

Periplaneta americana as a type study: every organ system of a classic insect

Habit, Habitat, Systematic Position

- cockroaches are omnipresent, preferring damp, moist crevices
- omnivorous, nocturnal, cursorial: running, not flying, is the main mode of movement
- three common Indian species: *Periplaneta americana*, *Blatta orientalis*, *Blattella germanica*
- Kingdom Animalia: no cell wall, heterotrophic
- Phylum Arthropoda: jointed appendages, segmented body, chitinous exoskeleton
- Class Insecta: two pairs of wings, three pairs of walking legs
- Genus *Periplaneta*, Species *americana*

External Morphology: Body Plan *

- elongated, bilaterally symmetrical, dorso-ventrally flattened body
- triploblastic, coelomate, coelom reduced to a haemocoel; truly segmented; glistening brown to red-brown
- body cavity is a haemocoel, filled with haemolymph (open circulation)
- exoskeleton: hard, waxy, non-living, made of the nitrogenous polysaccharide chitin
- each segment has four chitinous plates (sclerites): dorsal tergum, ventral sternum, two lateral pleurons
- body divides into three regions: head, thorax, abdomen
- head attaches to thorax at a right angle via a thin, movable neck (cervix)

Cockroach body



the three body regions, head set at a right angle to the rest by the flexible cervix

The Head: Sense Organs

Antennae

filamentous, long, segmented feelers in antennal sockets; tactile and olfactory, locate food

Fenestrae

ocellar spots at the base of each antenna, appearing as white spots

Compound eyes

paired, kidney shaped, many ommatidia; each forms a partial image, together a mosaic