

British land flatworms – Identification: an update since 2005.

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In 2005 I published an identification guide: Jones, H.D. (2005) British Land Flatworms, *British Wildlife*, Vol 16, 189-194. Since then, more species have been identified in the British Isles and this article is an update with the latest information.

The maps are of confirmed records sent to me by many people who are thanked.

Microplana kwiskea Jones et al., 2008

10-20 mm long, 1-2 mm wide. Brown, shade varies from pale to mid brown. Brown ventral creeping sole less than half ventral width. Plump and round in section when extended, anterior end blunt (the narrower end in the photograph).

Two eyes (small black spots) at the anterior end but these are not easily visible.

Scavenger, feeding on dead slugs and earthworms.

Few scattered records from the UK and Ireland (see map), also records from Poland, Italy and Bulgaria. Records from Ireland by Roy Anderson.

Probably reproduces by small (about 2 mm diameter) black cocoons.

This species was only recognised and described in 2008 from specimens found in a Yorkshire garden. However, specimens now identified as *M. kwiskea* had been found earlier in Ireland by Roy Anderson, the earliest in 1978.

Reference: Jones, HD, Webster, BL, Littlewood, DTJ & McDonald, JC. 2008. Molecular and morphological evidence for two new species of terrestrial planarians of the genus *Microplana* (Platyhelminthes; Turbellaria; Tricladida; Terricola) from Europe. *Zootaxa*, 1945, 1-38.

YouTube: <http://www.youtube.com/watch?v=MUSfSewWagM>



Microplana kwiskea. Above: a moderately extended specimen about 1 cm long. Below: specimen about 2.4 cm long. Anterior to the left in both.



***Obama nungara* Carbayo, Álvarez-Presas, Jones and Riutort, 2016. (The Brazilian flatworm)**

Up to about 10 cm long and 1 cm wide; flattened; anterior end narrow, pointed; dark brown with numerous black streaks dorsally, though colour can vary from very dark to mid-brown; some have a pale midline; pale ventrally.

Many eyes (small black spots) round the anterior and down both sides but not easily visible due to the dark colour of the worm.

Feeds on earthworms, snails and other flatworms.

Found in a few locations in UK; also Guernsey, Belgium, France, Spain, Ireland, Italy, Portugal, Madeira and the Azores. The first specimens were found in Guernsey in 2008 but its true identity was established only in 2016. It originates from southern Brazil and Argentina.

Lays black cocoons about 5 mm in diameter. Several hatchlings emerge after a few weeks.

Reference: Carbayo, F, Álvarez-Presas, M, Jones, HD and Riutort, M. 2016. The true identity of *Obama* (Platyhelminthes; Geoplanidae) flatworm spreading across Europe. *Zoological Journal of the Linnean Society of London*, 177, 5-28.

[doi: 10.1111/zoj.12358](https://doi.org/10.1111/zoj.12358).

YouTube:

http://www.youtube.com/watch?v=sZU_ncoawfY



Obama nungara

A specimen about 7 cm long (the holes on the background are 1 cm apart). The narrower end is anterior (right). The white mark indicates the position of the pharynx



Marionfyfea adventor Jones and Sluys, 2016

Very small, 5 mm to 1 cm long; patchy brown with blue-ish almost iridescent spots; plump when contracted, narrow anterior, widest about $\frac{3}{4}$ along the body; oval in cross section. Many small eyes (small black spots) round the anterior end and down both sides.

Feeding unknown.

The small size means that this is easily overlooked. It was only described in 2016, but specimens had been found in Ireland in 1997 (by Dr. R Anderson) but not identified at the time. It almost certainly originated in New Zealand. Few widespread UK records.

Also in Ireland, Denmark, Netherlands, Germany, Belgium and France.

Reproduction unknown, but almost certainly by sexual reproduction and laying small cocoons.

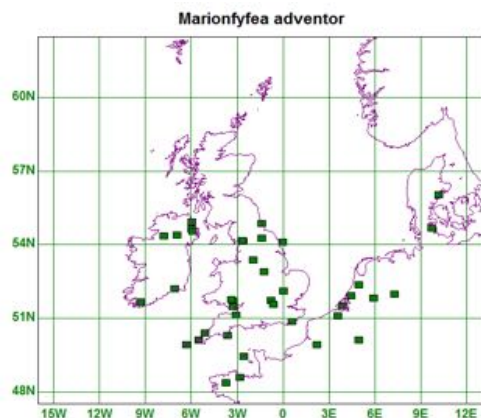


Marionfyfea adventor.
A moderately extended specimen about 1 cm long. Anterior end to the right.

Reference: Jones, HD & Sluys, R. 2016. A new terrestrial planarian of the genus *Marionfyfea* (Platyhelminthes: Tricladida) found in Europe. *Journal of Natural History*, 50, 2673-2690.

<http://dx.doi.org/10.1080/002222933.2016.1208907>.

YouTube: <http://youtu.be/80kQiKqm9UM>



Microplana fuscomaculosa Sluys, Mateos & Álvarez-Presas 2017.

12-15 mm long, beige-brown ground colour densely speckled with mahogany brown spots. A single pair of eyes in pigment-free patches.

