



BUG BIZ

Pest Management and Insect Identification Series



Sphenophorus aequalis, Clay-colored Billbug (Coleoptera: Curculionidae)

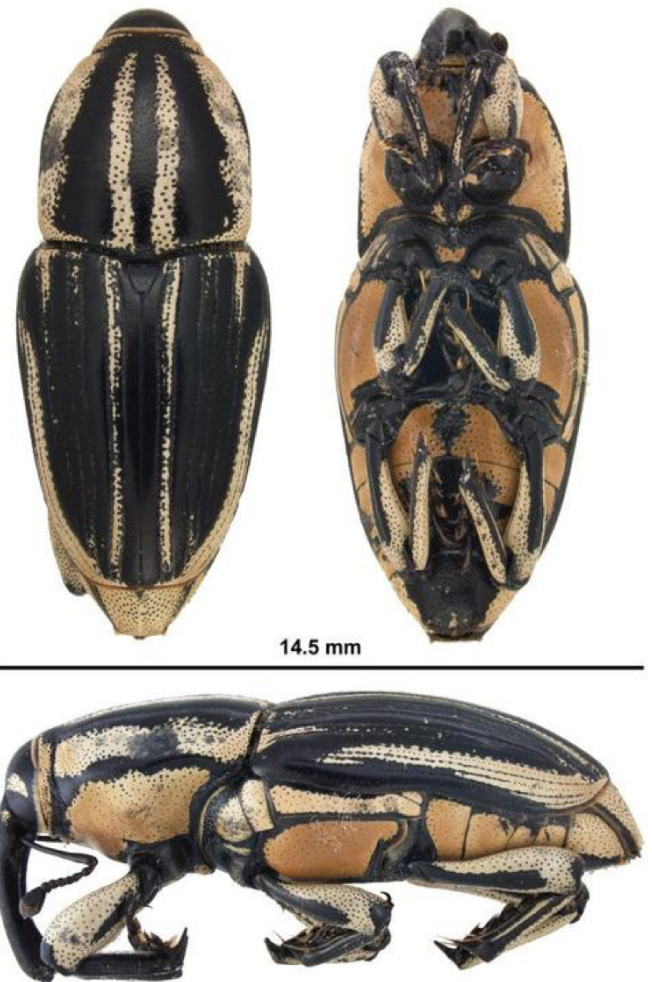
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Description

Clay-colored billbug beetles are members of the large beetle family Curculionidae, known as weevils or snout beetles. Billbugs belong to the genus *Sphenophorus*, with 65 species in the U.S., and at least 10 that occur in Louisiana. The clay-colored billbug can be considered typical of the genus. It is often further divided into up to four subspecies that differ in coloration and size but share similar external appearances.

All billbugs, and many other weevils, are characterized by their long, slender, curved snouts that bear small mouthparts at the tips. The adult size ranges from $\frac{2}{5}$ to $\frac{4}{5}$ of an inch (9 to 21 mm) in length. The body shape is oval, with small heads and clubbed, elbowed antennae inserted near the base of the snout. The thorax is about $\frac{2}{3}$ the length of the abdomen. Billbugs possess naked, tough cuticles ranging from black to tan, with varying arrangements of grooves and rows of punctures, depending on species. In Louisiana, clay-colored billbugs are typically $\frac{1}{2}$ to $\frac{2}{3}$ of an inch (12 to 16 mm) in length, and dark brown to auburn in color. Light yellow to tan stripes and rows of punctures are present on the thorax and abdomen. The larvae are white to pale yellow, legless, with C-shaped bodies and brown well-defined heads. Pupae are pale yellow and resemble soft, compact versions of the adults. Billbug eggs are $\frac{1}{25}$ to $\frac{1}{12}$ of an inch in length (1-2 mm), oblong in shape, creamy white, smooth and glossy.

Due to the large number of species occurring in Louisiana and the overall similarity among them, identifications to species of *Sphenophorus* should be performed by a knowledgeable specialist or entomology diagnostician.



Adult clay-colored billbug *Sphenophorus aequalis*, museum specimen (Patrick Marquez, U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Bugwood.org).

Life Cycle

As with all other beetles, billbugs undergo complete metamorphosis in four distinct life stages, egg, larva, pupa and adult. Little information is published about the life history details of clay-colored billbug, but life histories of billbug species follow similar patterns. After mating, females deposit tiny eggs near or in the roots of large grasses (Gramineae) and sedges (Cyperaceae), including a number of crop species such as corn. Plants growing in or near wet areas are favored. Once the larvae hatch, they feed on root and stem tissue, going through up to six growth stages. Larger larvae exit the plant and feed externally below ground level. Pupation occurs in the soil near host plants. In general, billbugs produce two generations a year, and adults are most active during May and June, when mating and egg laying occur. The larvae usually hatch in six to 10 days, depending on temperature. Overwintering adults produce larvae that are active during May and June, and summer adults produce larvae in September. Adult billbugs overwinter in protected areas, such as cavities in soil, under leaf litter, woody debris and similar places.

Ecological Significance and Pest Status

Clay-colored billbugs are widely distributed across North America, from Canada to northern Mexico and coast to coast. Larval feeding can cause damage to turfgrass, corn and wheat, among other cereal crops. Plants infested with billbug larvae develop discoloration of the leaves, turn brown and ultimately die. Clay-colored billbugs prefer host plants growing in wet areas, including swamps, low-lying fields and wet meadows, habitats that are abundant in Louisiana, often adjacent to agricultural crops. Of the various species of billbugs in Louisiana, none are considered to be serious agricultural pests, although damage to crops growing near wet areas may suffer sporadic damage. There are no reports of clay-colored billbugs damaging crops, but another related species, *Sphenophorus coesifrons*, has been reported as a mid-season pest of rice. Current integrated pest management practices keep their populations low enough to prevent significant economic losses. Other species probably cause sporadic damage but are not identified to species.

Control

The cryptic feeding habits and species diversity of billbugs make them difficult to manage effectively in situations where they reach damaging populations. However, through monitoring, cultural practices and the use of chemicals, it is possible to keep them under control. Difficulty in distinguishing species within this large, complex group can result in misidentifications. This can result in incorrect control methods being applied. Correct species identification is always the first step in successful management strategies.

Monitoring. Adult billbugs can be easily monitored utilizing pitfall traps because they usually disperse by crawling across the surface of the ground. Pitfall traps can be as simple as a plastic cup placed in the ground flush with the surface. Larvae are more difficult to monitor and require careful inspection of plants when feeding damage is observed. Grass crops adjacent to wet areas may be particularly susceptible to billbug damage.

Cultural control. To prevent infestation of billbugs in turfgrass, utilization of resistant turfgrass varieties is an excellent alternative to the use of chemicals.

Chemical control. Several chemicals with different modes of action are effective against all billbug species. Contact insecticides such as pyrethroids can be used to quickly reduce the populations of adults. Applications of long-residual, systemic insecticides (i.e., neonicotinoids) may be necessary in uncommon situations where larval control is needed.

Biological control. The utilization of nematodes that feed on billbug larvae has been proven as an effective management strategy. Alternatively, entomopathogenic fungi such as *Beauveria* spp. and *Metarhizium* spp. can be applied to the infected turfgrass or plants.

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