



Meenakshi is a theoretical ecologist with a passion for insects. Her interests lie in population dynamics of insects, with special focus on host shifts and disease transmission.



T. N. A. Perumal, FRPS, MFIAP, is a renowned wildlife photographer. He has been honoured with several prestigious awards, including the one from Karnataka Lalitha Kala Academy. Perumal has authored 'Photographing Wildlife in India' and also co-authored several books including 'Encounters in the Forest', 'Eye in the Jungle' and 'Some South Indian Butterflies'.



A CONCISE FIELD GUIDE TO
INDIAN INSECTS & ARACHNIDS

- Easy identification of Insects & Arachnids
 - Over 350 Colour Photographs
- Line illustrations • Summary tables

A CONCISE
FIELD GUIDE
TO

A CONCISE FIELD GUIDE

Indian Insects & Arachnids

Meenakshi
Venkataraman

Meenakshi Venkataraman

Insects and arachnids, more often than not, evoke feelings of revulsion, disgust and fear amongst the large majority of us. Butterflies, with their striking colours, are perhaps the only insect family that fascinates and beguiles us; the rest do not merit much of our attention. Nevertheless, insects and arachnids play a more important role in our ecosystem than we would like to imagine. Their presence or absence is as good an indicator of its health as that of any birds or mammals.

Much of our disaffirming perception of insects and arachnids emerges largely due to ignorance and prejudice and it's about time that people get to know these organisms better and look at these allegedly obnoxious creatures in a more empathetic light. In India, while we have quite a number of field guides and information on birds, reptiles, mammals and even butterflies for the lay person, we do not have a handy and basic field guide on insects and arachnids. This book seeks to fill this lacuna...

There are over 1 million species of insects and over 100,000 species of arachnids present today, with many more being identified daily. Given such a magnitude, to try and identify every individual specimen is not possible. Instead, an easier approach is to familiarise oneself with the common characteristics and key identification for different Families. This book aims to do so—by walking the reader through the different Orders, using beautiful photographs of these amazing organisms—and will help identify most of them out in the field. Arachnids abound just as insects, and this book serves as two guides in one book. Though we have limited ourselves to insects and arachnids found in the southern states of India, most species are quite ubiquitous and are found through most parts of India. This guide, therefore, can be used quite easily anywhere in India.

Endopterygota



COLEOPTERA



NEUROPTEROID
ASSEMBLAGE



DIPTERA



SIPHONAPTERA



MECOPTERA



TRICHOPTERA



LEPIDOPTERA



HYMENOPTERA



DR J. POORANI

RHINOCEROS BEETLE *Oryctes rhinoceros*

Order: Coleoptera

Family: Scarabaeidae

SCRUB

HEAD: Brownish-black (a single prominent horn in case of males)

PRONOTUM: Brownish-black, keeled in both sexes

ELYTRA: Brownish-black

ANTENNA: Clubbed

SIZE: 20 mm

HABITAT: Adults: coconut palm;
Larvae: decaying leaf matter, dung or compost heaps

OTHER INFORMATION: Major pests of coconut palm; makes V-shaped wedges in leaves, reducing yield.

OTHER EXAMPLES IN SCARABAEIDAE



DR M. S. MAYILVAHMAN

FLOWER BEETLES *Clinteria coerulea*



KARTHIKEYAN S.

SHINING LEAF CHAFERS
Trigonophorus delesserti (red)



KARTHIKEYAN S.

SHINING LEAF CHAFERS
Trigonophorus delesserti (green)



T. N. A. PERUMAL

LEAF-ROLLING WEEVIL *Apoderus scutellaris*

Order: Coleoptera

Family: Curculionidae

ORNAMENTALS

SCRUB

HEAD: Rust/brown

PRONOTUM: Rust/brown

ELYTRA: Rust/brown

ANTENNA: Thread-like

SIZE: 5-8 mm

HABITAT: Found in leaves and stems of plants. The weevil cuts slits into leaves and then lays her eggs. Then it rolls the leaves around where the eggs are laid to feed and protect the developing larvae

OTHER INFORMATION: Minor agricultural pest



DR M. S. MAYILVAHAN

RED PALM WEEVIL *Rhynchophorus ferrugineus*

Order: Coleoptera

Family: Curculionidae

SCRUB

PRONOTUM: Reddish-orange with dots

HEAD: Elongates into snout bearing the antennae

ELYTRA: Reddish-orange, but forewing does not cover the entire abdomen

ANTENNA: Thread-like

SIZE: 25-30 mm in length

HABITAT: Adults are found in foliage of palm trees where they lay eggs at the base of tender leaves. Larvae consume palm leaves and tree tissue, thereby killing the palm trees

CLASS ARACHNIDA

ORDER ACARI

(Mites and Ticks)

Mites and Ticks are Acari found across the polar regions to sulphur springs; from deep mines to fresh water and even in seawater. Practically, no biome is Acari-free. After bacteria, they are the most successful organisms on the planet. They have adapted for both free-living as well as parasitic lives. Mites have given up their predatorial quest and tend to be plant-feeders or scavengers while Ticks are predators and bloodsuckers.

Six legs

Wings absent

HYMENOPTERA



Ant-like; narrow-waisted

Pg 429

SIPHONAPTERA



Body flattened laterally

Pg 301

PSOCOPTERA



Parasites which have bodies flattened dorsoventrally

Pg 173

THYSANOPTERA



Distinctly pigmented; hard bodies; body size less than 5mm; narrow body

Pg 177

ORTHOPTERA



Distinctly pigmented; hard bodies; body size greater than 5mm; antennae multisegmented, biting-chewing mouthparts

Pg 113

THYSANURA



Not narrow-waisted or ant-like; body not flattened; with thread-like tails

Pg 25

HEMIPTERA



Not narrow-waisted, no tails; abdomen plump, soft bodied with two tubes

Pg 181

ISOPTERA



Not narrow-waisted; no tails; abdomen not plump/soft bodied; lacking tubes; lacking pigmentation; softbodied, whitish, with short antenna

Pg 143

HEMIPTERA



Distinctly pigmented; hard bodies; body size greater than 5mm; antennae 4-5 segments, sucking mouthparts

Pg 181

Six legs

Wings present; but front wings are hardened or leathery and cover the hindwings

DERMAPTERA



Abdomen with forceps like cerci

Pg 163

HEMIPTERA



Mouthparts sucking; with beak arising from front of head; hardened forewings with membranous tip

Pg 181

HEMIPTERA



Mouthparts sucking; with beak arising from back of the head; forewings uniform in texture

Pg 181

ORTHOPTERA



Abdomen does not possess cerci; has chewing mouthparts; veined frontwings held rooflike or overlapping over abdomen

Pg 113

COLEOPTERA



Mouthparts chewing; unveined forewings meeting in a straight line down the back

Pg 223