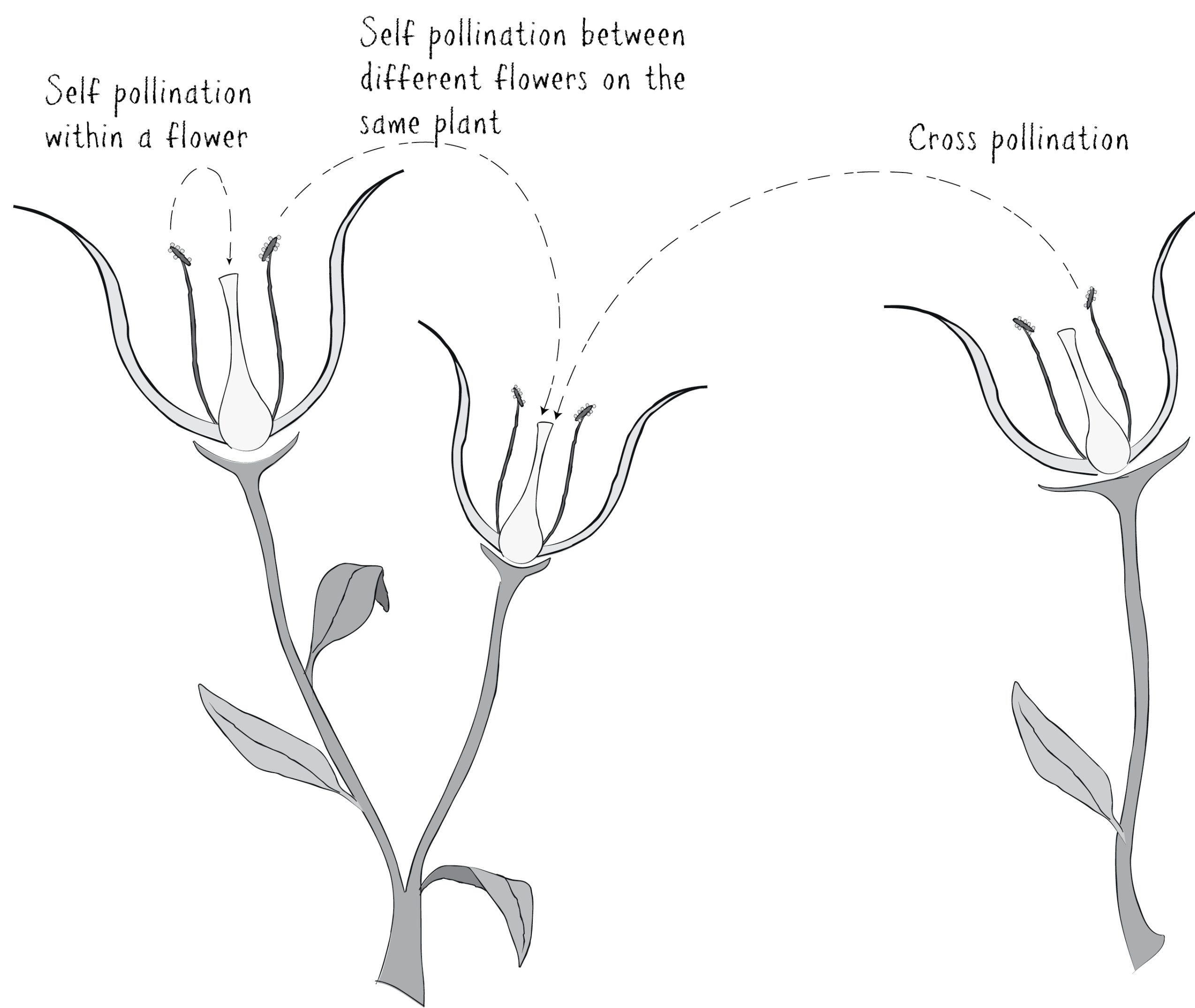


WHAT IS POLLINATION?

