INTRODUCTION TO ODONATA

With Identification Keys for
Dragonflies & Damselflies commonly found in Kerala

Society for Odonate Studies
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Foreword

Like any other form of life, Odonates (dragonflies and damselflies) are a window to the expansive view of nature. From among the described 9,25,000 species of insects, odonates though only numbering around 6250, have captured our attention more than any other except perhaps butterflies. However, scientific enquiry on odonates in India is lagging much behind that in the Western world. One of the reasons could be the lack of awareness among the public. It is heartening to note that in recent times there is a surge of interest in odonata among young naturalists and wildlife enthusiasts. The contribution of organizations like Society for Odonate Studies (SOS) in popularizing this wonderful insect is significant.

Correct identification of species is essential in understanding their ecology. This e-book, Introduction to Odonata With Identification Keys for Dragonflies & Damselflies commonly found in Kerala provides not only beautiful images of the species but also their identification keys. The images have been generously contributed by several individuals and have appeared on Wikipedia platform. Mr Jeevan Jose, President, SOS, has taken tremendous effort in compiling the photographs and also in preparing the ID keys. The illustrations on the morphology, life cycle, behavior and other aspects of the life of dragonfly and the science of odonatology give an excellent understanding of the subject to the reader. This is an important milestone in the scientific pursuit of Society for Odonate Studies (SOS).

New species are being discovered; modern scientific methods reveal hitherto unknown aspects of Odonates. The cryptic nature of the female and juvenile of the species will have to be addressed. It is hoped that SOS would be able to bring out periodic revisions and updates to this edition.

Knowledge is to be shared freely among all, especially when it contributes to understanding and protecting nature.

Balachandran V.
Introduction

The Order Odonata is among the most ancient of Earth’s living fauna. Fossils of the order Protodonata, the first recognizable progenitors of present-day dragonflies, are known from the Upper Carboniferous period 320 million years ago. Odonata comprises of three groups- Anisoptera (Dragonflies), Zygoptera (Damselflies) and Anisozygoptera.

Odonates lay their eggs in fresh water and the larger part of their lives as larvae is spent in the aquatic habitats such as rivers, lakes, ponds and even water-filled tree holes. The metamorphosis of odonate has only three stages, egg, larva and adult. The larval stage varies from few weeks to several years during which period they grow in size by shedding their exoskeletons. The fully grown larva emerges from water and aerial stage of life begins. Life as a flying insect lasts only a few months.

Life of the adult odonate is spent in foraging, establishing territory and finding a mate to ensure progeny. Odonates are carnivorous; they are cannibalistic also. Most of the species spend their life near water bodies. Species like *Pantala flavescens* migrate long distances like India to Africa. Their next generation migrates back and the cycle continues forever.

Odonate behaviour is a fascinating subject to study. They are very aggressive, agile fliers (can fly forward and backward, upward and downward, hover). They hunt and feed mostly on the wing. Their compound eyes each have up to 30,000 ommatidia and the visual field is almost 360°. They can detect color, UV light and movement, which makes them the perfect hunting machines. It has been reported that they have a successful hunting rate of 95% compared to 50% of a Great White Shark or 25% of an African Lion.

The habitats of these beautiful insects are under threat as humans relentlessly destroy the environment, water bodies dry up or get land-filled or contaminated beyond redemption. As on date the number of identified odonate species are: 6256 in the world, 488 in India, 193 in Western Ghats and 167 in Kerala. Many more remains to be discovered. Unless the natural environment is protected and conserved, we stand to lose them forever.
**Evolution**

- **Odonata** - an order of carnivorous flying insects (Pterygota)
- A monophyletic group (clade), existed since **Permian-Triassic** period (about 250 million years)
- Belongs to the **Odonatoptera** super-order, which existed since the **Carboniferous** period (320 million years)
- Odonata is the only living members of this super-order now
- Some other orders like **Meganisoptera** had members like **Meganeura monyi** having a wingspans of 70 cm and **Meganeuropsis permiana** having a wingspan of 71 cm
- Unlike the true Odonata, they had no pterostigma, and a somewhat simpler pattern of veins in the wings
- They had no **male copulatory organ** at the second abdominal segment too
- **Crown Odonata**: **Triassolestodes asiaticus** Pritykina, 1981. Triassolestidae. Type location: Kyrgyzstan. Minimum age: 237 million years
There are other classifications like the combined suborder **Epiprocta** (in which Anisozygoptera and Anisoptera are infraorders). But classification of Anisoptera as a suborder along with Zygoptera and Anisozygoptera is easier to understand and widely popular.
Similar organisms

They are members of **Neuroptera** order. Dragonflies were considered under this order prior to when Fabricius assigned a unique order **Odonata** for dragonflies.

Antlion (Myrmeleontidae)  Owlfly (Ascalaphidae)
Dragonfly Vs Damselfly

1. Eyes together
2. Fore wings & hind wings unequal in size; hind wings broader at the base
3. Strong & robust body
4. Wings spread out at rest
5. Strong agile fliers

1. Eyes wide apart
2. Fore wings & hind wings approximately of the same size and shape
3. Slender & fragile body
4. Wings usually held together dorsally over abdomen
5. Comparatively weak fliers
Size

Largest odonata:
*Megaloprepus caerulatus*
Wingspan: 190 mm
Body length: 120 mm

Largest dragonfly:
*Petalura ingentissima*
Wingspan: 160 mm

Longest odonata:
*Mecistogaster linearis*
Body length: 135 mm

Smallest dragonfly:
*Nannophya pygmaea*
Wingspan: 20 mm
Body length: 15 mm

Smallest damselflies:
Agriocnemis species
Wingspan: 17 mm

All figures proportional to their natural size

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Morphology of a Dragonfly

- Fore wing
- Pterostigma
- Hind wing
- Eyes
- Head
- Legs
- Thorax
- Abdomen (S1-S10)
- Anal appendage

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Morphology of a Damselfly

Wings

Pterostigma

Anal appendage

Abdomen (S1-S10)

Secondary genitalia of male

Thorax

Legs

Eyes

Head
Illustration of Dragonfly wings

Nannodiplax Rubra

10mm

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Illustration of Damselfly wing

Both fore and hind wings are similar

_Pseudagrion microcephalum (female)_

- **Ax1**: Primary antenodals
- **Ax2**: Primary antenodals
- **Ac**: Anal crossing

- **C**: Costa
- **Sc**: Subcosta
- **R+M**: Radius + Media
- **Cu**: Cubitus
- **1A**: Anal
Mating and Egg laying

Tandem

Intra-male sperm translocation

Heart (wheel)

Exophytic oviposition

Endophytic oviposition

Unguarded

Tandem guarding

Unguarded

Tandem guarding

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Life cycle (Hemimetabolism)

Endophytic type

- Egg
- Hatching of egg
- Larva (several moult)

Exophytic type

- Emerging
- Climbing out of the water
- Imago

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Emergence of a Dragonfly
Maturation phases of *Trithemis aurora*

- **Teneral male**
- **Juvenile male**
- **Sub-adult male**
- **Female**
- **Mature male with pruinescence**
Sexual dimorphism

Difference in characteristics beyond the differences in their sexual organs
Adult behaviour

- Foraging, Territorial defense and Patrolling – *Perchers, Fliers, and Gliders*
- Thermoregulation – *Basking, Gliding, Obelisk posture*
- Dispersal and Migration – *Limited dispersal, cyclic migration*
- Congregation and Communal roosting
Feeding

They actively hunt small insects such as mosquitoes, swarming flies, butterflies and other dragonflies as they can capture using their legs.
Migration & Dispersal

- *Pantala flavescens* migrate from India to Africa covering about 18,000 km
- *Anax parthenope, Anax ephippiger* are also migratory
- *Pseudagrion decorum, Pseudagrion microcephalum, Ischnura rubilio* etc are locally migrating damselflies
Predators and Parasites

• Mymaridae are parasitoids of eggs of other insects like odonates

• Water mites (Hydrachnidia) larvae feed on hemolymph of odonates

• Other predatory animals like birds, spiders, frogs, lizards, wasps etc hunt odonates

• Bigger odonates hunt smaller ones

• Carnivorous plants like Drosera capture and digest insects like odonates
Larva

Dragonfly

Damselfly

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Larvae habitats - Freshwater ecosystems

Hill streams & waterfalls

Rivers

Ponds

Swamps

Paddy fields

Phytotelmata

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Dragonfly larvae body shapes and microhabitat types
Damselfly larvae body shapes and microhabitat types
Some larvae and their habitats
The labium of odonate larvae - A unique foraging organ

They actively hunt fairly all sorts of aquatic invertebrates, such as aquatic insect larvae, small shrimps, tadpoles and small fish
Significance

- Being predators both at larvae and adults, odonates play a significant role in the aquatic ecosystem.
- Feed on mosquitoes and other insects which are harmful to humans.
- Control insect pests in agricultural fields.
- Important bio-indicators: Some dragonflies are very sensitive to pollution; so are indicators of water quality.

