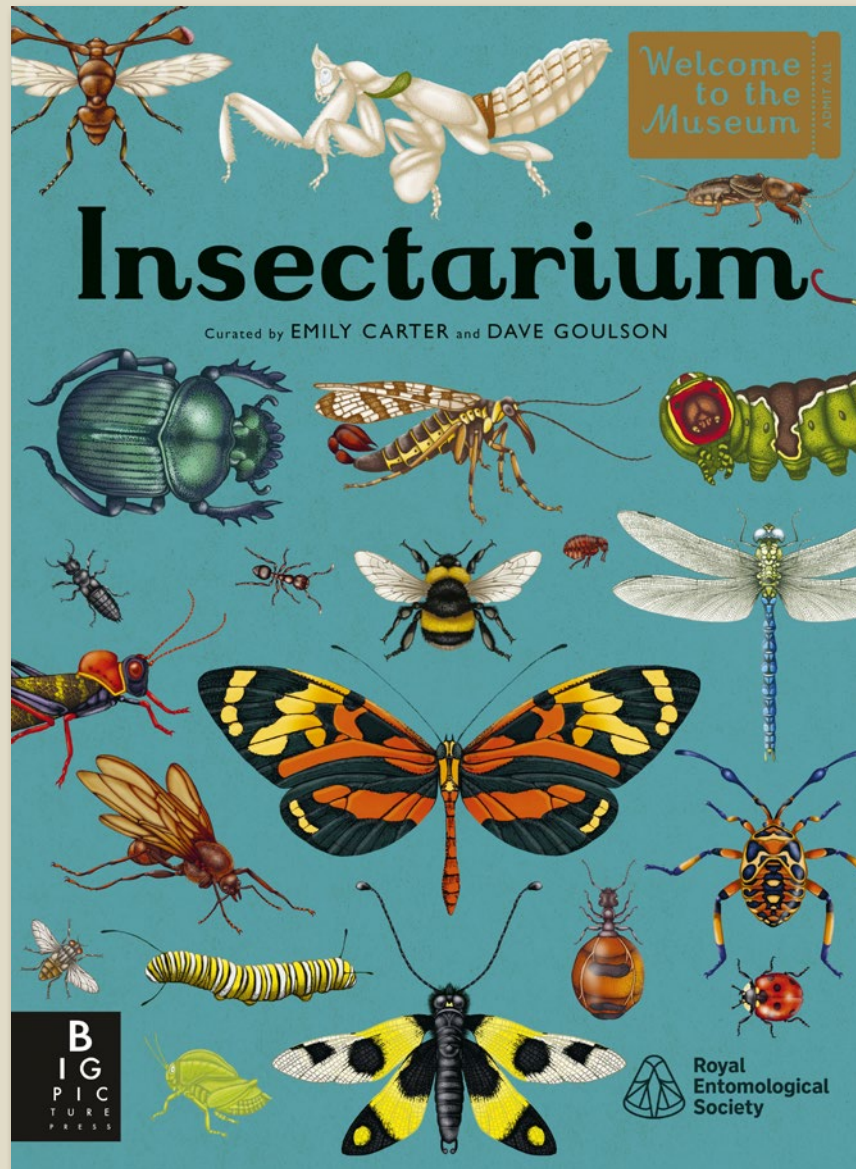


# Insectarium



The next instalment in the Welcome to the Museum series, *Insectarium* explores the fascinating world of insects.

- A new Welcome to the Museum book in the highly successful collection - more than two million copies sold worldwide
- Beautiful artwork by textile designer, Emily Carter
- Environmental concerns and declining insect populations with potentially catastrophic consequences means that insects are a very popular and current topic of scientific investigation.

# Insectarium

**Mantises**

Mantises are the most alien-looking group of the Dictyoptera order. Based most commonly on the praying mantis, they have long, jointed legs that resemble the forelimbs of a praying mantis. They catch their prey – mostly other insects – with their raptorial front legs which are adapted with spines of the spines. Caricatures that give a somewhat abstract, alien-like appearance to the insect. They are a common sight in gardens and parks, and are often found on trees and shrubs. The praying mantis is the most common species of praying mantis. Praying mantises have long, jointed legs which are adapted with spines of the spines. Caricatures that give a somewhat abstract, alien-like appearance to the insect. They are a common sight in gardens and parks, and are often found on trees and shrubs. The praying mantis is the most common species of praying mantis.

**Key to plate**

1. **Praying mantis**  
Mantis religiosa  
Length: 100mm  
This is the most common species of praying mantis. It has long, jointed legs and a raptorial front leg. It is a common sight in gardens and parks, and is often found on trees and shrubs.

2. **Common mantis**  
Mantis religiosa  
Length: 100mm  
This is the most common species of praying mantis. It has long, jointed legs and a raptorial front leg. It is a common sight in gardens and parks, and is often found on trees and shrubs.

3. **Common mantis**  
Mantis religiosa  
Length: 100mm  
This is the most common species of praying mantis. It has long, jointed legs and a raptorial front leg. It is a common sight in gardens and parks, and is often found on trees and shrubs.



**Habitat: Ponds, Streams and Rivers**

So long as they are abundant freshwater habitats are other substantially rich in insect life. The water surface is covered with a variety of insects, and the water itself is a rich source of food. The water surface is covered with a variety of insects, and the water itself is a rich source of food. The water surface is covered with a variety of insects, and the water itself is a rich source of food.

