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## Biodiversity of Heteroptera in Puerto Rico: Part II. Annotated Checklist and Keys of Lygaeoidea (Pentatomomorpha)<sup>1,2</sup>

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### ABSTRACT

Lygaeoidea fauna of Puerto Rico and its adjacent islands is presented as part of a revision of the Heteroptera of these islands. In this work, we present 73 species in nine families known from Puerto Rico: Berytidae (4); Lygaeidae (17); Cimidae (1); Ninidae (1); Blissidae (3); Geocoridae (7); Oxycarenidae (1); Pachygronthidae (2); and Rhyparochromidae (37). Of this total, nine represent new records for Puerto Rico: *Gampsocoris decorus* (Uhler), *Spilostethus pandurus* (Scopoli), *Icshnodemus variegatus* (Signoret), *Geocoris uliginosus* Say, *Valtissius distinctus* (Distant), *Pseudopachybrachius concepcioni* Zheng & Slater, *Paromius dohrnii* (Guérin-Méneville), *Ozophora barbudensis* Baranowski, and *O. xanthocnemis* Baranowski. Most species found here are also widely found in the West Indies. The genera with the most species represented are the rhyparochromids *Ozophora* Uhler and *Neopamera* Harrington. Taxonomic accounts presented in this work include synonymies, known distribution, lists of hosts and a listing of examined specimens. Also, we provided taxonomic keys and color plates of 52 of the species discussed.

**Key words:** Lygaeoidea, Puerto Rico, Pentatomomorpha, taxonomic keys

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## RESUMEN

La biodiversidad de Heterópteros en Puerto Rico: Parte II.  
 Lista anotada y claves taxonómicas de Lygaeoidea (Pentatomomorpha)

La fauna de Lygaeoidea de Puerto Rico y de sus islas adyacentes se presenta como parte de una revisión de los Heterópteros de estas islas. Presentamos 73 especies en nueve familias de Lygaeoidea conocidas de Puerto Rico: Berytidae (4); Lygaeidae (17); Cimidae (1); Ninidae (1); Blissidae (3); Geocoridae (7); Oxycarenidae (1); Pachygronthidae (2) y Rhyparochromidae (37). Nueve de las especies representan records nuevos para Puerto Rico: *Gampsocoris decorus* (Uhler), *Spilostethus pandurus* (Scopoli), *Icshnodemus variegatus* (Signoret), *Geocoris uliginosus* Say, *Valtissius distinctus* (Distant), *Pseudopachybrachius conceptioni* Zheng & Slater, *Paromius dohrnii* (Guérin-Méneville), *Ozophora barbudensis* Baranowski, y *O. xanthocnemis* Baranowski. La mayoría de los nuevos records son especies de amplia distribución en el Caribe. Los géneros con mayor número de especies representadas son los rhyparochromidos *Ozophora* Uhler y *Neopamera* Harrington. Incluimos sinonimias para las especies presentadas además de su distribución conocida, sus hospederos, y una lista de los especímenes examinados. También se incluyen claves taxonómicas y fotos a color para identificar 52 de las especies discutidas.

Palabras clave: Lygaeoidea, Puerto Rico, Pentatomomorpha, claves taxonómicas

## INTRODUCTION

This is the second part of our conspectus of the Hemipteran infraorder Pentatomomorpha of Puerto Rico. As in Part I of this series (Segarra-Carmona et al., 2016), our intent is to annotate, illustrate and provide keys for Heteroptera: Pentatomomorpha species reported from Puerto Rico and other islands under its jurisdiction. Thus, the principal thrust of the series arises from the need for an updated and comprehensive local treatise on this important group, and the presentation of photographs of common species for improved identification. In this part, we present members of superfamily Lygaeoidea of Puerto Rico.

In many respects, this undertaking has been a challenging task. Firstly, the relative paucity of curated material in local collections complicates our work. Many Lygaeoidea are small, dull-colored bugs, and as such, largely bypassed by one of our primary sources of specimens, i.e., amateur or student collectors, who tend to favor large and colorful creatures for mounting and preservation. Secondly, except for a few species, members of this group are generally not pests of agricultural or medical importance. Thus, they have seldom been the objects of organized and systematic collection efforts by past or present-day entomologists. Finally, as we discuss later, the taxonomic study of the Lygaeoidea, especially those belonging to the mega diverse Rhyparo-

chromidae, can be challenging and in fact intimidating to any aspiring entomologist trying to identify local/endemic species. Undoubtedly, these challenges will be reflected in this work.

As discussed in Part I (Segarra-Carmona et al., 2016), insects belonging to infraorder Pentatomomorpha are terrestrial, and the majority are plant feeders, consuming the fluids of many plant parts, especially flowers, seeds, and fruit. Except for the Aradoidea, all other Pentatomomorpha are characterized by the presence of *trichobothria*: specialized slender sensory setae arising from spots, tubercles or pits on the head and/or abdominal venter (segments III-VII). Four to six superfamilies are recognized by different authors. Schuh and Slater (1995) recognized five superfamilies within Pentatomomorpha: Aradoidea (e.g., flat bugs), Pentatomoidea (e.g., stink bugs), Lygaeoidea (e.g., stilt and seed bugs), Pyrrhocoroidea (e.g., cotton stainers and bordered plant bugs), and Coreoidea (e.g., broad-headed bugs, leaf-footed bugs). Henry (1997a) includes an additional superfamily: Ideostolidea, a very small group of species of transantarctic distribution with unique trichobothrial patterns. Except for Ideostolidea, members of the other five superfamilies occur in Puerto Rico.

**Key to Superfamilies of Pentatomomorpha  
(from Henry et al., 1997a)**

- 1. Abdominal trichobothria absent; bodies strongly dorsoventrally flattened; stylets labium as long as or longer than body, coiled within head; tarsi 2-segmented . . . . . **Aradoidea.**
- Abdominal trichobothria usually present; bodies not strongly dorsoventrally flattened; stylets only as long as labium and not coiled within head; tarsi usually 3-segmented, occasionally 2-segmented (e.g., Lygaeoidea) . . . . . 2.
- 2 (1). All abdominal trichobothria, when present, lateral and in pairs; scutellum large, extending at least to apex of clavus, sometimes covering a large part of abdomen; antennae usually 5-segmented; genital capsule usually broad and dorsoventrally flattened, with aperture directed caudally (except, e.g., some Podopinae) . . . . .  
. . . . . (see Part I. Segarra-Carmona et al., 2016) **Pentatomoidea.**
- Abdominal trichobothria ventral, mid-lateral, and lateral, all or at least some, in groups of threes; scutellum relatively small, not extending to apex of clavus; antennae always 4-segmented; geni-

- tal capsule usually rounded ventrally and caudally (cup-shaped), with aperture directed dorsally (except, e.g., some Alydidae and Rhopalidae) . . . . . 3.
- 3 (2). Hemelytral membrane with only 4 or 5 simple veins, almost always lacking closed cells at base of membrane . . . **Lygaeoidea**.
- Hemelytral membrane with 8 or more veins, these veins often anastomosing and often in combination with closed cells . . . 4.
- 4 (3). Trichobothria short, length no greater than diameter of a metatibial segment, difficult to distinguish from simple setae; hemelytral membrane with only 8-11 veins . . . . .  
. . . . . (*transantartic*) **Idiostoloidea**.
- Trichobothria long, distinct, usually longer than tibia, and surrounding setae; hemelytral membrane with many more than 11 veins . . . . . 5.
- 5 (4). Ocelli present; dorsal abdominal scent gland openings usually divided (except Rhopalidae); rarely aposematically colored . . .  
. . . . . **Coreoidea**.
- Ocelli absent; dorsal abdominal scent gland openings never divided; often aposematically colored . . . . . **Pyrrhocoroidea**.

### Superfamily Lygaeoidea

Unlike the Pentatomoidea, which, according to Grazia et al. (2008), are likely a monophyletic group, the Lygaeoidea are probably not monophyletic (see Henry et al., 2015). Evidence of this state of phylogenetic complexity is evident from the unstable nature of proposed phylogenies over the past 50 years, and whose changes continue today. In this work we will follow the classification scheme proposed by Henry (1997a), who used three synapomorphies or key morphological characters to distinguish the Lygaeoidea. These are: (1) reduced venation on the hemelytral membrane; (2) almost complete absence of closed membrane cells; and (3) presence of incrassate fore femora found on basal taxa but lost in many distal groups.

According to Henry et al. (2015), superfamily Lygaeoidea is the second largest superfamily in the infraorder Pentatomomorpha, and one of the most diverse groups of Heteroptera with about 700 genera and more than 4,200 species in the world. Until lately, the Lygaeoidea, as interpreted by most recent works (see Schuh and Slater, 1995) included five families, the Lygaeidae being by far the largest. The new phylo-

genetic interpretation of this important group was presented by Henry (1997a). This important work elevated many subfamilies to family status, in order to accommodate uncertainties in the old classification primarily due to paraphyletic and polyphyletic phylogenies inherent to the old grouping. Fifteen families are now recognized within Lygaeoidea (Henry, 1997a): Artheneidae, Colobathristidae, Cryptorhamphidae, Heterogastridae, Malcidae, Piesmatidae, *Berytidae*, *Blissidae*, *Cymidae*, *Geocoridae*, *Lygaeidae*, *Ninidae*, *Oxycarenidae*, *Pachygronthidae*, and *Rhyparochromidae*; with the latter nine families (in *italics*) present in Puerto Rico.

### **Biology and Economic Importance**

The Lygaeoidea are a diverse, highly successful group of true bugs. They are found in practically all ecological regions and are particularly diverse in the tropics. Most Lygaeoidea feed on seeds or plant sap, a few species are predatory, and a few species even feed on blood (e.g., *Clerada* sp.). As with all Heteroptera, these bugs have piercing-sucking mouthparts, which are composed of mandibles and maxillae modified to form needle-like stylets. Schuh and Slater (1995) described Heteroptera feeding types as either “stylet sheath” feeders (such as many Pentatomidae) or “lacerate-flush” feeders. The latter, which includes most Lygaeoidea and also the Miridae (Cimicomorpha), use the apical portion of the mandibles to macerate tissues within the host, which are then mixed with saliva and sucked down the alimentary canal. Most Lygaeoidea feed on plant parts known to be rich in nutrients, such as seeds (Schuh and Slater, 1995), while other lygaeoids, such as the economically important chinch bugs (*Blissidae*), are predominantly sap feeders.

### **State of Knowledge and Objectives**

As with the Pentatomoidea, the last major taxonomical studies of Heteroptera from Puerto Rico were published during the first half of the 20th century by Barber (1923, 1924a, 1939), later compiled by Wolcott (1936, 1948), and supplemented by Maldonado-Capriles and Navarro (1967). To date the best and most useful source for identifying Puerto Rican Heteroptera is still found in Barber (1939). No work has since focused on the Lygaeoidea in Puerto Rico. Probably the most useful source of information on local species is the extraordinary treatise by Baranowski and Slater (2005) on the West Indian Lygaeoidea. Few other publications exist on Puerto Rican lygaeid fauna, and they mostly discuss economically important species, such as *Blissus* sp. (see Leonard, 1968a, b).

This paucity of work on the Lygaeoidea in Puerto Rico posed difficult challenges in the preparation of our annotated checklist. Firstly, a faunal study necessarily involves literature records from earlier periods of taxonomic activity, and corroborating collection specimens. We lacked both. Thus, given this dearth of literature or specimens, we endeavored to list Lygaeoidea species reported from different sources, and in several cases without being able to validate their actual presence with museum or collection specimens. It has taken us 10 years to build the historical Lygaeoidea collection of the “*Museo de Entomología y Biodiversidad Tropical*” (MEBT) of the University of Puerto Rico Agricultural Experiment Station, enabling us to increase the number of specimens and recorded species, and of which we are certain that a number of new species await description. Secondly, large portions of Puerto Rico and its adjacent islands remain unsurveyed and will undoubtedly produce new records when systematically examined. From an examination of our records, most new records presented here have come from western Puerto Rico, reflecting a bias in collection efforts.

With those caveats presented, we have prepared several keys for Puerto Rican genera and species, where practical. The use of these keys requires some prior knowledge of standard Heteroptera anatomical nomenclature, which can be readily acquired from existing literature. In these keys we have strived to minimize the use of sexual or genitalic characters. Our work also includes photographs of MEBT specimens to help identify the most common species. Annotated species accounts are inclined to highlight West Indian/Caribbean information, and are organized by family and subfamily, and include type locality, Antillean and Caribbean distribution, host plants, and remarks on past local records, biology and identification. Research and information presented here is partly the product of on-going curatorial efforts towards the historical collection of the MEBT, and from research designed to identify new potential hemipteran pests and vectors of disease in palms and other tropical crops.

### **Taxonomical Accounts**

Species accounts presented below include: basic information on taxonomical synonymy, known geographical and local distribution, host plant data, a short account of relevant biological, historical or economic information, and a list of preserved material examined and housed at MEBT, including collection label information and sex for each insect (in brackets). Body length was taken from head to abdomen tip, without the membranous area, using an ocular micrometer. Biological materials examined belong to: **MEBT's** historical collection; **INV-COL**, The Invertebrate Collection at the University of Puerto Rico-Mayagüez, Biology Department; and **JAR**, Dr. José A. Ramos' private collection.

Species accounts presented below include: basic information on taxonomical synonymy; known geographical distribution with special emphasis on the Antilles and the Caribbean; host plant collection data; a short account of relevant biological, historical or economic information; and a list of preserved material examined and housed at MEBT that includes collection label information and sex for each insect (in brackets). Host plant records for Puerto Rico are those presented in Martorell (1976), unless specified.

**Key to Lygaeoidea Families in Puerto Rico  
(Adapted from Henry et al., 2015)**

- 1. Abdominal spiracles on segment II ventral ..... 2.
- 1'. Abdominal spiracles on segment II dorsal ..... 3.
- 2 (1). Suture between abdominal sterna IV and V usually curving anteriorly and usually ending before attaining lateral abdominal margin; Trichobothria present on head; ovipositor, at most, dividing abdominal sternite VII ..... **Rhyparochromidae.**
- 2'. Suture between abdominal sterna IV and V straight, always attaining lateral abdominal margin; Trichobothria never present on head; ovipositor dividing at least sternites VI and VII; Pro-femora strongly incrassate, much thicker than metafemora; base of hemelytral membrane without a closed cell ..... **Pachygronthidae.**
- 3 (1'). Ocellus nearly encircled by a distinct groove ..... 4.
- 3'. Ocellus not encircled by a groove ..... 6.
- 4 (3). First antennal segment long, slender, often apically clavate, subequal in thickness to, and nearly always longer than, segments II and III ..... **Berytidae.**
- 4'. First antennal segment short, stout, barrel shaped, much shorter and thicker than segments II and III ..... 5.
- 5 (4). Hemelytra impunctate, or with only a few indistinct punctures; corium hyaline to translucent beyond constricted base; apex of scutellum bifid; head broad, eyes substylate; vertex wider than anterior width of pronotum ..... **Ninidae.**
- 5'. Hemelytra distinctly punctate on clavus and corium; corium opaque throughout, never constricted; apex of scutellum rounded or



- acute; head not broadened, eyes never substylate, vertex always narrower than anterior width of pronotum; buccula short, not extending posteriorly beyond bases of antennae; abdominal trichobothria present on sternites II to VII . . . . . **Cymidae**.
- 6 (3). Abdominal spiracles on segments III and IV, ventral; lateral pronotal margin rounded or weakly carinate; female abdomen often rounded caudally; male abdominal segment VII with transverse combs or clusters of setae ventrally . . . . . **Oxycarenidae**.
- 6'. Abdominal spiracles on segments III and IV, dorsal; different combination of characters from previous couplet . . . . . 7.
- 7 (6). Abdominal spiracles on segments V to VI ventral; sutures between tergites 4/5 and 5/6 curving forward through middle . . . . . **Geocoridae**.
- 7'. Abdominal spiracles on segments V to VI dorsal; all abdominal tergites transverse, sutures not curving forward . . . . . 8.
- 8 (7). Abdominal spiracles on segment VII dorsal; each pronotal callus with an impressed, transverse, usually shiny groove; scutellum usually with a cross-shaped carina . . . . . **Lygaeidae**.
- 8'. Abdominal spiracles on segment VII ventral; pronotal calli without impressed grooves; scutellum without a cross-shaped carina . . . . . **Blissidae**.

#### FAMILY BERYTIDAE (FIEBER)

These insects are commonly known as “stilt bugs”, as their legs are usually as long or longer than their slender and elongate bodies, and their antennae appear threadlike. They can be cursorily confused with smaller emesine reduviids, but lack raptorial legs, or may resemble some smaller hydrometrids. Berytids are recognized from other Lygaeoidea because their antennae are located above an imaginary line through the middle of their eyes, and their first antennal segments are long, slender, often apically clavate, subequal in thickness to, and usually longer than segments II and III. Berytids are considered phytophagous, but some species may have important roles as pollinators, scavengers, and predators (Henry, 1997b).

Three subfamilies are recognized: *Berytinae* Puton, *Metacanthinae* Costa, and *Gampsocorinae* Southwood and Leston, with the latter two recorded from Puerto Rico. Older literature from Puerto Rico refers to this family by its older name of Neididae (Kirkaldy); the first member



of this family recorded here was collected from Mona Island, during a 1914 expedition by the American Museum of Natural History to that island.

**Key to the Berytidae of Puerto Rico**

- 1. Metathoracic scent channel extended into a rounded pouch-like structure, and lined with scale-like plates (*Gampsocorinae*) . . . . . *Gampsocoris decorus*.
- 1'. Metathoracic scent channel extended into an elongate spout or finger-like spine, and with smooth lining (*Metacanthinae*). . . . . 2.
- 2 (1). Ostiolar spout apically rounded and weakly recurved backwards near the level of the hemelytra, and without an apical spine, . . . . . *Metacanthus tenellus*.
- 2'. Ostiolar spout ending in an acute apical spine . . . . . 3.
- 3 (2). Femora with brown or black spots . . . . . *Jalysus sobrinus*.
- 3'. Femora without brown or black spots . . . . . *Jalysus reductus*.

***Gampsocoris* Fuss**

***Gampsocoris decorus*** (Uhler, 1893: 707) [Plate VII. Fig. 50]. **New Record.**

- Prothacanthus decorus* Uhler
- Jalysus tenellus* Distant (misidentification)
- Metacanthus capitatus* Uhler
- Metacanthus decorus* Distant
- Gampsocoris decorus* Henry

*Type locality:* St. Vincent Island.

*Antillean & Caribbean distribution:* Colombia, Cuba, Dominica, Grenada, Hispaniola, Jamaica, Florida (USA), St. Croix, Trinidad, Venezuela; Texas (USA), Mexico, Central America, Peru.

*Host plants:* *Urochloa mutica* (Forssk.) T.Q. Nguyen (Poaceae) (Wheeler and Henry, 2006).

*Remarks:* This is the first report of this stilt bug in Puerto Rico. The small species (3 – 3.5 mm) is readily identifiable from other stilt bugs occurring in Puerto Rico by its jet-black head and the rounded shape at the tip of its ostiolar canal. The examined specimens available in MEBT were collected from Añasco in October 1997.

*Material examined.* **PUERTO RICO.** *Añasco*: Oct 1997. W. Torres. (2); *Maricao*: Oct 1997. W. Torres (1).

***Metacanthus* Costa**

***Metacanthus tenellus* Stål (1859: 236) [Plate VII. Fig. 52.**

*Metacanthus tenellus* Stål

*Type locality*: Puna, Ecuador.

*Antillean & Caribbean distribution*: Cuba, Hispaniola, Jamaica, Puerto Rico; Florida (USA), Venezuela; Mexico, South America.

*Host plants*: *Acalypha alopecuroides* Jacq. (Euphorbiaceae) in Bermuda (Henry, 1997b); *Echinochloa crus-galli* (L.) P. Beauv. and *Urochloa mutica* (Poaceae) in Florida (USA).

*Remarks*: This small stilt bug (4.5 - 5.5 mm) was first reported from Puerto Rico by Henry (1997b) from specimens collected from Juana Díaz by Medina-Gaud in 1965. Other collection locations since then have included: Adjuntas, Cayey, Cabo Rojo, Lajas, and Jayuya, perhaps indicating a widespread geographical distribution on the island.

*Material examined.* **PUERTO RICO.** *Cabo Rojo*: 17°57.2N 67°11.9 W. 16 Feb 2015. Ex. Sweeping grasses. A. Segarra. (1); 17°58.3N, 67°12.7W. 24 Oct 2014. Ex. Sweeping. A. Segarra & Pérez (3); *Jayuya*: 18°10.34N 66°35.50W. 18 Nov 2006. Ex. Sweeping. A. Segarra (1, specimen has distinctly reddish thorax but is missing head, and is more elongated); *Lajas*: 18°00.61N 67°06.54W. 15 Oct 2015. Ex. Hg Vapor Lamp. A. Segarra (1); 3 May 2015. C. Gordillo.

***Jalysus* Stål**

***Jalysus reductus* Barber (1939: 331) [Plate VII. Fig. 51].**

*Jalysus spinosus* Barber (1923: 12 listed; Mona Island, Puerto Rico).

*Jalysus reductus* Barber

*Type locality*: Mona Island

*Antillean & Caribbean distribution*: Bahamas, Cuba, Curacao, Guatemala, Hispaniola, Saba, St. Eustatius, Tobago, Trinidad, Venezuela; Florida (USA), Honduras, Brazil, Peru.

*Host plants*: Little is known about its host plants beyond the likelihood that, as with other berythids, this species also favors glandular and/or hairy plants. According to Henry (1997b), a single female was taken on *Hyptis suaveolens* (L.) Poit. (Lamiaceae).