*Euphaea fraseri*  
*Brachythemis contaminata*
Threats

Threats to Freshwater ecosystems are threats to odonates too:

- Overexploitation
- Water pollution, Sedimentation
- Flow modification, Stream fragmentation
- Destruction or degradation of habitat
- Chemical and organic pollution, Eutrophication
- Invasion by exotic species
History of Odonate Studies

• Early Naturalists like Conrad Gessner and Ulisse Aldrovandi observed these insects in 16th century; but they though those lived in water and land were different organisms
• Jan Swammerdam noticed and illustrated the life cycle of these insects in 1669
• Leeuwenhoek observed ovipositing and how Embryos developed in the eggs in 1695
• Carl Linnaeus described a few species since 1758 under the genus Libellula in the order Neuroptera
• Fabricius established a new order Odonata for dragonflies in 1793
• Drury (1770-1773) described a few species
• Rambur (1842) described a lot of species
• Sélys separated Odonata into Anisoptera (Dragonflies) and Zygoptera (Damselflies) in 1854 based on the difference in wings
• Friedrich Ris and René Martin completed the works initiated by Sélys
• Laidlaw (1914-1932) and Fraser (1918-1953) thoroughly studied Indian Odonata during the British Raj
• Tillyard well explained the morphology of odonata eggs, larvae and imagines through his book, The Biology of Dragonflies: (Odonata or Paraneuroptera (1917)
• Corbet explained the behaviour of odonates through his works, including Dragonflies: behaviour and ecology of Odonata (1999) and A Biology of Dragonflies (1962)
Odonatology in India after independence

- Immediately after independence, people like Bhasin, Sahini, Singh and Baijal started contributing to the knowledge on Indian Odonata.
- Asahina (1958-1995) conducted several studies on odonates from western and eastern Himalaya and described several new taxa.
- Lieftinck (1960-1984) also significantly contributed to the Indian Odonata.
- After this period, the scientists of Zoological Survey of India (ZSI) started surveying conservation areas, wetlands to document the odonate fauna.
- Scientists like Kumar, Lahiri, Mitra, Prasad, Singh, Sinha, Srivastava, Ram, Kulkarni, Radhakrishnan, Emiliyamma, Babu, Gaurav Sharma, Supriya Nandy, Subramanian, Jaffer and Talmale published fauna of many states and conservation areas.
- Citizen scientists and researchers from other organizations such as Francy Kakkassery, Abraham Samuel, Susanth Kumar, VC Balakrishnan, David Raju, Kiran C. G., Rison Thumboor, Vinayan Nair, Ashish Tiple, Pankaj Khorpade, Parag Rangnaker, Raymond Andrew, Shantanu Joshi and many others has contributed significantly to the growth of knowledge on Indian odonata diversity.
Odonata Diversity

- **World**: 6256 species (World Odonata List, 2018)
- **India**: 488 species (Subramanian et al. 2017)
- **Western Ghats**: 193 species (Subramanian et al. 2018)
- **Kerala**: 167 species (As of 2019)
Dragonfly Families

- **Aeshnidae (Darners)**
- **Chlorogomphidae (Mountain Hawks)**
- **Corduliidae (Emeralds)**
- **Gomphidae (Clubtails)**
- **Libellulidae (Skimmers)**
- **Macromiidae (Cruisers)**
- **Synthemistidae (Tigertails)**

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Aeshnidae (Darners)

• Largest and fastest flying dragonflies on the planet

• Fly continuously in active hours

• Perch vertically with wings wide open while roosting

• Eyes nearly cover their heads, touching in the midline

• Having long and thin abdomen, usually marked with blue or green

• Transparent wings, sometimes with hindwing patches

• Mostly breeds in marshes, ponds and lakes

• Eggs are deposited among vegetation in water or close by

• Having ovipositor as in damselflies
Aeshnidae (Darners)

- Anaciaeschna jaspidea
- Anax ephippiger
- Anax guttatus
- Anax immaculifrons
- Anax indicus
- Anax parthenope
- Gynacantha bayadera
- Gynacantha dravida
Anaciaeschna jaspidea

- Large brown crepuscular dragonfly with blue eyes
- Reddish-brown thorax, with two broad greenish-yellow stripes on each side
- Abdomen is reddish-brown, marked with azure-blue, white, and yellow
- Segments 8 to 10 are darker on dorsum with a pair of dorsal apical spots
**Anax guttatus**

- Big dragonfly with blue eyes and pale green thorax
- Abdomen is dark brown with blue and orange markings on the sides
- Segment 3 is pale green on the sides and blue on the dorsum
- Segments 4 to 7 are with several spots
- The number of spots are lesser in segment 8 to 10
• Big dragonfly with blue eyes, pale green thorax and dark brown abdomen with bright yellowish-red markings on the sides
• The dorsal side of segment 3 is blue
• Segments 4 to 6 are with a pair of bright yellowish-red spots
• On 7-8 these spots combine to form a continuous yellow band
Anax ephippiger

• Large dragonfly with greenish-yellow eyes and olivaceous-brown thorax
• Segment 2 is blue on dorsum and pale green on the sides
• Segments 3 to 7 are olivaceous-yellow with irregular reddish-brown stripes
Anax parthenope

- Large dragonfly with greenish-yellow eyes and olivaceous-brown thorax
- Has a blue saddle at S2 and S3 which wrap around the abdomen
- Segments 4 to 9 have an irregular black mid-dorsal stripe
Anax immaculifrons

- Large dragonfly with sapphire-blue eyes and bluish-green thorax
- Its abdomen is pale reddish-brown marked with black

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Gynacantha bayadera

- Slender dragonfly with green thorax and pale brown abdomen on the dorsum
- Segments 1–3 are grass green on the sides
- Has frons unmarked compared to other species in this genus
Gynacantha drauida

- Large crepuscular dragonfly with dull brown colours
- Fully matured specimens have bright colours; blues and greens develop very late in life
- The inferior appendage is more than one-third the length of superiors in G. drauida; less than one-third in G. subinterrupta
Chlorogomphidae (Mountain Hawks)

• Large black dragonflies with bright yellow markings
• Have large and are moderately separated eyes
• Wings are transparent or tinted with golden yellow
• Found in forests, flying high above the tree canopy
• Breed in torrential streams
• Only two species are found in the Western Ghats; *Chlorogomphus campioni* and *Chlorogomphus xanthoptera*
Chlorogomphus campioni

• Large dragonfly with moderately separated emerald green eyes and black frons
• Thorax is black with three oblique bright yellow stripes
• Abdomen is black with yellow marking
• Wings are transparent with dark brown apices and black pterostigma; membrane brown
Corduliidae (Emeralds)

• Have large, emerald-green eyes

• Black or dark brown body with areas of metallic green or yellow

• Breed in montane lakes or in deep still pools of mountain streams

• *Hemicordulia asiatica* is the only species in this family found in the Western Ghats

*Hemicordulia asiatica*
Hemicordulia asiatica

• Medium sized dragonfly with emerald-green eyes and frons
• Thorax is dark metallic green, marked with yellow on the sides
• Abdomen is glossy black, marked laterally in bright ochreous colour
• Wings are transparent
Gomphidae (Clubtails)

