

## *Danaus gilippus* (Queen Butterfly)

Order: Lepidoptera (Butterflies and Moths)

Class: Insecta (Insects)

Phylum: Arthropoda (Arthropods)



**Fig. 1.** Queen butterfly, *Danaus gilippus*.

[[http://butterfliesofamerica.com/danaus\\_gilippus\\_berenice\\_live1.htm](http://butterfliesofamerica.com/danaus_gilippus_berenice_live1.htm), downloaded 2 April 2015]

**TRAITS.** The queen butterfly (*Danaus gilippus*) is a smaller version of its relative the monarch butterfly (Fig. 1). The dark brown forewings are long and pointed at the apex in comparison to the hind wings which are smaller and well rounded. They have white borders with black veins. The light spots appear brighter and are patterned differently on the forewings. The wingspan averages 75mm. The caterpillar has a hairless cylindrical body with dark stripes (Fig. 2) (Brower, 1958).

**DISTRIBUTION.** This butterfly has a geographical range from the tropics to temperate areas of Central and South America, North America and certain parts of Asia and Africa (Ritland, 1991b). Although ranging from Brazil all the way to the USA, the queen butterfly does not make

dramatic migrations like the monarch, but during dry seasons they will migrate from lowlands to high elevations (McLaughlin and Myers, 1970).

**HABITAT AND ACTIVITY.** In the tropics, the queen uses open land, fields, meadows and occasional marshes. In the southern USA, it uses deserts (Moranz and Brower, 1998). *Danaus gilippus* is a diurnal species and flutters around dry and hot areas of low herbaceous vegetation. Low foliage areas are used as shelter by the queen during heavy showers but can be active again when the downpour subsides or during light rain showers. Females fly close to each other in search of oviposition sites which are usually located on short vegetation that they land on for brief periods (Myers, 1968).

**FOOD AND FEEDING.** The milkweed (*Asclepias*) is a delicious food source for the queen larvae as well as the butterfly, which also uses plants of the nightshade family (Solanaceae) and several nectar producing plants such as fog fruit and shepherd's needle. The caterpillar also eats *Calotropis procera* and *Apocynaceae nerium* (Fig. 2). When sources of nectar are scarce the competition between the queens become fierce and studies show that in Texas, *Danaus gilippus* investigate the bases of grass flowers but the nutrients gained from this activity are undocumented (Pliske and Saltpeter, 1971). An adult queen feeds mainly on nectar (Fig. 3) but rotting fruit and dung can also be utilised. The males feed on *Heliotropium senecio* and *Eupatorium* plants that contain the alkaloid lycopsamine, which is used in the production of pheromones that are used to attract mates.

**POPULATION ECOLOGY.** The butterfly can be seen from a distance in large quantities during the rainy season and is most likely the commonest species found in the area where larval food sources are available. This is usually close to agricultural areas because milkweeds grow readily along irrigated channels and drain ditches (Ritland, 1991a). These butterflies often roost in groups on the underside of leaves in the late evening, upside down with their wings closed. Roosting in communities such as this is probably for the purpose of giving added protection from predators (Ritland, 1994).

**REPRODUCTION.** The queen can mate up to 15 times and as a result the males patrol in search for a female. When found, the courtship between the female and male must be followed rigidly. The female is chased by the male and he brushes her antennae with a scent to induce her to alight. Mating can last for more than an hour (New, 1991). The females will then fly close to the ground to find a host plant for egg deposition.

**BEHAVIOUR.** Eggs are laid by the female *Danaus gilippus* on the underside of leaves to reduce their susceptibility to predators, but are still attacked when discovered. In the adult stage, the *Danaus gilippus* develops acrid secretions. This is responsible for the butterfly being distasteful to predators such as birds and insects. The secretion is due to the diet that the caterpillars consume which are poisonous or rank to higher organisms. This is a desirable quality for other butterflies such as the viceroy to mimic the queen and ward off predators (Brower, 1958) (Fig. 4).

**REFERENCES**

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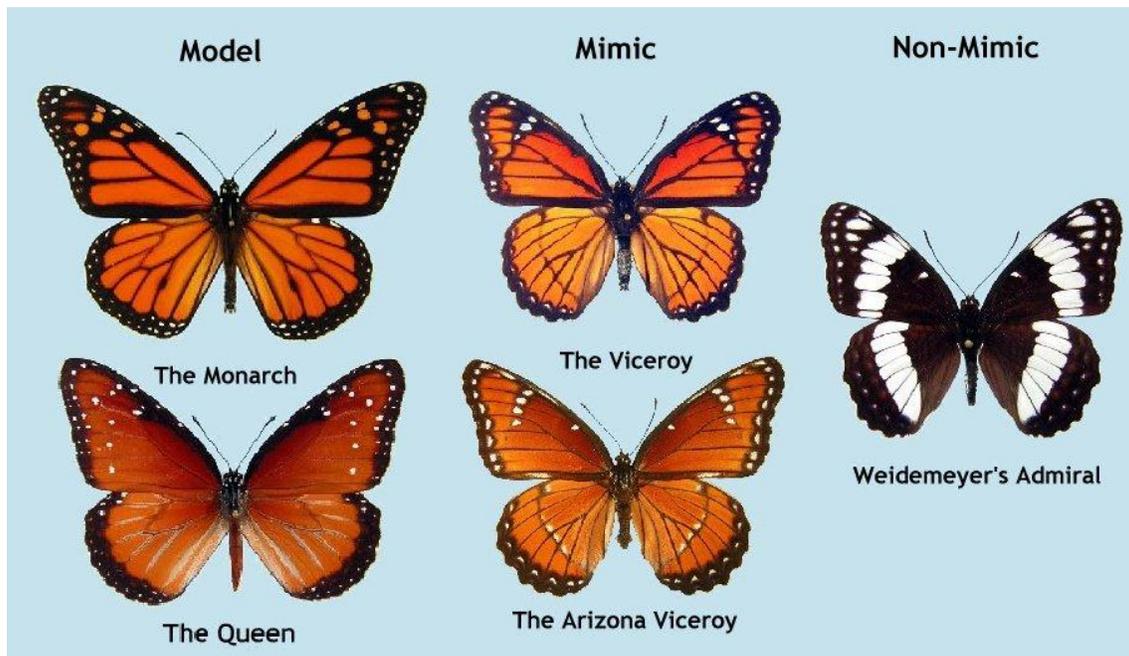
**Fig. 2.** The queen caterpillar feeding.

[[http://www.naba.org/chapters/nabast/queenmatingrituals\\_dmartnz.html](http://www.naba.org/chapters/nabast/queenmatingrituals_dmartnz.html), downloaded 2 April 2015]



**Fig. 3.** Queen butterfly feeding on nectar.

[<https://occupybigfood.wordpress.com/>, downloaded 2 April 2015]



**Fig. 5.** Mimicry between queen butterfly and other species.

[<http://www.utahbugclub.org/butterflies.php>, downloaded 2 April 2015]