*Remarks:* This is a mid-sized species (5.5 - 7 mm) with heavily and coarsely punctate pronotum. Stusak and Cobben (1975) remark that this species seems to be the most abundant stilt bug of the Caribbean. Aside from specimens collected from Mona Island, collection records exist only from Mayagüez.

*Material Examined.* **PUERTO RICO.** *Mayagüez:* 3 May 2015. C. Gordillo (3); 18°13.10N 67°08.8W *Ex. Pan trap;* D. Smith.

***Jalysus sobrinus*** Stål (1862: 60) [Plate VII. Fig. 51].

*Jalysus reversus* Van Duzee

*Type locality:* Unknown, probably Brazil.

*Antillean & Caribbean distribution:* Jamaica, Puerto Rico, Trinidad; Mexico, Central and South America.

*Host plants:* Unknown.

*Remarks:* This species was reported by Maldonado-Capriles and Navarro (1967) as *J. reversus* Van Duzee from specimens collected from Mayagüez, and which were collected by Maldonado-Capriles in June 1949. As mentioned in the key, this species is readily identified by the strongly spotted legs, impunctate head, and by the apically infuscated osteollar appendix. No specimens are present in our collections.

**FAMILY LYGAEIDAE (SCHILLING)**

These insects are commonly known as “seed bugs”, referring to their habit of normally feeding on mature seeds. Most lygaeids feed on seeds, but some feed on plant sap, whereas a few are predatory. In general, members are not considered pests, except some members of genus *Spilostethus* Stål, and some species of *Nysius* Dallas. Members are recognized by the transverse line impressed across the pronotal callus; and by the dorsal position of abdominal spiracles II through VII. Three subfamilies occur in Puerto Rico: Lygaeinae, Ischnorhynchinae and Orsillinae.

***Key to the Lygaeidae of Puerto Rico***

- 1. Clavus punctate; base of pronotum entire, not depressed (Ischnorhynchinae) . . . . . *Kleidocerys virescens*.
- 1'. Clavus impunctate; base of pronotum bordering either side of scutellum, depressed or flattened . . . . . 2.
- 2 (1). Hemelytra with a distinct subcostal vein; membrane lacking

- intervannal veins; coloration often red or orange; most species nearly glabrous (Lygaeinae) . . . . . 3.
- 2'. Hemelytra lacking a subcostal; membrane with intervannal veins; coloration dull gray to yellowish brown; species often pubescent (Orsillinae). . . . . 12.
- 3. Pronotum with four transverse depressions behind the calli . . . . 4.
- 3'. Pronotum without four transverse depressions behind the calli . . 6.
- 4 (3). Pronotal lobe black with anterior margin white and posterior margin orange; femora unicolored; corial veins slightly lighter than adjacent area . . . . . *Ochrinnus henryi*.
- 4'. Pronotal lobe entirely orange . . . . . 5.
- 5 (4). Femora bicolored, proximal two-thirds, yellow; corial veins concolorous with surrounding area . . . . . *O. collaris*.
- 5'. Femora unicolored, light brown; corial veins pale yellow contrasting with surrounding area . . . . . *O. laevus*.
- 6. (3') Scutellum swollen, raised above hemelytra; basal margin of pronotum on either side of scutellum flattened and produced posteriorly . . . . . 7.
- 6'. Scutellum not swollen; basal margin of pronotum not produced posteriorly . . . . . 10.
- 7 (6). Transverse narrow fascia across corium interrupted at distal third of clavus, membrane smoke colored; black macula near clavus apex . . . . . *Spilotethus pandurus*.
- 7'. Transverse broad fascia continuous across corium and distal third of clavus; membrane black; clavus uniformly colored with basal half red and apical half black . . . . . 8.
- 8 (7'). Membrane black without a distinct white macula . . . . .  
 . . . . . *Oncopeltus fasciatus*.
- 8'. Membrane black with a conspicuous white macula . . . . . 9.
- 9 (8). Pronotum with black areas of posterior lobe covering lateral margins; central areas of anterior pronotal lobe black . . . . .  
 . . . . . *O. semilimbatus*.

- 9'. Pronotum with posterior lobe largely black; central areas of anterior pronotal lobe not black; anterior angles of pronotum red; scutellum black with apical portion orange . . . . . *O. aulicus*.
- 10 (6'). Posterior pronotal lobe, at most, as high mesally as lateral margins; median carina on basal third distinct; clavus and posterior margin of corium pale; basal portion of corium with a large triangular orange area; membrane black with white patch along outer margin . . . . . *Neacoryphus albonotatus*.
- 10' Posterior pronotal lobe higher mesally than at lateral margins; disc distinctly convex; median carina absent . . . . . 11.
- 11 (10). Clavus unicolorous or pale basally and dark apically or with only the commissural margin pale; Pronotum with disc of anterior lobe dark, except for broad margin . . . . .  
. . . . . *Ochrostomus pulchellus*.
- 11'. Scutellar margin of clavus pale, contrasting with dark-colored corial margin; Pronotum completely dark . . . . . *Lygus coccineus*.
- 12 (2'). Costal margin of hemelytron straight to at least level with apex of clavus; fore femur sometimes spined; connexivum often exposed . . . . . *Neortholomus jamaicensis*.
- 12'. Costal margin of hemelytron straight only to level with apex of scutellum; fore femur never spined; connexivum not exposed . . . . . 13.
- 13 (12). Hemelytron without a complete row of punctures on either side of claval suture; buccula impunctate (Nysiini) . . . . . 14.
- 13'. Hemelytron with a distinct row of punctures on either side of claval suture; buccula usually punctate, not extending beyond level with middle of eye . . . . . 16.
- 14 (13). Buccula low; gradually tapering posteriorly, fading gradually towards base of face . . . . . *Nysius raphanus*.
- 14' (13'). Buccula high anteriorly, slightly narrowing posteriorly, ending abruptly near base of head . . . . . 15.
- 15 (14). Basal portion of lateral corial margins with prominent hairs .  
. . . . . *Nysius scutellatus*.
- 15'. Basal portion of lateral corial margins devoid of prominent hairs, at most minute. . . . . *Nysius tenellus*.

- 16 (13'). Corium conspicuously constricted at base; pronotum not longitudinally callused on either side of midline; color cinereous; 4<sup>th</sup> antennal segment equal or longer than 3<sup>rd</sup> . . . . . *Xyonysius californicus*.
- 16'. Corium conspicuously not constricted at base; pronotum longitudinally callused on either side of midline; color pale testaceous . . . . . *Xyonysius basalis*.

### Subfamily Ischnorhynchinae Stål

This subfamily is closely related to the Orsillinae but distinguished from these by its punctate clavus, the lack of a depression on the posterior margin of the pronotum on either side of the scutellum, and often by a translucent corium. These are small, rather dull and brownish, ovoid insects. The majority of species are tropical or southern temperate in distribution. *Kleidocerys* is the only genus known in the Caribbean, and it is widespread in the Northern Hemisphere.

#### *Kleidocerys* Stephens

***Kleidocerys virescens*** (Fabricius, 1794: 70) [Plate II. Fig. 15]

*Acanthia virescens* Fabricius

*Tingis virescens* Fabricius

*Cymodema virescens* Walker

*Ischnorhynchus pictipes* Stål

*Kleidocerus pictipes* Lethierry

*Ischnorhynchus championi* Distant (In Barber, 1939)

*Kleidocerys championi* (Distant) (In Wolcott, 1948)

*Kleidocerys virescens* Ashlock

*Type locality*: Hispaniola (“*Americae Meridionalis Insulis Dom.*”).

*Antillean & Caribbean distribution*: Anguilla, Aruba, Barbados, Cuba, Dominica, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Mona Island, Puerto Rico, Saba, St. Barthélemy, St. Kitts, St. Lucia, St. Martin, Virgin Gorda; North and Central America.

*Host plants*: Wolcott (1936) reported it collected from *Rubus rosifolius* Sm. (Rosaceae) at Aibonito. Wolcott (1948) also mentions collections of *Sauvegesia erecta* L. (Ochnaceae) by José Ramos in Guánica. Baranowski and Slater (2005) found the species to be common on the flowers and seed heads of *Capraria biflora* L. (Scrophulariaceae) in Martinique, and on *Lobelia viridiflora* McVaugh (Campanulaceae) in Jamaica.

*Remarks:* This small species (2 - 2.4 mm) was first reported as *Ischnorhynchus championi* Distant (a junior synonym) by Barber (1923) from specimens collected from Mayagüez in 1915. Ramos (1946) found it “exceedingly abundant” on Mona Island.

*Material examined.* **MONA ISLAND.** 18°05.25N 67°56.40W. 6 Sept 2013. Ex. Sweeping vegetation. A. Segarra. (2♀ ♂). **PUERTO RICO.** *Cabo Rojo:* 17°57.21N 67°11.91W. 16 Feb 2015. Ex. *Sweeping.* A. Segarra. (2♂).

### **Subfamily Lygaeinae Stål**

The Lygaeinae are usually moderate to large bugs, often recognized by their contrasting red or orange, and black coloration (probably aposematic). All abdominal spiracles are located dorsally. Hemelytral clavi are impunctate, and the base of the pronotum depressed on either side of the scutellum. The forewing membrane typically has one closed cell, a subcostal vein, and a hamus (spur or short vein).

This is a large subfamily of about 500 species of worldwide distribution, but with its largest diversity found in the tropics. Most species feed above the ground, although many live in close relationship with ground litter when host plant seeds are abundant.

#### *Lygaeus* Fabricius

*Lygaeus coccineus* Barber (1923: 3) [Plate I. Fig. 3].

*Type locality:* Puerto Rico.

*Antillean & Caribbean distribution:* Anguilla; Mona Island, Puerto Rico.

*Host plants:* Nymphs and adults collected on *Chamaecyse* sp. (Euphorbiaceae) in Anguilla (Baranowsky and Slater, 2005). In a recent collection on Mona Island by the senior author, several adults were collected from flowers of the endangered woolly nipple cactus, *Mamillaria nivosa* (Link ex N.E. Pfeiffer) (Cactaceae).

*Remarks:* This is a medium-sized (6 - 8 mm) bug with black body, red and black hemelytra, and whitish membrane which was found in abundance on Mona Island, on the dolomitic plateau north of the island’s lighthouse. First described by Barber (1923) from two males collected in Old San Juan. Barber suggested a problematic generic placement, and perhaps a better placement in the genus *Melanostethus* Stål. This issue remains unresolved to this date.



*Material examined.* **MONA ISLAND.** 18°05.24N 67°50.66W. 7 Sept 2013. Ex. Sweeping vegetation. Segarra & Collazo. (2♀ 2♂).

***Neacoryphus*** Scudder

***Neacoryphus albonotatus*** (Barber, 1923:2).

*Lygaeus albonotatus* Barber (incertae sedis)

*Neacoryphus albonotatus* Slater (1992:23)

*Type locality:* Mona Island as *Lygaeus (Malanocoryphus) albonotatus* Baker) *Antillean & Caribbean distribution:* Eleuthera Island, Mona Island.

*Host plants:* Unknown.

*Remarks:* Described from a single male (3 mm) from Mona Island, 1914. The author assigned it *Lygaeus* but expressed doubts about its correct placing. To our knowledge, it is the only specimen ever collected on Mona Island. Ramos (1946) reports no collections in spite of “very diligent” searches. Barber and Ashlock (1960) reports a specimen collected by E.B. Heydon in 1953 on Governors Harbor in the Bahamian island of Eleuthera. Slater (1992), in his revision of Western Hemisphere Lygaeinae, lists *N. albonotatus* as *incertae sedis*, maintaining his doubts about its correct generic placement.

*Material Examined:* No specimens were found in MEBT, JAR, or INVCOL collections.

***Ochrimnus*** Stål

***Ochrimnus (Ochrimnus) collaris*** (Fabricius, 1803: 230) [Plate I. Fig. 2].

*Lygaeus collaris* Fabricius

*Melanocoryphus (Ochrimnus) collaris* Stål

*Ochrimnus collaris* Uhler

*Type locality:* St. Thomas Island.

*Antillean & Caribbean distribution:* Antigua, Bequia, Cuba, Dominica, Grenadines, Guadeloupe, Hispaniola, Jamaica, Martinique, Mona Island, Montserrat, North Caicos, Puerto Rico, Saba, St. Eustatius, St. Lucia, St. Vincent, Tortola.

*Host plants:* Most specimens that we examined were collected at light. Wolcott (1948) reports that adults were abundant on flowers of *Pisonia albida* Britton (Nyctaginaceae) on Mona Island. Fife (1939) reported this species on cotton (*Gossypium barbadense* L. Malvaceae) in Puerto Rico.

*Remarks:* This colorful medium-sized bug (6 - 8 mm) can be recognized from congeners in Puerto Rico by its mostly reddish pronotal lobe, bi-colored femora, and pale wing venation. Mostly found in coastal areas in Puerto Rico, but some specimens have also been collected upland. Several specimens that we examined were collected at light.

*Material examined:* **MONA ISLAND.** 18°05.25N 67°56.40W. 6 Sept 2013. Ex. UV light. Segarra & Collazo. (2♀). **PUERTO RICO.** *Aguada:* Cerro Gordo. Aug 1987. R. Inglés. (♀); 3 Sept 1987. R. Inglés. (♀ 2♂); 7 Sept 1987. R. Inglés. (♀); *Cabo Rojo:* Boquerón. 18°00.66N 67°10.96W. 5-6 Sept 2011. Ex. Blacklight. A. Segarra. (5♀ 7♂); 18°00.66N 67°10.96W. 6 Sept 2011. Ex. Blacklight. A. Segarra. (11♀ 8♂); *Guánica:* 17°57.34N 66°51.71W. 15 Sept 2014. Ex. UV & MgVap. A. Segarra. (3♂); *Las Marias:* 2 Feb 2013. D. Martell. (♀); *Mayagüez:* Rosario. 22 Aug 1991. V. González. (2♂); 28 Aug 2014. R. Dávila. (♂); *Villalba:* 23 Oct 1999. E. Martínez. (♀).

***Ochrimnus (Ochrimnus) henryi*** Brailovsky (1982: 59). [Plate I. Fig. 1]

*Type locality:* Isla Magueyes-Parguera, Lajas, Puerto Rico

*Antillean & Caribbean distribution:* Recorded only from Puerto Rico.

*Host plants:* Unknown

*Remarks:* This medium-sized species (5 - 7 mm) is recognized by the black pronotal lobe with white anterior margins and posterior orange margins. Femora are unicolored. MEBT specimens examined all come from southwestern Puerto Rico. Nothing is known about its biology.

*Material examined:* **PUERTO RICO.** *Cabo Rojo:* 17°57.2N 67°11.9W. 12 Mar 2015. Ex. MgVap. H. Pérez & A. Segarra. (2♂); *Guánica:* Insular Forest. 6 Jul 1953. J. A. Ramos & J. Maldonado. (♀); Bosque Seco, (Guánica). 19 Dec 1987. R. Inglés. (♀).

***Ochrimnus (Ochrimnus) laevus*** Brailovsky (1982: 56).

*Type locality:* St Kitts.

*Antillean & Caribbean distribution:* Caicos; Hispaniola; Inagua, Providenciales, Puerto Rico, St. Kitts.

*Host plants:* Unknown.

*Remarks:* According to Brailovsky (1982), *O. laevus* shares its solid orange color of the posterior pronotal lobe with *O. collaris* (F.) but differs in its femora being unicolored.

*Material examined:* No specimens were found in MEBT, JAR, or INVCOL collections.

### *Ochrostomus* Stål

***Ochrostomus pulchellus*** (Fabricius, 1794: 159) [Plate I. Fig. 4].

*Lygaeus pulchellus* Fabricius

*Lygaeus* (*Ochrostomus*) *pulchellus* Stål

*Lygaeus* (*Craspeduchus*) *pulchellus* Barber

*Ochrostomus pulchellus* Slater

*Type locality:* St. Croix.

*Antillean & Caribbean distribution:* Abaco Cays, Andros, Bahamas, Beef Island, Cayman Brac, Cat Island, Cuba, Dominica, Grand Bahama, Grand Cayman, Guadeloupe, Hispaniola, Jamaica, Long Island, Little Cayman, Mayaguana, Mexico, Mona Island, Nevis, Panama, Puerto Rico, Rum Cay, West Caicos; Central and South America.

*Host plants:* According to Baranowski and Slater (2005), Maldonado-Capriles collected this species feeding on jackswitch, *Corchorus hirsutus* L. (Tiliaceae), in Puerto Rico. Baranowski and Slater (1975) found this species breeding in *Corchorus siliquosus* L., and also described its immature stages.

*Remarks:* First listed for Puerto Rico by Barber (1923). This medium-sized (5.5 - 7 mm) was portrayed by Wolcott (1948) as a "...*little black bug neatly and evenly margined in pale yellow, the lateral margins of the pronotum red . . .*", and abundantly present on jackswitch at the airport on Mona Island. Many MEBT specimens are from Mona Island, with several collected at light.

*Material examined.* **MONA ISLAND.** Sardinera. 18 Dec 1988. Ex. At Light. Segarra & Pantoja. (♀); 18°04.41N 67°51.69W. 3 Sept 2013. Ex. Sweeping vegetation. A. Segarra. (2♀ 2♂); 18°05.25N 67°56.40W. 6 Sept 2013. (♀ ♂); 18°05.24N 67°50.66W. 7 Sept 2013. Ex. Sweeping vegetation. Segarra & Collazo. (2♀ 2♂); 8 Sept 2013. Ex. Sweeping vegetation. A. Segarra. (♀). **PUERTO RICO.** *Aguadilla:* Base Ramey. 5 Oct 1991. V. González. (♂); *Cabo Rojo:* El Faro. 12 Sept 1987. R. Inglés. (2♀ 2♂); 7 May 1999. E. Martínez. (♀); 14 Oct 2013. G. Túa. (♂); 16 Oct 2013. G. Túa. (♀); 17°57.95N 67°10.74. 24 Dec 2014. Ex. Sweeping. A. Segarra. (2♀ 2♂); *Mayagüez:* 16 Apr 2010. E. Vélez. (♂); *Santa Isabel:* 16 Nov 1997. E. Correa. (♀); *Yauco:* 16 Sept 1997. E. Correa. (♂).

***Oncopeltus* Stål**

***Oncopeltus aulicus*** (Fabricius, 1775: 718) [Plate I. Fig. 5]

*Cimex aulicus* Fabricius

*Lygaeus aulicus* Fabricius

*Lygaeus (Oncopeltus) aulicus* Stål

*Oncopeltus (Erythrischius) aulicus* Stål

*Oncopeltus aulicus* Uhler

*Type locality*: "America". Guerin-Méneville (1857) first reports this species from Cuba, and Guadeloupe.

*Antillean & Caribbean distribution*: Abaco Cays, Antigua, Bahamas, Barbados, Berry Island, Bimini, Cuba, Culebra Island, Guadeloupe, Grand Cayman, Hispaniola, Jamaica, Martinique, Mona Island, New Providence, Puerto Rico, St. Barthelemy, St. Croix, St. John, St. Martin, St. Thomas, Tortola.

*Host plants*: The species breeds on *Asclepias curassavica* L. (Asclepiadaceae), but also has been collected on flowers of many other plants (Wolcott, 1936). According to Baranowski and Slater (2005), collection records are reported on *Gossypium* sp. (Malvaceae), *Moringa moringa* Small, *M. digifera* Lam, (Moringaceae), *Colubrina colubrina* Small, *C. ferruginosa* Brongn. (Rhamnaceae) and *Sarcostemma dausum* (Jacq.) (Apocynaceae).

*Remarks*: This is a larger sized (10 - 11 mm), crimson and black bug with a small white spot at the base of the membrane. According to Wolcott (1948) this species appears to be infrequently collected in Puerto Rico. MEBT specimens are all collected from Cabo Rojo and Mayagüez.

*Material Examined*: **PUERTO RICO**. *Cabo Rojo*: El Faro. 12 Sept 1987. R. Inglés. (♀);

*Mayagüez*: 1 Oct 1987. R. Inglés (♂).

***Oncopeltus fasciatus*** (Dallas 1852: 538) [Plate I., Fig.7]

*Lygaeus fasciatus* Dallas

*Oncopeltus fasciatus* Stål

*Type locality*: Americas.

*Antillean & Caribbean distribution*: Abaco, Antigua, Barbados, Berry Island, Bimini, Brazil, British Guiana, Colombia, Cuba, Culebra Island, Dominica, Grand Cayman, Grand Turk, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Mexico, Montserrat,

Nassau, Providenciales, Puerto Rico, Saba, St. Barthelemy, St. Croix, St. John, St. Martin, St. Thomas, St. Vincent, Tortola, Virgin Gorda; Canada to Argentina.

*Host plants:* A common species that feeds on pods and seed of milkweeds (Asclepiadaceae); e.g., *Calotropis procera* (Aiton) and *Asclepias curassavica* L.

*Remarks:* This larger-sized bug (11 - 13 mm) is perhaps the best known and most thoroughly studied member of the Lygaeoidea, with several thousands of publications covering detailed aspects of its biology, ecology, genetics, reproduction, physiology, and systematics (Blakley, 1980; Chaplin, 1973; O'Rourke, 1976; Root and Chaplin, 1976). Curiously, the species is not considered a pest, but its large size and ease of rearing have made this insect a popular subject of entomological research. This species was first reported from Puerto Rico by Gundlach (1893: 282), and it is found throughout the Western Hemisphere from Canada to Argentina. It is common wherever its main host plants are abundant, and it is often attracted to light.