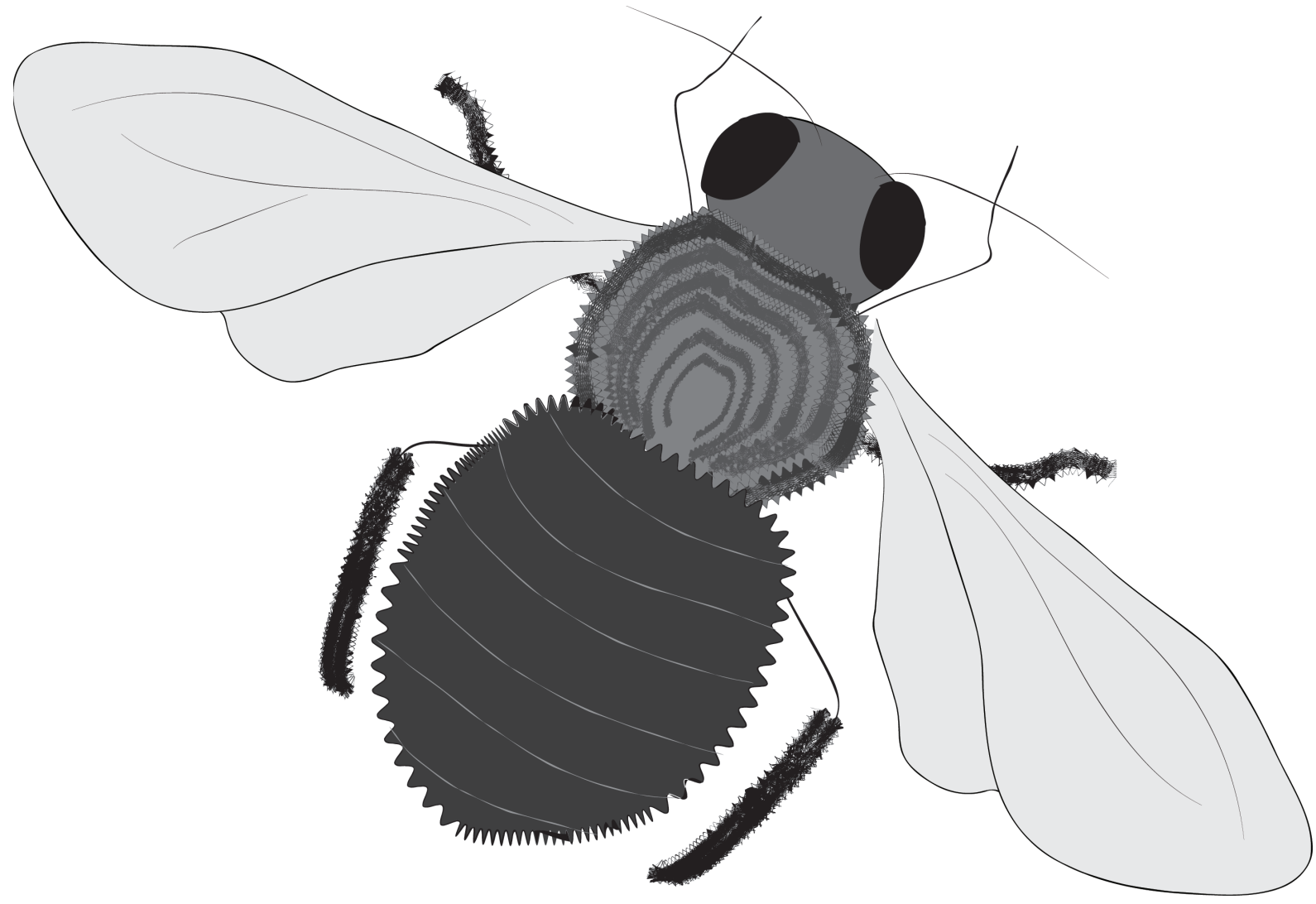


Pollination is an important part of how flowering plants reproduce. Because plants don't move around, they need flying creatures to move pollen from one flower to the female parts of another, to fertilize them.

Fertilized flowers create seeds and fruit. Some warm-blooded creatures, such as hummingbirds and bats, pollinate flowers, but most pollinators are insects: wasps, butterflies, beetles, flies and even mosquitoes.

Nature's best pollinators are bees. There are nearly 20,000 species of bee around the world and over 800 in Canada. They all have a special talent for finding flowers and spreading pollen.

