

endangered

by Melinda Moir



Eula's planthopper

Eula's planthopper (*Budginmaya eulae*), pronounced 'Bud-gin-may-a u-lay', is a unique and rare bug. It is unique in that worldwide it is the only member of its family (Flatidae) known to co-exist with ants in their nests in a form of mutualism.

Mutualism is an association between two organisms where both derive some benefit. Through their 'bodyguard' of ants, these bugs receive protection from predators. In turn, the bugs provide the ants with honeydew for food—which is the bug's excretion after feeding on plant sap.

All planthoppers are herbivorous and, although much of the biology of Eula's planthopper is unknown, it is reasonable to infer that the ants 'herd' the bugs from the nests at night to feed on nearby host plants (species of which are currently undetermined) and then back into the nests before dawn. Interestingly, Eula's planthopper lives with the ant species

Camponotus terebrans, which is also the known host to a suite of other insects, including butterflies and leafhopper bugs (see 'The ant, the butterfly, the leafhopper and the bulldozer', *LANDSCOPE*, Autumn 2010).

Subterranean life with ants has transformed the appearance of Eula's planthopper into something that is markedly different from its closest relatives within the family Flatidae. Characteristically these bugs, known as common green planthoppers, are recognised as about one-centimetre-long green 'triangles' which jump or hop, and are often seen in gardens on the branches of plants. In contrast, Eula's planthopper has yellow-brown colouring, smaller eyes and wings (the hindwings are completely absent) and bigger antennae, plus many small sensory hairs covering the head and body.

Eula's planthopper was discovered in May 2007 and, despite intensive sampling in the vicinity, had not been

seen previously, nor has it been collected since. Because of its rarity, it is currently listed as 'priority one' on the Department of Environment and Conservation's list of threatened species.

All the bugs were collected under a single rock within the same ant nest on Bandalup Hill, east of Ravensthorpe. This area is also home to a number of rare plants including *Kunzea similis* subsp. *mediterranea* and *Eucalyptus purpurata*. As the bug relies upon the presence of both the ant and a host plant species for its survival, it is possible that the host-specificity of Eula's planthopper is determining its restricted distribution. This would be the case if the required host plant is a threatened species such as *E. purpurata*.

The discovery of such a unique insect endemic to the south-west of Western Australia highlights the region's international importance as a biodiversity hot spot.

Photos by Melinda Moir

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Executive editor Madeleine Clews.

Editors Joanna Moore, Samille Mitchell.

Scientific/technical advice Kevin Thiele, Paul Jones, Keith Morris, Michael Rule.

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Illustration Gooitzen van der Meer.

Cartography Promaco Geodraft.

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Phone (08) 9334 0296 or fax (08) 9334 0432.

Subscription enquiries

Phone (08) 9219 8000.

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