*Material examined:* **PUERTO RICO.** *Adjuntas:* 24 Sept 2003. H. Garmos. (♂); *Cabo Rojo:* 17°58.96N 67°07.43W. 16. Feb. 2015. Ex. *Calotropis procera.* A. Segarra. (♂); *Isabela:* Río Guajataca. 12 Nov 1987. R. Inglés. (2♀); *Lares:* Acc No. 59-92. Mar 1952. E. Vargas. (♀); *Mayagüez:* 2 Sept 2003. A. Delgado. (♂); *Yauco:* 23 Feb 2013. L. Torres. (♀).

***Oncopeltus semilimbatus* Stål (1874:103) [Plate I. Fig. 6]**

*Type locality:* Brazil.

*Antillean & Caribbean distribution:* Antigua, Cuba, Grenada, Hispaniola, Honduras, Jamaica, Martinique, Mexico, Mona Island, St. Lucia, St. Vincent, Trinidad, Venezuela; Central and South America.

*Host plants:* Feeding habits similar to those of *O. fasciatus*.

*Remarks:* This large sized bug (11 - 13 mm) is only known locally from collections on the island of Mona and reported from there by Barber (1939) and by Ramos (1946). Three specimens are deposited at MEBT, all from Mona Island.

*Material Examined:* **MONA ISLAND.** April 1940. L. F. Martorell (2♀); 11-31 Aug 1944. B. A. Beatty. (♀).

**Spilostethus** Stål***Spilostethus pandurus*** (Scopoli, 1763: 126-127) [Plate I., Fig. 8].**New Record***Lygaeus civilis* Fabricius*Lygaeus pandurus* Horvath*Spilostethus pandurus* Oshanin*Type locality:* Europe*Antillean & Caribbean distribution:* Colombia, Puerto Rico. Apparently native of Southern Europe, Asia, Northern Africa; also, Australia and “Surinan” (sic) (Slater, 1964).*Host plants:* In Puerto Rico, immatures and adults have been collected from *Calotropis procera*. In its native lands, this species feeds on *Calotropis gigantea* (L.) (Apocynaceae), and on *Helianthus annuus* L. (Asteraceae).*Remarks:* The first record of this species in Puerto Rico is of a male collected by student Alexandra Delgado in the southern coastal town of Ponce on 19 July 2003 (Acc. No. MEBT-012981). Several specimens have been collected since, all from southern Puerto Rico. According to Sweet (2000a), *Spilostethus* Stål is an Old World genus with 24 species that apparently has its center of diversity in the Ethiopian region. This large species (13 - 14 mm) is considered of economic importance as a pest of sunflower, as well as a secondary pest of alfalfa, peanuts, sesame, sugarcane, citrus, grapes, and chickpeas (Awad et al., 2013; Sweet, 2000a; Vivas, 2012). This species was initially determined from our specimens by Edda Martínez, for which we are grateful.*Material Examined.* **PUERTO RICO.** *Cabo Rojo:* 17°58.96N 67°07.43W. 16 Feb 2015. Ex. *Calotropis procera*. A. Segarra. (♀ ♂); 25 Oct 2015. E. Rodríguez. (♀ ♂); 14 Nov 2015. J. Rivera. (2♂); *Ceiba:* 27 Oct 2015. I. Escalera. (♂); *Juana Díaz:* 13 Oct 2015. G. Reyes. (♀); *Mayagüez:* 19 Jul 2003. A. Delgado. (♂).Subfamily **Orsillinae** Stål

Members of the Orsillinae are relatively small, dull, yellowish brown bugs; often pubescent having a depressed area at the base of the pronotum, and impunctate hemelytra. Hind wings lack distinct subcostal vein. Orsillines occur worldwide, but many species occur on islands, where remarkable radiation seems to be common. Three tribes are represented here: Metrargini (*Xyonisius* spp.), Nysiini (*Nysius* spp.), and Orsillini (*Neortholomus* sp.).

***Xyonysius*** Ashlock & Lattin

***Xyonysius basalis*** (Dallas, 1852: 553) [Plate II, Fig. 9]

*Nysius basalis* Dallas

*Nysius inaequalis* Uhler (In Barber, 1939)

*Xyonysius basalis* Ashlock and Lattin

*Type locality*: Jamaica and Brazil.

*Antillean & Caribbean distribution*: Abaco, Antigua, Desecheo Island, Dominica, Costa Rica, Cuba, Desecheo Island, Florida, Grand Bahama; Guadeloupe, Hispaniola, Honduras, Jamaica, Little Cayman, Martinique, Mexico, Mona Island, Puerto Rico, Saba, St. Thomas, Tobago, Trinidad; Canada to Argentina.

*Host plants*: Unknown, but specimens have been collected from *Flaveria linealis* Lag. in Florida and from *Tridax procumbens* L. on Saba, both Asteraceae (Baranowski and Slater, 2005). Probably an Asteraceae herbivore.

*Remarks*: *Xyonysius basalis* was first reported from the islands of Desecheo and Mona by Barber (1923). Several records also refer to this species as *Nysius inaequalis* Uhler (e.g., Barber, 1939). This medium-sized bug (5 - 5.5 mm) appears to be the most common *Xyonysius* sp. in Puerto Rico.

*Material Examined*. **PUERTO RICO**. *Guayanilla*: Mogote Rd #2. 25 Sept 1987, R. Inglés; *Mayagüez*: Finca Alzamora 22 Nov 1991. V. González. (2♂).

***Xyonysius californicus*** (Stål, 1859: 242) [Plate II, Fig. 10]

*Nysius californicus* Stål

*Xyonysius californicus* Ashlock and Lattin

*Type locality*: California (San Francisco)

*Antillean & Caribbean distribution*: Anguilla, Antigua, Barbados, Cayman Brac, Cuba, Grand Cayman, Grenada, Hispaniola, Jamaica, Little Cayman, Montserrat, Nevis, Puerto Rico, Saba, St. Kitts, St. Lucia and Virgin Gorda.

*Host plants*: Various Asteraceae (Baranowski and Slater, 2005).

*Remarks*: *X. californicus* was first reported from Puerto Rico by Maldonado-Capriles and Navarro (1967) as *Nysius californicus* from specimens collected from Ponce by Maldonado-Capriles in 1945. Schaefer (1998) describes members of *Xyonysius* as occasional pests of sunflowers (*Helianthus annuus*) (Asteraceae). This medium-sized species (6 - 7 mm) is frequently collected during vegetation sweeps.



*Material Examined.* **PUERTO RICO.** *Cabo Rojo*: 8 Aug 1945. Ex. At. Light. J.A. Ramos. (♀, JAR); *Mayagüez*: 18°13.10N 67°08.87W. 17-18. Feb 2016. Ex. Malaise trap. A. Segarra. (♀); *Ponce*: 2 Jul 1945. S.W. (♀JAR).

*Nysius* Dallas

*Nysius raphanus* Howard (1872: 507 & *Can. Entomol.* 4: 219-220) [Plate II, Fig. 11]

*Nysius raphanus* Howard

*Nysius strigosus* Wolcott (1936); Barber (1939)

*Type locality*: Kansas, USA.

*Antillean & Caribbean distribution*: Anguilla, Antigua, Cuba, Dominica, Grand Cayman, Guadeloupe, Hispaniola, Martinique, Mona Island, Tobago, Trinidad, Virgin Gorda; Mexico and Southern USA.

*Host plants*: Reported by Howard (1872) feeding on radishes and other Brassicaceae. In Florida, breeding populations have been found in *Gamochaeta purpurea* (L.) and the species has also been found on *Baccharis neglecta* Britton in Texas, both Asteraceae (Baranowski and Slater, 2005).

*Remarks*: This small bug (4 - 4.5 mm) appears to be a common temperate and tropical species. Reported by Wolcott (1936) and by Barber (1939) as *N. strigosus* Uhler. Most specimens in MEBT have been collected by sweeping vegetation.

*Material Examined.* **PUERTO RICO.** *Coamo*: 18°02.3N 66°22.5W. 7 Oct 2014. Ex. Sweeping grasses. A. Segarra. (2♀); *Lajas*: 18°01.49N 67°04.28W. 30 May 2006. Ex. Sweeping. A. Segarra. (3♂ 4♀).

*Nysius scutellatus* Dallas (1852: 553) [Plate II, Figure 12]

*Nysius scutellatus* Dallas

*Nysius ericae* (Schilling) (In Barber, 1923, 1939; Wolcott, 1948)

*Type locality*: Jamaica

*Antillean & Caribbean distribution*: Antigua, Barbados, Cayman Brac, Dominica, Exuma Cays, Grand Cayman, Grand Bahama Island, Guadeloupe, Mona Island, Puerto Rico, St. Croix, St. Lucia, St. Martin, St. Thomas, South Bimini; Southern USA.

*Host plants*: Unknown.

*Remarks*: This small species (4 - 4.5 mm) was first reported in Puerto Rico by Barber (1923) as *N. ericae* (Schilling). Barber (1939) remarks that this species was perhaps *N. scutellatus*, given its similarities and the fact that *N. ericae* had been described from Europe.

*Material Examined*. **MONA ISLAND**. Apr 1935. AMC Exp. (♀); 20 Aug 1944. J.A. Ferrer. (2♀ ♂); **PUERTO RICO**. *Cabo Rojo*: 17°56.2N 67°11.7W. 24 Oct 2014. Ex.

*Sweeping grasses*. Segarra & Pérez. (♀); *Coamo*: 18°02.3N 66°22.5W. 7 Oct 2014. Ex. *Sweeping grasses*. A. Segarra. (♀); *Fajardo*: 6 Jan 1944. M. Pérez.; *Lajas*: 18°00.61N 67°06.54W. 17 Oct 2015. Ex. Mg vapor lamp. A. Segarra. (♂); *Mayagüez*: Feb 1941. E. Cintrón. (♂); 14 Mar 1944. L. Soltero. (♀); 11 Mar 2010. E. Vélez. (♂); *Salinas*: 7 Apr 1939. J.A. Ramos. (♀).

***Nysius tenellus*** Barber (1947: 361) [Plate II, Fig. 13]

*Nysius strigosus* Uhler (In Barber, 1939)

*Type locality*: Santa Clara, California. USA.

*Antillean & Caribbean distribution*: Antigua, Dominica, Grand Cayman, Guadeloupe, Hispaniola, Jamaica, Mona Island, Puerto Rico, St. Martin; North and Central America.

*Host plants*: Baranowski and Slater (2005) report that this species has been associated with a wide range of host plants, predominantly Asteraceae: *Conyza bonariensis* (L.), *Eupatorun* sp., *Helianthus* sp., *Erigeron* sp., *Artemisia* sp., and *Pluchea* sp.

*Remarks*: This small species (4 - 4.5 mm) was first reported by Wolcott (1936) as *N. strigosus* from specimens collected in San Juan (Punta Cangrejos) on *Pluchea odorata* (L.) Cass. (referred by Wolcott as *Pluchea purpurascens*) (Asteraceae). This same specimen is mentioned by Barber (1947).

*Material Examined*. **HAITI**. *Kenscoff*. 20 Jun 1938. J. A. Ramos. (2♀). **PUERTO RICO**. *Mayagüez*. Finca Alzamora. Nov. 22, 1991. V. González (♂).

### ***Neortholomus*** Hamilton

***Neortholomus jamaicensis*** (Dallas, 1852: 555) [Plate II, Fig. 14]

*Type locality*: Jamaica.

*Antillean & Caribbean distribution:* Anguilla, Antigua, Barbados, Cuba, Dominica, Grand Cayman, Guadeloupe, Hispaniola, Jamaica, Martinique, Mona Island, Montserrat, Puerto Rico, St. Croix, St. Lucia, St. Vincent, Trinidad, Vieques Island, Virgin Gorda; Central and South America.

*Host plants:* Wolcott (1936) reports this species as collected from “milk-weeds”, and later Wolcott (1948) reports a collection from *Hyptis pectinata* (L.) Poit. (Lamiaceae). Baranowski and Slater (2005) report collection from a large variety of host plant families, although most records do not indicate actual breeding potential, such as the presence of immatures.

*Remarks:* This small bug (5 - 5.5 mm) was first reported from Puerto Rico by Barber (1923) as *Ortholomus jamaicensis* Dallas from specimens collected in San Juan in 1912. This species is also common in sweeping samples and has been collected from coastal as well as mountain locations.

*Material Examined.* **PUERTO RICO.** *Jayuya:* 18°10.34N 66°35.81W. 3 Sep 2014. *Ex. Sweeping.* A. Segarra. (♀); *Lajas:* 18°01.49N 67°04.28W. 30 May 2006. *Ex. Sweeping.* A. Segarra. (2♀); *Maricao:* 18°09.69N 66°51.76W. 3 Sep 2014. *Ex. Sweeping.* A. Segarra. (♀).

#### FAMILY CYMIDAE BAERENSPRUNG

Cymids are small (<5 mm), dull testaceous to reddish brown, elliptical, and coarsely punctate bugs. Abdominal spiracles 2 to 6 are dorsal, but usually ventral in segment 7. Ocelli are almost encircled by a groove; the first antennal segment is short, stout and barrel-shaped; and the short buccula not extending posteriorly beyond the level with the bases of the antennae. Little is known of their biology or natural history. Only one species is represented in the Caribbean.

#### *Cymodema* Spinola

*Cymodema breviceps* (Stål, 1874: 127) [Plate II, Fig. 16]

*Cymus breviceps* Stål

*Cymus virescens* Stål (as *C. virescens* F. in Barber, 1923, 1924b; Wolcott 1948).

*Cymodema breviceps* Hamid

*Type locality:* Texas and “Carolina meridionalis” USA

*Antillean & Caribbean distribution:* Dominica, Cuba, Grand Cayman, Guadeloupe, Hispaniola, Martinique, Nassau, Puerto Rico,

Saba, St. Lucia, St. Martin, St. Thomas, St. Vincent, Trinidad; North, Central and South America.

*Host plants*: No host plants are recorded from Puerto Rico. Wolcott (1936) mentions a collection on mangrove, which likely represents a transient visitor. Baranowski and Slater (2005) found nymphs and adults feeding on foxtail flat sedge *Cyperus alopecuroides* Rottb. (Cyperaceae) on Martinique.

*Remarks*: This small bug (3.5 - 4 mm) was first reported in Puerto Rico by Barber (1923) as *Cymus virescens* (F.) from specimens collected from Añasco in 1917, and Slater (1963) describes this species' 5<sup>th</sup> instar. All collections of this species in Puerto Rico appear to be from coastal areas.

*Material Examined*. **PUERTO RICO**. Ponce: 14 May 1945. L.T. (♂, JAR); 10 Jul 1946. L.T. (♂, JAR).

#### FAMILY NINIDAE BARBER

Closely related to Cymids, the Ninidae are small bugs (<4.0 mm), with impunctate hemelytra; broad head; usually substylate eyes; vertex wider than anterior width of pronotum; scutellum with bifid apex; and with hyaline, basally constricted hemelytra. According to Henry et al. (2015) the head and pronotum of several taxa are coated with a powdery white residue (e.g., *Neoninus* Distant). Only one species is reported from Puerto Rico.

#### *Cymoninus* Breddin

*Cymoninus notabilis* (Distant, 1882: 191) [Plate III. Fig. 17]

*Ninus notabilis* Distant

*Cymoninus notabilis* Van Duzee

*Cymoninus notabilis* Barber

*Type locality*: Guatemala.

*Antillean & Caribbean distribution*: Antigua, Barbados, Cayman Brac, Cuba, Dominica, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Mona Island, Saba, San Salvador, St. Lucia, St. Thomas, St. Vincent, Tobago, Trinidad. North, Central and South America.

*Host plants*: No host plant records from Puerto Rico. Baranowski and Slater (2005) record several on *Cyperus* spp. (Cyperaceae) in Martinique, Dominica, and Jamaica. Although apparently specializing on Cyperaceae, this species is an occasional

pest of rice (*Oryza sativa*) (Poaceae) in southern Brazil (Alburquerque, 1991).

*Remarks:* This species can be readily identified by its small size (2.5 - 3 mm), impunctate hemelytra and its hyaline corium to translucent beyond its constricted base. *Cymoninus notabilis* is also among those species listed by Barber (1923) from specimens collected in Coamo Springs in 1914.

*Material Examined.* **PUERTO RICO.** *Coamo:* 18°02.3N 66°22.5W. 7 Oct 2014. Ex. *Sweeping grasses.* A. Segarra. (♂); *Mayagüez:* Jan 1937. J. A. Ramos (♀, JAR); 3 Jun 1946. J. A. Ramos (♂, JAR); 18°13.10N 67°08.87W. 3-4 Feb 2016. Ex. *Malaise Trap.* A. Brau & G. Báez. (♂).

### FAMILY BLISSIDAE STÅL

The Blissidae, also known as chinch bugs, are probably the most economically important group of Lygaeoidea (Sweet, 2000a). Chinch bugs are sap suckers, specialized in monocotyledonous host plants. According to (Sweet, 2000a) chinch bugs are among the most important pests of grasses (Poaceae), including barley, corn (maize), millets, oats, rice, rye, sorghum, forage grasses and wheat.

Blissids range in size from less than 3 mm to more than 15 mm; have elongate to broadly oval forms, often with flattened bodies to access between leaf sheaths of their host plants. Commonly their head and pronotum are covered in fine powder (i.e., pruinose). Blissids range from fully winged macropterous form to short winged (brachypterous) form, the latter having only remnant wing pads. *Blissus* Burmeister and *Ischnodemus* Fieber, both from subfamily Blissinae, are the only two genera represented in Puerto Rico. *Patritius* Distant and *Toonglasa* Distant, two other genera, occur in the Caribbean but have not been reported from here.

### *Key to the Blissidae of Puerto Rico*

- 1. Fore coxal cavities posteriorly open, body short . . . *Blissus antillus*.
- 1'. Fore coxal cavities posteriorly closed, body elongate . . . . . 2.
- 2. Membrane with a large black macula . . . *Ischnodemus variegatus*.
- 2'. Membrane smoky dark without a large black macula . . . . .  
. . . . . *Ischnodemus sallei*.

**Subfamily Blissinae Stål*****Blissus* Burmeister*****Blissus antillus*** Leonard (1968b: 152) [Plate III, Fig. 18]*Blissus leucopterus* var. *insularis* Barber (1918: 38) (in Wolcott, 1948)*Blissus leucopterus* (Say) (in Barber, 1939)*Blissus antillus* Leonard*Type locality*: Mayagüez, Puerto Rico.*Antillean & Caribbean distribution*: Antigua, Cayman Brac, Cuba, Dominica, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Montserrat, Puerto Rico, Providenciales, St. Barthelemy, St. Croix, St. Lucia, St. Vincent, Tobago, Trinidad, Vieques Island, Virgin Gorda; Neotropical.*Host plants*: A common pest of Poaceae including turf, sugarcane and several fodder grasses (such as guinea grass *Urochloa maxima* (Jacq.) and malojillo *Eriochloa polystachya* Kurth). Leonard (1968a) reports this species as a serious pest of Java grass *Polytrias indica* (Houtt.) in Puerto Rico.*Remarks*: First listed by Barber (1923) as *B. leucopterus* (Say), this small species (3.0 mm) has been recognized as an important pest of Poaceae. According to Leonard (1968b), this species appears to be particularly close to *B. insularis* (another member of the “*leucopterus*” complex), which was a commonly used junior synonym for *B. antillus* in early literature. Populations of this species in Puerto Rico commonly reach damaging levels on lawns and pastures, especially during rainy and hot summer periods. Cattle and dairy farmers, who usually use field forages for feed production, frequently complain about serious damage from the species. Unfortunately, no further economical or biological studies have been conducted on this important species in Puerto Rico.*Material Examined*. **PUERTO RICO**. *Aguadilla*: 5 Oct 1991. V. González. (♀); 18°29.314N 67°09.570W. 10 Oct 2014. *Ex. Sweeping* grasses. González & Pérez. (♂ ♀); *Coamo*: 18°02.3N 66°22.5W. 7 Oct 2014. *Ex. Sweeping* grasses. A. Segarra. (♀); *Isabela*: 18°30.755N 67°05.841W. 10 Oct 2014. *Ex. Sweeping* grasses. González & Pérez. (8♂9♀); *Lajas*: Cartagena Lagoon. 18°00.81N 67°05.33W. 7 Nov 2006. *Ex. Sweeping*. A. Segarra.

(3 ♀); 18°04.8N 67°06.5W. 31 Aug 2014. *Ex. Sweeping* vegetation. A. Segarra. (♀); *Mayagüez*: 12 Oct 1991. V. González. (♂); 19 Apr 2014. E. Pérez. (♂).

***Ischnodemus* Fieber**

***Ischnodemus sallei*** (Signoret, 1857: 25) [Plate III, Fig. 19]  
*Cimex fulvipes* De Geer (1773: 355) (preoccupied)  
*Micropus sallei* Signoret  
*Ischnodemus sallei* Stål

*Type locality*: Mexico.

*Antillean & Caribbean distribution*: Cuba, Hispaniola Jamaica, Puerto Rico, Trinidad; North, Central and South America.

*Host plants*: None reported from Puerto Rico. *Canna indica* L. (Cannaceae), *Thalia geniculata* L. (Maranthaceae), *Musa paradisiaca* L. (Musaceae) have been reported by Slater and Wilcox (1969) as host plants.

*Remarks*: This medium-sized species (7 - 8 mm) was first reported in Puerto Rico by Wolcott (1936), from specimens collected from Orocovis (then called 'Barros' in 1930. The species does not appear to be commonly collected.

*Material Examined*. **PUERTO RICO**. *Orocovis*: 12 Oct 1930. C.G. Salazar. (♂ ♀, JAR); *Río Piedras*: Nov 1931. Blasina. (♀, JAR).

