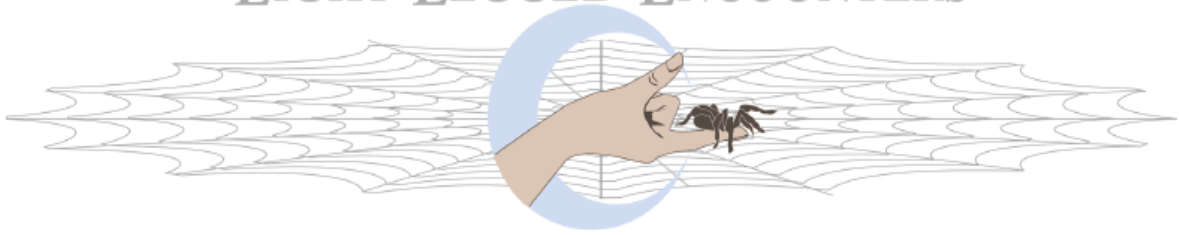


EIGHT LEGGED ENCOUNTERS



VII. CATCH A MOTH

GOAL: This game illustrates one of many unusual hunting strategies exhibited by spiders and highlights the diversity of ways in which spiders can use silk.

BACKGROUND: Bolas spiders are orb-weaving spiders that no longer build typical orb webs. Instead, these spiders have evolved a unique hunting strategy that involves placing a sticky drop of silk at the end of a silken line (referred to as a ‘bolas’; thus their name). This sticky droplet contains chemicals that mimic the pheromones of moths, thus luring unsuspecting males to their ultimate death! As a male moth approaches, looking for what it believes to be a mate, the spider swings its bolas and lassos the moth out of the air! One species of bolas spider, *Mastophora hutchinsoni*, has been shown to even adjust its pheromone blend in line with the activity patterns of two local moths: (i) the bristly cutworm moth and (ii) the smoky tetanolita moth. The spider produces components of both species’ pheromones at all times, but as the bristly cutworm moth becomes less active over the course of the night, the spider decreases its emissions of that species’ pheromone blend! The young of *M. hutchinsoni* neither build orb webs nor use bolas, but instead ambush prey from the underside of leaf margins.

MATERIALS:

- A horizontal strand of fishing line string between two poles (~10 ft across, depending on how many participants you want to be able to play at a time).
- Homemade “moths” attached by fishing line, hung at various heights, along the horizontal strand.
- Moths can be made from foam pieces, “noodles”, pipe cleaners, cloth, etc. and need only have a piece of Velcro on their underside.
- The opposite piece of Velcro should be attached around a Ping-Pong ball (*i.e.* the droplet of sticky silk), which should be attached to a thicker white string creating the spider’s bolas.
- A line of colored tape can be placed on the floor a few feet from where the moths are hanging.
- On display near this activity, or associated with this activity, it would be ideal to have a video loop of spiders using silk in different ways to capture prey.

PROCEDURE:

- Participants are given a bolas (Ping Pong ball attached to a string) and are instructed to stand with their toes behind the colored tape line.

EIGHT-LEGGED ENCOUNTERS

- Using *only underhand* movements, participants swing their bolas and try to capture a moth.
- Successful participants can be given a prize (*e.g.* a small plastic spider).

