

Anomala Samouelle, 1819

Taxonomy

Sub family: Rutelinae / Tribe: Anomalini / Genus: *Anomala*

Distinguishing Features

Small to medium beetles of varying body shape, body length 5-30mm. Body colouration variable: yellow, brown, black, through to metallic greens, and bicoloured or patterned species. Clypeus with apex rounded or subquadrate, not strongly reflexed. Labrum moderately thick, but not produced vertically. Antennae with 9 segments, and a 3-segmented club. Frontoclypeal suture usually complete. Foretibia bidentate (rarely uni or tridentate), with an inner subapical spur. Pronotum with an apical membranous margin. Elytra with a membranous border along lateral margins. Mesosternum without a mesometasternal process produced between mesocoxae. Mesepimeron concealed by the base of the elytra in dorsal view. Terminal spiracles not positioned in pleural suture. Tarsi sometimes with a cleft claw on fore and mid legs, hind tarsal claws simple.

Related and Similar Species

There are around 1000 species in the genus *Anomala*, making accurate identification extremely difficult. It is seen as a heterogeneous grouping of species that is in much need of a complete revision. Some regional identification resources exist such as Potts (1974), Ratcliffe and Paulson (2008) and Filippini *et al.* (2016). A key to the three Australian distributed species is provided by Jin *et al.* (2014).

They are members of the tribe Anomalini which are easily recognised through their membranous elytral border and 9-segmented antennae.

An updated key to the Australian Rutelinae can be found in Weir *et al.* (2019).

Biological Data

Adult beetles of *Anomala* are foliage or nectar feeders, and can be active during the day or nocturnally. They are strongly attracted to lights. Larvae can feed on the shallow roots of plants, particularly damaging to grasses and turf.

A. orientalis is a significant invasive pest species, known to attack a wide range of grasses, ornamentals and crop plants including maize, pineapple, sugarcane and raspberry. A comprehensive pest data sheet on the species has been compiled by CABI (2018) (as *Exomala orientalis*).

Distribution

Species of *Anomala* are found on every continent. Species density is thought to be the highest in tropical areas.

Three species are present in Australia: *A. aeneotincta* (QLD and WA), *A. antiqua* (Northern QLD, WA and NT) and *A. katherine* (NT).

Useful Links

CABI Pest Datasheet: <https://www.cabi.org/isc/datasheet/5510>

Hawaiian Scarab ID species page: <https://idtools.org/id/beetles/scarab/factsheet.php?name=15168>

PaDIL image set: <http://www.padil.gov.au/pests-and-diseases/pest/main/135627>

References

CABI 2018. *Exomala orientalis* (oriental beetle). Invasive Species Compendium. Wallingford, UK, CABI International. Available from <http://www.cabi.org/isc/datasheet/5510>

Jin, M., Weir, T., Slipinski, A., Pang, H. 2014. Description of a new species of *Anomala* Samouelle (Coleoptera: Scarabaeidae: Rutelinae) from Northern Territory, Australia. *Zootaxa*. 3872. 591-600.

Potts, R.L. 1974. Revision of the Scarabaeidae: Anomalinae. 1. The Genera Occurring in the United States and Canada. *Pan-PaciPc Entomol.* 50: 148-154.

Filippini, V., Mico, E., Galante, E. 2016. Checklist and identification key of Anomalini (Coleoptera, Scarabaeidae, Rutelinae) of Costa Rica. *Zookeys* 621: 63-136.

Ratcliffe, B.C., Paulsen, M. J. 2008. The Scarab Beetles of Nebraska. *Bulletin of the University of Nebraska*, Vol. 22. 570pp



Anomala arida dorsal view

Photographer:

Pia Scanlon



Anomala arida lateral view

Photographer:

Pia Scanlon



Anomala arida ventral view

Photographer:

Pia Scanlon



Anomala arida head front

Photographer:

Pia Scanlon



Anomala moquina dorsal view

Photographer:

Pia Scanlon



Anomala moquina lateral view

Photographer:

Pia Scanlon



Anomala moquina ventral view

Photographer:

Pia Scanlon

Ratcliffe, B. C., Jameson, M. L., Smith, A.B.T. 2002. Chapter 34. Scarabaeidae Latreille1802, pp. 39–81 (in part). In: Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.), *American Beetles*, Volume 2. CRC Press, Boca Raton, FL. 861 pp.

Weir, T.A., Lawrence, J.F., Lemann, C., Gunter, N.L. 2019. Chapter 32. Scarabaeidae: Rutelinae Macleay, 1919, pp. 508-515. In: Slipinksi, A. & Lawrence, J.F. (eds) *Australian Beetles*, Volume 2, Archostemata, Myxophaga, Adephaga, Polyphaga (part). CSIRO Publishing, Clayton South, Vic. 784 pp.

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Anomala moquina head front

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Anomala moquina elytral margin

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Anomala tenera dorsal view

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Anomala tenera head front

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Anomala tenera lateral view

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Anomala tenera ventral view

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