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New State and Provincial Records for Some Nearctic True Bugs (Hemiptera: Heteroptera) from the Illinois Natural History Survey Insect Collection

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New State and Provincial Records for Some Nearctic True Bugs (Hemiptera: Heteroptera) from the Illinois Natural History Survey Insect Collection

Cover Page Footnote
I am very grateful to Tommy McElrath (INHS) for the privilege of studying the material under his care, for his assistance in navigating old and fragile accession ledgers, for supplying information on W. V. Balduf and Andreas Bolter, and for his general support. I also owe thanks to Ed DeWalt (INHS) for making some of his specimens available for study. I greatly appreciate both Tamera Lewis’ (USDA-ARS) and Laura Miller’s (WVDA) advice and willingness to share their vast knowledge concerning the identification and distribution of various species of minute pirate bugs and lace bugs, respectively. I also thank Bethany Anderson (UIUC, University Archives) for her support and efforts in accessing data from the Shelford Papers. Finally, I am indebted to Steve W. Chordas III, Tommy McElrath, and David A. Rider for their generous effort and massive time investment in reviewing this long, data-heavy manuscript. Thanks to their discernment and diligence, roughly 20% of the original submitted records were rightly culled and many species’ distribution summaries were greatly improved, mostly through the unearthing of various obscure references and/or overlooked records. Their suggested stylistic improvements also made the contribution clearer and more navigable. There is no question that each significantly enhanced the quality and utility of this study, and for that, I give them my earnest thanks.

This peer-review article is available in The Great Lakes Entomologist: https://scholar.valpo.edu/tgle/vol54/iss2/6
True bugs (Hemiptera: Heteroptera) are a morphologically diverse and globally distributed group of hemimetabolous insects, generally recognized by the suctorial mouthparts and usually half-coriaceous, half-membranous forewings (e.g., Schuh and Weirauch 2020). Constituting part of the fifth largest order of insects, more than 43,000 species of true bugs arranged in 88 families have been described worldwide (Schuh and Weirauch 2020). As might be expected, from heightened morphological diversity follows diversity in habitat and natural history. In both cases, heteropterans do not disappoint expectation, being distributed throughout nearly every major biome and accompanying habitats on Earth, with the exception of marine aquatic and polar desert (Weirauch et al. 2019, Schuh and Weirauch 2020).

Studying the biogeography of Heteroptera and other organisms can influence and yield insights into their phylogenetic histories and ecologies as well as conservation and management strategies (e.g., generally, Whittaker et al. 2005, Ricklefs and Jenkins 2011, Ronquist and Sanmartin 2011, Heads 2015). However, biogeographical studies are underpinned by presence-absence data, and incomplete knowledge of geographic distributions, an impediment in organismal biology termed the Wallacean shortfall, limits the inferences that can be made. Therefore, augmenting presence-absence data, where possible, is of great utility (e.g., Swanson 2019).

Toward this goal, biological collections become an indispensable resource. As repositories of organisms and their associated occurrence data, biological collections are particularly well-suited to provide and fortify the basic biogeographical units, which in turn can support meaningful, evidence-based conclusions applicable in a wide range of scientific disciplines (e.g., Suarez and Tsutsui 2004). The Illinois Natural History Survey Insect Collection (INHS) (Dmitriev 2015) is one such repository. Founded in 1858, the INHS is the largest and oldest institutional arthropod collection in the state of Illinois. The collection currently holds around 7 million prepared specimens, reaching a global...
The purpose of this study was to verify and compile unreported state-level records for true bug species in the United States while concurrently sorting and identifying undetermined heteropteran material present in the INHS. As a result of this survey and effort, 157 state records for 133 species of Heteroptera are newly-reported herein, including 9 state records for a family-level taxon.

Materials and Methods

General methodology of specimen examination and identification, data transcription, and record vetting follows that of previous treatments (e.g., Swanson 2018, 2019), with the main difference being an exclusive focus on specimens present in the INHS (except in a few cases where specimens in the author’s personal collection bolster new records).

Many specimens were newly identified by the author. However, many were previously identified, sometimes by experts in a particular group (e.g., Miridae by H. H. Knight, Notonectidae by H. B. Hungerford). Even in these latter cases, identifications were still corroborated by the author, although often in the context of updated taxonomies.

Complete locality data are reported, although they are not reported verbatim (e.g., “22-5-1943” is rendered 22 May 1943). Any additions, changes, or interpretive elements are shown in brackets; most commonly, this comprises counties not included on the label and specimen sexes and counts. Although it is not explicitly transcribed among the Material Examined, each specimen, unless otherwise noted, bears a “Det. D. R. Swanson [YEAR]” label and is deposited in the Illinois Natural History Survey Insect Collection.

Concerning species distributions, the authority on which a state having a published record for a given species is based belongs to the corresponding chapter in Henry and Froeschner’s (1988, 1992) catalog, unless otherwise noted. Theabbreviations used for each U.S. state and Canadian province or territory follow the United States Postal Service and the Canada Post Corporation, respectively.

Material mentioned in this study comes from one of the following biological collections:

- DRS—Daniel R. Swanson, personal collection
- INHS—Illinois Natural History Survey Insect Collection, Champaign, Illinois (Dmitriev 2015)

Results

As a result of this investigation, 157 new state records for 133 species in 99 genera in 33 families have been compiled and are reported herein.

Distribution-wise, the following 40 states are represented among the new records: AL, AR, AZ, CA, CO, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, OH, OK, OR, PA, SC, SD, TN, TX, WA, WI, WV, WY. A new record for one Canadian province also is included: ON.

Twenty-two of the records, roughly one-seventh of the total reported herein, come from Illinois. This highlights the importance of determining unidentified material in biological collections: even in a state with a long history of biological survey, additional faunistic discoveries have yet to be made. The remaining six-sevenths, representing extra-Illinois records, illustrate the breadth and potential contribution of the INHS to biodiversity knowledge well beyond its home state.

Taxa-wise, 33 of the 57 heteropteran families are represented by new records (Table 1): Acanthosomatidae, Alydidae, Anthocoridae, Aradidae, Belostomatidae, Blissidae, Coreidae, Corixidae, Cymidae, Gelastocoridae, Geocoridae, Hebridae, Hydrometridae, Largidae, Lasiocladidae, Lygaeidae, Mesoveliidae, Miridae, Nabidae, Naucoridae, Nepidae, Notonectidae, Piesmatidae, Pleidae, Reduviidae, Rhopalidae, Rhyparochromidae, Salididae, Schizopteriidae, Scutelleridae, Thyreocoridae, Tingidae, and Velidae. Of these, the following 9 records represent new state records for the family: Acanthosomatidae (West Virginia), Cymidae (Kentucky), Hebridae (Tennessee), Lygaeidae (Delaware), Naucoridae (Georgia), Piesmatidae (Mississippi, North Dakota), Pleidae (North Dakota), and Schizopteriidae (Illinois).

A substantial number of records come from collections made by Walter Valentine Balduf around Eagles Nest and Ely in Saint Louis County, Minnesota. These collections occurred when Balduf was an Assistant Professor (1940, 1941, 1942), Professor (1953, 1957), and Professor Emeritus (1958, 1959) at the University of Illinois at Urbana-Champaign (Lampe et al. 1970). Balduf’s Collected Papers, which includes research
Table 1. Taxonomic distribution of the 157 new state records reported herein, arranged by family.

<table>
<thead>
<tr>
<th>Family</th>
<th>No. of Records</th>
<th>Taxa Represented</th>
<th>Genera</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acanthosomatidae</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Alydidae</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td></td>
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<tr>
<td>Anthocoridae</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Aradidae</td>
<td>14</td>
<td>5</td>
<td>12</td>
<td></td>
</tr>
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<td>Belostomatidae</td>
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<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Blisidae</td>
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<td></td>
</tr>
<tr>
<td>Coreidae</td>
<td>7</td>
<td>7</td>
<td>7</td>
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</tr>
<tr>
<td>Corixidae</td>
<td>10</td>
<td>5</td>
<td>9</td>
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<tr>
<td>Cymidae</td>
<td>2</td>
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<td>Galostocoridae</td>
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<td>1</td>
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<tr>
<td>Geocoridae</td>
<td>2</td>
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<td>2</td>
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<td>Hydrometridae</td>
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<td>Lygaeidae</td>
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<td>Mesoveliidae</td>
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<tr>
<td>Miridae</td>
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<tr>
<td>Notonectidae</td>
<td>3</td>
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<td>Reduviidae</td>
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<td>8</td>
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<tr>
<td>Schizopteridae</td>
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<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Scutelleridae</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Thyreocoridae</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tingidae</td>
<td>11</td>
<td>5</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Velididae</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL:</td>
<td>157</td>
<td>99</td>
<td>133</td>
<td></td>
</tr>
</tbody>
</table>

These collections are significant because the heteropteran fauna of Minnesota has been poorly-documented in the literature, particularly in comparison with other Midwestern states. State-specific faunistic treatments of true bugs include Luger (1900: general and injurious), Bennett and Cook (1981: semi-aquatic), Tinerella and Gundersen (2005: Corixidae), and Koch et al. (2014: Pentatomidae). Roughly 480 heteropteran species had been recorded from Minnesota prior to this treatment (Swanson, unpublished).

