BSF Small Grant Interim Report - March 2024

Creating easy to use flash cards for beginners, nature educators on common spiders & insects found in Bangalore city and its outskirts

Team: *Vena Kapoor - Nature Conservation Foundation/Nature Classrooms - Bangalore*
& Priya Venkatesh - EcoEdu Consultants Pvt Ltd - Bangalore
With additional support from: R Vaidyanathan, Consultant, Bangalore

Designer: Pratyush Gupta, **Illustrations for Keys**: Tanvi TT
Images: R Vaidyanathan, Karthikeyan, Anubhav, Vena

We are in the final stages of completion of this project. Content for 19 out of the 20 groups of insects and spiders are completed and finalised. Design and layout of 15 groups are completed and finalised. The number of flashcards has increased and therefore we are currently working out the feasibility of using the roller/spiral binding tool that we had initially planned for. We will keep the BSF team updated on these plans.

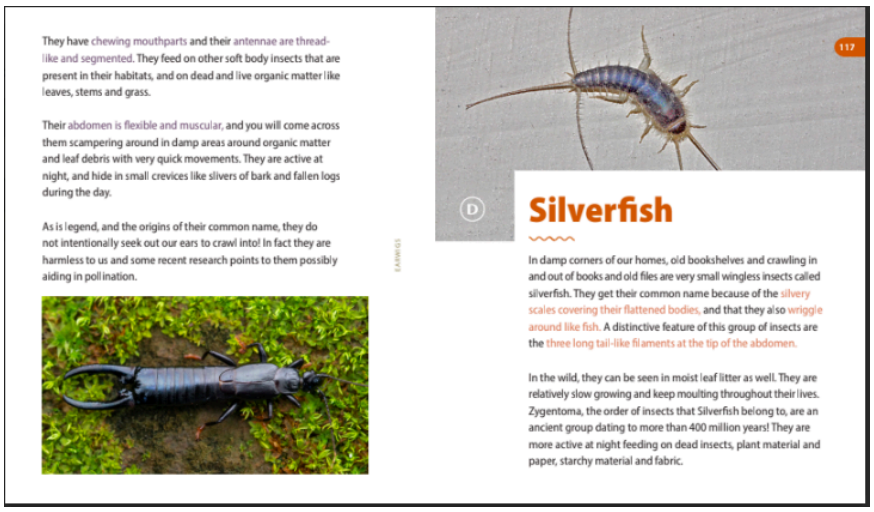
The Kannada translation of the cards by the EcoEdu team has started but will take a few months to complete. We will keep BSF updated on the progress.

We have approached the printer to get estimates of costs and paper quality. We hope to complete the Flashcards content and design by mid April and complete the printing of the trial copies for distribution and testing to select naturalists before the end of April.
Once all the cards are designed, checked and finalised we will submit the whole set to BSF in a digital format to upload on the BSF website. If feasible the flashcards will also be uploaded on the NCF and EcoEdu websites for ease of access. We are working out the terms of CC.
We hope that these flashcards on common spiders and insects around us will get children and adults much more aware and interested in these groups and can be used as aids for nature educators when taking groups for nature walks. We will also discuss with the BSF team about how we can use these flashcards in collaboration with other BSF supported biodiversity projects and conduct training sessions in the coming year.

Budget and Balances as of March 31, 2024

S No	Budget Heads	INR	Balance as of March 2024
1	Consultation and travel costs for the two proposers: INR 50,000/- * 2	100,000	0
2	Costs towards help for Kannada translation of flashcards to EcoEdu	30,000	0
3	Cost of sourcing images	20,000	0
4	Costs towards printing, testing of initial copies of the flashcards & contingency	50,000	49,948
5	Costs towards design and illustrations	100,000	0
6	Printing of 50 flashcards sets with roller binders	200,000	1,66,976
	Total Budget	**5,00,000**	
	Funds Received from BSF	**4,00,000**	
	Funds Balance on March 31, 2024		**1,16, 924**

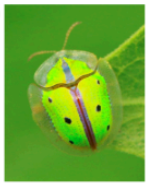
Snapshots of a few of the completed groups:



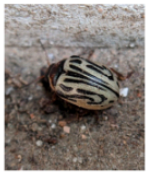
They have chewing mouthparts and their antennae are thread-like and segmented. They feed on other soft body insects that are present in their habitats, and on dead and live organic matter like leaves, stems and grass.

Their abdomen is flexible and muscular, and you will come across them scampering around in damp areas around organic matter and leaf debris with very quick movements. They are active at night, and hide in small crevices like slivers of bark and fallen logs during the day.

As is legend, and the origins of their common name, they do not intentionally seek out our ears to crawl into! In fact they are harmless to us and some recent research points to them possibly aiding in pollination.



Tortoise beetle



Parthenium beetle
(Calligrapha bicolorata)

Leaf Beetles

Chrysomelidae

These beetles look similar to ladybird beetles but are larger in size and more broadly oval to pear shaped. Unlike ladybirds, leaf beetles are generally herbivorous and feed on plant matter. They are often conspicuously coloured with yellows, blues and metallic shiny hues.