• Large or medium sized dragonflies

• Most of the males have a club-like widening of the end of the abdomen

• Perch flat or with raised abdomen

• Frequently make quick, short flights

• The eyes are well separated and large

• Generally black, marked with yellow or green

• Transparent wings

• Mostly breeds in streams and rivers

• Eggs are deposited in water

• Larvae usually burrow in the sediment at the bottom of the water body
Gomphidae (Clubtails)

- Burmagomphus laidlawi
- Gomphidia kodaguensis
- Heliogomphus promelas
- Ictinogomphus rapax
- Macrogomphus wynaadicus
- Megalogomphus hannyngtoni
- Merogomphus tamaracherriensis
- Onychogomphus acinaces
- Paragomphus lineatus

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**Gomphidia kodaguensis**

- Large dragonfly with bottle-green eyes
- Thorax is black, marked with yellow
- Abdomen is black, marked with yellow
- Segment 3 to 6 have dorsal basal spots
- Segment 7 has the basal half yellow
- Segment 8 has a long transverse basal spot
- Segment 9 is unmarked; segment 10 has a dorsal spot
**Ictinogomphus rapax**

- Large dragonfly with bluish-grey eyes
- Thorax is black, marked with yellow
- Abdomen is black, marked with yellow dorsal spots up to segment 6
- Segment 7 and 8 have the basal half yellow
- There is a leaf-like expansion in both sides of segment 8
- Segment 9 and 10 are mostly black

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Megalogomphus hannyngtoni

• Large dragonfly with bottle-green eyes
• Thorax is black, marked with greenish-yellow
• Abdomen is black, marked with bright citron-yellow dorsal spots up to segment 6
• Segment 7 has more than the basal half yellow
• Segments 8 and 9 have small lateral basal triangular spots
• Segment 10 is entirely black
Heliogomphus promelas

- Medium-sized dragonfly with bottle-green eyes
- Thorax is black, marked with greenish-yellow
- Abdomen is black, marked with greenish yellow narrow mid-dorsal stripe on segments 1 to 5
- Segment 7 has a ring on its basal third and a dorsal spot on segment 8
- Remaining segments are entirely black
Merogomphus longistigma

• Medium-sized dragonfly with bottle-green eyes
• Thorax and abdomen are black, marked with bright yellow
• Segment 3 to 6 have a baso-lateral triangular spot and a narrow mid-dorsal stripe.
• Segment 7 has its basal half broadly yellow
• Segments 8 to 10 have only the mid-dorsal carina finely yellow
Merogomphus tamaracherriensis

- Medium-sized dragonfly with bottle-green eyes
- Thorax and abdomen are black, marked with bright yellow
- The mid-dorsal spot on segment 3 is isolated, and absent on segments 4 to 6
- Segment 7 has a ring on its basal third
- There is a mid-dorsal tiny diamond-shaped spot on the base of Segment 8
- Segments 9 and 10 usually unmarked
Macrogomphus wynaadicus

- A medium-sized dragonfly with bottle-green eyes
- Thorax is black, marked with yellow
- Abdomen is black, marked with paired yellow dorsal spots up to segment 6
- Segment 7 has the basal half yellow
- Segment 8 is very broad
- Segment 9 and 10 are rather long as peculiar in *Macrogomphus* genus
Microgomphus souteri

• A small dragonfly with bottle-green eyes
• Thorax is black, marked with yellow
• Abdomen is black, marked with greenish yellow
• Segments 3 to 6 have narrow basal rings
• Segment 7 has a broader basal ring
• Segments 8 to 10 are unmarked
• Can be distinguished from other Gomphidae by the shape of the anal appendages
Burmagomphus laidlawi

- Medium-sized dragonfly with bottle-green eyes
- Thorax is black, marked with greenish-yellow
- Abdomen is black, marked with yellow basolateral lunules on segments 4 to 6
- Segment 7 has a broad basal ring
- Segment 9 has its apical half yellow
- Segments 8 and 10 are unmarked
Onychogomphus acinaces

- Medium-sized dragonfly with bottle-green eyes
- Thorax and abdomen are black, marked with greenish yellow
- Segment 3 has a large basal spot; segments 4 to 6 have smaller spots
- Segment 7 has its basal half yellow
- Segment 8 has only a basal spot on the sides
- Segments 9 and 10 are unmarked
- The inferior appendage is slightly longer than superiors
Onychogomphus nilgiriensis

- Medium-sized dragonfly with bottle-green eyes.
- Thorax and abdomen are black, marked with yellow
- Segment 3 has a large basal spot; segments 4 to 6 have triangular spots. Segment 7 has its basal half yellow; Segment 8 has only a basal spot on the sides. Segments 9 and 10 are unmarked
- Anal appendages are black; but the outer and upper surfaces of the superiors are bright yellow
- The apical third of the superiors curling strongly downwards and then backwards, so that its dorsum comes into contact with the dorsal surface of the inferior appendage
- The inferior appendage is black, the branches curving at first downwards and then bent at a right angle to overlap the superiors
**Paragomphus lineatus**

- Medium-sized dragonfly with bluish grey eyes
- Thorax is yellow, marked with blackish-brown
- Abdomen is black marked with yellow basal rings
- Segments 8 and 9 have wide dilatations at their sides
- They are black on the dorsum except for a fine basal rings
- Segment 10 is yellow, with black on the basal half of the dorsum
- Anal appendages are yellow and hood-shaped
Libellulidae (Skimmers)

- Largest dragonfly family in the world
- Large, medium or small sized dragonflies
- Usually perch flat or with raised abdomen
- Some of them make continuous flights
- Eyes are confluent
- Most of them are brightly coloured
- Wings may be transparent, opaque, or with patches in the base
- Breed in wide variety of aquatic habitats, including still and running waters
- Eggs are deposited in water
**Acisoma panorpoides**

- Small dragonfly with blue eyes, azure-blue thorax and abdomen, marbled with black
- The characteristic shape of the abdomen will help to distinguish this species from other Libellulidae
Aethriamanta brevipennis

• Small dragonfly with dark reddish-brown eyes, chocolate-brown thorax and bright red abdomen
• Breeds in weedy ponds and lakes
Brachydiplax chalybea

- Small dragonfly with dark-brown eyes and yellowish-brown thorax, powdered with blue pruinescence
- Abdomen is also powdered with blue, except on the last segments
- Wings are transparent, with tinted brown base
**Brachydiplax sobrina**

- Small dragonfly with dark-brown eyes and yellowish-brown thorax, powdered with blue pruinescence
- Abdomen is also powdered with blue, except on the last segments
- Wings are transparent, without any tint
**Brachythemis contaminata**

- Small dragonfly with brown-capped yellowish-green eyes and olivaceous-brown thorax
- Abdomen is ochreous-red, marked with brown stripes
- Wings are transparent, but with a broad orange fascia between the base and the reddish pterostigma
Bradinopyga geminata

- Medium sized dragonfly with brown-capped grey eyes and ashy grey thorax
- Abdomen is coloured very similarly to thorax; black marbled with yellowish white
- Wings are transparent with dual colour pterostigma, black at centre and white at both ends
**Diplacodes lefebvreii**

- Small dragonfly with dark eyes, thorax, and abdomen
- In sub-adults, some yellow marks on sides of thorax and abdomen are visible

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**Diplacodes trivialis**

- Small dragonfly with bluish eyes, olivaceous thorax and abdomen, marked with black
- In old adults, the whole thorax and abdomen become uniform pruinose blue
**Diplacodes nebulosa**

- Small dragonfly with brown-capped yellowish eyes, dark thorax and abdomen, and dark wing tips
- In sub-adults, some yellow marks on sides of thorax and abdomen are visible
Libellulidae (Skimmers) - 2

- Epithemis mariae
- Hylaeothemis indica
- Indothemis carnatica
- Lathrecista asiatica
- Potamarcha congener
- Cratilla lineata
- Rhodothemis rufa
- Crocothemis servilia
- Urothemis signata

