8.ORDER Dictyoptera: Cockroaches and termites & Mantids

A. Blattodea Cockroaches

Etymology: Blattodea is derived from "blatta", the Greek word for cockroach.
Hemimetabola - incomplete metamorphosis

Key Characters:

- Body is elongate oval, and somewhat flattened which is well-adapted for running and for squeezing into narrow openings
- Pronotum oval, shield-like, covering much of head and thorax
- Short, multi-segmented cerci
- Long. filiform antennae
- Eggs are enclosed in a special capsule around known as an ootheca,
- Legs adapted for running
- Front wings thickened; hind wings membranous, pleated

Economic Importance:

Some cockroaches are urban pests, associated with human dwellings throughout the world, they may carry a variety of human pathogens on their bodies and also cause allergies.

The German cockroach, *Blattella germanica*, Blattellidae is a noxious home invader

The Oriental cockroach, *Blatta orientalis* is a widespread domestic species; females are brachypterous (short or reduced wings and may not be functional for flight).

The American cockroach, *Periplaneta americana*, is another species found in homes
The Brown-banded cockroach *(Supella longipalpa)* is also an urban pest.
Barring these, all cockroaches are useful in wood decomposition and nutrient cycling.

Major Families:

Family	**Key Traits**	**Notable Species**
Blattidae	Large, household pests	American cockroach -*Periplaneta americana* *Oriental cockroach - Blatta orientalis*
Ectobiidae	Small, fast, common indoor pests	German cockroach - *Blattella germanica* *Brown-banded cockroach - Supella longipalpa*
Blaberidae	Large, tropical, live-bearing kept as pets or feeder insects	Madagascar hissing cockroach *Gromphadorhina portentosa*, *Blaptica dubia*  By Almabes at English Wikipedia - Transferred from en.wikipedia to Commons by Sreejithk2000 using CommonsHelper., Public Domain, https://commons.wikimedia.org/w/index.php?curid=10542089
Corydiidae	Dry-habitat specialists Adapted to xeric or desert conditions with little or no water.	Sand cockroach - *Arenivaga spp.*  *By Acatenazzi, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=3298410*
Cryptocercidae	Wood-feeders, termite relatives	Wood roach - *Cryptocercus spp.*  By Matt Berger - https://www.inaturalist.org/photos/46217693, CC BY 4.0, https://commons.wikimedia.org/w/index.php?curid=101349534

Trivia:

- The American cockroach, *Periplaneta americana*, originated in Africa.
- Some cockroaches in the family Polyphagidae live as commensals in the nests of ants.
- *Gromphadorhina portentosa*, a species from Madagascar, can force air out of its tracheal system to produce an audible hiss.
- The Surinam cockroach, *Pycnoscelus surinamensis*, is the intermediate host of a nematode, *Oxyspirura mansoni*, that may cause blindness in poultry.

b. MANTODEA: Mantids / praying mantids

Etymology: Mantodea is derived from "mantis", the Greek word for these insects.
Hemimetabola - incomplete metamorphosis

Key Characters:

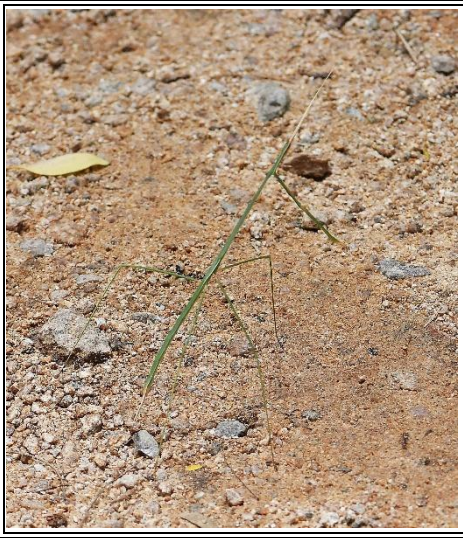
- Elongated body and prothorax
- Triangular head with large, compound eyes with excellent vision.
- Raptorial or grasping front legs with spines for catching prey
- Triangular head that can turn from side to side
- Most species show excellent camouflage

Economic Importance:
It is considered as highly beneficial insects because they feed on other insects and are important insect predators in agricultural fields.

