

LITTLE BLACK DOTS ON THE FENCE

圍籬上的小黑點

In our everyday lives, we're surrounded by creatures large and small, and if we look closely, we'll see that their lives are full of surprises. This book features one of the most common species of ants in Taiwan (gray-black spiny ants) as the protagonist to bring readers into a world of fascinating creatures.

Have you ever seen an orderly row of black dots in the park, or on a fence or a pile of waste? Gray-black spiny ants are a species of ant commonly found in Taiwan who live all around us, so keep your eyes peeled as you make your way through this book and see how they cooperate with aphids and compete with other insects, as well as how they forage, work, and have families so their population multiplies over generations.

With the lifecycle of the ants serving as the main book's main storyline, the authors use vivid language and scientific illustrations rendered in realistic brushstrokes to guide readers through the natural ecology of the gray-black spiny ants. They hope that by the end of the story, young readers will start to love and understand the natural world and respect all the tiny lives within it.

Wang Ling-Hsuan 王凌軒

Born in 1992 in Hsinchu, Wang Ling-Hsuan studied life sciences in Taipei and started to unearth her inner feral child as soon as she stepped into an ecology lab. Drawing has not only shaped the way she perceives things and creates narratives but has also been a good way to meet people. However, even before that, drawing was a source of never-ending joy for her. She had first been fascinated by the written depictions of the wilderness, then as she slowly got to understand the reality of nature, she felt a deep kinship towards it



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and wanted to use stories and beautiful illustrations to pull children into the magical world of living creatures.

Huang Han-Yau 黃瀚曉

Huang Han-Yau loves to observe nature and thought he had to go to the mountains to experience it before he realized that the city is its own kind of wilderness. With the exception of a few places that he visits on a regular basis, he can't remember the locations of almost any of the shops he's been to, but he's gradually drawn a map of the city that feels like it belongs to him. There are buried irrigation canals, disappearing courtyard houses with vegetable gardens, old city walls, treelined streets, formerly prosperous neighborhoods, old trees, ferns, birds' nests, termite nests, and stray cats. Since then, he has been living inside that map and is constantly trying to re-draw those invisible paths and landmarks with words, illustrations, and commentary, so that his friends can travel there too. His narrative non-fiction book *The Lost River* won the Taiwan Literature Award in 2023.

LITTLE BLACK DOTS ON THE FENCE

Translated by Helen Wang

p.6-7

On spring mornings,
a long line of little black dots appears on the fence.
Close up, you can see they are black spiny ants.
Early in the morning they bore through the fence post,
line up neatly and come out to work.

p.8-9

There are many aphids on the saplings by the fence.
They quietly suck the sap from the saplings,
and excrete any excess sugar and water from their tail
ends in the form of a very sweet liquid.
This is "honeydew", the gray-black spiny ant's favourite food.
"A little more, and a little more!"
While the gray-black spiny ants gather it, they tap the aphids
with their antennae to encourage them to secrete more of the delicious honeydew.

p.10-11

A few tail-lifting ants creep up.
"Go away! Go away!"
The gray-black spiny ants wave their tentacles,
and open their jaws wide,
They won't let them steal their honeydew.

Oh no, a ladybird flies over to eat aphids,
The gray-black spiny ants hurry over.
They push and pull, and try to make it leave.
But its shell is hard and slippery, and difficult to deal with!

p.12-13

As soon as danger is spotted, gray-black spiny
ants immediately warn their companions.
As a group, they secrete from their tail ends a

smelly ant acid, to scare the enemy.
So, even a fierce praying mantis, won't want to step any closer.

On the back of a gray-black spiny ant grow three pairs
of hard spikes like sharp-pointed horns or fangs.
"These little guys don't look at all appetising."
The Durian redstart who is looking for food,
glances at it, then flaps his wings and flies away.

p.14-15

Snip, snip, the gardener comes to tidy up the garden!
The gray-black spiny ants and aphids on the leaves fall to the ground.
Although the saplings are gone, the gray-black spiny ants move their antennae,
and immediately start looking things to eat.

p.16-17

The gray-black spiny ants follow the smell left by their companions, and move forward one by one.

"There's something delicious ahead!"
They touch each other's antennae to tell each other.
Gray-black spiny ants that find food
will give some to their companions.

p.18-19

There is nutritious sap on the tree trunk,
and sweet nectar in the flower bush;
The calyces of the luffa and the leaves of the tallow tree all secrete "nectar".

These are foods that gray-black spiny ants love to eat.

p.20-21

"Come with me!"
Gray-black spiny ants will often move companions to food,
put them down, then carry the food home together.
If the food is too big and heavy, the gray-black spiny ant
will use its big mandible and bite it into pieces,
then not so much effort is needed to move it!

p.22-23

We're home! We're home!

Some gray-black spiny ants are responsible for storing food,
some spit out the honeydew in their stomachs and feed it to hungry larvae,
some help move the eggs laid by the queen ant,
some are responsible for cleaning up the nest...

Everyone shares the work; they are all good companions.

p.24-25

The larvae of the gray-black spiny ant will spit out a sticky filament to help
repair the cracks in the nest; when they grow a little bigger, they will
spin silk into white cocoons, then pupate inside.