Likewise, a substantial number of records come from the Andreas Bolter Collection. Andreas (or Andrew) Bolter was a German-born émigré and founder of the Chicago-based company Illinois Iron Works. As a wealthy businessman, he was able to pursue interests outside the industry, perhaps most notably as an amateur entomologist and owner of the one of the most extensive private insect collections of the time (Sheppard 2017, Alberts 2018). The collection was accessioned to the University of Illinois’ Museum of Natural History after Bolter’s death in 1900, and in 1948, it was subsumed into the growing collection of the Illinois Natural History Survey (Alberts 2018). It seems likely that Bolter was mostly a patron of collectors, as he was known to have paid handsomely for some of his specimens (e.g., Alberts 2018), although at least a small portion was thought to have been collected by Bolter himself. Unfortunately, this is mostly unknowable, as the specimens usually possess only one or two labels: (1) a single-word abbreviation indicating the state (or country, for exotic material) whence the insect was collected; and (2) a label reading “Andreas Bolter Collection”, which was likely added later as part of accessioning. However, it is known that all specimens were collected before 1900, the year of Bolter’s death, and likely were collected during the prior two or three decades. Thus, even with the very general locality data, the specimens of the Bolter Collection provide important bio-historical context, showcasing a fauna whose populations and accompanying ranges had yet to experience the most recent 120 years of anthropogenic degradation.

Infraorder DIPSOCOROMORPHA

Family SCHIZOPTERIDAE

Glyptocombus saltator Heidemann, 1906

Material examined: ILLINOIS: [Alexander Co.], Thebes, 7 December 1939, in ground cover in beech woods, H. H. Ross, det. H. H. Ross 1943, INHS Insect Collection 761627 [1 ♂, 1 ♀]; Union Co., Atwood Ridge nr. Ware, M. W. Sanderson, Acc. 50138, INHS Insect Collection 761577 [1 ♀].
Notes: Henry and Froeschner (1992) indicated that the Washington record listed in Henry and Froeschner (1988) was erroneous and referred to the District of Columbia.


Infraorder GERROMORPHA

Family HEBRIDAE

Hebrus buenoi Drake and Harris, 1943


Distribution: Canada: ON (Maw et al. 2000), QC (Roch 2017, 2020); USA: CA, CO, DC, FL, IA, ID, IL, KS, LA, MA, MI, MN (Bennett and Cook 1981), MO, MS, NE, NH (Roch 2017, 2020), NJ, NY, OH, OK (Schaefer and Drew 1967), OR, PA, TN, VA, WI.

Family HYDROMETRIDAE

Hydrometra australis Say, 1831a


Notes: The potential conspecificity of H. australis and Hydrometra martini Kirkaldy, 1900 (e.g., Polhemus and Chapman 1979) is acknowledged, although the specimens examined fit the concept of H. australis.

Distribution: USA: CA, FL, GA, LA, MD (Brown and Bahr 2008), MS, NC (Brimley 1938), OH, TN, TX, VA.

Infraorder NEPOMORPHA

Family BELOSTOMATIDAE

Abedus herberti Hidalgo, 1935

Material examined: TEXAS: Brewster Co., Santa Elena Canyon, 3 April 1969, WB & ALB, INHS Insect Collection 473654 [1 adult].

Distribution: USA: AZ, NM, TX, UT.

Benacus griseus (Say, 1831b)


Distribution: Canada: MB, ON, QC; USA: AL, AR, CO, CT (Parshley 1917), DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME (Roch 2020), MI, MN, MO, MS, NC, NE, NH (Roch 2007, 2020), NJ, NY, OH, OK (Schaefer and Drew 1964), PA, RI (Parshley 1917), SC, TN, TX, VA, WI, WV.

Family CORIXIDAE

Callicorixa alaskensis Hungerford, 1926a

Material examined: COLORADO: [Denver Co.], Denver, 1 June 1879, 5317 ft., [no collector], det. H. B. Hungerford, INHS Insect Collection 444356 [1 ♂].

Distribution: Canada: AB, BC, MB, NB, NL, NS, NT, ON, QC, SK, YT; USA: AK, CO, CT (Jansson 2002), ME (Parshley 1917, as C. praesta), MI, MT, NH, NY, PA, UT, VT (Jansson 2002), WA, WY.
Cenocorixa utahensis (Hungerford, 1925)


Distribution: Canada: AB, BC, MB, ON, SK; USA: AZ, CO, IA, ID, KS, MI (Chordas et al. 2002), MT (Roemhild 1976), ND, NM, NV, OR, SD, TX, UT, WA, WI, WY.

Sigara douglasensis (Hungerford, 1926b)

Material examined: ILLINOIS: [Williamson Co.], Marion, 21 February 1933, Ross & Mohr, det. I. Lansbury 1954, INHS Insect Collection 460076 [1 adult, abdomen missing].


Distribution: Canada: BC, ON (Jansson 2002); USA: CT (Jansson 2002), IL, IN, KS, LA, MA, MD, ME (Jansson 2002), MI, MN, MO, MS, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, VT (Jansson 2002), WI.

Sigara virginiensis Hungerford, 1948


Distribution: USA: CT (Jansson 2002), DC, GA, IL, MD, NC, ND, NH, NJ, NY (Jansson 2002), OH, PA, RI (Jansson 2002), SC, TN, TX, VA, VT.
Family GELASTOCORIDAE

*Nerthra martini* Todd, 1954

Material examined: **NEW MEXICO**: “N. Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 444325, 444326 [2 ♂♂].

Distribution: USA: AZ, CA, NM.

Family NAUCORIDAE

*Pelocoris balius* La Rivers, 1970


Distribution: USA: FL, GA.

Family NEPIDAE

*Nepa apiculata* Uhler, 1862

Material examined: **KENTUCKY**: Jessamine Co., Marble Creek, 12 September 1967, P. T. Marsh Collection, INHS Insect Collection 465629 [1 adult].

Distribution: Canada: MB, ON, QC; USA: AR (Farris and Harp 1982, Harp 1985), CT, DC, GA, IA, IL, IN, KS, KY, MA, MD, MI, MN, MO, ND (Sites and Polhemus 1994), NH, NJ, NY, OH, OK (Schaefer and Drew 1964), PA, RI, TN (Green 1937), VA (Bobb 1974), VT (Roch 2020), WI.

*Ranatra buenoi* Hungerford, 1922


Family NOTONECTIDAE

*Notonecta lunata* Hungerford, 1926

Material examined: **MINNESOTA**: [Saint Louis Co.]; Eagles Nest, 20 September 1959 [additional date: 3 August 1959], W. V. Balduf, INHS Insect Collection 465228–465237 [10 adults]; **NEW JERSEY**: “NJ” [no further data], INHS Insect Collection 465460–465463 [4 adults].


*Notonecta unifasciata* Guérin-Ménéville, 1857


Distribution: Canada: BC; USA: AZ, CA, CO (Polhemus 1997), ID (Harris & Shull 1944), MT (Roemhild 1976), NM, NV, OR, TX, UT, WY.

Family PLEIDAE

*Neoplea striola* (Fieber, 1844)


Distribution: Canada: BC (Scudder 2008), MB, ON, QC; USA: AL, AR, CA, CO (Durfee et al. 1999), CT, FL, IA, IL, IN, KS, LA (Ellis 1952), MA, MD, MI, MN, MO, MS, NC, ND, NE, NH (Roch 2020), NJ, NY, OH.
OK (Schaefer and Drew 1964, Reisen 1975), PA, TX, UT(?), WA, WI (Hilsenhoff 1984), WV, VA.

Infraorder LEPTOPODOMORPHA

Family SALDIDAE

Micracanthia floridana
Drake and Chapman, 1953


Distribution: USA: AR, CO, FL, IL, KS, MI, MO, MS, NJ, PA, TX.

Salda anthracina Uhler, 1877

Material examined: MINNESOTA: Otter Tail Co., Pelican Rapids, Grove Lake, June 1877, A. C. Ashworth, NDSIRC, INHS Insect Collection 935086 [1 ♂]; LAWRENCE COUNTY: Spearfish Canyon, N. Black Hills, margins of running water, [no date], A. C. Ashworth, NDSIRC, INHS Insect Collection 935084 [1 ♂]; CANADA: ONTARIO: Owen Sound, Townline Lake, in wet peat, [no date], A. C. Ashworth, NDSIRC, INHS Insect Collection 935087, 935088 [1 ♂, 1 ♀].

