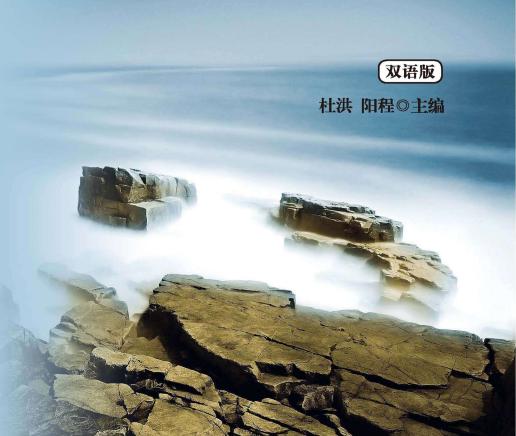


动物亮丽风景线



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态上的变化,即变态过程。

We live in an age of insects. About half of all known animals are insects. Scientists have found about 1 million species (kinds) of insects so far. There are more species of insects than of any other animal in the world. Bees, flies, ants, grasshoppers, beetles, and butterflies are some of the insects that might live near you.

Insects buzz in the air. They crawl over stones. They hop through grass. They dig tunnels underground.

Some insects are helpful. They do important jobs to help plants grow. They help get rid of wastes and dead plants and animals. Some insects are harmful. They bite or sting. They carry diseases or destroy crops.

Morphology of a flying insect: vertebrate animal with segmented bodies, usually winged, that undergo metamorphosis.

Compound eye: one of two complex organs of sight of an insect.

Antenna: one of two organs of touch of an insect.

Head: foremost part of an insect.

Fore leg: one of two front limbs of an insect.

Thorax: central part of an insect.

Middle leg: one of two middle limbs of an insect.

Hind leg: one of two rear limbs of an insect.

Abdomen: rear part of an insect.

Hind wing: one of two rear appendages used for flying.

Fore wing: one of two front appendages used for flying.

The praying mantis is an insect that helps farmers and gardeners by eating other insects. The praying mantis got its name because when it puts its legs together, it looks like it's praying. But it's actually waiting to

catch its dinner!

Water striders can do a neat trick-they can walk on water! Waterproof hairs at the tips of their legs help these insects stay afloat.

As its name suggests, the caterpillar hunter beetle likes to eat caterpillars. This beetle is about to have a meal.

Most insects undergo a change of shape as they grow. This damselfly sheds its old body for a new one, a process called incomplete metamorphosis.

What Makes an Insect? 昆虫的特点

Insects are invertebrates, or animals without backbones. They breathe air through holes in their bodies. The body of an insect has three main parts called the head, thorax, and abdomen.

Insects go through life stages and have very different forms in each stage. Adult insects usually have three pairs of legs, one pair of antennae, and two pairs of wings.

Insects are small animals. You could barely see the feathery-winged dwarf beetle because it is only 1t inch (0.25 millimeters) long. The walkingstick of Southeast Asia is one of the biggest insects. It can be 20 inches (50 centimeters) long with its legs stretched out.

An insect does not have bones. Its body has a hard outer covering. The hard covering is called an exoskeleton, or external skeleton.

Where Do Insects Live? 昆虫的生活环境

Insects can live almost anywhere on Earth. Insects called rock crawlers live on the cold mountaintops of the Himalayas in Asia. These insects make a kind of antifreeze. The antifreeze works like antifreeze in a car. It keeps water in their bodies from freezing solid.

Some ants live in the heat of the Sahara, a desert in Africa. They look for food even in the hottest weather, when temperatures can be higher than 116° Fahrenheit (47° Celsius).

Many insect species live in the fresh water of lakes, streams, ponds, and swamps. Very few insects can live in the salty water of the oceans.

More insects live in tropical rain forests than any other place in the world. Scientists believe there are millions of insect species living in the rain forest that have not yet been found.

What Do Insects Eat? 昆虫的食物

Insects eat all kinds of foods. Insects that live outdoors eat leaves, wood, nectar from flowers, or other small animals. Insects that live indoors eat wool clothes, glue, and even soap.