Major Families

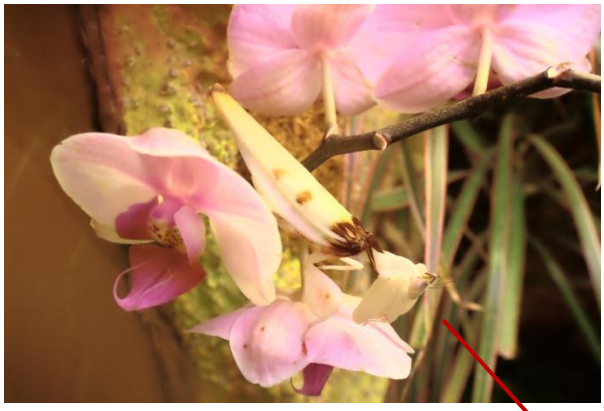
Family	Common Name	Key Features
Amorphoscelididae	Small mantids https://commons.wikimedia.or  g/wiki/File:Amorphoscelid_Mantis_(Amorphoscelis_tuberculata)_(16463076431).jpg	Tiny, obscure family; small and short-winged; found in tropical Asia and Africa.
Deroplatyidae	**Dead leaf mantids** 	Excellent dead leaf mimics; found in Southeast Asia; large and flat bodies.

Family	Common Name	Key Features
	By Roy Bateman - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=92225017	
Empusidae	**Conehead / devil's mantids** 	Slender with leaf-like lobes; crested head; excellent mimics; found in warm regions.
Hymenopodidae	Flower mantids 	Brightly coloured; resemble orchids, flowers; ambush predators that blend with blooms.
Mantidae	Typical mantids 	Largest family; includes most common species; well-developed raptorial legs; many species show leaf/stick mimicry.
Eremiaphilidae	Bark/grass mantids	Cryptic colouration; mimic twigs or bark; narrow bodies and long legs.

Family	Common Name	Key Features
		

Trivia

- Mantids are the only insects that can turn their head from side to side without moving any other part of the body. Many humans mistakenly interpret this behaviour as a sign of intelligence.
- A female mantid may eat her mate while he is still linked with her. This behaviour is probably more common in captivity than in the wild.



https://commons.wikimedia.org/wiki/File:Insect_camouflage_PP08338.png

- Most mantids are cryptically coloured to blend with their environment. A pink Malaysian species spends most of its time hunting for prey on pink orchids.
- Although mantids usually feed on insect prey, they have been known to catch and eat small frogs, lizards, and even birds.
- Aldous Huxley mentions the violin mantis *Gongylus gongyloides* in the book “Island” as symbol of death.
- Martial art form of China mimics the mantis.

Phasmidae: Walking sticks / stick insects / leaf insects / phasmids

Etymology: Phasmatodea, derived from the Greek "phasm" meaning phantom, refers to the cryptic appearance and behaviour of these insects.

Hemimetabola - incomplete metamorphosis

Key Characters:

- Prothorax shorter than mesothorax or metathorax
- Slender body parts (twig-like)
- Wings reduced or absent
- Stick insects resemble the twigs and branches on which they live.
- Leaf insects of the family Timemidae (Phyllidae) resemble leaves. Abdomens are broad and flat, legs have large lateral extensions, and colouration is primarily brown, green, or yellow.
- Eggs are dropped singly onto the ground, sometimes from great heights.

Major Families:

Phasmatidae (walking sticks) - mimic sticks and twigs


Phyllidae (leaf insects) - mimic leaves and foliage

Trivia

- Phasmid eggs often resemble seeds. The eggs may remain dormant for over a year before hatching.
- In some parts of the tropics, stick insects may be so abundant that eggs falling out of the trees may sound like rain on a tin roof. In the rainforests of Queensland, Australia, species like Goliath stick insect, *Eurycnema goliath* are abundant, and their egg laying may contribute to this phenomenon.
- Some walking sticks are sold as pets.
- Glands located on the thorax of many species can produce a foul-smelling liquid that repels predators.
- When attacked by a predator, the legs of some phasmids may separate from the body (autotomy). Some species can even regenerate lost legs at the next moult. These are the only insects able to regenerate body parts.
- Several species produce offspring from unfertilized eggs (parthenogenesis). Males may be uncommon or unknown.
- Some phasmids change colour with changes in temperature, humidity, or light intensity. Pigment granules in the epidermis disperse at night or on cool days, darkening the cuticle and absorbing more heat.
- The longest insect in the world is a species of stick insect called *Phryganistria chinensis*

https://www.dailymail.co.uk/news/article-4778776/The-world-s-largest-insect-long-arm.html