

First incursion of the Asian root mealybug *Ripersiella planetica* in Europe (Hemiptera, Coccoidea, Rhizoecidae)

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The Rhizoecidae is a family of the Coccoidea (HODGSON, 2012) containing 233 species worldwide that are hypogaeic and parasitic on plant roots, hence their common name ‘root mealybugs’ (KOZÁR & KONCZNÉ BENEDICTY, 2007). Several species are economically important plant pests and *Ripersiella hibisci* (Kawai & Takagi, 1971) is a regulated quarantine pest in the European Union (MALUMPHY & ROBINSON, 2004). The Asian root mealybug *Ripersiella planetica* (Williams, 2004) has been found recently in Malta. This is the first incursion (an isolated population of a pest recently detected in an area, not known to be established, but expected to survive for the immediate future - FAO, 2010) of *R. planetica* in Europe, and is the first species of Rhizoecidae recorded from Malta. It has been intercepted previously at Aalsmeer in the Netherlands during a quarantine inspection, on the roots of *Livistona* sp. (Arecaceae) imported from Sri Lanka (Maurice Jansen, *personal communication*, 2012). *Ripersiella planetica* was described from specimens collected from roots of Cactaceae from Pahang, Cameron Highlands, Malaysia (intercepted in quarantine at Kota Kinabalu, Sabah, Malaysia), 5.ix.1998 (WILLIAMS, 2004). It has since been recorded from China and Korea (KOZÁR & KONCZNÉ BENEDICTY, 2007). Its specific name is appropriately based on the Greek word ‘planetikos’, meaning ‘disposed to wander’.

Ripersiella planetica (Williams, 2004)

Synonym: *Rhizoecus planeticus* Williams, 2004

(Fig. 1)



Figure 1: *Ripersiella planetica*, slide-mounted adult female; **Figure 2:** *Rhizoecus albidus*, adult female.

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Material examined. MALTA: Qawra, 13.ii.2012, on the roots of *Sonchus oleraceus*, leg. C. Malumphy. Five slide-mounted adult females are deposited at The Food and Environment Research Agency (FERA) (address below).

The following description of the adult female of *R. planetica* is based on the Maltese specimens. In life, elongate oval, white or cream, covered in a thin layer of powdery wax, 1.79-1.91 mm long and 0.80-1.00 mm wide. Appearance typical for Rhizoecidae, closely resembling other species of *Ripersiella* and *Rhizoecus* (Fig. 2). The mealybugs are small and inconspicuous, and usually first detected by the presence of white wax powder and wax filaments deposited on the roots and soil. There were 20+ mealybugs found at the locality mentioned during February, the majority of which were immature, suggesting that this is the overwintering stage. None of the five adult females collected contained ova. The mealybugs were very slow moving, which may have been due to exceptionally cold conditions at the time. They were infesting the roots of two common sow thistle (*S. oleraceus* L., Asteraceae) plants growing in a neglected, raised concrete flower bed in an urban environment. There were also unidentified succulent plants and grasses in the flower bed, but the mealybug was not found on the roots of these plants. Common sow thistle is a new host species and Asteraceae a new host family for *R. planetica*, as it has only been previously recorded on Arecaceae and Cactaceae. Common sow thistle is almost cosmopolitan in distribution and an invasive weed in many parts of the World. It is very common throughout Europe and most parts of the Mediterranean. *Ripersiella planetica* has been recorded feeding on three unrelated plant families and is likely to have a wider host range than currently reported.

Detailed morphological descriptions and illustrations of adult female *R. planetica* were provided by WILLIAMS (2004) and KOZÁR & KONCZNÉ BENEDICTY (2007). A slide-mounted specimen is illustrated in Fig. 2, showing the elongate oval body, short legs and geniculate antennae. *Ripersiella planetica* can be identified using the keys to *Ripersiella* species of the world by KOZÁR & KONCZNÉ BENEDICTY (2004, 2007), *Ripersiella* species of southern Asia by WILLIAMS (2004), and the key to the subterranean mealybugs (including species intercepted in quarantine) recorded in the Netherlands by JANSEN (2008).

Ripersiella planetica is native to Southern Asia and is likely to have been introduced into Malta on the roots of ornamental plants (not common sow thistle). It has not been recorded having any economic or environmental impact. Root mealybugs are frequently transported with international plant trade, as they are easily overlooked due to their small size and subterranean nature (JANSEN, 2003, 2008; MALUMPHY & ROBINSON, 2004), and several species have been distributed throughout Europe due to anthropogenic activities. Five species of *Ripersiella* have been recorded from Italy, the closest country to the Maltese archipelago: *R. lelloi* (Mazzeo, 1995); *R. periolana* Goux, 1985; *R. poltavae* (Laing, 1929); *R. tritici* (Borchsenius, 1949); and *R. vidanoi* Marotta & Tranfaglia, 1995 (BEN-DOV, 1994; KOZÁR & KONCZNÉ BENEDICTY, 2007), and there is a high probability that examination of plant roots in Malta will reveal some of these and/or other species of Rhizoecidae.

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