THE DIFFERENCE BETWEEN BEES AND WASPS

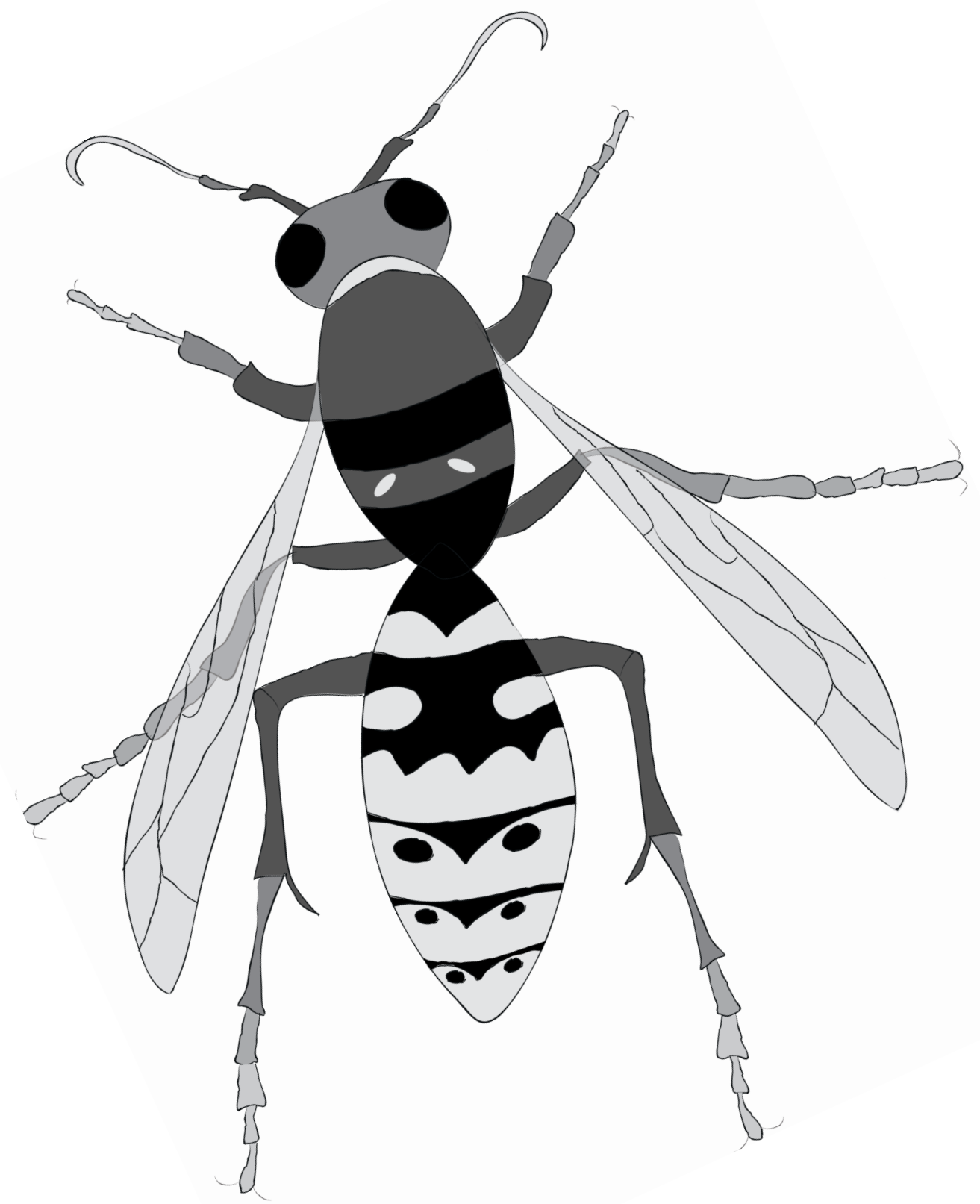
