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ORDER HEMIPTERA

Aquatic & Semiaquatic True Bugs

The majority of Hemiptera are not associated with aquatic habitats. Aquatic hemipterans are unlike most aquatic taxa in that the adults and larvae occupy the same habitat. Aquatic and semiaquatic Hemiptera can be separated into two groups based on their antennal morphology and the habitat in which they are generally found. Some Hemiptera are primarily aquatic and can be recognized by the possession of antennae that are shorter than the head and concealed below the eye (see Fig. 7.2). One exception is the Gelastocoridae, which are riparian and possess short antennae. The truly aquatic species are usually found under water, but many possess wings, which allow movement between water bodies. In contrast, most semiaquatic species of Hemiptera have antennae longer than their heads (see Fig. 7.3) and can be found on the water's surface or at the water's margin.

Although some taxa are primarily aquatic, most Hemiptera do not rely heavily on dissolved oxygen in the water, but instead obtain oxygen from the atmosphere. Due to their ability to utilize atmospheric oxygen, Hemiptera are often able to exist in water bodies with low levels of dissolved oxygen.

Most aquatic and semiaquatic Hemiptera are predatory. After grasping a prey item, these predatory hemipterans inject enzymes into the prey with their beaks, first to poison and then to digest the insides of their prey. The softened internal structures of the prey are then sucked up through the beak. Some species of these Hemiptera can inflict a painful bite in self-defense when handled (*e.g.*, Belostomatidae, Naucoridae, Nepidae).

Hemiptera Morphology

The most distinctive characteristic of both immature and adult Hemiptera is the presence of mouthparts that are modified into an elongate, sucking beak. Most hemipteran adults possess "hemelytra", which are modified fore wings with a leathery base and membranous distal half (Fig. 7.1). Some adults and all larvae lack wings, but most mature larvae possess wing pads. Both adults and larvae have three pairs of segmented legs and there are two tarsal claws present on at least some of the legs.

The shape and length of the antennae, legs, and beak (*i.e.*, rostrum) can be important for separating Hemiptera families. Body shape and the presence or absence of veins in the wing membrane are also diagnostic for some taxa.

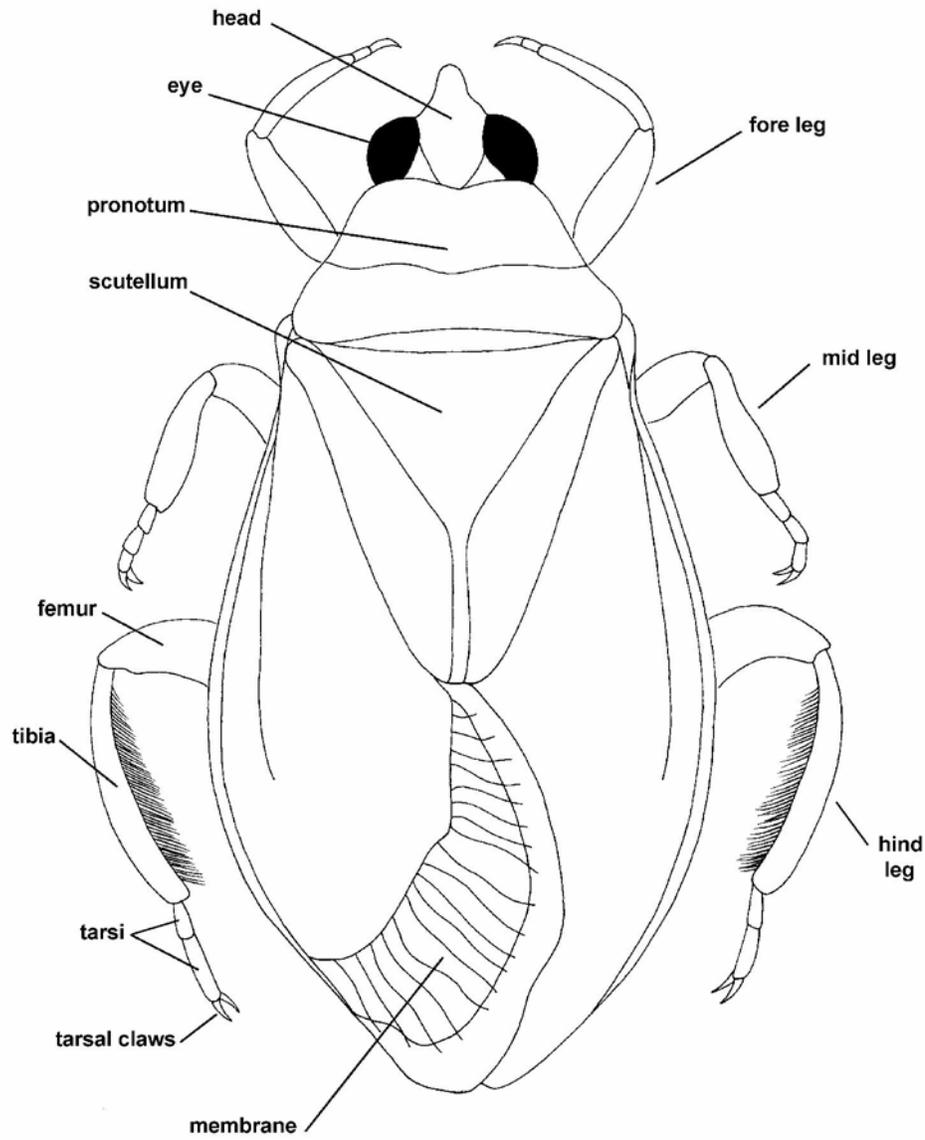


Figure 7.1: Dorsal view of hemipteran adult.