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Epithemis mariae

• Small dragonfly with brown-capped yellowish eyes, dark thorax with a broad yellow humeral stripe on either side
• Segments 1-3 of the abdomen are brick-red, the remaining segments are black with basal yellow rings
**Hylaeothemis indica**

- Medium sized dragonfly with bluish-green eyes and black thorax, marked with pale blue
- Abdomen is slim and black, marked with pale blue stripes
- Segment 7 has a large dorsal spot in pale blue
**Indothemis carnatica**

- Small dark violaceous dragonfly with yellow markings
- Young males and females have yellowish markings which are obscured by violaceous pruinescence in adult males
- Anal appendages are pale yellow tipped with black
**Lathrecista asiatica**

- Medium sized dragonfly with brown-capped grey eyes and copper brown thorax, marked with yellow stripes
- Abdomen is blood red, with last segments black
Potamarcha congener

• Medium sized dragonfly with brown-capped yellow eyes and copper brown thorax, marked with yellow stripes
• Abdomen is dark brown with broad yellow markings
• The thorax and abdomen are covered with ashy blue pruinescence in adult males
Cratilla lineata

• Medium sized dragonfly with metallic-blue frons and brown-capped grey eyes
• Thorax is bronze-black, marked with yellow
• Abdomen is black, marked with narrow yellow stripes
Rhodothemis rufa

• Medium sized dragonfly with red eyes, thorax and abdomen
• Young males and females have a mid-dorsal citron-yellow stripe in the pro-thorax, thorax and abdominal segments
• These marks get obscured by red pruinescence in adult males
Crocothemis servilia

- Medium sized dragonfly with blood-red eyes, frons and thorax
- Abdomen is red with a narrow black mid-dorsal carina
Urothemis signata

• Medium sized dragonfly with red eyes, frons and thorax
• Abdomen is red with some black marking on the dorsum of last segments
• Wings are transparent with a amber colored patch in the base of hind-wings
Libellulidae (Skimmers) - 3

Neurothemis fulvia

Neurothemis intermedia

Neurothemis tullia

Trithemis aurora

Trithemis kirbyi

Trithemis festiva

Trithemis pallidinervis

Sympetrum fonscolombii

Tetrathemis platyptera

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Neurothemis fulvia

• Medium sized dragonfly with reddish-brown eyes, frons, thorax and abdomen
• Wings are dark reddish brown with transparent tips and reddish pterostigma
**Neurothemis intermedia**

- Medium sized dragonfly with brown-capped yellowish eyes, reddish yellow thorax and abdomen
- There is a bracken ventro-lateral dark stripe in the abdominal segments
- Has a broad basal amber-yellow marking at base of all wings
**Neurothemis tullia**

- Small dragonfly with brown-capped yellowish eyes, black thorax and abdomen
- There is a pale yellow mid-dorsal carina on the thorax and abdomen, may fade in adults
- Wings are transparent for apices and brownish black for basal half, separated by a milky white patch
Trithemis aurora

- Medium-sized dragonfly with crimson red eyes, face, thorax and abdomen
- Wings are transparent with crimson venation and the base has a broad amber patch
- Wing spots are a dark brown
Trithemis kirbyi

• Medium-sized dragonfly with scarlet red eyes, face, thorax and abdomen
• Wings are transparent with broad reddish amber patch on the base
• Wing spots are a dark brown
Trithemis festiva

- Medium-sized dragonfly with brown-capped grey eyes and purple face
- Thorax and abdomen are dark brown with yellowish red marks; covered with purple pruinescence in adult males
Trithemis pallidinervis

- Medium-sized dragonfly with long legs and brown-capped grey eyes
- In males, the face is pale brown in front and purple above. It is yellow in females
- Thorax and abdomen are olivaceous with black markings
- Wing spot is black with creamy white ends
**Sympetrum fonscolombii**

- Medium-sized dragonfly with brown-capped grey eyes, red face, frons, thorax and abdomen
- Wings have red veins and the wing bases of the hind-wings are yellow
- Pterostigma is pale yellow bordered with black veins
- Dorsum of last segments of the abdomen are black

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**Tetrathemis platyptera**

- Small dragonfly with bluish green eyes
- Thorax and abdomen are yellow with broad black markings
- Wings are transparent, with fore-wings faintly and hind-wings broadly tinted with yellow in base
- Female stabs eggs on dry twigs hanging over water
- The eggs hatch out in rains and the larvae fall into the water below

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Libellulidae (Skimmers) - 4

Orthetrum chrysis

Orthetrum pruinosum

Orthetrum sabina

Orthetrum glaucum

Orthetrum triangulare

Orthetrum luzonicum

Orthetrum taeniolatum

Palpopleura sexmaculata

Onychothemis testacea
Orthetrum chrysis

• Medium sized dragonfly with bluish grey eyes, red face and frons
• Thorax is dark brown and abdomen is blood red
• Wings are transparent, with a small amber patch on the base
• Looks very similar to Orthetrum pruinosum in shape and size; but can be distinguished by the colour of the abdomen
**Orthetrum pruinosum**

- Medium sized dragonfly with bluish grey eyes, dark face and frons
- Thorax is dark brown; but with dull purple pruinescence in adult males
- Abdomen is purple red in adults
- Wings are transparent, with a small amber patch on the base
- Looks very similar to *Orthetrum chrysis* in shape and size; but can be distinguished by the colour of the abdomen
**Orthetrum sabina**

- Medium sized dragonfly with greenish grey eyes, white face and frons
- Thorax is greenish-yellow, marked with black
- Abdomen is yellowish white, marked with black
- Wings are transparent
- Females are similar to males, differ only in sexual characteristics
Orthetrum glaucum

• Medium sized dragonfly with dark face and greenish blue eyes
• Thorax and abdomen are dark with yellow markings; but obscured by blue pruinescence in old males
• Last two segments of abdomen are black
• Wings are transparent with dark amber-yellow tint in the extreme base
Orthetrum triangulare

- Medium sized dragonfly with dark face and dark blue eyes
- Thorax is black with broad greenish yellow markings on both sides
- Segments 1-2 and 8-10 in the abdomen are black and the remaining segments are pruinose with azure blue
- Wings are transparent with dark triangular patch in the hind wings
Orthetrum luzonicum

- Medium sized dragonfly with yellowish white face and blue eyes
- Thorax is yellowish green with brown stripes; obscured by pruinescence in old males
- Abdomen is yellowish green with brown stripes; obscured by azure blue pruinescence up to the last segments
- Wings are transparent
Orthetrum taeniolatum

- Medium sized dragonfly with brown capped blue eyes
- Thorax and abdomen are pale brown with yellowish green stripes; obscured by powder blue pruinescence in old males
- Wings are transparent
**Palpopleura sexmaculata**

- Small dragonfly with brown capped greenish blue eyes
- Thorax and abdomen are yellowish green with dark brown stripes; obscured by pale blue pruinescence in old males
- Wings are transparent; hind-wings usually tinted with yellow from the base
- The pterostigma of young males and female are bi-coloured with half black and half yellow
Onychothemis testacea

- Medium sized dragonfly with bottle-green eyes and metallic blue frons
- Thorax and abdomen are dark metallic-blue, marked with citron-yellow
- Wings are transparent; pterostigma is black
Libellulidae (Skimmers) - 5

- **Tramea basilaris**
  - © David V. Raju

- **Tramea limbata**
  - © Renilith Jacob Mathews

- **Zygonyx iris**
  - © Jeevan Jose

- **Rhyothemis triangularis**
  - © Jeevan Jose

- **Rhyothemis variegata**
  - © Vengolis

- **Zyxomma petiolatum**
  - © Rison Thumboor

- **Pantala flavescens**
  - © Jeevan Jose

- **Tholymis tillarga**
  - © Renilith Jacob Mathews

- **Hydrobasileus croceus**
  - © Vengolis

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Tramea basilaris

• Medium sized dragonfly with brown-capped grey eyes and red frons
• Thorax is olivaceous with black stripes
• Abdomen is brick red, marked with black; last segments are black, ringed with yellow
• There are two brownish black patches surrounded by a golden yellow areola in the base of each hind-wing
• Anal appendages are very long
Tramea limbata