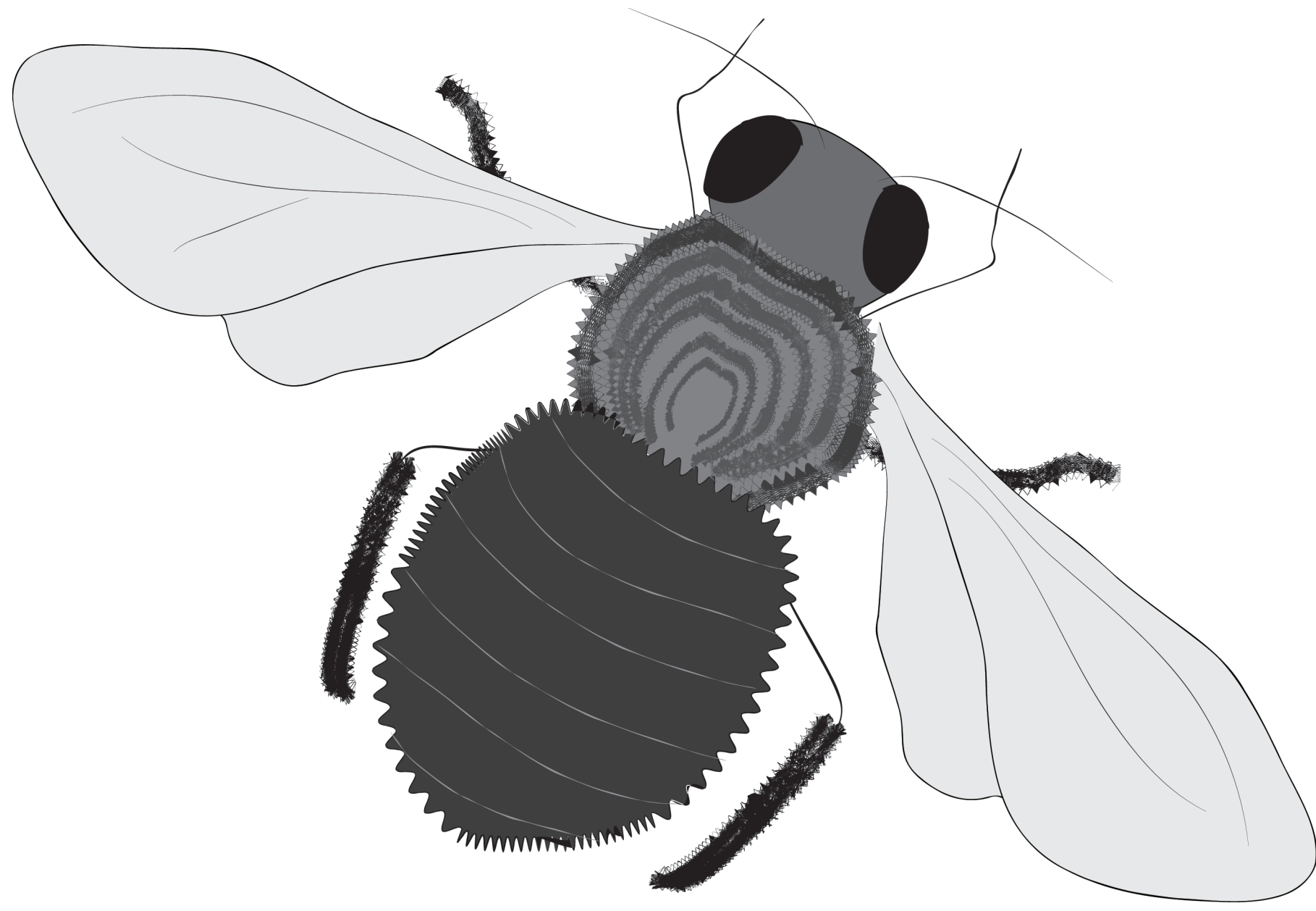