Distribution: Canada: BC, NT (Maw et al. 2000), ON, YT (Maw et al. 2000); USA: AK, AL, KS, MI, MN, NE, NH, NJ, NY, OH, PA, SD, TN.

Salda obscura Provancher, 1872


Distribution: Canada: AB, BC (Downes 1934, Maw et al. 2000), MB, NL, NT (Maw et al. 2000), ON (Maw et al. 2000), QC, SK, YT (Maw et al. 2000); USA: AK, CO, ID (Harris and Shull 1944), MI, MN, NV, OR, SD (Harris 1937), WA.

Salda provancheri Kelton and Lattin, 1968


Notes: Schuh (1967) stated (of Salda bouchervelli) that Drake and Hottes (1950) reported this species from Alaska, New Mexico, and Tennessee and further indicated that records from New Mexico were probably erroneously identified Salda buenoi (McDunnough, 1925). However, Drake and Hottes (1950) did not explicitly mention New Mexico. New Mexico was included anonymously within the general attributed range (i.e., “from Alaska . . . clear across Canada and northern United States and then south into Arizona and Tennessee.”). However, it seems that Schuh mistook “(underlining mine) often found in collections labeled [sic] Salda obscura Provancher, VanDuzee. Dat. Hemip. Amer. N. Mex., treated . . .” (Drake and Hottes 1950) as a reference to New Mexico, rather than its intended meaning of “America, North of Mexico” (i.e., titles of Van Duzee 1916, 1917a). Regardless, these specimens indicate that S. provancheri does occur within the state.

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NL, NS, NT, ON, PE (Maw et al. 2000), QC, SK, YT (Scudder 1997, Maw et al. 2000); USA: AK, AZ, CA, CO, CT (Parshley 1917, as Salda coriacea), GA, IL, KS, MA, ME, MI, MN, MO, ND, NE, NH (Roch 2020), NJ, NM, NY, OH (Osborn and Drake 1915, as Salda coriacea), OR, PA, SD (Harris 1937, as Salda coriacea), TN, UT, WI.

Saldula comatula Parshley, 1922a

Material examined: NORTH DAKOTA: Ransom Co., 2.5 km SW McLeod, 12 July 1995, black light + mercury vapor [light], David A. Rider, NDSIRC, INHS Insect Collection 935090, 935091 [1 ♂, 1 ♀].

Distribution: Canada: AB, BC, SK; USA: AZ, CA, CO, ID, IL, KS, MT, ND, NE, NM, NV, SD, UT, WA, WY.

Saldula confluenta (Say, 1831a)

Material examined: MAINE: Cumberland Co., Naples, [no further data], INHS Insect Collection 810012 [1 adult].

Distribution: Canada: MB, ON, PE (Maw et al. 2000), QC, USA: CO, CT, IA, IL, IN, KS, ME, MI, MN, MT, NC, NH (Roch 2020), NJ, NY, OH, OK (Schaefer and Drew 1964), SC, SD, TN, TX, VA, WI.

Saldula opacula (Zetterstedt, 1838)

Material examined: ILLINOIS: Carroll Co., Savanna, at lantern on Mississippi River Station G 18532, 25 July 1892, [no collector], INHS Insect Collection 698723 [1 ♀]; [Joe Daviess Co.], Galena, 5 July 1917, [no collector], INHS Insect Collection 698722 [1 ♀]; Joe Daviess Co., Wolf Creek @ S Pleasant Hill Rd, 1.5 km S. Elizabeth, 5 August 1993, M. A. Harris, C. A. Taylor, H. E. Kitchel, M. J. Wetzel, det. A. Slater 1993, INHS Hemip. #0017, INHS Insect Collection 653751 [1 ♀]; Will Co., 5 mi SSE Naperville, ex. black light, 4 July 1973, T. G. Marsh & R. J. Bill-

Dufouriellus ater (Dufour, 1833)


Orius diespeter Herring, 1966


Notes: Updated distribution from Swanson (2019).

Distribution: Canada: AB, BC, NB, NS, ON, QC, YT; USA: AK, CT, CO, IA, ID, IL, KS, MA, ME, MI, MN, MS (Richmond 1962), MT, ND, NE, NJ, NV, NY, OR, PA, SD, UT, VT, WA, WI.

Xylocoris sordidus (Reuter, 1871)


Distribution: Canada: ON (Gibson 1915, 1919), QC (Moore 1944); USA: AR (Chordas, Robison et al. 2005), AZ, CA, FL, GA, IA (Hendrickson 1930), IL, KS, MA, MD, NC (Brimley 1938), NJ, NM, NY, PA, SC, SD (Harris 1943), TN, TX.

Family LASIOCHILIDAE

Lasiochilus pallidulus Reuter, 1871


Distribution: USA: FL, GA (Joseph and Braman 2009), SC, TN, TX.

Family MIRIDAE

Subfamily ISOMETOPINAE

Myiomyia cixiiforme (Uhler, 1891)

Material examined: ILLINOIS: [Pułaski Co.], Karnak, 23 June 1932, Ross, Dozier, Park, det. H. H. Knight, INHS Insect Collection 624957 [1 ♀].
Distribution: Canada: ON, QC; USA: DC, DE, FL, IL, KY (Henry et al. 2005), MD, MO (Blinn and Yonke 1985), OK (Smith et al. 1996), PA, TX, VA, WV.

Subfamily MIRINAE

Adelphocoris rapidus (Say, 1831a)


Notes: Adelphocoris superbus (Uhler, 1875) was synonymized with A. rapidus by Schwartz and Scudder (2003); thus, the distribution below represents combined records of both taxa.

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Parshley 1923a, Maw et al. 2000), ON, PE (Maw et al. 2000), QC, SK, USA: AR (Scudder and Sikes 2014), AL (Anonymous 1964a), AR, AZ, CA, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD (Knight and McAtee 1929, Anonymous 1964a, Brown and Bahr 2008), ME, MI (Hussey 1922a), MN (Lugger 1900; Hughes 1943; Anonymous 1964b, c), MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK (Carpenter 1937, Smith 1940), PA, RI, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY.

Lygeidea rubecula (Uhler, 1895)

Material examined: INDIANA: [Pike Co.], Rogers, at light, 2 June 1936, Mohr & Burks, det. Knight, INHS Insect Collection 619559, 619560 [1 ♂, 1 ♀].

Notes: Minor but apparent sexual dimorphism indicated by two specimens collected syntopically and determined by Knight: the rostrum of the male does not reach beyond the apex of mesocoxa, whereas the rostrum is slightly longer in the female, reaching beyond the apex of the mesocoxae.

Distribution: Canada: MB, ON; USA: CA, CO, IL, IN, ME, MI, NC, ND (Hussey 1922b), NH, NY, SD (Parshley 1922b), VT.

Neolygus belfragii (Reuter, 1876)

Material examined: MICHIGAN: “15375”, “EX. INHS ACCESSION LEDGER #15375”.

Notes: Johnston (1936) reported this species from Mississippi in an unpublished thesis.

Distribution: Canada: MB, ON; USA: AR (Tugwell et al. 1973), FL, IL, IN, IA, MN, MO, MS, ND (Knight 1927a, 1941), NY, OH, OK, TX (Johnston 1929, Knight 1941), WI, WV (Henry 2010).

Phytocoris eximius Reuter, 1876

Material examined: TENNESSEE: Blount Co., Great Smoky Mountains National Park, Cades Cove Campground (spot C-62), 17 S 248625 3943164 (NAD83), fluorescent lantern/white light, 4 August 2008, P. P. Tinerella & S. J. Taylor, PPT08-097, SJT08-177, GRSM08 PPTC EtOH Cat 84, INHS Insect Collection 810014 [1 ♂].

Notes: Johnston (1936) reported this species from Mississippi in an unpublished thesis.

Distribution: Canada: NS (Parshley 1923a), ON, QC; USA: AL (Knight 1941, as Phytocoris penipecten), AR (Chordas, Robison et al. 2005), AZ (Uhler 1893, Snow 1907), CA (Reuter 1909; Van Duzee 1914, 1916, 1917b), CO, CT, DC, DE, FL, GA, IA (Osborn 1898), IL, IN, KS (Crevecoeur 1905), KY (Henry et al. 2005), LA (Knight 1941, as Phytocoris penipecten; Snodgrass et al. 1984), MA, MD, ME, MI (Hussey 1922a), MO, MS (Snodgrass et al. 1984), NC, NH (Parshley 1917), NJ, NY, OH (Watson 1928), PA, RI (Parshley 1917), SD (Parshley 1922b), TN, TX, UT (Uhler 1893), VA (Uhler 1893), WI (Akingbohungbe 1974, as Phytocoris penipecten).

