

Colorado Insect of Interest

Mexican Jumping Bean Moth

Scientific Name: *Cydia deshaisiana* (Lucas)

Order: Lepidoptera (Butterflies, Moths, and Skippers)

Family: Tortricidae (Leafrollers)

Identification and Descriptive Features: The Mexican jumping bean moth is annually marketed in late summer and early fall, during the period when the full-grown larvae are present in the dropped seeds of its host plant.

Distribution in Colorado: The Mexican jumping moth does not survive in Colorado and its host plants are not present.

Life History and Habits: Mexican jumping beans have been a popular product sold in comic books and other kid-directed publications for over 80 years and were featured prominently in cartoon story lines from the 1930s through the 1950s. The secret of these odd novelties is an insect that lives within.

The Mexican jumping bean moth, *Cydia deshaisiana*, is a small moth that lays its eggs in spring following the flowering of its host plant, *Sebastiania pavoniana*, a desert shrub native to mountainous areas in the northern Mexico states of Sinoloa and Sonora. Upon hatching the young larvae tunnel into the developing seeds and by late spring have completely consumed the interior of the seed. During the rainy season of summer, the seeds drop from the plant.

The insects remain secure within the tough seed coat, the interior of which may also be covered in silk produced by the caterpillar. During this time, when suddenly warmed, as from the heat of a hand, the caterpillar inside the “bean” begins



Figure 1. Mexican jumping beans are usually marketed in small packages containing a few seeds each with a full-grown larva collected in early summer.



Figure 2. Full-grown larva of the Mexican jumping moth removed from the seed (‘bean’) of its host plant.



Figure 3. Pupa of the Mexican jumping bean moth exposed from seed in late winter.



Figure 4. Old pupal skin pulled out of the exit hole as the adult moth emerges from the seed.

Technically the jumping bean is not a bean (seed of a legume) as it is the seed of a plant in the poinsettia family Euphorbiaceae. And to say they jump is a bit of a stretch; it is more of a bit of modest twitching. Regardless, the successful promotion of the “Mexican jumping bean” is a triumph of insect marketing.

to twitch, causing the seed to move. Presumably this behavior is useful for preventing the insect from overheating on the desert floor; movements of the seed, with the insect inside, can shift the seed to shaded areas out of direct sunlight. The caterpillar remains within the seed through the rest of the year, but goes into a semi-dormant state (diapause) when full grown and ceases to feed.

In late winter the insect finally transforms to a pupa, after the larvae leave a small circular opening cut through the seed coat that is then covered with silk. Later the adult moths that emerge from the pupal case push through the opening to the outside. They subsequently fly to new *Sebastiania* flowers mate and females lay eggs to renew the cycle.

The jumping beans have long been a source of entertainment in their native area of Mexico where they are known as *brincadores*. As legend tells, it was a 12-year old, Joaquin Hernandez, who first had the bright idea of selling the insect infested seed. This led to an ongoing industry which still exports millions of jumping beans per year. The town of Alamos, Sonora calls itself the “Jumping Bean Capital of the World”.



Figure 5. Adult of the Mexican jumping bean moth.