GOLD NUGGET

Diversity Of Soil Organisms
Mesofauna – Diplura

Morphology

Diplura are small wingless hexapods, with body lengths ranging from 0.3 to 1 cm, although the largest species can be longer than 2 cm. Diplurans have a narrow and elongated body, and are generally white or colourless. The head has a pair of long and moniliform (a string formed of bead-like segments) antennae and no eyes. The abdomen ends with a pair of cerci, i.e. prominent abdominal appendages, which can contain silk glands. The cerci can have either a pair of pincers (Japygoidea) or can be filamentous (Campodeoidea). Some species of japygid Diplura are robust and darker in colour, and are often confused with earwigs (Dermaptera). However, Diplura have neither eyes nor wings. Fertilisation is similar to that found in proturans and collembolans: the males produce and deposit a large number of spermatophores, capsules containing spermatozoa, on the substrate that are then picked up by a female. The females lay eggs in clumps in the soil cavities or decomposing vegetation. Some species check the eggs and the larvae. Diplura are known to be able to regenerate lost body parts, such as legs, antennae and cerci.

Taxonomy

The class Diplura (phylum Arthropoda, superclass Hexapoda) comprises nine extant families, the main ones being Japygidae and Campodeidae (each with more than 400 species).

Microhabitat

Diplura live in wood, leaf litter, under stones, rocks or logs, on the surface of, or in deeper layers of soil, in mosses or in termite and ant nests. Many species are herbivores and detritivores (feed on decomposing plant and animal parts) and feed on a wide range of plant material. However, some species have well-developed mandibles and eat nematodes, small arthropods, enchytraeids, etc. They can also consume fungal mycelia and plant detritus. They are often part of the decomposer community, helping recycle dead plant material.

Diversity, abundance and biomass

There are approximately 1 000 described species that are common inhabitants of most natural and human modified soils. They are distributed worldwide, from the tropics to temperate zones. They do not have specific habitat preferences and, generally, their population densities are not high (< 50 individuals per square metre).

Farming Secrets says: If Diptura Can Regenerate Limbs – Why Can't We?

Ref: A Global Atlas of Soil Biodiversity p 54