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The Asian planthopper *Ricania speculum* (Walker) (Homoptera: Ricaniidae) on several crops in Italy: a potential threat to the EPPO region?

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In August 2014, twenty adults of *Ricania speculum* (Walker) (Homoptera: Ricaniidae) were collected on plants of *Citrus* spp. in La Spezia province (Liguria, Italy). This planthopper, which is native to parts of China and other Asian countries, is highly polyphagous and a pest of several crops such as citrus, cotton, coffee, oil palm and tea. As a newly introduced pest in Europe, *R. speculum* needs to be monitored for its potential spread, especially in Southern European countries and for the damage it may cause to agriculture in the region.

Introduction

The first appearance of *Ricania speculum* (Walker) in Europe was recorded recently in some areas of the Ligurian coast (Mazza *et al.*, 2014). *Ricaniidae* is one of the largest families of Fulgoromorpha and includes approximately 46 genera of planthoppers (Bu & Liang, 2011). The majority of *Ricaniidae* are distributed in the tropics and sub-tropics of the eastern hemisphere, whereas in Europe this family includes only three species, *Ricania hedenborgi S*tål, detected in Greece, in the Afro-tropical region, the Near East and North Africa (Hoch, 2002; Holzinger *et al.*, 2003), *R. japonica* Melichar, introduced in Ukraine and Bulgaria (Nast, 1987; Holzinger *et al.*, 2003; Gjonov, 2011) and *R. limbata* Lallemand in France (Bourgoin, 2013). Some Ricaniids are indicated as major plant pests. The passionvine hopper *Scolypopa australis* (Walker) became a serious pest of kiwifruits in New Zealand, where it was accidentally introduced, and a pest of lesser importance on passion vines (*Passiflora* spp.) and other crops in Australia, where it is a native species (Marshall *et al.*, 2003).

In the case of *R. speculum* Walker, its presence in Italy could be tracked via an Italian entomological forum (Natura Mediterraneo: http://www.naturamediterraneo.com/). Adults and juveniles have been observed in Genoa and some localities of the Eastern Ligurian Riviera such as Carasco, Riva Trigoso, but also in Oristano (Sardinia) since 2009.

When this study was undertaken, there were no official records of the presence of this species in Europe. In August 2014, twenty adults of *R. speculum* were collected on citrus plants grown in gardens of Arcola (La Spezia, Italy) and identified. No juveniles or exuviae were observed.

After the above observations, the presence of the Asian planthopper was recorded on several other host plants within a radius of about 15 Km from the first sighting. On many of the new host plants, eggs and/or adults were observed.

The need for an alert concerning this exotic planthopper, new for Europe and potentially attacking many plants, is considered important because *R. speculum* seems to be spreading quickly in Italy.

Short notes on *Ricania speculum*

Ricania speculum is an Asian planthopper. *Ricania malaya S*tål, 1854 is a synonym of the species, and has also previously been called *Flatoides perforatus* Walker, 1851 and *Flatoides speculum* Walker, 1851 (Bourgoin, 2013). Its distribution, according to the available data, includes Indonesia, Malaysia, China (certain regions), the Philippines, Taiwan, Korea (both in the Republic of Korea and in the Democratic People's Republic of Korea), Vietnam, Japan and India (Hill, 1983; Bourgoin, 2013).

The adults (Fig. 1) have a body length of approximately 7–8 mm and a wing-span of approximately 18 mm; the tip of the abdomen is pointed in males and rounded in females (Fig. 2).

The reproductive female system was described by Lin *et al.* (2011). The fore-wings, kept opened and weakly tilted when the insect rests, are dark brown and variegated pale brown and grey with five irregular transparent spots, two on the lateral wing edge, two at the posterior edge and one in the middle of the wing.

The females lay milky white eggs in batches in the midribs of host plant leaves, covering the tip of the eggs with wax filaments, so that the presence of eggs is relatively evident. The nymphs have a whitish integument (exoskeleton) covered by wax secretions (Solis & Esguerra, 1979). These secretions are produced by wax glands which are particularly abundant on the abdomen tip and responsible for the production of a wax tuft at the body

Fig. 1 Female of *Ricania speculum* laying eggs on *Buddleja davidii*.

Fig. 2 Male (upper) and female (lower) abdomen of *Ricania speculum* adults.

end. The species is highly polyphagous. Some of the most common host plants found in the literature are indicated in Table 1.