• Medium sized dragonfly with brown-capped grey eyes and violet frons
• Thorax is olivaceous with some narrow dark stripes
• Abdomen is brick red, marked with black; last segments are black
• There is a brownish black patch in the base of each hind-wing (not surrounded by a golden yellow areola as in other species)
• Anal appendages are very long
Zygonyx iris

- Medium sized dragonfly with brown-capped grey eyes and metallic blue frons
- Thorax is dark metallic blue with citron-yellow stripes
- Abdomen is black with segments 1-3 yellow on the sides
- There is an yellow mid-dorsal carina and basal annule on segments 1 to 6
- There is a big yellow spot on segment 7

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Rhyothemis triangularis

• Small dragonfly with brown-capped grey eyes and metallic blue frons
• Thorax is dark metallic green and abdomen is black
• Wings are transparent with dark metallic blue patches on the base
Rhyothemis variegata

• Medium-sized dragonfly with brown-capped grey eyes and metallic green frons
• Thorax is dark metallic green and abdomen is black
• Wings palely tinted throughout with yellow. There are a few black spots on the apices and nodes of the fore-wings and a large patch in the base of the hind-wings, marked with black and golden yellow.
Zyxomma petiolatum

• Medium-sized crepuscular dragonfly with emerald-green eyes
• Thorax and abdomen are chocolate-brown
• Wings are transparent; but enfumé with brown in adults
Pantala flavescens

• Medium-sized dragonfly with brown-capped bluish grey eyes and yellow frons
• Thorax is olivaceous and hairy
• Abdomen is yellowish red, marked with black
• Wings are transparent
Tholymis tillarga

- Medium-sized crepuscular dragonfly with brown-capped olivaceous eyes and reddish frons
- Thorax is reddish on dorsum and golden yellow on the sides
- Abdomen is coral red
- Wings are transparent; but hind wings have a golden-brown patch in the base, bordered by a cloudy-white patch
Hydrobasileus croceus

- Large dragonfly with brown-capped olivaceous eyes and reddish frons
- Thorax is olivaceous brown
- Abdomen is olivaceous brown, changing to ochreous towards anal end, marked with black and yellow
- Wings are palely tinted throughout with golden amber; base of hind-wings have a moderately broad dark reddish-brown mark
Libellulidae (Skimmers) - 6

*Macrodiplax cora*

*Lyriothemis acigastra*

*Lyriothemis tricolor*
Macrodiplax cora

- Medium sized dragonfly with red eyes, frons and thorax
- Abdomen is red, dorsally marked with black patches on each segment
- The marks on segments 4 to 7 are in the shape of a hour-glass
- Wings are transparent with a amber coloured patch in the base of hind-wings
- Legs black; bases of femora white
Lyriothemis acigastra

• Small dragonfly with brown-capped greenish-yellow eyes
• Thorax is blackish brown, marked with yellow
• Abdomen is red, tapered from base to end, and marked with black
Lyriothemis tricolor

• Medium sized dragonfly with brown-capped greenish-yellow eyes
• Thorax is blackish brown, marked with yellow
• Abdomen is red, marked with black
• Breeds in water collected inside the tree holes of evergreen and semi-evergreen forests
Macromiidae (Cruisers)

- Usually found flying to and fro over bodies of water
- Fly continuously in active hours
- Perch vertically with wings wide open while roosting
- Eyes are green and just barely meet at the top of the head
- Mostly breed in rivers, streams and lakes
- Lay their eggs by dipping the abdomen in the water as they fly over
- *Epophthalmia* and *Macromia* are the two genus in this family found in the Western Ghats
Epophthalmia vittata

- Moderately sized dragonfly with bluish-green eyes and dark metallic blue frons
- Thorax is dark reddish brown, marked with yellow
- Abdomen is dark reddish brown with bright ochreous annules
- Wings are transparent
Macromia ellisoni

- Moderately sized dragonfly with emerald-green eyes and dark metallic blue frons
- Thorax and abdomen are black, marked with citron yellow
- Wings are transparent, palely enfumed with brown
Synthemistidae (Tigertails)

• They look similar to Corduliidae and Gomphidae dragonflies

• Most species are small in size and have narrow abdomens

• Perch vertically with wings wide open while roosting

• Eyes are usually green; body usually marked with yellow

• Mostly breed in marshes and streams

• Their nymphs are bottom-dwellers, and resist droughts by burying themselves very deeply

• *Idionyx* and *Macromidia* are the two genus in this family found in the Western Ghats
**Idionyx travancorensis**

- Medium sized dragonfly with emerald-green eyes and bluish green frons
- Thorax is metallic green, marked with yellow lateral stripes
- Abdomen is black, unmarked
- Wings are transparent, palely tinted with yellow
Idionyx saffronata

• A medium sized dragonfly with emerald-green eyes and bluish green frons
• Thorax is metallic green, marked with yellow lateral stripes
• Abdomen is black
• Segments 1 and 2 are marked narrowly along the ventral borders with citron-yellow
• Segments 7 to 10 are bordered with bright yellow
• Segment 10 strongly keeled but without a dorsal spine
• Wings are transparent, palely enfumed
**Idionyx gomantakensis**

- A small dragonfly with emerald-green eyes
- Thorax is metallic green, marked with yellow lateral stripes
- Abdomen is black; narrowly yellow along the ventral border
- Can be differentiated from other species of *Idionyx* by long and slender cerci and epiproct, absence of teeth in the basal half of the cerci, and a tuft of golden hairs at the end of the lateral lobes of the epiproct
Macromidia donaldi

• Medium sized crepuscular dragonfly with emerald-green eyes and metallic-green frons
• Thorax is metallic green, marked with yellow
• Abdomen is black, marked with yellow mid-dorsal stripes
• Segment 7 has a broad club like mark on dorsum
• Wings are transparent
Damselfly Families

**Calopterygidae (Broad-wings)**

**Chlorocyphidae (Stream Jewels)**

**Coenagrionidae (Narrow-wings)**

**Euphaeidae (Gossamer-wings)**

**Lestidae (Spread-wings)**

**Platystictidae (Shadow damsels)**

**Platycnemididae (White-legs)**

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Calopterygidae (Broad-wings)

• Large damselflies with broad head and conspicuous round eyes

• Have metallic bodies; their wings are broader, with wider bases than other damselflies

• Males are often territorial

• Some species display courtship behaviour

• Wings may be transparent, opaque, or with patches

• Breed in forested streams

• Eggs are deposited in aquatic plants
Calopterygidae (Broad-wings)

Neurobasis chinensis

Vestalis apicalis

Vestalis gracilis

Vestalis submontana
Neurobasis chinensis

- Large damselfly with dark-brown capped bluish green eyes
- Thorax and abdomen are metallic bronzy green
- Fore-wings are transparent, tinted in pale yellow with green neuration
- Hind-wings are opaque in brilliant metallic green or peacock-blue in the base and dark brown in the apices
Vestalis gracilis

- Large damselfly with dark-brown capped greenish yellow eyes
- Thorax and abdomen are metallic green
- Wings are transparent
Vestalis apicalis

• Large damselfly with dark-brown capped greenish yellow eyes
• Thorax and abdomen are metallic green
• Wings are transparent; the apices of all wings are broadly tipped with blackish-brown
Vestalis submontana

• Large damselfly with dark-brown capped greenish yellow eyes and black face
• Thorax and abdomen are golden-bronzed metallic green
• Wings are transparent. The apices of all wings are tipped with blackish-brown; but much restricted, occupying only about 2.5 mm
• The inferior appendages are proportionally longer than the other two species
Chlorocyphidae (Stream Jewels)

• Small damselflies with large bulb like eyes

• Wings are iridescent in males and transparent in females

• Abdomen is shorter than the hindwing

• Breed in forested streams

• Eggs are deposited in aquatic plants or logs
Chlorocyphidae (Stream Jewels)

- *Calocypha laidlawi*
- *Heliocypha bisignata*
- *Libellago indica*
Calocypha laidlawi

