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NEWSLETTER 411



Spider Specifics

By Dr. Stuart Mitchell

Do you surmise about spider specifics or can you specifically spell-out spider specifics? Now and then, studying spider specifics will allow you to answer studiously, specific questions about specified spider species.

Spider Biology Specifics

*Spiders are defined as any of the Order Araneae (arachnids) having an abdomen usually un-segmented and constricted at the base, chelicerae modified into poison fangs, and two or more pairs of abdominal spinnerets for spinning threads of silk for various uses (as in making cocoons for eggs or webs to capture prey).

- Spiders have bodies divided into a cephalothorax and abdomen with eight joined legs.
- Palps function as sensory organs and serve males in reproduction.
- Upon molting, spiders exit the exoskeleton by pulling the legs out.
- Female spiders are usually larger than males.
- There are seven types of spider glands to produce various silks (protein masses), but each spider species possess only a selection of glands.
- By weight, spider dragline silk is 5x stronger than steel, 30% more flexible than nylon, 2x as elastic, and can absorb 3x the impact force of Kevlar.

- Spider webs do not desiccate or breakdown from micros.
- To allow moving from strand to strand and not sticking to webs, spiders have specific tarsal claws.
- Spiders balloon by using strands of silk as a wing to ride on air currents.
- Ground dwelling spiders line burrows with silk.
- All spiders are predators.
- Hunting spiders possess dense hair tufts called scapulae under tarsi (numerous surface contact points) that enable walking on smooth vertical surfaces and ceilings.
- Spiders eat a weight of insects greater than the weight of the human population.
- Most female spiders do not consume the male post-copulation.
- Spiders consume by injecting a digestive fluid then suck up the fluid.
- In the U.S., only about 60 species of spiders are capable of biting, and only four capable of injury (Black Widow, Brown Recluse, Hobo, and Yellow Sac spiders).
- Most spider fangs cannot penetrate human skin and are therefore harmless.
- Most spider bites result only in localized swelling and/or irritation.



Illustration of a spider ballooning
Image courtesy PCVN



Spider Control Specifics

- Spider problem or lighting problem? Change blue light fixtures to yellow (Hg vapor or blue light is 112x more attractive to insects than Na vapor or yellow light-fewer insects, fewer spiders).
- Eliminate woodpiles, trash, rocks, and clutter or debris fields along exterior structural grade and foundation areas.
- Maintain building positive pressure to push ballooning spiders out.
- Seal or caulk cracks, crevices, and gaps as well as check to be sure doors and windows are serviceable.

- Use pressure-washing systems as appropriate to eliminate heavy spider pressures.
- Mechanically broom down spider webs.
- Manage interior excess moisture and relative humidity through vent and dehumidifier systems.
- Vacuum (HEPA filter) webbing, egg sacks, spiders, and dead insects (place bag in sealed container for disposal).
- Use appropriate glue traps to capture and monitor spider species and pressure.
- Use professional products to strategically reduce and eliminate spider pressures (for web-constructing spiders, lightly dust the web as it maybe biologically recycled).
- Always read, understand, and follow product label directions.
- Communication throughout the process of spider management is critical and will establish realistic expectations for your customers.

*Merriam-Webster

- Source: Pest Control Video Network-PCVN (pcvnonline.com)
- Source: Pest Control Video Network-PCVN (pcvnonline.com)

MOST WANTED BY PMPs

Phorid Fly, *Megaselia scalaris*

Aliases: "Coffin fly," "Humpbacked fly," and "Scuttle fly"

Feloniously flying from fermenting filth, flushes of Phorids frequently foul food, inflict infections, and interfere with fundamental freedoms.

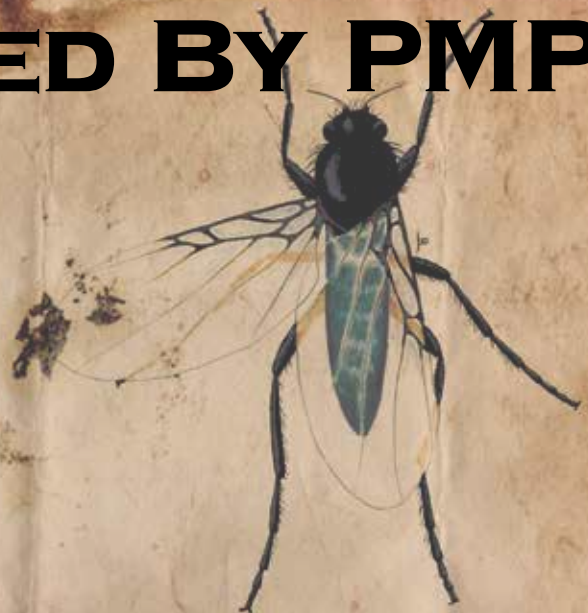
Description: Adult flies are 3-4 mm long with a wingspan of 9-10 mm. The thorax is dark brown-tan with a distinctive humped appearance. Wings have no cross veins.