**Key to plate**

1. **Dragonfly nymph**  
Zygoptera  
Length: 50mm  
This is the most common species of dragonfly nymph. It has long, jointed legs and a raptorial front leg. It is a common sight in ponds and streams, and is often found on the water surface.

2. **Dragonfly nymph**  
Zygoptera  
Length: 50mm  
This is the most common species of dragonfly nymph. It has long, jointed legs and a raptorial front leg. It is a common sight in ponds and streams, and is often found on the water surface.

3. **Dragonfly nymph**  
Zygoptera  
Length: 50mm  
This is the most common species of dragonfly nymph. It has long, jointed legs and a raptorial front leg. It is a common sight in ponds and streams, and is often found on the water surface.



**Beetles and Relatives**

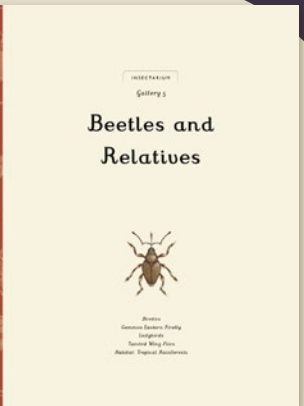
Beetles are the most diverse group of insects. They are found in almost every habitat, and are a common sight in gardens and parks. They are a common sight in gardens and parks, and are often found on trees and shrubs. They are a common sight in gardens and parks, and are often found on trees and shrubs.

**Key to plate**

1. **Common beetle**  
Coleoptera  
Length: 10mm  
This is the most common species of beetle. It has a hard, protective shell and is a common sight in gardens and parks, and is often found on trees and shrubs.

2. **Common beetle**  
Coleoptera  
Length: 10mm  
This is the most common species of beetle. It has a hard, protective shell and is a common sight in gardens and parks, and is often found on trees and shrubs.

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**Wasps**

Wasps, bees and ants all belong to a highly successful group of insects known as the Hymenoptera, with 150,000 known species. The Hymenoptera contains most of the 'eusocial' insects – those that live in large nests with the majority of individuals being workers with just one, or a few, queens.

The earliest known wasps appeared about 200 million years ago in the Jurassic period and today more than 100,000 species of wasp have been identified. When most people think of a 'wasp' the common yellow and black social species (known as yellowjackets in North America) comes to mind – the type that tend to cause a nuisance at picnics. These are not typical wasps however. The large majority of known species of wasp are 'parasitoid' wasps, solitary insects that as larvae live on or in hosts (usually other insects). These wasps invariably kill their host, bursting from its corpse in a manner that almost certainly inspired the movie Alien (1979). Most parasitoids are small and easily overlooked, and so it is highly likely that huge numbers of species are yet to be discovered.

Most of the social wasps, such as yellowjackets, build nests from chewed up and regurgitated wood pulp. They create a light and strong paper mâché that is fashioned into an insulating papery ball containing sheets of hexagonal honeycomb-like cells. In social wasps, the egg-laying tube of the female has evolved into a sting, used particularly in early spring and dying out with the onset of autumn.

Wasps are much maligned, yet they serve many important functions as biocontrol agents and important pollinators.

**Key to plate**

1. **European wasp**  
Vespa velutina  
Length: Up to 14mm  
A hardworking wasp, the European wasp operates in feeding on honey bees, which are parasitoid and stored in burrows underground for the offspring to consume. Many females may nest near one another in dense vegetation in sandy soil.

2. **Giant Asian hornet**  
Vespa mandchurica  
Length: Up to 45mm  
Sometimes known as the murder hornet, this is the largest hornet species and has a potent sting. It is from Asia, but recently colonised north-west North America. It is a feared predator commonly attacking and deterring honey bee colonies.

3. **Common wasp**  
Vespa vulgaris  
Length: Up to 13mm  
Nests are founded by a queen in spring and built of paper. They can grow to house several thousand workers by late summer. These wasps are important predators of crop pests.

4. **Emerald cockroach wasp**  
Ampulex compressa  
Length: Up to 20mm  
The colorful insect has a sinister identity. They are parasitoid of large cockroaches, stinging their prey in a particular part of its brain so that the cockroach loses the ability to get away, but is otherwise unharmed. The wasp then leads its victim by one of its antennae like a dog on a lead back to its lair where it lays an egg on the roach. The cockroach then stands helpless for days while it is consumed alive by the wasp's offspring.

5. **Tarantula hawk wasp**  
Ampulex compressa  
Length: Up to 50mm  
These splendid blue-black insects have distinctive rusty orange wings. They prey on tarantulas which they paralyze, sting back to their nest and lay a single egg upon. The grub then burrows into the spider and eats it alive. Said to have one of the most painful stings of any insect, the tarantula hawk wasp is also one of the largest wasp species.

6. **Red velvet ant (female)**  
Dermamelus podiceps  
Length: Up to 19mm  
The wingless female resembles a tiny ant. Her bright colors warn of a powerful sting. Like ants are parasitoid eggs of the species are laid on the brood of various solitary wasps.

7. **Giant scoliid wasp**  
Megalopterus procer  
Length: Up to 72mm  
Perhaps the largest wasp species, the giant scoliid is a parasitoid of other scoliid grubs parasitizing an unfortunate grub with a sting, laying an egg in it and then burying it for the emerging wasp grub to consume it as larvae.



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