

Procter, W. 1946. *Biological Survey of the Mount Desert Region Incorporated. Part VII, Being a Revision of Parts I and VI with the Addition of 1100 Species. The Insect Fauna with References to Methods of Capture, Food Plants, the Flora and Other Biological Features.* The Wistar Institute of Anatomy and Biology, Philadelphia.

## **The long- and short-horned bugs (Hemiptera)—The bioblitz of 2008**

The Schoodic bioblitz of 2008 targeted the two larger suborders of Hemiptera, the Heteroptera (the “true” or long-horned bugs), and the Auchenorrhyncha (the leaf- and planthoppers, or short-horned bugs). The third suborder, Sternorrhyncha, was not covered due to the more specialized collecting techniques required and the need of slide preparations for identifications in many of the included groups. Data for a few species of Psyllidae (jumping plant lice) were recorded. The lead scientists for this bioblitz were K.G. Andrew Hamilton (Agriculture & Agri-foods Canada), who handled the Auchenorrhyncha, and Donald S. Chandler (University of New Hampshire), who worked with the Heteroptera. A total of 196 species in 28 families were taken.

### **The leafhoppers and allies, or short-horned bugs (Suborder Auchenorrhyncha)**

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Auchenorrhyncha or “short-horned” bugs include cicadas (Cicadidae) and their relatives, treehoppers (Membracidae), and a variety of superficially similar families once called “froghoppers” but now recognized as a heterogenous assembly consisting of leafhoppers (Cicadellidae), spittlebugs (Cercopoidea), and planthoppers (Fulgoroidea). Cicadas are large insects and treehoppers have bizarre shapes that render these insects of interest to most naturalists. By contrast, froghoppers are generally small to tiny insects and are not usually considered a group accessible to amateurs, but digital photography and the Internet are fast changing this (Hamilton 2011).

Acadia National Park is not a place one would expect to find interesting Auchenorrhyncha. The fauna of Mt. Desert Island has already been documented by Procter (1946), who recorded 224 species and “varieties.” The primary collecting techniques of sweeping or beating vegetation were commonly used and are still the most productive ways to collect these insects. Also, much of the available habitat is rocky and mostly covered with boreal forest, one of the least productive ecosystems for Homoptera on the continent. Furthermore, most Auchenorrhyncha in boreal forests are associated with fens, aspen groves, and willow thickets, none of which are common in Schoodic District of the park where the bioblitz took place. Nevertheless, a one-day survey there

in 2008 found 95 species of Auchenorrhyncha, which produced 15 new state records and an additional 15 new records for ANP, representing 30% of all the Auchenorrhyncha that were taken during the bioblitz. There is obviously a great need for a more thorough collection of Auchenorrhyncha in the park and elsewhere in the state.

Spittlebugs easily dominated the bioblitz collections. Most were individuals of the introduced European insect known in North America as the Meadow Spittlebug, *Philaenus spumarius*. Its many different color forms (Hamilton 1982: fig. 7) confuse the average collector into thinking that they represent many different species or even a variety of genera. Almost equally abundant in moist sites is another introduced European spittlebug, *Neophilaenus lineatus*. Seven native species were also found at the park, representing nine of the 14 species reported by Procter (1946), after the names recorded by Procter have been corrected to the species now known to occur in this area: *Aphrophora cribrata* (Walker) (= *A. parallela*), assuming *Aphrophora gelida* (Walker) (= *A. irrorata* and *A. sp. nr. permutata*), and that *Philaenarcys spartina* Hamilton (= *Philaronia* or *Philaenus bilineata*). The 14 species of spittlebug reported from the park is a number only slightly higher than the 10 species known from Atlantic Canada, the small provinces south and east of Québec (Maw et al. 2000), and thus probably represents a good estimate of the actual spittlebug fauna of the park.

Cicadas were heard but not taken during the bioblitz. The only call heard was that of the Dog-day Cicada, *Tibicen canicularis* Harris, which is one of two species reported from the park (Procter 1946) and one of only three known from Atlantic Canada, giving a probable representation of 33% of the local cicada fauna.

Planthoppers were represented from the bioblitz by 11 identified species in two families. There were three species in Cixiidae and eight in Delphacidae, of which two specimens of the delphacid genus *Megamelus* appeared to be different species, but could not be identified in the absence of males. This contrasts with 27 species recorded by Procter (1946), including representatives of three additional families: Achilidae (genera *Epiptera*, *Catonia*), Caliscelidae (genus *Bruchomorpha*), and Derbidae (genera *Cedusa* [= *Lamenia*], *Otiocerus* [= *Apache*], and *Patara*). All three cixiid species were among the four reported previously, but nine are known from Atlantic Canada, suggesting that perhaps as little as a third of the total species of this family have been found in the park. Delphacid species were still more poorly represented, with only eight species found compared to at least 12 reported by Procter (1946). The two lists show how incomplete is our information on this family, for only two species are present on both lists: *Tumidagena terminalis* Metcalf (= *M. spartini* of Procter [1946]), and *Muirodelphax arvensis* (Fitch) (= *Delphacodes campestris*). *Megamelus metzaria*, *Prokelisia dolus*, and *Sogatella kolophon* are new state records, and *Kosswigianella lutulenta* is a new park record. The genus *Pissonotus* is represented by a single unidentified female, and brings the total delphacid genera taken during the bioblitz to seven. By contrast, seven delphacid genera recorded by Procter were not verified: *Kelisia*, *Laccocera*, *Liburniella*, *Phyllostinus*, *Stenocranus*, *Stobaera*, and *Javesella* (for "*Delphacodes*" *pellucida*). Combining the two

