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Conserving the nature of WA

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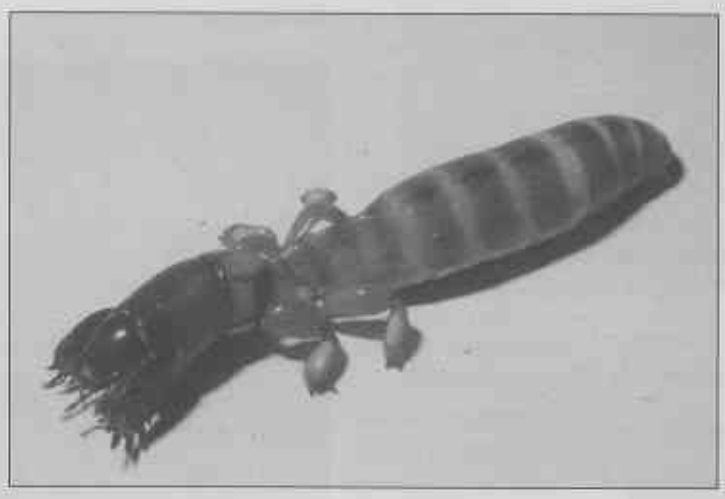
CAN YOU FIND A SANDGROPER?

Terry Houston

'SANDGROPER' is not just a colloquial name for Western Australians, it's also the name for some very strange, wholly subterranean insects known to entomologists as cylindrachetids.

These rather odd-looking animals are believed to be descended from grasshoppers. Their streamlined bodies with no trace of wings are well-adapted to their burrowing mode of life. The insects part the soil ahead of them with breast-stroke-like motions of their highly-modified and very powerful fore legs, running backwards or forwards within their galleries on the comparatively tiny mid and hind legs. Raised trails across bare sand are a sign of their presence.



A sandgroper

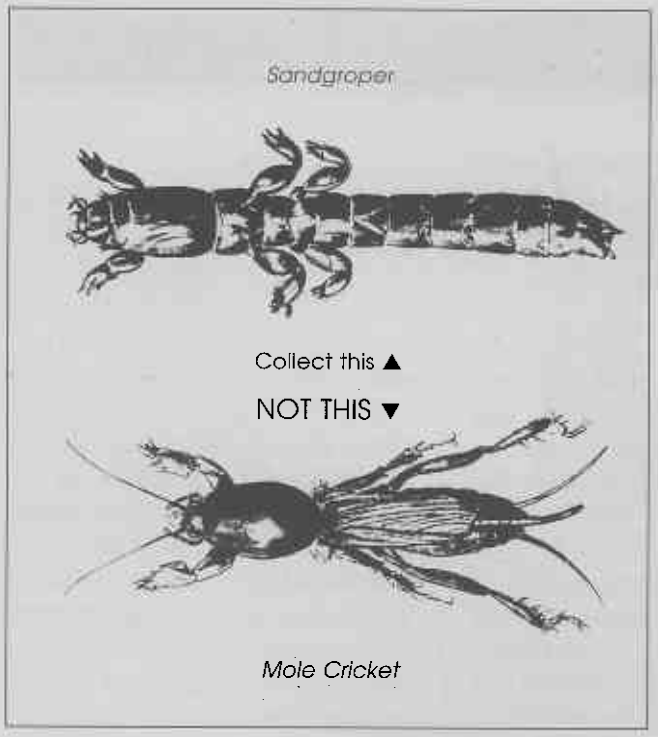
My interest in sandgropers developed out of an awareness that almost no reliable information had been published on their biology, yet the insects were virtually right under our feet here in Perth as the city is built on a sand plain. Surely, I thought, one could easily learn something about their biology if only enough fresh specimens could be obtained. So, in April 2002 I began spreading the word with the help of newspapers and radio that I wanted specimens for study. I asked people who found a live sandgroper to freeze it as soon as possible to preserve gut contents, ovaries and other internal organs, and to contact me at the Museum. I received a very good public response, although most of the calls I got concerned the superficially similar mole crickets (these have long antennae, long feelers extending from the rear of the body, hind legs as long or longer than the abdomen and the adults are usually winged). Several farmers from Dandaragan to Northampton and beyond proved to be the best source of sandgroper specimens for they occasionally ploughed them up while preparing for sowing new crops.

I have learned that sandgropers are active near the surface and produce surface trails only one or two days after rain and while the surface soil is moist (mainly from April to September). They create open tunnels as they burrow through the soil and they can back-pedal in these fairly swiftly if they are disturbed or strike a barrier. The tunnels are just slightly greater in diameter than the insects making them and don't permit turning. It seems to be chiefly the males that make the long surface trails and probably they travel in search of females. However, a small percentage of trails are made by females and juveniles.

My dissections are still underway but already have revealed that the insects consume a wide variety of native and introduced plant material including roots and leaves. Farmers' claims that sandgropers destroy some cereal plants by feeding on the bases of the stems and pulling the plants down into the soil have been supported by my analysis of gut contents. In several instances the gut contents have also included various kinds of soil-dwelling insects and some specimens had obviously feasted on termites. Dissections have also revealed that females produce eggs over most (if not all) of the year. The large eggs are laid singly in deep burrows.

continued on page 3

Sandgropers continued from page 1



Don't confuse sandgropers and mole crickets.

Almost all of the specimens obtained for my study have come from the coastal plain from near Mandurah to Shark Bay. Possibly this reflects the drought conditions that prevailed in more inland areas during 2002. However, very few Museum specimens have ever been collected from inland areas and none are from the southern wheatbelt or the south coast. Whether this means that sandgropers do not occur in southern WA is open to conjecture. Consequently, should anyone find a specimen east of the Darling Range and particularly from a southern locality, I would greatly appreciate receiving it.

I would prefer to receive specimens alive or freshly killed (e.g. by freezing and forwarded on ice or preserved in 75% alcohol or formalin) but even dead, dry specimens would be useful to fill gaps in known distributions. Dry specimens to be mailed should be packed in a stiff container with tissue paper packing to prevent movement and breakage. Precise details of locality and date of collection should accompany all specimens.

Studying sandgroper trails

For further details of preservation and packaging, together with a colour picture of the animal, contact: Dr Terry Houston, Senior Curator (Entomology), Dept. of Terrestrial Invertebrates, Western Australian Museum, Francis Street, Perth W.A. 6000.
Phone (08) 9427 2742,
or email: terryhouston@museum.wa.gov.au

Bush Detective

Mary Bremner sent in this photo from the Rudall River area. Large (5-6 cm), hollow, apple-sized woody lumps were growing on many bloodwood trees. They can be found on bloodwoods throughout the Kimberley and Pilbara. What are they? (Hint, inside some of the lumps is a fat grub.)

Ans: p 13

(Mary also noted that many of the fallen 'apples' had been chewed open. Rock Rats, perhaps?)

Pic: M. Bremner