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NOTES ON AQUATIC AND SEMIAQUATIC HEMIPTERA  
FROM THE SOUTHWESTERN UNITED STATES  
(INSECTA: HEMIPTERA)

John T. Polhemus<sup>1</sup>

ABSTRACT.— Notes are given concerning distribution and habitat for *Ochterus barberi* Schell, *Hydrometra aemula* Drake, *Metrobates artus* Anderson, *Metrobates denticornis* Champion, *Rhagovelia becki* Drake and Harris, *Velia beameri* Hungerford, *Velia summersi* Drake, *Abedus* (*Abedus*) *breviceps* Stal, *Abedus* (*Deinostoma*) *herberti* Hidalgo, *Ambrysus buenoi* Usinger, and *Ambrysus thermarum* La Rivers. The following synonymies are noted: *Hydrometra aemula* Drake 1956 = *Hydrometra ciliata* Mychajliw 1961, new synonymy; *Gerris paludum* Fabricius 1794 = *Gerris uhleri* Drake and Hottes 1925, new synonymy. The macropterous form of *Velia beameri* is described.

These notes concern the synonymy and distribution of aquatic and semiaquatic Hemiptera collected mostly by myself during numerous trips to the southwestern states, including southwestern Colorado and parts of Texas. Additional notes are given concerning habitat preferences, and the description of the winged form of one of our *Velias* is included. The material covered here did not seem appropriate for papers already published or in preparation but is limited to those items that seem to offer a significant contribution.

Unless otherwise noted, all specimens are in the Polhemus collection; specimens in other collections will be indicated by the institutional abbreviations given in the acknowledgments.

I am indebted to the following people for help in various ways during the work that led to the preparation of this paper: H. C. Chapman, Lake Charles, La.; the late C. J. Drake; R. C. Froeschner, Smithsonian Institution; J. Herring, USDA, United States National Museum (USNM); H. B. Leech, California Academy of Sciences (CAS); A. S. Menke, USDA, United States National Museum; J. C. Schaffner, Texas A & M University (TAM); J. Schuh, Klamath Falls, Oreg.; P. Wygodzinsky, American Museum of Natural History (AMNH).

*Ochterus barberi* Schell

*Ochterus barberi* Schell, 1943, J. Kansas Ent. Soc. 16:41 (Type ♂, Colorado Canyon, Arizona; USNM).

Heretofore known from Arizona, California, and Mexico, this species was taken in New Mexico. This ochterid is common in the desert areas of Arizona.

MATERIAL EXAMINED.— ARIZONA: 2 ♂♂, 1 ♀, 1 nymph, Aravaipa, 8-X-1964, CL315, J. T. Polhemus; 2 ♂♂, 5 miles NE Castle Hot Springs, 7-X-1964, J. T. Polhemus; 1 ♀, Indian Hot Springs, 9-X-1964, CL314, J. T. Polhemus; 1 ♂, Whiteriver, 15-IV-1965,

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CL317, J. T. Polhemus. NEW MEXICO: 2 ♂♂, Gila River, near Gila National Monument, 17-IV-1965, J. T. Polhemus; 1 ♀, Sherman, 17-IV-1965, CL322, J. T. Polhemus.

### *Hydrometra aemula* Drake

*Hydrometra aemula* Drake, 1956, Proc. Biol. Soc. Wash. 69:153 (Type ♀, Hermosillo, Mexico; Drake Collection, Smithsonian Institution).

*Hydrometra ciliata* Mychajliw, 1961, J. Kansas Ent. Soc. 34:29. (Type ♂, Guerrero, Mexico; F. H. Snow Entomological Museum, Lawrence, Kansas).  
*New synonymy.*

The examination of numerous specimens that I had identified as *H. ciliata* has convinced me that *ciliata* is a synonym of *aemula*.<sup>2</sup> Drake described the latter from a single female from Hermosillo, Sonora, Mexico, and Mychajliw described *ciliata* from six specimens from Mexico. The turned-up abdomen of the female and hairy venter of the male separate it immediately from any other species found in the United States; it is new to our fauna.

MATERIAL EXAMINED.— ARIZONA: 13 ♂♂, 11 ♀♀, 5 miles NE Castle Hot Springs, CL312, 7-X-1964, J. T. Polhemus; 1 ♂, 1 ♀, E of Castle Hot Springs, CL541, 16-I-1972, J. T. Polhemus.

### *Gerris paludum* Fabricius

*Gerris paludum* Fabricius, 1794, Ent. Syst. 4:188 (Type sex, locality, and disposition unknown to me).