lists gives a total park fauna of 34 species, comparable to the 30 represented in Atlantic Canada (Maw et al. 2000). The bioblitz sample therefore represents no more than 27% of the fulgoroid fauna in the park.

The treehoppers found in the bioblitz represent a still smaller percentage of the expected fauna. The five species found contrasts with the 11 previously reported (Procter 1946), with only a single new park record, *Telamona gemma*. Since there are 20 species of membracids known in Atlantic Canada (Maw et al. 2000), only about a quarter of the expected fauna was found.

Leafhoppers constituted the bulk of the records, with 65 species found (of which 58 are native), and only a few were unidentifiable, such as two different species of *Draeculacephala* found on *Glyceria* in a seep area in the woods, and another on bayberry (*Myrica*) in a bog.

Procter (1946) reported more than 100 species and varieties of leafhoppers, based on Osborn (1915). Of these, 29 species listed may be associated with species taken in the bioblitz, but some such associations are doubtful: the adventive *Aphrodes albifrons* (L.), which has been recorded only from eastern Canada and Oregon (Hamilton 1983a) is more probably *Anoscopus albiger* (Germar). For the native species listed by Procter, the following corrections are probable and placed in parentheses: *A. novella* (?= *Agalliopsis ancistra* Oman), *B. punctata* (?= *Balclutha confluens* [Rey]), *Aceratagallia sanguinolenta* (?= *Ceratagallia humilis* [Oman]), *Dikraneura* sp. (?= *D. hungerfordi* Lawson), *Evacanthus acuminatus* (?= *E. orbitalis* Fitch), *Graphocephala coccinea* (?= *G. picta* [Walker]), *Latalus sayi* (?= *L. personatus* Beirne), *Limotettix cuneatus* (?= *L. schedia* Hamilton), *Macrosteles divisus* (?= *M. fascifrons* [Stål]), and possibly *Empoasca querci* var. *gillettei* (?= *Typhlocyba latifasciata* [Christian]). Thus, of the 155 species of leafhoppers recorded by Osborn (1915) from all over the state, 19 of these were taken during blitz, suggesting a total fauna exceeding 200 species. By contrast, there are 330 species known from Atlantic Canada (Maw et al. 2000), of which *Draeculacephala robinsoni* Hamilton, *Oncopsis flavidorsum* (Amyot & Serville), and *Oncopsis minor* (Fitch) (= *O. pruni* [Prov.]) were previously recorded from the park by Hamilton (1975, 1983b). The bioblitz records may therefore represent only about 20% of the probable park fauna.

Three of the new state records are of adventive leafhoppers that have expanded their range into Maine since 1946. *Anoscopus flavostriatus* (Donovan) was previously recorded from Vermont in 1898, ranging as far as Nova Scotia by 1954; *Doratura stylata* (Boheman) was first recorded from Massachusetts in 1923, and *Latalus ocellaris* (Fallén) was first found in Quebec in 1942, ranging to New Hampshire by 1954 (Hamilton 1983a). Other new state records include the leafhoppers *Arboridia nitida* (Beamer), *Forcipata acclina* DeLong & Caldwell, *Draeculacephala zaeae* Hamilton, *Empoasca junipera* DeLong, *Empoasca vincula* DeLong, *Oncopsis concurrens* Hamilton, *Scaphoideus jannus* Barnett on various plants, *Kyboasca trilobata* (DeLong) and *Macrosteles galeae* Hamilton on bayberry, and *Destria bisignata* (Sanders & DeLong) on cordgrass. New records from the park include the European *Euscelis sordida* (Zetterstedt) that was “common

in New England” as long ago as 1926, and the native *Balclutha impicta* (Van Duzee), *Colladonus setaceus* Nelson, *Draeculacephala antica* (Walker), *Elymana sulphurella* (Zetterstedt), *Empoasca fabae* Harris, *Gyponana cacumina* DeLong, *Gyponana serpenta* DeLong, *Macrosteles quadrilineatus* (Forbes), *Oncopsis crispae* Hamilton, *Ribautiana unca* (McAtee), and *Xestocephalus fulvocapitatus* Van Duzee.