A single specimen of this species was found in 2012 in Aston Wood, Aston Rowant, Oxfordshire. It has also been found at one locality in Spain and one in France.

Reference: Mateos, E., Sluys, R., Riutort, M. & Álvarez-Presas, M. 2017. Species richness in the genus *Microplana* (Platyhelminthes, Tricladida, Microplaninae) in Europe: as yet no asymptote in sight. *Invertebrate Systematics*, 31, 269-301.
<http://doi.org/10.1071/IS16038>.



Microplana fuscomaculosa.
Photo: Eduardo Mateos and Marta Álvarez-Presas.



Artioposthia exulans (Dendy, 1901)

1-2 cm long, 1-2 mm wide, slender when extended; dorsal median broad well-defined dark brown stripe and several narrower anastomosing stripes laterally on a dirty-white background; ventral dirty-white with two broad bands of brown.

Numerous small eyes (small black spots) round the anterior end and laterally.

Feeding: not known.

In the UK only found in Newlyn, Penzance (2013) and Penryn (2016 & 2020), all Cornwall. Specimens found near Bantry, Co Cork, Ireland in 2020. Originally found in the Chatham Islands, New Zealand; also found on North Island, New Zealand.

Reproduction: not known, but sexually mature specimens were found. After copulation they are presumed to lay small (about 2 mm diameter) black cocoons with several juveniles hatching after some weeks.

Reference: Jones, HD. & Fenwick, D. 2018. Specimens of a New Zealand terrestrial planarian, *Artioposthia exulans* (Dendy, 1901) (Platyhelminthes: Geoplanidae) from Cornwall, UK. *Journal of Natural History*, 52, 2653-2663. <https://doi.org/10.1080/00222933.2018.1545057>.

YouTube video: <https://youtu.be/I-y0furscUE>

David Fenwick's website (good for other species too):

https://www.aphotofauna.com/worms_flatworms_platyhelminthes_nemertean.html



Artioposthia exulans.
A moderately extended specimen about 2 cm long. The narrower end is anterior.
Photo: David Fenwick.



Specimen found by Julia Cooper near Bantry, Ireland, October 2020. About 1.5 cm long. Photo: H.D. Jones.

Australopacifica atrata (Steel, 1897)

1 to 4 cm long, 1-2 mm wide; intense shiny black dorsally; ventrally a dark mid-line with pale line either side.



Australopacifica atrata. Left: a moderately extended specimen about 1.5 cm long. Right: the underside of a specimen about 3 cm long. Anterior to the left in both.

Many eyes (small black spots) round the anterior end and down both sides but these are not easily visible due to the dark colour of the worm.

Scavenger, feeding on any kind of dead animal (slow worm, mouse, insects, slugs, earthworms), even fallen fruit; many specimens often feeding together.

Few UK records, the first in 2015. A species originally from Australia, first found in 1897. Also found in New Zealand.

Reproduction: mostly through fission, specimens readily fragment to small pieces about 5 mm long *even when gently touched – they are remarkably fragile*, and each portion regenerates. Sexually mature specimens have never been found and as the reproductive system is crucial to generic identification, they are currently in the genus

Australopacifica, a collective genus for undescribed and immature specimens.



Reference: Jones, HD. 2019. Another alien terrestrial planarian in the United Kingdom: *Australopacifica atrata* (Steel, 1897) (Platyhelminthes: Tricladida: Continenticola). *Zootaxa*, 4604, 575-587. <https://doi.org/10.11646/zootaxa.4604.3.12>.

YouTube: <https://youtu.be/q4l7ISaYrl8>

Caenoplana variegata (Fletcher & Hamilton, 1888) [= *Caenoplana bicolor* (Graff 1899)]

2-20 cm long, 2-5 mm wide. Dorsally a yellow midline with two narrow brown stripes. Lateral surfaces very dark purplish-brown, almost black, but may be paler with blue-green shades; colour varies before and after feeding, starved ones paler. Ventrally pale with blue-ish tint, pale midline. Anterior end reddish. Long and thin, almost quadrangular in cross-section when crawling. Numerous small eyes (small black spots, difficult to see) round the anterior end and laterally.

Feeds on almost any arthropod such as woodlice, insects and spiders. They do not touch earthworms, even damaged ones. First found in the UK in 2008, since found in several UK locations (see map). Records also from France, Spain, Ireland, Greece (Crete) and the Netherlands. Origin: New South Wales, Australia.

Reproduces mostly by fission, small pieces 1-2 cm long break off and each regenerates into a larger worm. Most specimens are immature, but some sexually mature specimens have been found.

