

Identification Key to the Principal Families of Florida Hemiptera, s.o. Heteroptera

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Introduction

The following diagnostic key is intended to assist the reader in recognizing many of the more commonly encountered families of Florida Heteroptera. This document has been greatly enhanced by the addition of many striking photographs taken by David Almquist, Entomology and Nematology Dept., University of Florida, using their Auto Montage system. Keys and illustrations have been modified from a variety of sources.

Heteroptera are numerous in Florida. Families exhibit a wide range of sizes and shapes. Due to this diversity it is impractical to illustrate all examples within each family. Once the reader has arrived at a tentative identification, be sure to check your textbook for confirmation. *Note, some of the less commonly encountered families are not in this key. This Order now contains 3 suborders, Heteroptera, Auchenorrhyncha, and Sternorrhyncha. The latter 2 were formally placed in the Order Homoptera. They are treated in another handout and are not included here.*



Side view of Hemipteran showing beak extending beneath head. Check for this, especially for those insects that first appear to be beetles.

(Be sure that once you have arrived at a determination use your textbook and other handouts as checks because not all families of Heteroptera are included in this key)

1. Antennae shorter than the head, usually concealed in depressions on under side of head beneath the eyes (**aquatic/semiaquatic families**) 2
 - Antennae as long as or longer than the head, fully exposed (**terrestrial families**) 7
2. Ocelli present. Inhabitants of margins of streams and ponds (Toad bugs) **Gelastocoridae**
 - Ocelli absent; aquatic bugs 3
3. Hind tarsi without 2 distinct claws; front legs not fitted for seizing prey 4
 - Hind tarsi with 2 distinct claws; front legs fitted for seizing prey 5
4. Head overlapping prothorax dorsally; dorsal surface flattened (water boatmen)..... **Corixidae**
 - Head inserted in prothorax; dorsal surface strongly convex (back swimmers) **Notonectidae**
5. Membrane of hemelytra reticulately veined 6
 - Membrane of hemelytra not veined (water creepers).. **Naucoridae**
6. Tarsi consisting of one segment; abdomen with a long, non-retractile, caudal appendage; hind legs not flattened and not fitted for swimming (water scorpions)..... **Nepidae**
 - Tarsi consisting of 2 segments; abdomen without long caudal appendage (short, flat retractile appendages present); hind legs flattened and fitted for swimming (Fig. 1, giant water bugs) **Belostomatidae**
7. Head shorter than the entire thorax; **OR** body not linear 8
 - Head as long as or longer than the thorax; body linear. (marsh treaders) **Hydrometridae**
8. Claws of the front tarsi inserted before the apex of the segment (anteapical), the segment more or less cleft (Fig. 2) 9
 - Claws of all tarsi inserted at apex of segment, the segment not cleft..... 10
9. Beak 4-jointed; hind femora extending much beyond the apex of abdomen **Gerridae**
 - Beak 3-jointed; hind femora not extending much beyond the apex of the abdomen **Veliidae**
10. Antennae 5 segmented 11
 - Antennae 4 segmented 14
11. Tibiae armed with strong spines (burrower bugs)



Fig. 1. Belostomatidae - (Giant waterbugs) Antennae are short and concealed in grooves under eyes.



Fig. 2. Anteapical front tarsal claw of Gerridae.