Other leafhoppers found on cordgrass and previously recorded from the park include *Amplicephalus simplex* (Van Duzee) (= *Deltocephalus simplarius* [Osborn & Ball]) and *Neohecalus lineatus* (Uhler). These, together with the spittlebug *Philaenarcys spartina*, the planthoppers *Tumidagena terminalis*, *Megamelus metzaria*, and *Prokelisia dolus*, plus the leafhopper *Destria bisignata* that was previously known only as far north as New Jersey (Kramer 1976), form a rich fauna restricted to a small area of the the Schoodic District of the park, the filled-in channel between Big Moose Island and the tip of the Schoodic Peninsula. The number of these insects that are flightless or have a widely disjunct distribution pattern suggest that they were brought to the park as eggs in floating vegetation mats torn from coastlines far to the south and transported northwards during hurricanes.

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## Order Hemiptera: long- and short-horned bugs

### Suborder Auchenorrhyncha—the short-horned bugs

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#### CERCOPIDAE

##### *Aphrophora cribrata* (Walker)

Site 5	8/10/2008	M. Dearborn, sweeping, bog
Site 15	8/9/2008	A. Pierce, sweeping, asters on edge of road
Site 27	8/9/2008	C. Rallis, beating, alder
	8/9/2008	D.S. Chandler, sweeping, alders along road shoulder
Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
	8/9/2008	M. Swann, sweeping
Site 94	8/9/2008	M. Tomlinson & J. Hoekwater, sweeping, grasses
Site 96	8/9/2008	M.E. Mazurkiewicz, sweeping, salt marsh— <i>Spartina patens</i>

##### *Aphrophora gelida* (Walker)

Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
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##### *Aphrophora quadrinotata* Say

Site 1	8/9/2008	B. Woo, beating, parking area at SERC gate
	8/9/2008	C. Rallis, beating, birch, alder, and sumac, picnic area near ballfield
	8/9/2008	P. Darling, sweeping, edge of ballfield, grasses

##### *Aphrophora saratogensis* (Fitch)

Site 34	8/10/2008	C. Teerling, sweeping, grasses and bog vegetation
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##### *Clasoptera obtusa* (Say)

Site 15	8/9/2008	A. Pierce, sweeping, asters on edge of road
Site 27	8/9/2008	C. Rallis, beating, alder
Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
	8/9/2008	M. Swann, sweeping
Site 94	8/9/2008	M. Tomlinson & J. Hoekwater, sweeping, grasses
Site 96	8/9/2008	M.E. Mazurkiewicz, sweeping, salt marsh— <i>Spartina patens</i>

##### *Clasoptera saintcyri* Provancher

Site 21	8/9/2008	D.S. Chandler, sweeping, open understory dominated by <i>Vaccinium</i>
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##### *Neophilaenus lineatus* (Linnaeus)

Site 1	8/9/2008	A. Alyokhin, beating, alders near bioblitz lab
	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab
	8/9/2008	D. Vacca, sweeping, SERC entrance area, grasses with yarrow, meadowsweet, and goldenrod
	8/9/2008	R.G. Dearborn, sweeping, alders near water tower
	8/9/2008	R.G. Dearborn, sweeping grass
Site 2	8/9/2008	C. Rallis, sweep/beat grasses and brush
Site 5	8/10/2008	M. Dearborn, sweeping, bog
Site 13	8/9/2008	L. Havsall, beating, mountain ash and spruce trees
Site 16	8/9/2008	J. Hazen-Connery & R.W. Hildreth, sweeping, small pond
Site 20	8/9/2008	D. Vacca, sweeping, low shrubs, including lowbush blueberry and spruce shrubs
Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation
Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
Site 27	8/9/2008	C. Rallis, beating, alder
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
Site 93	8/9/2008	D. Wade, sweep low shrubs and grasses, roadside grasses, <i>Spirea</i> , rose
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line
Site 99	8/10/2008	R.E. Nelson, underwater and surface sweeping, <i>Sphagnum</i> , sedge, <i>Myrica</i> bog