Life Cycle: Complete metamorphosis (eggs, larvae, pupae, and adults). Each female places about 40 single eggs upon decaying organic matter (over 12 hours). Larvae emerge from the egg in about 24 hours and feed 8 to 16 days depending upon conditions. Larvae display a unique behavior of swallowing air when exposed to pools of liquid (allows floating). Larvae crawl to a drier spot to pupate and then adults emerge. Under ideal conditions, the life cycle is complete in about 14 days; under lessor conditions, it may take up to 40 days.

Habitat: Urban, interior environments such as mausoleums, homes, public restrooms, floor drain systems, dumpsters, trash containers, carrion or rotting meats, vegetable wastes, failing sewer vaults/pipes, and many others.

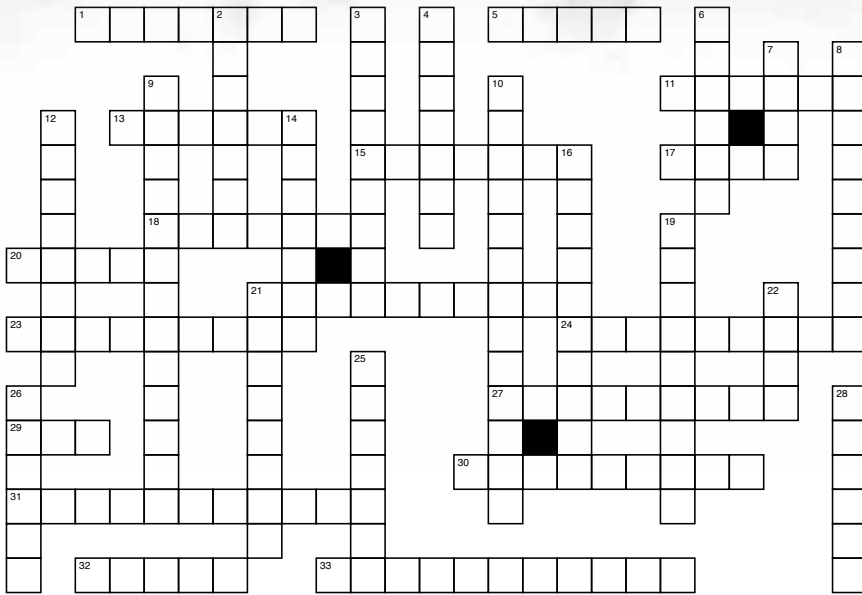
Food: Larvae feed upon fermenting organic materials, carrion, sewage, and feces. Adults feed upon carbohydrates and exudates.

Range: Established throughout the U.S. (especially within older/aging/decaying urban infrastructures).



Significance: As an endophilic ("interior-loving") species, Phorid flies are significantly increasing as pest pressures. With the added pressure of heavy rains, decaying biological waste handling systems and aging municipal sewer and septic systems fail from blockages and collapse. Flies easily locate and exploit such failures. Therefore allowing interior structural explosive invasions or en masse flushes of adult Phorid flies.

Get A Clue About Bed Bugs!



Across

1. Snout like mouthparts
5. Gaseous phase of water to kill bed bugs
11. Location by scent
13. Physical removal
15. Bed bug skin
17. Pointed abdomen
18. Mass of tubes in female
20. Traumatic insemination
21. Support for mattress
23. Ten power hand lens
24. Fecal material
27. Crack and crevice
29. A simple fertilized cell
30. Night time activity
31. Secondary infection
32. Feet
33. Hematophagia

Down

2. Resting place
3. Disease state of bed bug bites
4. Heavy storage
6. *Trypanosoma cruzi*
7. Stages of development
8. Opposite of plaintiff
9. Environmental cue
10. Inspection report
12. Sensory organs
14. Surveillance procedure
16. Mattress cover
19. Response in same species
21. Cultural control
22. Bed bug temperature solution
25. Insecticide formulation of solid or liquid particles in a gas
26. The common name for *C. lectularius*
28. Meaning top

Answers will be in the next issue

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