Prepops insitivus (Say, 1831a)

Material examined: TENNESSEE: Campbell Co., 2 mi. W. Caryville, 28 May

Distribution: Canada: ON, QC (Gibson 1916); USA: AR (Skvarla et al. 2016), CO, CT, DC (Knight and McAtee 1929), FL, GA, IA, IL, IN, KY (Henry et al. 2005), MA, MD, ME, MO, NC, NH, NJ, NM (Cockerell 1903), NY, OH (Osborn and Drake 1915), OK (Smith et al. 1996), PA, RI, TN, VA (Knight and McAtee 1929), VT, WV.

Prepops rubroviittatus (Stål, 1862)


Distribution: Canada: NB (Maw et al. 2000), NS, ON (Maw et al. 2000), PE (Maw et al. 2000), QC (Maw et al. 2000); USA: AR (Chordas, Robison et al. 2005, 2011), CO, DC (Knight and McAtee 1929), FL, GA, IN, IL (Knight 1941), LA, MA, ME, MN, MO, MS, NC (Brimley 1938), NJ, NM, NY, TN (Howden and Crossley 1961), TX, WI.

Taylorilygus apicalis (Fieber, 1861)


Distribution: Canada: AB, BC, MB, NB, NL (Maw et al. 2000), NS, ON (Schwartz and Wagner, 1957 and Maw et al. 2000), PE (Maw et al. 2000), QC (Maw et al. 2000); USA: AK, AR, CT (Knight and McAtee 1929), GA, IA, IL, KY, LA, MA, MD (Knight and Henry 1992), MI, MN, MO (Blinn and Yonke 1985), MS, NC, NH, NY, OH, PA, SC (Kelton 1971), SD, TN, WI, WV, WY.

Subfamily ORHTOTYLINAE

Blepharidopterus diaphanus (Kirschbaum, 1856)

Material examined: MICHIGAN: [Van Buren Co.], S. Haven, at light, 15 July 1914, [no collector], Orthotylus ulmi det. H. H. Knight AUTOTYPE, INHS Insect Collection 620060 [1 ♂].

Distribution: Canada: AB, BC, MB, ON, NS, QC, SK; USA: CA, CO, GA, IA, KS (Tucker 1967a, b), MI, MN, MO, NH, NY, TX.

Ceratocapsus fuscinus Knight, 1923

Material examined: MICHIGAN: [Berrien Co.], Berrien Springs, St. Joseph R., 16 July 1914, [no collector], Ceratocapsus fuscinus det. Knight 1930, INHS Insect Collection 633298, 633350 [1 ♂, 1 ♀].

Distribution: Canada: ON, QC; USA: DC, FL, GA, IA (Knight 1941), IL, IN, KY (Henry et al. 2005), LA, MD, MI, MN, MO, MS, NC, NY, OH, PA, WV.

Ceratocapsus fuscosignatus Knight, 1927b

Material examined: OKLAHOMA: [Oklahoma Co.], Oklahoma City, ex. light globe, "Summer 1935", [no collector], det. H. H. Knight, INHS Insect Collection 633387 [1 ♀].

Notes: Johnston (1936) recorded this species from Mississippi in an unpublished thesis.

Distribution: USA: AL (Knight 1927b), AR, AZ, CA, FL, IA, KS (Schwitzgebel and Wilbur 1942), NM, OK, TX.
Ilacora stalii Reuter, 1876

Material examined: TENNESSEE: [Knox Co.], Knoxville, 8 June 1890, H. E. Summers, det. Knight 1930, INHS Insect Collection 605251 [1 ♀].

Distribution: Canada: AB, MB, ON, QC (Maw et al. 2000), SK: USA: AR, AZ, CO, DC, DE, GA, IA, IL, IN, KS, KY (Henry et al. 2005), LA (Snodgrass et al. 1984), MD (Knight and McAtee 1929), MI, MO, MS, MT, NC, ND (Hussey 1922b), NJ, NM, NY, OH, PA, SD, TN, TX, VA, WI, WY, WV.

Labops hesperius Uhler, 1872


Material examined: MONTANA: [Madison Co.], Harrison, 8 July 1936[?], H. H. Ross, det. H. H. Knight, INHS Insect Collection 608929 [1 ♂].

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Scudder 2012), ON, QC; USA: AL (Beyer 1921), AR (Beyer 1921), CO, CT, DC (Beyer 1921), DE (Anonymous 1959a, b, c, d, e, f, g, h), FL, GA, HA (Henry 1983), IA, IL (Beyer 1921, Knight 1941), IN, KS, KY (Henry et al. 2005), LA (Snodgrass et al. 1984), MA (Parshley 1917), as Halticus citri, MD, ME (Parshley 1914, 1917, as Halticus citri), MI, MN (Lugger 1900), MO, MS (Snodgrass et al. 1984), NC, NJ, NY, OH, OR (Beyer 1921), PA, SC, SD, TN (Beyer 1921), UT, VA (Beyer 1921, Cagle and Jackson 1947), WV, WI.

Orthotylus pacificus Van Duze in Parshley, 1919

Material examined: LOUISIANA: [Caddo Par.], Shreveport, 16 July 1942, H. H. Ross, det. H. H. Knight, INHS Insect Collection 609948 [1 ♂].

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Scudder 2012), ON, QC, SK (Kelton 1980b, Maw et al. 2000); USA: CA (Van Duze in 1921), CO (Kumar et al. 1976, Polhemus 1994), CT, DE, FL, GA, IA, IL, IN, KY (Henry et al. 2005), LA, MA, MD, MI, MN, MO, (Blinn and Yonke 1992), MT, NC, NY, OH, PA, SD, UT, WA, WY, WV.

Notes: Henry (1991) indicated that “[e] arly records of Melanotrichus flavosparsus from the East are misidentifications of M. flavosparsus.” Slosson’s (1895) record from New Hampshire is included as a result. This species is often treated under the genus Orthotylus Fieber, 1858.

Distribution: Canada: AB, BC, MB, NB (Barnes et al. 2000, Maw et al. 2000), NS, NT (Barnes et al. 2000, Maw et al. 2000), ON, PE (Barnes et al. 2000, Maw et al. 2000), QC, SK, USA: AR (Wheeler and Henry 1992), CA, CT, DC, FL, GA, IA (Osborn 1892, misidentified as Macrocoleus coagulatus; Carvalho 1947), IL, IN, KS, KY (Henry et al. 2005), MA (Parshley 1917), MD (Brown and Bahr 2008), ME, MI, MN, MO, NC (Blatchley 1926, Brimley 1939), ND (Hussey 1922b), NE, NH (Slosson 1895, as Macrocoleus coagulatus), NJ, NY, OH, PA, RI, SD (Parshley 1922b), UT (Knowlton 1932), VA, WA, WI, WV.

Microtechnites bractatus (Say, 1831a)

Material examined: TENNESSEE: [Knox Co.], Harrison, 8 July 1936[?], H. H. Ross, det. H. H. Knight, INHS Insect Collection 609948 [1 ♂].

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Scudder 2012), ON, QC; USA: AL (Beyer 1921), AR (Beyer 1921), CO, CT, DC (Beyer 1921), DE (Anonymous 1959a, b, c, d, e, f, g, h), FL, GA, HA (Henry 1983), IA, IL (Beyer 1921, Knight 1941), IN, KS, KY (Henry et al. 2005), LA (Snodgrass et al. 1984), MA (Parshley 1917, as Halticus citri), MD, ME (Parshley 1914, 1917, as Halticus citri), MI, MN (Lugger 1900), MO, MS (Snodgrass et al. 1984), NC, NJ, NY, OH, OR (Beyer 1921), PA, SC, SD, TN (Beyer 1921), UT, VA (Beyer 1921, Cagle and Jackson 1947), WV, WI.

Orthotylus pacificus Van Duze in Parshley, 1919

Material examined: MONTANA: [Madison Co.], Harrison, 8 July 1936[?], H. H. Ross, det. H. H. Knight, INHS Insect Collection 608929 [1 ♂].

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Scudder 2012), ON, QC, SK (Kelton 1980b, Maw et al. 2000); USA: CA (Van Duze in 1921), CO (Kumar et al. 1976, Polhemus 1994), CT, DE, FL, GA, IA, IL, IN, KY (Henry et al. 2005), LA, MA, MD, MI, MN, MO, (Blinn and Yonke 1992), MT, NC, NY, OH, PA, SD, UT, WA, WY, WV.

Notes: Henry (1991) indicated that “[e] arly records of Melanotrichus flavosparsus from the East are misidentifications of M. flavosparsus.” Slosson’s (1895) record from New Hampshire is included as a result. This species is often treated under the genus Orthotylus Fieber, 1858.

