Plecia spp., Lovebugs
(Diptera: Bibionidae)

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Description

Although regionally referred to as “bugs,” these insects are members of the order Diptera; therefore, they are true flies with only one pair of wings, the forewings, and not two pairs as in most other flying insects. The hind wings are reduced to balancing organs called halteres. Adult females are larger than males, one-quarter to one-third of an inch (7 to 9 mm), in body length, while males measure one-fifth to one-quarter of an inch (5 to 6 mm). Body colorations of adults of the common species in Louisiana are distinctive. The head, abdomen and wings are dark brown to black, and the thorax is bright orange. Females possess smaller heads than males because of the much smaller compound eyes that do not meet in the middle. Males possess enormous eyes that are joined at the middle and occupy most of the top and sides of the head. The antennae of both sexes are short, compact and multisegmented, with individual segments difficult to distinguish. The two most common species in Louisiana can be separated based on the orange coloration of the thorax. Plecia nearctica is mainly dark brown or black on the lower surface (ventral) of the thorax, while Plecia americana has orange extending to the ventral surface. Numerous additional species are found in the state and differ in various anatomical details, but these rarely occur in large aggregations typical of Plecia. Lovebug is only one of several descriptive common names based on the mating flight behavior of these flies. Others include honeymoon flies, double-headed flies and the less interesting March fly. The latter is the common name applied to the entire family Bibionidae.

Larvae are medium sized, up to one-half inch in length (13 mm), legless, cylindrical maggots that bear warty tubercles, an obvious head capsule and an overall dirty brown or gray appearance.

Life Cycle

In Louisiana, adult lovebugs emerge in March or April and may be seen feeding on nectar of various spring wildflowers and blooming shrubs. Soon they engage in mass mating flights in open areas, particularly highway corridors, where dense swarms of individuals suspended in air while copulating end-to-end account for the regional common names. Mating flights may last for over a month, but individual insects only live for a week or less. Females typically lay over 100 eggs each on the surface of soil near accumulations of organic matter. After hatching, larvae feed on moist, decaying vegetable matter, including leaf litter, grass clippings, compost and similar substrates. The larvae mature and pupate in the feeding substrate during the summer. Depending on species, adults may emerge for another mating flight during fall (Plecia nearctica) or overwinter in the soil until the following spring (Plecia americana). Occurrences of these two species are concentrated to a few months of the year, but adults of various other species of March flies may be observed any month of the year in the southern U.S. during suitable weather.

Ecological Significance and Pest Status

Because of the notoriety of the massive mating flights, particularly along roadways, considerable research has been conducted on lovebug behavior. In addition to their preference for open areas for mating flights, lovebugs are attracted to the volatile products of internal

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combustion engines and even the heat and vibration of vehicles. Odd aggregations of adults around parked cars and other mechanical devices are probably due to these kinds of localized stimuli. Heavy concentrations of mating adults on roadways are hazards to visibility and can create traction problems because of the vast numbers of crushed bodies in traffic lanes. In addition, the body fluids (haemolymph) of adults can have a corrosive effect on automotive paints. More aerodynamic vehicle designs have reduced problems caused by smashed lovebugs on fronts of vehicles, but immediately cleaning them from car finishes is advised after driving through mating swarms at high speed. During bygone days of “service stations” in the southern U.S., attendants would often be stationed near the highway during lovebug season with a water hose to spray the windshields of motorists who would briefly pull over for the service.

Variations on a particularly persistent urban legend that predates the internet hold that lovebugs originated recently as a result of a genetic experiment gone wrong. Typically, a story is presented that researchers at (fill in the name of any university here) were trying to genetically modify an insect for mosquito control and they escaped and became the scourge of motorists now known as lovebugs. In reality, modern highway rights of way management practices have created near perfect environmental conditions to support lovebug populations along roadways. These include wide, frequently mown shoulders and medians that produce abundant larval habitat in the form of grass clippings along with wide open spaces for mating flights and a constant stream of vehicles producing emissions that are apparent lovebug aphrodisiacs. University researchers couldn’t have devised a better lovebug habitat!

Larvae of lovebugs perform a valuable ecological service by breaking down vegetable debris and converting it to soil nutrients. Unfortunately, few predators feed on the adults because of the repellent qualities of their body fluids.

Control

No control is recommended for lovebugs and likely none is possible because of the highly mobile nature of the adults and availability of abundant larval habitats. Lovebugs represent a minor nuisance in most circumstances, with caveats related to vehicle safety and possible paint damage, as noted above.

References