- Small damselfly with big dark-brown capped greenish yellow eyes and black head with several vermilion spots
- Thorax is black, marked with vermilion red dorsal carina and azure blue marks on the sides
- Abdomen is black, marked with azure blue on the sides
- Wings are transparent; bases tinted with yellow and the apices of all wings are broadly tipped with black
**Heliocypha bisignata**

• Small damselfly with big brown capped grey eyes and black head
• Thorax is black, marked with rose-pink mesothoracic triangle and yellow marks on the sides
• Abdomen is black, marked with thin yellow stripes and dots on the sides
• Fore-wings are transparent with outer fourth opaque in bright copper colours
• Hind-wings are with outer third opaque, marked with two series of vitreous spots which glow with a copper or violet reflex
Libellago indica

• Small damselfly with big brown capped grey eyes and black face
• Thorax is black, marked with yellow
• Abdomen is black with broad yellow marks on the sides
• Wings are transparent; bases tinted with amber and the apices of fore wings are tipped with black
Coenagrionidae (Narrow-wings)

• Largest damselfly family

• Slender and small damselflies

• Have varied colouration, including green, blue, yellow, orange, or purple

• Usually narrow, colourless and clear wings

• Usually have a black pattern

• Breed in ponds, marshes and wetlands; but some species in streams

• Eggs are deposited in living or dead submerged vegetation

• Some species even crawl underwater to deposit their eggs
Coenagrionidae (Narrow-wings) - 1

Agriocnemis keralensis

Agriocnemis pygmaea

Agriocnemis pieris

Agriocnemis splendidissima

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Agriocnemis keralensis

- Small damselfly with brown capped green eyes
- Thorax is black, marked with apple green stripes
- Abdomen is reddish with black markings
- Segment 2 of the abdomen has a distinct mark on dorsum
Agriocnemis pieris

• Small damselfly with black capped pale blue eyes
• Thorax is black, marked with pale blue stripes
• Abdomen is pale blue, marked with black up to segment 8
Agriocnemis pygmaea

• Small damselfly with black capped green eyes
• Thorax is black, marked with green stripes
• Abdomen is greenish yellow, marked with black up to segment 7
• Remaining segments and appendages are brick red
Agriocnemis splendidissima

- Small damselfly with black capped greenish eyes
- Thorax is black, marked with pinkish blue stripes, turn to pruinose blue in adults
- Abdomen is very slender and in ground-red colors, marked with black
- Abdomen is also get pruinose with blue in adults
- Anal appendages are long, narrow, and curved downward
Coenagrionidae (Narrow-wings) - 2

Ischnura rubilio

Ischnura senegalensis

Mortonagrion varralli

Paracercion calamorum

Paracercion malayanum
Ischnura rubilio

- Small damselfly with black capped green eyes
- Thorax is black, marked with olive green stripes
- Abdomen is rusty-yellow, except for segments 8 to 10, which are azure blue
- There is a large diamond-shaped spot on apical end of the dorsum side of segment 6
- Segment 7 is broadly bronzed black on the dorsum
- There is a broad black dorsal spot in segment 10
Ischnura senegalensis

- Small damselfly with black capped green eyes
- Thorax is black, marked with green stripes
- Abdomen is bluish green in segments 1-2 and then khaki yellow up to segment 7, marked with black
- Segments 8 and 9 are azure blue, with 9 black on dorsum. Segment 10 is black on dorsum and khaki yellow on the sides.
- The green on thorax and abdomen may turn to blue in both male and female when aged
Mortonagrion varralli

- Small damselfly with reddish-brown capped grey eyes
- Thorax is reddish-brown, marked with narrow pale blue stripes
- Abdomen is reddish-brown with narrow pale blue basal annules; 8th segment has a broader sky-blue basal annule
**Paracercion calamorum**

- Small damselfly with brown capped yellowish green eyes
- Thorax is black on dorsum without any stripes
- Lateral sides of thorax are greenish blue; obscured by bluish white pruinescence in adults
- Abdomen is azure blue with broad black dorsal marks up to segment 7
Paracercion malayanum

• Small damselfly with deep blue eyes
• Thorax is black on dorsum with very broad azure blue stripes
• Lateral sides of thorax are blue without any pruinescence
• Abdomen is azure blue with broad black dorsal marks up to segment 7
• Segment 2 has a distinct broad dorsal spot shaped like a thistle-head
Coenagrionidae (Narrow-wings) - 3

Aciagrion approximans krishna

Amphiallagma parvum

Aciagrion occidentale

Archibasis oscillans

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Aciagrion approximans krishna

- Small, slender damselfly with brown-capped greenish eyes
- Thorax is black with lateral violet stripes
- Abdomen is violet with broad black dorsal marks up to segment 7
- Segments 8 and 9 are violet; lower half of segment 8 is marked with black
**Aciagrion occidentale**

- Small, slender damselfly with brown-capped pale blue eyes
- Thorax is black with lateral azure blue stripes
- Abdomen is azure blue with broad black dorsal marks up to segment 7
- Segment 8 is blue with a narrow triangle black dorsal spot, segment 9 is blue
Amphiallagma parvum

• Small, slender damselfly with sky-blue eyes slightly capped with black
• Thorax is black with lateral azure blue stripes
• Abdomen is azure blue with black dorsal marks up to segment 7
• Segment 8 to 10 are blue; segment 10 has a narrow mid-dorsal stripe
Archibasis oscillans

- Long, slender damselfly with dark-blue capped pale blue eyes
- Thorax is black with lateral azure blue stripes
- Abdomen is greenish yellow with black dorsal marks up to segment 7
- Remaining segments are azure blue with apical black rings
Coenagrionidae (Narrow-wings) - 4

Ceriagrion cerinorubellum

Ceriagrion coromandelianum

Ceriagrion olivaceum

Ceriagrion rubiae

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Ceriagrion cerinorubellum

• Medium sized damselfly with greenish eyes
• Thorax is yellowish green
• Abdominal segments 1, 2 and basal half of three and apical half of 7 to 10 are in brick red
• Other segments are pale blue, marked black on dorsum
**Ceriagrion coromandelianum**

- Medium sized damselfly with yellowish green eyes
- Thorax is olive green, paler on sides
- Abdomen is uniformly citron yellow
Ceriagrion chromothorax

- Medium sized damselfly with yellowish green eyes
- Thorax is chrome yellow
- Abdomen is long and slender; yellowish brown with black markings on the dorsum of last segments
Ceriagrion olivaceum

- Medium sized damselfly with olivaceous brown eyes, darker above
- Thorax is pale olivaceous brown, paler on sides
- Abdomen is uniformly olivaceous brown
Ceriagrion rubiae

• Medium sized damselfly with olivaceous eyes, darker above
• Thorax is bright orange, paler on the sides
• Abdomen is rich orange
Coenagrionidae (Narrow-wings) - 5

Pseudagrion australasiae

Pseudagrion decorum

Pseudagrion indicum

Pseudagrion malabaricum

Pseudagrion microcephalum

Pseudagrion rubriceps

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Pseudagrion decorum

- Medium sized damselfly with bluish eyes, black above
- Thorax is bluish green, marked with narrow black stripes; azure blue on the sides
- Abdomen is azure blue with dorsal black mark up to segment 7
- Segments 8 to 10 are azure blue with apical black annules
Pseudagrion indicum

• Medium sized damselfly with black capped greenish eyes
• Thorax is grass-green, marked with black stripes; azure blue on the sides
• Abdomen is azure blue with dorsal black mark up to segment 7
• Segments 8 and 9 are azure blue with apical black annules
• Segment 10 is black
*Pseudagrion rubriceps*

- Medium sized damselfly with bright orange face and eyes, yellowish below
- Thorax is olive green, marked with black stripes; azure blue on the sides
- Abdomen is blue on the sides, broadly marked with black on dorsum, up to segment 8
- Segments 9 and 10 are azure blue without any marks
**Pseudagrion australasiae**

