

4. Lyriothemis keralensis- Environment

New dragonfly species discovered in Kerala, named Lyriothemis keralensis

A new dragonfly species, Lyriothemis keralensis, has been discovered in the rubber and pineapple plantations of Kerala, having been misidentified as a northeastern species for over a decade. This red-and-black insect is active during the Southwest monsoon and highlights the critical need to conserve biodiversity within non-protected agricultural landscapes of the Western Ghats.

Discovery of a New Species

A new dragonfly species, Lyriothemis keralensis, has been identified in Kerala. This discovery highlights the hidden biodiversity existing within plantation landscapes of the Western Ghats, a region often overlooked in traditional conservation surveys.

History of Misidentification- The species has been observed in Kerala since 2013. For over a decade, it was misidentified as Lyriothemis acigastra. Lyriothemis acigastra is a different species that was previously thought to be restricted to northeast India (Assam and West Bengal).

About Lyriothemis keralensis

Etymology (Naming)- The species is named keralensis in recognition of Kerala's rich biodiversity and its unique ecological landscape.

Distribution- Currently recorded from Varapetty near Kothamangalam in the Ernakulam district of Kerala.

Habitat Preferences- It does not require pristine forest conditions; instead, it inhabits vegetated pools and irrigation canals. Uniquely, these habitats are found within shaded rubber and pineapple plantations, demonstrating adaptability to human-altered landscapes.

Seasonality

- Adults- Seasonally visible during the Southwest monsoon (May–August).
- Larvae- The species persists in the larval stage for the rest of the year, emerging as adults only when water availability peaks.

Key Physical Characteristics

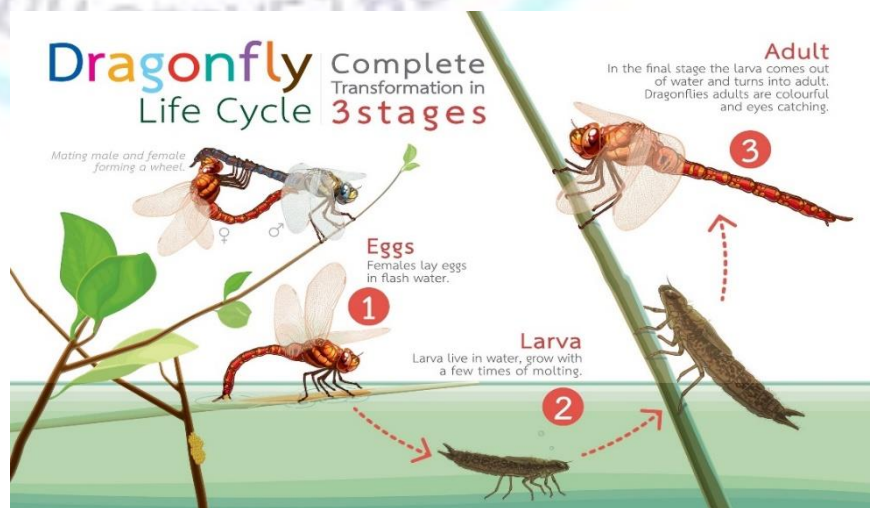
- Sexual Dimorphism- The species shows distinct differences between males and females.
- Males- Characterized by a bright blood-red coloration with specific black markings.
- Females- Distinguished by a yellow body with black markings and a bulkier physique compared to males.
- Differentiation- It can be distinguished from similar species by its slender abdomen and unique anal appendages/genitalia.

Conservation Concerns

Lack of Protected Status- The majority of the known populations lie outside protected areas (like National Parks or Wildlife Sanctuaries).

Vulnerability- Being located in plantation-dominated landscapes, the species is highly vulnerable to land-use changes (e.g., converting plantations to urban areas or other crops).

Call to Action- The discovery emphasises the urgent need for biodiversity-sensitive agricultural practices to protect species that thrive in agro-forestry systems.



General Overview of Dragonflies

Classification

Order- Odonata.

Suborder- Anisoptera (meaning "unequal wings").

Diversity- There are roughly 3,000 species globally, typically found near freshwater habitats.

Physical Features- Characterized by large compound eyes (offering nearly 360-degree vision). Possess four transparent wings and three pairs of legs. Known for a slender, elongated body.

Diet and Predation

- Adults- Specialized aerial predators with a 95% hunting success rate. They feed on mosquitoes, flies, and other flying insects.
- Larvae- Feed on aquatic insects, worms, and small aquatic organisms.

Ecological Role

- Pest Control- They help control insect populations, particularly vectors like mosquitoes.
- Food Web Support- They are integral to aquatic-terrestrial food webs, serving as prey for birds, fish, frogs.

Indicator Species

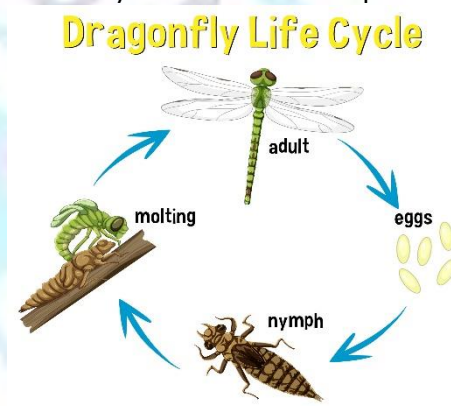
- Dragonflies are highly sensitive to water quality habitat changes.
- Their presence or absence serves as an excellent biological indicator of freshwater ecosystem health.

Life Cycle of Dragonflies

The life cycle consists of three distinct stages (hemimetabolous metamorphosis)-

Stage	Environment	Respiration Mechanism
Egg	Laid in or near water	N/A
Larva (Nymph)	Aquatic; lives among plants/rocks	Breathes through internal gills
Adult	Terrestrial/Aerial; around streams/wetlands	Breathes through spiracles

Source- https://www.thehindu.com/sci-tech/energy-and-environment/new-dragonfly-species-discovered-in-kerala-named-lyriothemis-keralensis/article70610007.ece#google_vignette



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