

## *Agraulis vanillae* (Silver Spotted Flambeau)

Order: Lepidoptera (Butterflies and Moths)

Class: Insecta (Insects)

Phylum: Arthropoda (Arthropods)



**Fig. 1.** Silver spotted flambeau, *Agraulis vanilla*.

[[http://entnemdept.ufl.edu/creatures/bfly/gulf\\_fritillary01.jpg](http://entnemdept.ufl.edu/creatures/bfly/gulf_fritillary01.jpg), downloaded 7 March 2016]

**TRAITS.** *Agraulis vanilla*, the Gulf fritillary, is more commonly known locally as the silver spotted flambeau. The adult butterfly is bright orange with black markings on the dorsal surface (Fig. 1) while the ventral surface is brown with elongated silver spots. It is a long-wing butterfly with a wingspan of 6-9.5cm. The sexes are dimorphic, in that the females are both larger and darker in colour with a greater number of markings compared to males.

**DISTRIBUTION.** *Agraulis vanillae* is neotropical and found in the southern USA (mainly Florida and Texas), and southwards through Mexico, Central America, the West Indies and South America. Adults migrate northwards in spring (March to May) to form temporary breeding colonies (Daniels, 2007). They migrate along the Gulf of Mexico, giving the name Gulf fritillary. During winter, they remain in the southern portions of the distribution range. Additionally, the cultivation of the *Passiflora* plant in gardens has allowed *Agraulis vanillae* to broaden its distribution range to include California.

**HABITAT AND ACTIVITY.** The silver spotted flambeau is usually seen in scrub and fields, lower than 2m above the ground in grass blades and leaves (Brown, 1981). *A. vanillae* are also

inclined to subtropical secondary growth, city gardens, woodland edges and roadsides (Harris, 2014).

**FOOD AND FEEDING.** *A. vanillae* is known to feed on flowers and leaves of *Passiflora* species (passion flowers). In the larval stage it exclusively feeds on this host plant, for example on *Passiflora incarnata* (Fig. 2). It can quickly consume all the leaves on the plant and can be considered a pest to its host plant. Immediately after hatching, the larva consumes the remnants of the egg shell. *Passiflora* species are poisonous, and this is believed to be transferred to the caterpillar or larva which is poisonous if eaten. The adults also uniquely gather pollen on the proboscis and feed on this, in addition to the nectar consumed by most butterflies (Harris, 2014).

**REPRODUCTION.** The life cycle (Fig. 3) begins when the adult butterfly lays one egg at a time on the leaf of the passion flower plant. A caterpillar hatches from the egg which is bright orange and grows up to a length of approximately 4 cm. Along the length caterpillar there are many black spines in rows which are soft to the touch. Prior to the chrysalis formation, the larva becomes grey in colour. It begins to spin a silk-like material into a ball which is used to attach the rear end of the caterpillar to the host plant, suspending itself upside down. The chrysalis then undergoes minor muscular contractions to shed the skin exposing a soft body which quickly hardens and becomes a mottled brown colour. The chrysalis is around 3 cm long and has the appearance of a dried leaf. This stage lasts anywhere from 11-21 days. After this time the chrysalis cracks open and the adult *Agraulis vanillae* butterfly slowly emerges.

**BEHAVIOUR** The newly emerged adult butterfly utilises fluids from its abdomen to stretch its wings, which must dry before flying. . The females are courted by passing males and the females also flutter in response to the males. During mating, the males clap their wings, which is required for successful courtship (Rutowski and Schaefer, 1984). The butterfly's flight is rapid and erratic which aids in predator evasion. Caterpillars are found in small groups. They are protected from predators by their bright orange colour and black spines. The bright colour of adults and larvae and the dried-leaf appearance of the chrysalis are all considered to be protective mechanisms from predators. This species shows Batesian mimicry through its colour. This is an anti-predatory adaptation where a species without dangerous characteristics evolves to exhibit those of dangerous species, such as the monarch butterfly. The adult butterflies are found in loose groups when resting at night (Brower and Beltram, 2007).