- **Cydnidae**
- Tibiae not armed with strong spines, smooth or with small setae 12
- 12. Scutellum narrowed behind, more or less triangular in shape, rarely almost covering the abdomen (Figs. 3, 3a. stink bugs) **Pentatomidae**
- Scutellum not narrowed behind, rounded and usually almost covering the abdomen (turtle bugs, shield bugs and negro bugs) **13**
- 13. Tibiae not strongly spinose; connexivum of abdomen with seven dorsal segments; color never shining black **Scutelleridae**
- Tibia with two or more rows of strong black spines; connexivum with but six visible ventral segments; color usually shining black; size less than 5mm, usually 2-3mm. **Corimelaenidae = Thyreocoridae**
- 14. Hemelytra resembling a network **Tingidae**
- Hemelytra not resembling a network, or vestigial 15
- 15. Beak 3-jointed 16
- Beak 4-jointed 21
- 16. Tarsi 2 segmented or less 17
- Tarsi 3 segmented 18
- 17. Body greatly flattened; femora of front legs not thickened **Aradidae**
- Body not flattened; front legs with greatly thickened femora; tarsi with 2 segments or none **Phymatidae**
- 18. Rostrum or beak stout; short, not reaching the middle coxae, fitting in a groove between front legs; ocelli, when present, placed distinctly behind the eyes or behind a transverse depression (Assassin bugs) **Reduviidae**
- Beak elongate, reaching the middle coxae; ocelli, when present, not behind a transverse depression, but usually in line with the rear margin of the eyes 19
- 19. Ocelli absent; hemelytra reduced, without membrane; parasitic bugs (Bedbugs) **Cimicidae**
- Ocelli present 20
- 20. Hemelytra with an embolium; membrane of hemelytra veinless or with indistinct veins but lacking closed cells **Anthocoridae**
- Hemelytra without an embolium; membrane with 4 or 5 long, closed cells **Saldidae**
- 21. Tarsi 2-jointed; exceedingly flat bugs; found under bark **Aradidae**
- Tarsi 3-jointed; not exceedingly flat 22

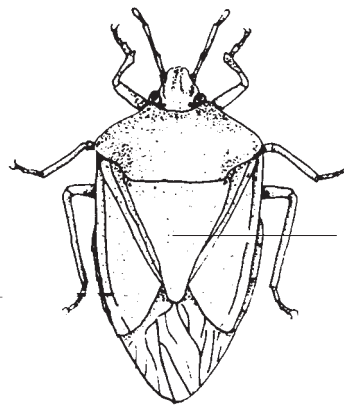


Fig. 3. Pentatomidae - line points to scutellum. Below, Fig. 3a, *Loxa flavicollis* (Drury)

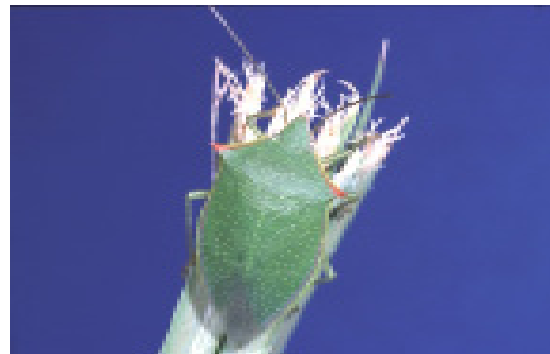


Fig. 3a. Adult Pentatomidae (*Loxa flavicollis* Drury)



Scutelleridae (often included in Pentatomidae) about to take flight. Notice the wings extending from beneath the scutellum, which covers almost the entire dorsum of the insect.



Scutelleridae adult - these are often confused with beetles due to their convex shape and hidden wings. The majority of visible posterior surface is actually the scutellum!

22. Front legs fitted for seizing prey, raptorial; tibiae and usually the femora armed with numerous interlocking spines **Nabidae**
 — Front legs not raptorial; fitted for walking 23
23. Hemelytra with a cuneus; membrane with one or two closed cells near the base **Miridae**
 — Hemelytra without cuneus 24
24. Ocelli absent **25**