*Gerris uhleri* Drake and Hottes, 1925, Proc. Biol. Soc. Wash. 38:69 (Type ♂, "Ariz"; USNM). *New synonymy.*

For a decade I have been disturbed by the inability of myself and others to secure additional specimens of *Gerris uhleri*, which was described, presumably, from "Arizona." Also disturbing was the great similarity between this species and *Gerris paludum* Fabricius from Europe. I examined the type of *uhleri* and confirmed that it is indeed synonymous with *paludum*, but the script label "Ariz" was still puzzling.

Fortunately I found specimens of Old World *Velia* in the collections of the United States National Museum bearing script labels "Ariz" in the same handwriting, reportedly Uhler's, as the label on the type of *uhleri*. Unquestionably the *Velia* originated in the Old World, since the females possess an anal plate which is lacking in the New World species of this genus. Three of the *Velia* were sent to Dr. Livio Tamanini, Rovereto, Italy, who very kindly determined them to be *sauli* Tamanini and *caprai* Tamanini. These specimens correspond with material examined from southern France and western Spain, he said, and there is a river Arize in the Toulouse region in France which would be pronounced "Ariz." It seems most probable that this is the originating locality for the type of *uhleri*. As it

<sup>2</sup>I have now studied the types of *aemula* and *ciliata* and confirmed their synonymy.

now seems certain that *uhleri* originated in the Old World, its synonymy with *paludum* is defensible.

The events described above underscore the importance of maintaining historical collections (all specimens described above bear "PR Uhler Collection" labels) and forewarn of difficulties that may arise if and when the information content of biological collections is computerized and then utilized without proper regard to its origin or to the possibility of error.

MATERIAL EXAMINED.— DENMARK: 2 ♂♂, 2 ♀♀, Lögsö, Rúde Skov, 28-VII-1941, K. O. Leth and E. W. Kaiser. ENGLAND: 1 ♂, Surrey, 6-VII-1941; 1 ♂, Rickmansworth, HT., Batchworth Lake, 26-VII-1953, PNL. FRANCE: 1 ♂, (Holotype, *Gerris uhleri* Drake and Hottes), Ariz, P. R. Uhler Collection (USNM); 1 ♀, Umg. Arcachon, Etang de Cazaux, 11-VI-1954, Weber; 1 ♂, Pyrenees or., Umg, Banyula, 30-V to 10-VI-1953, Gallia mer., H. H. Weber leg.

#### *Metrobates artus* Anderson

*Metrobates artus* Anderson, 1932, J. Kansas Ent. Soc. 5:56 (Type ♂, Cameron County, Texas; F. H. Snow Entomological Museum, Lawrence, Kansas).

This little gerrid is apparently restricted to central and southern Texas, being replaced by *Metrobates trux* Bueno to the west and north and overlapping in range with *Metrobates denticornis* Champion in southern Texas.

MATERIAL EXAMINED.— TEXAS: 2 ♂♂, 3 ♀♀, Altair, Colorado River, CL390, 8-VIII-1967, J. T. Polhemus; 32 ♂♂, 23 ♀♀, Ottine, San Marcos River, CL396, 8-VIII-1967, J. T. Polhemus; 1 ♂, 3 ♀♀, Llano, Llano River, 7-IX-1963, H. R. Burke (TAM, JTP); 1 ♂, 1 ♀, Brownsville, 22-IV-1945.

#### *Metrobates denticornis* (Champion)

*Trepobatopsis denticornis* Champion, 1898, Biol. Cent. Amer. 2:158 (Type ♂, Mexico; Stockholm Museum).

*Metrobates denticornis* has been previously reported from the United States (New Mexico, Texas) but is apparently rare here. It is a distinctive species with a ventral tubercle on the anterior femur.

MATERIAL EXAMINED.— TEXAS: 5 ♂♂, 4 ♀♀, Big Bend National Park, Reed Camp, Rio Grande River, 25-XI-1971, CL539, J. T. Polhemus.

#### *Rhagovelia becki* Drake and Harris

*Rhagovelia becki* Drake and Harris, 1936, Proc. Biol. Soc. Wash. 49:106 (Type ♂, Sabinas Hidalgo, Nuevo Leon, Mexico; Drake Collection, Smithsonian Institution).

Described from Mexico, this species has been reported previously from Texas. The record from Nevada represents a significant west-

ward extension of its range; the specimens were taken from a run-off stream from hot springs.

MATERIAL EXAMINED.— NEVADA: 12 ♂♂, 20 ♀♀, all apterous, Moapa, Clark Co., CL281, 22-II-1964, J. T. Polhemus.

### *Velia beameri* Hungerford

*Velia beameri* Hungerford, 1929, Ann. Ent. Soc. Amer. 22:759 (Type ♂, Santa Rita Mtns., Arizona; F. H. Snow Entomological Museum, Lawrence, Kansas).