Site 101	8/10/2008	W.S. Urquhart, sweeping, dewberry, mountain ash, lichens, ferns, small grasses and etc.	
Site 111	8/11/2008	K.G.A. Hamilton, by hand and sweeping, along shoreline	
<i>Philaenarcys spartina</i> Hamilton			
Site 15	8/9/2008	A. Pierce, sweeping, asters on edge of road	
<i>Philaenus spumarius</i> (Linnaeus)			
Site 1	8/9/2008	A. Alyokhin, beating, alders near bioblitz lab	
	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab	
8/9/2008	8/9/2008	C. Donahue, yellow pan trap, near bioblitz lab	
	8/9/2008	R.G. Dearborn, sweeping, alders near water tower	
8/9/2008	8/9/2008	R.G. Dearborn, sweeping grass	
	8/10/2008	B. Woo, sweeping, grassy area behind Schooner Club	
Site 3	8/9/2008	A. Alyokhin, sweeping, grass and shrubs	
Site 13	8/9/2008	D. Vacca, sweeping, deadly nightshade and tall grasses	
	8/9/2008	L. Havsall, beating, mountain ash and spruce trees	
Site 16	8/9/2008	J. Hazen-Connelly & R.W. Hildreth, sweeping, small pond	
Site 20	8/9/2008	D. Vacca, sweeping, low shrubs, including lowbush blueberry and spruce shrubs	
	8/9/2008	J. McDade, A. Swann, M. Goff, sweeping	
	8/9/2008	J.H. Connelly, by hand and sweeping	
	8/9/2008	K. Hutchins, sweeping, asters, vegetation at edge of spruce trees	
	8/9/2008	L. Servier, sweeping, found on grasses and ferns	
	8/9/2008	P. Darling & K. Hopkins, sweeping	
	Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation
	Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
	Site 26	8/10/2008	D. Burrell, sweeping, boggy head of stream estuary
	Site 27	8/9/2008	C. Rallis, beating, alder
Site 83	8/9/2008	D.S. Chandler, sweeping, beach pea	
	8/8/2008	S. Gross, hand picking, alder on side of road	
Site 87	8/9/2008	J. Hoekwater, beating, rocky blueberry area, on quaking aspen	
	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach	
Site 92	8/9/2008	D. Wade, sweep low shrubs and grasses, roadside grasses, <i>Spirea</i> , rose	
Site 93	8/9/2008	D. Wade, sweep low shrubs and grasses, roadside grasses, <i>Spirea</i> , rose	
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line	
Site 101	8/10/2008	W.S. Urquhart, sweeping, dewberry, mountain ash, lichens, ferns, small grasses and etc.	
	8/10/2008	W.S. Urquhart, sweeping	

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**CICADELLIDAE**


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*Agalliopsis ancistra* Oman

Site 14	8/9/2008	D. Michaud & D. Bourque, sweeping, hand picking
Site 25	8/9/2008	T. Murray & J. List, sweeping, sumac
Site 35	8/10/2008	D. Michaud, D. Bourque, T. Murray, sweeping, hand picking
Site 97	8/10/2008	R.E. Nelson, yellow plastic bowl beneath red maple by road

*Anoscopus albiger* (Germar)

Site 1	8/9/2008	C. Donahue, yellow pan trap, near bioblitz lab
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*Anoscopus flavostriatus* (Donovan)

Site 97	8/10/2008	R.E. Nelson, yellow plastic bowl beneath red maple by road
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*Aphrodes bicinctus* (Schrank)

Site 1	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab
Site 97	8/10/2008	R.E. Nelson, yellow plastic bowl beneath red maple by road

*Arboridia nitida* (Beamer)

Site 92	8/9/2008	K.G.A. Hamilton, sweeping, <i>Glyceria</i> in rill near N end of Sundew Trail
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*Athysanus argentarius* Metcalf

Site 1	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab
	8/10/2008	D. Wade, beating, campground near ballfield, paper birch

- Balcanocerus provancheri* (Van Duzee)  
 Site 24 8/9/2008 D. Burnell, sweeping, open blueberry heath
- Balclutha confluens* (Rey)  
 Site 3 8/9/2008 J. McDade, A. Swann, J. Seger, M. Goff, sweeping  
 Site 25 8/9/2008 C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac  
 8/9/2008 T. Murray & J. List, sweeping, sumac  
 Site 27 8/9/2008 C. Rallis, beating, alder
- Balclutha impicta* (Van Duzee)  
 Site 10 8/10/2008 J.S. Weaver, sweeping, salt marsh pond
- Bandara johnsoni* (Van Duzee)  
 Site 48 8/10/2008 J.S. Weaver, sweeping mostly alder and white birch, deciduous woods
- Ceratagallia humilis* (Oman)  
 Site 3 8/9/2008 J. McDade, A. Swann, J. Seger, M. Goff, sweeping
- Colladonus clitellarius* (Say)  
 Site 48 8/10/2008 J.S. Weaver, sweeping mostly alder and white birch, deciduous woods
- Colladonus setaceus* Nielson  
 Site 46 8/10/2008 A. Alyokhin, sweeping, vegetation, mostly *Vaccinium*
- Deltocephalus simplarius* (Osborn & Ball)  
 Site 8 8/10/2008 M.E. Mazurkiewicz, sweeping, *Spartina patens*  
 Site 20 8/9/2008 K. Hutchins, sweeping, asters, vegetation at edge of spruce trees  
 8/9/2008 K. Hutchins, sweeping, bog  
 8/9/2008 R.W. Hildreth & J.H. Connery, sweeping and hand pick, seaside grasses, *Rosa rugosa* thicket  
 Site 27 8/9/2008 C. Rallis, beating, alder  
 Site 38 8/9/2008 K.G.A. Hamilton, sweeping  
 Site 48 8/10/2008 C. Rallis, sweeping, in short grasses near mouth of creek  
 Site 96 8/9/2008 M.E. Mazurkiewicz, sweeping, salt marsh—*Spartina patens*  
 Site 111 8/11/2008 K.G.A. Hamilton, by hand and sweeping, along shoreline
- Destria bisignata* (Sanders & DeLong)  
 Site 111 8/11/2008 K.G.A. Hamilton, by hand and sweeping, along shoreline
- Dikraneura hungerfordi* Lawson  
 Site 22 8/9/2008 K.G.A. Hamilton, sweeping, sedgy understory and forbs near road, with much blueberry
- Dikraneura* sp.  
 Site 22 8/9/2008 D.S. Chandler, sweeping, ground vegetation  
 8/9/2008 K.G.A. Hamilton, sweeping, sedgy understory and forbs near road, with much blueberry
- Doratura stylata* (Boheman)  
 Site 1 8/9/2008 C. Donahue, yellow pan trap, near bioblitz lab  
 Site 16 8/9/2008 J. Hazen-Connery & R.W. Hildreth, sweeping, small pond  
 Site 25 8/9/2008 T. Murray & J. List, sweeping, sumac  
 Site 27 8/9/2008 C. Rallis, beating, alder  
 8/9/2008 C. Rallis, sweeping, grasses  
 8/9/2008 D.S. Chandler, sweeping, grasses along saltwater inlet  
 Site 93 8/9/2008 D. Wade, sweep low shrubs and grasses, roadside grasses, *Spirea*, rose  
 Site 98 8/10/2008 R.E. Nelson, beating, low alder thickets
- Dræculacephala antica* (Walker)  
 Site 1 8/10/2008 D. Wade, beating, campground near ballfield, paper birch  
 Site 38 8/9/2008 K.G.A. Hamilton, sweeping
- Dræculacephala mollipes* (Say)  
 Site 16 8/9/2008 J. Hazen-Connery & R.W. Hildreth, sweeping, small pond  
 Site 99 8/10/2008 R.E. Nelson, underwater and surface sweeping, *Sphagnum*, sedge, *Myrica* bog

