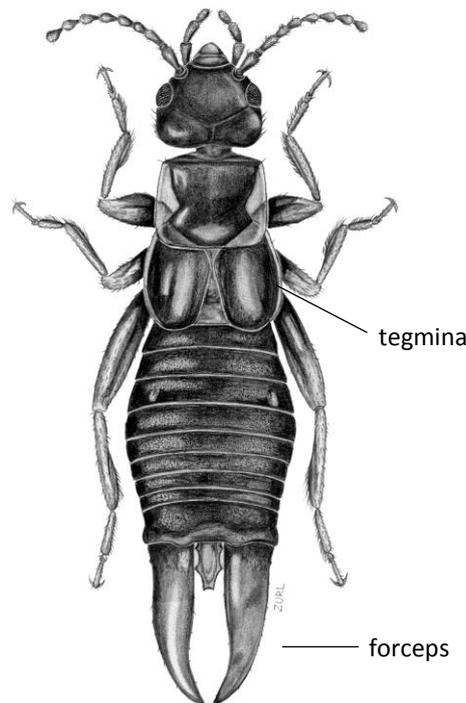


Order Dermaptera



Common name: earwigs

Simple diagnosis. Dermaptera are elongate, flattened insects, recognised by long forceps (= enlarged pincer-like unsegmented cerci) at the end of the abdomen. They have shortened, thickened forewings (= tegmina) and membranous fan-like hindwings, with a widened anal region (= posterior region of wing). They have a prognathous (= directed forwards) head with mandibulate (= biting and chewing) mouthparts (= biting and chewing mouthparts), multi-segmented antenna (mostly threadlike, sometimes bead-like), absence of ocelli, and 3-segmented tarsi.

Technical diagnosis. The earwigs are small to large insects, and range between 4-50 mm in length. They have mandibulate (= biting and chewing) mouthparts (= biting and chewing) and have an elongate body shape, and are usually heavily sclerotised (= robust exoskeleton), and dorsoventrally (= body compressed) flattened insects. The distinctive character of this order is the presence of long unsegmented forceps-like cerci. Sometimes they can be shortened, especially in females, and in ectoparasitic (= living semi-permanently on external surface of other organisms) that live on bats the cerci can be multi-segmented. If wings present, the forewing is small and leathery and never reaches the tip of the abdomen. The hindwing is entirely membranous, large and circular, and is folded, and can be seen protruding from the tip of the forewings. Many earwigs have lost their wings. Earwigs have a prognathous (= directed forwards) head with unmodified mandibulate (= biting and chewing) mouthparts, usually with large compound eyes, lacking ocelli, the antennae are multi-segmented which are either moniliform (= beaded) or filiform (= thread-like), the pronotum is usually shield-like, the legs are short, tarsi 3-segmented with the second segment shortened. Nymphs resemble adults, but without wings or with wing buds, shorter antennae and are often paler in colouration.



Earwig (Dermaptera)

What can they be confused with? Earwigs are most easily confused with rove beetles (= superfamily Staphylinoidea) with both having short and thick forewings, without veins. At rest staphylinids do not have the hindwings protruding beyond the tip of the forewings but they may unfold when killed, giving that appearance. Earwigs and rove beetles can be easily separated by the presence in earwigs of large, unsegmented, pincer-like forceps; rove beetles lack cerci entirely.

Dermapterans are similar to Blattodea in their habits, flattened body, unmodified mandibulate (= biting and chewing) mouthparts, leathery forewings, and the hindwings have a large anal region. Roaches have a more or less oval body whereas earwigs are usually much narrower. Also, winged roaches have the forewings longer, often reaching or surpassing the apex of the abdomen, the tarsi are 5-segmented, and the cerci are never in the shape or size of the enlarged forceps of earwigs.

Dermapteran nymphs have shortened and multi-segmented forceps, and can be confused with Plecoptera (= stone flies), with both insect orders sharing mandibulate unmodified mouthparts, three-segmented tarsi, and hindwings with a large anal region. Plecopterans differ in having a hypognathous (= directed vertically) head and mouthparts (= vertically directed), two or three ocelli, the forewings are not thickened into tegmina and the body is not flattened. They are found in different habitats, with earwigs hidden in damp microhabitats (e.g., under rocks and bark) and stone flies are aquatic.

Wingless earwigs have short cerci and are similar to wingless Embioptera (= web spinners), with both have having a prognathous (= directed forwards) head and mouthparts (= directed forwards), multi-segmented antennae, no ocelli, mandibulate (= biting and chewing) mouthparts, well-defined thoracic terga (= dorsal sclerites of the thorax), and three-segmented tarsi. Unlike earwigs, embiopterans have the foretarsus greatly enlarged.

Biology. Earwigs live in damp habitats, such as leaf litter, in debris, under bark, in crevices, and a few species are ectoparasitic on bats and rodents. Earwigs are usually omnivorous, but can be herbivorous or carnivorous.

Diversity in Papua New Guinea. Earwigs are distributed worldwide, with about 1800 species. The New Guinea fauna is poorly known (Miller 2007).



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Key references for Papua New Guinea.

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