- Medium sized damselfly with blue eyes, black on top
- Thorax is azure blue, marked with black stripes
- Abdomen is blue on the sides, broadly marked with black on dorsum, up to segment 7
- Segments 8 and 9 are azure blue with narrow apical fringe in black
- Segment 10 has an X-shaped, broad black mark on the dorsum, blue on the sides
- Superior appendages are half the length of segment 10
**Pseudagrion malabaricum**

- Medium sized damselfly with blue eyes, black on top
- Thorax is azure blue, marked with black stripes
- Abdomen is blue on the sides, broadly marked with black on dorsum, up to segment 7
- Segments 8 and 9 are azure blue with narrow apical annules in black
- Segment 10 is black on dorsum and blue on the sides
- Superior appendages are smaller than segment 10; but not as small as those of *Pseudagrion australasiae*
**Pseudagrion microcephalum**

- Medium sized damselfly with blue eyes, black on top
- Thorax is azure blue, marked with black stripes
- Abdomen is blue on the sides, broadly marked with black on dorsum, up to segment 7
- Segments 8 and 9 are azure blue; 8 with a thick and 9 with a thin apical annules in black
- Segment 10 is black on dorsum and blue on the sides
- Superior appendages are of the same length of segment 10
Euphaeidae (Gossamer-wings)

• Medium sized damselflies with large round eyes

• Wings are transparent, tinted or with iridescent markings

• Mostly metallic-coloured

• Males perch on boulders and dry twigs near streams

• Males open wings and prominently display the iridescent copper markings of the hindwings

• Breed in forest streams

• Some of them are good bio-indicators
Euphaeidae (Gossamer-wings)

- Dysphaea ethela
- Euphaea cardinalis
- Euphaea dispar
- Euphaea fraseri

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Dysphaea ethela

- Medium sized damselfly with brown-capped pale grey eyes
- Thorax is black, marked with narrow yellowish red stripes
- Abdomen is black, marked with yellow apical annules up to segment 8 and yellow lateral stripes up to segment 6
- Wings are transparent; but evenly enfumed with brown
Euphaea cardinalis

- Medium sized damselfly with brown-capped pale grey eyes
- Thorax is black, marked with bright ochreous-red stripes
- Abdomen is red up to the segment 6; apical third of segment 6 to the end segment are black
- Fore-wings are transparent, merely enfumed with brown on the apices
- Hind wings are transparent; but nearly half of the wings from the apices are broadly black
- All legs are red
**Euphaea dispar**

- Medium sized damselfly with brown-capped pale grey eyes
- Thorax is black, marked with bright ochreous-red stripes
- Abdomen is red up to the segment 6; apical third of segment 6 to the end segment are black
- Fore-wings are transparent, black on the extreme apices
- Hind-wings are transparent; but nearly one third of the wings from the apices are broadly black
- All legs are yellow at base and remaining segments are dark
**Euphaea fraseri**

- Medium sized damselfly with brown-capped pale grey eyes
- Thorax is black, marked with sky-blue ante-humeral and reddish-yellow humeral stripes
- Abdomen is red up to the segment 7; apical third of segment 7 to the end segment are black
- Fore-wings are transparent, merely enfumed with brown on the apices
- Hind-wings are transparent; but one third of the wings from the apices are broadly black
- First pair of legs is dark
Lestidae (Spread-wings)

• Most of them rest with their wings at an angle away from their bodies

• Abdomen is long and slender

• The body has usually a greenish, metallic shine; covered by pruinescence in adults

• Breed in marshes, ponds and rarely in running waters
Lestidae (Spread-wings)

- **Indolestes davenporti**
- **Lestes dorothea**
- **Lestes praemorsus**
- **Lestes elatus**
- **Lestes nodalis**
- **Lestes umbrinus**
- **Lestes viridulus**
- **Platylestes platystylus**

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Indolestes davenporti

• Medium sized damselfly with brown-capped bluish eyes
• Thorax is black, marked with azure blue stripes
• The lower edge of the black is like a saw-tooth
• Abdomen is azure blue on the sides, broadly black on dorsum up to the basal half of segment 9
• The apical half of segment 9 and whole of segment 10 are azure blue
• The azure blue parts are pale brown in young males without pruinescence
Lestes dorothea

- Medium sized damselfly with blue eyes
- Thorax is brown, marked with a pair of metallic green ante-humeral stripes with several lobes in their outer border
- The mark on each side is followed by another diffuse black stripe on the humeral suture
- The thorax of matured males are heavily pruinosed, obscuring all these markings
- Abdomen is blue, marked with black
- Segment 8 is with a fine basal blue ring, segments 9 entirely black, and segment 10 is black with pruinosed white on the dorsum
Lestes praemorsus

- Medium sized damselfly with blue eyes
- Thorax is brown, marked with a pair of metallic green ante-humeral stripes with several lobes in their outer border
- The thorax of matured males are heavily pruinose, obscuring all these markings
- Abdomen is blue, marked with black
- Segment 8 has a thin apico-lateral blue spot; segment 9 has a very large lateral spot of blue on each side; segment 10 also has a blue spot on each side
**Lestes elatus**

- Medium sized damselfly with brown capped blue eyes
- Thorax is reddish brown, marked with a pair of narrow antehumeral metallic green stripes expanded outwardly at the abdominal end like a hockey stick.
- The thorax of matured males are heavily pruinose with blue on the sides.
- Abdomen is pale brown at the sides, marked broadly on dorsum with metallic green, up to segment 8.
- The basal half of segment 9 is black and the apical half is yellowish brown. Segment 10 is yellowish brown.
- The yellowish-brown colour of the abdomen will change to bluish-white due to pruinescence in the adults.
Lestes viridulus

• Medium sized damselfly with brown capped yellowish eyes
• Thorax is reddish brown, marked with a pair of very narrow metallic green stripes, running closely parallel to the mid-dorsal carina
• Abdomen is pale brown at the sides, marked broadly on dorsum with metallic green, up to segment 8
• The basal half of segment 9 is black and the remaining parts are yellowish brown
Lestes umbrinus

- Medium sized damselfly with brown-capped yellowish eyes
- Thorax and abdomen are brown, paler on the sides
**Lestes nodalis**

- Medium sized damselfly with brown eyes, bluish in adults
- Thorax is brown, paler on the sides
- Abdomen is brown with black apical annules up to segment; segment 7 and 8 are dark brown
- Segment 9, 10 and anal appendages are pale; bluish when aged.
- The pale colours on the thorax and abdomen are also get bluish due to pruinescence when aged
- Wings are transparent with bi-coloured pterostigma, blackish-brown at centre and yellow along the sides
Platylestes platystylus

• Medium sized damselfly with olivaceous eyes
• Thorax is pale brown, paler at the sides; marked with a large number of black spots
• Adults have a greenish white pruinosecence
• Abdominal segments 1 to 6 are reddish brown, marked with black apical rings
• Remaining segments are black
• Pterostigma is short and broad having white inner and outer ends
Platycnemididae (White-legs)

• Small to medium sized and slender damselflies

• The family is divided into several subfamilies, including Platycnemidinae (Bushdarts) and Disparoneurinae (Bambootails)

• They are black with blue, red or yellow markings

• Abdomen is long; but not as long as in Platystictidae

• Breed in forest streams
Platycnemididae (White-legs)

- Copera marginipes
- Copera vittata
- Esme mudiensis
- Caconeura ramburi
- Caconeura risi
- Onychargia atrocyana
- Disparoneura apicalis
- Disparoneura quadrimaculata
- Prodasineura verticalis

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Copera marginipes

• Medium sized damselfly with brown-capped yellow eyes with a narrow equatorial black band
• Thorax is black on dorsum marked with irregular bluish yellow and yellow stripes and dots; yellowish on the sides
• Abdomen is black on dorsal half up to segment 8; paler on ventral half
• Segment 9 is bluish-white on dorsal half and black below it; segment 10 is bluish-white
• Anal appendages are pale yellow to white, the inferiors tipped with black
• The superiors are half the length of segment 10 and inferiors are four times the length of superiors
**Copera vittata**