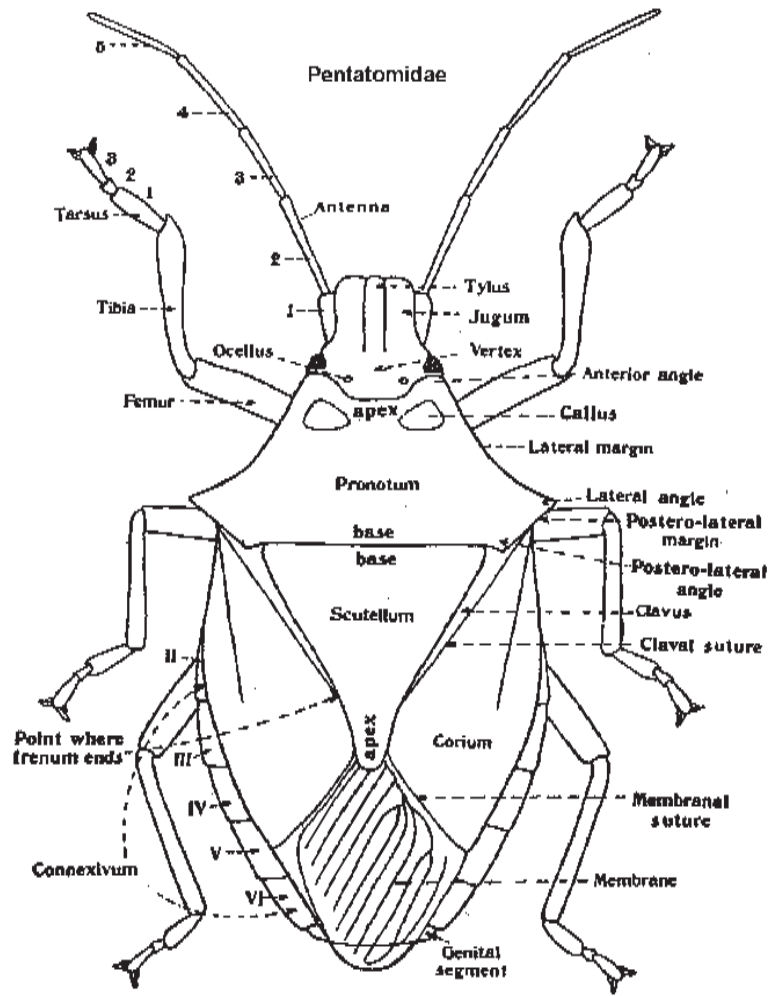


Ocellus is red structure

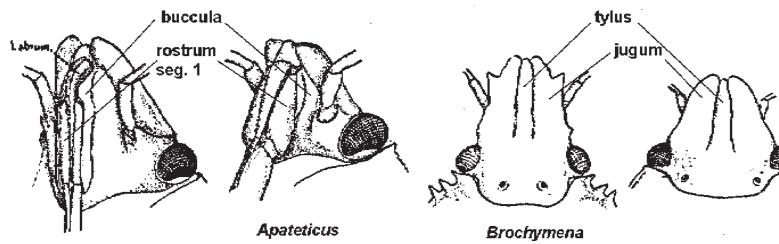
- Ocelli present 26
25. Pronotum laterally margined **Pyrrhocoridae**
 — Pronotum rounded laterally **Largidae**
26. Body and legs very slender, almost linear; head with a transverse incision in front of the ocelli; antennae elbowed **Berytidae**
 — Body not linear; legs not long and slender; head without a transverse incision 27
27. Membrane of hemelytra with 4-5 usually simple veins arising from its base **Lygaeidae**
 — Membrane of hemelytra with many veins arising from a transverse basal vein 28
28. Scent glands absent **Rhopalidae**
 — Scent glands present, opening between middle and hind coxae 29
29. Head narrower and shorter than pronotum; bucculae extending backward beyond base of antennae; hind coxae rounded or quadrate **Coreidae**
 — Head nearly as wide and long as pronotum; bucculae short, not extending backward beyond base of antennae; hind coxae transverse **Alydidae**