***Ischnodemus variegatus*** (Signoret, 1857: 26) [Plate III, Fig. 20].  
**New Record.**

*Micropus variegatus* Signoret (1857: 26)  
*Ischnodemus variegatus* Stål

*Type locality*: Colombia ("Nouvelle Grenade").

*Antillean & Caribbean distribution*: Colombia, Hispaniola, Puerto Rico, Trinidad; Central and South America.

*Host plants*: Díaz et al. (2009) report all stages of *I. variegatus* on West Indian marsh grass, *Hymenachne amplexicaulis* Rudge (Nees) (Poaceae).

*Remarks*: This is a newly recorded species for this genus for Puerto Rico. Specimens collected from Río Piedras in 1997 seem to be the earliest records of this species on the island. This member of the genus in Puerto Rico is medium-sized (6.5 - 7.5 mm).



*Material Examined.* **PUERTO RICO.** *Mayagüez:* Miradero. 15 Oct 2013. C.A. Negrón. (♀); *Río Piedras:* 7 Nov 1997. P. Arce. (♂); 7 Nov 1997. C. Fernández. (♂); 7 Nov 1997. S.M. Colón. (♀).

### FAMILY GEOCORIDAE BAERENSPRUNG

Geocorids are easily recognized for having broad heads, with kidney-shaped (reniform) eyes that extend laterally beyond the anterior pronotal margins. Bodies are usually small (2 - 4 mm), stout and ovoid, but in the Pamphantinae, some forms are ant-like. Abdominal sutures between tergites 4 and 5, and between 5 and 6 are posteriorly curved; spiracles on segments II, III, and IV are dorsal, and those on segments V, VI, and VII usually are ventral in most members (Henry et al., 2015).

Most Geocoridae are predaceous, although they usually also feed on plant seeds and foliage, especially as early instars (Sweet, 1960). According to Sweet (2000b), geocorids have complex nutritional needs and require plant food for their best development. Nonetheless, their importance as biological control agents is well documented. The family includes well-known biological control agents belonging to the genus *Geocoris* Fallen that are ubiquitous in tropical and temperate agroecosystems. These are the so-called “big-eyed bugs”, aptly named for their large kidney-shaped eyes. The family also includes the Neotropical genus *Ninyas* Distant, which are small-sized bugs (3.0 - 3.5 mm), with polished bodies, and with a distinctly West Indian distribution (Brailovsky, 2013).

#### *Key to the Geocoridae of Puerto Rico.* (Modified from Baranowski and Slater, 2005)

1. Sutures on abdominal sterna II, III, and IV fused and without lateral trichobothria; body elongate, antlike (Pamphantinae) . . . . .  
   . . . . . *Pamphantus pellucidus*.
- 1'. Sutures on abdominal sterna II, III, and IV entire and with distinct, lateral trichobothria; body stouter, not antlike (Geocorinae) . . 2.
- 2 (1). Claval commissure present and well developed; basal 3 sterna not fused; tylus with no complete sulcus (*Ninyas* spp.) . . . . . 3.
- 2'. Claval commissure absent; basal 3 sterna, fused; tylus with a complete median sulcus (*Geocoris* spp.) . . . . . 5.
- 3 (2). Head basally with black behind eyes . . . . . *Ninyas strabo*.
- 3'. Head basally completely pale behind eyes . . . . . 4.

- 4 (3). Posterior pronotal angle without brown macula . . . . *N. obrieni*.
- 4'. Posterior pronotal angle with brown macula; Size > 3.6 mm . . . . .  
 . . . . . *N. deficiens*.
- 5 (2'). Head smooth, shining; tylus with fine longitudinal sulcus extending well into vertex . . . . . *Geocoris punctipes*.
- 5'. Head granulose or rugose; tylar sulcus not extending on vertex . . 6.
- 6 (5). Pronotum dark; corium black or dark chocolate . . . *G. uliginosus*.
- 6'. Pronotum pale with some dark areas mesally; corium bicolored . . .  
 . . . . . *G. thoracicus*.

**SUBFAMILY PAMPHANTINAE BARBER & BRUNER**

***Pamphantus* Stål**

***Pamphantus pellucidus*** Slater (1956: 50-52).

*Type locality:* Puerto Rico.

*Antillean & Caribbean distribution:* Recorded only from Puerto Rico

*Prey species:* Unknown.

*Remarks:* The species is the sole pamphantine recorded from Puerto Rico thus far and is known only from two males: a macropterous male collected from El Yunque in 1938 by Darlington, and a brachypterous male collected in Ensenada (Guánica) in 1915. Slater (1956) placed this species in *Pamphatus* with some hesitation, suggesting that the non-spinous fore femora, and the presence of a median carinal vertex were suggestive of *Parapamphantus* Barber. Recently, Henry (2013) described a new pamphantine genus from the neighboring British Virgin Islands (*Cymapamphantus valentineorum*), opening the possibility of additional endemics within the Puerto Rican Bank.

*Material Examined.* No specimens were found in MEBT, JAR, or INVCOL.

**Subfamily Geocorinae Stål**

***Geocoris* Fallen**

***Geocoris punctipes*** (Say, 1831: p. 781 in Fitch). [Plate III. Fig. 21].

*Salda bullata* var *punctipes* Say

*Ophthalmicus punctipes* Glover

*Geocoris punctipes* Uhler

*Type locality*: United States.

*Antillean & Caribbean distribution*: Abaco Cays, Cayman Brac, Cuba, Eleuthera, Grand Bahama, Grand Cayman, Hispaniola, Inagua, Jamaica, Puerto Rico.

*Host species*: Generalist predator of mites and small insects; North, Central and South America.

*Remarks*: This is the common big-eyed bug usually found in North America, a species commonly valued as a biological control agent of many horticultural pests. An excellent account of its life history is given in Champlain and Sholdt (1967). This species was first reported here by Baranowski and Slater (2005) from a specimen collected at the Juana Díaz Agricultural Experiment Substation by F.D. Bennett in 1990. It appears to be an uncommon species in Puerto Rico.

*Material Examined*. **PUERTO RICO**. *Lajas*: 18°01.93N 67°04.32W. 20 Apr 2008. Ex. Sweeping. A. Segarra (♂).

***Geocoris thoracicus*** (Fieber, 1861: 281). [Plate III. Fig. 22].

*Ophthalmicus thoracicus* Fieber

*Geocoris lividipennis* Barber (1923) (also in Wolcott, 1936)

*Geocoris thoracicus* Stål (in Wolcott, 1948).

*Type locality*: Venezuela. Fieber (1861) mentions "La Guayres" as the collecting location, which could stand for La Guaira in Venezuela.

*Antillean & Caribbean distribution*: Anguilla, Bonaire, Jamaica, Puerto Rico, Mona Island; North, Central and South America.

*Host species*: No records are available, but presumably this species is also a small insect and mite predator.

*Remarks*: This species was first listed by Barber (1923) as *G. lividipennis* Stål from specimens collected in 1914 in San Juan. Ramos (1946) reports collections of this species on Mona Island.

*Material Examined*. **MONA ISLAND**. (Plateau) 20 Jul 1944. JA. Ferrer. (♀ JAR); (Uvero Beach) 11-31 Aug 1944. H. Beatty.

***Geocoris uliginosus*** (Say, 1831: 337). [Plate III. Fig. 23]. **New Record**.

*Type locality*: United States.

*Antillean & Caribbean distribution*: Cuba, Puerto Rico.

*Host species:* No records are available from Puerto Rico, but presumably this species is also a small insect and mite predator.

*Remarks:* A new record for Puerto Rico, this is a dark black species with transparent membrane, easily distinguished from its much paler congeners. This species feeds on a wide range of pest insects across many host plants (e.g., chinch bugs *Blissus* sp.), and sometimes engages in herbivory, intraguild predation, and scavenging. (Sweet, 2000b; Wheeler and Chong, 2012). According to Readio and Sweet (1982), *G. uliginosus* is associated with disturbed habitats in southern United States, especially abundant in shaded and moist situations. This species is common in Florida (Mead, 2001).

*Material Examined.* **PUERTO RICO.** *Cabo Rojo:* 18°02.38N 67°10.59W. 5 Jun 2006. Ex. light. A. Segarra. (♂); *Coamo:* 18°02.3N 66°2.5W. 7 Oct 2014. Ex. *Sweeping* grasses. A. Segarra. (♀).

### *Ninyas* Distant

*Ninyas deficiens* (Lethierry, 1881:9) [Plate III. Fig. 24]

*Geocoris deficiens* Lethierry  
*Ninyas deficiens* Montandon

*Type locality:* Guadeloupe

*Antillean & Caribbean distribution:* Dominica, Grenada, Guadeloupe, Hispaniola, Jamaica, Puerto Rico, St. Lucia.

*Host species:* Unknown but presumed omnivorous.

*Remarks:* Local collection records indicate that members of this genus prefer mountainous areas and more pristine upland habitats. The senior author has collected them by beating citrus trees growing above 400 m in western Puerto Rico. All records of this species at MEBT correspond to collections in mountainous areas.

*Material Examined.* **PUERTO RICO.** *Maricao:* 18°09.45N 66°59.93W. 14 Nov 2006. Ex. *Sweeping.* A. Segarra. (♀); 23 Mar 2009. Ex. *Sweeping.* A. Segarra. (♀); *Las Marias:* 18°12.50N 66°58.47W. 24 Mar 2009. Ex. citrus. A. Segarra. (♀).

*Ninyas obrieni* Baranowski (Baranowsky and Slater, 2005: 71) [Plate IV. Fig 25].

*Type locality:* Puerto Rico.

*Antillean & Caribbean distribution:* Recorded only from Puerto Rico.

*Host species:* Unknown.

*Remarks:* This species was described by Baranowski from a female collected from Mt. Britton at El Yunque National Forest in 1999 by Charles O'Brian. We examined two males that were collected by José A. Ramos in Villalba in 1952, and an additional female specimen collected by the senior author in Jayuya in 2015. This species is collected mostly within the mountain regions of Puerto Rico.

*Material Examined.* **PUERTO RICO.** *Jayuya:* 18°11.18N 66°29.61W. 19 Mar 2015. Ex. *Sweeping.* A. Segarra. (♀); *Villalba:* 3 Nov 1952. J.A. Ramos. (2♂, JAR).

***Ninyas strabo*** Distant (1882: 194-195) [Plate IV. Fig 26]

*Ninyas deficiens* Lethierry (in Barber, 1923, 1939; Wolcott, 1936, 1948)

*Type locality:* Panama, Volcán de Chiriquí, 770-1230 meter (2500-4000 feet)

*Antillean & Caribbean distribution:* Dominica, Grenada, Hispaniola, Jamaica, Puerto Rico; Central America.

*Prey species:* Unknown

*Remarks:* According to Baranowski and Slater (2005), this species was most likely referred to as *N. deficiens* Lethierry in early Puerto Rican literature (i.e., Barber, 1923, 1939; Wolcott, 1936, 1948). Specimens have been collected from *Vernonia acuminata* DC in Jamaica, and a male was collected by the senior author on *Myrsine coriacea* (Sw.) R. Br. ex Roem. & Schult (Primulaceae) in Jayuya, Puerto Rico.

*Material Examined.* **PUERTO RICO.** *Jayuya:* 18°10.06N 66°34.62W. 19 Mar 2015. Ex. *Myrsine coriacea.* A. Segarra. (♂).

#### FAMILY OXYCARENIDAE STÅL

According to Henry et al. (2015) oxycarenid bugs are recognized by a combination of characteristics: porrect and punctate head; hyaline hemelytra; abdominal spiracles III to VII ventral and II dorsal; absence of lateral trichobothria on sterna III, IV, and V; median trichobothrium on sternum V; abdominal sutures reaching lateral margins (segments III, IV, and V often fused); truncate female abdomen; and a transverse comb of glandular setae on the male abdomen. This family is cosmopolitan and believed native to the Old World. The large Old World ge-

nus *Oxycarenum* Costa is now represented in the New World by the introduced *O. hyalinipennis* (Costa), a pest of cotton. This species, first detected in Brazil in 1917, is now known to occur in much of South America and the West Indies (Slater and Baranowski, 1994).

### *Oxycarenum* Fieber

***Oxycarenum hyalinipennis*** (Costa, 1847: 45) [Plate IV. Fig. 27]

*Aphanus tardus* var. *hyalinipennis* Costa

*Aphanus hyalinipennis* Costa

*Cymus cincticornis* Walker

*Oxycarenum cruralis* Stål

*Oxycarenum leucopterus* Fieber

*Oxycarenum hyalinipennis* Costa

*Type locality*: Old World tropics.

*Antillean & Caribbean distribution*: Caiman Brac, Cuba, Hispaniola, Inagua, Little Cayman, Long Key, North Caicos, St. Croix, St. Thomas; Cosmopolitan.

*Host plants*: Malvaceae and others; e.g., *Gossypium* sp. (Samy, 1969).

*Remarks*: This small insect (3 mm), sometimes called “the dusky cotton stainer bug”, was found in Puerto Rico in January 2010, and also on the islands of St. Croix and St. Thomas in the U.S. Virgin Islands in April of the same year (APHIS, 2010). *Oxycarenum* Costa is a large Palearctic genus, represented in the New World by the introduced *O. hyalinipennis*. This species is a pest of cotton and was first detected in the Americas as early as 1917 in Brazil. Currently, the species is known to occur throughout much of South America and the West Indies (Slater and Baranowski, 1994).

*Material Examined*: **PUERTO RICO**. *Cabo Rojo*: Combate: 17°58.3N 67°12.7W.24 Oct 2014. Ex. Sweeping grasses. Segarra & Pérez. (♂).

### FAMILY PACHYGRONTHIDAE STÅL

Like other members of Lygaeoidea, pachygronthids predominantly feed on seeds, preferring those of sedges (Cyperaceae), but are also known to feed on seeds of Poaceae and Juncaceae (Henry et al., 2015). None are known as pests. Pachygronthids are separated into two subfamilies, the Pachygronthinae and the Teracriinae (Slater, 1955; Henry et al., 2015). Pachygronthines are distinguished by having elongate bodies, powerful thickened (incrassate) spines in fore femora, and a long first antennal segment. Teracriines, which are largely Palearctic, are stout bodied and

have shorter antennae (Henry, 1997a). Both taxa have heavy incrassate fore femora and ventrally placed abdominal spiracles (Baranowski and Slater, 2005). Two pachygronthines occur in Puerto Rico, while only one teracriine species is present in other parts of the Caribbean as reported in Baranowski and Salter (2005) (i.e., *Phlegyas* sp. Uhler from Trinidad).

***Key to the Pachygronthidae of Puerto Rico (Adapted from Baranowski and Slater, 2005; and Henry et al., 2015)***

1. First antennomere not reaching apex of tylus, and always shorter than succeeding segments (Teracriinae) . . . . .  
 . . . . . *Phlegyas* Stål (not known from Puerto Rico).
- 1'. First antennomere greatly exceeding apex of tylus, usually as long as other segments (II–IV), and frequently longer (Pachygronthinae) . . . . . 2
2. Eyes as wide or wider than long; distance between base of the antenna and anterior margin of eye as long as, or longer than, length of eye; First segment clavate; antennal segment IV shorter than either segment II or III . . . . . *Pachygrontha compacta*.
- 2' Eye longer than wide; distance between base of antenna and anterior margin of eye less than length of eye; antennal segment I progressively swollen to apex; last segment longer than segment II or III. . . . . *Oedancala bimaculata*.

**Subfamily Pachygronthinae Stål**

Members of this subfamily are elongate insects, with stout bodies and incrassate fore femora. All abdominal spiracles are ventral. Most members appear tropical in origin. Slater (1975) reviewed the pachygronthines of the West Indies.

***Oedancala* Amyot & Serville**

***Oedancala bimaculata*** (Distant, 1893: 393) [Plate IV. Fig 28]

*Pachygrontha bimaculata* Distant

*Oedancala cubana* Stål (in Gundlach, 1893)

*Oedancala bimaculata* Barber

*Type locality*: Panama, Volcán del Chiriquí.

*Antillean & Caribbean distribution*: Cuba, Dominica, Grenada, Hispaniola, Jamaica, Puerto Rico, Trinidad, Mexico, Central and South America.



*Host plants:* Cyperaceae, being reported on *Rhynchospora holoschoenoides* (Rich.) Herter, *Eleocharis geniculata* (L.) Roem. & Schult., *Scleria* sp., and *Fimbristylis littoralis* Gaudich in Trinidad by Baranowski and Slater (1982).

*Remarks:* This bug was also reported by Barber (1939) from a specimen collected by Dr. S. Danforth in 1927 from Mayagüez. This mid-sized species (6 - 6.5 mm) was probably misidentified by Gundlach (1893) as its Cuban congener *O. cubana* Stål. These two species can be told apart by the relative length of antennal segment II, which in *O. cubana* is longer than the combined lengths of segments II + III, and much longer than the pronotum (Baranowski and Slater, 2005). All MEBT specimens examined are *O. bimaculata* from Mayagüez collected by Ramos in 1946 and 1955.

*Material Examined.* **PUERTO RICO.** Mayagüez: 6 Jun 1946. J.A. Ramos (2♂ JAR); 3 Jun 1946. J.A. Ramos (♂); 3-4 Aug 1955. Ex. At light. J.A. Ramos (♂ 2♀ JAR).

### *Pachygrontha* Genmar

*Pachygrontha compacta* Distant, 1893: 393.

*Type locality:* Guatemala; Panama.

*Antillean & Caribbean distribution:* Cuba, Dominica, Grenada, Hispaniola, Jamaica, Mona Island, Trinidad.

*Host plants:* Baranowski and Slater (1982) suggest that this pachygrontid is probably a specialist of *Cyperus* spp. (Cyperaceae), a hypothesis derived from observing breeding populations collected in Trinidad from *Cyperus rotundus* L., *C. surinamensis* Rottb., *C. polystachyos* Rott, *C. planifolius* Rich and *C. ligularis* L. Other collections have included specimens of *Scleria gaertneri* Raddi [as *S. melaleuca* in Baranowski and Slater (2005)], and *Rhynchospora corymbosa* (L.) Britton. All these sedges occur in Puerto Rico.

*Remarks:* First reported as *Pachygrontha parvula* by Barber (1939) from Mona Island. No records exist of this species from the main island of Puerto Rico. No specimens were found in our collections, and none were examined.

### **FAMILY RHYPAROCHROMIDAE AMYOT & SERVILLE**

Rhyparochromids are the largest and most complex family in Lygaeoidea. Over 2,000 species in 14 tribes are known in the Neotropical fau-

na, and these comprise about half of the world's known species (Henry et al., 2015). Most of its species have been depicted as somber-colored insects, marked with subtle coloration patterns of brown, black, pale yellow, or white (Baranowski and Slater, 2005). The unassuming or muted coloration, which appears adequate to their habits near the soil, has led to their name of "dirt-colored" seed bugs (greek: "*rhyparos*" = dirt or filth; "*chromos*" = colored).

According to Henry et al. (2015), rhyparochromids have a broad range of feeding habits. Most species are seed feeders, some live on the ground feeding on fallen seeds, while others climb vegetation when mature seeds are available. Some species live on weedy vegetation, while others live in forests canopies. Oddly, members of tribe Cleradini feed on vertebrate blood, and are the exception to their normal seed-feeding habits. One interesting feature of some rhyparochromids is that they are ant mimics, or myrmecomorphic. Adults, and especially nymphs, of some members of *Neopamera* Harrington, *Pseudopachybrachius* Malipatil, and *Heraeus* Stål appear to mimic ants even with their movements (Henry et al., 2015).

Henry's (1997a) highlights that the family is distinguished by the presence of head trichobothria, and that it contains two subfamilies: the Plinthisinae, a small group of Palearctic and Oriental distribution, and the more cosmopolitan Rhyparochrominae. Most rhyparochromids are distinguished by having abdominal suture IV–V abbreviated and not reaching the dorsal margin of abdomen. Only members of the Rhyparochrominae are reported from the Caribbean, with tribes represented (i.e., Antilocorini, Cleradini, Lethaeini, Ozophorini, Myodochini, Rhyparochromini, and Udeocorini). These tribes are reported from Puerto Rico, and only the Neotropical tribe Lilliputocorini has not yet been reported from here.

Lastly, correct identification of rhyparochromids is often a somewhat complicated and difficult affair. The difficulty of readily locating hard to examine structures, such as tiny abdominal spiracles, trichobothria in their relative position, the presence of abdominal laterotergites, and faint iridescent areas all contribute to make taxonomy of this group particularly challenging. In addition, genitalic characters are unknown for most described species. Other complications arise in some large and speciose groups, such as the Ozophorini, where species are morphologically similar, and where strong endemism and undescribed species appear to abound (Baranowski and Slater, 2005). Groups such as these merit a more extensive taxonomical review, a goal that unfortunately lies outside of the objectives of this current work. The following key separates Rhyparochrominae tribes present in Puerto Rico.

