



Biology and Control of the Eastern Lubber Grasshopper¹

C.W. Scherer and D.E. Short²

Periodically, grasshoppers have been of economic importance in Florida. A few species sometimes occur in large enough numbers to cause serious damage to citrus, vegetable crops and landscape ornamentals. One of these culprits is the Eastern Lubber Grasshopper (Figure 1), *Romalea guttata*.

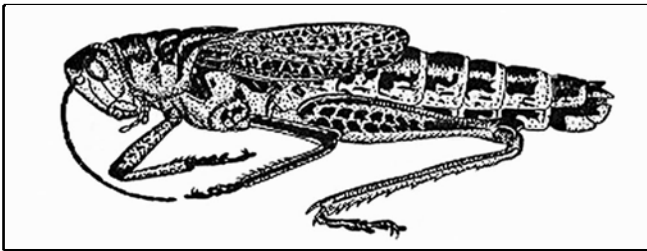


Figure 1. Adult female Lubber.

Description

The lubber is surely the most distinctive grasshopper species within the southeastern United States. It is well known both for its size and its unique coloration. Adult males and females are usually 2.5 and 3.0 inches, long, respectively. The body is quite robust while the legs remain relatively slender. The general color of adults is dull yellow with varying degrees of black spots and markings, though some are almost entirely black (see below). The front pair

of wings (tegmina) are yellow with numerous scattered black dots, while the hind wings when exposed reveal a bright red/rose coloration with a black border. The immatures differ dramatically in appearance from the adults. Nymphs typically are completely black with one or more distinctive yellow stripes. The front legs and sides of the head are often red.

A darker form of the adult lubber also occurs throughout most of the normal range. This phase is entirely black with a few marks of yellowish tawny. The adults of this phase seem to resemble the nymph. However, these two phases are indeed the same species.

The wings offer little help with mobility for they are rarely more than half the length of the abdomen. This species is incapable of flight and can jump only short distances. Mostly the lubber is quite clumsy and slow in movement and travels by walking and crawling feebly over the substrate.

Distribution/Habitat

The lubber is limited to the southeastern and central southern portion of the United States (Figure 2). The northern boundary is central North Carolina

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2. C.W. Scherer, recent graduate and D.E. Short, retired professor, Entomology and Nematology Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

west through southern Tennessee, Georgia, Alabama, Mississippi, Louisiana, Arkansas, to Texas.



Figure 2. Distribution of *Romalea guttata*.

Lubbers seem to prefer open pine-woods, weedy fields, and the weedy vegetation along roadsides. Occasionally, on rural highways in the central portion of the state, enough flattened lubbers will accumulate on the road to cause a minor slick.

The accumulation of weedy plant species along drainage ditches within citrus groves and vegetable fields will sometimes attract Lubbers, which in turn end up feeding on the cultivated crops as well. Along the coastal regions of the southern section of the state, lubbers may often invade residential areas and feast on certain ornamental plants, especially amaryllis and related plants.

Seasonal Appearance/Life History

Adults of *Romalea guttata* exist throughout the year in Florida with their numbers dwindling over the winter period. They have one generation per year, with eggs beginning to hatch in late February in South Florida while the rest of the state remains almost free of grasshoppers until mid-March. Lubbers, like all grasshoppers, grow through successive stages after molting. These stages are referred to as nymphal instars. Lubbers have a total of five instars before molting into the adult stage. The length of these instars vary slightly but average 7 - 10 days each. The highest number of adults can be observed during the months of July and August.

Lubbers are known to possess rather unusual courting behavior. Males will jump at the female, then grasp her firmly. Quickly the male will raise the

front wings and flutter the hind wings for brief periods while engaged in copulation.

Females will begin laying eggs during the summer months. After mating, females use the tip of the abdomen to dig a small hole into a suitable patch of soil. Usually at a depth of about two inches, she will deposit up to 50 eggs contained within a light foamy froth. Each female will lay from one to three egg masses. These eggs will remain in the soil through late fall and winter and then begin hatching in March. The young grasshoppers crawl up out of the soil upon hatching and seem to congregate near suitable food sources.

Defensive Characteristics

Lubber grasshoppers possess a variety of abilities to defend themselves. Their bright color pattern is a warning to predators that the lubber contains toxic substances. Indeed, there are several records attributing the demise of individual birds to failure to exercise caution when selecting prey items. Also, small mammals such as opossums have been known to vomit violently after ingesting a lubber, and to remain ill for several hours.

If the red, yellow, and black coloration fails to keep a predator at bay, then the lubber may secrete a foamy spray from the thoracic region (the portion of the body where the legs and wings are attached). This spray consists of a number of compounds, some of which, are irritants. This bubbly froth is accompanied by a relatively loud, frightful hissing sound. The insect contracts the abdomen to force air out of the tiny holes in the thorax called spiracles along with the defensive secretion. The sound is produced as the spray is being forced out of the spiracles. Very young grasshoppers are unable to produce the secretion. The third instar seems to be the first stage which possesses this ability.

Lubbers, like most all grasshoppers, can also spit up or regurgitate recently consumed plant material. This regurgitant is mostly liquid and has a dark brown color. This is commonly referred to as "tobacco spit." The tobacco spit is partially digested food material along with some semi-toxic compounds from the insects' crop region. This substance can easily stain clothing.

How to Control Lubbers

The size of the Lubber is a little misleading when one considers they require far less food material than most of the more injurious species of grasshoppers that are only one-third as large or smaller.

Lubbers lend themselves to a non-chemical control method. The Eastern Lubber Grasshopper rarely occurs in high enough numbers to cause significant damage to gardens and ornamentals. In most cases the homeowner can easily rid oneself of any individual lubbers by hand. Lubbers are large, slow moving, and essentially harmless to humans. All that would be necessary to rid the area of any pests is a small net or a homemade smashing device (such as a broom). With a net and a garbage bag one should be able to minimize any potential damage within minutes.

If chemical control is necessary, there are several insecticides registered for use on ornamentals to control grasshoppers. The following is a listing along with some trade names: Carbaryl (Drexel Carbaryl), Cyfluthrin (Decathlon, Tempo), Bifenthrin (Talstar).

Grasshoppers are much easier to control when they are nymphs. As they mature, and grow larger, higher rates of toxicants must be applied for effective control.

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