Bees and wasps have a lot in common. They come from the order of insects called Hymenoptera, and evolved from a common ancestor. But wasps are carnivores and bees are vegetarians.

Wasps hunt other insects, using their stingers to paralyze prey. Wasps keep many insect pests from getting out of control. Bees collect pollen and nectar from flowers for their food and only use their stingers for defence.

Unlike wasps, nearly all bees are covered in tiny branched hairs, which pick up pollen from flowers, the same way that burrs stick to animal fur. As they visit flowers to collect food, bees transfer pollen, which helps flowers reproduce.

SOLITARY BEES AND WASPS

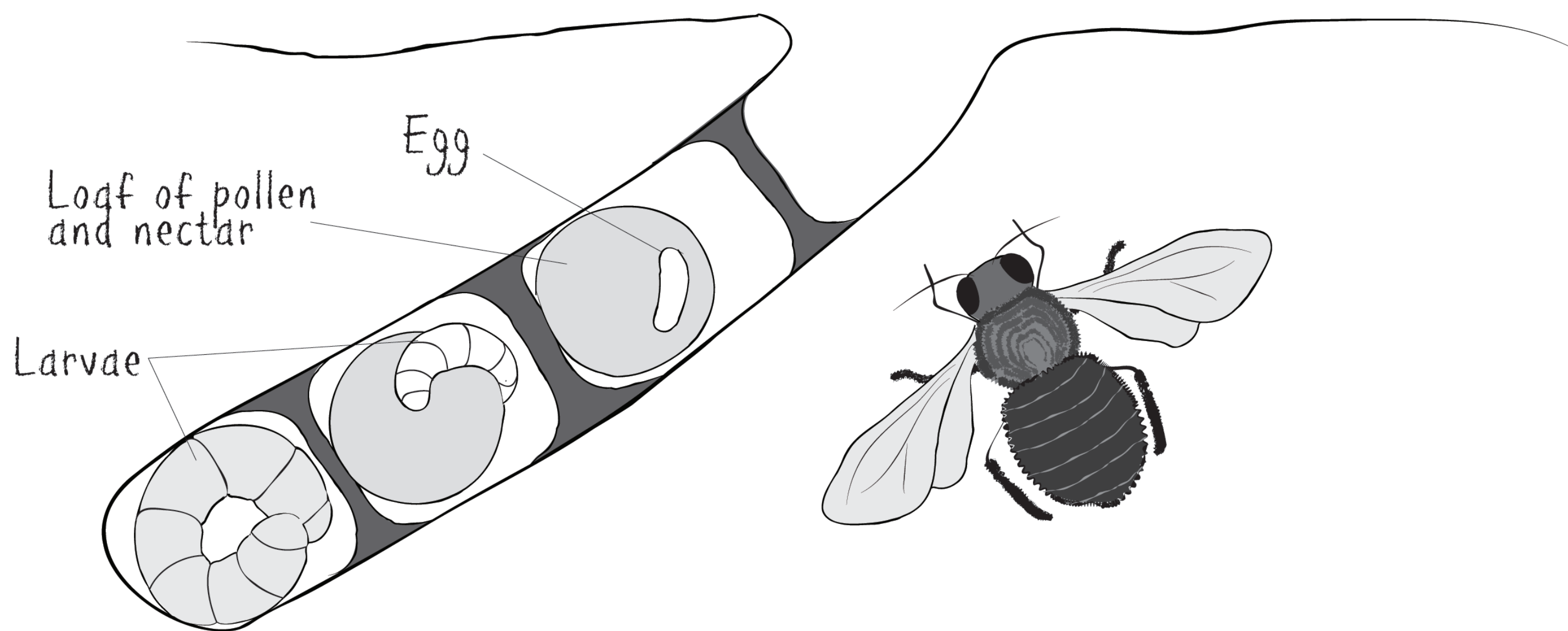


People are most familiar with social bees, such as honeybees and bumblebees, and social wasp species like paper wasps and hornets. But most types of bee and wasp live alone, with no companions to help them forage. They build single-occupant nests in holes, tunnels and even hollow stems.

They live the single life, but they are valuable pollinators and play an important role in the balance of nature.

LIFE CYCLE OF SOLITARY BEES AND WASPS

I: BORN ALONE



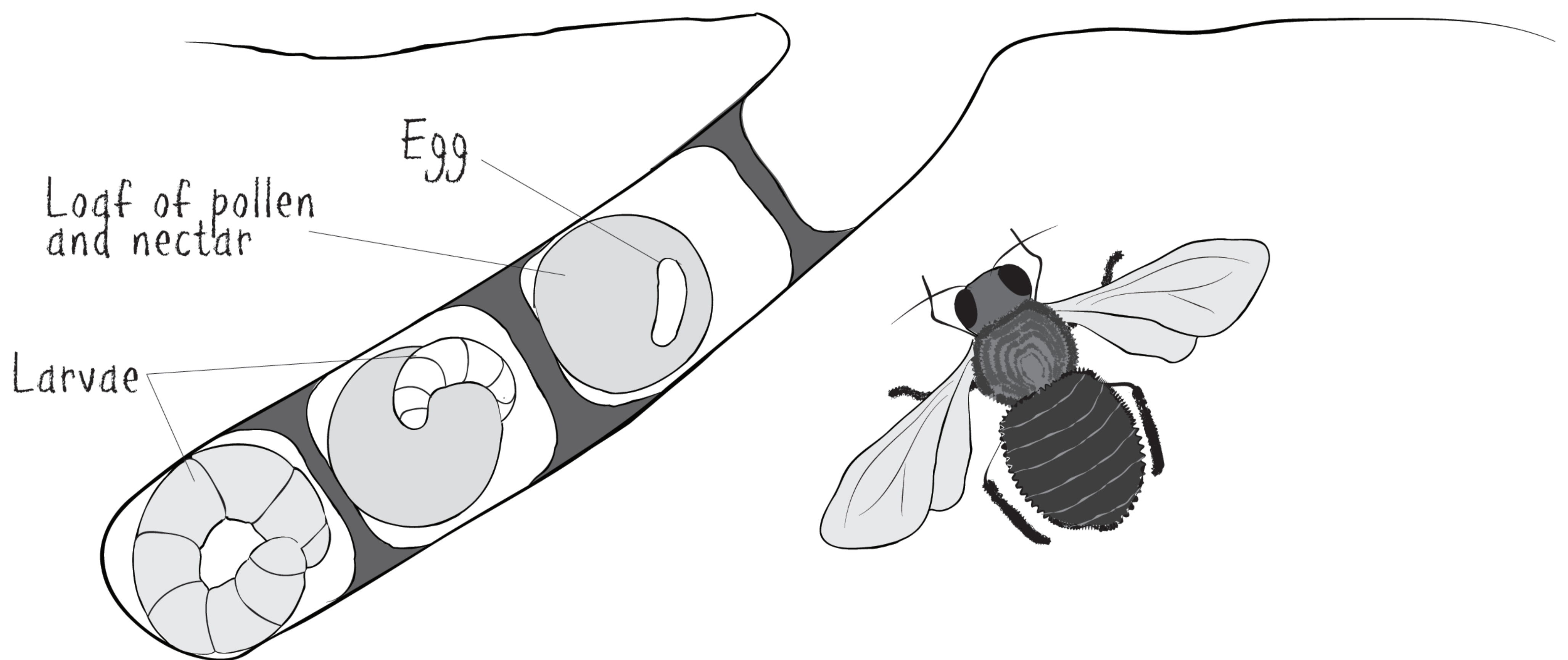
Solitary bees and wasps are born alone. They begin life as a tiny white egg, less than a millimetre long, which grows into a maggot-like larva.