**Key to the tribes of *Rhyparochrominae* in Puerto Rico (Adapted from Henry et al., 2015)**

- 1. With at least spiracles in abdominal segment IV appearing dorsally . . . . . 2.
- 1'. All abdominal spiracles ventral . . . . . 4.
- 2 (1). Abdominal spiracles located dorsally either on segments III and IV, or IV only; always ventral on segment II . . . . . **Rhyparochromini.**
- 2'. Abdominal spiracles located on segments II and IV dorsal . . . . . 3.
- 3 (2). Inner laterotergites absent; lateral pronotal margins almost always rounded. . . . . **Myodochini.**
- 3'. Inner laterotergites present; lateral pronotal margins variable from rounded to carinate . . . . . **Udeocorini.**
- 4 (1). Posterior pair of trichobothria on sternum V positioned one above the other . . . . . 5.
- 4'. Posterior pair of trichobothria on sternum V positioned one in front of the other and forming a linear series of those on segments IV and V . . . . . 6.
- 5 (4). Ocelli lateral and behind eyes; suture between abdominal sterna IV and V reaching lateral connexival margin; labial segment II short, usually not attaining the base of the head . . . . . **Cleradini.**
- 5'. Ocelli between eyes and slightly to their posterior; suture between abdominal sterna IV and V, usually not reaching lateral connexival margin and usually markedly curving anteriorly; labium variable, but generally with segment II reaching or exceeding base of head; apical corial margin straight . . . . . **Ozophorini.**
- 6 (4'). Apical margin of corium deeply concave; inner laterotergites present; head lacking iridescent areas; abdominal scent-gland scars between terga III/IV, IV/V, and V/VI. . . . . **Antillocorini.**
- 6' Apical margin of corium straight; inner laterotergites absent; head with iridescent areas basally; abdominal scent-gland scars between terga V/VI minute or absent . . . . . **Lethaeini.**

**Subfamily Rhyparochrominae Amyot & Serville*****Tribe Antillocorini Ashlock***

Members of the Antillocorini are minute insects and also among the smallest in the Rhyparochromidae (Baranowski and Slater, 2005). According to these authors, the Antillocorini appear to be closely related to Lethaeini, given the trichobothrial arrangement in their abdomens, but have deeply concave apical corial margins, and have no iridescent areas in the head. Schuh and Slater (1995) suggest that this group may not be monophyletic based on discrepancies in the sternal trichobothrial arrangement observed in several Neotropical species.

Several West Indian genera are present, including *Antillocoris* Kirkaldy, *Antillocorisma* Slater, *Arimacoris* Baranowski & Slater, *Bathydema* Uhler, *Botocudo* Kirkaldy, *Caymanis* Baranowski & Brambila, *Cligenes* Distant, *Gemmacoris* Baranowski & Slater, and *Valeris* Brambila. Of these, *Bathydema* appears to be the most speciose, with seven described species, almost all endemic to specific islands. Three species have been reported from Puerto Rico: *Antillocoris pallidus*, *Bathydema cubana* and *Cligenes distinctus*, with the latter probably being an erroneous record (see below).

***Key to the species in tribe Antillocorini reported from Puerto Rico (Modified from Baranowski and Slater, 2005)***

1. Lateral margins of pronotum rounded, not carinate or strongly callused . . . . . *Bathydema cubana*.
- 1'. Lateral margins of pronotum sharply carinate or strongly callused . . . . . 2.
- 2 (1). Trichobothria in abdominal sternum V not linear, located dorso-ventrally one to the other; dorsal surface dull yellow. . . . .  
. . . . . *Antillocoris pallidus*.
- 2'. Trichobothria in abdominal sternum V linear; prosternum with a deep median longitudinal groove . . . . . *Cligenes distinctus*.

***Antillocoris* Ashlock**

***Antillocoris pallidus* (Uhler, 1894:187)**

*Pygaeus pallidus* Uhler

*Salacia picturata* Uhler

*Antillocoris pallidus* Barber

*Type locality:* Grenada, West Indies.

*Antillean & Caribbean distribution:* Bahama Islands, Cuba, Grenada, Hispaniola, Jamaica, Puerto Rico, St. Vincent; Florida, USA.

*Host plants:* Unknown.

*Remarks:* This species is known in Puerto Rico only from a single specimen, now deposited at the U.S. National Museum; it was first reported by Maldonado-Capriles and Navarro (1967). These are among the smallest of rhyparochromids, not exceeding 3 mm. No specimens were found in our collections nor examined.

### ***Bathydema*** Uhler

***Bathydema cubana*** Slater, Sweet and Baranowski, 1977:348.

*Type locality:* Sierra Maestra, Cuba.

*Antillean & Caribbean distribution:* Cuba, Puerto Rico.

*Host plants:* Unknown

*Remarks:* This species was first reported from Puerto Rico by Baranowski and Slater (2005) from specimens collected in ‘Guilarte’ and ‘Toro Negro’ State Forests in 1979 by G.B. Marshall and L.B. O’Brien, perhaps indicating its preference for higher elevations. No specimens were found in our collections, perhaps indicating its rarity.

### ***Cligenes*** Distant

***Cligenes distinctus*** Distant, 1893: 405.

*Type locality:* Panama.

*Antillean & Caribbean distribution:* Cayman Brac, Cuba, Grand Bahama, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Jamaica, Mayaguana, Middle Caicos, North Caicos, Puerto Rico (see remarks), Saba, St. Vincent, Trinidad; Florida, USA.

*Host plants:* According to Baranowsky and Slater (2005) this species is regularly found associated with fallen ficus seeds, but Maldonado-Capriles (1981) suggests that the species may play a role as predator. No specimens were found in our collections.

*Remarks:* Baranowsky and Slater (2005) first reported this species from Puerto Rico from a specimen labeled “*Camino del Rangel, 9-xii-34, A. Bierig (NMNH)*”. We doubt the accuracy of this record. Neither the locality nor the collector are familiar to the authors based on our experience of past collectors and expedi-

tions to Puerto Rico. It is likely that this record is in error. We suggest that the collector's identity is likely to be German naturalist and artist Alexander Bierig, who worked in Cuba from 1919 to 1939, and that the location may refer to the town of Rangel in Santa Clara Province, Cuba. In addition, there are no records of Bierig ever visiting and collecting in Puerto Rico during that period of time. No specimens were found in our collections.

### ***Tribe Cleradini Stål***

Most Cleradini (54 species in 20 genera) are confined to the Old World tropics. Only the cosmopolitan *Clerada apicicornis* Signoret occurs in the Western Hemisphere (Schuh and Slater, 1995). Members of this tribe have ocelli located behind the eyes, instead of between the eyes as in other rhyparochromid taxa.

#### ***Clerada* Signoret**

***Clerada apicicornis* Signoret 1863: 28. [Plate IV. Fig. 29]**

*Type locality:* Reunion Island.

*Antillean & Caribbean distribution:* Cuba, Grenada, Hispaniola, Jamaica, Puerto Rico, St. Vincent, St. Thomas, and the Virgin Islands.

*Host species:* None reported in Puerto Rico.

*Remarks:* This brown, mid-sized species (7 mm) was first reported by Gundlach (1893: 282), who indicated its widespread distribution on the island. Specimens in MEBT and those mentioned in Barber (1939) were all collected from Western Puerto Rico. This species is known to feed on the blood of insects and even that of some vertebrates, and its life cycle and biology have been described in some detail by Cárdenas et al. (2001).

*Material Examined.* **PUERTO RICO.** *Guánica:* Ensenada. 21 Mar 1936. J.A. Ramos; *Lajas:* 13 Nov 1976. M. Irizarry. (♂); *Mayagüez:* Mar 1935. W. López. (♂); 29 Jan 1944. M. Pérez. (♀).

### ***Tribe Lethaeini Stål***

The Lethaeini are small to medium-sized seed bugs, characterized by their abdominal spiracles all located ventrally, and with trichobothria in IV and V sterna organized on a longitudinal line (Ashlock, 1964). The base of their heads has single or paired iridescent areas, dorsally. Many have a single noticeable trichobothrium near each anterolateral pronotal angle. Schuh and Slater (1995)

remark on the lack of a Y-chromosome in the group. According to Henry et al. (2015) this is one of the most diverse rhyparochromid tribes in the Neotropics, with 13 genera and 36 species known. Nine genera are reported in the West Indies: *Bubaces* Distant, *Cistalia* Stål, *Cryphula* Stål, *Gonatoides* Slater, *Lipostemmata* Berg, *Petissius* Distant, *Neopetissius* O'Donnell, *Paragonatas* Barber, and *Valtissius* Barber. Only the latter three genera are reported from Puerto Rico.

***Key to the species in tribe Lethaeini reported from Puerto Rico***

- 1. Head with two iridescent patches basally . . . . *Valtissius distinctus*.
- 1'. Head with only one iridescent patch basally . . . . . 2.
- 2 (1). Antennal segment III with a prominent white proximal annulus; clavus and corium with pale irregular markings; size greater than 5.5 mm . . . . . *Neopetissius variegatus*.
- 2'. Antennal segment 3 without a prominent white proximal annulus; less than 5 mm . . . . . *Paragonatas divergens*.

***Neopetissius* O'Donnell**

***Neopetissius variegatus*** O'Donnell, 2001:144-146. [Plate IV. Fig 31]

*Type locality:* Mayaguana Island, Bahamas

*Antillean & Caribbean distribution:* Bahamas, Cuba, Hispaniola, Jamaica, Puerto Rico, St. Croix, St. John, Turks and Caicos.

*Host plants:* Unknown.

*Remarks:* This species was first reported in Puerto Rico by O'Donnell (2001) and appears to be the largest Lethaeini in Puerto Rico. The mid-sized (6 - 6.5 mm) dark, robust species has entire pleural and sternal surfaces shining in contrast with its dull dorsal surface. This species is easily distinguished from its congeners by its elongate labium that extends well into the abdomen. Only two specimens are known from Puerto Rico: one reported by O'Donnell (2001) collected from Río Abajo Forest (no date/collector) and kept at the U.S. National Museum of Natural History; and a female collected by former UPR student Manuel Cordero in Jayuya in 2016 and kept at MEPT.

*Material Examined.* **PUERTO RICO.** *Jayuya.* 18° 10.13N, 66° 39.20W. 7-8 May 2016. Ex. UV light. M. Cordero (♀).



*Paragonatas* Barber

***Paragonatas divergens*** (Distant, 1882: 219) [Plate IV. Fig 30]

*Gonatas divergens* Distant

*Paromius longulus* Stål

*Paragonatas divergens* Barber

*Type locality*: Guatemala.

*Antillean & Caribbean distribution*: Andros, Antigua, Barbados, Cayman Islands, Cuba, Dominica, Great Abaco, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Mayaguana, Mona Island, Montserrat, Nevis, Puerto Rico, Saba, San Salvador, South Bimini, St. Croix, St. John, St. Kitts, St. Thomas, St. Vincent, Trinidad & Tobago, Virgin Gorda; Central America.

*Host plants*: Baranowsky and Slater (2005) suggest that given their usual association with grassy areas near abandoned plantation openings, they are likely to be grass seed feeders.

*Remarks*: This dark and dull species was first reported by Barber (1939) from a specimen collected in Lares by entomologist Francisco Seín. *Paragonatas divergens* appears to be widely distributed in the Caribbean, and was informed from Mona Island by Ramos (1946) from a specimen collected at light near Sardinera Beach. The species appears to be readily attracted to light, as have been most of the specimens in MEBT thus far.

*Material Examined*. **PUERTO RICO**. *Aguada*: Cerro Gordo. 30 Aug 1987. R. Inglés. (♀); *Cabo Rojo*: 18°02.38N 67°10.59W. 16 Jul 2005. *Ex.* Blacklight. A. Segarra. (♀); Boquerón. 18°00.66N 67°10.96W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (4♂); 8 Oct 2011. *Ex.* Blacklight. A. Segarra. (3♂ ♀); *Mayagüez*: 18°13.11N 67°08.86W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (♀).

*Valtissius* Barber

***Valtissius distinctus*** (Distant, 1901:501) [Plate IV. Fig. 32]. **New Record.**

*Petizius distinctus* Distant

*Valtissius distinctus* Scudder

*Type locality*: Grenada.

*Antillean & Caribbean distribution*: Antigua, Cuba, Dominica, Granada, Hispaniola, Puerto Rico, St. Lucia, St. Vincent, Trinidad; North, Central and South America.

*Host plants:* Although host plants are unknown, Baranowsky and Slater (2005) suggest that these insects are probably grass and sedge feeders.

*Remarks:* This is the first record of this species from Puerto Rico, with two females collected in 2015 by the authors near Laguna Cartagena in Lajas. This small species (3 mm) occurs from Texas to Argentina. Another species, the smaller *V. pusillus* (Barber) has been reported from Mexico and Cuba.

*Material Examined.* **PUERTO RICO.** *Lajas:* 18°00.61N 67°06.54W. 17 Oct 2015. Ex. Mg Vapor Lamp. A. Segarra. (2♂).

***Tribe Myodochini Stål***

According to Harrington (1980), all members of the tribe with known feeding habits are seed-feeders. The majority of species appear to be ground bugs and can usually be found in the litter layer feeding on fallen seeds usually within the “seed shadow” of their host plants. Others may seek seeds still in the seed head, or in the nests of rodents, and still others in bird droppings on leaves.

The tribe Myodochini is among the most diverse of the Rhyparochromidae, comprising 75 genera and over 300 species worldwide, with 36 genera and 117 species occurring in the Neotropics (Rengifo-Correa and González, 2011; Henry et al., 2015). Seven genera and 16 species are reported from Puerto Rico. Members of the tribe are easily characterized by their rounded, non-carinate pronotal margins, distinct anterior pronotal collar, and the presence of dorsal spiracles on abdominal segments II-IV. Harrington (1980) has revised the group and has offered a phylogenetic analysis of this tribe.

***Key to the genera of Myodochini from Puerto Rico  
(Modified from Baranowski and Slater, 2005)***

- 1. Crescent-shaped, striated stridulitrum, present ventrolaterally on anterior portion of abdomen . . . . . 2.
- 1'. Striated stridulitrum absent on anterior portion of abdomen . . . 3.
- 2 (1). Lateral margin of posterior pronotal lobe angled at approximately 45°; pronotum markedly bi-lobed, deeply incised, with a transverse impression; antennal segment IV with a pale proximal band; fore femoral spines clearly in two rows (present on both the inner and outer edge of ventral surface. . . . .  
. . . . . *Froeschneria* Harrington.

- 2'. Lateral margin of the posterior pronotal lobe angled posterolaterad at less than a 45°; transverse impression not deeply incised; antennal segment IV usually uniformly dark; if with a pale band, then fore femoral spines in a single row (present only along inner edge of ventral surface) . . . . . *Ligyrocoris* Stål.
- 3 (1'). Evaporative area reduced, occupying much less than half of metapleural area; claval punctation usually in three rows; pronotum shiny, never pruinose; length of antennal segment II less than inter-ocular distance . . . . . *Prytanus* Distant.
- 3'. Evaporative area not reduced, occupying much more than half of metapleural area; claval punctation in more than three rows; pronotum dull or pruinose; length of antennal segment II usually longer than interocular distance. . . . . 4.
- 4. Mesacetabulum with mesepimeron emergent between the meso- and metepisternum . . . . . 5.
- 4'. Mesepimeron enclosed by metepisternum; touching mesepisternum . . . . . 6.
- 5 (4). Head elongate, with a distinct neck; postocular distance 2-3x > than distance from ocelli to margin of eye. Ventral portion of collar anteriorly produced . . . . . *Heraeus* Stål
- 5'. Head less elongate, never with a distinct neck; postocular distance less than distance between ocelli; dorsal surface of head and both lobes of pronotum in the same plane; fore coxal spine(s) well developed; posterior pronotal lobe lacking orange markings along lateral margins . . . . . *Neopamera* Harrington.
- 6 (4'). Pronotum tapering cephalad, with anterior lobe flattened and weakly convex; anterior lobe distinctly lower than posterior lobe in lateral view; collar with a median depression to posterior margin; abdomen equal to or longer than combined length of head and pronotum . . . . . *Paromius* Fieber.
- 6'. Anterior pronotal lobe usually strongly convex, not lower than posterior lobe in lateral view; collar without median depression; abdomen shorter than combined length of head and pronotum; generally, less than 5 mm long; jugal ridge above antennal segment I, usually narrow and poorly developed . . . . .  
 . . . . . *Pseudopachybrachius* Malipatil.

**Froeshneria** Harrington

**Froeschneria piligera** (Stål, 1862: 312).

*Plociomera piligera* Stål

*Lygirocoris abdominalis* Stål (in Barber, 1923, 1939; Wolcott, 1936, 1948)

*Froeschneria piligera* Harrington

*Type locality*: Tabasco, Mexico.

*Antillean & Caribbean distribution*: Cayman Brac, Cuba, Dominica, Hispaniola, Jamaica, Nevis, New Providence, Puerto Rico, Saba, Tobago, Trinidad; North, Central and South America.

*Host plants*: Baranowsky and Slater (2005) report collections from *Helianthus debilis* Nutt. and *H. annuus* L. from Cuba, suggesting an association with the Asteraceae.

*Remarks*: This larger species (7 - 8 mm) was described as *Lygus* (Beosus) *abdominalis* by Guérin-Méneville from Cuba, but this name had been preoccupied. Thus, from specimens collected in Mexico, Stål re-described the species *Plociomera piligera*. Barber (1923) first listed the species from Puerto Rico as *Lygirocoris abdominalis* Guerin from a specimen collected from Tallaboa, Peñuelas, on 23 July 1914, and kept at the American Museum Natural History (AMNH). No specimens were found in our collections.

**Heraeus** Stål

**Heraeus guttatus** (Dallas, 1852: 580). [Plate IV. Fig 33].

*Orthaea guttata* Dallas

*Heraeus guttatus* Distant

*Type locality*: Jamaica.

*Antillean & Caribbean distribution*: Hispaniola, Jamaica, Mona Island, Puerto Rico.

*Host plants*: Unknown. Another member of this genus, *H. caliginosus* Slater & Baranowski, has been collected from *Baccharis* L. (Asteraceae) elsewhere.

*Remarks*: *Heraeus* Stål contains a dozen species all of which are Neotropical, and eight occur in the Caribbean. According to Barber (1939) only a single specimen of this species had been seen from Puerto Rico, and that was collected from Isabela by Leonard on 24 April 1930, at light. Subsequently, two additional specimens (1♂, 1♀) were found by Ramos on Mona Island and collected on 5 April 1944.

*Material Examined.* **MONA ISLAND.** 5 Apr 1944. J.A. Ramos (♂ ♀ JAR).

*Lygyrocoris* Stål

*Lygyrocoris litigiosus* (Stål, 1862: 313).

*Plociomeria litigiosa* Stål

*Lygyrocoris litigiosus* Stål

*Type locality:* Mexico.

*Antillean & Caribbean distribution:* Cuba, Grand Cayman, Jamaica, Puerto Rico, St. Croix. Other locations include United States, Mexico, Central America, Colombia, Venezuela.

*Host plants:* According to Baranowski and Slater (2005) there is a collection record on *Lantana camara* L. (Verbenaceae).

*Remarks:* Described from Mexico. The sole specimen known from Puerto Rico was collected from Bayamón in January 1899 by Busch and may be at the U.S. National Museum of Natural History, according to Barber (1939). No specimens were found in our collections.

*Neopamera* Harrington

***Key to the species of Neopamera from Puerto Rico (Modified from Baranowski and Slater, 2005)***

1. Fourth antennal segment with a conspicuous white (or lighter colored) sub-basal annulus . . . . . 2.
- 1'. Fourth antennal segment uniformly colored with no annulus . . . 3.
- 2 (1). Relatively small species < 6 mm; eyes not strongly produced . . . . . *albocincta*.
- 2'. Larger species 8-10 mm; eyes strongly produced . . . . . *neotropicalis*.
- 3 (1'). Anterior pronotal lobe impunctate; corium with a distinctive dark transverse fascia . . . . . *bilobata*.
- 3'. Anterior pronotal lobe punctate; corium with at most an obscure incomplete transverse fascia . . . . . 4
- 4 (3'). Third antennal segment 2/3 length of segment II; body  $\leq$  4.5 mm; forefemora pale sometimes with darker annulus distally . . . . . *intermedia*.
- 4'. Third antennal segment > 2/3 length of segment two; body  $\geq$  5.2 mm;

forefemora dark brown or black with yellow distally . . . *vicarius*.

***Neopamera albocincta*** (Barber, 1952: 216-218) [Plate 5. Fig. 34]

*Plociomera servillei* Stål

*Pachybrachius servillei* Stål (as *P. servillei* (Guérin-Ménéville)  
in Barber, 1939; Wolcott, 1948.

*Pachybrachius albocinctus* Barber

*Neopamera albocincta* Harrington

*Type locality*: Beaumont, Texas.

*Antillean & Caribbean distribution*: Andros, Barbados, Cayman Brac, Cuba, Eleuthera, Grand Cayman, Grenada, Hispaniola, Jamaica, Mayaguana, Middle Caicos, Montserrat, North Caicos, Puerto Rico, St. Lucia, St. Vincent, Tobago, Trinidad; North, Central and South America.

*Host plants*: This species is adapted to moist and wet conditions where, according to Baranowsky and Slater (2005), it has been collected while feeding on sedge seeds (*Carex* sp. and *Scirpus* sp., Cyperaceae) in Connecticut.

*Remarks*: This species was first recorded from Puerto Rico by Barber (1939) from a specimen collected in Humacao on 18 November 1930 by M.A. Díaz, and identified as *Pachybrachius servillei* (Stål), a junior synonym. This appears to be a widespread species in Puerto Rico, but only three specimens are deposited at MEBT. Only macropters are known.

*Material Examined*. **PUERTO RICO**. *Cabo Rojo*: Boquerón. 18° 00.66N 67° 10.96W. 8 Oct 2011. Ex. Blacklight. A. Segarra. (♀). *Mayagüez*: 4 Dec 1930. M.A. Díaz. (♀); Feb 1934. H. Willians; Dec 1935. H. Monserrate (♂).

***Neopamera bilobata*** (Say, 1831: 334) [Plate V. Fig. 35]

*Pamera bilobata* Say

*Plociomerus servillei* Walker

*Orthaea bilobata* Kirkaldy (in Barber, 1923; Wolcott, 1936)

*Orthaea servillei* Wolcott (1936)

*Pachybrachius bilobatus* Barber (1939)

*Neopamera bilobata* Harrington

*Type locality*: Louisiana and Mexico.