A week later, other gray-black spiny ants help to
bite through the cocoon, and a new companion
will climb out smoothly!

p.26-27

One golden dusk in summer,
the heavy, warm air is fragrant with flowers,
gray-black spiny ants preparing to marry grow wings.
The big ones are female, the small ones are males.
They climb to a high place, and spread their wings...

p.28-29

And fly!

p.30-31

A group of male ants pursue a female and descend to land,
pushing and shoving they surround her,
and form a ball of ants.

When the wedding is over,
a new queen is born!

As soon as they have found a good place
to build a nest, they can start
a new family of gray-black spiny ants.

p.32-33

On early autumn mornings, in the trees, on the fence, and in the grass,
line after line of little black dots appear.

Close up, you can see they are neat lines of gray-black spiny ants that come out to work early in the morning!

Division of Labour Among Gray-Black Spiny Ants

The gray-black spiny ant is a social insect, but what does that mean? If a certain kind of insect lives together as a family, where the adults raise their offspring together, and a small number are responsible for giving orders, and the others work together, then we can say that it is a social insect. The typical social insect has a reproductive class that can mate and lay eggs, and a working class that cannot lay eggs, such as bees, wasps, various ants, and termites.

The Reproductive Class

The gray-black spiny ant's reproductive class consists of female and male ants. Before mating, they will have grown two pairs of wings, and most importantly, they will have mature reproductive organs, which ordinary worker ants do not have. They will also have three extra tiny eyes on their foreheads, which may render the reproductive ants more sensitive to light, making the "nuptial flight" (when they leave the nest to reproduce) safer and smoother.

The Queen Ant

After mating, a female ant is called a queen ant, and the entire nest is her offspring. The queen ant will secrete chemicals to prevent nearby larvae becoming fertile females, thereby limiting the number of fertile ants in the nest. But, sometimes larvae further away from the queen may, after becoming pupae, be unaffected by the chemical substances and grow wings, which is often the case in larger ant nests. However, when the mating season comes, most female ants will leave the nest and set up kingdoms of their own.

Male Ants

Male gray-black spiny ants are completely different from worker ants: they have a slimmer body and no spikes. This may be because they almost always stay in the nest, and die soon after they leave the nest to mate, so have little need to protect themselves from enemies.

Non-Reproductive Worker Ants

A large gray-black spiny ant nest, in addition to the queen, can accommodate more than two hundred worker ants and raise more than a hundred larvae. Just like a complex society, there must be division of labour to maintain the regular operation of the nest. The tasks of worker ants can be roughly be split between looking for food, caring for larvae, and guarding the entrance to the nest. Larger worker ants usually are responsible for guard-duty, but if a companion needs them, they can, after a short break, immediately switch to another position and provide support.

Favourite Food

Gray-black spiny ants will arrange fixed routes, and diligently collect and guard food near the nest. For example, aphid colonies are an important food source for gray-black spiny ants – think of them as their livestock. The plants they gather on are like their pasture, and allow a nest to survive nearby for a long time. However, when the aphids' honeydew is in short supply, the gray-black spiny ants will send many worker ants out to look for new food near the nest. This includes dead insects, nuts, nectar, nectaries on leaves, and bits and pieces of food dropped by humans.

Special Behaviour

Warning

When frightened, the gray-black spiny ant will immediately beat the ground with its abdomen, and emit warning chemicals. Its companions will immediately sense the atmosphere of fear, and start to beat their own abdomens to warn others.

Communication

The gray-black spiny ant has poor eyesight, and when it first meets a companion, it will shake nervously, and stretch out its antennae to explore the other. But after confirming the smell of its companion it will withdraw its antennae and walk away calmly, as though giving a sigh of relief.

Social Transport

The reason why gray-black spiny ants move their companions may be to save energy, or to recruit helpers more effectively. Instead of following the smell left behind by a companion to locate food, if you could let a companion who has just returned from a food source, or has more experience, take you there directly, it would save so much time.

When the gray-black spiny ant wants to transport another companion, it will touch it with its antennae, then spit out a little food to feed it. When the companion understands the situation, it will relax completely and shrink into a pupa so that the other can pick it up in its big mandibles.

The Architecture of the Ants' Nest

In the wild, gray-black spiny ants often use branches or leaves as a skeleton in the wild to build a structure that is usually round. If you cut a gray-black spiny ants' nest in half, you'd find that the compartments and tunnels inside seem to be made of a white membrane. This is a fine white material woven from the silk secreted by the larvae. However, having spent so much effort on the nest, it is unlikely the larvae will be able to mature. On the surface of the nest, the gray-black spiny ants will stick plant debris or soil on it, so that it looks like a very hard ball of earth, but is very soft to the touch.

Gray-black spiny ants like to build nests at bush height. Only in rare circumstances will they build their nests on the ground or in tall trees. The location of the nest depends on nearby food sources and appropriate structures. In city suburbs, they often use man-made structures, for example, door- and window-frames that haven't been used for a long time, discarded hollow water pipes, or flowerpots and umbrellas that have been thrown outdoors. If there is a ready-made structure, gray-black spiny ants will happily save their energy. In this book, the gray-black spiny ants build their nests on hollow fence posts, which is drawn from real-life observation.

In addition to gray-black spiny ants, many other ants live around us. Although they occasionally disturb us slightly, their ability to remove plant and animal debris is very important in nature. There are many creatures that depend on the protection of ants in order to survive. Moreover, just thinking about how hard they work, competing against each other, helping each other, is enough to feel you know their behaviour and their needs. Give them a little space!