This new bee or wasp's brothers and sisters are in nearby cells, but they will never interact. The larva eats pollen (if it's a bee) or paralyzed bugs (if it's a wasp) left by its mother, whom it will never meet.

Larvae eventually transform and grow tough exoskeletons, along with wings, legs and mandibles (jaws). Now they are ready to emerge from their cells and begin adult life.

LIFE CYCLE OF SOLITARY BEEES AND WASPS

2: COMING OUT



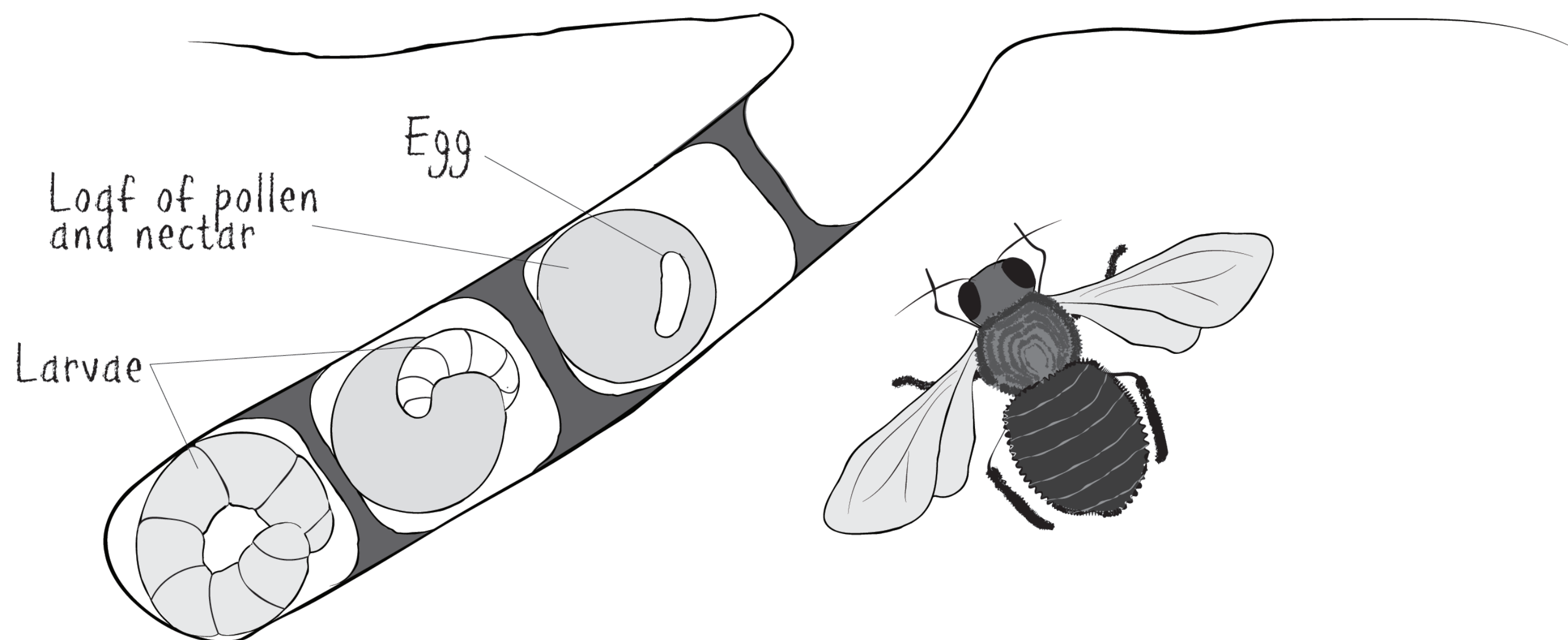
A young bee or wasp emerges from its cell fully grown, knowing what to do in life by instinct.