*Velia beameri* was originally described from one apterous male and one apterous female from the Santa Rita Mountains, Arizona, and has heretofore been known only from the type specimens.

I collected this veliid near Castle Hot Springs, Arizona, in thick emergent vegetation at the edge of a small pool at the base of a low dam whose impoundment is completely filled with sand. The insects remained hidden in and under the vegetation until it was violently disturbed, whereupon they ran out onto the surface of the water a short distance and then quickly returned to their hiding place. Included in this series is one macropterous female which is described below.

One additional specimen and a nymph were taken by violently sweeping in the dark hollow of a partially submerged tree stump along a tiny, spring-fed streamlet in Aravaipa Canyon, Arizona.

DESCRIPTION: Macropterous female. Body shape, coloration, and hairiness as in apterous forms. Humeri more pronounced but not produced (width, apterous ♀/alate ♀; 40/53). Hemelytra brown, veins prominent; basal white spots of similar length (0.75 mm) to the wing pads in micropterous specimens; V-shaped white mark on apical fourth opening caudad.

MATERIAL EXAMINED.— ARIZONA: 18 apterous ♂♂, 10 apterous ♀♀, 1 ♀ macropterous (winged Plesiotype), 4 nymphs, 5 miles NE Castle Hot Springs, CL312, 7-X-1964, J. T. Polhemus; 1 apterous ♀, 1 nymph, Aravaipa Canyon, CL315, 8-X-1964, J. T. Polhemus.

### *Velia summersi* Drake

*Velia summersi* Drake, 1951, Rev. Ent. (Brazil) 22:371 (Type ♀. Oak Creek Canyon, Arizona; Drake Collection, Smithsonian Institution).

The holotype, a winged female, was described from Oak Creek Canyon, Arizona, and the allotype later described from a small series of specimens taken near Whiteriver, Arizona (Drake, 1957). I took a long series of specimens along the San Francisco River in New Mexico from the pebbles of gravel bars. By splashing water on the shore, the *Velia* were flushed from their hiding places and easily collected as they clambered over the stones or ran rapidly over the water. A diligent search of haunts normally inhabited by *Velia*, such as steeply sloping banks, emergent vegetation, and crevices in

logs failed to yield a single specimen. Several gravel bars along the river yielded specimens, and a few were taken by splashing water into pockets of a sheer rock cliff rising out of the river. Additional specimens were taken from gravel bars in Oak Creek Canyon.

At Seven Springs Canyon north of Phoenix, I searched the gravel bars for this veliid without success in January of 1972 but found many specimens in emergent vegetation in crevices of a sheer rock wall rising from a deep pool. Violent splashing was necessary to dislodge the specimens, and they would make every effort to return to the vegetation. The afternoon temperature was around 50 F in the canyon, with frosty mornings and ice noted in the road ditches: so it is possible that these veliids retreat to this habitat and become more or less dormant in cold periods.

It is worthy of note that all records for this species are from the Salt River-Verde River system. Several closely related species occur in Mexico, with *Velia alvaradana* Drake and Hottes occurring as far north as Sonora, but I have not seen any material collected between the Arizona-Mexico border and Alamos, Sonora.

The left paramere of a male is shown in Figure 1.

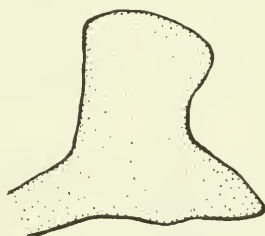


Figure 1. *Velia summersi* Drake, left paramere of male from Whiteriver, Arizona.

**MATERIAL EXAMINED.**— ARIZONA: About 100 specimens, apterous, N Carefree, 18-I-1972, CL542, J. T. Polhemus; 1 ♂, 1 ♀ apterous, 1 ♀ macropterous, Sedona, Oak Creek Canyon, 9-VI-1969, CL1211, J. T. Polhemus; 1 ♀ apterous, 8-15 miles NE Whiteriver, 8-11-VII-1940, Gertsch and Hood (Part of allotype series, exchange from AMNH). NEW MEXICO: Several hundred apterous specimens, Glenwood, 16-IV-1965, CL319, J. T. Polhemus.

#### *Abedus (Abedus) breviceps* Stål

*Abedus breviceps* Stål, 1862, Ent. Zeitung 23:462 (Lectotype ♀, Mexico; Riksmuseum, Stockholm).

This species is primarily found in Mexico but has been recorded from Arizona, New Mexico, and Texas.

**MATERIAL EXAMINED.**— ARIZONA: 3 ♂♂, 3 ♀♀, 1 nymph, Camp Verde, 7-X-1964, CL310, J. T. Polhemus. TEXAS: 1 ♀, 1

nymph, Big Bend National Park, Reed Camp, Rio Grande River, 1-25-X-1971, CL539, J. T. Polhemus.