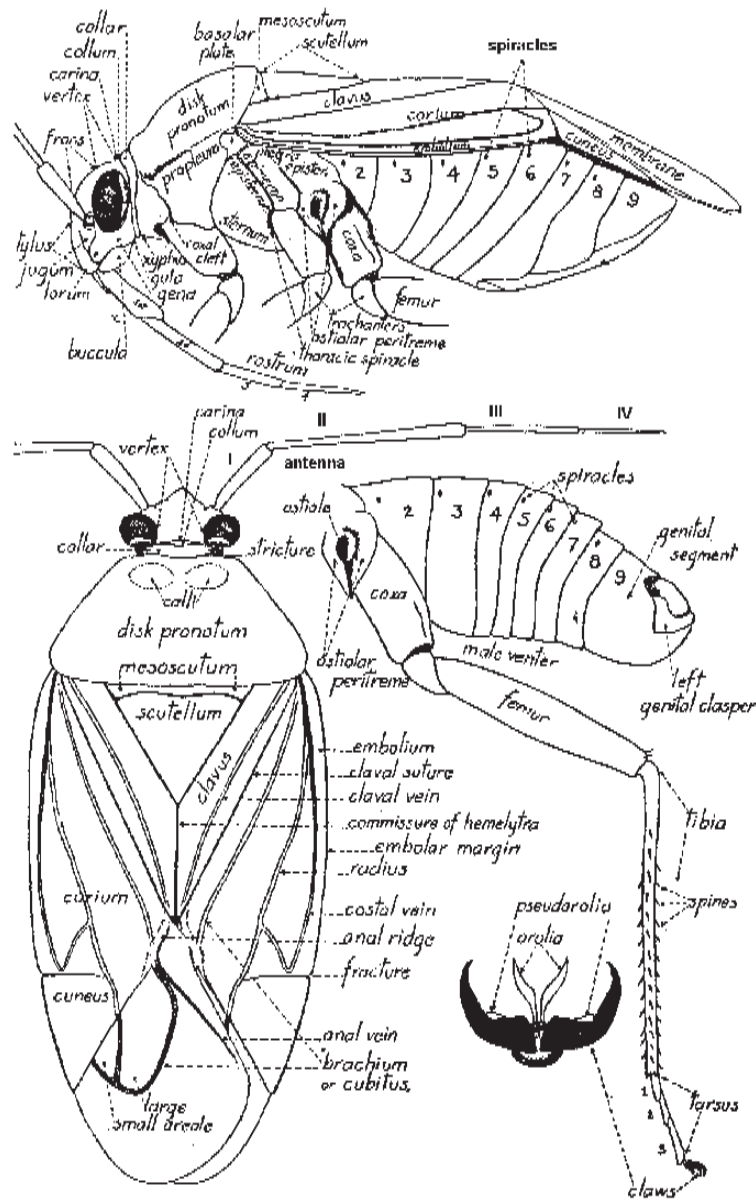
Terms to be familiar with:

- anteapical - just before the apex
- areolae - a small cell on the wings
- beak - type of mouthpart in Heteroptera and Homoptera
- arolium - a cushion-like pad on tarsi
- buccula - elevated plate on each side of rostrum
- clavus - sharply pointed anal area of hemelytra next to scutellum when folded
- claval suture -
- commissure - line where hemelytra meet along clavus below apex of scutellum
- connexivum - prominent abdominal margin of Heteroptera
- corium - harder part of wing, exclusive of clavus
- cuneus - small triangular area at end of embolium of hemelytra
- embolium - differentiated costal part of the corium in the forewing
- hemelytron (hemelytra) - wing type of Heteroptera
- jugum - lateral lobes of head when viewed from above
- lorum - plate on outer side of jugum
- ocellus - simple eye, situated on top of head
- pronotum - dorsal surface of prothorax
- propleuron - lateral part of prothorax
- scutellum - triangular part of mesothorax placed between the bases of hemelytra
- tylus - distal part of clypeus
- vertex - top of head between eyes

