

# Bugs (*Hemiptera*)

Many families of *Hemiptera* have common names. These names are given in the key immediately before the Latin name.

- 1**
- a. Antennae shorter than head, based under eyes and not visible from above ..... 2
  - b. Antennae longer than head, based in front of eyes and visible from above ..... 7

- a. Rostrum (beak) broad and triangular, not distinctly segmented, often with transverse grooves; front tarsi (feet) scoop-shaped, single segment ..... **Water Boatmen, Corixidae**

**2**

*The water boatmen mostly feed on algae, detritus and microorganisms, in contrast to the other Hemipterans, which are predators. They resemble the Notonectidae but are more flattened. Most live in lakes, though they are at times found in the slow water of streams.*  
[M/5/11/C]

- b. Rostrum cylindrical or cone-shaped with 3-4 segments; front tarsi not scoop-shaped ..... 3

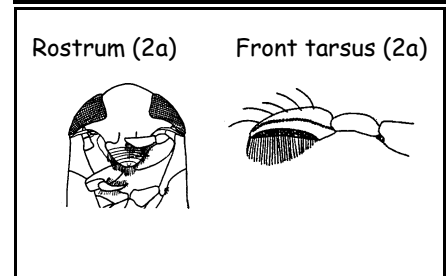
- a. Abdomen with a slender respiratory tube ..... **Water Scorpions, Nepidae**

**3**

*Water scorpions are usually found among vegetation on lake margins. They are poor swimmers but cling to plants as they hunt for invertebrate prey. They breath through the respiratory tube when at the surface and store air beneath the wings while submerged.*  
[M/0/2/C]

- b. Abdominal respiratory tube absent or short and flat ..... 4

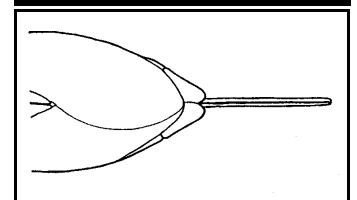
**Corixidae showing rostrum and front tarsus (2a)**



**Corixidae (2a)**



**Nepidae abdomen with respiratory tube (3a)**



**Nepidae (3a)**



- a. Body flattened and oval; front upper legs broad  
..... 5
- 4** b. Body elongate or hemispherical, not flattened; front upper legs similar to others  
..... 6

- a. Length > 18 mm; short respiratory flaps at end of abdomen; eyes protruding  
... *Giant Water Bugs*, **Belostomatidae**

**5** *The giant water bugs are among the largest invertebrate predators, capturing anything they can hold including fish and frogs. They live in lakes and marshes or in other calm and vegetated waterbodies. They sometimes fly towards lights. [H/1/2/C]*

- b. Length <16 mm; no respiratory flaps; eyes even with margin of head  
.... *Creeping Water Bugs*, **Naucoridae**

*The creeping water bugs are more common in the southern states. They usually live in well oxygenated water of streams or small ponds and carry an air bubble under the wings. [M/0/1/C]*

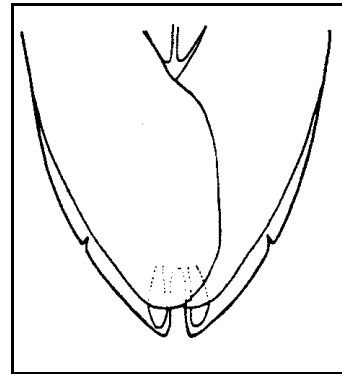
- a. Body hemispherical; rostrum 3-segmented; length <3 mm  
..... *Pigmy Backswimmers*, **Pleidae**

*Pigmy backswimmers have shell-like wings like Beetles. They live in vegetated areas of ponds, lakes, marshes and slow streams. They swim upside-down and crawl on vegetation in search of invertebrate prey. [M/0/1/R]*

- 6** b. Body elongate; rostrum 4-segmented; length > 5 mm  
..... *Backswimmers*, **Notonectidae**

*Backswimmers swim upside-down but out of the water (during occasional or migratory flight) orient themselves right-side-up. They are found in lakes, ponds and stream pools either near the surface or submerged for long periods. They are predators. [H/1/2/C]*