Table 1 List of the main host plants of *Ricania speculum*

Host plant	Common name	References
Sorghum bicolor (Poaceae)	Great millet	Hill (1983)
Elaeis guineensis (Arecaceae)	Oil palm	Wilson (1988)
Theobroma cacao (Malvaceae)	Cocoa	Hill (1983)
Coffea spp.(Rubiaceae)	Coffee plant	Hill (1983)
Gossypium spp. (Malvaceae)	Cotton	Hill (1983)
Ceiba pentandra (Malvaceae)	Kapok	Wilson & O'Brien (1987)
Citrus spp.(Rutaceae)	Citrus	Wilson & O'Brien (1987)
Tectona grandis (Lamiaceae)	Teak	Nair *et al.* (1986)
Camellia oleifera (Theaceae)	Tea-oil camellia	Li *et al.* (2013)
Camellia sinensis (Theaceae)	Tea	Xu (2009)
Luffa cylindrica (Cucurbitaceae)	Luffa	Solis & Esguerra (1979)
Pueraria montana (Fabaceae)	Kudzu	Sun *et al.* (2006)
Glycine max (Fabaceae)	Soybean	Dai *et al.* (2010)

In the observations made by the authors, eggs and/or adults of the Ricaniid were found on several wild and cultivated plants. Among the latter, oviposition was recorded on peach tree, poplar, bay-laurel, citrus (lemon tree and orange tree), pear tree and grapevine (Fig. 3).

The species has two generations per year in China, overwintering as juveniles on tree branches or on the soil and litter (Yu, 2007).

The damage reported is due to sap suction and honeydew emission, but in the observations made in this case, honeydew was not observed on plants, while some blackish fecal spots were occasionally found. When the eggs were laid on thin shoots or thorns, the withering of the distal part of these shoots or thorns was observed.

On many crops, *R. speculum* is considered to be a minor pest, but its presence in the Mediterranean area suggests the need for careful monitoring of its spread: the case of the Flatid planthopper *Metcalfa pruinosa* (Say) introduced into Europe about 20 years ago, considered a secondary pest in North America, and which now can cause serious damage to field crops and ornamental plants (Lucchi, 2000; Lucchi & Mazzoni, 2004) reminds us not to underestimate these accidental introductions.

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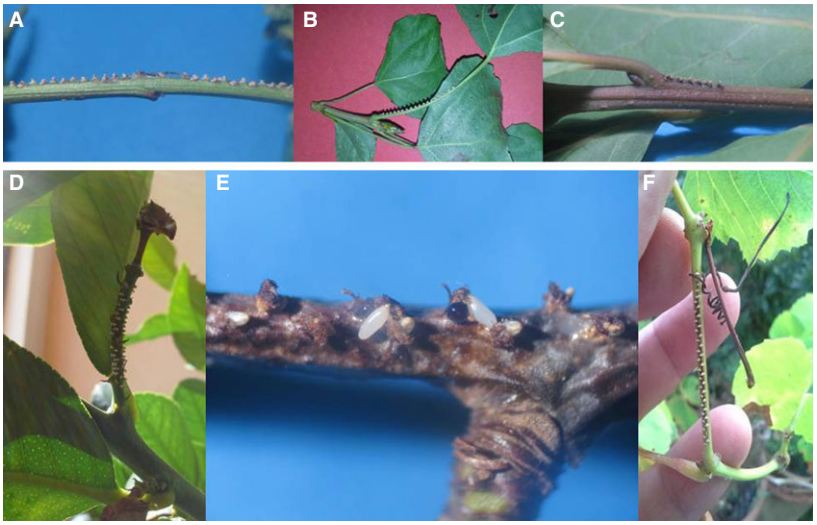

Fig. 3 *Ricania speculum*. Groups of eggs on different host plants: (A) Peach tree (*Prunus persicae*); (B) Poplar (*Populus pyramidalis*); (C) Bay-laurel (*Laurus nobilis*); (D) Lemon tree (*Citrus limon*); (E) Pear tree (*Pyrus communis*); (F) Grapevine (*Vitis* spp.).

Le cicadelle asiatique *Ricania speculum* (Walker) (Homoptera: Ricaniidae) sur plusieurs cultures en Italie: une menace potentielle pour la région OEPP?

En août 2014, 20 adultes de *Ricania speculum* ont été collectés sur *Citrus* spp. dans la province de La Spezia (Liguria, Italie). Cette cicadelle, endémique dans certaines parties de la Chine et d'autres pays asiatiques, est très polyphage et est un organisme nuisible de plusieurs cultures telles que les agrumes, le cotonnier, le caféier, le palmier à huile et le théier. *R. speculum* est un organisme nuisible nouvellement introduit en Europe, dont la dissémination potentielle, en particulier dans les pays d'Europe du sud, doit faire l'objet d'un suivi, ainsi que les dégâts qu'il peut causer à l'agriculture de la région.

Представляет ли потенциальную угрозу для региона ЕОКЗР азиатское полужесткокрылое *Ricania speculum* (Walker) (Hemiptera: Ricaniidae), встречающееся на некоторых сельскохозяйственных культурах в Италии?

В августе 2014 г. двадцать взрослых особей полужесткокрылого насекомого *Ricania speculum* были собраны на цитрусовых в итальянской провинции Специя (Лигурия). Это азиатское полужесткокрылое насекомое, происходящее из некоторых частей Китая и других азиатских стран, считается весьма многоядным и вредящим на таких культурах как цитрусовые, хлопок, кофе, масличная пальма и чай. Являясь новым интродуцированным в Европу вредным организмом, *R. speculum* должно исследоваться в плане его возможного распространения, особенно в южноевропейских странах, а также на предмет возможного ущерба сельскому хозяйству в регионе.

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