<i>Draeculacephala robinsoni</i> Hamilton		
Site 16	8/9/2008	J. Hazen-Connery & R.W. Hildreth, sweeping, small pond
Site 27	8/9/2008	C. Rallis, beating, alder
Site 81	8/9/2008	P. Darling, sweeping, vegetation along road
<i>Draeculacephala</i> sp. A		
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, <i>Glyceria</i> in rill near N end of Sundew Trail
<i>Draeculacephala</i> sp. B		
Site 99	8/10/2008	R.E. Nelson, underwater and surface sweeping, <i>Sphagnum</i> , sedge, <i>Myrica</i> bog
<i>Draeculacephala zaeae</i> Hamilton		
Site 2	8/9/2008	C. Rallis, sweep/beat grasses and brush
<i>Elymana</i> sp.		
Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line
<i>Elymana sulphurella</i> (Zetterstedt)		
Site 27	8/9/2008	C. Rallis, sweeping, grasses
<i>Empoasca fabae</i> Harris		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath
<i>Empoasca junipera</i> DeLong		
Site 99	8/10/2008	R.E. Nelson, beaten from <i>Thuja occidentalis</i> , margin of <i>Sphagnum</i> bog
<i>Empoasca</i> sp.		
Site 1	8/9/2008	C. Donahue, yellow pan trap, near bioblitz lab
	8/9/2008	C. Rallis, beating, goldenrod and <i>Spirea</i> , athletic field
	8/9/2008	J.S. Weaver, sweeping, mostly goldenrod near athletic field
	8/9/2008	T. Murray, sweeping, sweet fern patch
Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 20	8/9/2008	J. McDade, A. Swann, M. Goff, sweeping
	8/9/2008	K. Hutchins, sweeping, asters, vegetation at edge of spruce trees
Site 48	8/10/2008	J.S. Weaver, sweeping mostly alder and white birch, deciduous woods
Site 83	8/9/2008	D.S. Chandler, sweeping, beach pea
Site 101	8/10/2008	W.S. Urquhart, sweeping, dewberry, mountain ash, lichens, ferns, small grasses, etc.
<i>Empoasca vincula</i> DeLong		
Site 1	8/9/2008	C. Donahue, yellow pan trap, near bioblitz lab
	8/9/2008	J.S. Weaver, sweeping, mostly goldenrod near athletic field
Site 20	8/9/2008	K. Hutchins, sweeping, asters, vegetation at edge of spruce trees
Site 44	8/9/2008	K. Bowser, sweeping, beach pea
Site 83	8/9/2008	D.S. Chandler, sweeping, beach pea
<i>Euscelis sordida</i> (Zetterstedt)		
Site 27	8/9/2008	C. Rallis, sweeping, grasses
<i>Evacanthus orbitalis</i> Fitch		
Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 97	8/10/2008	R.E. Nelson, yellow plastic bowl beneath red maple by road
<i>Forcipata acclina</i> DeLong & Caldwell		
Site 99	8/10/2008	R.E. Nelson, underwater and surface sweeping, <i>Sphagnum</i> , sedge, <i>Myrica</i> bog
<i>Graphocephala picta</i> (Walker)		
Site 6	8/9/2008	J. Seger, A. Swann, J. McDade, sweeping, beating, parking area
Site 16	8/9/2008	J. Hazen-Connery & R.W. Hildreth, sweeping, small pond
Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation
Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
Site 46	8/10/2008	M.E. Mazurkiewicz, sweeping, low bush blueberry