*Antillean & Caribbean distribution*: Anguilla, Antigua, Barbados, Cayman Brac, Dominica, Eleuthera, Grand Bahama, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Inagua, Jamaica, Mar-

tinique, Montserrat, Nevis, Puerto Rico, Saba, St. Barthelemy, St. Croix, St. John's, St. Kitts, St. Lucia, St. Martin, St. Vincent, Tobago, Tortola, Trinidad, Vieques Is., Virgen Gorda; North, Central and South America.

*Host plants:* Unknown.

*Remarks:* First listed by Barber (1923) as *Orthaea bilobata* from specimens collected in San Juan and Aibonito, in July 1914. According to collection records by Barber (1939) and Wolcott (1936), it appears that this is a very common species, particularly abundant in coastal areas. It has also been recorded from Vieques Island. MEBT holdings of this species are numerous, many collected from light or in malaise traps. Harrington (1980) designated *N. bilobata* as the type species for genus *Neopamera*. The species also is widespread through southern United States, Mexico, Central America, and South America. According to Barber (1939) there is considerable variation in the lengths of the pronotal lobes, as well as in the intensity of the coloration. Baranowski and Slater (2005) wrote that *N. bilobata* prefers drier habitats than *N. albocincta*, and is more commonly found in disturbed sites, such as old fields, weedy lawns, and roadsides.

*Material Examined.* **PUERTO RICO.** *Cabo Rojo:* Boquerón. 18°00.66N 67°10.96W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (2♂); 18°00.66N 67°10.96W. 6 Oct 2011. *Ex.* Blacklight. A. Segarra. (2♂ ♀); 8 Oct 2011. *Ex.* Blacklight. A. Segarra. (♂ ♀); 24 Oct 2014. 17°58.3N 67°12W. *Ex.* Sweeping grasses. Segarra & Pérez.; *Coamo:* 18°02.3N 66°2.5W. 7 Oct 2014. *Ex.* Sweeping grasses. A. Segarra. (5♂ 2♀); *Guánica:* 28 Aug 1999. R. Tamayo. (2♂); *Isabela:* AES. 4-5 Nov 1987. R. Cruz. (♂); 30 Aug 1991. V. González. (♂); 14 Nov 1997. E. Correa. (♂); *Lajas:* AES. 18°01.49N 67°04.28W. 30 May 2006. *Ex.* Sweeping. A. Segarra. (3♂ 7♀); Cartagena Lagoon. 18°00.39N 67°06.10W. 4 Mar 2011. *Ex.* Sweeping weeds. A. Segarra. (♀); 11 May 2011. *Ex.* UV light. A. Segarra. (♀); *Mayagüez:* 11 Mar 2010. E. Vélez. (♂); 18°13.11N 67°08.86W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra.; 17 Apr 2015. J. González. (♂); 18°13.10N 67°08.87W. 25-27 Sept 2015. *Ex.* malaise trap. A. Segarra. (♀); 7 Nov 2015. I. Escalera (♀).

***Neopamera intermedia*** (Barber, 1924a: 136) [Plate V. Fig. 36]

*Orthaea ferruginosa* Barber (preoccupied)

*Orthaea intermedia* Barber (in Wolcott, 1936)

*Pachybrachius intermedius* Barber (in Wolcott, 1948)

*Neopamera intermedia* Harrington



*Type locality:* Mayagüez, Puerto Rico.

*Antillean & Caribbean distribution:* Cayman Brac, Cayman Islands, Cuba, Dominica, Eleuthera, Grand Cayman, Grenada, Guadeloupe, Hispaniola, Jamaica, Puerto Rico, Trinidad, Tobago.

*Host plants:* Unknown.

*Remarks:* Barber described this species as *Orthaea ferruginosa* (1923: 4) from a single male collected in Mayagüez in July 1914. Paratypes included: two females from Maricao, also collected in July 1914; one female from Adjuntas collected June 1915; and two females, from San Lorenzo in June 1915. This name had been preoccupied, and later the species was renamed *O. intermedius* (Barber 1924a: 136). Barber also wrote that *N. intermedia* appears to be closely related to *N. albocincta* (Barber), but that the former is smaller, the legs are differently colored and marked, and the terminal segment of the antenna is entirely fuscous. Only two specimens are found in MEBT from San Germán (1942) and Mayagüez (1934), and both were determined by Barber.

Material Examined. **PUERTO RICO.** *Mayagüez:* Dec 1939. S. Descartes. (♂ JAR); *San Germán:* 7 Feb 1942 C.A. Ortiz. (♂ JAR).

***Neopamera neotropicalis*** (Fabricius, 1803: 236). [Plate V. Fig. 37]

*Lygaeus serripes* Fabricius (Preoccupied)

*Plociomera serripes* Stål

*Pamera serripes* Stål

*Orthaea neotropicalis* Kirkaldy

*Pachybrachius neotropicalis* Barber

*Pachybrachius serripes* Maldonado and Navarro

*Neopamera neotropicalis* Harrington

*Type locality:* Central America

*Antillean & Caribbean distribution:* Antigua, Cuba, Dominica, Grand Cayman, Great Abaco, Grenada, Guadeloupe, Hispaniola, Jamaica, Puerto Rico, Saba, St. Kitts, Tobago, Trinidad, Vieques; North, Central and South America.

*Host plants:* Baranowski and Slater (2005) report this species feeding on fallen ripe guava fruit, presumably consuming the seeds, and also feeding from seed-laden bird droppings.

*Remarks:* Maldonado-Capriles and Navarro (1967) first reported this large species (9 - 9.5 mm) for Puerto Rico as *Pachybrachius serripes* (F.). At almost twice the size of congeners on the island,

this is the largest member of the genus in Puerto Rico and easily identified by its reduced white corial markings. MEBT records indicate collections from Gurabo, Las Marías, Cabo Rojo, and from the island of Vieques.

*Material Examined.* **PUERTO RICO.** *Cabo Rojo*: Oct 1980. C. Sotomayor. (♀ JAR); Boquerón. 18°02.38N 67°10.59W. 5 Jun 2006. *Ex.* Light. A. Segarra; 18°00.66N 67°10.96W. 6 Oct 2011. *Ex.* Blacklight. A. Segarra; *Gurabo*: 20 Dec 1944. L.T. (♀ JAR); *Las Marías*: 16 Abr 2013. D. Martell. (♂); *Ponce*: 30 Aug 2013. C.A. Negrón. (♀). **VIEQUES ISLAND.** 29 May 1943. L.T. (♀ JAR).

*Neopamera vicarious* (Barber, 1954b: 339-40)

*Pachybrachius vicarious* Barber

*Neopamera vicarious* Harrington

*Type locality*: Cuba.

*Antillean & Caribbean distribution*: Antigua, Cayman Brac, Cuba, Hispaniola, Grand Cayman, Guadeloupe, Jamaica, Montserrat, Nevis, Puerto Rico, Saba, St. John, St. Kitts.

*Host plants*: Unknown.

*Remarks*: This species was first reported from Puerto Rico by Baranowski and Slater (2005). The first known specimen was collected by Maldonado-Capriles from Rincón in 1964. Other specimens have been collected from mountain locations in El Yunque, and Carite rain forests. The species resembles *N. intermedia* but differs in leg coloration and relative size of their antennomers. No specimens are present in our collections.

### *Pseudopachybrachius* Malipatil

*Pseudopachybrachius conceptioni* Zheng & Slater, 1984: 98 [Plate V. Fig. 38]. **New Record.**

*Type locality*: Grenada, Dominica, Hispaniola and Trinidad.

*Antillean & Caribbean distribution*: Grenada, Dominica, Hispaniola, Puerto Rico, Saba, St. Kitts, Tortola, Trinidad.

*Host plants*: Unknown

*Remarks*: This is the first record of this species in Puerto Rico. Little is known about the species. Two specimens are in our collection (MEBT). This species is easily distinguished from *P. vinctus*,

having the anterior pronotal lobe at least 1/3 longer than the posterior lobe, and by having a conspicuous dark spot along the lateral corial margin.

*Material Examined.* **PUERTO RICO.** *Mayagüez:* 18°13.11N 67°08.86W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (♂); *Yabucoa:* 29 Jul 1997. C. Sustache.

***Pseudopachybrachius vinctus*** (Say, 1831: 333) [Fig. Plate V. Fig. 39].

*Pamera vincta* Say (in Gundlach, 1893)

*Orthaea vincta* Kirkaldy (in Barber, 1923; Wolcott, 1936)

*Pachybrachius vinctus* Barber (Barber, 1939; Wolcott, 1948)

*Pseudopachybrachius vinctus* Malipatil

*Type locality:* Florida (USA)

*Antillean & Caribbean distribution:* Abaco, Andros, Antigua, Cayman Brac, Cuba, Dominica, Eleuthera, Exuma, Grand Cayman, Great Inagua, Grenada, Hispaniola, Isle of Pines, Jamaica, Mona Island, New Providence, Puerto Rico, St. Croix, St. Thomas, St. Vincent, Vieques Island.

*Host plants:* Wolcott (1936) reports collections from *Crotalaria* sp. (Fabaceae), and from *Hibiscus* sp. (Malvaceae). There are feeding records on strawberry (*Fragaria* sp. Rosaceae) in the United States. No feeding or breeding records exist in the Caribbean.

*Remarks:* This cosmopolitan species was first reported by Gundlach (1893) as *Pamera vincta* Say. Barber (1923) also reported this species from Puerto Rico as *Orthmea vincta* Say from specimens collected by Lutz in Mayagüez and Mona Island in 1914. Collection records indicate that this is a common and widely distributed species, present both in coastal and upland locations, and readily collected at light. Further, according to Barber (1939) this species is common in the West Indies, southern United States, Mexico, Central America, and South America, as well as Australia, India, Sri Lanka, Southeast Asia and South Africa.

*Material Examined.* **MONA ISLAND.** 19 Dec 1988. Segarra & Pantoja. (♀). **PUERTO RICO.** *Aguada:* Cerro Gordo. 3 Sept 1987. R. Inglés. (2♂ 3♀); *Cabo Rojo:* Boquerón. 18°00.66N 67°10.96W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (3♀); 18°00.66N 67°10.96W. 8 Oct 2011. *Ex.* Blacklight. A. Segarra. (♂ 2♀); *Coamo:* 18°02.3N 66°2.5W. 7 Oct 2014. *Ex.* Sweeping grasses. A. Segarra. (2♂ 2♀); *Isabela:* 18°30.755N 67°05.841W. 10 Oct 2014. *Ex.* Sweep-

ing grasses. González & Pérez. (♀); 14 Sept 2015. M. Acevedo; Mayagüez: 18°13.11N 67°08.86W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (♂); 2 Mar 2015. (♀); 17 Apr 2015. I. González. (♀).

***Paromius* Fieber**

***Paromius dohrnii*** (Guérin-Méneville, 1857: 399-400.) [Plate V. Fig. 40]. **New Record.**

*Lygaeus (Plociomerus) dohrnii* Guerin

*Plociomerus dohrnii* Walker

*Paromius dohrnii* Distant

*Type locality:* Cuba.

*Antillean & Caribbean distribution:* Cuba, Dominica, Grand Cayman, Guadeloupe, Hispaniola, Martinique, Puerto Rico, St. Lucia, St. Vincent; South America.

*Host plants:* Baranowski and Slater (2005) reported collections of nymphs and adults on stems and seed heads of 'barbas de indio,' *Andropogon bicornis* L. (Poaceae) from the French island of Martinique.

*Remarks:* We report this species from a single female specimen collected in Mayagüez in 2003, which is deposited at MEBT. This species is similar in size to *P. longulus*, and in fact Barber (1939) considered them synonyms. However, Baranowski and Slater (2005) considered them to be separate and easily distinguished species. *Paromius dohrnii* is light tan, not dark as *P. longulus*; its anterior pronotal lobe is reddish brown and proportionally longer than the posterior lobe by 1.9 to 1. This proportion is smaller in *P. longulus* (1.6:1). This species is widely distributed in South America and the West Indies (Baranowsky and Slater, 2005).

*Material Examined.* **PUERTO RICO.** Mayagüez: 17 Sept 2003. H. Garmos. (♀).

***Paromius longulus*** (Dallas, 1852: 578). [Plate V. Fig. 41]

*Rhyparochromus longulus* Dallas

*Paromius longulus* Stål

*Pamera longula* Gundlach

*Type locality:* Unknown.

*Antillean & Caribbean distribution:* Antigua, Bahamas, Cuba, Desecheo Island, Dominica, Guadeloupe, Hispaniola, Isle of Pines, Jamaica, Mona Island, Montserrat, Nevis, Puerto Rico, Saba,

St. Croix, St. John, St. Kitts, St. Thomas, Tortola, Trinidad, Virgin Gorda; North, Central and South America.

*Host plants:* Not known. Collection records support the proposition that host plants are in the Poaceae [e.g., *Digitaria sanguinalis* (L.), *Andropogon* sp.] (Baranowsky and Slater, 2005).

*Remarks:* Gundlach (1893) first reported this species as *Pamera longula* Stål. Barber (1923) also reports this species from Puerto Rico. Other records include collections from Desecheo and Mona Islands (Barber 1939). This dull black species is common in Puerto Rico and has been collected both from coastal and mountain locations. The species is widely distributed from South and Central America, Mexico, and southern United States.

*Material Examined. PUERTO RICO. Aguadilla:* 18°29.314N 67°09.570W. 10 Oct 2014. *Ex. Sweeping* grasses. González & Pérez. (♀); *Aibonito:* Sector Sierra. 11 Oct 1991. V. González. (3♂ 2♀); *Cabo Rojo:* El Faro. 19 Oct 1991. V. González; Boquerón. 18°00.66N 67°10.96W. 5-6 Oct 2011. *Ex. Blacklight.* A. Segarra. (♂); 8 Oct 2011. *Ex. Blacklight.* A. Segarra. (2♂); *Combate.* 17°58.3N 67°12.7W. 24 Oct 2014. *Ex. Sweeping* grasses. Segarra & Pérez. (2♂ 2♀); 8 Nov 2015. *Ex. Sweeping.* R. Sanchez. (2♀); *Coamo:* 18°02.3N 66°2.5W. 7 Oct 2014. *Ex. Sweeping* grasses. A. Segarra. (2♀); *Guánica:* 23 Jul 1997. E. Correa. (♀); *Isabela:* 8 Nov 1987. Inglés & Méndez. (5♀); 14 Nov 1997. E. Correa. (♀); 18°30.755N 67°05.841W. 10 Oct 2014. *Ex. Sweeping* grasses. González & Pérez. (♂ ♀); *Mayagüez:* 11 Mar 1982. A. Poventud. (♂); *Finca Alzamora.* 18°13.1N 67°08.9W. 1 Oct 2014. *Ex. Sweeping* weeds. A. Segarra. (♀); 11 Feb 2015. G. Reyes; 17 Apr 2015. J. González. (♀); 30 Aug 2015. J. Orengo. (♀).

***Prytanus* Distant**

**Key to the species of *Prytanus* from Puerto Rico (Modified from Baranowski and Slater, 2005)**

- 1. Forefemora pale, with basal and subdistal dark brown annuli . . . . . *oblonga*.
- 1'. Forefemora dark or pale, but never annulated . . . . . 2.
- 2 (1). Width of pronotum, across humeral angles ≥ 1.5 times as width across its transverse impression; width of head across eyes

- slightly less than width of transverse impression . . . . *formosa*.
- 2'. Width of pronotum, across humeral angles much less than 1.5 times as width across transverse impression; width of head across eyes much less than width of transverse impression . . . . . 3.
- 3 (2). Forefemora light yellow . . . . . *minima*.
- 3'. Forefemora dark brown . . . . . *dissimilis*.

***Prytanes dissimilis*** (Barber, 1953: 22) [Plate VI. Fig. 42]

*Exptochiomera dissimilis* Barber

*Prytanes dissimilis* Harrington

*Type locality*: Florida (USA)

*Antillean & Caribbean distribution*: Bahamas, Barbuda, Cuba, Hispaniola, Jamaica, Puerto Rico, St. Vincent; Florida (USA).

*Host plants*: Unknown.

*Remarks*: Barber (1953) first reported this species from Puerto Rico as *Exptochiomera dissimilis* from a single specimen collected from Aguirre in 1931 by M. D. Leonard. Specimens at MEBT are from Cartagena Lagoon in Lajas and from Ponce. These collections may indicate a preference for more xeric environments.

*Material Examined*. **PUERTO RICO**. *Lajas*: Cartagena Lagoon. 18°00.39N 67°06.10W. 4 Mar 2011. Ex. UV light. A. Segarra. (♂); 18°00.61N 67°06.54W. 27 Aug 2014. Ex. Mg Vapor Lamp. A. Segarra. (♂); 18°00.61N 67°06.54W. 17 Oct 2015. Ex. Mg Vapor Lamp. A. Segarra. (2♂ ♀); *Ponce*: Aug 1945. L.T. (♂).

***Prytanes formosa*** (Distant, 1882: 210) [Plate VI. Fig. 43].

*Plocionera formosa* Distant

*Exptochiomera formosa* Barber

*Prytanes formosa* Harrington (Baranowski and Slater, 2005)

*Type locality*: Guatemala. *Antillean & Caribbean distribution*: Antigua, Bahamas, Cuba, Dominica, Hispaniola, Grenada, Guadeloupe, Jamaica, Martinique, Montserrat, Puerto Rico, St. Lucia, St. Vincent, Trinidad; North, Central and South America.

*Host plants*: Unknown.

*Remarks*: Baranowski and Slater (2005) first report *P. formosa* in Puerto Rico from several specimens, the first of which was collected by Medina-Gaud from Corozal in 1967 using a black light trap.

These authors report other specimens from San Juan and Isabela. This species readily comes to light, as shown by the specimens collected at light from Boquerón and Cartagena Lagoon (Lajas).

*Material Examined:* **PUERTO RICO.** *Cabo Rojo:* Boquerón. 18°00.66N 67°10.96W. 5-6 Oct 2011. Ex. Blacklight. A. Segarra. (2 ♀); *Lajas:* 18°00.61N 67°06.54W. 27 Aug 2014. Ex. Mg Vapor Lamp. A. Segarra. (♂); 18°00.61N 67°06.54W. 17 Oct 2015. Ex. Mg Vapor Lamp. A. Segarra. (2 ♂).

***Prytanes minima*** (Guérin-Méneville, 1857:398 In Sagra.) [Plate VI. Fig. 46]

*Lygaeus minima* Guérin-Méneville

*Ptochiomera minima* Uhler (in Barber, 1923)

*Exptochiomera minima* Barber (in Barber, 1939; Wolcott, 1936, 1948)

*Prytanes minima* Harrington

*Type locality:* Cuba.

*Antillean & Caribbean distribution:* Bahamas, Cayman Islands, Cuba, Jamaica, Puerto Rico.

*Host plants:* Unknown.

*Remarks:* This species was first reported from Puerto Rico by Barber (1923). This species together with *P. oblonga* are the smallest *Prytanes* species occurring in Puerto Rico (2.5 - 3.0 mm). A single male specimen, collected in Lajas by the senior author, is present at MEBT. The species also occurs in Southern Florida.

*Material Examined.* **PUERTO RICO.** *Lajas:* Cartagena Lagoon. 18°00.61N 67°06.54W. 17 Oct 2015. Ex. Mg Vapor Lamp. A. Segarra. (♂).

***Prytanes oblonga*** (Stål, 1862: 313-314) [Plate VI. Fig 44]

*Ptochiomera oblonga* Stål (in Barber, 1923)

*Exptochiomera minima* Barber (in Barber, 1939; Wolcott, 1936, 1948)

*Prytanes minima* Harrington.

*Type locality:* Mexico.

*Antillean & Caribbean distribution:* Cuba, Grenada, Hispaniola, Jamaica, Puerto Rico, Tobago, Trinidad; Mexico, Central and South America.



*Host plants:* Baranowsky and Slater (2005) collected nymphs and adults in the seed litter of *Amaranthus* (Amaranthaceae) in Tobago. They also report its association with other rhyparochromids, but *P. oblonga* is more abundant in the deep shade of its host plants.

*Remarks:* Baranowski and Slater (2005) report *P. oblonga* from a single specimen collected by J. Maldonado-Capriles from Salinas in June 1961 using a black light trap. This species is easily told from local congeners by its clearly annulated forefemora. The species is also known from Central America and northern South America. MEBT collection records may hint at a preference for xeric environments.

*Material Examined.* **PUERTO RICO.** *Cabo Rojo:* Boquerón. 18° 00.66N 67°10.96W. 5-6 Oct 2011. *Ex.* Blacklight. A. Segarra. (♂ 2♀); 8 Oct 2011. *Ex.* Blacklight. A. Segarra. (2♂ 3♀); *Mayagüez:* 3-4 Aug 1955. *Ex* At light. J.A. Ramos. (♂JAR).

### ***Tribe Rhyparochromini Stål***

Members of this tribe are distinguished by abdominal spiracles in segments III and IV (or just in IV in some) located dorsally. Pronotal margins are carinate with a conspicuously explanate lateral margins. According to Baranowski and Slater (2005), the tribe has its center of abundance in Africa and the Orient, with just a few species considered adventive in the Neotropics. Only one species has been reported in Puerto Rico.

### **Dieuches Dohrn**

***Dieuches armatipes*** (Walker, 1872: 91-92); [Plate VI. Fig. 45]

*Rhyparochromus armatipes* Walker

*Dieuches alborostratus* Dohrn

*Dieuches armatipes* Distant

*Type locality:* "America" (♂).