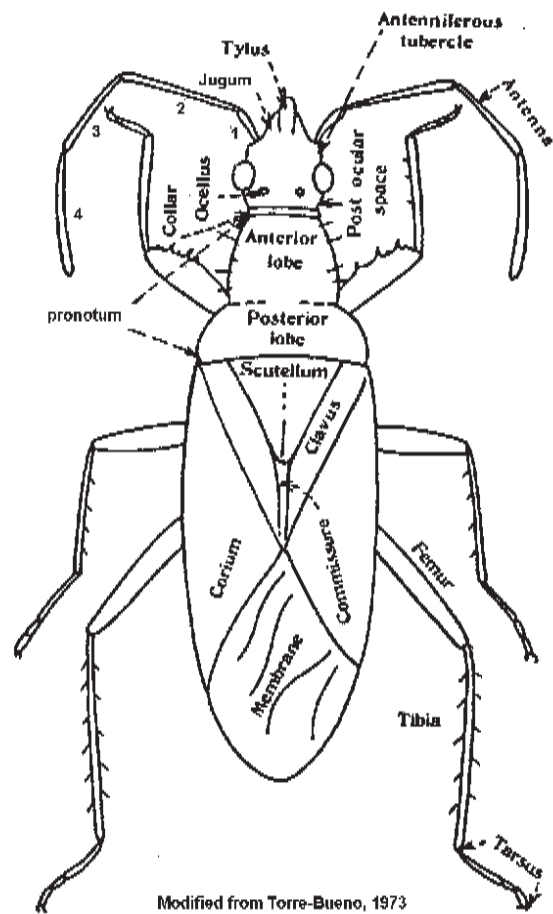


Modified from Torre-Bueno, 1973



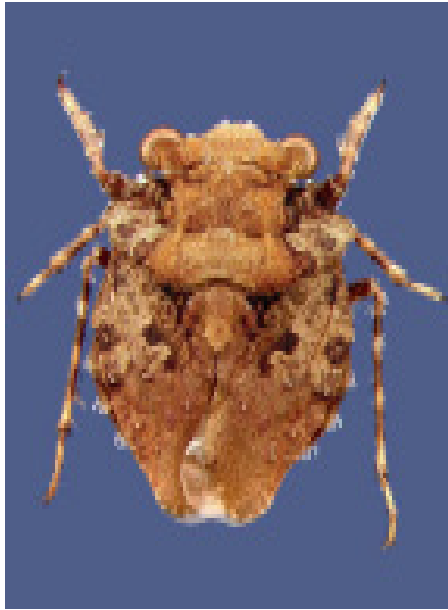


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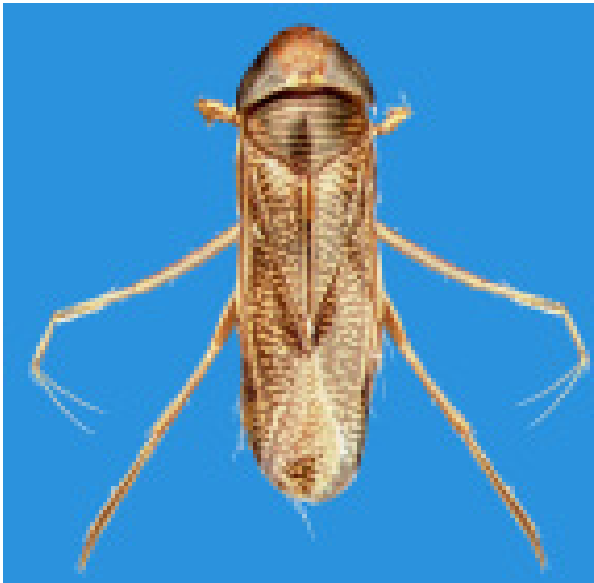


