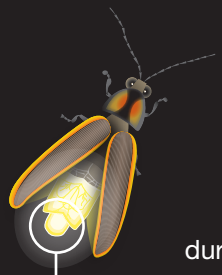
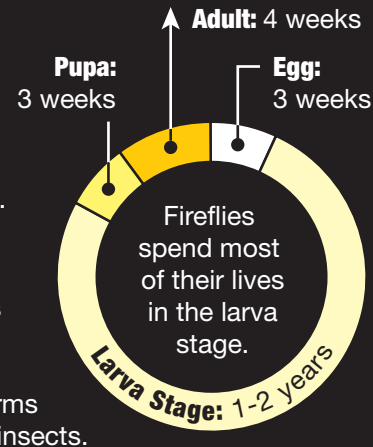
SHINING A LIGHT ON FIREFLIES

The Say's Firefly — named after Thomas Say, an eminent naturalist from New Harmony in Posey County — will officially become **Indiana's state insect** when Gov. Eric Holcomb signs the recently passed Senate Enrolled Act 236 into law.

The Say's is one of about 2,000 species of firefly ... but they actually aren't flies at all — fireflies, or "lightning bugs," are actually a type of beetle.



Life cycle

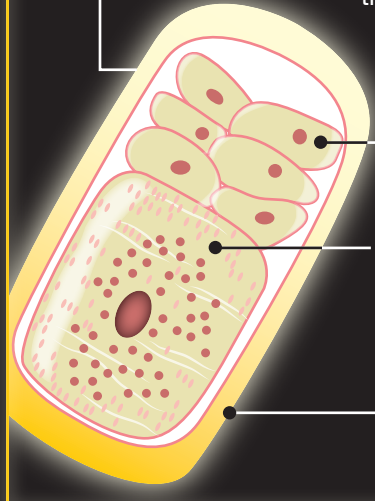


- In mid-summer, females deposit about 100 **eggs** in the soil or on vegetation. The eggs of some fireflies are bioluminescent and already glow.
- The eggs hatch in about three weeks. The worm-like **larvae** that produce light are sometimes called glowworms. The larvae hunt at night and prey on slugs, snails, worms and other insects. When it captures prey, the larva injects its victim with enzymes to paralyze it and liquefy its remains. Larvae live through the winter before pupating in the spring — in some species, larvae live through two winters before pupating.

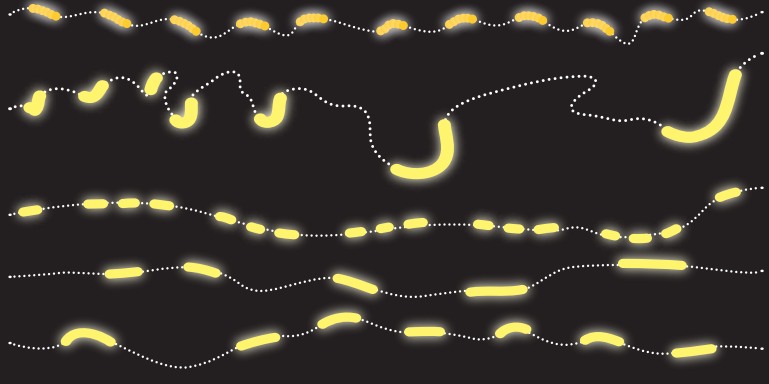
- During the **pupal** stage in a process called histolysis, the larva's body is broken down and transformative cells are activated. When the metamorphosis is complete, the adult firefly is ready to emerge, usually about three weeks after pupation.
- **Adult fireflies** only live up to a month. Some do not eat at all during adulthood, using every precious moment to find a mate. Others are cannibalistic, but most dine on pollen and nectar.

How they light

Fireflies produce light during a chemical reaction called **bioluminescence** in a light-emitting organ that consists of three parts:



A variety of flash patterns



The Say's Firefly (top) emits a rapid flicker every 3.5 seconds that is more amber in color. Each species has its own pattern.

Why do they light?

The primary purpose for fireflies' flickering light is to **attract a mate**. Each species of firefly has a unique flashing pattern. Only male fireflies fly, signaling light patterns to females on the ground. The proper pattern indicates to the female that they are of the same species and therefore suitable for mating. Their light also serves as a **protection mechanism** against potential predators. Fireflies have a bitter taste and are poisonous to many species. Over time, potential predators learn to associate that bitter taste with the light and avoid consuming fireflies.

Sources: Firefly.org; Mass Audubon; National Geographic

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