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, Auchennorhyncha, and Sternnorhyncha. 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) ....
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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 = Thyreocorididae

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

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Fig. 3. Pentatomidae - line points to scutellum. Below, Fig. 3a, *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

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
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Modified from Tare-Bueno, 1973
Modified from Torre Buxó, 1973.
Photo Gallery of Florida Heteroptera Families

Gelastocoridae (left), Naucoridae (right)

Corixidae (left), Notonectidae (right)
Cydnidae (top), Scutelleridae (middle), Thyreocoridae (bottom), Belostomatidae

Hydrometridae
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Reduviidae, 3-segmented beak, prosternal groove

Nabidae

Miridae (left), Pyrrhocoridae (right)

Saldidae

Berytidae
Florida Heteroptera

Anthocoridae

Lygaeidae - 4 segmented beak, adult habitus below.

Tingidae
Identification - Insects of Florida

- Alydidae
- Rhopalidae
- Coreidae
- Largidae
- Alydidae
Selected References for Identification of Florida Heteroptera

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