mesic deciduous forests. Adults occur from early June to early September. Larvae are predators/parasitoids of slugs of the genera *Pallifera* and *Philomycus* (Trelka and Foote 1970). Pupae overwinter in leaf litter.

Tetanocera clara Loew



Tetanocera ferruginea Fallén



Tetanocera ferruginea is a multivoltine Holarctic species known to be transcontinental in the Nearctic from Alaska east to Newfoundland, south to California and Illinois. It is found on vegetation in or near margins of freshwater marshes and ponds and in buttonbush and floodplain swamps (Murphy et al. 2018). Adults occur from mid-April to late September. Larvae prey on pulmonate freshwater snails (Foote, 1999). Pupae overwinter within a floating puparium.

Tetanocera ferruginea Fallén



Tetanocera fuscinervis Zetterstedt



Distribution map

Tetanocera fuscinervis is a multivoltine Holarctic species known to be transcontinental in the Nearctic from Alaska east to Newfoundland, and south to Arizona and Ohio. It is found on vegetation in or near freshwater marshes, fens, and buttonbush and floodplain swamps (Murphy et al. 2018). Adults occur from late May to mid-August. Larvae prey on pulmonate shoreline or stranded pulmonate freshwater and terrestrial snails (Beaver 1972, Foote 1996a). Pupae overwinter within a floating puparium.

Tetanocera fuscinervis Zetterstedt



Tetanocera kerteszi Hendel



Tetanocera kerteszi is a Holarctic species known to be transcontinental in the Nearctic from Alaska east to Newfoundland, and south (in mountains) to Wyoming and Colorado. It is found on vegetation in or near mesic mixed woods with birch, grassy bogs, and margins of lakes (Rozkošný 1984). Adults occur from early June to late-July. Larvae are morphologically adapted to prey on terrestrial snails, according to B.A. Foote (unpubl.), who attempted without success to rear the species from adults collected in Colorado. Nothing further is known of its biology.



Tetanocera latifibula Frey



Tetanocera latifibula is a multivoltine Holarctic species known in the Nearctic from Alaska south to California and New Mexico (in mountains), and east to Minnesota, Iowa, Manitoba and Ontario. Adults occur from May to early-September. Larvae prey on freshwater snails (Knutson 1970). Nothing is known of its biology.

Tetanocera latifibula Frey


Tetanocera loewi Steyskal



Tetanocera loewi is an univoltine Nearctic species known from British Columbia east to Newfoundland, south to California (in mountains), and east to North Carolina and Kentucky. It is found on vegetation in or near margins of freshwater marshes, swamps, fens, and ponds. Adults occur from early April to late September. Larvae prey on pulmonate aquatic snails (Foote 1999). Overwintering takes place as unhatched first instars within the egg membrane.

Tetanocera loewi Steyskal



Tetanocera melanostigma Steyskal



Tetanocera melanostigma is a multivoltine Nearctic species known to be transcontinental from Alaska east to Newfoundland, south to Colorado, West Virginia, and Connecticut. It is found on vegetation in or near freshwater marshes and moist deciduous forests. Adults occur from late May to early September. Larvae are predators/parasitoids of semiterrestrial snails of the genus *Succinea* (Foote 1996b). Pupae overwinter within a puparium in leaf litter.

Tetanocera melanostigma Steyskal



Tetanocera mesopora Steyskal



Tetanocera mesopora is a multivoltine Nearctic species known to be transcontinental from Northwest Territories south to California (in mountains), and east to Newfoundland and the Maritime provinces. Adults occur from July to late-September. It is found in freshwater marshes, and probably preys on pulmonate freshwater snails. Overwintering takes place as first instars within the egg membrane.

Tetanocera mesopora Steyskal



Tetanocera montana Day



Tetanocera montana is a univoltine Holarctic species known in the Nearctic from Alaska south to Colorado and Wyoming and east to Nova Scotia. It is found on vegetation in or near margins of freshwater marshes, swamps, and woodland ponds. Adults occur from late May to early September. Larvae prey on pulmonate freshwater snails (Foote 1999). Overwintering takes place as unhatched first instars within the egg membrane or as a second or third instar.

Tetanocera montana Day



Tetanocera oxia Steyskal



Tetanocera oxia is a multivoltine Nearctic species known from British Columbia east to Newfoundland, and south to Colorado and West Virginia. It is found on vegetation in or near open freshwater marshes. Adults occur from late April to early August. Larvae are predators/parasitoids of terrestrial snails in three genera of the family Succineidae (Murphy et al. 2018). Pupae overwinter within a floating puparium.





Tetanocera phyllophora Melander



Tetanocera phyllophora is a multivoltine Nearctic species known from Alaska east to Newfoundland, and south to New Mexico and Massachusetts. It is found on vegetation in or near open to densely shaded mesic to moist coniferous or deciduous and mixed woodlands with lush herbaceous undergrowth (Murphy et al. 2018). Adults occur from June to late-August. Larvae prey on pulmonate terrestrial snails in the genera *Discus, Gyraulus*, and *Zonitoides*, and a wide range of pulmonate freshwater snails (Foote, 2008).

