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Cover Page Footnote
The bulk of the work that went into this study was carried out during my time in the UMMZ, and I am grateful to Mark O’Brien (UMMZ) and Gary Parsons (MSUC) for the privilege of studying the material under their care. I thank Edwin L. Freese and Jane O’Donnell (UCMS) for correspondence regarding some pentatomomorph records from Iowa and Connecticut, respectively. I owe much appreciation to three reviewers, whose stylistic comments and knowledge of obscure references, greatly improved the content and utility of this manuscript.
New state records for some Pentatomomorpha (Heteroptera) of the United States

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Abstract

Forty-two new state records, distributed among the Alydidae, Coreidae, Largidae, Pyrrhocoridae, and Rhopalidae, are reported for 25 species of Pentatomomorpha found in the United States.

Keywords: True bugs, faunistics, distribution, Nearctic

My studies of the heteropteran groups of Michigan have afforded ample opportunity to examine material from all over the United States. As a retrospective companion piece to my Michigan Coreoidea synopsis (i.e., Swanson 2011), I have re-examined and identified Coreoidea and Pyrrhocoroidea in the two major collections in southern Michigan in order to bring to light unreported state records among that material. As a result, 42 new extra-Michigan state records for species from five pentatomomorph family, comprising material from the Michigan State University Albert J. Cook Arthropod Research Collection in East Lansing, the University of Michigan Museum of Zoology Insect Collection in Ann Arbor, and the author’s personal collection, are herein reported.

Materials and Methods

After examining the determined coreo and pyrrhocoroid holdings and identifying most of the undetermined U.S. material in two Michigan university collections, the locality data of these specimens was compared with the most recent catalog for Heteroptera found north of Mexico (Henry and Froeschner 1988). Further records were culled after comparing with various post-1988 regional faunistic studies, as well as some pre-1988 references overlooked by the authors of the catalog (see annotations). The remaining specimen data are the subject of this treatment.

The identification of each specimen included in this study was rendered or confirmed by me, using my own keys (Swanson, unpublished) to the United States taxa synthesized from various sources (e.g., Torre-Bueno 1941, Packauskas 1994, Schaefer 2004). All new records pertain to specimens voucher in one of the collections listed below.

Label data were not copied verbatim, although complete locality information is included. Any additions, changes, or interpretive elements I provide are shown in brackets. Multiple localities are included, where possible, to fortify new records. Distributional or taxonomic notes are offered where deemed necessary or useful.

As mentioned, the initial authority on which a state having a published record is based belongs to Froeschner (Alydidae: 1988a; Coreidae: 1988b) and Henry (Largidae: 1988a; Pyrrhocoridae: 1988b; Rhopalidae: 1988c). An updated distribution within the United States and Canada is included for each species treated herein. Records overlooked or reported subsequently are annotated in the distribution north of Mexico given at the end of each species account, whereas new records herein reported are presented in bold type; thus, this treatment also may be used as a partial compilation of references overlooked in Henry and Froeschner’s (1988) catalog. The abbreviations used for each U.S. state and Canadian province or territory follow the United States Postal Service and the Canada Post Corporation, respectively.

Collections are designated as follows: Daniel R. Swanson, personal collection (DRS); Albert J. Cook Arthropod Research Collection, Michigan State University, East Lansing, Michigan (MSUC); and University of Michigan Museum of Zoology Insect Collection, Ann Arbor, Michigan (UMMZ).
Results

As a result of this investigation, 42 new state records for 25 species in 22 genera in 5 families have been compiled. The following 22 states have new records: AL, AZ, CT, FL, GA, IL, KS, KY, LA, MD, MN, MT, ND, NE, NM, NY, OK, OR, TN, TX, WV, WY.

Superfamily COREOIDEA
Family ALYDIDAE

Eleven new state records are reported for 8 species in 6 genera.


Notes: Froeschner (1988a) listed this species from “Dakota”; see Rider (2012) for a discussion about the probable localities of these records. Hussey (1922a) and Weber (1935) reported this species (the former as Coriscus conspersus) from North Dakota, and Clem and Ray (2016) listed a specimen from South Dakota in the appendix. I have examined the following corroborative material: SOUTH DAKOTA: Lawrence Co., Cheyenne Crossing, Black Hills National Forest, 13–14 July 1974, Richard A. Arnold, det. D. R. Swanson 2012 [1 ♀] (MSUC); idem. Thomas A. Bowling [1 ♀] (MSUC).


Distribution: USA: CA (Van Duzee 1917a), CO, IA, MT, NM, WY; Canada: AB, BC.


Distribution: AZ, CA, CO, NE (Schaefer 2003), NM (Schaefer 2003), OR, SD (Harris 1937), TX, UT (Schaefer 2003), WA (Schaefer 2003), WY (Schaefer 2003).