Distribution: Canada: AB, BC, MB, NB (Barnes et al. 2000, Maw et al. 2000), NS, NT (Barnes et al. 2000, Maw et al. 2000), ON, PE (Barnes et al. 2000, Maw et al. 2000), QC, SK, USA: AR (Wheeler and Henry 1992), CA, CT, DC, FL, GA, IA (Osborn 1892, misidentified as Macrocoleus coagulatus; Carvalho 1947), IL, IN, KS, KY (Henry et al. 2005), MA (Parshley 1917), MD (Brown and Bahr 2008), ME, MI, MN, MO, NC (Blatchley 1926, Brimley 1939), ND (Hussey 1922b), NE, NH (Slosson 1895, as Macrocoleus coagulatus), NJ, NY, OH, PA, RI, SD (Parshley 1922b), UT (Knowlton 1932), VA, WA, WI, WV.

Microtechnites bractatus (Say, 1831a)

Material examined: TENNESSEE: [Knox Co.], Harrison, 8 July 1936[?], H. H. Ross, det. H. H. Knight, INHS Insect Collection 609948 [1 ♂].

Distribution: Canada: AB, BC, MB, NB (Maw et al. 2000), NS (Scudder 2012), ON, QC, SK (Kelton 1980b, Maw et al. 2000); USA: CA (Van Duze in 1921), CO (Kumar et al. 1976, Polhemus 1994), CT, DE, FL, GA, IA, IL, IN, KY (Henry et al. 2005), LA, MA, MD, MI, MN, MO, (Blinn and Yonke 1992), MT, NC, NY, OH, PA, SD, UT, WA, WY, WV.

Subfamily PHYLINAE

Lopus decolor (Fallén, 1807)

Material examined: ILLINOIS: Cook Co., Calumet Van Vlessingen Prairie, N 41° 42.781´ W 87° 34.498´, general collection, 23 July 2003, D. Voegtlin, DV03-007, detINHS Insect Collection 609850 [1 ♂].

Material examined: ARKANSAS: Ozark National Forest, MV light trap, 16 August 2001, V. R. Block, INHS Insect Collection 809842 [1 ♂].


Pilophorus vanduzeei Uhler, 1890b


Distribution: Canada: ON (Schuh and Schwartz 1988); USA: CO, DC, GA, IA, IL, IN, KS (Schuh and Schwartz 1988), KY (Henry et al. 2005), LA (Schuh and Schwartz 1988), MD, MI, MO, NC, NE, NJ, NY, OH, PA, SC (Schuh and Schwartz 1988), TN (Schuh and Schwartz 1988), VA, WI, WV.

Rhinocapsus vanduzeei Uhler, 1890


Notes: Identifications of *N. alternatus* herein are based in great part on the presence of a small paramere as described by Harris (1928), i.e., diameter of blade being distinctly shorter than dorsal width of eye.

Distribution: Canada: AB, BC, USA: AR, AZ, CA, CO, FL, GA, IA, ID, IL, IN, KS, MO, MS, MT, NC, ND, NE, NM, NY, NV, OK (Stoner et al. 1962, Drew and Schaefer 1963a), OR, SC, SD, TN (Howden and Crossley 1961), TX, UT, WA, WY.

*Nabis nigrovittatus nearcticus* (Kerzhner, 1981)


Notes: Updated distribution from Swanson (2019).

Distribution: Canada: AB, BC, MB, NB, NL, NS, NT, ON, PE, QC, SK, YT; USA: USA: AK, CO, ID, IL, IN, KS(?) (Kurczewski 1967), MA, ME, MI, MN, MO, MT, ND, NE, NH, NM, NV, OK, OR, SD (Harris 1937, Clem et al. 2019), TX, UT, WA, WY.

Family REDUVIIDAE

*Lophoscutus prehensilis* (Fabricius, 1803)

Material examined: CALIFORNIA: [Los Angeles Co.], Los Angeles, 205 ft., 25 March 1879, Andreas Bolter Collection, INHS Insect Collection 715569 [1 adult, abdomen missing].

Notes: Identification is based on *Kormilev’s* (1987) key. During this study, it was noticed that another species, *Lophoscutus uhleri* (Handlirsch, 1898), was erroneously characterized in *Kormilev’s* (1987) key as having “granulations of head and pronotum not setigerous”. However, specimens in INHS examined by me actually have setigerous granulations, with the setae surmounting the granulations being minute and incipient. Thus, *L. uhleri* will key to couplet #5 with *michelbacherischaффneri* in *Kormilev’s* (1987) key.


*Macrocephalus cimicoides* Swederus, 1787

Material examined: ARIZONA: [Yuma Co.], Yuma, 150 ft., 7 April 1879, Andreas Bolter Collection, INHS Insect Collection 715549 [1 ♀].

Notes: Identification is based on Kormilev’s (1990) key. The record of this species from Canada (as listed in Henry and Froeschner 1988) is considered dubious and requires confirmation.

Distribution: USA: AZ, CA, “Carolina”, FL, GA (Van Duzees 1917a), NC (Brinley 1938), TN (Lambdin et al. 2003), TX.

*Rhynocoris ventralis* (Say, 1831a)


Notes: This specimen corresponds to the subspecies *Rhynocoris ventralis americanus* (Bergroth, 1897), Updated distribution from Swanson (2011a). The record from Kansas was based on a tentative identification of nymphs.

Distribution: Canada: AB, BC, MB, ON (Paiero et al. 2003), SK; USA: AZ, CA, CO, ID, IL, IN, KS(?) (Kurczewski 1967), MA, ME, MI, MN, MO, MT, ND, NE, NH, NM, NV, OK, OR, SD (Harris 1937, Clem et al. 2019), TX, UT, WA, WY.

Family TINGIDAE

*Acalypta duryi* Drake, 1930


*Attheas insignis* Heidemann, 1909


Distribution: USA: AR, DC, IL, FL (Halbert 2014), MD, MS, VA.

*Corythucha bellula* Gibson, 1918


Notes: This specimen possesses a high, arched median pronotal carina, in direct contrast to the description by Gibson (1918) of “Median carina low, not arched”. However, the specimen strongly matches other specimens examined by me from other
states and taken on *Crataegus* sp. or *Alnus incana*, both hosts mentioned by Gibson in the original description. Additionally, the specimen agrees with the description of *C. bellula* in other diagnostic characters. Thus, the evidence suggests that the shape of the median pronotal carina varies intraspecifically in *C. bellula*, as it does in other species of *Corythucha*, although the relative height compared to the height of the pronotal hood remains more or less constant (Miller, pers. comm., Nov. 2020). This record appears to represent the southwesternmost record of the species.

**Distribution:** Canada: AB (Maw et al. 2003), BC (Downes and Allred 1966), OK, SC, TX, UT, VA. USA: AL, AZ, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, MA, MD, ME, MI, MO, MS, NC, ND, NE, NJ, NY, OH, OK, OR, PA, RI, SC, SD, TN (Lambdin et al. 2003), TX, UT, VA, VT, WA, WI, WV.

**Corythucha juglandis** (Fitch, 1856)

Material examined: **NEW MEXICO:** Otero Co., 7.5 mi. S Ruidoso, 3 June 1980, S. L. Heydon, INHS Insect Collection 752137–752142 [6 adults].

**Distribution:** Canada: BC, QC (Moore 1907, 1944; Maw et al. 2000); USA: CT, GA, IA, IL, IN, KS, MA, MD, ME, MN (Katovich and Ostry 1998), MO (Sheeley and Yonke 1977), MS, NC, NH, NJ, NM, NY, OH, RI, SC, TN, TX, VA, VT, WI, WV (Torres-Miller 1989).

**Corythucha pallipes** Parshley, 1918

Material examined: **NORTH CAROLINA:** [Cleveland Co.], Lawndale, on *Vitis rotundifolia* var. Frye, 12 May 1978, K. Corrette, INHS Insect Collection 752383 [1 adult].

**Distribution:** Canada: MB, NB, NL, ON, QC; USA: CT, MA, ME, MI, NC, NH, NJ, NY, OR, VT, VA, WI.

**Gargaphia angulata** Heidemann, 1899

Material examined: **IOWA:** O’Brien Co., nr. Sutherland, 30 Aug. 1972, L. P. Pedigo & J. D. Stone, “591”, INTSOY, det. Froeschner 1975, INHS Insect Collection 646162 [1 adult]; **ILLINOIS:** [St. Clair Co.], Cahokia, on potato, 10 May 1914, [no collector], det. Drake 1928, INHS Insect Collection 646161 [1 ♂]; **WASHINGTON:** Du Bois, on *Ceanothus*, 10 August 1917 [additional dates: 21 May 1917, 8 August 1917, 9 August 1917], [no collector], det. Drake 1928, INHS Insect Collection 646134–646160 [26 adults, 4 nymphs].