Tetanocera phyllophora Melander



Tetanocera plebeja Loew



Tetanocera plebeja is an abundant, multivoltine Holarctic species. It is transcontinental in the Nearctic from Alaska east to Newfoundland and south to Arizona and Florida. It is found on vegetation in or near margins of freshwater marshes, fens, swamps, floodplain and mesic forests, and old fields. Adults occur from late May to mid-September. Larvae are parasitoids/predators of the slugs *Deroceras laeve* and *D. reticulatum* (Trelka and Foote 1970; Trelka and Berg 1977). Pupae overwinter in leaf litter.

Tetanocera plebeja Loew



Tetanocera plumosa Loew



Tetanocera plumosa is an univoltine Nearctic/Neotropical species, often the most abundant *Tetanocera* species in most areas of the Nearctic. It is transcontinental from Alaska south to central Mexico and east to Newfoundland. It is found on vegetation in or near margins of freshwater marshes, fens, swamps, roadside ditches. Adults occur from early April to early September. Larvae prey on shoreline and pulmonate freshwater snails (Foote 1961, 2011). Larvae overwinter as a second or third instar.

Tetanocera plumosa Loew



Tetanocera robusta Loew



Tetanocera robusta is a Holarctic species ranging from Alaska east to Newfoundland, and south to California, Colorado, and New Mexico. It is found on vegetation in or near freshwater marshes and margins of ponds and lakes. Adults occur from late May to August. Larvae are predators of pulmonate freshwater snails (Knutson 1970). Probably overwinters in the pupal stage (Rozkošný 1984).

Tetanocera robusta Loew



Tetanocera rotundicornis Loew



Tetanocera rotundicornis is a multivoltine Nearctic species known to be transcontinental from Alaska east to Newfoundland, and south to Colorado and Missouri. It is found on vegetation in or near margins of freshwater marshes, fens, moist fields, and drainage ditches. Adults occur from late April to early-August. Larvae are parasitoids/predators of pulmonate semiterrestrial snails of the genus *Oxyloma*. Pupae overwinter (Berg 1953, Foote 1996b).

Tetanocera rotundicornis Loew



Tetanocera silvatica Meigen



Distribution map

Tetanocera silvatica is a Holarctic species known to be transcontinental in the Nearctic from Alaska east to Newfoundland, but in the USA is mainly restricted to the western states. It is found on vegetation in or near freshwater marshes, around ponds, and damp situations in shaded woods (Rozkošný 1984). Adults occur from late-May to August. Larvae are parasitoids/predators of exposed pulmonate freshwater snails. Overwintering stage is unknown.

Tetanocera silvatica Meigen



Tetanocera spirifera Melander



Tetanocera spirifera is a Holarctic species known in the Nearctic from Alaska and Northwest Territories south to British Columbia, and in the east from Manitoba, and Prince Edward Island. Adults occur from June to late-August. According to B.A. Foote (unpubl.) it is found in sedges and grasses along unshaded, marshy borders of small streams; larvae are parasitoids/predators of terrestrial amber snails of the Succineidae genus *Oxyloma* and *Catinella*. Larvae overwinter in leaf litter in the habitat of the host snail.

Tetanocera spirifera Melander



Tetanocera valida Loew



Tetanocera valida is a multivoltine Nearctic species ranging from British Columbia east to Newfoundland, and south to New Mexico, West Virginia, and North Carolina (in mountains). It is found on vegetation in or near swamps, shrubby freshwater marshes, floodplain forests, and mesic forests. Adults occur from late May to mid September. Larvae are parasitoids/predators of the slug *Deroceras laeve* (Trelka and Foote 1970, Foote 2008). Pupae overwinter in litter.

Tetanocera valida Loew



Tetanocera vicina Macquart



Tetanocera vicina is an univoltine Nearctic species ranging from Alaska east to Newfoundland and south to Arizona, Kansas, Tennessee and North Carolina. It is found on vegetation in or near freshwater marshes, fens, roadside ditches, sedge meadows, and swamps. Adults occur from early April to late September. Larvae prey on "a wide variety of nonoperculate freshwater snails" (Foote 1999), and overwinter as a third instar.

Tetanocera vicina Macquart



Trypetoptera canadensis (Macquart)



Trypetoptera canadensis is the only Nearctic representative of this small (two species) Holarctic genus. It is nearly transcontinental from British Columbia east to New Brunswick and south to New Mexico, Missouri, Oklahoma and Georgia. It is found on vegetation in or near floodplain forests and mesic forests, freshwater marshes, and fens. Adults occur from late May to early September. Larvae probably prey on small pulmonate terrestrial snails, and overwintering habits are unknown.

Trypetoptera canadensis (Macquart)