Each species of insect has special mouthparts for the type of food that it eats. Some insects such as grasshoppers and beetles have mouthparts for chewing food. Butterflies and moths have a tongue like a drinking tube that they put into a flower to suck up nectar. They roll the tube up when they are not feeding.

Can Insects See and Hear? 昆虫的视觉与听觉

Insects do not see the world the way you do. You have two eyes with one lens each. An insect has two bulging eyes on its head. The eyes are made of many lenses and are called compound eyes. Insect eyes cannot see clearly the way your eyes can. But insect eyes can detect very small movements better than you can. This ability helps them catch prey-or escape from animals that prey on them.

Some insects can hear. Most insects do not really hear the way you do. Insects learn about the world around them with feelers or antennae. The antennae extend from the front of an insect's head. Most insects use their antennae for smelling. Mosquitoes can also use their antennae for picking up sounds.

What Are an Insect's Life Stages? 昆虫的一生

Most insects start life inside an egg. The animal that comes out of the egg looks different from its parents. It does not have wings. It may not even have legs. As the insect grows, it starts to change shape. This change is called metamorphosis. There are two kinds of metamorphosis, called incomplete and complete.

Dragonflies, grasshoppers, and crickets are some insects that go through incomplete metamorphosis as they grow up. The young insects are called nymphs or naiads. The young insect molts, or crawls out of its exoskeleton, as it grows bigger. It grows a new, larger exoskeleton. Its body changes each time it molts. Soon it gets the shape of an adult insect with wings.

Butterflies, moths, beetles, bees, and flies are insects that go through complete metamorphosis. The young insects are called larvae. They look completely different from their parents. Caterpillars are the larvae of butterflies and moths. Maggots are the larvae of flies.

Larvae change into another stage called the pupa. The pupae of many insects spin a protective case made of silk called a cocoon or a chrysalis. The larva's body changes completely inside the case. A caterpillar changes into a beautiful butterfly or moth. A maggot becomes a housefly. The adult insect then breaks out of its case. Flying insects pump blood into their new wings and fly away.

Bees 蜜蜂

蜜蜂包括两万个种类,都以花蜜和花粉为食。其中大部分是独栖的,也有一些正处在群体生活的起始阶段。不过,没有任何一个种类像蜜蜂科的高级蜜蜂那样过着严密的群体生活。蜜蜂科是惟一营社会生活的蜜蜂,其中包括蜜蜂属、熊蜂属和无蛰蜂属。

蜜蜂的4个种类分布在全球各地,它们各有不同的栖息习惯。 其中3种在亚洲栖息,它们悬空筑巢。印度巨蜂喜欢高山生活,它们 可以在海拔2000米的高度栖息,这种蜂主要分布在东南亚和菲律宾 一带。花蜂栖息地不超过海拔500米,其分布区域与印度巨蜂相同。 印度蜂分布在亚洲的广大区域,其中包括中国以及西伯利亚的一部 分地区。

第4种就是蜜蜂。这种蜂在西方分布最广。它们栖息在好几个欧洲国家(西班牙、英国、德国和法国),在这些国家它们还成为驯养的家蜂。它们也栖息在非洲。伴随着殖民运动,蜜蜂也来到美洲、澳大利亚和新西兰。它们在天然洞穴或人工蜂箱中筑巢,而且也很适应高山生活。

It's a warm summer afternoon in a park or garden. Bees are buzzing around the flowers. You might be sitting in the sun and feeling kind of lazy. But the bees are very busy doing work that is important to you.

The bees are going from flower to flower. They are collecting a liquid called nectar and yellow grains called pollen. The bees use nectar and pollen as food. They also do something wonderful as they go about collecting. The bees take pollen from one plant to another. Some pollen sticks to a bee's legs and body. It rubs off when the bee visits another plant. In this way bees pollinate, or fertilize, plants.