Site 48	8/10/2008	J.S. Weaver, sweeping mostly alder and white birch, deciduous woods
Site 98	8/10/2008	R.E. Nelson, beating, low alder thickets
<i>Gyponana cacumina</i> DeLong		
Site 1	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab
	8/9/2008	R.G. Dearborn, sweeping, weedy area near watertower
	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 14	8/9/2008	D. Michaud & D. Bourque, sweeping, hand picking
Site 20	8/9/2008	D. Vacca, sweeping, low shrubs, including lowbush blueberry and spruce shrubs
Site 21	8/9/2008	D.S. Chandler, sweeping, open understory dominated by <i>Vaccinium</i>
Site 22	8/9/2008	K.G.A. Hamilton, sweeping, sedgy understory and forbs near road, with much blueberry
Site 34	8/10/2008	J.S. Weaver, sweeping, bayberry
	8/10/2008	J.S. Weaver, sweeping, hanging bog, cotton grass in bog area and other bog plants
Site 46	8/10/2008	A. Alyokhin, sweeping, vegetation, mostly <i>Vaccinium</i>
Site 98	8/10/2008	R.E. Nelson, beating, low alder thickets
<i>Gyponana serpenta</i> DeLong		
Site 1	8/9/2008	A. Alyokhin, sweeping, roadside vegetation near bioblitz lab
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath
Site 109	8/10/2008	K. Hopkins, sweeping, sweep tamarack
<i>Gyponana</i> sp.		
Site 20	8/9/2008	J. McDade, A. Swann, M. Goff, sweeping
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath
Site 87	8/9/2008	M. Tomlinson, sweeping, goldenrod, beach pea, and grasses
Site 109	8/10/2008	K. Hopkins, sweeping, sweep tamarack
<i>Idiodonus kennicottii</i> (Uhler)		
Site 34	8/10/2008	C. Rallis, sweeping, hanging bog, swept grasses, bayberry, wild rhododendron
<i>Idiodonus morsei</i> (Osborn)		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
<i>Kyboasca trilobata</i> (DeLong)		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
Site 21	8/10/2008	D.S. Chandler, sweeping, aquatic vegetation
Site 46	8/10/2008	D. Burrell, beating white birch branches.
<i>Laevicephalus acus</i> (Sanders & DeLong)		
Site 27	8/9/2008	C. Rallis, sweeping, grasses
<i>Laevicephalus</i> sp. 1		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
<i>Latalus ocellaris</i> (Fallén)		
Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
	8/9/2008	T. Murray & J. List, sweeping, sumac
<i>Latalus personatus</i> Beirne		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
Site 21	8/10/2008	D.S. Chandler, sweeping, prostrate juniper
Site 27	8/9/2008	C. Rallis, sweeping, grasses
<i>Limotettix humidus</i> (Osborn)		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
<i>Limotettix schedia</i> Hamilton		
Site 34	8/10/2008	J.S. Weaver, sweeping, hanging bog, cotton grass in bog area and other bog plants
<i>Limotettix vaccinii</i> (Van Duzee)		
Site 21	8/9/2008	D.S. Chandler, sweeping, open understory dominated by <i>Vaccinium</i>

