

Colorado Insect of Interest

Broadwinged Katydid (Greater Angle-wing)

Scientific Name: *Microcentrum rhombifolium* (Saussure)

Order: Orthoptera (Grasshoppers, Crickets, Katydid)

Family: Tettigoniidae (Longhorned Grasshoppers, Katydid)



Figure 1. Broadwinged katydid male.

Identification and Descriptive Features: These are large insects, with some at least two inches from the head to the tip of the wings. They are pale-green color with an angular form in side view, leading to another common name for the species, the “greater angle-wing katydid”. The hind legs are long and thin, the base (femur) thickened to allow jumping. Antennae are very long and thread-like. Even when not seen, the broadwinged katydid is one of the most often heard Colorado insects, making clicking calls in trees and shrubs during late summer.

The eggs are also a distinctive stage of this insect. They are flat and laid in loose double rows on twigs or leaf midribs, somewhat resembling fish scales (Figure 2). Originally black when laid, the eggs rapidly become cream colored.

Distribution in Colorado: The broadwinged katydid is widely distributed in the state, found in both eastern and western Colorado and common in many urban areas.



Figure 2. Broadwinged katydid eggs.

Life History and Habits: The overwintering stage of katydids are eggs that are laid on twigs and small branches. The eggs hatch the following spring and the young katydids develop during the season, becoming full grown in late summer. Although katydids feed on leaves, they are never abundant enough to cause significant damage to plants. Incidentally, katydids may feed on some small insects present on the plants.

Singing occurs in late summer, lasting several weeks. Loud 'lisps' and 'ticks' are produced by males with the aid of specialized structures on the forewings. Unlike most katydids and crickets, the females also can produce sound - a weak clicking/rustling. Among the katydids sounds are perceived by means of a typanum located on the tibia of the front legs (i.e., “ears on their knees”).

During mating the male passes to the female a large nutritive packet (spermatophore) that the female feeds on and uses to help nourish developing eggs (Figure 4).

Females (Figure 3) can be distinguished from males (Figure 1) by a pronounced hook-like ovipositor. They lay eggs by roughening the bark and gluing the eggs to the twigs of host plant. Adults die with cold weather in September and early October and there is one generation produced per year.

Related Species: The “true” katydid, *Pterophylla carnellifolia* F. (Figure 5), has become established in parts of the Front Range area of Colorado. This is a somewhat larger katydid with broader body form. The males of this species make loud, raucous nighttime mating calls.

Also native to Colorado are two species of “broadwinged bush katydids” (*Scudderia* spp.) that have a similarly angular wing and body profile as the broadwinged katydid but are somewhat smaller. The forktailed bush katydid, *S. furcata* Brunner, is likely widespread in the state and CSU Museum collections include specimens from both eastern Colorado and the West Slope. Current state records for the second species, *S. pistillata* Brunner, indicate it is only present in the northeastern areas of the state, including Larimer County.

In total, there are approximately 18 species of katydids and other “longhorned grasshoppers” (Tettigoniidae family) in Colorado. One unusual flightless species that sometimes attracts attention is the Mormon cricket, *Anabrus simplex* Haldeman. Within in the state it is most commonly observed in areas around Dinosaur National Monument. Outbreaks of this insect periodically occur in northwestern Colorado as well as areas of Utah, Wyoming, Idaho, and Nevada.



Figure 3. Broadwinged katydid female.



Figure 4. Broadwinged katydid female with spermatophore.



Figure 5. Hearing organ of the broadwinged katydid on the joint of the fore leg..