- Medium sized damselfly with brown-capped yellow eyes with a narrow equatorial black band
- Thorax is black on dorsum marked with irregular bluish yellow and ochreous stripes and dots; yellowish on the sides
- Abdomen is black on dorsal half up to segment 8; paler on ventral half
- Segment 9 is bluish-white on dorsal half and black below it; segment 10 is bluish-white
- Anal appendages are pale blue or creamy white
- The superiors are as long as segment 10, conical, and tapered at apices
- The inferiors nearly twice the length of superiors
Esme mudiensis

• Medium sized damselfly with black-capped blue eyes and labrum entirely azure blue
• Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
• Abdomen is black, marked with azure blue on the sides of segment 1 and 2
• Segments 3 to 6 have very narrow baso-dorsal annules of blue
• Segments 8 to 10 are blue with ventral borders broadly black
• The labrum is blue, bordered with black in Esme longistyla
Esme longistyla

- Medium sized damselfly with black-capped blue eyes and labrum azure blue, bordered with black
- Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
- Abdomen is black, marked with azure blue on the sides of segment 1 and 2
- Segments 3 to 6 have very narrow baso-dorsal annules of blue
- Segments 8 to 10 are blue with ventral borders broadly black
- The labrum is entirely blue in Esme mudiensis
Phylloneura westermanni

• Medium sized damselfly with black-capped blue eyes and labrum azure blue, bordered with black
• Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
• Abdomen is black, marked with azure blue on the sides of segment 1 and 2
• Segments 3 to 5 have very narrow baso-dorsal annules of blue; segment 6 is black
• Apical half of segment 7 and segments 8 to 9 are blue with very narrow black basal annules
• Segment 10 is blue on dorsum, black laterally
Caconeura gomphoides

• Medium sized damselfly with black-capped blue eyes
• Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
• Abdomen is black, marked with azure blue on the sides of segment 1 and 2
• There is a mid-dorsal blue mark on segment 2
• Segments 3 to 6 have broad baso-dorsal annules of blue
• Segments 8 to 10 are blue with ventral borders broadly black
• Pterostigma is reddish-brown
• Comparatively short and thick than other species in this genus
Caconeura ramburi

- Medium sized damselfly with black-capped blue eyes
- Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
- Abdomen is black, marked with azure blue on the sides of segment 1 and 2
- Segments 3 to 7 have broad baso-dorsal annules of blue
- Segments 8 to 10 are blue with ventral borders broadly black
Caconeura risi

- Medium sized damselfly with black-capped blue eyes
- Thorax is velvet-black on dorsum with azure blue stripes, azure blue on sides
- Abdomen is black, marked with azure blue on the sides of segment 1 and 2
- Segments 3 to 7 have broad baso-dorsal annules of blue
- Segments 8 to 10 are azure blue on dorsum, with black basal annules
- The lateral side of segment 10 is black
Onychargia atrocyana

• Medium sized damselfly with black-capped pale blue eyes
• Thorax is velvet-black on dorsum with citron-yellow stripes, obscured by blue pruinescence in adults
• Abdomen is black, marked with narrow bluish basal rings on segments 3 to 6
Disparoneura apicalis

- Medium sized damselfly with reddish-brown eyes, yellowish-green beneath
- Thorax is metallic greenish-black on dorsum with narrow brownish stripes which get obscured by blue pruinescence in adults
- Abdomen is blackish-brown, with small white basal rings on segments 3 to 7
- Wings are transparent with the apices of the wings, deep blackish-brown
**Disparoneura quadrimaculata**

- Medium sized damselfly with brick-red eyes, with two horizontal dark-red equatorial lines
- Thorax is bright brick-red on dorsum, paler on the sides; marked with black
- Abdominal segments 2 to 6 are reddish-brown with broadly black on the apical ends
- Segments 7 to 9 are black; segment 10 and anal appendages are pale brown
- Wings are transparent; but have a broad blackish-brown fascia, which extends from the node to the pterostigma
Elattoneura souteri

• Medium sized damselfly with reddish-brown eyes, greenish yellow beneath
• Head is black, marked with a cherry-red band across the face from eye to eye
• Thorax is velvet-black, marked with broad cherry-red humeral stripes
• There is another lateral stripe of citron-yellow in the first lateral suture, cherry-red in anterior border
• Abdomen is black with red and yellow marks on segments 1 to 3
Elattoneura tetrica

• Medium sized damselfly with black-capped pale blue eyes, marked with a black equatorial belt
• Thorax is velvet-black, marked with creamy white stripes
• Abdomen is black with segments 3 to 6 have small base-dorsal yellow annules
• All these pale marks may get pruinosed with blue in adults
**Prodasineura verticalis**

• Medium sized damselfly with black-capped brown eyes
• Thorax is velvet-black, marked with red and yellow stripes
• Abdomen is black with segments 3 to 6 have small base-dorsal yellow spots
Platystictidae (Shadow damsels)

- Slender black or brown damselflies marked with white, blue or markings

- Abdomen is very long and twice or more than twice the length of the hindwing

- Live in dense forests in the tropics where they are found around small streams

- Do not disperse far from their habitat

- Breed only in forest streams
Platystictidae (Shadow damsels)

*Indosticta deccanensis*

*Protosticta greatlyi*

*Protosticta ponmudiensis*

*Protosticta davenporti*

*Protosticta hearseyi*

*Protosticta sanguinostigma*

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**Indosticta deccanensis**

• Medium sized damselfly with bluish-white face and black-capped brown eyes
• Thorax is cinnamon brown with a black mid-dorsal carina
• Abdomen is dark-brown up to segment 7; segments 8 to 9 are azure blue bordered below with black
Protosticta gravelyi

• Long, slender damselfly with dark eyes
• Thorax is glossy black, marked with broad creamy-white stripes
• Abdomen is black, marked with broad white basal annules up to segment 7
• Segment 8 is with its basal half turquoise-blue and segments 9 and 10 are unmarked
Protosticta ponmudiensis

- Long, slender damselfly with bright green eyes
- Thorax is glossy black, marked with broad creamy-white stripes
- Abdomen is black, marked with white basal annules up to segment 6
- There is a broad bluish-white basal annule on segment 7
- Segment 8 has a narrow basal annule; segments 9 and 10 are unmarked

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Protosticta davenporti

• Long, slender damselfly with bottle-green eyes
• Thorax is glossy black, marked with broad bluish-white stripes
• Abdomen is black, marked with white basal annules up to segment 7
• Segment 8 is with its basal third or half turquoise-blue; segments 9 and 10 are unmarked
• Robust and stouter compared to Protosticta gravelyi
**Protosticta hearseyi**

- Small, slender damselfly with blue eyes
- Thorax is brownish black, marked with bluish-white stripes
- Abdomen is brownish black, marked with pale blue basal annules up to segment 7
- Segment 8 is turquoise-blue with narrow black apical annule; segments 9 and 10 are black, unmarked
Protosticta sanguinostigma

• Small, slender damselfly with eyes bottle-green above and pale green below separated by an equatorial band of reddish-brown
• Thorax is glossy bronze-black, marked with bluish-white stripes
• Abdomen is brownish black, marked with white basal annules up to segment 7
• Segment 8 is turquoise-blue with narrow black apical annule; segments 9 and 10 are black, unmarked
Protosticta monticola

• Long, slender damselfly with eyes greyish-black above and pale bluish-green below
• Thorax is glossy black, marked with broad bright yellow stripes
• Abdomen is metallic black, marked with yellow basal annules up to segment 8
• Segment 8 is black with lateral and ventral sides, yellow
• Ventral side of segment 9 is yellow
• Can be distinguished from all other species of this genus by the completely black dorsal side of the abdomen
References


**Kiran, C.G.; Raju, D.V.** 2013. *Dragonflies & Damselflies of Kerala.* Tropical Institute of Ecological Sciences, Kottayam.


**Martin Schorr; Dennis Paulson.** *World Odonata List.* University of Puget Sound

**Moore, N.W.** 1997. *Dragonflies: status survey and conservation action plan.* IUCN.


**Subramanian et. al.** 2018. *Atlas of Odonata (Insecta) of the Western Ghats, India.* ZSI, Kolkata, India