YouTube: <http://www.youtube.com/watch?v=b6S9fMpzklk>

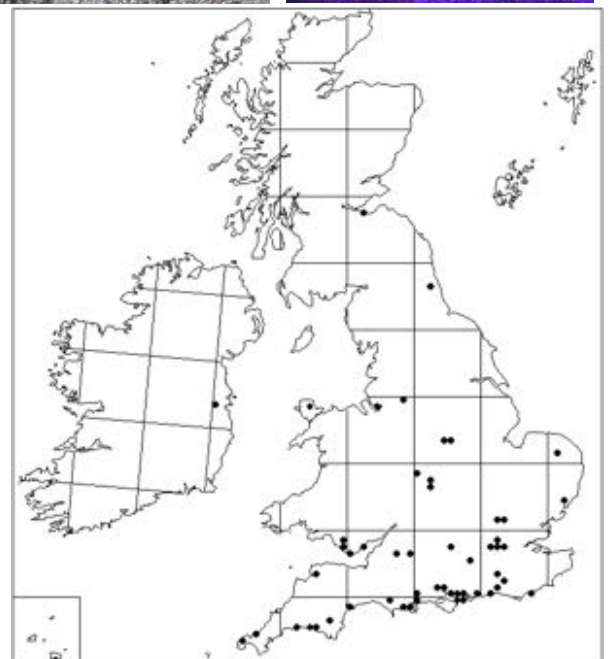
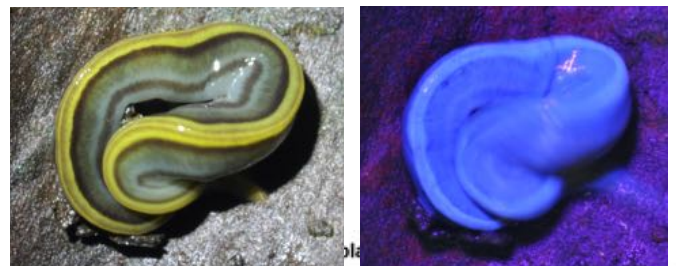
Elimination: this is almost impossible, but put any found into a sealed jar or bottle half filled with water. They will soon decompose (and smell!) and can be poured away.

Taxonomic note: this species has been identified as *Caenoplana bicolor* (Graff, 1899) but there is no distinction between the original descriptions and the 1888 name takes precedence.

Reference: Jones HD, Mateos E, Riutort M & Álvarez-Presas M. 2020. The identity of the invasive yellow-striped terrestrial planarian found recently in Europe: *Caenoplana variegata* (Fletcher & Hamilton, 1888) or *Caenoplana bicolor* (Graff, 1899)? *Zootaxa*, 4731, 193-222. <https://doi.org/10.11646/zootaxa.4731.2.2>.



Upper: *Caenoplana variegata*. A specimen about 8 cm long. The narrow, reddish, end is anterior.
Lower: A specimen photographed in normal and ultra-violet light.



Microplana edwardsi Jones & McDonald 2021



Living worms (A, B, anterior to the left, 1 mm scale in B) are 6-7 mm long, less than 1 mm in width, slightly wider than high, and bluntly rounded anteriorly and posteriorly though the anterior end is narrower. They are creamy-white, with diffuse dark grey pigment anteriorly. The ventral creeping sole is about half the width of the animal. There is a single pair of very small eyes (black dots) near the anterior end.

The only confirmed record is of two specimens from a garden in North Yorkshire, UK. Both were examined anatomically and are fully mature. Nothing is known about their feeding. Three further unconfirmed records.

Reference: Jones, HD & McDonald, JC. 2021. A new species of terrestrial planarian of the genus *Microplana* (Platyhelminthes: Turbellaria; Tricladida: Continenticola) from Yorkshire, United Kingdom; with a discussion of *Microplana humicola* Vejdovsky 1890. *Zootaxa*, 4980, 174-184. <https://doi.org/10.11646/zootaxa.4980.1.11>



Diversibipalium multilineatum (Makino & Shirasawa, 1983).

100-210 mm long, 3-5 mm wide. The expanded semi-circular head is up to 10 mm wide. Very pale brown body ground colour with five narrow black lines; a narrow dark midline which extends onto the head as a small dark patch, and two either side which do not extend onto the head. Ventrally three narrow dark stripes. Feeding: few observations but apparently feeds on earthworms. Distribution: A single specimen was found in Jersey in 2021. There are several records from France (earliest in 2010), Switzerland and Italy. The species was described from specimens found in Tokyo, Japan. Reproduction: by fission and regeneration, small portions (1-3 cm) break off the rear and each develops a head and grows to full size. Sexually mature specimens have never been found. Molecular results (Justine et al., 2018 below) show that specimens from France, Switzerland and Italy have identical CO1 DNA sequences, confirming all are clones and the method of reproduction in the European population.

Taxonomic note: the species is placed in *Diversibipalium*, a collective genus for species not fully described. Until a sexually mature is found and described it is not possible to place it in a described genus (*Bipalium*, *Humbertium* or *Novibipalium*).

Reference: Justine, J-L, Winsor, L, Gey, D, Gros, P, Thévenot, J. 2018, Giant worms *chez moi!* Hammerhead flatworms (Platyhelminthes, Geoplanidae, *Bipalium* spp., *Diversibipalium* spp.) in metropolitan France and overseas French territories. PeerJ, [DOI 10.7717/peerj.4672](https://doi.org/10.7717/peerj.4672) (Open access.)



Upper: a specimen from Jersey. The blunt rear end indicates that it might have recently fissioned. Lower: the head end. Photos © Jody Robert.

