

# Peek into the world of Bengaluru's smallest inhabitants

A new book, *Commonly Spotted Insects & Spiders in the City of Bengaluru*, explores around 135 insects and 25 spiders. Its e-version is on the Bengaluru Sustainability Forum website

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Spotting spiders. | Photo Credit: SPECIAL ARRANGEMENT

Did you know ants once shared the planet with dinosaurs like the T-Rex and the Velociraptor? Or that termites cultivate food gardens of fungi within their large, intricately constructed mounds? And that it isn't just honey that will go missing in a world without bees, but also many fruits, vegetables, grains and nuts. Also, not all spiders build webs, cockroaches are a lot more than irritating house pests, butterflies can taste food with their feet, and male cicadas serenade potential mates using a unique sound-producing organ on their abdomen called the tymbal?



Priya Venkatesh | Photo Credit: SPECIAL ARRANGEMENT

The world of these minibeasts is indeed both enigmatic and fascinating, as a new book, *Commonly Spotted Insects & Spiders in the City of Bengaluru*, reinforces repeatedly. “The lives, survival strategies and nature history stories of insects and spiders can range from the calmly simple (or at least what we know so far) to the bizarrely complex,” states the introduction to the book, which has been co-authored by Vena Kapoor, Priya Venkatesh and Vaidya R., designed by Pratyush Gupta and enabled by the Bengaluru Sustainability Forum’s Small Grants Programme.



Weevil Beetle | Photo Credit: Vena Kapoor

## To get to know them

Filled with mind-boggling facts and gorgeous pictures, it offers a ringside view of the lives and natural histories of some of the city's many six- and eight-legged creatures — around 135 insects and 25 spiders — serving as “an easy-to-use tool to help you identify and get to know more about the some of the commonly found insects and spiders living their lives around us.”

As Vaidya points out, most of the images in the book were not shot in far-flung, wooded areas with many trees but bang amid the concrete jungle that is Bengaluru. “Most of them have been shot right at homes or just outside them, in gardens, etc,” says the Bengaluru-based nature enthusiast and photographer. “The main point we are trying to emphasise is that there is a lot of biodiversity, even in your backyard.”



Robberfly with prey. | Photo Credit: Vena Kapoor

Arthropods, the phylum which includes insects, spiders, scorpions, centipedes, millipedes, crabs, prawns and even head lice, is the most successful animal group on the

planet, consisting of over 800,000 described species, with many still undiscovered. First emerging in the water around 500 million years ago, before colonising land a few million years later, arthropods are found in every nook and cranny of the planet today. So ubiquitous are these tiny creatures that the combined biomass of terrestrial arthropods alone is believed to be roughly 1 billion tonnes, roughly equivalent to the biomass of all human beings and livestock put together, according to a study published in the open-access journal *Science Advances* in 2023.



Chrysomelidae Tortoise beetle. | Photo Credit: Vena Kapoor

## Diverse creatures

Insects, which form the majority of the arthropods, “pretty much rule the world,” says Priya, the founder-director of The Naturalist School (TNS), Bengaluru. She considers them “the most diverse and fascinating creatures we have on Planet Earth: they come in all shapes, sizes and colours, are also found everywhere, in the air, land and water” and are “a very important part of the entire food chain because of which the whole planet is going around,” she says. Not only are they both prey and predators, but they also play an important role in helping many plants propagate. “Most of the plant kingdom, as you know, are producers, without which there would be no food on this planet,” says Priya. And many of these plants, particularly those that make fruits, depend on insects for pollination. “In that sense, they are very intricately connected to life on earth.”

Vena, a city-based conservationist and independent nature educator, believes that observing and learning about arthropods is also a great way to get people interested in nature and natural systems. Often, too often, there is a deep cognitive dissociation between human beings and insects, she says. “They are all around us but are often kind of hidden. We don’t notice them as much because of their size or the associations we have with them.” She finds it pretty humbling to know that there are millions of organisms around us, playing such crucial roles and that we are only just scratching the surface and getting to know them. “They are as messy as human beings with bizarre habits and behaviours.”



Two-Tailed Spider Hersilia | Photo Credit: Vena Kapoor

## Genesis of book

The idea for *Commonly Spotted Insects & Spiders in the City of Bengaluru* started with the realisation that there was no easy-to-use guide on insects that could help people get more natural history information about arthropods, especially insects and spiders that they encounter even in a city like Bengaluru. People would have to troll through popular apps like i-naturalist or Google it," says Vena, who often leads these nature walks. "Nature educators, like myself, were also doing that because we had no other means to access this information."

The idea, therefore, was to create a resource for beginner naturalists that was easy to use and understand without being too heavily scientific, she says. The initial plan was to create a set of flashcards about insects, much like the flashcards on common Indian birds currently produced by the Nature Conservation Foundation, says Vena. "We pitched this idea to the Bengaluru Sustainability Forum's Small Grants Programme and were, luckily, selected among many applicants," she says.



Leaf Katydid Vena | Photo Credit: Vena Kapoor

The next step was selecting the insects and spiders that would be featured, a mammoth task considering the sheer diversity. “We could have easily done a book 10 times this size.”

They started by first coming up with different groups, such as ants, termites, butterflies, spiders, mantids, lacewings, beetles and so on, and then identifying the most common species in those groups using a combination of experience and also by using the iNaturalist database, says Vaidya, adding that, in some cases, where quite a few species existed in each group, as in the case of beetles and dragonflies, it was further narrowed down to the most commonly-seen species to “make sure you get the most representative species in the city.”



Nest of Weaver Ants. | Photo Credit: Vena Kapoor

Once the initial master database was created, images had to be sourced and matched to the various insects and spiders that were finally selected. While some of the photos

already existed with the co-authors, many did not, and so “my main task was about finding these images,” says Vaidya, who turned to iNaturalist, reaching out to nature enthusiasts and naturalists who had posted images on it, such as Jithesh Pai, Anubhav Agarwal, Chandu Bandi and Yuvan Aves.

While the initial plan was to create flashcards, after taking feedback from multiple people, the initiative evolved into its current format, a book offering detailed information about some common insects and spiders in the city, including the tropical fire ant, the carpenter bee, the potter wasp, the common tree cricket, the giant Asian mantis, the flesh fly, the cotton stainer bug and crab spiders.



Mud-dauber Wasp | Photo Credit: Vena Kapoor

## Translation in the offing

“The idea was to create a reference book and visual tool that nature educators can use while taking people out for walks,” says Vena, adding that around 100 free print copies of the book will be distributed free of cost to Bengaluru’s nature educators. An e-version of the book is also available for free download on the Bengaluru Sustainability Forum website, and a Kannada translation is in the works. “Having the whole book as open source means that people can look at it, take printouts for themselves and use it,” she adds.



Twig mantis | Photo Credit: Vena Kapoor

By this offering, the authors hope that people will eventually feel a sense of connection to these tiny animals that are such a crucial part of Planet Earth. “The idea is that the more we get to know about the life forms that share our world, the hope is that there will be more empathy-building, curiosity, and a sense of wonder,” says Vena. She also believes that the book could be a starting point to help people reflect on what is required to protect these creatures and how our daily behaviours and habits have a profound impact on the lives of these creatures who share our world with us. “This book is just one tool to get people more interested and curious about what they can find in Bangalore,” she says. “The hope is also that they start documenting and recording behaviour more,

contributing to natural history observations, which we don't do enough of in this country.”

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