

New country, Brazilian states and host records of the eucalypt shoot psyllid *Blastopsylla occidentalis*

Dalva Luiz de Queiroz¹, Wagner de Souza Tavares², Carolina Rodrigues de Araujo³, Daniel Burckhardt⁴

¹Embrapa Florestas, Estrada da Ribeira, Km 111, CP. 319, CEP 83411-000, Colombo, PR, Brazil

²Asia Pacific Resources International Holdings Limited (APRIL), Riau Andalan Pulp and Paper (RAPP), Pangkalan Kerinci, 28300, Riau, Indonesia

³Embrapa Agrobiologia, Rodovia BR-465, Km 7 (antiga Rodovia Rio/São Paulo), Bairro Ecologia, CP. 74.505, CEP 23891-000, Seropédica, RJ, Brazil

⁴Naturhistorisches Museum Basel, Augustinergasse 2, 4001 Basel, Switzerland

*Corresponding author: :
dalva.queiroz@embrapa.br

Index terms:

New geographic records
Forest pest
Forest entomology

Termos para indexação:

Novos registros geográficos
Praga florestal
Entomologia florestal

Abstract – The eucalypt shoot psyllid, *Blastopsylla occidentalis* Taylor, 1985 (Hemiptera: Psylloidea), is reported here for the first time from Burundi, Indonesia (Sumatra), Nicaragua, the Philippines and Yemen. The record from Paraguay is shown to be erroneous. New state records are given for the Brazilian states Bahia, Ceará, Piauí and Rio Grande do Sul. *Eucalyptus viminalis* is listed for the first time as host of *B. occidentalis*.

Novos registros de países, estados brasileiros e hospedeiros para o psilídeo das ponteiras do eucalipto *Blastopsylla occidentalis*

Resumo – O psilídeo das ponteiras do eucalipto, *Blastopsylla occidentalis* Taylor, 1985 (Hemiptera: Psylloidea) é relatado aqui pela primeira vez para o Burundi, Indonésia (Sumatra), Nicarágua, Filipinas e Iêmen. O registro desta para o Paraguai mostrou ser um erro. Novos registros são dados para os estados brasileiros Bahia, Ceará, Piauí e Rio Grande do Sul. *Eucalyptus viminalis* é listado pela primeira vez como hospedeiro de *B. occidentalis*.

Received in 09/11/2017

Accepted in 21/05/2018

Published in 29/06/2018

doi: 10.4336/2018.pfb.e201701533



The majority of *Eucalyptus* (Myrtaceae) species is native to Australia but many of them are planted today in tropical and subtropical regions around the world to supply the demand for wood for pulp, paper, construction, fuel, etc. In Australia, eucalypts host a very diverse fauna of phytophages, in particular insects. These include over 300 species of psyllids (Hemiptera: Psylloidea) (Hollis, 2004), some of which were introduced into other continents following their hosts. Currently, eight Australian species are known to attack eucalypts in other continents: *Blastopsylla occidentalis*

Taylor, 1985, *Cardiaspina fiscella* Taylor, 1962, *Cryptoneossa triangula* Taylor, 1990, *Ctenarytaina eucalypti* (Maskell, 1890), *C. spatulata* Taylor, 1997, *Eucalyptolyma maideni* Froggatt, 1901, *Glycaspis brimblecombei* Moore, 1964 and *Spondylaspis* cf. *plicatuloides* (Froggatt, 1900). Another two species probably also originate from Australia but are currently known only from the West Palaearctic: *Ctenarytaina peregrina* Hodkinson, 2007 and *Platyobria biemani* Burckhardt et al., 2014 (Queiroz et al., 2012; Burckhardt et al., 2014; Hurley, 2014).

Adult *B. occidentalis* resemble tiny cicadas (Figure 1) with their body length ranging from 1.7–2.1 mm in males and 2.0–2.4 mm in females. Immatures are dorso-ventrally flattened and mostly yellow (Figure 2). Detailed morphological descriptions of adults and immatures are available from Taylor (1985) and Burckhardt & Elgueta (2000). A key to separate *Blastopsylla* from other Australian psyllid genera is provided by Hollis (2004).

B. occidentalis reproduces sexually. Its development passes from the egg through five instars to the adult. The females lay their eggs near the apices of twigs, in leaf axils, on small branches and on young leaves. The immatures secrete copious white flocculence and a large amount of honeydew in form of white globules (Figure 3) (Taylor, 1985; Meza & Baldini, 2001a; Queiroz et al., 2012). *B. occidentalis* develops exclusively on *Eucalyptus* and *Corymbia* species (Myrtaceae). Following species are reported as hosts: *C. citriodora*, *E. brassiana*, *E. camaldulensis*, *E. deglupta*, *E. forrestiana*, *E. globulus* (and its ssp. *maidenii*), *E. gomphocephala*, *E. lehmannii*, *E. longirostrata*, *E. conf. microneura*, *E. microtheca*, *E. nicholii*, *E. oleosa*, *E. conf. platypus*, *E. polyanthemus*, *E. robusta*, *E. sideroxylon*, *E. rudis*, *E. saligna*, *E. spathulata*, *E. tereticornis*, *E. urophylla* and a

hybrid of *E. grandis* and *E. urophylla* (= *E. urograndis*) (Burckhardt et al., 1999; Beardsley & Uchida, 2001; Hollis, 2004; Nesar & Millar, 2007; Tamesse et al., 2010; Percy et al., 2012; Queiroz et al., 2012; Yen et al., 2013; Martínez et al., 2014).