<i>Macrosteles fascifrons</i> (Stål)		
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line
<i>Macrosteles galeae</i> Hamilton		
Site 21	8/10/2008	D.S. Chandler, sweeping, aquatic vegetation
<i>Macrosteles quadrilineatus</i> (Forbes)		
Site 27	8/9/2008	D.S. Chandler, sweeping, grasses along saltwater inlet
Site 38	8/9/2008	K.G.A. Hamilton, sweeping
<i>Neohecalus lineatus</i> (Uhler)		
Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
	8/9/2008	M. Swann, sweeping
	8/10/2008	C. Rallis, drag sweep, marsh
	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
	8/9/2008	M. Swann, sweeping
Site 38	8/9/2008	K.G.A. Hamilton, sweeping
Site 48	8/10/2008	C. Rallis, sweeping, in short grasses near mouth of creek
Site 111	8/11/2008	K.G.A. Hamilton, by hand and sweeping, along shoreline
<i>Neokolla hieroglyphica</i> (Say)		
Site 20	8/9/2008	J. McDade, A. Swann, M. Goff, sweeping
	8/9/2008	K. Hutchins, sweeping, beach pea
Site 25	8/9/2008	T. Murray & J. List, sweeping, sumac
<i>Oncopsis concurrens</i> Hamilton		
Site 1	8/10/2008	D. Wade, beating, campground near ballfield, yellow birch
<i>Oncopsis crispae</i> Hamilton		
Site 1	8/9/2008	A. Alyokhin, beating, alders near bioblitz lab
	8/9/2008	C. Donahue, beating, spruce near bioblitz lab
	8/9/2008	R.G. Dearborn, sweeping, alders near water tower
	8/9/2008	T. Murray, sweeping, grass and wood edges
Site 14	8/9/2008	D. Michaud & D. Bourque, sweeping, hand picking
Site 20	8/9/2008	D. Vacca, sweeping, low shrubs, including lowbush blueberry and spruce shrubs
Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
	8/9/2008	M. Swann, sweeping and hand picking, near old ranger station, open meadow and shrubs
Site 38	8/9/2008	K. Hutchins, beating, alder
<i>Oncopsis flavidorsum</i> (Amyot & Serville)		
Site 27	8/9/2008	D.S. Chandler, sweeping, alders along road shoulder
<i>Oncopsis minor</i> (Fitch)		
Site 6	8/9/2008	J. Seger, A. Swann, J. McDade, sweeping, beating, birch tree
<i>Paraphlepsius fulvidorsum</i> (Fitch)		
Site 1	8/9/2008	R.G. Dearborn, sweeping grass
<i>Paraphlepsius irroratus</i> (Say)		
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath.
<i>Psammotettix lividellus</i> (Zetterstedt)		
Site 48	8/10/2008	C. Rallis, sweeping, in short grasses near mouth of creek
<i>Ribautiana unca</i> (McAtee)		
Site 1	8/9/2008	A. Alyokhin, beating, alders near bioblitz lab
<i>Scaphoideus carinatus</i> Osborn		
Site 21	8/9/2008	D.S. Chandler, sweeping, open understory dominated by <i>Vaccinium</i>
<i>Scaphoideus jannus</i> Barnett		
Site 14	8/9/2008	D. Michaud & D. Bourque, sweeping, hand picking
Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation
<i>Scaphoideus</i> sp.		
Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation

*Scaphoideus* sp. A

Site 21 8/9/2008 D.S. Chandler, sweeping, open understory dominated by *Vaccinium*

Site 46 8/10/2008 A. Alyokhin, sweeping, vegetation, mostly *Vaccinium*

*Scaphytopius acutus* (Say)

Site 1 8/9/2008 C. Rallis, beating, goldenrod and *Spirea*, athletic field

Site 3 8/9/2008 J. McDade, A. Swann, J. Seger, M. Goff, sweeping

Site 14 8/9/2008 D. Michaud & D. Bourque, sweeping, hand picking

Site 20 8/9/2008 J. McDade, A. Swann, M. Goff, sweeping

Site 83 8/9/2008 D.S. Chandler, sweeping, beach pea

*Scaphytopius vaccinium* (DeLong)

Site 1 8/10/2008 D. Wade, beating, campground near ballfield, paper birch

Site 6 8/9/2008 J. Seger, A. Swann, J. McDade, sweeping, beating, birch tree

Site 21 8/9/2008 D.S. Chandler, sweeping, open understory dominated by *Vaccinium*

Site 34 8/10/2008 C. Rallis, beating, hanging bog, on bayberry

8/10/2008 C. Rallis, sweeping, hanging bog, swept grasses, bayberry, wild rhododendron

8/10/2008 J.S. Weaver, sweeping, bayberry

Site 46 8/10/2008 A. Alyokhin, sweeping, vegetation, mostly *Vaccinium*

*Typhlocyba latifasciata* (Christian)

Site 1 8/9/2008 C. Rallis, beating

8/9/2008 P. Darling, sweeping, mountain ash at edge of ballfield

Site 27 8/9/2008 D.S. Chandler, sweeping, alders along road shoulder

*Typhlocyba* sp.

Site 99 8/10/2008 R.E. Nelson, beaten from *Thuja occidentalis*, margin of *Spagnum* bog

*Xestocephalus fulvocapitatus* Van Duzee

Site 21 8/10/2008 J.S. Weaver, sweeping near pond

**CIXIIDAE***Cixius coelopium* Fitch

Site 1 8/10/2008 B. Woo, sweeping, grasses, goldenrod, near gazebo of Sundew Trail  
8/10/2008 T. Miller, sweeping, Moore Auditorium, stand of meadowsweet

Site 21 8/9/2008 L. R. Miller, by hand, balsam forest by pond, moss

Site 35 8/10/2008 D. Michaud, D. Bourque, T. Murray, sweeping, hand picking

Site 43 8/10/2008 W.S. Urquhart, sweeping, mixed vegetation below white birch

Site 102 8/10/2008 W.S. Urquhart, sweeping

*Cixius misellus* Van Duzee

Site 1 8/10/2008 B. Woo, sweeping, grasses, goldenrod, near gazebo of Sundew Trail

Site 83 8/9/2008 D.S. Chandler, sweeping, beach pea

Site 86 8/9/2008 S. Gross, by hand

*Cixius pini* Fitch

Site 3 8/9/2008 J. McDade, A. Swann, J. Seger, M. Goff, sweeping

Site 14 8/9/2008 D. Michaud & D. Bourque, sweeping, hand picking

Site 20 8/9/2008 J. McDade, A. Swann, M. Goff, sweeping

*Cixius* sp.