Notes: Froeschner (1988a) listed this species from “Dakota”; see Rider (2012) for a discussion about the probable localities of these records. Hussey (1922a) reported this species (as Coriscus eurinus) from North Dakota, and I have examined the following corroborative material: NORTH DAKOTA: Richland Co., Wahpeton, jct. Hwy. 210 & Westmore Ave., 19 July 2013, 46.2727°N 96.6258°W, #31, 1010 ft., D. R. Swanson, det. D. R. Swanson 2013 [2 ♀] (DRS); DRED DAKOTA: Codington Co., Watertown, Pelican Lake Rec. Area, 19 July 2013, 44.8656°N 97.2082°W, #34, 1770 ft., D. R. Swanson, det. D. R. Swanson 2013 [1 ♂] (DRS); Badlands, 16 June 1955, R. L. Fischer, det. D. R. Swanson 2012 [1 ♂] (MSUC). Evans et al. (1978) recorded Alydus pluto Uhler, 1872 from the Yukon Territories, which record was later referred to this species by Scudder (1997).

Sixteen new state records are reported for 9 species in 9 genera.


Notes: McPherson et al. (2011) synonymized *Acanthocephala confraterna* (Uhler, 1871) with this species; many of the annotations refer to this or another junior synonym, and the record for Texas reported by Froeschner (1988a) is referred here.

**Family COREIDAE**

Sixteen new state records are reported for 9 species in 9 genera.


Notes: McPherson et al. (2011) synonymized *Acanthocephala confraterna* (Uhler, 1871) with this species; many of the annotations refer to this or another junior synonym, and the record for Texas reported by Froeschner (1988a) is referred here.


Notes: Brailovsky and Garcia (1987) synonymized *Ficiana* Stål, 1862 with *Catorhintha* Stål, 1859.


Distribution: USA: AR (Tugwell et al. 1973, Chordas et al. 2005), CT, FL, GA (Scott and Fiske 1902), IA (Osborn 1892, Hendrickson 1930), IL, IN, KS, KY, MA, MD (Brown and Bahr 2008), MI, MN, MO, NC, NE, NH (Parshley 1917), NJ, NY, OH, OK (Drew and Schaefer 1963, Smith et al. 1996), PA, RI (Parshley 1917), SC, SD (Parshley 1922, Harris 1937, McDaniel 1989), TN (Lambdin et al. 2003), TX, VA, WI, WV; Canada: ON.


Distribution: AZ, TX.


Distribution: USA: FL, LA, OK, SC, TX.


Distribution: USA: AL, AR (Tugwell et al. 1973, Chordas et al. 2005), CT, FL, GA (Scott and Fiske 1902), IA (Osborn 1892, Hendrickson 1930), IL, IN, KS, KY, MA, MD (Brown and Bahr 2008), MI, MN, MO, NC, NE, NH (Parshley 1917), NJ, NY, OH, OK (Drew and Schaefer 1963, Smith et al. 1996), PA, RI (Parshley 1917), SC, SD (Parshley 1922, Harris 1937, McDaniel 1989), TN (Lambdin et al. 2003), TX, VA, WI, WV; Canada: ON.


Notes: The species of this genus are often confounded and some of the records referred to other species actually refer to *M. distinctus*. The Floridian record (i.e., Uhler 1876) is referred to *Merocoris typhaeus* (Fabricius, 1798), following the interpretation of Baranowski and Slater (1986). Records from the western states (i.e., Van Duze 1914, 1917b; Froeschner 1988b) might refer to *Merocoris curtatus* McAtee, 1919 and currently remain suspect. Identifications...
also were compared with Blairovsky and Barrera’s (2009) key. Uhler (1876), Wirtner (1904), Van Duzez (1917b), and Froeschner (1988b) reported this species as *M. typhaeus* or *var. distinctus* from Pennsylvania, and I have examined the following corroborative material: **PENNSYLVANIA**: [Pike Co.], Milford, 7 September 1955, R. Angle, det. D. R. Swanson 2012 [1 ♀] (MSUC). The record of *M. typhaeus* reported for Tennessee by Lambdin et al. (2003) almost certainly refers to this species, and I have examined the following corroborative material: **TENNESSEE**: Fentress Co., Allardt, 16 August 1922 [add. date: 13 August 1924], elev. ca. 1600 ft., T. H. Hubbell, det. D. R. Swanson 2012 [2 ♀] (UMMZ); Stewart Co., Land Between the Lakes, nr. Model, 9–10 June 1971, D. K. Young, det. D. R. Swanson 2012 [1 ♀] (UMMZ); Van Buren Co., Fall Creek Falls State Park, 11 August 1951, T. J. Cohn, det. D. R. Swanson 2012 [1 ♀, 1 ♂] (UMMZ). Van Duzez (1917b), Froeschner (1988b), and Williams (2004) reported this species as *M. typhaeus* or *var. distinctus* from Wisconsin, and I have examined the following corroborative material: **WISCONSIN**: Shawano Co., [no further locality data], 26 August 1950 [add. date: 31 August 1950], [no collector], det. D. R. Swanson 2012 [2 ♀] (MSUC); [Oconto Co.], Lakewood, 1 August 1950 [add. date: 26 August 1950], [no collector], det. R. Swanson 2012 [1 ♀, 1 ♂] (MSUC).

