

Kentucky State University Cooperative Extension Connections



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The Wheel Bug

Wheel bugs are large predatory insects in the family Reduviidae, commonly known as assassin bugs. They are beneficial predators that feed on a wide range of arthropods using piercing-sucking mouthparts to extract body fluids. Among the largest assassin bugs in North America, these insects often surprise first-time observers with their size and unusual shape. They are easily recognized by the toothed, cog-like “wheel” on the thorax (Fig. 1).

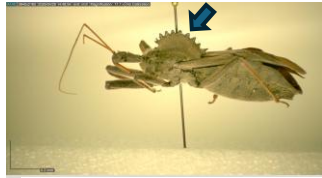


Fig. 1. Wheel bug adult (A. Yuknis, KSU)

Life Cycle

Eggs

Wheel bugs have one generation a year and overwinter in the egg stage. The eggs are cylindrical, barrel-shaped, and brown. They are laid in tight clusters, typically ranging from 20 to 200 eggs (Figs. 2 & 3).

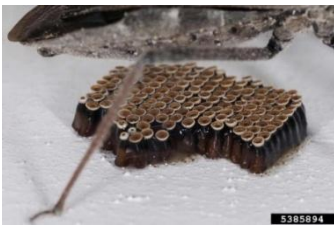


Fig. 2. Wheel bug egg mass (J. Berger, Bugwood.org)

Nymphs

Nymphs hatch in late spring to early summer (May-June; Fig. 3). Wheel bugs develop through five nymphal stages before becoming adults. With each molt, they increase in size, and wing pads appear during the final two instars. Young nymphs are red and black (Fig. 4), while later instars become more brownish-black as they mature. Like adults, nymphs are predatory and feed on soft-bodied insects.



Fig 3. Wheel bug egg mass and nymphs (J.N. Dell, Bugwood.org)

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Fig. 4. Wheel bug nymph (S. Ellis, Bugwood.org)

Adults

Adult wheel bugs (Fig. 1) are about 1-1.5 inches long. They are gray to brown and somewhat flattened, with long legs and a thick beak. The raised, toothed “wheel” on the thorax is unique to this species and makes them easy to identify. Adults are slow-moving predators that rely on ambush rather than pursuit. They are often seen during the summer and fall on trees and shrubs.

Behavior

Wheel bugs are generalist predators and are considered to be beneficial insects. Although they are not aggressive toward people, they will bite if handled, and their bite is notoriously painful.

If you see a wheel bug outdoors, it’s best to leave it alone. If one needs to be moved, gently nudge it away using a long object. They usually won’t bite unless they’re picked up or squeezed.

Acknowledgement

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Sources

Day, E., & Dellinger, T. A. (2021, September 29). Wheel Bug (*Arilus cristatus*). Virginia Cooperative Extension, Virginia Tech. Retrieved from: <https://www.pubs.ext.vt.edu/3104/3104-1585/3104-1585.html>.

Stone, B. (2022, May 6). Watch Out for Wheel Bugs. Lee County Cooperative Extension, NC State Extension. Retrieved from: <https://lee.ces.ncsu.edu/2022/05/watch-out-for-wheel-bugs/>.

University of Kentucky Entomology. Wheel Bug (*Arilus cristatus*). Retrieved from: <https://entomology.mgcafe.uky.edu/ef705>.