Modified from Torre-Bueno, 1973

Photo Gallery of Florida Heteroptera Families



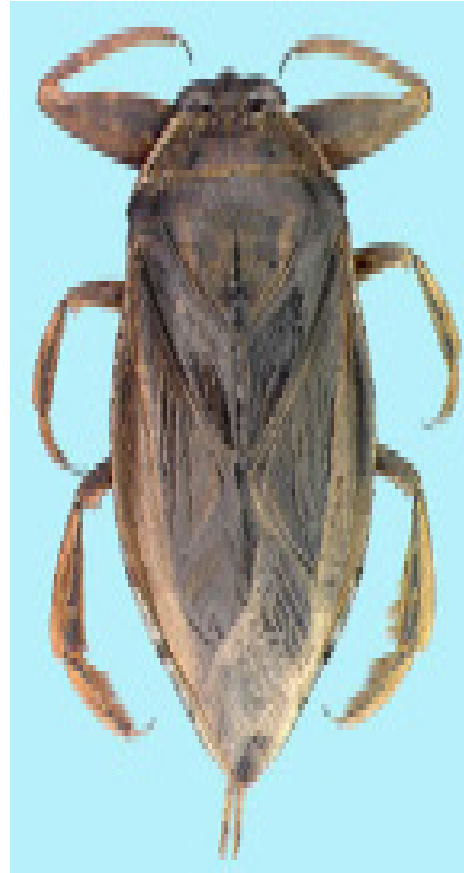
Gelastocoridae (left), Naucoridae (right)



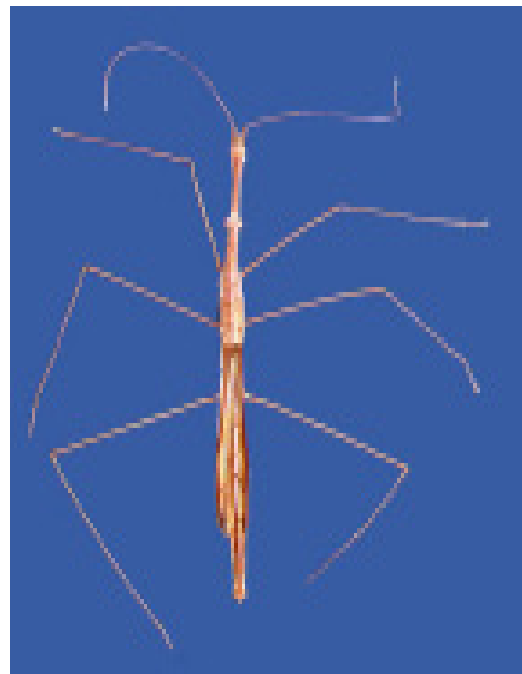
Corixidae (left), Notonectidae (right)



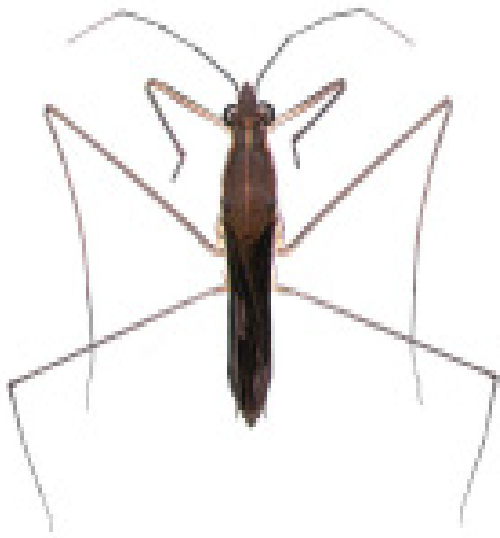
Cydnidae (top), Scutelleridae (middle), Thyreocoridae (bottom)



