



## Sandgropers

(Cylindrachetidae)



*An adult sandgopher, Cylindraustralia kochii.*



*Sandgopher trails (across middle ground).*

The term 'sandgropers' has a long history as a colloquial name for Western Australians and also denotes some very strange, wholly subterranean insects known to entomologists as cylindrachetids. Though common in Western Australia, sandgropers are not restricted to the State but occur widely across the Australian continent wherever there are extensive areas of sandy or sandy loam soils (they are absent from the south-eastern portion of the continent and Tasmania).

Sandgropers are seldom seen because of their subterranean life-style but are common inhabitants of sand dunes and sand plains including the Swan Coastal Plain and the

Perth region. Despite their grub-like appearance, cylindrachetids are believed to be descendants of grasshoppers. Their bodies are wonderfully adapted for a burrowing mode of life. A tell-tale sign of their presence is a long raised trail across bare sand where one has burrowed just beneath the surface, usually following rain. Sandgropers part the soil ahead of them with breaststroke-like motions of their highly modified and very powerful fore legs and they can run backwards or forward within their galleries on the comparatively tiny mid and hind legs. Their bodies are streamlined and offer minimal resistance: wings are entirely absent and the mid and hind legs recess into the sides of the body.

Sandgropers show some similarities to mole crickets but the latter are easily distinguished by having long antennae, wings (when adult) and hind legs that reach to or beyond the apex of the abdomen.

The biology of sandgropers was long neglected because of the difficulty in finding and observing them but Houston (2007a) provided some insights into their lives and ways. Two common WA species are omnivorous, feeding on roots, seeds, leaf litter, fungi, other insects and spiders, etc. Like their grasshopper relatives, sandgropers develop gradually from egg to adult (that is, juveniles resemble adults, except for a wholly white abdomen, and there is no larval stage). The eggs are relatively large (up to 7 mm long), white, pink or deep red, and each is laid singly in a separate chamber, suspended from the ceiling (see photos). Development from egg to adult is slow and a life-cycle extending over several years is indicated. The insects feed near the soil surface only during the cooler, wetter months and retreat to deeper, moister soil (up to 1.9 m deep) during the dry summer months.



*Freshly laid eggs suspended in soil chambers.*



*Older eggs showing attachment pedicels.*



*Newly hatched nymph with egg shell.*

Western sandgroppers are reported as having damaged cereal crops by feeding on the bases of the stems (e.g. Richards 1980) but Houston's observations have cast some doubt on their pest status.

Sixteen species and three genera of sandgroppers were recognized in the most recent study of the family (Günther 1992): the genus *Cylindraustralia* was established for 13 Australian and one New Guinea species (all earlier placed in *Cylindracheta*), *Cylindracheta* is now restricted to one species from the 'Top End' of the Northern Territory, and *Cylindrodes* contains one Argentinean species. The six known species of sandgroppers from Western Australian all belong to *Cylindraustralia* and two of them, *C. kochii* and *C. tindalei*, inhabit the Perth region.

Rentz (1996) and Houston (2007b) have provided popular account of the insects.

### References:

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- Houston, T.F. (2007b). Unearthing the secrets of sandgroppers. *Landscape* **23**(2): 39-43.
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