Site 21 8/9/2008 L. R. Miller, by hand, balsam forest by pond, moss

Site 83 8/9/2008 D.S. Chandler, sweeping, beach pea

Site 86 8/9/2008 S. Gross, by hand

**DELPHACIDAE***Kosswigianella lutulenta* (Van Duzee)

Site 27 8/9/2008 C. Rallis, sweeping, grasses

*Megamelus metzaria* Crawford

Site 21 8/9/2008 J.S. Weaver, dip net

Site 27 8/9/2008 D.S. Chandler, sweeping, grasses along saltwater inlet

Site 92 8/9/2008 K.G.A. Hamilton, sweeping, West Pond beach

Site 111	8/11/2008	K.G.A. Hamilton, by hand and sweeping, along shoreline
<i>Megamelus</i> sp. 1		
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
<i>Megamelus</i> sp. 2		
Site 27	8/9/2008	D.S. Chandler, sweeping, grasses along saltwater inlet
<i>Pissonotus</i> sp.		
Site 38	8/9/2008	K.G.A. Hamilton, sweeping
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
<i>Prokelisia dolus</i> Wilson		
Site 8	8/10/2008	M.E. Mazurkiewicz, sweeping, <i>Spartina alterniflora</i>
Site 14	8/9/2008	D. Michaud & D. Bourque, sweeping, hand picking
Site 16	8/9/2008	K. Hutchins, sweeping, meadow on edge of pond
Site 27	8/9/2008	D.S. Chandler, sweeping, grasses along saltwater inlet
	8/10/2008	C. Rallis, sweeping, tall grasses
Site 28	8/10/2008	J.S. Weaver, sweeping, marsh grass
Site 38	8/9/2008	K.G.A. Hamilton, sweeping
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
Site 96	8/9/2008	M.E. Mazurkiewicz, sweeping, salt marsh— <i>Spartina alterniflora</i>
<i>Sogatella kolophon</i> (Kirkaldy)		
Site 22	8/9/2008	D.S. Chandler, sweeping, ground vegetation
<i>Tumidagena terminalis</i> (Metcalf)		
Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
Site 111	8/11/2008	K.G.A. Hamilton, by hand and sweeping, along shoreline

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**MEMBRACIDAE**


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*Campylenchia latipes* (Say)

Site 3	8/9/2008	A. Alyokhin, sweeping, grass and shrubs
Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 16	8/9/2008	J. Hazen-Connelly & R.W. Hildreth, sweeping, small pond
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath
Site 25	8/9/2008	C. Rallis, sweeping, beating, grasses, goldenrod, alder, and sumac
Site 27	8/9/2008	C. Rallis, beating, alder
Site 28	8/9/2008	D. Bourque & D. Michaud, sweeping, grassy salt marsh, bayberry
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line

*Enchenopa binotata* (Say)

Site 3	8/9/2008	S. Gross & J. Hoekwater, by hand, wild rose.
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*Publilia concava* (Say)

Site 3	8/9/2008	J. McDade, A. Swann, J. Seger, M. Goff, sweeping
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath.

*Stictocephala basalis* (Walker)

Site 1	8/9/2008	J.S. Weaver, sweeping, mostly goldenrod near athletic field
Site 5	8/10/2008	L.T. Miller & D. Burrell, sweeping, open bog
Site 24	8/9/2008	D. Burnell, sweeping, open blueberry heath
Site 25	8/9/2008	M. Swann, sweeping and hand picking, near old ranger station, open meadow and shrubs
	8/9/2008	T. Murray & J. List, sweeping, sumac
Site 27	8/9/2008	D.S. Chandler, sweeping, alders along road shoulder
Site 38	8/9/2008	K. Hutchins, sweeping, overgrown field
	8/9/2008	K. Hutchins, sweeping, roadside vegetation
Site 86	8/9/2008	S. Gross, by hand
	8/9/2008	W.S. Urquhart, sweeping, <i>Spirea</i>
Site 89	8/9/2008	S. Gross, by hand, beach pea
Site 92	8/9/2008	K.G.A. Hamilton, sweeping, West Pond beach
Site 95	8/9/2008	L. Miller & D. Burrell, sweeping, grassy areas just above tide line

*Telamona gemma* (Ball)

Site 1	8/10/2008	D. Wade, beating, campground near ballfield, paper birch
Site 46	8/10/2008	D. Burrell, sweeping, wet grassy meadow.

Biodiversity of the Schoodic  
Peninsula:  
Results of the Insect and Arachnid  
Bioblitzes at the Schoodic District of  
Acadia National Park, Maine

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