Plants need pollen in order to reproduce. We would not have many kinds of flowers, fruits, or vegetables if bees did not carry pollen to plants.

Honey bees live in hives. Each hive contains a queen, female workers (pictured, right), and male drones. The queen lays up to 1,000 eggs a day. Worker bees gather food, make honey, tend eggs, and guard the hive. Drones mate with the queen, and then die.

Bees are insects that depend on flowers for food. They eat a powder in flowers called pollen and collect a sweet liquid called nectar.

Leafcutting bees use pieces of leaves or flower petals to make their nests.

When a bee such as this bumblebee visits a flower, tiny grains called pollen stick to the bee. The bee then carries the pollen to another flower. This process, known as pollination, is necessary for many plants to make seeds and fruit.

The sweat bee got its name because it is attracted to the salt in human sweat. It is one of the most common bees in North America.

A honey bee hive is made up of networks of cells made of beeswax. These networks are also called honeycombs. The queen bee lays eggs in some of the cells. Other cells are filled with honey

Carpenter bees got their name because they tunnel through wood to

make their nests. The chewing sounds these bees make can be heard several feet away!

Beekeepers wear protective clothing over their whole body to keep from being stung by the bees. Beekeepers collect honey from the hives.

Kinds of Bees 蜂的种类

There are about 20,000 species, or kinds, of bees. Bees live everywhere in the world except on high mountains, in the Arctic and Antarctic, and on some small islands in the ocean.

Some bees are as small as 0,08 inch (2 millimeters). Some bees are as big as 1,6 inches (4 centimeters). Bees come in many colors-black, gray, yellow, red, green, or blue. Most bees live alone. They are called solitary bees. Some bees live in groups called colonies. They are social bees.

Body of a Bee 蜂的身体

Bees are insects. They have three pairs of legs and four wings. Like all insects, they have a head, chest, and abdomen. They have mouthparts and a tongue for collecting nectar. They carry nectar in an organ called a honey stomach.

A bee has special wings that let it fly like a helicopter. Bees can fly backward, forward, sideways, or stay in one place in the air.

Bees have three regular eyes and two compound eyes. A compound eye has many lenses. Bees can see colors and patterns. This helps them find flowers.

Life of a Bee 蜂的一生

Bees reproduce sexually. A male bee mates with a female bee. Female bees lay eggs in nests made of small cells. They lay one egg in each cell. They put pollen and nectar in the cell for food.

A bee's life has several stages. A larva hatches out of the egg. The larva looks a little like a worm. The larva becomes a pupa covered by a hard case. The pupa becomes an adult bee and breaks out of the case.

Honey-Making Bees 酿蜜蜂

Honey bees are social insects that make honey. They live in hives, or nests, made of wax. Honey bees are the best-known kind of bee. Beekeepers raise honey bees for honey and for pollinating farm crops.

Three types of honey-making bees live in each hive-queen, workers, and drones. Each type of bee has a special job.

The queen is a female that lays all the eggs. There is only one queen for each hive.

Worker bees are females that do not lay eggs. Each nest has thousands of worker bees. Workers build the nest from wax they make in their bodies. The nest has many cells with six sides. The cells are glued together to make a comb. The queen lays eggs in some cells. Workers fill other combs with honey.

Workers collect nectar and pollen, make honey, and make a food called royal jelly to feed the larvae. Workers guard the hive. They sting anything that threatens the hive. A worker bee can only sting once. It leaves the stinger in its victim. Then the bee dies.

Drones are male bees. Drones cannot collect nectar or pollen. Drones do not have stingers. The only job of a drone is to mate with a queen.

The queen decides which eggs will become queens, workers, or drones. Only eggs fertilized with sperm become females. A few fertilized eggs are put in special cells and fed lots of royal jelly. These eggs become the queens.

When a honey bee finds food, it tells other honey bees. The bee comes back to the hive with nectar. It then performs a dance. The bee's movements tell the other bees where to look for this nectar.



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北京外国语大学著名语言学教授 胡文仲

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