**Belostomatidae, showing respiratory flaps (5a)**



**Belostomatidae (5a)**



**Naucoridae (5b)**



**Pleidae (6a)**



**Notonectidae (6b)**



- a. Membrane of wing with 4 or 5 distinct similar cells; hind coxae (base of hind legs) large and broad  
 ..... Shore Bugs, **Saldidae**

7

*The shore bugs are semi-aquatic, living on margins of streams, lakes and marshes. They are predators. [X/X/X/C]*

- b. Membrane of wing lacking distinct similar cells; hind coxae small, cylindrical or conical  
 ..... 8

8

- a. Claws of front tarsi attached along side  
 ..... 9
- b. Claws of front tarsi attached at tip  
 ..... 10

9

- a. Hind femur (upper leg or thigh) long, extending far beyond tip of abdomen  
 ..... Water Striders, **Gerridae**

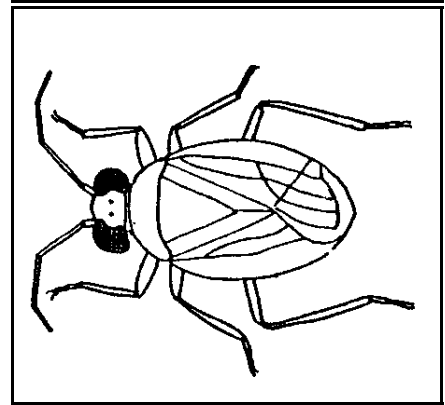
*Water striders are large bugs living on any flat-water (no ripples) habitat and are often found among vegetation. They feed on terrestrial insects that are trapped in the surface film or other near-surface invertebrates. Some types lack wings. [X/2/7/C]*

- b. Upper hind leg shorter, extending only to or slightly past tip of abdomen  
 ..... Broad Shouldered Water Striders, **Veliidae**

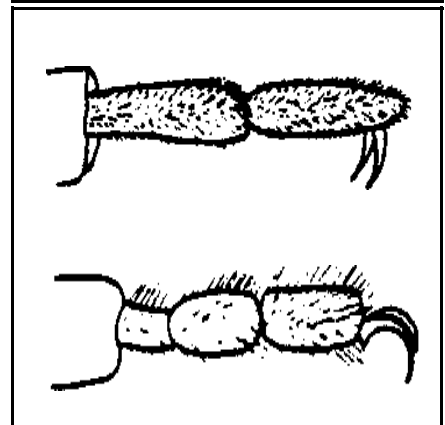
*The Veliidae are smaller than the Gerridae and are usually wingless. They live on flat water (no ripples) and are predaceous. [M/1/3/C]*

**Saldidae**

(7a)



Front tarsal claws attached along side and at tip (8a/8b)



**Gerridae**

(9a)



**Veliidae**

(9b)



- a. Head as long as entire thorax and slender; eyes about midway on head  
 .... *Water Measurers, Hydrometridae*

**10**

*The water measurers are stick-like and close to 1 cm in length. They walk on vegetation or the water's surface where there are no waves and usually in the absence of fish. They prey on invertebrates in the surface film by spearing them. [M/o/1/C]*

- b. Head short and stout; eyes at rear of head  
 ..... 11

**Hydrometridae (10a)**



- a. Lower part of head grooved to receive rostrum; tarsi 2-segmented; legs without bristles; length < 2.5 mm  
 ..... *Velvet Water Bugs, Hebridae*

*Velvet water bugs live on calm water or on the moist soil at water's edge. They are slower moving than Veliidae. [X/o/2/R]*

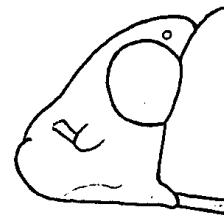
**11**

- b. Lower part of head not grooved; tarsi 3-segmented; black spines on legs; legs with scattered, stiff, black bristles; length 2-4 mm  
 ..... *Water Treaders, Mesoveliidae*

*Water treaders live among emergent and floating vegetation on calm water. They are often wingless. They prey on small invertebrates in the surface film. Freezing kills adults and nymphs, so they overwinter as eggs. [X/o/1/R]*

**Heads of Hebridae and Mesoveliidae (11a/11b)**

Hebridae with lower part of head receiving rostrum (11a)



rostrum (11b)



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