*Abedus (Deinostoma) herberti* Hidalgo

*Abedus herberti* Hidalgo, 1935, Univ. Kansas Sci. Bull. 22:507 (Type ♂, Tucson, Arizona; F. H. Snow Entomological Museum, Lawrence, Kansas).

*Abedus herberti* is fairly widespread in Arizona but not commonly found elsewhere. The specimens I have collected vary substantially in size; the smallest male, from Patagonia, measured 28.5 mm in length, while the largest male, from Sedona, measured 38 mm.

MATERIAL EXAMINED.— ARIZONA: 1 ♀, 2 nymphs, Patagonia, 25-III-1967, CL1217, J. T. Polhemus; 1 ♂, 4 ♀ ♀, 2 nymphs, Patagonia, 17-III-1967, CL1218, J. T. Polhemus; 1 ♂, 2 ♀ ♀, 2 nymphs, Seven Springs, N Carefree, 18-I-1972, CL542, J. T. Polhemus; 1 ♂, 1 ♀, Aravaipa, 8-X-1964, CL315, P. T. Polhemus; 1 ♂, 4 ♀ ♀, 2 nymphs, Whiteriver, 15-IV-1965, CL317, J. T. Polhemus; 1 ♂, Sedona, 9-VI-1966, CL1211, J. T. Polhemus; 1 ♀, East Fork Verde River, Payson to Pine, Gila Co., 6-IV-1966, J. Schuh; 1 ♂, 4 miles S Patagonia, Santa Cruz Co., Santa Cruz River, 4-IV-1966, J. Schuh; 1 ♀, Santa Cruz Co., 3 miles W Fort Huachuca, 29-V-1969, D. Schuh. NEW MEXICO: 3 ♂ ♂, 3 ♀ ♀, Gila River, Gila National Monument, 17-IV-1965, CL323, J. T. Polhemus.

*Ambrysus buenoi* Usinger

*Ambrysus buenoi* Usinger, 1946, Univ. Kansas Sci. Bull. 31:199 (Type ♂, Rio Grande, Brewster Co., Texas; USNM).

This species is one of the "free swimming" *Ambrysus* that occur in the slow or still portions of streams. When disturbed, it swims rapidly away in a manner much like most corixids.

MATERIAL EXAMINED.— TEXAS: 31 ♂ ♂, 39 ♀ ♀, 3 nymphs, Big Bend National Park, Fresno Creek, CL538, 25-XI-1971, J. T. Polhemus; 3 ♂ ♂, 3 ♀ ♀, Alamito Creek, 5 miles SE Presidio, 13-VI to 11-VII-1968, J. E. Hafernik (JTP, TAM); 1 ♂, 1 ♀, Brewster Co., 21 miles S Alpine, Calamity Creek, 19-VII-1964, D. R. Smith and C. W. Baker.

*Ambrysus thermarum* La Rivers

*Ambrysus thermarum* La Rivers, 1953, Proc. U.S. National Museum 103:1 (Type ♂, Hot Springs, Sierra Co., New Mexico; USNM 60987).

The name *thermarum* for this insect, alluding to its occurrence in a hot spring area, is indeed unfortunate, for it occurs in colder water than any other *Ambrysus* known to me. I have collected it only in cold mountain streams in the region of the great caldera northwest of Santa Fe, New Mexico. Presumably, similar streams exist in the mountains west of Hot Springs (now Truth or Conse-

quences), the type locality, and the type series was almost certainly collected from such a habitat. I have not found it in the warmer or slower reaches of any of the streams. *A. thermarum* inhabits the stony, swift-flowing portions of streams, where it may be taken by turning over the rocks and holding the net downstream to catch the dislodged bugs. At Vallecito the water was so cold that my hands ached after a few minutes of collecting in this way.

MATERIAL EXAMINED.— NEW MEXICO: 2 ♂♂, 3 ♀♀, Sandoval Co., Jemez Cr., La Cueva, alt. 7634 feet, 11-VIII-1965, H. B. Leech (JTP, CAS); 3 ♂♂, 3 ♀♀, 3 nymphs, 12 miles W Espanola, 6-VI-1970, CL483, J. T. Polhemus; 3 ♂♂, 2 ♀♀, Canones Creek, 6 miles N Canones, 31-V-1971, CL530, J. T. Polhemus; 9 ♂♂, 9 ♀♀, 5 nymphs, Rio Tusas, Tusas, 9-X-1971, CL535, J. T. Polhemus; 139 specimens, Vallecito, 10-X-1971, CL536, J. T. Polhemus.

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