**Teleonemia nigrina** Champion, 1898

Material examined: **ILLINOIS:** [Union Co.], Wolf Lake, 2 August 1932, H. L. Dozier, INHS Insect Collection 809949 [1 ♂].

**Distribution:** Canada: BC (Downes 1934, Scudder 1961, Maw et al. 2000); USA: AR, AZ, CA, GA, ID (Harris and Shull 1944), **IL**, KS, MO, NC, NJ, NM, NV (Beck and Allred 1986), OK, SC, TX, UT, VA.
Infraorder PENTATOMOMORPHA

Superfamily ARADOIDEA

Family ARADIDAE

Aneurus inconstans Uhler, 1871

Material examined: ILLINOIS: “N. Ill.” [no further data], Andreas Bolter Collection, INHS Insect Collection 776566, 776567, 776569 [2 ♂♂, 1 ♀].

Notes: Range updated from Swanson (2020a, b).

Distribution: Canada: AB, BC, MB, NS, ON, QC, SK; USA: CT, DC, DE, IL, IN, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, RI, SD, TN, VA, VT.

Aradus abbas Bergroth, 1889

Material examined: MINNESOTA: [Saint Louis Co.], Duluth, [no further data], Andreas Bolter Collection, INHS Insect Collection 775832 [1 ♀]; “Min.” [no further data], Andreas Bolter Collection, INHS Insect Collection 775823 [1 ♀]; MONTANA: “Mont.” [no further data], Andreas Bolter Collection, INHS Insect Collection 777257 [1 ♂].

Notes: The specimen from Montana is point-mounted on the same flag as the specimen of Aradus snowi Van Duzee, 1920 reported above.

Distribution: USA: AZ, CO, MN, WI.

Aradus antennalis Parshley, 1921


Notes: There is variation in the antennal coloration between the two specimens from New Mexico: the male has the first three antennomeres flavous and the fourth one brown, whereas the female has all antennomeres brownish, except for the flavous apical two-thirds of third antennomere segment. It is not known whether this variation is attributable to sexual dimorphism or non-sexual intraspecific variability.

Distribution: Canada: BC; USA: CA, CO, ID, NE, NM, WA.

Aradus hesperius Parshley, 1921

Material examined: NEW MEXICO: “N. Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 775801, 775802, 775812, 775822, 775831 [1 ♂, 3 ♀♀, 1 adult missing abdomen].

Distribution: USA: AZ, CO, NM.

Aradus ovatus Kormiliev, 1966

Material examined: FLORIDA: “Fla.” [no further data], Andreas Bolter Collection, INHS Insect Collection 775790 [1 ♀].

Distribution: USA: FL, KS.

Aradus snowi Van Duzee, 1920

Material examined: MONTANA: “Mont.” [no further data], Andreas Bolter Collection, INHS Insect Collection 777257 [1 ♀].

Notes: This specimen is point-mounted on the same flag as the Montana specimen of A. abbas reported above.

Distribution: USA: AZ, MT, NM, TX.

Mezira sayi Kormiliev, 1982


Notes: Range updated from Swanson (2020a).

Distribution: USA: AL, AR, FL, GA, IL, IN, LA, MS, NC, SC, TN, TX, VA.

Mezira vanduzeei Usinger, 1936

Material examined: NEW MEXICO: “N. Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 775795–775797 [3 ♀♀].

Distribution: USA: AZ, NM.

Neuroctenus hopkinsi Heidemann, 1904


Distribution: USA: AR, GA, MD, NC.

Neuroctenus pseudonymus Bergroth, 1898

Material examined: MISSOURI: Barry Co., Cassville, Roaring River State Park, 26 April 1972, [no collector], INHS Insect Collection 777297 [1 ♀].

Notes: Range updated from Swanson et al. (2017).
Distribution: USA: AR (Skvarla et al. 2016), DC, DE (Bray and Triplehorn 1953), IL, IN, LA, MD, MO, NC, OH, TN, TX, VA.

Neuroctenus simplex (Uhler, 1876)

Material examined: ALABAMA: [Lee Co.], Auburn, 15 October 1952, A. D. Oliver, Neotrichius simplex IL, IN, LA, MD, MO, NC, OH, TN, TX, VA. 2016), DC, DE (Bray and Triplehorn 1953), Quilnus niger NY, OH, OK, PA, SC, TX, WI.

Notes: Range updated from Swanson (2020a, b).

Distribution: Canada: ON; USA: AL, AR, CT, DC, DE (Bray and Triplehorn 1953), FL, GA, IA, IL, IN, KS, LA (Taylor and Gil 2009), MA, MD, ME, MI, MO, MT, NC, NJ, NY, OH, OK, PA, SC, TX, WI.

Quilnus niger Stål, 1873

Material examined: NEW MEXICO: “N. Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 775803 [1 ♂, 1 ♀, same pin].

Distribution: Canada: NB, NS, ON, QC; USA: AL, AR (Taylor and McPherson 1989), CO, DC, FL, MA, ME, MI (Swanson 2020b), MO, NC, NH, NJ, NY, NM, SC, TX, VA, WA.

Superfamily COREOIDEA

Family ALYDIDAE

Alydus conspersus Montandon, 1893

Material examined: NEBRASKA: Cherry Co., Nebraska National Forest, taken on Euphorbia escula, 13 June 1965, D. W. Ribble, INHS Insect Collection 748018 [1 ♂]; [Douglas Co.], Omaha, [no further data], Andreas Bolter Collection, det. J. Schaffner 1970, INHS Insect Collection 717886 [1 ♂, head & thorax missing]; [Douglas Co.], Omaha, [no collector], 563, det. J. Schaffner 1970, INHS Insect Collection 717912 [1 ♂, head missing]; “563” [no further data, see previous], det. J. Schaffner 1970, INHS Insect Collection 717917, 717922 [2 ♀♀]; “Neb.” [no further data], Andreas Bolter Collection, INHS Insect Collection 717924 [1 ♂].

Notes: Updated distribution from Swanson (2018).

Distribution: Canada: AB, BC, MB, NB, NS, NT, ON, PE, QC, SK, YT; USA: USA: AR, AL, AR, AZ, CA, CO, CT, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WI, WV.

Protenor belfragii Haglund, 1868

INHS Insection Collection 809898–809904 [7 adults].

Distribution: Canada: MB (Valley 1930, Maw et al. 2000), NB (Maw et al. 2000), NS (Scudder 2010a), ON, PE (Maw et al. 2000), QC, SK (Maw et al. 2000); USA: CA, CO, CT (Parshley 1917), IA, IL, IN, MA, ME, MI, MN, ND (Hussey 1922b), NH (Parshley 1917), NJ, NY, OH, TX, WI, WV (Hoffman 1975).

Family COREIDAE

Acanthocephala declivis (Say, 1832)

Material examined: MISSISSIPPI: Jackson Co., Gulf Coast Research Laboratory, 4 December 1974, T. G. Marsh, T. Marsh Collection, INHS Insect Collection 716610 [1 ♂].

Notes: Range updated from McPherson et al. (2011).

Distribution: USA: AL, AR, AZ, FL, GA, IL, KY, LA, MO, MS, NC, NM, OK (Drew and Schaefer 1963b), SC, TX, VA.

Catorhintha guttula (Fabricius, 1794)


Distribution: USA: AZ, CA, CO, FL, IA (Osborn 1892), NC (Brinley 1942), NM, NV, OK, SC, TX.

Ceraleptus americanus Stål, 1870


Distribution: USA: AR, AZ, CA, DC, FL, IA (Hendrickson 1930), IL, IN, LA, MO, MS, NC, NY, OK (Drew and Schaefer 1963b, TX, UT, VA (Hoffman 1999).

Chariesterus antennator (Fabricius, 1803)

“Ky.” [no further data], Andreas Bolter Collection, det. T. R. Yonke 1971, INHS Insect Collection 667446, 666776 [1 ♂, 1 ♀].

Notes: Updated distribution from Swanson (2018).

Distribution: USA: AZ (Snow 1904, 1906), AR (Chordas and Kremers 2009), CO, FL, GA (Scott and Fiske 1902), IA (Osborn 1892), IL, IN (Blatchley 1926), KS, KY, MD (Brown and Bahr 2008), MI, MO (Froeschner 1942), MS, NC, NJ, NY (Torre-Bueno 1908), OH (Osborn 1900), OK, SC, SD (Parshley 1922b, Harris 1937), TN, UT (Knowlton 1936, as Archimerus alternatus), VA (Hoffman 1975), WI.

Family RHOPALIDAE

Brachycarenus tigrinus (Schilling, 1829)

Material examined: ILLINOIS: Cook Co., Indian Ridge Marsh, railroad, 22–23


Harmostes angustatus Van Duzee, 1918


Distribution: USA: AZ, CO, CA, NM, NV (Allred 1973), TX, UT.

