

SHORT COMMUNICATION

First record of *Glycaspis brimblecombei* Moore, 1964 (Hemiptera: Psyllidae) in Greece

P.G. Milonas¹ and G.K. Partsinevelos¹

Summary The psyllid *Glycaspis brimblecombei* has been recorded for the first time in Greece. Infested eucalyptus leaves were found in Attica region, Aitoloakarnania and Chania during the summer months of 2013.

Additional keywords: distribution, first record, *Glycaspis brimblecombei*, Hemiptera, redgum lerp psyllid

Psyllids are tiny sap-sucking insects (1-10 mm) of the superfamily Psylloidea, resembling with small cicadas. There are about 3,850 species that have been described worldwide (Li, 2011), where most develop in woody dicotyledons (Burckhardt, 1994; Hodkinson, 1988). One of the most dangerous pests for a variety of eucalyptus species in different regions of the world is the redgum lerp psyllid *Glycaspis brimblecombei* (Hemiptera: Psyllidae). It is native to Australia (Moore, 1964) and introduced into the USA in 1998 (Brennan *et al.*, 1999; Gill, 1998), where the recent years has shown invasive behaviour and spread across several countries (de Queiroz *et al.*, 2013). In Palaearctic region it was detected in Portugal in 2007 (Valente and Hodkinson, 2009), Spain in 2008 (Hurtado and Reina, 2008) and in Italy in 2010 (Laudonia and Garonna, 2010). It has been projected that there is a great potential to colonize in new countries, especially in latitude between 20° and 40° in both hemispheres (de Queiroz *et al.*, 2013).

This work reports the presence of *Glycaspis brimblecombei* in Greece. It was found to infest Eucalyptus trees in Attica region

(Aigina, Vary, Varymbombi, Laurio, Maroussi, Metamorfosi, Neo Irakleio, Peristeri, Kifisia) in June 2013, and in Aitoloakarnania and Chania in July and August 2013, respectively (Figure 1). The identification was done by the first author following the key developed by Laudonia and Garonna (2010). The National Plant Protection Organisation of the Ministry of Rural Development and Food was notified immediately for the presence of the pest in Greece.

Adults of *G. brimblecombei* are 2.5-4mm long, winged, highly mobile, light green to brownish colour with yellow and orange patches (Figure 2). They can easily distinguish from other species from the very long genal processes and the dorsally flat thorax (Laudonia and Garonna, 2010). Detailed morphological description of redgum lerp psyllid has been published by Moore (1964) and Halbert *et al.* (2001).

Eggs are orange-yellowish, stalked ovoid and laid loose by female in new leaves (Figure 3). Larvae are reddish bronze colour with darker wing pads which have bright white spots. Characteristic of its appearance is that larvae are settled and protected from sugary, crystalline white conical cover called lerps, with wax and honeydew excretions resembling with armoured scale insects (Halbert *et al.*, 2001) (Figure 4). Larvae continue to feed and grow under protective

¹ Department of Entomology and Agricultural Zoology, Benaki Phytopathological Institute, 8 St. Delta Str., GR-145 61 Kifissia, Attica, Greece
Corresponding author: p.milonas@bpi.gr



Figure 1. Occurrence of *G. brimblecombei* in Greece.



Figure 2. *Glycaspis brimblecombei* adult.

cover. When larval development completes, adults emerge and start infesting and feeding in new host plants.

The main damage that it causes is tree weakening by suction of sap, where in high population density larvae produce large amounts of waxy secretions and honeydew, and the resulting sooty mould reduce photosynthesis, induce premature leaf drop, growth reduce, branches and shoots die-back and occasionally tree death (Brennan *et al.*, 1999; Paine *et al.*, 2006). Moreover, in urban areas honeydew secretions cause



Figure 3. Eggs and lerps of *G. brimblecombei*.

considerable nuisance (Paine *et al.*, 2006). Laudonia and Garonna (2010) observed 2-4 generations per year in Australia, but there are not available data for life history in Europe.

