

Spalgis epius (Westwood): The Carnivorous Butterfly

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Most butterflies live quietly on nectar and pollen, but a small Lycaenid called *Spalgis epius* (Westwood) — the ‘apefly’, named for its monkey-faced pupa — breaks the rule entirely. Its larvae hunt and devour mealybugs (Hemiptera: Pseudococcidae), making *S. epius* one of the world's rare carnivorous butterflies. Adults sip honeydew, but it is the larval stage that matters economically: field observations show *Spalgis* larvae can collapse entire mealybug colonies (Nasari *et al.*, 2020), making this unassuming predator a valuable ally for farmers hoping to cut back on chemical sprays.

Classification and Distribution

S. epius sits in the subfamily Miletinae — unusual because most of its members are predatory rather than herbivorous — within family Lycaenidae, order Lepidoptera. It ranges across the Old World tropics: India, Sri Lanka, Bangladesh, Thailand, Malaysia, and Indonesia. Rather than following a host plant, it tracks mealybug prey, turning up in orchards, agroforestry plots, field crops, and home gardens wherever local microclimate and mealybug density are favourable.

Life Stages and Life Cycle

Adult: 20–30 mm wingspan, dull grayish-brown above with a small white forewing patch; the underside shows cryptic wavy dark lines that blend into bark.

Egg: Tiny, dome-shaped, pale greenish-white, laid directly among mealybug egg masses.

Larva: Slug-shaped (onisciform), draped in the mealybug's own waxy secretion and shed skins as camouflage from predators and guarding ants.

Pupa: Compact, fixed to a leaf, with dark dorsal markings forming an uncanny rhesus-monkey face.

Stage	Duration (days)	Notable features
Egg	3.0 – 4.5	Laid within ovisacs; dome-shaped, pale green
Larva (instars 1–4)	8.5 – 12.0	Onisciform; wax camouflage; feeds voraciously
Prepupa & pupa	6.5 – 9.5	Feeding stops; simian-mask pattern forms
Adult	5.0 – 7.5	Cryptic underwing pattern; feeds on honeydew
Total	18.0 – 26.0	Compressed cycle; several generations per season

Hunting Habits and Prey Range

Early instars target mealybug eggs and crawlers; third and fourth instars graduate to nymphs and adult females. A single larva can consume 400–600 eggs, or dozens of adult mealybugs, across development. Its diet spans several economically important species — papaya mealybug (*Paracoccus marginatus*), citrus mealybug (*Planococcus citri*), striped mealybug (*Ferrisia virgata*), and pink hibiscus mealybug (*Maconellicoccus hirsutus*) — across crops including papaya, citrus, guava, cotton, and grapevines.

Why It Matters for Biological Control

Mealybugs' waxy coating repels water-based insecticides, and broad-spectrum sprays wipe out beneficial insects along with the pest. *S. epius* sidesteps both problems: it is host-specific, and its larvae forage directly beneath the wax layer without disturbing non-target species — fitting neatly into an Integrated Pest Management (IPM) programme.

Feature	Chemical pesticides	<i>Spalgis epius</i>
Specificity	Broad-spectrum; harms beneficials	Host-specific
Waxy shield	Repelled by mealybug wax	Larvae burrow beneath the wax
Residues	Leaves chemical residue	Entirely natural, no residue

Seasonal Dynamics, Rearing, and Outlook

Field populations peak just after the monsoon and again in the dry summer, tracking prey build-up; heavy rainfall washes away young crawlers and damages exposed pupae, causing temporary dips (Dhara Jothi *et al.*, 2014). For release programmes, introducing the predator early — before pests cross the economic threshold — gives the best results. Dinesh, A.S. and Venkatesha, M.G. (2010) developed a mass-rearing protocol using pumpkin or potato sprouts to sustain mealybug colonies as larval food: host plants are inoculated with mealybug cultures, mated adults are kept in mesh cages on 10% honey solution, eggs are laid onto infested sprouts, and resulting pupae are collected for field release. Remaining challenges include the labour of maintaining live mealybug colonies, the risk of chemical drift killing local predator populations, and the lack of a viable artificial larval diet.

Key Facts

- One of only a handful of strictly carnivorous butterfly species on Earth.
- Its pupa's monkey-face pattern appears to deter visually hunting predators.
- Larvae coat themselves in mealybug wax, masking both sight and scent from guarding ants.
- A single larva can eat well over 500 eggs before completing development.
- Adults are quick fliers that feed on honeydew rather than floral nectar..

References

1. Dhara Jothi, B., Jasin Rahman, V.K. and Govindan, K. (2014). Seasonal occurrence and predatory efficiency of *Spalgis epius* on *Paracoccus marginatus* infesting cotton. Madras Agricultural Journal, 101(4–6): 142-145.
2. Dinesh, A.S. and Venkatesha, M.G. (2010). Prey consumption by the mealybug predator *Spalgis epius* on pink hibiscus mealybug (*Maconellicoccus hirsutus*). Phytoparasitica, 39(1): 11-17.