*Antillean & Caribbean distribution:* Cayman Brac, Cuba, Hispaniola, Eleuthera, Grand Cayman, Puerto Rico, St. Croix, St. Barthélemy, St. Kitts; Cosmopolitan.

*Host plants:* This species is of economic importance in Africa, and considered a serious pest of peanuts (Baranowski and Slater, 2005).

*Remarks:* Brambila and Halbert (2004) first reported this species from Puerto Rico, but no collection location was given as the record comes from an USDA-APHIS agricultural inspection interception. This is the largest rhyparochromid in Puerto Rico (up to

11 mm); easily identified by the large white distal spot in the corium. Specimens at MEBT were collected from Cabo Rojo, Mayagüez, and Ponce.

*Material Examined.* **PUERTO RICO.** *Cabo Rojo.* Boquerón 18° 02'38" N 67°10'59"W 5 Jun 2006 and 6 Oct 2011. Ex. Light. A. Segarra; *Mayagüez.* Bo. Legizamo. 13 APR 2016. J. Vega; *Ponce.* 30 AUG 2013. C.A. Negrón.

### ***Tribe Ozophorini Sweet***

Ozophorines are distinguished by their prorrect heads, which have many shallow, glabrous longitudinal grooves on the vertex, a distinctive pronotal collar, and all abdominal spiracles located ventrally. Members of this tribe are distributed throughout most tropical and subtropical areas of the world. According to Schuh and Slater (1995), this is the most biodiverse rhyparochromid tribe in the Neotropics, and also throughout the New Guinea island arch. The tribe includes 13 genera in the Neotropical Region (Ashlock and Slater, 1982), only two of which are reported from the Caribbean (i.e., *Lygofuscanellus* Scudder and *Ozophora* Uhler). Both genera are very similar, with the latter lacking a striate crescent-shaped stridulitrum across the second, third, and fourth abdominal sterna. Some unresolved controversy exists as to the proper placement of the *Lygofuscatellus*, as the presence of stridulitra appears to be plesiomorphic in the Myodochini and in other Ozophorini (Baranowski and Slater, 2005). Genus *Ozophora*, the only genus reported from Puerto Rico, is the largest in the tribe with almost 90 species described from the Neotropics (Henry et al., 2015).

Lastly, the genus *Ozophora* is arguably one of the most taxonomically complex and difficult of rhyparochromid taxa (Slater and Baranowski, 1983). An added hurdle to their taxonomical difficulty is the explosive speciation and endemism of this genus evidenced in the West Indies (Baranowski and Slater, 2005). A key to the West Indian *Ozophora* was published by these authors, and which contain their ample cautions about the striking similarities in size, shape and color of most species. These authors caution appropriately that "...many species vary subtly for island to island. This not only makes the key difficult to use and yet accommodate such variation, but specially where limited material is available, make the status of some taxa still questionable".

Ten species are reported from Puerto Rico. MEBT holdings of *Ozophora* are well over 100 specimens, of which only *O. octomaculata* is easily and readily identifiable. While many specimens appear to key straightforwardly in the Baranowski and Slater (2005) keys, many subtle and not so subtle variations exist, which make us strongly suspect the presence of new species in the abundant unidentified material.

Thus, we have decided not to attempt to construct a key but to provide a simple annotated list of species occurring in Puerto Rico as reported by Baranowski and Slater (2005). It becomes evident that a thorough revision of this genus in Puerto Rico and the Caribbean is needed to further enable their identification, and this task is beyond the objectives of the current monograph.

### *Ozophora* Uhler

***Ozophora atropicta*** Barber (1939: 356).

*Type locality*: Manatí, Puerto Rico (1915).

*Caribbean distribution & Remarks*: Bahamas, Cuba, Hispaniola, Mona Island, Puerto Rico, St. John, St. Thomas, Vieques. Records from Baranowski and Slater (2005): Isabela and Ponce. This species resembles *O. heydoni* Barber & Ashlock and can only be reliably separated by careful comparisons of genital capsules.

***Ozophora barbudensis*** Baranowski (Baranowski & Slater, 2005:192). [Plate VI. Fig. 48]. **New Record.**

*Type locality*: Oyster Pond, Barbuda.

*Caribbean distribution & Remarks*: Barbuda, Puerto Rico. According to Baranowski & Slater (2005), this species closely resembles *O. divaricata* Barber but differs in having a pale annulus in the IV antennal basal third. Only a male specimen was examined, collected from Mayagüez (18°13.11N 67°08.86W) 5 Oct 2011 by the senior author. (Acc No. MEBT-013169).

***Ozophora burmeisteri*** (Guérin-Méneville, 1857:397, In Sagra).

*Type locality*: Havana, Cuba.

*Caribbean distribution & Remarks*: Cuba, Bahamas, Guadeloupe, Hispaniola, Jamaica, St. Vincent. First reported in Puerto Rico by Barber (1923). Records by Baranowski and Slater (2005) include specimens from Isabela, Mayagüez and Utuado. Other Puerto Rican records in that publication are in fact locations in Cuba (e.g., Majuana, Prov. Camagüey; Las Tunas in Holguin, Prov. Oriente), and are thus likely incorrect.

***Ozophora caribbee*** Baranowski & Slater (1983: 446-447).

*Type locality*: St. Vincent.

*Caribbean distribution & Remarks*: Cuba, Dominica, Grenada, Guadeloupe, Hispaniola, Puerto Rico. First reported in Puerto Rico

by Baranowski and Slater (2005), and in its type series contains specimens collected throughout Puerto Rico, at all altitude ranges, and include specimens from Vieques Island. This is a small sized species ( $\approx 3$  mm).

***Ozophora divaricata*** Barber (1954a: 6) (in Baranowski and Slater, 1983).

*Type locality:* Bimini Island.

*Caribbean distribution & Remarks:* Anegada, Bahamas, Cuba, Guadeloupe, Hispaniola, Jamaica, Martinique, Puerto Rico, St. Thomas, Vieques. First reported in Puerto Rico by Barber (1939) as *O. pallescens*. It has been reported from *Pluchea* and *Conyza* (Asteraceae).

***Ozophora heydoni*** Barber & Ashlock (1960: 123)

*Type locality:* New Providence Island, Bahamas.

*Caribbean distribution & Remarks:* Bahamas, Hispaniola, Puerto Rico. First reported in Puerto Rico by Baranowski and Slater (2005) from a specimen collected in 1977 by Woodruff and Agostini from Isabela. Similar to *O. atropicta* [see Slater and Baranowski (1995)] for discussion.

***Ozophora octomaculata*** Ramos (1946: 27). [Plate VI. Fig 47].

*Type locality:* Mona Island.

*Caribbean distribution & Remarks:* Mona Island and Puerto Rico. This rather large species can be readily told from other *Ozophora* by the presence of eight yellowish-orange spots on the pronotum. Ramos's type series was collected at light from Sardinera Beach in 1944. MEBT holds several specimens collected at light from Mona's airport (1988 and 2013), and a single male specimen collected from the Cabo Rojo salt flats in Puerto Rico (2015), using an Hg-Vapor lamp. The species is not known from other Caribbean islands.

***Ozophora pallescens*** (Distant, 1893:395)

*Type locality:* Panama.

*Caribbean distribution & Remarks:* Bahamas, Cuba, Dominica, Grenada, Guadeloupe, Hispaniola, Jamaica, Saba, St. Vincent, Trinidad. This species was first reported in Puerto Rico by Barber (1939). This appears to be a widely distributed Neotropical spe-

cies; Baranowski and Slater (2005) report collections on *Pilea* (Urticaceae) on the Island of Saba.

***Ozophora quinquemaculata*** Barber (1939: 359)

*Type locality*: Vieques Island.

*Caribbean distribution & Remarks*: Anegada, Anguilla, Antigua, Barbados, Barbuda, Cuba, Guana Island, Guadeloupe, Grand Cayman, Hispaniola, Jamaica, Montserrat, Nevis, Peter Island, Saba Island, St. Barthelemy, St. Croix, St. Eustatius, St. John, St. Kitts, St. Lucia, St. Martin, St. Thomas, Tortola, Trinidad, Virgin Gorda. This species was first reported in Puerto Rico by Barber (1923) as *O. concava*, and later described from a male collected in 1930 by M.D Leonard. This species appears to be widely distributed in the Central Caribbean, and a systematics review of the '*quinquemaculata*' species group can be found in Slater (1987).

***Ozophora subimpicta*** Barber (1939: 358)

*Type locality*: Mayagüez, Puerto Rico.

*Caribbean distribution & Remarks*: Only known from Puerto Rico. This species was described from a single male collected by Barber in 1914. Collection records presented by Baranowski and Slater (2005) suggest a preference for higher elevations as most specimens come from El Yunque, Toro Negro, Carite (Cayey) and Maricao.

***Ozophora umbrosa*** Slater (1987: 142).

*Type locality*: Jamaica.

*Caribbean distribution & Remarks*: Bahamas, Hispaniola, Jamaica, Mona Island. First reported from Puerto Rico by Slater (1987) from collections in Río Grande, Guánica, Isabela. Baranowski and Slater (2005) report collections from Mona Island.

***Ozophora xanctocnemis*** Baranowski (Baranowski & Slater, 2005:246). [Plate VI. Fig 49]. **New Record.**

*Type locality*: North Caicos, Bahamas

*Caribbean distribution & Remarks*: Bahamas, Mona Island. According to Baranowski and Slater (2005) this species closely resembles *O. minuscula* Scudder, an endemic species of Grand Cayman, and so far, unreported elsewhere. It also resembles *O. caribee* (Baranowski and Slater, 2005), but differs in be-

ing larger, and for having a subapical spine in hind femora. A male specimen, collected at light at Mona Island Airport 19 Dec 1988 by Segarra & Pantoja, was examined (Acc. No. MEBT-013166).

### **Udeocorini Sweet**

Udeocorines vary from small to large, with rounded, carinate, or explanate pronotal margin. Abdominal spiracles II, III, and IV are dorsal, and laterotergites are present. According to Henry et al. (2015) only three genera and five species are recorded from the Neotropics, and the group appears to have radiated most extensively in Australia (Schuh and Slater, 1995)

#### ***Tribe Udeocorini Sweet***

*Tempyra biguttula* Stål (1874: 157)

*Type locality:* Texas, USA.

*Antillean & Caribbean distribution:* Bahamas, Cuba, Jamaica, Puerto Rico.

*Host plants:* Unknown.

*Remarks:* This species was first reported from Puerto Rico by Baranowski and Slater (2005) from a specimen collected by Gonzalo Mejia in 1991 from Las Arenas, Cabo Rojo. No specimens are found in MEBT collections.

## **DISCUSSION**

Currently, the Lygaeoidea is the largest group of Pentatomomorpha represented in Puerto Rico. Seventy-three species are now recognized, including nine new records for Puerto Rico (Figure 1). New records are: *Gampsocoris decorus* (Uhler), *Spilostethus pandurus* (Scopoli), *Icshnodemus variegatus* (Signoret), *Geocoris uliginosus* Say, *Valtissius distinctus* (Distant), *Pseudopachybrachius conceptioni* Zheng & Slater; *Paromius dohrnii* (Guérin-Méneville), *Ozophora barbudensis* Baranowski, and *O. xanthocnemis* Baranowski.

Most Lygaeoidea species found in Puerto Rico occur elsewhere in the West Indies (Figure 2). This observation is in agreement with that of Baranowski and Slater (2005) who suggested that, in contrast to Caribbean herpetological and mammalian faunas, most West Indian Lygaeoidea are widespread throughout the islands. Most species are also reported both on the islands, and from Mexico, North, Central, and South America. These authors also suggest that, with the exception of the large islands of Cuba (22 endemics) and Hispan-

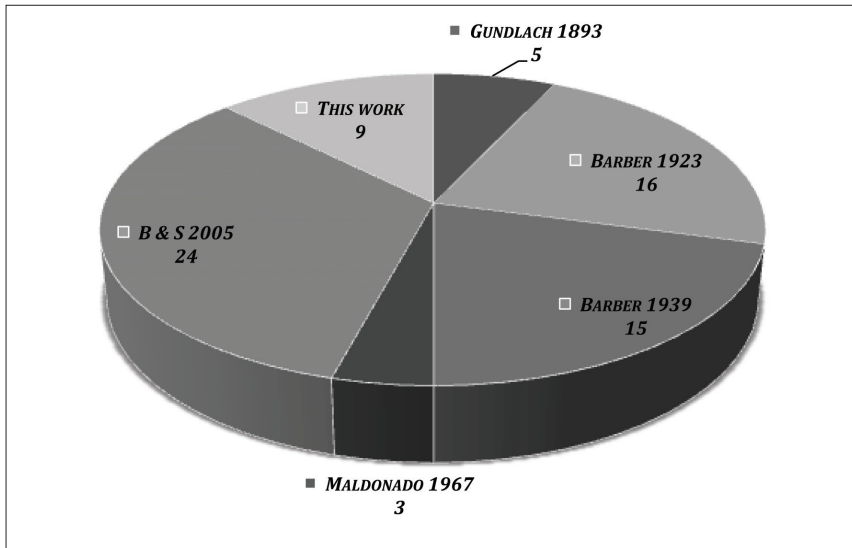


FIGURE 1. Number of Lygaeoidea species added by major group reviews (Gundlach, 1893; Barber 1923, 1939; Maldonado and Navarro, 1967; and Baranowski and Slater, 2005).

iola (27 endemics), there appears to be very limited island-specific endemism. In the case of Puerto Rico, only five species seem to be endemic to Puerto Rico (including Mona Island): *Ochrimnus henryi*, *Pamphantus pellucidus*, *Ninyas obrieni*, *Ozophora octomaculata*, and *Ozophora subimpicta*.

Figure 2. Distribution of Lygaeoidea species found in Puerto Rico. [West Indian = widespread in Greater and Lesser Antilles; PR & Greater Antilles = Only reported from PR, Cuba, Jamaica, Hispaniola and includes Bahamas, and Turks and Caicos; PR & Lesser Antilles = Only reported from PR, and Windward/Leeward islands; Cosmopolitan = widely distributed in the World].

As with the Pentatomoidea, it is difficult to make strong generalizations about endemism, or to reach firm conclusions about geographical distribution patterns. Region-wide collection efforts have been characterized as being haphazard in nature, with some islands being thoroughly collected (e.g., Bahamas, Dominica, Trinidad & Tobago), while others practically ignored (e.g., islands within Puerto Rico Bank, such as Vieques, Culebra, Caja de Muertos, Desecheo, St. Thomas, St. Croix, St. John, Tortola, Virgin Gorda, Anegada, Saba). Further, the difficult and deficient taxonomical status of some com-



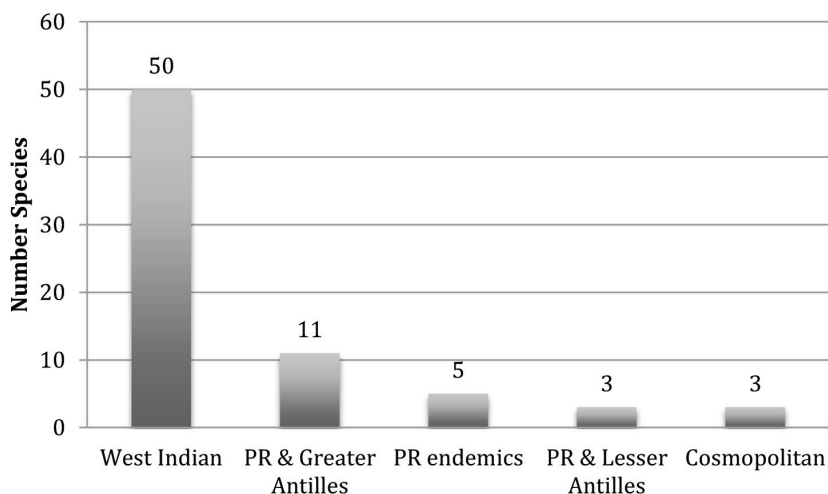


FIGURE 2. Distribution of Lygaeoidea species found in Puerto Rico. [West Indian =widespread in Greater and Lesser Antilles; PR & Greater Antilles = Only reported from PR, Cuba, Jamaica, Hispaniola and includes Bahamas, and Turks and Caicos; PR & Lesser Antilles = Only reported from PR, and Windward/Leeward islands; Cosmopolitan = widely distributed in the World].

mon groups, particularly in the Rhyparochromidae (e.g., *Ozophora* and *Antillocoris*) hinders a more solid understanding of their distribution. Also, the presence of undescribed material, particularly in *Ozophora*, calls for a more concerted effort in revising entire groups in a more systematic fashion.

Finally, even within Puerto Rico, there is a clear bias of collection efforts. Most specimens examined in the preparation of this work come from the Western side of the island. This unfortunate situation reflects the fact that for many decades Heteroptera taxonomists and their students worked at the Mayagüez campus of the University of Puerto Rico. Just a cursory examination of MEBT material shows that complete areas in Puerto Rico, including outlying islands of Vieques, Culebra and Desecheo, remain largely under-collected (e.g., northern karst-limestone regions; coastal and mountain towns from Humacao west to Aibonito, and south to Patillas and Maunabo; and Central Cordillera areas from Cayey to Jayuya/Utuado). Collection efforts to be conducted in future biodiversity assessment efforts must then concentrate there. We hope that this work will contribute a useful compilation of information about Puerto Rican Lygaeoidea, sparking new interest in a more thorough understanding of our insect fauna and future taxonomists.

CHECKLIST OF LYGAEOIDEA IN PUERTO RICO

**Family BERYTIDAE (4)**

1. *Jalysus reductus* Barber
2. *Jalysus sobrinus* Stål
3. *Metacanthus tenellus* Stål
4. *Gampsocoris decorus* (Uhler) (*New Record*)

**Family LYGAEIDAE (17)**

**Subfamily Lygaeinae Stål**

1. *Lygaeus coccineus* Barber
2. *Neacoryphus albonotatus* (Barber): *Mona*
3. *Ochrimnus collaris* (F.)
4. *Ochrimnus henryi* Brailovsky
5. *Ochrimnus laevus* Brailovsky
6. *Ochrostomus pulchellus* (F.)
7. *Oncopeltus aulicus* (F.)
8. *Oncopeltus fasciatus* (Dallas)
9. *Oncopeltus semilimbatus* Stål
10. *Spilostethus pandurus* (Scopoli) **New Record**

**Subfamily Orsillinae Stål**

*TRIBE METRARGINI* KIRKALDY

11. *Xyonysius basalis* (Dallas)
  12. *Xyonysius californicus* (Stål)
- Tribe Nysiini* Uhler
13. *Nysius raphanus* Howard
  14. *Nysius scutellatus* Dallas
  15. *Nysius tenellus* Barber

*TRIBE ORSILLINI* STÅL

16. *Neortholomus jamaicensis* (Dallas)

**Subfamily Ischnorhynchinae Stål**

17. *Kleidocerys virescens* (F.)

