

## *Heliconius erato* (Red Postman Butterfly)

Order: Lepidoptera (Butterflies and Moths)

Class: Insecta (Insects)

Phylum: Arthropoda (Arthropods)



**Fig. 1.** Red postman butterfly, *Heliconius erato*.

[<http://best-butterfly.blogspot.com/2011/06/butterfly-heliconius-erato-butterfly.html>, downloaded 2 November 2016]

**TRAITS.** The species has variety of colours; their colour variation is according to their geographical location, this makes them difficult to distinguish from various other *Heliconius* butterflies. *Heliconius erato* has elongated black wings; the basal area is usually marked red where the wing attaches to the thorax, and the hindwings have a cream, red or orange radiating line or solid median band (Fig. 1). Both sexes are similar in body form and colour pattern but females tend to be slightly more rounded at the margins of the wings. They are poisonous and the colour patterns on their wings signal to ward of predators of their foul taste and also they use their colour to signal to mates. Total length is 5.5-8cm in wingspan. The caterpillars are white with black dots and have branched black spines on the back and sides (Fig. 2); the chrysalis is brown with golden spots on the abdomen and thorax and it has short black spikes on the region of the abdomen and wing cases (Fig. 3).

**DISTRIBUTION.** *Heliconius erato* is common and widespread, distributed in cool secondary forest across Mexico, Central and South America and associated with slow-flowing streams in forests of south Texas (Fig. 4).

**HABITAT AND ECOLOGY.** Found in habitat at an elevation between 0-1800m on both sides of the Andes, it is a slow lazy flier seen in and around open pastures, along tracks throughout primary forest, and commonly in secondary forest edges where there is shady undergrowth with flowers in sunshine. *Heliconius erato* females feed on both pollen and nectar. The red postman are social butterflies that roost at night in groups of up to 10 on dry stems 2-10m above the ground (Fig. 5). Two species of *Heliconius*, *H. melpomene* and *H. erato*, live side by side to each other and share their general colour pattern, but *H. erato* have four instead of three red dots at the wing base and they are somewhat smaller in forewing length than *H. melpomene*.

**REPRODUCTION.** Male *Heliconius erato* patrol during the day for females to mate with, they are attracted to the female by pheromones released by the pupae, and to the wing colour pattern. This release of chemical helps to identify the sex and species. They partake in pupal mating this is when he sit and wait until she starts to emerge to attempt copulation. After successfully mating (Fig. 6) the male places a chemical repellent on the female's abdomen to ward off other males from mating with her. The female then lays eggs singly on young tendrils and shoots of *Passiflora* plants, which the caterpillars feed on. The eggs measure about  $1.49 \times 0.83$ mm with vertical and horizontal ridges (Fig. 7). The egg hatches into a larva which moults and grows into a mature caterpillar, then the chrysalis where it develops into the adult butterfly.

**BEHAVIOUR.** *Heliconius erato* has an unusually long life span and high fecundity (egg production), due to the females feeding on pollen and nectar. *Heliconus erato* has a good memory since they remember their home range from which they can locate nectar and pollen, their host plant and roosting area. The caterpillars possess tiny black spines to ward of predators, and the toxin obtained from the *Passiflora* food give off an awful smell and taste. The adult butterflies use their colourful wing pattern to ward off predators.

**APPLIED BIOLOGY.** This butterfly species and its genus of *Heliconius* have had their genomes sequenced, and are used in a wide variety of evolutionary and genomic studies. It is not present on the IUCN Red List so is not threatened.

## REFERENCES

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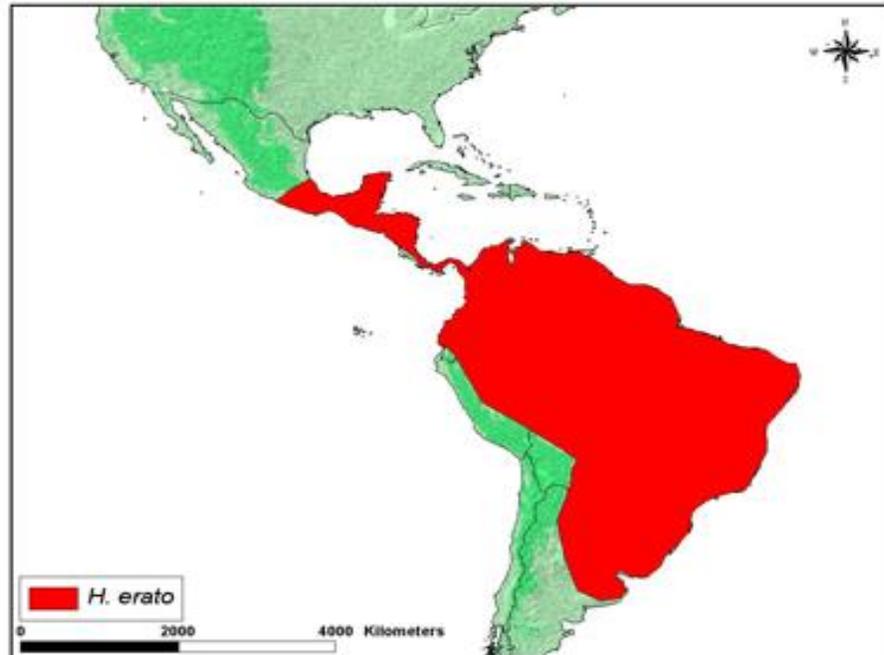
**Fig. 2.** Red postman butterfly caterpillar.

[<http://www.butterflyfarm.co.uk/attraction/gallery.php?id=0000000005>, downloaded 7 November 2016]



**Fig. 3.** Red postman butterfly emerging from chrysalis

[<http://www.butterflyfarm.co.uk/attraction/gallery.php?id=0000000005> downloaded 7 November 2016]



**Fig. 4.** Red postman butterfly geographic distribution.

[[http://www.tolweb.org/Heliconius\\_erato/72242](http://www.tolweb.org/Heliconius_erato/72242) downloaded 2 November 2016]



**Fig. 5.** Red postman butterfly roosting.

[<http://www.heliconius.org/2009/roosting-erato-2/> Downloaded 7 November 2016]



**Fig. 6.** Red postman mating.

[<http://www.kleincostarica.nl/heliconius-erato/> downloaded 7 November 2016]



**Fig. 7.** Red postman butterfly egg.

[<http://www.butterflyfarm.co.uk/attraction/gallery.php?id=0000000005> downloaded 7 November 2016]

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