

# *Popillia japonica* Newman, 1838

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### Taxonomy

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

### Distinguishing Features

Small to medium, broadly oval beetles, body length 8-15mm. Body colouration metallic green, with coppery elytra. Distinct patches of pale setae on lateral margins of abdomen and the pygidium. Clypeus with apex subquadrate or rounded. Antennae with 9 segments, and a 3-segmented club. Frontoclypeal suture complete. Pronotum with base tridentate and with an apical membranous margin. Mesepimeron visible dorsally. Elytra with a membranous border along lateral margins. Mesometasternal process present, projecting forward beyond base of mesocoxae. Protibia bidentate, with a subapical spur. Front and mid tarsi with a cleft claw, hind claws simple.

### Related and Similar Species

The genus *Popillia* contains over 250 species. There is no complete identification resource for the entire genus.

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

The five patches of white hairs on each side of the abdominal segments, and one pair on the last abdominal segment distinguish *Popillia japonica* from all other similar looking beetles.

### Biological Data

The adults lay their eggs in the soil in grassy areas. The emerging C-shaped larvae feed first on the thin grass roots and later with maturity on increasingly thick roots occasionally causing damage. In extreme cases, the symptoms can be in the form of large brown patches that appear during dry weather.

Though larvae can cause some feeding damage, adult beetles are the primary pestiferous form that are capable of feeding on nearly 300 plant species across 79 families. They are often skeletonising foliage of many fruit trees and grapes, and in corn crops they can cause severe damage by feeding on the silk (the style of a maize floret).

*Popillia japonica* has also been recorded as facilitating and increasing the pest status of other beetles. By feeding on intact grapes they allow the fruit to be exploited by other beetles, such as *Cotinis nitida* in the United States whose mouthparts are unsuitable for piercing the fruit's skin (Hammons et al. 2009). Injured fruit can also produce attractant volatiles causing potential for further fruit damage.

### Distribution

The species is native to Japan and far eastern Russia. It has since spread outside its native range into the USA, Canada, China, India, Korea, Taiwan and Portugal. It is absent from Australia. Once it was introduced to the USA the extensive, well-watered turf areas and a lack of parasites allowed populations to rapidly build up and spread. The species has proved to be very adaptable, moving considerably outside of their native climatic conditions.

### Useful Links

Scarabs of Hawaii Fact Sheet: <http://idtools.org/id/beetles/scarab/factsheet.php?name=15216>

EPPO Diagnostic Protocol (pdf): <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2338.2006.01039.x>

UFL Fact Sheet: [http://entnemdept.ufl.edu/creatures/orn/beetles/japanese\\_beetle.htm](http://entnemdept.ufl.edu/creatures/orn/beetles/japanese_beetle.htm)

Plant Health Australia Fact Sheet (pdf): <http://www.planthealthaustralia.com.au/wp-content/uploads/2013/09/Japanese-beetle-FS.pdf>

### References



*Popillia japonica* female dorsal view

Photographer:

Pia Scanlon



*Popillia japonica* female lateral view

Photographer:

Pia Scanlon



*Popillia japonica* female ventral view

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Pia Scanlon



*Popillia japonica* female head front

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*Popillia japonica* clypeus

Photographer:

Pia Scanlon



*Popillia japonica* female foretibia

Photographer:

Pia Scanlon



*Popillia japonica* male foretibia

Photographer:

Pia Scanlon

CABI 2018. *Popillia japonica* (Japanese Beetle). Invasive Species Compendium. Wallingford, UK, CABI International. Available from <https://www.cabi.org/isc/datasheet/43599>

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