This group includes the delightful tortoise beetles who's elytra extend beyond the abdomen completely covering the legs.

The Parthenium beetle was introduced to India from Mexico to control the invasive Parthenium weed and can often be spotted on these weeds.

BEETLES

BEETLES

Scarab Beetles

Scarabaeidae

The common beetles from the Scarab group of beetles are the dung-rollers. They are robust, shiny smooth and black beetles that are famous for their behaviour of rolling and moving animal dung that is made into neat balls. They sometimes do this cooperatively by pushing and dragging the ball backwards. Part of this dung is used as food and part of it is used to lay their eggs. Look out for the tips of their antennae that are lobed and spread out like a small fan.

Plain Tiger

Striped Tiger

Plain Tiger Caterpillar

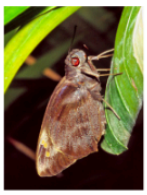
Common Crow

BUTTERFLIES

Skippers

Hesperiidae

A rapid and darting flight is the reason why butterflies of the family Hesperiidae are called Skippers. Most of these butterflies are various shades of brown with a few having brighter colours when their wings are open. They are also characterised by the presence of noticeably large, prominent eyes. Look out for their antennae that are curved or hooked. At a quick glance they look more like moths than butterflies because their bodies are typically hairier and bulkier than other butterfly groups. The Common Banded Awl and the nocturnal Giant Redeye are the most commonly seen skippers.



Giant Redeye

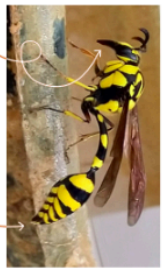
Common Banded Awl

BUTTERFLIES

Wasps look similar to bees, but unlike bees they have very little or no hair on their bodies and their lower abdomens are pointed and most groups have narrower waists.

Wasps also have mouthparts that are adapted for biting and cutting but are also modified to allow for them to suck up nectar making them an important pollinators as well!

Female wasps have an organ at the rear end of their abdomens that look like a thin needle (the ovipositor) that is used for defence, to lay eggs or pierce through to parasitise the egg sacs of other insects, or the insects themselves.



WASP

WASP

Some groups of wasps that we are familiar with like the paper wasps live in large groups and build their large impressive nests, raise, feed their young ones together (social wasps), but most wasp species live solitary lives hunting, feeding.

One of the most fascinating groups of wasps are the very tiny fig wasps and many are pollinators of their fig host trees - the fig trees and these wasps depend on each other for producing the next generation of fig wasps and fig trees.

116

Have you come across small conical shaped pits on mud, sand? You may even find many of these conical pits close to each other in a small area. They are a fascinating group of insects with a very interesting and bizarre life cycle.

The larval stage of this insect is what builds and lives within these conical pits.

Adult antlions are not often seen because of their more cryptic behaviours. They have long slender abdomens and wings and sometimes look like damselflies from a distance. Look closer though and you will see that their antennae are longer and have prominent "clubs" at the tips. They are more active in the evenings and towards dusk and are weak flyers compared to other flying insect groups.

ANTLIONS

117

3

Bugs

- A triangular tough protective semi-transparent "plate" (called the scutellum) between the folded wings
- Elongate piercing and sucking mouthparts (also known as a stylet or proboscis) forming a flexible feeding tube
- Uses a disagreeable odour secreted from "stink" glands as a form of defence - this is advertised through bright patterns and colours on the body

102

Owlet Moth *(Spirama)*

A large striking moth with prominent "eyespots", that look like inverted commas and wavy lines throughout the body to confuse their predators.

MOTHS

Tussock Moth *(Artaxa)*

The caterpillars of Tussock Moths have "tufts" of dorsal hairs on their abdomens which can cause an itch when handled. The adult moths are not so brightly coloured or patterned compared to other moths in the Erebid group and are also usually furry. When at rest their long hairy forelegs are kept outstretched in front.

103

MOTHS

32

Leafcutter/ Wooly Wall Bee

Megachile SOLITARY

You will come across the tell-tale artistic signs on the leaves of plants made by these bees more often than actually spotting them! They neatly cut and carve out parts of leaves and sometimes the petals on flowers into semi-circular patterns! These carved out pieces are then rolled up and these are then carried away to use as a lining in their nests. If you are lucky you might see these wonderful behaviours! Their nests can either be in wall and door cavities, in undisturbed hollows in vegetation, on sandy surfaces accessed through pits, or in the folds of abandoned clothes. Sometimes they also construct fresh mud structures. They are larger in size than the honey bees and have a fuzzy, hairy orangish head and thorax.

BEES

33

BEES

Blue Banded Bee

Amegilla SOLITARY

A delightfully small and relatively hairy bee with characteristic brilliant blue bands on the abdomen and an orange thorax. They are fast and furious flyers with a loud buzz and therefore notoriously difficult to have a clear close observation and to photograph. They love foraging for nectar and pollen on flowers found on herbs and shrubby vegetation. If you are lucky and you manage to find one settled on a flower long enough, look out for its long proboscis! They are very important pollinators of many wild native plants and food crops.

Sample Illustrations for Quick Identification Key:

Printed Samples: