

## *Heliconius ethilla* (Ethilia Longwing Butterfly)

Order: Lepidoptera (Butterflies and Moths)

Class: Insecta (Insects)

Phylum: Arthropoda (Arthropods)



**Fig. 1.** Ethilia longwing, *Heliconius ethilla*.

[[http://www.jczinn.com/Brazil/Brazil 2010/maria-boba-Heliconius-ethilla-5977a.html](http://www.jczinn.com/Brazil/Brazil%202010/maria-boba-Heliconius-ethilla-5977a.html)  
downloaded 2 April 2015]

**TRAITS.** The ethilia longwing is a brush-footed butterfly (family Nymphalidae) with an average wingspan of 6-7cm. In this family the first pair of legs is reduced and non-functional. The forewings are usually orange in colour with four black spots and black on the edge of the wings. Their orange hindwings display a pair of prominent black stripes (Fig. 1). Larvae (caterpillars) can grow up to 1.7cm, and appear to be white, with black spikes and an orange head (Fig. 2) (Encyclopedia of Life, 2013).

**DISTRIBUTION.** Found mainly in South American mainland (Fig. 3), including Colombia, Peru, Panama, Brazil, Venezuela Suriname and the island of Trinidad. May be encountered at elevations up to 2000m above sea level, The subspecies *Heliconius ethilla ethilla* is native to Trinidad (Encyclopedia of Life 2013).

**HABITAT AND ACTIVITY.** Commonly found at the equatorial zone in tropical rainforests with high rainfall at almost 2.5m per year, and average temperatures ranging from 20-34°C. Their habitats are generally undisturbed by humans as they habitually roost nocturnally within tree canopies up to 30m tall. When mating and reproducing females and adults may do this alone or in loosely aggregated groups; at

elevations 2-10m above ground on twigs, they generally remain within a home range for feeding, flying and roosting.

**FOOD AND FEEDING.** These butterflies and their larvae are primary consumers which feed on plants of the *Passiflora* genus, inclusive of *Granadilla* (Encyclopedia of Life, 2013). Unlike most butterflies, the adults feed on pollen, crushing the grains on the proboscis (tongue) to obtain amino acids used for the production of sperm and eggs (Fig. 4). The feeding habits of the adults allows for a shorter larval period, as only 20% of the amino acids used in reproduction come from larval feeding, most come from pollen consumed by the adults (Beltrán, 2010). The larvae can therefore develop more quickly, and so avoid predation, as they do not have to accumulate amino acids for reproduction when adult. Pollen-feeding also allows for greater longevity of the adults, which can live for several months.

**POPULATION ECOLOGY.** Gonçalves Rios et al. (2013) state that the maximum known longevity of an adult *H. ethilla* butterfly may range from 106-160 days, this stems from their pollen-based diet which extends their reproductive lives. Adults routinely form loosely gregarious groups. Males outnumber and exceed their female counterparts in size, with a wing length of 3.63cm in males and 3.31cm in females, without much variation in appearance between the sexes.

**REPRODUCTION.** All *Heliconius* butterflies are oviparous, with an average clutch size of 1-4 eggs, eggs usually yellow with the dimensions 1.3 x 0.9mm cm, found under *Passiflora* plant leaves. The accelerated, four week growth phase includes the development of the eggs, larvae and pupae, with the larval stage significantly reduced due to foraging being carried out by the long-lived adults. Since their host plants are productive year-round, this allows ethilia longwings to reproduce at will as opposed to seasonally. However, egg-laying may depend on the availability of pollen within a female's home range, as the female waits for pollen availability to proceed with oviposition (egg-laying) (Ehrlich & Gilbert, 1973). Fully-grown *H. ethilla* larvae feed on plants of the *Passiflora* genus, which like adults, confers them a measure of protection from predation due to their unpalatability. Due to the deposition of eggs in clusters, developed larvae are incidentally gregarious in nature. *Heliconius* butterflies undergo the process of pupal mating, in which phenomenon, adult males seek out and sit on pupae prior to emergence; they mate with the emerging females, ensuring their reproductive success (Beltrán, 2010). Females display parental care by their careful selection of oviposition sites on larvae-nourishing *Passiflora* leaves, and also discriminate against host plants which have eggs already present.

**BEHAVIOUR.** Mating and reproducing females and adults may be solitary or in loosely aggregated groups; they roost at elevations 2-10m above ground on twigs. *Heliconius ethilla* also participates in a type of Müllerian mimicry, called the tiger stripe complex, involving similar patterns of yellow/orange stripes on a black background. Several species with common anti-predation strategies, i.e. unpalatability derived from cyanide-containing *Passiflora*, have similar aposematic signals (warnings in the form of distinct colours). This phenomenon functions as a form of mutualism, where the model and its mimic both benefit from their interaction, as they are both less likely to be eaten by shared potential predators.

**APPLIED ECOLOGY.** While *Heliconius ethilla* is not currently listed by the IUCN, it faces threats from destructive human activities. Deforestation actions in their rainforest habitat may lead to a reduction of roosting sites near likely food sources for both adults and juveniles. Reduced food sources may lead to a lower reproductive frequency and a reduction in the size of its population. (Albuquerque de Moura et al., 2011).

#### REFERENCES

- Albuquerque de Moura, Priscila, Swee-Peck Quek, Márcio Z Cardoso, and Marcus R Kronforst. 2011. 'Comparative Population Genetics Of Mimetic Heliconius Butterflies In An Endangered Habitat; Brazil's Atlantic Forest'. *BMC Genetics* 12 (1): 9. doi:10.1186/1471-2156-12-9.
- Beltrán, Margarita. 2010. 'Heliconius Ethilla Godart 1819'. *The Tree Of Life Web Project*, accessed April 2, 2015. [http://tolweb.org/Heliconius\\_ethilla/72907](http://tolweb.org/Heliconius_ethilla/72907).
- ButterflyCorner,. 2015. 'Butterflycorner.Net: Heliconius Ethilla'. *Butterflycorner.Net*, accessed April 2, 2015. <http://www.butterflycorner.net/Heliconius-ethilla.646.0.html>.
- Ehrlich, Paul R., and Lawrence E. Gilbert. 1973. 'Population Structure And Dynamics Of The Tropical Butterfly Heliconius Ethilla'. *Biotropica* 5 (2): 69. doi:10.2307/2989656.
- Encyclopedia of Life,. 2013. 'Descriptions And Articles About Heliconius Ethilla As Classified By Species 2000 & ITIS Catalogue Of Life: April 2013 - Encyclopedia Of Life'. *Encyclopedia Of Life*, accessed April 2, 2015. [http://eol.org/pages/157369/hierarchy\\_entries/52260305/details](http://eol.org/pages/157369/hierarchy_entries/52260305/details).
- Gonçalves Rios, Gleice, Michelle Gonçalves Silva, Daniela Aparecida Rosa de Paiva, Juliana Rodrigues Santos, Priscilla Peixoto Alvarenga, Niccolly Cristine de Miranda, Denise Lange, and Vanessa Stefani. 2013. 'Population Structure Of Two Species Of Heliconius Kluk, 1780 Butterflies (Lepidoptera: Nymphalidae)= Estrutura Populacional De Duas Especies De Borboletas Heliconius Kluk, 1780 (Lepidoptera: Nymphalidae)'. *Bioscience Journal* 29 (5): 1350-1360.

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**Fig. 2.** The larval stage of *H. ethilla*.

[<http://www.projectnoah.org/spottings/164856003/fullscreen>, downloaded 2 April 2015]



**Fig. 3.** *H. ethilla* distribution.

[<http://eol.org/pages/157369/details>, downloaded 2 April 2015]



**Fig. 4.** *Heliconius ethilla* collecting pollen.

[<http://benthebutterflyguy.blogspot.com/2010/03/heliconius-butterflies-part-1-host.html>, downloaded 2 April 2015]