Glycaspis brimblecombei develops on various *Eucalyptus* species including *E. blakeyi* Maiden, *E. brassiana* Blake, *E. bridgesiana* Baker, *E. camaldulensis* Dehnh., *E. camphora* Baker, *E. dealbata* Cunn. ex Schauer, *E. mannifera* ssp. *maculosa* Baker, *E. nitens* Deane and Maiden, *E. teriticornis* Smith, , *E. lehmannii* (Schauer) Benth., *E. diversicolor* Muell, *E. globulus* Labill, *E. sideroxylon* Cunn ex Woollis, *E. rufida* Endl., *E. cinerea* Muell, *E. cladocalyx* Muell, *E. ficifolia* Muell, *E. grandis* Hill ex Maiden, *E. paniculata* Smith, *E. platypus* Hook, *E. polyanthemos* Schauer, *E. pulverulenta* Sims, *E. robusta* Smith, *E. saligna* Smith, *E. viminalis* Labill, *E. leucoxylon* Meull, *E. macrandra* Muell ex Benth and *E. nicholii* Maiden and Blakely (Brennan *et al.*, 1999; Brennan *et al.* 2001; Hollis 2004; Percy *et al.*, 2012). From the above *Eucalyptus* species, *E. camaldulensis*, *E. rufida* and *E. teriticornis* are moderate to highly susceptible with heavy defoliation



Figure 4. *Eucalyptus* sp. leaves infested by *G. brimblecombei*.

(Brennan *et al.*, 2001) and is considered preferable to avoid their planting.

Economic impact of redgum lerp psyllid may be more serious than other eucalyptus psyllids. *Glycaspis brimblecombei* has a wide host range compared with other eucalyptus psyllids and has impact to nurseries, ornamental and forestry plantations. Life cycle completes in immature and mature leaves and an infestation of this pest can defoliate the host. Continuing defoliation causes stress to the trees and makes them more susceptible to other pathogens and insect infestations (Landsberg, 1990).

A sustainable IPM programme should be performed for sufficient control, as *G. brimblecombei* spreads quickly (Santana and Burckhardt, 2007). Many generalist predators have been recorded to feed on this psyllid, such as coccinellid beetles, lacewings (Erbilgin *et al.*, 2004), syrphids, chrysopids and anthocorids. The parasitoid *Psyllaephagus bliteus* Riek (Hymenoptera: Encyrtidae) has been reported as highly efficient and has been introduced in the USA from Australia in an effort of classical biological con-

trol (Daane *et al.*, 2005; Dahlsten *et al.*, 2005; Huerta *et al.*, 2011; Sime *et al.*, 2004).

Cultural practices and tree health can also affect the psyllid population and the extent of damage. With tolerant varieties, infrequent irrigation and nitrogen fertilization, tree stress can be reduced and avoid damage (Paine *et al.*, 2006). Systemic insecticides provide control sometimes, but generally, their effectiveness in the U.S.A. is considered inappreciable and foliage sprays are not recommended as natural enemies can be harmed (Paine *et al.*, 2006).

P.S.: After finalizing the manuscript for publication and uploading, a paper about the occurrence of *Glycaspis brimblecombei* in Greece was published (Tsagkarakis *et al.*, 2013).

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ΣΥΝΤΟΜΗ ΑΝΑΚΟΙΝΩΣΗ

Πρώτη καταγραφή του *Glycaspis brimblecombei* Moore, 1964 (Hemiptera: Psyllidae) στην Ελλάδα

Π.Γ. Μυλωνάς και Γ.Κ. Παρτσινέβελος

Περίληψη Στην παρούσα εργασία αναφέρεται για πρώτη φορά στην Ελλάδα η παρουσία της ψύλλας του ευκαλύπτου *Glycaspis brimblecombei* (Hemiptera: Psyllidae), σοβαρού εχθρού πολλών ειδών ευκαλύπτων σε διάφορες περιοχές του κόσμου. Το *G. brimblecombei* το οποίο κατάγεται από την Αυστραλία, εισήχθη στις ΗΠΑ το 1998 και από τότε εξαπλώθηκε σε αρκετές χώρες του κόσμου συμπεριλαμβανομένων και χωρών της Μεσογείου. Στην Ελλάδα η παρουσία του διαπιστώθηκε στους Νομούς Αιτωλοακαρνανίας, Χανίων και Αττικής. Ειδικότερα στον Ν. Αττικής διαπιστώθηκε στους δήμους Αίγινας, Βάρης, Αχαρνών, Κηφισιάς, Λαυρεωτικής, Αμαρουσίου, Μεταμορφώσεως και Περιστερίου.

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