

Rhagovelia collaris, Burmeister (1835)

(Insecta: Hemiptera: Veliidae: *Rhagovelia*)

Yarilis Rivera Guzmán, Miriam C. Muñoz Santiago, Juliana Cardona, Nico Franz

UPRM – BIOL3435L – HHMI Module – Spring 2009



1- Geographic Range

Rhagovelia collaris is widely distributed in the Caribbean region, including Cuba (Ojito de Agua, Cupeyal de Norte, La Pangola and Río Nuevo Mundo), the Dominican Republic, the Bahamas and Puerto Rico: Aguada, Arroyo, Barranquitas, El Yunque, Jayuya, Lares, Luquillo, Maricao, Mayagüez, San Juan and San Sebastian.

2- Habitat

Rhagovelia collaris is an exclusive fresh water species that inhabits rapidly moving waters or the adjacent shore. These small insects live on the water surface, or on the adjacent shore where they move about actively. "They are usually found in "schools" darting about in fast running streams where the current is strongest (Slater, 215). They can make use of the surface tension of water in walking.

3- Physical Description

How to diagnose *Rhagovelia*? They are broad-shouldered water striders with short bodies (typically about 4mm in length). They have three segmented antennae and short forelegs. In total they have six legs with tufts of hairs on the ends, which enable them to live on water without breaking through the surface. Their hind femora do not reach beyond the abdomen. They have three tarsi, and each tarsi is three segmented. "The ventral arolium of the mid tarsi is developed into a swimming fan" (317). Their tarsal claws are inserted sub apically. The pronotum is fused, and the scent gland is open with laterally extended channels. Their general color is grayish-black with golden pubescence, with brown in their legs and antennae.

4- Reproduction

There are both female and male of *Rhagovelia collaris*. Adults overwinter and the eggs are laid in moss or plants. “The number of eggs that a female lays depends on the amount of food that is available: if there is plenty of food, she can lay the maximum number of eggs” (115). Eggs are relatively small with a porous shell and two to four micropyles. The embryo has a median, clypeal egg buster which is used to produce a longitudinal split in the egg shell just prior to hatching. Generally, the eggs are glued lengthwise to emergent or floating water plants, under water or at the water surface. “The numbers of generation in a year probably depend on the local climate” (Dolling, 133).

5- Lifespan/Longevity

There are five months from nymph to adult.

6- Behavior

They are predatory and gregarious, and are always in groups. The adult *Velia* can both walk slowly and row rapidly with simultaneous strokes of the middle pair of legs. Both of the veliid genera can glide forward without moving the limbs. They do this by reducing the surface tension of the water behind them by exuding a detergent fluid, possibly saliva, from the tip of the rostrum.

7- Communication and Perception

Information not abundant, but other genera in other aquatic bugs, like the genera in the family Gerridae, have been identified to communicate through surface ripples.

8- Food Habits

They are scavengers and predators that feed of small insects. Food consists of drowning insects like water fleas, springtails, small crustacean (ostracods) and the floating eggs or larvae of the mosquitoes.

9- Predation

“These animals are carnivores that pierce their prey with their mouthparts (stiletto) and feed on the juices of other insects. They detect their prey by the ripples that are produced on the water surface” (114).

10- Ecosystem Roles

They are predators that are probably important to control the mosquito larvae, aquatic snails and other pests.

11- Contributors

Yarilis Rivera Guzmán, Miriam C. Muñoz Santiago, Juliana Cardona, Nico Franz

References

Dolling, W.R. 1991. The Hemiptera. Oxford University Press, New York, 133 pp.

Ducane, F. et. al., 1915. Biología Centrali-Americana: Zoology, Botany and Archeology. R. H. Porter, London, 184.

González Lazo, D. D., et. al. 2005. Insectos Acuáticos del Parque Nacional

“Alejandro de Humboldt”, Cuba. Boletín Sociedad Entomológica Aragonesa.

n1 36: http://www.sea-entomologia.org/PDF/BOLETIN_36/B36-048-257.pdf

Grimaldi, D. et al., 2005. Evolution of the Insects. Cambridge Evolution Series: 317 pp.

López del Castillo, P., et. al., 2004. Insectos Acuáticos del Parque Nacional “La Bayamesa”, Cuba. Boletín Sociedad Entomológica Aragonesa. n1 **35** :
<http://www.sea-entomologia.org/aracnet/12/03Cuba4.pdf>

Slater, J.A., et. al., 1978. How to Know the True Bugs. Wm. C. Brown Company
Publisher, Iowa, 215 pp.

Wade, Sam, et. al., 2004. Critter Catalogue. Australian Biological Resources Survey,
Australia, 114 pp.