First it has to chew its way out. Males emerge first, looking for females to mate with.

Each female bee looks for new tunnel to build cells and lay eggs in, all by herself. This is what she will do for the rest of her short life.

LIFE CYCLE OF SOLITARY BEES AND WASPS

3: A SHORT AND BUSY LIFE



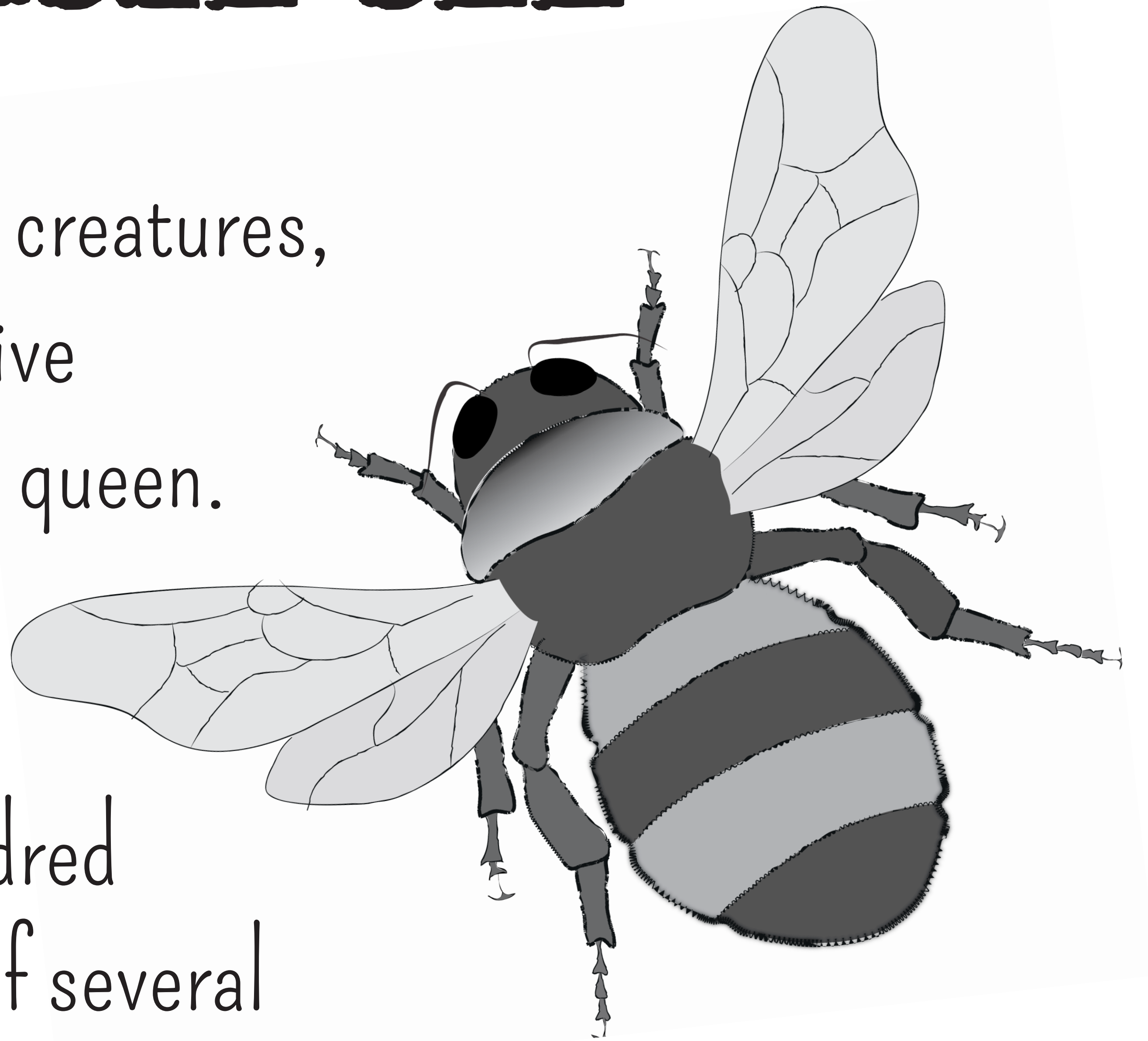
Solitary bees and wasps only live a few weeks. Their brief lives are spent preparing the next generation.

A solitary bee collects leaves, plant resin, mud and other materials to build cells for her offspring. She gathers pollen and nectar from flowers, which she combines into sticky balls called loaves. She lays one small egg on each ball of pollen.