**APPLIED ECOLOGY.** This species is not listed in the IUCN database. However, this species can be adversely affected by the use of pesticides in the larval stage where it feeds directly off the host plant. Additionally the adult butterfly may be affected as they rest on plants.

## REFERENCES

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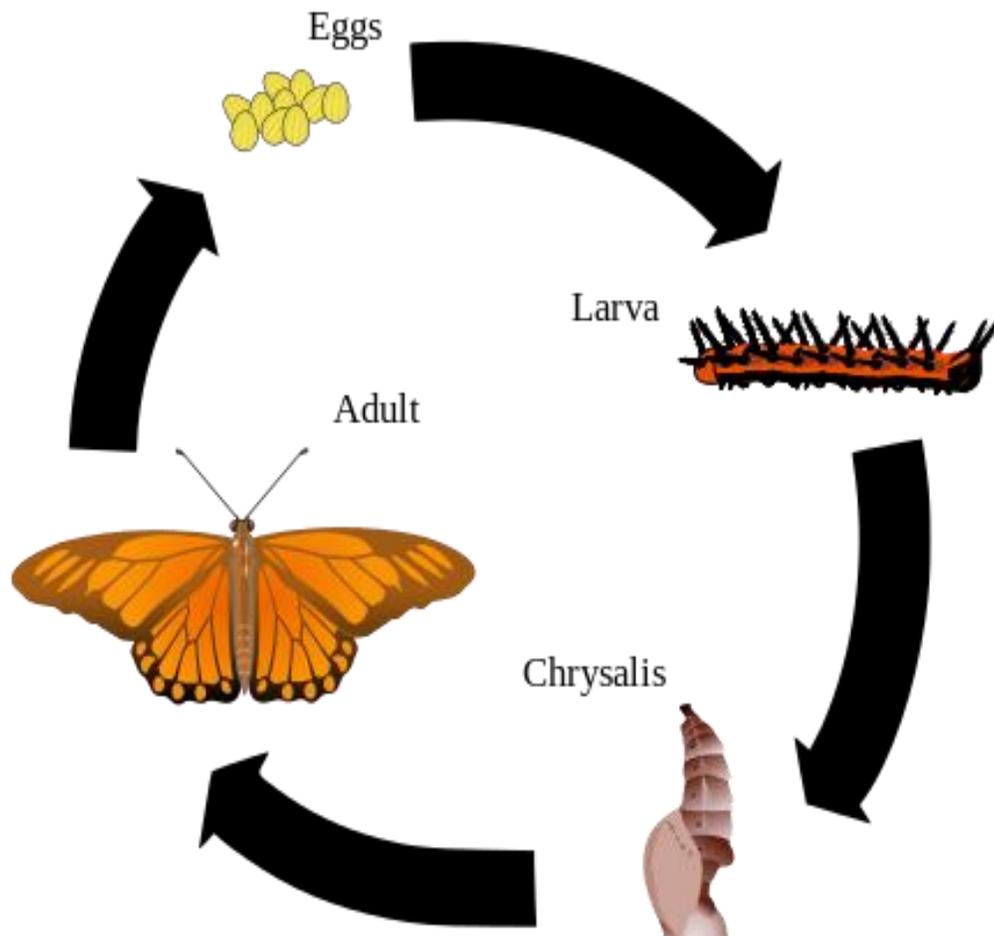
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Posted online: 2016



**Fig. 2.** *Passiflora incarnata*, a host of *Agraulis vanilla*.

[[http://entnemdept.ufl.edu/creatures/bfly/gulf\\_fritillary05.jpg](http://entnemdept.ufl.edu/creatures/bfly/gulf_fritillary05.jpg), downloaded 9 March 2016]



**Fig. 3.** The life cycle of *Agraulis vanilla*.

[[https://upload.wikimedia.org/wikipedia/commons/thumb/c/c1/Gulf\\_Fritillary\\_Life\\_Cycle.svg/440px-Gulf\\_Fritillary\\_Life\\_Cycle.svg.png](https://upload.wikimedia.org/wikipedia/commons/thumb/c/c1/Gulf_Fritillary_Life_Cycle.svg/440px-Gulf_Fritillary_Life_Cycle.svg.png), downloaded 9 March 2016]

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