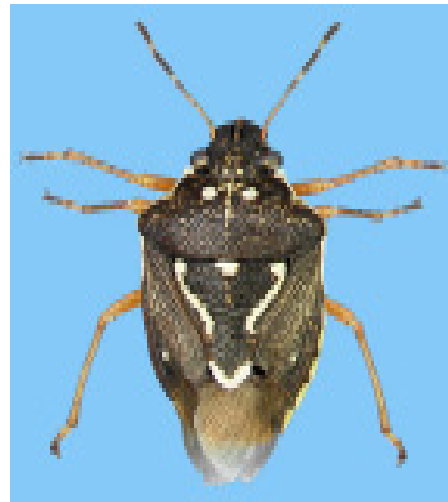
Belostomatidae



Hydrometridae



Gerridae



Pentatomidae



Veliidae



Aradidae



Reduviidae, 3-segmented beak, prosternal groove



Nabidae



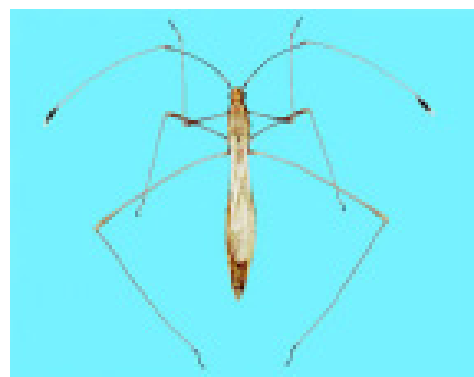
Cimicidae



Miridae (left), Pyrrhocoridae (right)



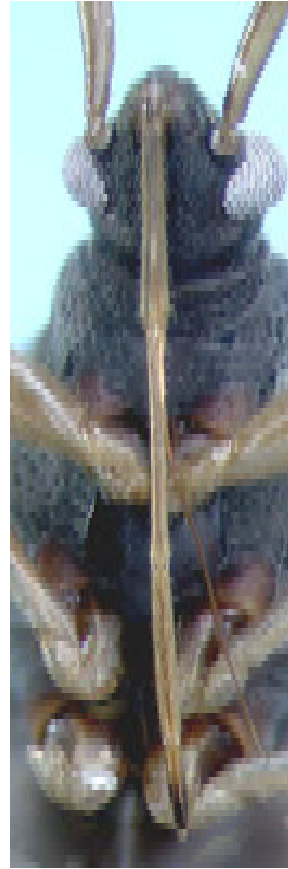
Saldidae



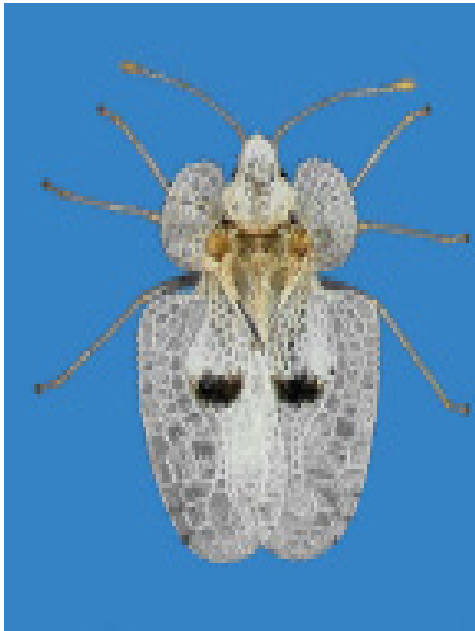
Berytidae



Anthocoridae



Lygaeidae - 4 segmented beak, adult habitus below.

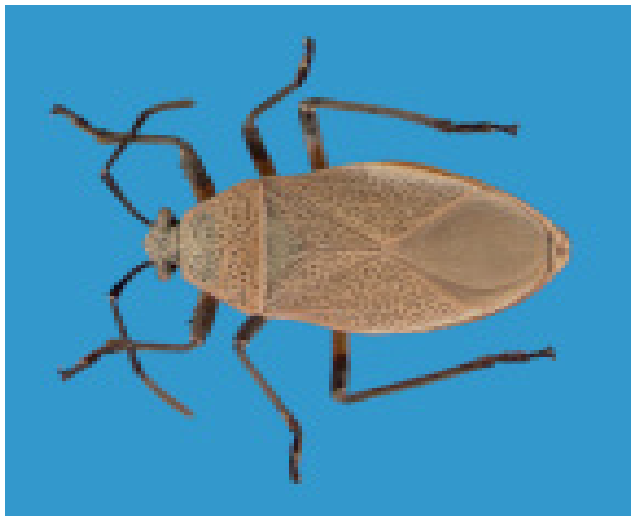


Tingidae





Coreidae



Largidae



Rhopalidae



Alydidae

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