Stictopleurus punctiventris (Dallas, 1852)

Material examined: WISCONSIN: [Iron Co.], Mercer, sweeping, August 1964, M. Moser, T. Marsh Collection, INHS Insect Collection 716619 [1 ♀].

Notes: Updated distribution from Swanson (2018).

Distribution: Canada: AB, BC, MB, NB, NL, NS, NT, ON, PE, QC, SK, VT, USA: AK, AZ, CA, CO, CT, GA, ID, IL, IN, MA, MD, ME, MI, MN, MT, NC (McPherson and Weber 1981), ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY.

Superfamily LYGAEIDE

Family BLISSIDAE

Ischnodemus praecultus Distant, 1882

Examined material: ALABAMA: Mobile Co., Dauphin Island, 6 April 1974, T. G. & (?) E. Marsh, T. Marsh Collection, INHS Insect Collection 689855 [1 ♀].

Distribution: USA: AL, FL.

Family CYMIDAE

Cymus angustatus Stål, 1874

Material examined: KENTUCKY: “Ky.” [no further data], Andreas Bolter Collection, INHS Insect Collection 809854 [1 ♂]; NEW MEXICO: “N.Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 809855 [1 ♀].


Family GEOCORIDAE

Geocoris punctipes (Say, 1831a)


Notes: Van Duzee (1917a) listed several varieties under G. uliginosus that are now considered valid species. However, his Localities list did not discriminate between the varieties. One variety, now Geocoris howardi Montandon, 1908, was described from Michigan and thus was known from the state at the time of Van Duzee’s catalog. Thus, the “Mich.” in Van Duzee’s list under G. uliginosus is attributed to G. howardi, and the Michigan record of G. uliginosus here presented is treated as new.

Distribution: Canada: NB (Scudder 2010a), NL (Maw et al. 2000), QC (Moore 1944, 1950; Maw et al. 2000); USA: AL, AR, CO (Kumar et al. 1976), CT, DE, FL, GA, IA, ID (Harris and Shull 1944), IL, IN, KS, KY, LA, MA, MD, ME (Parshley 1917, Johnson 1927), MI, MO, MS, NC, ND, NE, NH (Parshley 1917), NJ, NM, NY, OK, PA, SC, SD (Morihara and Balsbaugh 1976), TN, TX, UT (Knowlton 1932), VA, WI, WV, WY (Dennis et al. 2010).

Family LYGAEIDAE

Kleidocerys ovalis Barber, 1953


Distribution: Canada: AB (Scudder 2008), BC, MB (Scudder 2008), ON, SK (Scudder 2008); USA: AZ, CA, CO, ID, IL, MA, ME, MI, MN, ND, NH, NY, OR, SD, UT, WA, WY.

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Kleidocerys resedae (Panzer, 1797)


Note: The distribution given below represents the species-level, aggregating the distributions of the three subspecies.


Lygaeus truculentus Stål, 1862

Material examined: TEXAS: “Tex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 689658 [1 ♂]. Distribution: USA: AZ, CA, OR (Scudder 2012, as “truncatulus”), TX.

Melacoryphus lateralis Dallas, 1852

Material examined: MISSOURI: Boone Co., 13 April 1972, S. O. Swadener, INHS Insect Collection 690113 [1 ♂]. Distribution: Canada: BC, ON (Scudder 2008), SK: USA: AZ, CA, CO, IA, ID, KS, MO, MT, NE (Scudder 2012), NM, NV (Scudder 2012), OK, OR (Scudder 2012), SD, TX, UT, WY.

Melacoryphus nigrinervis (Stål, 1874)

Material examined: NEW MEXICO: [San Miguel Co.], Las Vegas, [no date], 714, [no collector], Andreas Bolter Collection, INHS Insect Collection 689656 [1 ♀]; “N. Mex.” [no further data], Andreas Bolter Collection, INHS Insect Collection 689651, 689653 [2 ♂♂]. Distribution: USA: AZ, CO, NM, TX (Barber 1948), UT.

Neortholomus scolopax (Say, 1831a)


Nysius raphanus Howard, 1872


Nysius tenellus Barber, 1947


Distribution: Canada: AB (Scudder 2012), BC, SK (Scudder 2010a); USA: AZ, CA, CO, FL, ID, MT (Hewitt and Burleson 1976), NM, NV, OR, TX, UT, WA.

Oncopeltus fasciatus (Dallas, 1852)

Material examined: DELAWARE: [Kent Co.], Dover, 30 June 1939, Robt. Traub, INHS Insect Collection 607997 [1 ♀].

Distribution: Canada: ON, QC; USA: AR (Chordas et al. 2011), AZ, CA, CT, DE, FL, GA (Scott and Fiske 1902), IA, IL, IN, KS, KY (Chordas et al. 2011), LA, MA, MD, ME, MI, MN, MO, MS (Richmond 1962, Lago and Testa 2000), NC, NJ, NM (Scudder 2012), NY, OH, OK, PA, SC, SD, TN, TX, VA, WI.

Xyonyssus californicus (Stål, 1859)

Note: The distribution given below represents the species-level, aggregating the distributions of the two subspecies. In their catalog, Henry and Froeschner (1988) noted that “this form [alabamensis] is doubtfully distinct from [californicus].”


Family PIESSMATIDAE

Parapisma cinereum (Say, 1831a)


Distribution: Canada: AB, BC, MB (Maw et al. 2000), ON, QC (Moore 1944, Maw et al. 2000), SK (Maw et al. 2000), YT (Maw et al. 2000); USA: AL (Tugwell et al. 1973), AZ, CA, CO, CT, DC, FL, IA, IL, IN, KS, MA, MD (Blöte 1945, Brown and Bahr 1973), AZ, CA, CO, CT, DC, FL (Frost 1964), IA, ID, IL, IN, KS, MA, MD, ME, MI, MN, MO, NC, ND, NH, NJ, NM, NY, OH, PA, RI, SD, TN, TX, UT, VA, WA, WI.

Parapisma explanatum (McAtee, 1919)


Distribution: Canada: AB (Maw et al. 2000), BC, MB (Maw et al. 2000), SK (Maw et al. 2000); USA: ND, UT.

Family RHYPAROCHROMIDAE

Drymus unus (Say, 1831a)

Examined material: MINNESOTA: [Saint Louis Co.], Eagles Nest, 10 August 1957 [additional dates: 20 August 1956, 3 September 1958, 9 September 1959, 7 July 1959], W. V. Balduf, det. P. D. Ashlock 1959, INHS Insect Collection 702091–702107 [17 adults].

Distribution: Canada: AB, BC, MB (Maw et al. 2000), NB, NL, NS, NT (Maw et al. 2000), ON, PE (Scudder 2012), QC, SK, YT (Scudder 1997, Maw et al. 2000); USA: AR, AZ, CA, CO, CT, DC, FL, IA, ID, IN, KS, MA, MD, ME, MI, MN, MO, NC, ND, NH, NJ, NM, NY, OH (Balduf 1923), OR (Scudder 2012), PA, RI, SD, TN (Lambdin et al. 2003), TX, UT, VA, WI.

Ligyrocoris sylvestris (Linnaeus, 1758)


Distribution: Canada: AB, BC, MB (Maw et al. 2000), MB (Maw et al. 2000), NB (Maw et al. 2000), NL, NS, NT (Maw et al. 2000), ON, PE (Maw et al. 2000), QC, SK, YT (Scudder 1997, Maw et al. 2000); USA: AK, AZ (Snow 1907), CO, CT, ID, IL, IN, KS, MA, MD (Uhler 1871), ME, MI, MN, MO, NC, ND, NH, NJ, NM, NY (Scudder 2010b), OH, PA, RI, SD, TX, UT, VT, WA (Scudder 2010b), WI, WY (Dennis et al. 2010).

Myodocha serripes Olivier, 1811


Paromius longulus (Dallas, 1852)


Distribution: USA: AL, AR (Chordas et al. 2011), FL, GA, IA, LA, MS, MO, NC, OK (Chordas and McAllister 2019), SC, TN, TX.

Scolopostethus thomsoni Reuter, 1874


Stygnoecoris rusticus (Fallén, 1807)


Distribution: Canada: AB (Barnes et al. 2000), BC, NL (Barnes et al. 2000, Maw et al. 2000), NS, ON, PE, QC, SK (Scudder 2010a); USA: CT, IL, ME, MI, MN, NY, OH (Chordas et al. 2008), PA, VT, WA, WI, WV.

Tempyra biguttula Stål, 1874


Distribution: USA: AR, DC (Barber 1914b), KS, MD, MO, TX.

Zeolidoneus costalis (Van Duzee, 1909b)

Material examined: MINNESOTA: [Saint Louis Co.], Eagles Nest, 20 August 1958, [no collector], det. P. D. Ashlock 1959, INHS Insect Collection 704308 [1 ♀].

