

Elizabeth R. Huff
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Entomology 6166, Student Semester Project

Phymatidae

After much research, I found that there was not very much information regarding the Phymatidae. The Catalog of the Heteroptera¹ considers Phymatidae as a family and divides it up into two subfamilies, Macrocephalinae and Phymatinae. Even though it is still thought of as its own family, much of the literature refers to this group as Phymatinae, a subfamily of the Reduviidae. In some books, the Phymatidae is not considered to be of “ecological importance”². Maybe this is why there is a lack of information on this family. Included in this paper is a description of the family with a list of species that occur in Florida according to four different sources, along with a key and illustrations.

Phymatinae is a complex of subfamilies³. This diverse group contains 26 genera and 281 species that are differentiated based upon morphology. These genera are grouped into four tribes. These are carcinocorini, macrocephalini, phymatini, and themonocorini. According to the catalog, only species of the genera *Lophoscutus*, *Phymata* and *Macrocephalus* occur in Florida. These species are listed before the key to the genera.

Ambush bugs have gained their name through their actions as insects. They diligently wait on flower tops for unsuspecting passer-bys, regardless of whether they are beneficial pollinators or not. Their prey includes such small insects as flies and bees, and such large insects as wasps and moths. After catching their prey with their raptorial front legs, they jab the insect with their beak injecting digestive enzymes so that the resulting fluids are siphoned.

Ambush bugs also exhibit incomplete metamorphosis. The eggs are laid during the summer and fall months and hatch the following spring. Adulthood is reached near the summer and the cycle begins again.

Identifying characteristics of this group include four segmented antennae, two ocelli, three segmented beak, and three segmented tarsi. Other characteristics include a greatly enlarged fore-femur, and the fore-tibia and tarsus are fused and often lay in a scrobe or are occasionally absent. Their elytra are elongate and narrow. Also, the fore-wing membrane is often with out distinct cells or if with cells, also with several supernumerary veins radiating from them posteriorly. Ambush bug abdomens are wide, extend distally and upward, and have cryptic coloring. They have small heads, are porrect, have large bucculae which form a groove under the chest for the reception of the beak. Ambush bugs may be distinguished however from the Reduviidae by their slightly clubbed shaped antennae.

¹ Henry, Thomas J. and Froescher, Richard C. 1998. Catalog of the Heteroptera or True Bugs of Canada and the Continental US.

² Schaefer, Antonio and Ranizzi, Ricardo. 2000. Heteroptera of Ecological Importance.

³ Schuh, Randall T. and Slater, James A. 1995

List of Species Occurring in Florida

According to: Catalog of the Heteroptera of North America⁴

Phymatidae

Subfamily Macrocephalinae

Genus *Lophoscutus* (Kormilev) 1951

Lophoscutus prehensilis (Fabricius) 1803

Lophoscutus prehensilis minor (Kormilev) 1954

Genus *Macrocephalus* (Swederus) 1787

Macrocephalus gracilis (Handlirsch) 1897⁵

Macrocephalus cimicoides (Swederus) 1787

Subfamily Phymatinae

Genus *Phymata*

Subgenus *Phymata*

Phymata fasciata (Gray) 1832

Phymata fasciata mystica (Evans) 1931

Phymata noualhieri (Handlirsch) 1897

Phymata pennsylvanica (Handlirsch) 1897

Phymata vicina (Handlirsch) 1897

Phymata vicina vicina (Handlirsch) 1897

According to: Heteroptera of True Bugs of Eastern North America⁶

Phymatidae

Genus *Phymata*

Phymata wolffii (Stal.) 1876⁷

Phymata fasciata (Gray) 1832

Phymata noualhieri (Handlirsch) 1897

Phymata guerini (Lethierry & Severin) 1896⁸

Phymata acutangula (Guerin) 1857

Genus *Macrocephalus*

Macrocephalus cimicoides (Swederus) 1787

According to: A Preliminary Revision of the Ambush Bugs of North America⁹

Phymatidae

Genus *Phymata*

Phymata fasciata georgiensis (Melnin) 1930¹⁰

⁴ Catalog of the Heteroptera or True Bugs of Canada and the Continental US.

⁵ Distribution is North America. This species apparently has not been recognized since its original description. Catalog of the Heteroptera.

⁶ Blatchley, W.S. 1926. Heteroptera Or True Bugs of Eastern North America. Pg 503-510.

⁷ *Phymata wolffii* has been synonymized with *fasciata* according to Catalog of Heteroptera.

⁸ *Phymata guerini* is described under the Geridae in Evans 1931 (Preliminary Revision) and is not even found under Phymatidae. However, there is no evidence of what has happened to this species in the newest species list in the Catalog of Heteroptera.

⁹ Evans, J. Harwood. 1931. A Preliminary Revision of the Ambush Bugs of North America. 24: 4, 711-738. Distributions are not listed for each species described in this publication.

List of Species Occurring in Florida

According to: A Preliminary Revision of the Ambush Bugs of North America¹¹

Phymatidae

*Phymata mystica*¹²

Phymata noualhier (Handlirsch) 1897

Genus *Macrocephalus*

Macrocephalus cimicoides (Swederus)¹³

Genus *Macrocephalus* continued...

Macrocephalus prehensilis (Fabr.)¹⁴

According to the Florida State Collection of Arthropods (FSCA):

Phymatidae

Genus *Lophoscutus*

Lophoscutus prehensilis

Genus *Macrocephalus*

Macrocephalus cimicoides

Genus *Phymata*

Phymata fasciata

Phymata fasciata mystica

Phymata guerini

Phymata vicina

¹⁰ *Phymata fasciata georgiensis* has been synonymized with *fasciata* pg 602 Catalog of Heteroptera.