Some solitary wasps also build cells out of mud, grass or other substances. A wasp, depending on species, hunts bugs, caterpillars, grasshoppers or spiders, paralyzing them with her stinger, for her young to eat alive.

LIFE CYCLE OF THE BUMBLE BEE

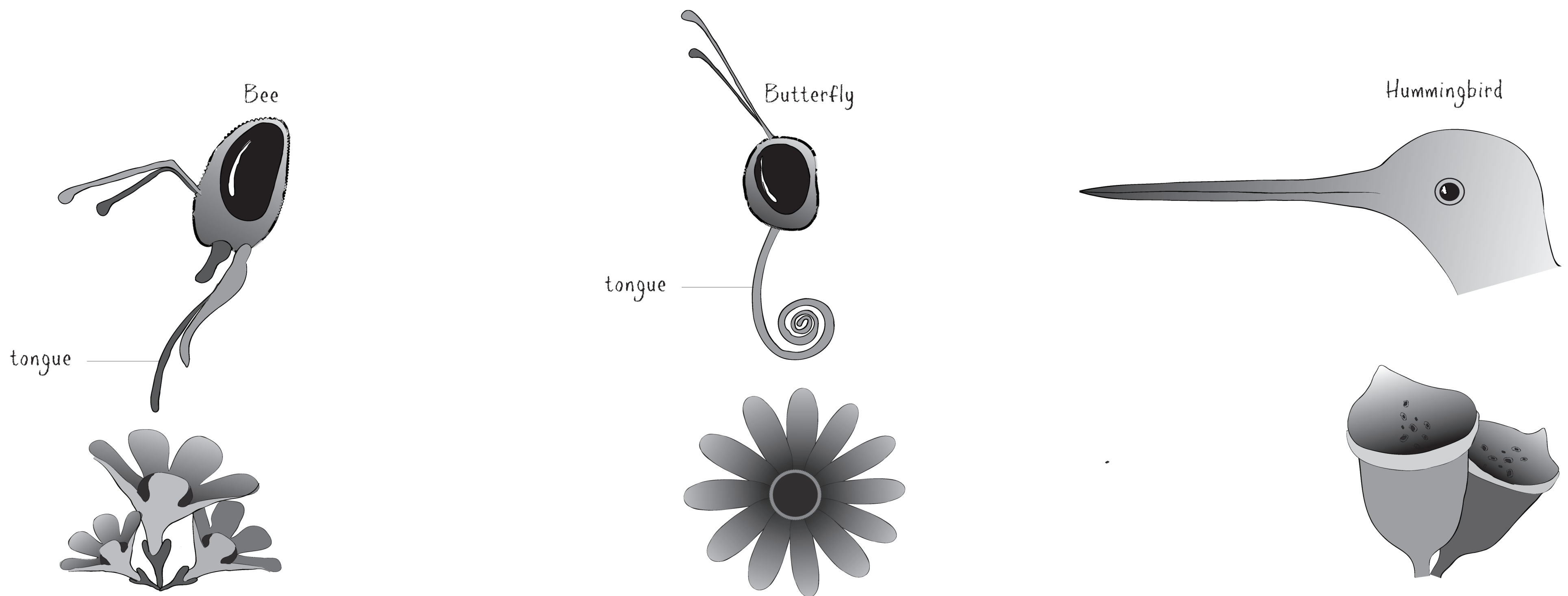
Bumblebees are social creatures, like honeybees. They live in colonies and have a queen. They have much smaller colonies, however, of a few hundred worker bees, instead of several thousand.



Each spring the colony has to start over. A new queen awakes in the spring from hibernation and looks for a suitable nest in the ground. She lays eggs—which grow into females, who become workers, and males, who go out and spread the colony's genes.

This queen, and the rest of the colony, will die in the fall, but not before new queens are born, to begin again next spring.

FLOWERS KNOW THEIR FRIENDS



Everyone likes to look at flowers and sniff them, but flowers look and smell like they do to attract the insects and other creatures that pollinate them. Flowers and their pollinators evolved to fit one another like a key and a lock.

Bees are very attracted to blue and purple, and their short tongues are more suited to small, clustering flowers, such as delphiniums and phlox.

Butterflies, with their much longer tongues, like showy flowers with large areas to land on, such as gloriosa daisies and blanket flowers.

Hummingbirds prefer tube-shaped flowers with a lot of nectar, such as foxglove and jewelweed. They also love the colour red, which bees don't even see as a colour.

Beetles were pollinators long before bees, and they still come around to chew on flowers. **Flies** also visit flowers to feed on pollen and nectar—some types of flies even look like bees.