Distribution: USA: AB, BC (Scudder 1966, Maw et al. 2000), MB, ON, QC, SK; USA: CT, IA, IL, IN, MA, MD, MN, MO, NC, ND, NH (Parshley 1917), NY, OH, SD, TN (Lambdin et al. 2003), WI.

Superfamily PENTATOMOIDEA

Family ACANTHOSOMATIDAE

Elasmucha lateralis (Say, 1831a)


Notes: Although Thomas (1991) characterized the range as “Maine to British Columbia, south to Tennessee in the east, to Nevada in the west”, I am unaware of specific records for the states reported here.


Family SCUTELLERIDAE

Fokkeria producta (Van Duzee, 1904)


Distribution: Canada: AB; USA: CO, NM.

Homaenus aeneifrons (Say, 1824)


Notes: The distribution given below represents the species-level, aggregating the distributions of the two subspecies. Rider’s (2012) treatment is followed here, with the species comprising the more eastern H. a. aeneifrons and the western Homaenus a. consors Uhler, 1876. The examined material represents H. a. consors, and in these specimens, the juga are wholly black in the specimen from Oregon and yellowish...
only at the extreme apex of the juga in the specimen from Wyoming. Unpublished records for this species mentioned in Lattin’s (1964) dissertation include Arizona, Idaho, Iowa, Kansas, Rhode Island, Vermont, Washington, and West Virginia.

Distribution: Canada: AB, BC, MB, NB, NL, NS, NT, ON, PE (Maw et al. 2000), QC, SK, YT (Maw et al. 2000); USA: AK, CA, CO, IL (McPherson 1982), MA, MD, ME, MI, MN, MT, NC, ND (Hussey 1922b), NH, NJ, NY, NE, OR, PA, SD, UT, VA, WI, WY. Homoemus bijugis Uhler, 1872


Distribution: Canada: AB, BC (Stoner 1926; Walley 1929a, b; Maw et al. 2000), MB (Maw et al. 2000), ON (Freese and Chordas 2021), SK: USA: AR (Lee and Barton 1988), AZ, CA, CO, FL, IA, ID, IL, KS, MN, MO, MT, ND (Rider 2012), NE, NM, NV, OK (Smith 1940, Stoner et al. 1962), SD, UT, WI (Williams 2004), WY.

Family THYREOCORIDAE

Corimelaena nigra Dallas, 1851


Distribution: Canada: AB, BC, “Hudson’s Bay”, MB (Criddle 1921; Walley 1929a, 1931; Maw et al. 2000), ND (Maw et al. 2000, Roch 2017), NS (Maw et al. 2000, Roch 2017), ON, QC, SK, YT, USA: AZ, CA, CO, ID (Van Duuze 1904, 1917a; Harris and Shull 1944), IL (Malloch 1919), IN (Blatchley 1926), MI, MN, NE (Van Duuze 1917a), NM, NY, OR, SD, UT, WA.

Superfamily PYRRHOCOROIDEA

Family LARGIDAE

Arhaphe carolina Herrich-Schäffer, 1850

Material examined: ARKANSAS: [Garland Co.], H[ot] Springs, 13 June, Andreas Bolter Collection, INHS Insect Collection 646841 [1 ♂]; idem, 28 May, INHS Insect Collection 646843 [1 ♀]; idem, 15 June, INHS Insect Collection 646844 [1 ♂].

Notes: Records of this species in Arizona and New Mexico are dubious (see Henry and Froeschner 1988, Stelhik and Kment 2011).


Selected Corroborative Records

Infraorder DIPSOCOROMORPHA

Family CERATOCOMBIDAE

Ceratocombus vagans McAtee and Malloch, 1925

Subfamily MIRIDAE

**Subfamily BRYOCORINAE**

*Trupiocoris rubi* (Knight, 1968)

Material examined: ILLINOIS: [Calhoun Co.], Hardin, 5–9 June 1932, H. L. Dozier, INHS Insect Collection 642025, 642026 [2 ♀♂]; [Carroll Co.], Savanna, 11 June 1917 [additional date: 12 June 1917], [no collector], INHS Insect Collection 642014, 642015, 642020 [2 ♂♂, 1 ♀]; [Champaign Co.], Urbana, in garden, 11 June 1933, H. H. Ross, INHS Insect Collection 642034 [1 ♀]; [Clarke Co.], Rocky Branch, Dolson (Clarksville), on *Juglans nigra*, 14 June 1933, Frison & Ross, INHS Insect Collection 642031, 642032, 642038 [1 ♀, 3 ♀♂]; [Iroquois Co.], Sheldon, 4 June 1932, Frison & Mohr, INHS Insect Collection 642024 [1 ♀]; [Kane or McHenry Co.], Algonquin, 12 June 1897, [no collector], 110, INHS Insect Collection 642016–642019 [3 ♂♂, 1 ♀]; [Knox Co.], Galesburg, butternut, [no date] June, [no collector], INHS Insect Collection 642022 [1 ♀]; [Knox Co.], Galesburg, 19 June 1893, [no collector], INHS Insect Collection 642023 [1 ♀]; [Mason Co.], Manito, 2 June 1933, C. O. Mohr, INHS Insect Collection 642033 [1 ♀]; [McHenry Co.], Harvard, 11 June 1933, Mohr & Townsend, INHS Insect Collection 642027 [1 ♀]; [Sangamon Co.], Grandview, 24 June 1932, Frison & Mohr, INHS Insect Collection 642028–642030 [3 ♀♂, [county unknown] Castle Rock, Grand Detour, 2 July 1932, Dozier and Mohr, INHS Insect Collection 642036, 642037 [1 ♂, 1 ♀].

Notes: Kelton (1980a) suggested that previous records for *Dicyphus agilis* (Uhler, 1877) were greatly confounded, and Knight (1968) had aligned some of his prior records to a new species, *Dicyphus rubi* Knight, 1968. Based on an examination of specimens in the INHS, records of *D. agilis* in Illinois (mentioned at least by Knight 1941) should be referred to this species. Though not indicated in the above transcriptions, all of the examined specimens bear a determination label with *“Dicyphus agilis”* (Uhler) det. H. H. Knight as well as another one with *“Tu- piocoris rubi”* (Knight) det. D. R. Swanson 2020. Henry (2010) indicated that Wheeler et al.’s (1983) record of *Dicyphus agilis* from West Virginia was a misidentification of this species.


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[Massac Co.], Metropolis, 20 August 1916, C. A. Hart]. Trigonotylus brevipes det. H. H. Knight, INHS Insect Collection 628724, 628725 [1 ♂, 1 ♀].

Notes: Eyles (1975) treated Trigonotylus dohertyi (Distant, 1904) as a junior synonym of Trigonotylus doddi (Distant, 1904), and Golub (1989) treated T. doddi as a junior synonym of T. tenuis. Wheeler and Henry (1992) indicated that many records of Trigonotylus brevipes Jakobev, 1986 in North America referred to T. tenuis, but Scudder (2018) indicated that all records of T. tenuis from Canada should be excluded, as they might represent other species. The examined specimens are the same specimens examined and reported by Knight (1941) as T. brevipes. However, the specimens from 17 August 1891 require clarification: one is unequivocally a male, whereas the other seems to be a male, despite a missing abdomen, although the rostrum does not reach the mesocoxae. Of specimens of T. brevipes in INHS, only those from Illinois were examined.

Distribution: USA: AL, AR (Snodgrass et al. 1984), AZ, CA, CO, CT (Knight 1941, as T. brevipes), DE (Bray and Triplehorn 1953), FL, GA, IL, KY (Knight 1941, as T. brevipes), LA, MD, MO (Froschener 1949, as T. brevipes), MS (Snodgrass et al. 1984), NC, NJ, NV (Knight 1941, as T. brevipes), PA (Wheeler and Henry 1992), SC, TN, TX UT, VA.

Subfamily PHYLLINAE

Rhinacloa forticornis Reuter, 1876

Material examined: ILLINOIS: [Champaign Co.], Urbana, in yard, 29 June 1914, [no collector], det. H. H. Knight, INHS Insect Collection 610796 [1 ♂].

Notes: The presence of this species in Illinois, reported by Knight (1927a, 1941) as well as Ward et al. (1977), was considered questionable (e.g., Schuh and Schwarz 1985, Henry and Froschener 1988). However, the above examined material does indeed represent R. forticornis, confirming the species’ one-time presence in the state. It is worth noting that in this specimen the scale-like setae are present on the pronotum but seem to have rubbed off the hemelytra.

Distribution: USA: AZ, CA, CO, FL (Barber 1914a), IA (Knight 1927a), IL (Knight 1927a, 1941; Ward et al. 1977), MO, MS (Snodgrass et al. 1984), NJ (Ward et al. 1977), NM NV, PA (Wirtner 1904), TX UT.

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