¹¹ Evans, J. Harwood. 1931. A Preliminary Revision of the Ambush Bugs of North America. 24: 4, 711-738. Distributions are not listed for each species described in this publication.

¹² At time book was written, was a new species. No author is listed.

¹³ No year was listed.

¹⁴ No year was listed.

Key to Species of Florida

According to: A Preliminary Revision of the Ambush Bugs of North America¹⁵ and
Heteroptera or True Bugs of Eastern North America¹⁶

Key to North American Genera¹⁷

1. A. Scutellum short and triangular; a small degenerate tarsus present on the forelegs..... Genus *Phymata*
1. B. Scutellum elongate, covering the wings; no tarsus on the forelegs.....Genus *Macrocephalus*

Key to Genus *Phymata*¹⁸

1. A. Frontal processes rather blunt and slightly upturned; lateral edges of pronotum thick and not upturned or as seen from above and side rounding or with a blunt tip, pronotum also only slightly wider behind than in front; longitudinal ridges with distinct knobs towards the anterior part; a distinct lateral notch (Fig. 16); notch of side margins of pronotum not wider than deep; side margins of hind lobe of pronotum obtusely rounded, without tooth at hind angles; fourth connexivum three lobed, the middle the longest, or connexiva may also project in small prominent tips; middle and hind legs annulate.....Species *noualhierii*¹⁹
1. B. Without the above combination.....2
2. A. Lateral process less sharply pointed and shorter, pronotum not as flaring as; side margins of hind lobe of pronotum subtruncate with a single tooth in its humeral angle; lateral notch not as deep (Fig. 19 & 20), notch of side margins of pronotum wide and shallow, much wider than deep; tips of connexiva projecting more than slightly; legs not annulate; widely distributed.....Species *fasciata*
2. B. Lateral process and posterior 3 corners of pronotum very sharply pointed, fourth acutely angled and much wider (Fig. 23 & 24); abdomen flaring quite abruptly to the widest point; frontal processes extend slightly beyond the first antennal segment and sharply pointed; head narrows dorsally toward tip; surface of head studded with small smooth granules.Species *mystica*²⁰

¹⁵ Evans, J. Harwood. 1931. A Preliminary Revision of the Ambush Bugs of North America. 24:4, 711-738.

¹⁶ Blatchley, W.S. 1926. Heteroptera or True Bugs of Eastern North America. Pg 503-510.

¹⁷ There was no information regarding the genus *Lophoscutus*. This genus is listed in the Catalog of Heteroptera and it was also found in the FSCA, but taxonomic keys were not found regarding *Lophoscutus*.

¹⁸ There was no information regarding the species *pennsylvanica*, *vicina* and *guerini* in either of the sources used to make this key. Because *pennsylvanica* was not found in the FSCA, this species is considered questionable as to whether it actually occurs in Florida. However, *vicina* was found in the FSCA and does occur in Florida. The species *guerini* was also found in the FSCA but it is not listed in the Catalog of Heteroptera. For some reason, the species information has been lost and this may be a mistake in the book.

¹⁹ Because *noualhierii* was not found in the FSCA, this species is considered questionable as to whether it actually occurs in Florida.

²⁰ The species *mystica* has been synonymized with *fasciata*.

Key to Species of Florida

According to: A Preliminary Revision of the Ambush Bugs of North America²¹ and
Heteroptera or True Bugs of Eastern North America²²

Key to the species of *Macrocephalus*²³

1. A. Anterior half and lateral edges of pronotum with small round granules; color on the scutellum of male may be yellow with a black median stripe, or only yellow, female usually without the black stripe; coarse punctures on the scutellum do not diminish in size toward the apex.....*prehensilis*²⁴
1. B. Abdomen in both sexes is wider and more heart-shaped; second and third connexiva as seen dorsally are as wide long..... *cimicoides*²⁵

Bibliography

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10. [Http://www.inhs.uiuc.edu/~sjtaylor/reduviidae/ReduvidPics.html](http://www.inhs.uiuc.edu/~sjtaylor/reduviidae/ReduvidPics.html)
11. [Http://www.espd.com/amber/SEM/images/insectPart1SEM/source520/2a.html](http://www.espd.com/amber/SEM/images/insectPart1SEM/source520/2a.html)

Addendum

P. guerini is restricted to Cuba, according to Evan (1931). As a result Evans described the species *P. mystica* for specimens recorded as *P. guerini* in Florida and Georgia. *P. mystica* is now considered a subspecies of *P. fasciata*. For some reason, Froeschner (1988) did not explain this or mention the name *P. guerini*.

Thomas J. Henry

²¹ Evans, J. Harwood. 1931. A Preliminary Revision of the Ambush Bugs of North America. 24:4, 711-738.

²² Blatchley, W.S. 1926. Heteroptera or True Bugs of Eastern North America. Pg 503-510.

²³ There was no information regarding the species *cimicoides* in either of the references used to make this key, however this species was found in the FSCA.

²⁴ *Macrocephalus prehensilis* has been synonymized under *Lophoscutus prehensilis*. *Lophoscutus prehensilis* was found in the FSCA, and is considered to occur in Florida.

²⁵ The species *cimicoides* was found in the FSCA and does occur in Florida.

Systematic Entomology Laboratory
PSI, ARS, USDA
c/o P.O. Box 37012
Natl. Mus. Nat. Hist., MRC-0168
Smithsonian Institution
Washington, DC 20013-7012

Phone: 202/382-1780
Fax: 202/786-9422
Email: thenry@sel.barc.usda.gov

Don't forget to visit the International Heteropterists' Society Webpage at
<http://entomology.si.edu/IHS/home.lasso>