**Family CYMIDAE Baerensprung (1)**

*TRIBE CYMINI* STÅL

1. *Cymodema breviceps* (Stål)

**Family Ninidae Barber (1)**

1. *Cymoninus notabilis* (Distant)

**Family BLISSIDAE Stål (3)**

**Subfamily Blissinae Stål**

1. *Blissus antillus* Leonard
2. *Ischnodemus sallei* (Signoret)
3. *Ischnodemus variegatus* (Signoret) **New Record**

**Family Geocoridae Baerensprung (7)**

Subfamily **Geocorinae Stål**

1. *Geocoris uliginosus* Say **New Record**
2. *Geocoris punctipes* (Say)
3. *Geocoris thoracicus* (Fieber)
4. *Ninyas deficiens* (Lethierry)
5. *Ninyas obrieni* Baranowski
6. *Ninyas strabo* Distant

Subfamily **Pamphantinae Barber & Bruner**

TRIBE PANPHANTINI SLATER

7. *Pamphantus pellucidus* Slater

**Family Oxycarenidae Stål (1)**

1. *Oxycarenus hyalinipennis* (Costa)

**Family Pachygronthidae Stål (2)**

Subfamily **Pachygronthinae Stål**

1. *Oedancala bimaculata* (Distant)
2. *Pachygrontha compacta* Distant: Mona Island

**Family Rhyparochromidae Amyot & Serville (37)**

Subfamily **Rhyparochrominae Amyot & Serville**

TRIBE ANTILLOCORINI ASHLOCK

1. *Bathydema cubana* Slater & Baranowski
2. *Cligenes distinctus* Distant (\*Status Uncertain\*)
3. *Antilocoris pallidus* (Uhler)

TRIBE CLERADINI STÅL

4. *Clerada apicicornis* Signoret

TRIBE LETHAEINI STÅL

5. *Neopetissius variegatus* O'Donnell
6. *Paragonatas divergens* (Distant)
7. *Valtissius distinctus* (Distant) **New Record**

TRIBE MYODOCHINI STÅL

8. *Froeschneria piligera* (Stål)
9. *Heraeus guttatus* (Dallas)
10. *Ligyrocoris litigiosus* (Stål)
11. *Neopamera albocincta* (Barber)
12. *Neopamera bilobata* (Say)
13. *Neopamera intermedia* (Barber)
14. *Neopamera neotropicalis* (F.)
15. *Neopamera vicarius* (Barber)
16. *Pseudopachybrachius concepcioni* Zheng & Slater **New Record**
17. *Pseudopachybrachius vinctus* (Say)
18. *Paromius dohrnii* (Guérin-Méneville) **New Record**

19. *Paromius longulus* (Dallas)
20. *Prytanes dissimilis* (Barber)
21. *Prytanes formosa* (Distant)
22. *Prytanes minima* (Guérin-Ménéville)
23. *Prytanes oblonga* (Distant)

TRIBE RHYPAROCHROMINI DOHRN

24. *Dieuches armatipes* (Walker)

TRIBE OZOPHORINI SWEET

25. *Ozophora atropicta* Barber
26. *Ozophora barbudensis* Baranowski **New Record**
27. *Ozophora burmeisteri* (Guérin-Ménéville)
28. *Ozophora caribbee* Baranowski & Slater
29. *Ozophora divaricata* Barber
30. *Ozophora heydoni* Barber & Ashlock
31. *Ozophora octomculata* Ramos: Mona Is.
32. *Ozophora pallescens* (Distant)
33. *Ozophora quinquemaculata* Barber
34. *Ozophora subimpicta* (Barber)
35. *Ozophora umbrosa* Slater
36. *Ozophora xanthocnemis* Baranowski **New Record**

TRIBE UDEOCORINI SWEET

37. *Tempyra biguttula* Stål

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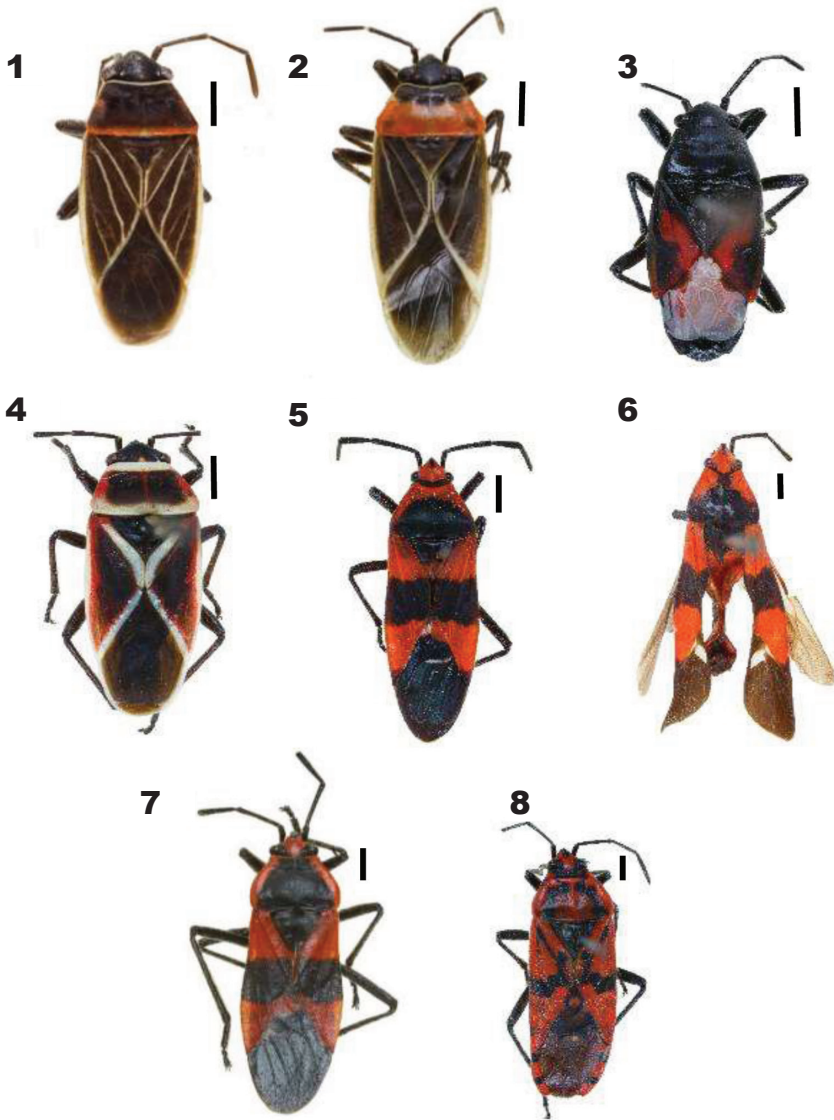


PLATE I. 1. *Ochrimnus (ochrimnus) henryi* Brailovsky. 2. *Ochrimnus (ochrimnus) collaris* (F.). 3. *Lygaeus coccineus* (Barber). 4. *Ochrostomus pulchellus* (F.). 5. *Oncopeltus aulicus* (F.). 6. *Oncopeltus semilimbatus* (Stål). 7. *Oncopeltus fasciatus* (Dallas). 8. *Spilostethus pandurus* (Scopoli). [Bar=1mm]

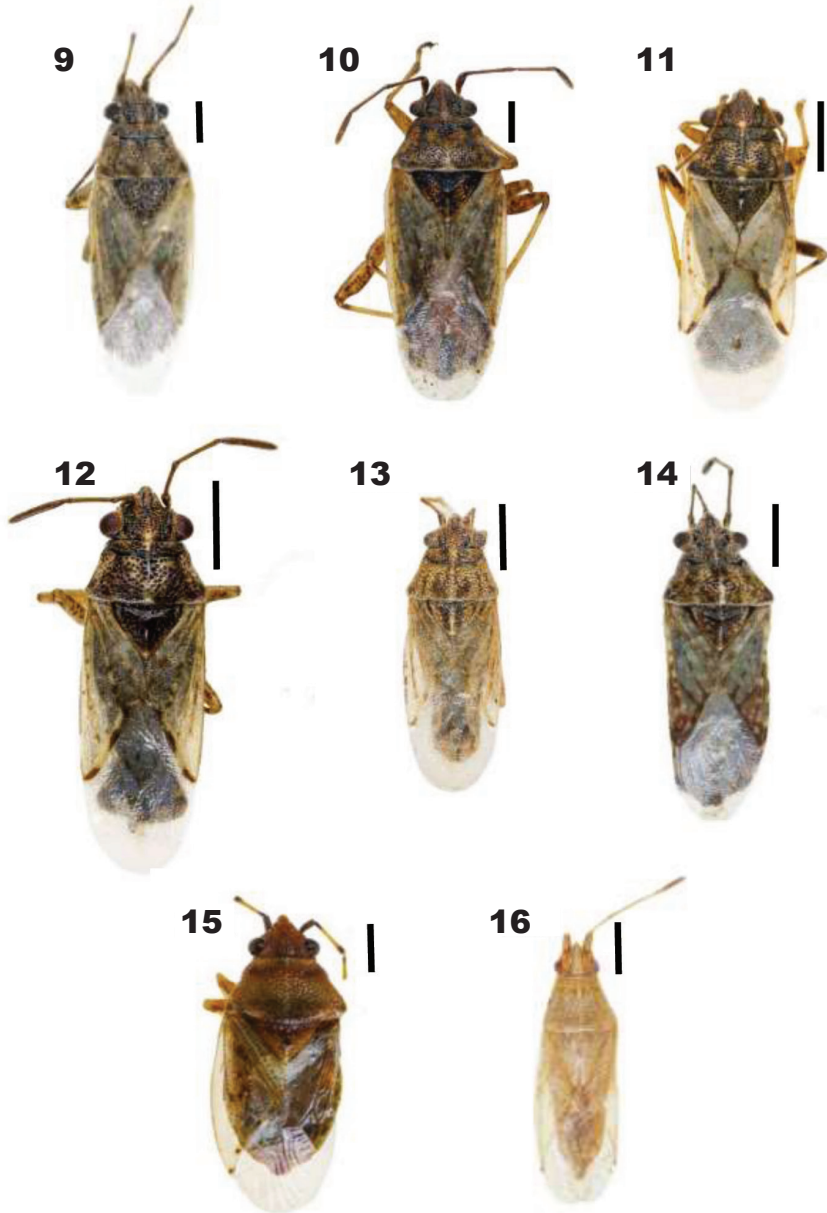


PLATE II. 9. *Xyonysius basalis* (Dallas). 10. *Xyonysius californicus* (Stål). 11. *Nysius raphanus* Howard. 12. *Nysius scutellatus* Dallas. 13. *Nysius tenellus* Barber. 14. *Neortholomus jamaicensis* (Dallas). 15. *Kleidocerys virescens* (F.). 16. *Cymodema breviceps* (Stål). [Bar=1mm]

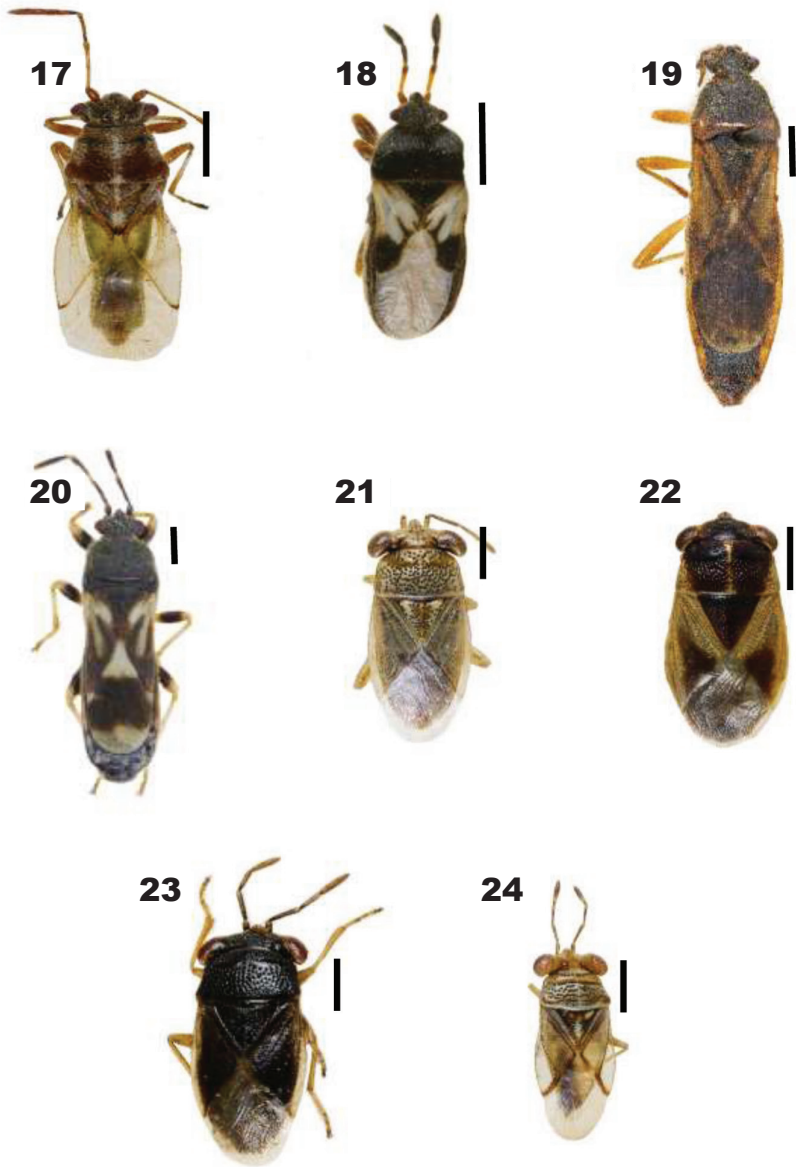


PLATE III. 17. *Cymininus notabilis* (Distant). 18. *Blissus antillus* Leonard. 19. *Ischnodemus sallei* (Signoret). 20. *Ischnodemus variegatus* (Signoret). 21. *Geocoris punctipes* (Say). 22. *Geocoris thoracicus* (Fieber). 23. *Geocoris uliginosus* (Say). 24. *Ninyas deficiens* (Lethierry). [Bar=1mm].

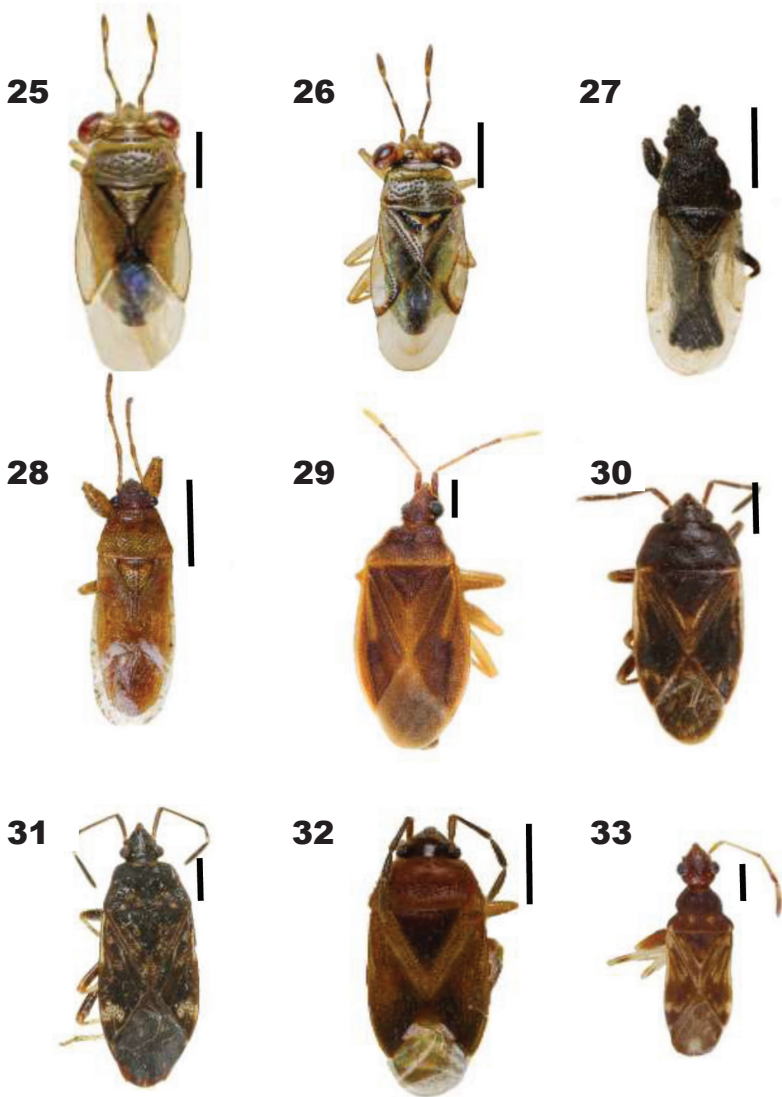


PLATE IV. 25. *Ninyas obrieni* Baranowski. 26. *Ninyas strabo* Distant. 27. *Oxycareus hyalinipennis* (Costa). 28. *Oedancala bimaculata* (Distant). 29. *Clerada apicicornis* Signoret. 30. *Paragonatas divergens* (Distant). 31. *Neopetisius variegatus* O'Donnell 32. *Valtissius distinctus* (Distant). 33. *Heraeus guttatus* (Dallas). [Bar=1mm]

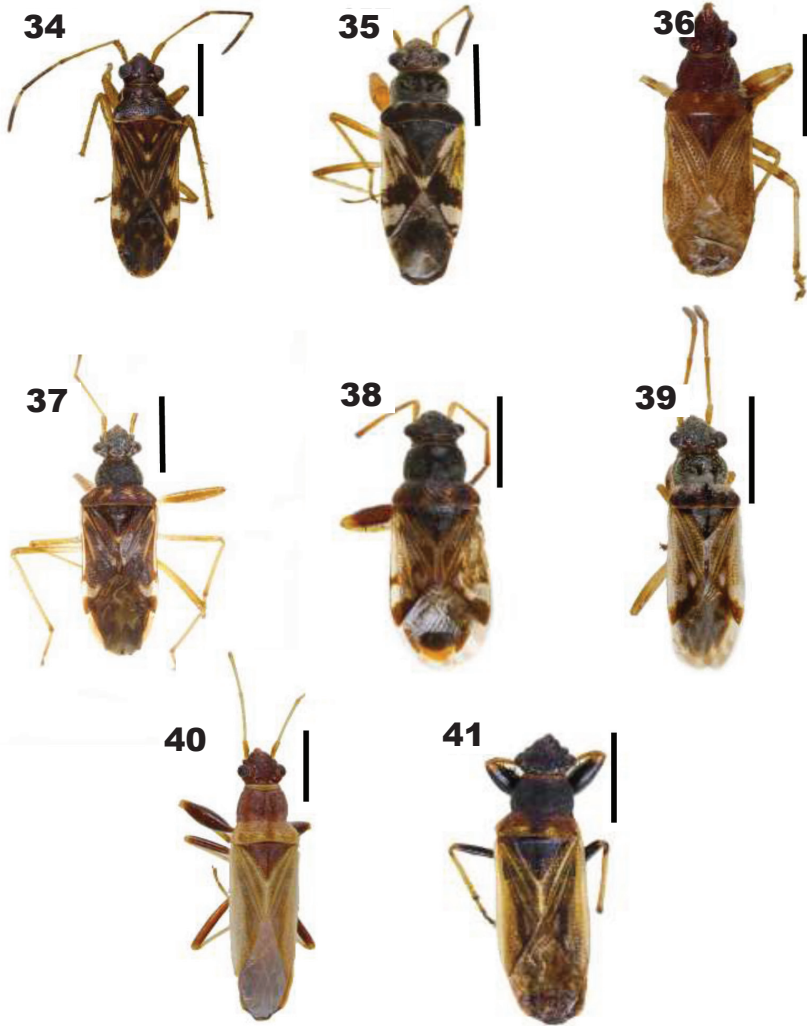


PLATE V. 34. *Neopamera albocincta* (Barber). 35. *Neopamera bilobata* (Say). 36. *Neopamera intermedia* (Barber). 37. *Neopamera neotropicalis* (Kirkaldy). 38. *Pseudopachybrachius concepcioni* Zheng & Slater. 39. *Pseudopachybrachius vincetus* (Say). 40. *Paromius dohrnii* (Guérin Méneville). 41. *Paromius longulus* (Dallas). [Bar=1mm]



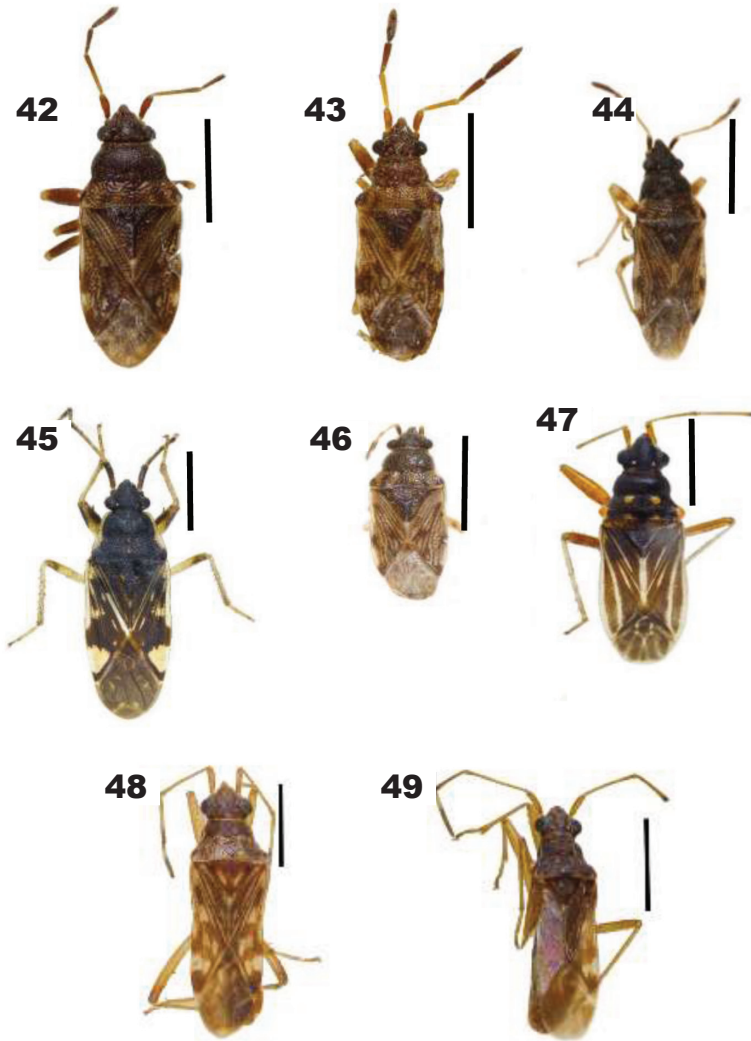


PLATE VI. 42. *Prytanus dissimilis* (Barber). 43. *Prytanus formosa* (Distant). 44. *Prytanus oblonga* (Stål). 45. *Dieuches armatipes* (Walker). 46. *Prytanus minima* (Guérin-Ménéville). 47. *Ozophora octomaculata* Ramos. 48. *Ozophora barbudenensis* Baranoswki. 49. *Ozophora xanthonecmis* Baranoswki. [Bar=1mm].

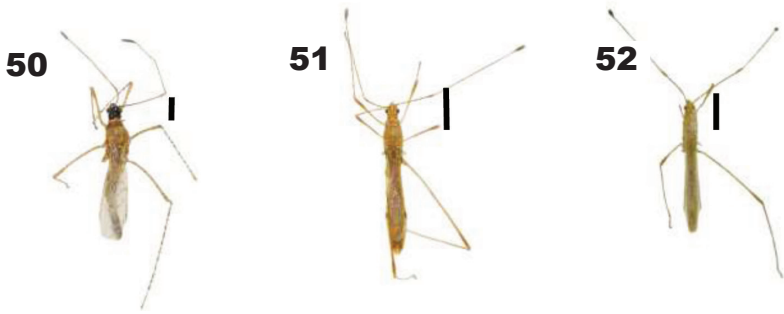


PLATE VII. Berytidae: 50. *Gampsocoris decorus* (Uhler). 51. *Jalysus reductus* Barber. 52. *Metacanthus tenellus* Stål. [Bar=1mm].