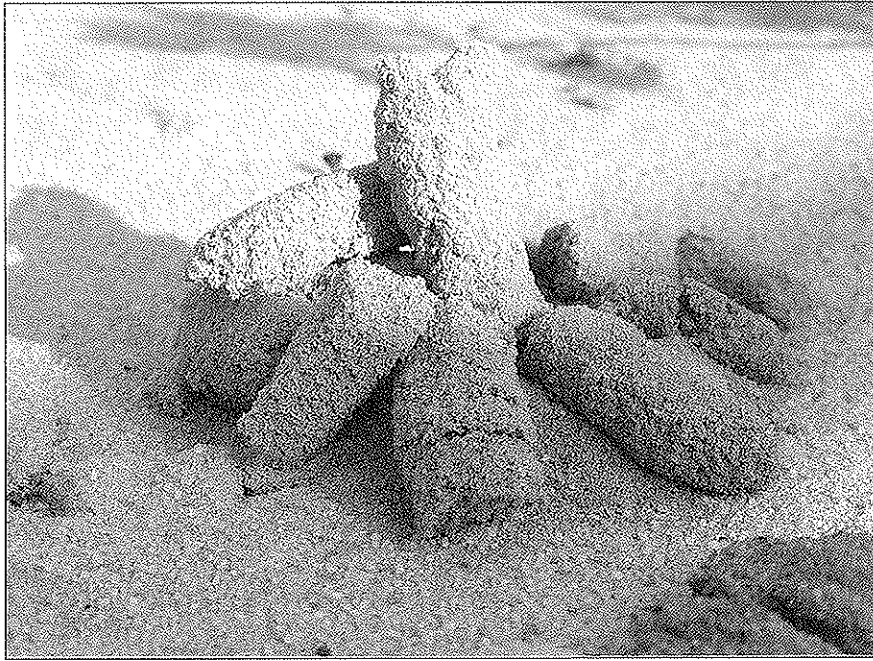


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MYSTERY ANIMAL 'DROPPINGS' ARE BEETLE 'PUSH-UPS'

Terry Houston



Have you ever seen a pile of what looks like animal droppings only to find that the lumps are composed entirely of sand? Such piles appear on the ground after heavy rain and are most commonly seen in bushlands with sandy soils (although they sometimes appear on harder soils as well). They are not the product of a large animal but rather the work of some remarkable scarab-like beetles known as 'earth-borers'. Mainly

nocturnal in habits, the earth-borers fly after heavy rain and excavate fresh burrows before sun-up. After burrowing downwards for a time, a beetle will 'bull-doze' a load of loosened, damp sand towards the burrow entrance, forcing it out like tooth paste from a tube.

Earth-borers belong to the family Geotrupidae and range in length from 5-30 mm. They resemble dung beetles in having a domed body form, spiny digging legs and a variety of horns or spines on the head and thorax in males. They can be distinguished from dung beetles in their brown (rather than black) colouration and in having prominent rounded knobs on the ends of the antennae. Australia has 166 species and 100 are represented in WA.

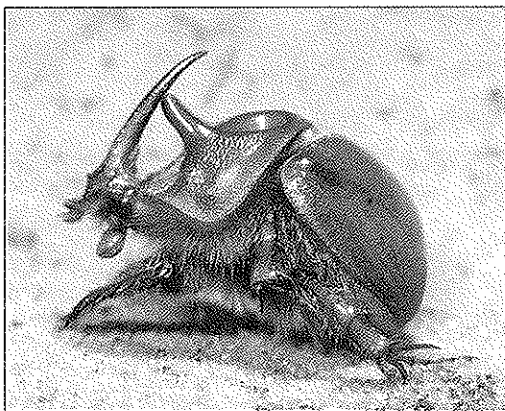
The beetles burrow in search of underground fungi, including native truffles, on

which they themselves feed. Some, if not all, of the fungi eaten are mycorrhizal fungi (i.e. they form close attachments to plant roots and provide the plants with essential nutrients). This makes the beetles of special interest as they may play an important role in the ecology of the fungi by helping to disperse their spores. This has been the focus of a study I have recently undertaken in collaboration with Dr Neale Bougher of the WA Herbarium.

The beetles' life-histories are still very incompletely known. Females of at least some species lay just one relatively gigantic egg (more than half their own weight) at a time. In order to lay enough eggs to sustain the population, the beetles must be long-lived. It has been reported that some earth-borers deposit their eggs in large brood cells provisioned with humus (much as dung beetles provision brood cells with dung). However, my observations indicate that this is not common to all species and ongoing research at the WA Museum aims to document the life-histories of more species.

Your best chance of encountering these fascinating beetles is to sit by a lantern in the bush just after dark one to several days after a soaking rain. One or more specimens may come circling in noisily and crash land somewhere close to you. Listen for their peculiar 'huffing' or squeaking sound produced by stridulation. It is as if they are complaining – "What hit me?"

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Photos: T. Houston