**Distribution**: AL, AR, AZ(?), CA(?), CO, CT (Parshley 1917, 1923), GA (Scott and Fiske 1902), IA, IL, IN (Blatchley 1926), KS, MA, MD, ME (Parshley 1917), MI (Swanson 2011), MO, MT, NC (Torre-Bueno and Engelhardt 1910, Van Duzez 1917b, Brimley 1938), NH (Parshley 1917), NJ, NM(?), NY, OH, OK, PA (Uhler 1876, Wirtner 1904, Van Duzez 1917b), RI (Parshley 1917), SC, SD (Parshley 1922, Harris 1937, McDaniel 1989), TN, TX (Uhler 1876), VA, VT (Parshley 1917), WI (Van Duzez 1917b, Williams 2004), WV; Canada: AB, MB (Maw et al. 2000), ON (Gibson 1910, 1912, 1917; Maw et al. 2000), QC (Maw et al. 2000), SK (Maw et al. 2000).

**Notes**: Barber (1928) described this species from specimens previously referred to *Coriomeris humilis* (Uhler, 1872) (Pseudophloeinae), based on morphological similarities with the genus *Scolopocerus* Uhler, 1875 (Coreinae). It is worth noting that a single male of *C. humilis* residing in the UMMZ shares the exact same locality data as the above specimen of *N. apiculatus*; the former was reported by Hussey (1922a). Barber (1928) stated that Uhler’s (1875) specimen from Gila River was not *Dasyocoris humilis* Uhler, 1872 but rather belonged to his new species; thus, Uhler’s (1875) record is treated as the first for Arizona.

**Distribution**: USA: AZ (Uhler 1875), CO, ND, NE, NM; Canada: AB, MB (Maw et al. 2000), SK (Maw et al. 2000).

**Family RHopalidae**

Ten new state records are reported for 5 species in 5 genera.


**Notes**: Snow (1904), Hambleton (1908), and Van Duzez (1917b) included records for Arizona and California, but these records were excluded by Chopra (1968) and Henry (1988c), the latter treatments followed here.

**Distribution**: USA: **AL**, AR, CO (Gillette and Baker 1895), CT, DC, FL, IA (Osborn 1892, Hendrickson 1930), IL (Swanson et al. 2011), IN, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, NH (Parshley 1917), NJ, NY, OH, PA, RI, TN, TX, VA, WV; Canada: BC (Parshley 1919, Downes 1927), ON, QC.


**Distribution**: AR (Chordas et al. 2011), AZ, CA, DC, FL, GA, IL, IN, KS (Tucker 1907a, b), MD, MN, MO, MT (Göllner-Scheiding 1978), NC, NJ, NY, OK, PA, TN (Lambdin et al. 2003), TX, VA, WA (Göllner-Scheiding 1978).


Notes: There is much confusion regarding the alpha taxonomy of this group, and the identifications were rendered using Halstead’s (1972) key. Halstead (1972) treated *Wupatkius semo* Bliven, 1956, described from Arizona, as a junior synonym of *L. con- vuiss*. Bliven (1973) disputed this treatment, and Henry (1985b) retained Bliven’s genus and species.

**Distribution**: **AZ, CA, CO, NM, TX.**


Notes: See note in previous species account. Scott and Fiske (1902) and Van Duze (1917b) reported this species from Oregon, and I have examined the following corroborative material: **GEORGIA**: Mitchell Co., Baconton, 8 April 1953, George W. Byers, det. D. R. Swanson 2012 [1 ♂] (UMMZ); **SALT RIVER RANGE, 8 July 1934, Edna Brodkorp, det. D. R. Swanson 2012 [1 ♂] (UMMZ).**


**Distribution**: **AL, AR (Chordas et al. 2011), AZ, CA, CO, FL, IA (Hoeboke and Wheeler 1982), IL, IN (Deay and Gould 1935), KS, LA, MI (Barber 1912), MO, NC, NE, OK (Ortenburger 1926, Drew and Schaefer 1963, Smith et al. 1996, Chordas and McAllister 2012), SD (Harris 1937), TX.**
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Family PYRRHOCORIDAE

One new state record is reported for 1 species in 1 genus.


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