The damage caused by *B. occidentalis* is related to its feeding habits. It has piercing-sucking mouth parts, which are inserted into the vascular tissue, sucking the phloem sap and thus obtaining nutrients necessary for its development. The psyllid weakens the host plant, retarding growth and diminishing productivity, especially in nurseries (Meza & Baldini, 2001a, 2001b; Queiroz et al., 2012). It attacks mainly young and to a lesser extent adult plants, concentrating in the apical tips. The most significant damage constitutes leaf senescence and premature shedding resulting in a thinning of the crown. Psyllid feeding can also cause leaf distortion and death of the tips (Figure 4). This may contribute to general loss of vigour in the attacked plants (Satchell, 1999). In addition to feeding damage, psyllids can also inflict indirectly damage to the plants, particularly when the populations are high, by secreting copious white flocculence and globules of honeydew, which favour the growth sooty mould (Figure 5) on the host (Taylor, 1985; Burckhardt et al., 1999; Meza & Baldini, 2001a, 2001b).



Figures 1–5. *Blastopsylla occidentalis*. 1. Adult; 2. Colony of immatures; 3. White and flocculent honeydew and waxes; 4. Death of the tips; 5. Sooty mould on the host.

B. occidentalis originates from Australia, probably Western Australia, and is also recorded from New South Wales, Queensland and South Australia (Taylor, 1985). The species has been introduced into all other continents. Here we provide a list of countries, arranged according to continent, citing always the first country record: Africa: Burundi (reported here), Cameroon (Dzokou et al., 2009), Egypt (El Nasr & Abd-Rabou, 2012), Kenya (Hollis, 2004) and South Africa (Nesar & Millar,

2007); America: Argentina (Bouvet et al., 2005), Brazil (Burckhardt et al., 1999), Chile (Burckhardt & Elgueta, 2000), Mexico (Hodkinson, 1991), Nicaragua (reported here), USA (Taylor, 1985) and Uruguay (Martínez et al., 2014); Asia: China (Hollis, 2004; Li, 2011, as *Blastopsylla barbara*), Indonesia (reported here), Israel (Spodek et al., 2015), the Philippines (reported here), Turkey (Aytar, 2007) and Yemen (reported here); Europe: Italy (Laudonia, 2006), Portugal and Spain (Pérez-Otero

et al., 2011); Oceania: New Zealand (Taylor, 1985). The record from Paraguay by Hollis (2004) and repeated in other publications is erroneous. The sources cited by Hollis (2004) do not mention Paraguay. There is also no respective material in the Natural History Museum, London (D. Ouvrard, pers. comm.) nor in the collections of the Muséum d'histoire naturelle Genève (MHNG) and Naturhistorisches Museum Basel (NHMB).

In Brazil, *B. occidentalis* was reported for the first time from Goiás (Burckhardt et al., 1999) and later reported from Espírito Santo (Resende & Santana, 2008), Minas Gerais, Mato Grosso (Santana, 2008), Mato Grosso do Sul (Burckhardt & Queiroz, 2012), Paraná and São Paulo (Santana, 2008). During recent field work we could find the species also in the states of Bahia, Ceará, Piauí and Rio Grande do Sul.

We have studied specimens from following collections: Muséum d'histoire naturelle, Genève, Switzerland (MHNG), Naturhistorisches Museum Basel, Switzerland (NHMB) and Tel Aviv University, Israel (TAUI):

Brazil: Bahia: many adults, Luiz Eduardo Magalhães, 11°48'–12°07'S 45°10'–45°36'W, 700–750 m, 25.ix.2012 (D. L. Queiroz) #353, 354, 356–360 (NHMB, in 70% ethanol). – Ceará: 4 males, 1 female, Tianguá, Tabocas, 3°48.3'S 40°57.4'W, 840 m, 6.vii.2016, *Eucalyptus viminalis* (plant specimen identified by J.T. Motta, Museu Botânico de Curitiba) (D. Burckhardt & D. L. Queiroz) #221(1) (NHMB, in 70% ethanol). – Piauí: 3 males, 8 females, Parnaíba, campus Embrapa Meio-Norte, 3°05.1'S 41°47.2'W, 60 m, 27–30.vi.2016, *Eucalyptus camaldulensis* (D. Burckhardt & D. L. Queiroz) #207(2) (NHMB, in 70% ethanol). – Rio Grande do Sul: 2 males, 5 females, Cambará do Sul, Parque Nacional de Aparados da Serra, Macieira, S29°08' W50°08', 980 m, 24–27.i.2016, *Eucalyptus* sp. (D. Burckhardt & D. L. Queiroz) #186(7) (NHMB, in 70% ethanol).

Burundi: 1 male, 2 females, Kayanza, 2°55'S 29°37'E, 1800 m, 28–29.i.2011 (A. Freidberg) (NHMB, TAUI, dry mounted).

Indonesia: 3 males, 10 females, 4 immatures, North Sumatra, Sibisa, 2°46'N 99°13'E, 910 m, 11–15.vii.2016, *Eucalyptus urophylla* clone (W. de Souza Tavares) (NHMB, dry mounted and in 70% ethanol).

Nicaragua: 1 male, 1 female, Masaya, vi.1993, at UV light (C. Lecoq & I. Cantamessa) (MHNG, dry and slide mounted).

Philippines: 3 males, 3 females, 12 immatures, Bislig, Mindanao. Surigas del Sur, 4.v.1989, *Eucalyptus deglupta* (R.D. Braza) (MHNG, dry and slide mounted).

Yemen: 1 male, 3 females, Ta'izz, v–vi.2002, at light (A. van Harten & A. R. Al Yarimi) #7429 (NHMB, in 70% ethanol); 1 male, 4 females, same but vii.2002, #7326.

Conclusions

We provide here new country records for Burundi, Indonesia, Nicaragua, the Philippines and Yemen while we show for the record from Paraguay that it is erroneous. New records are given for the Brazilian states Bahia, Ceará, Piauí and Rio Grande do Sul. We also list *Eucalyptus viminalis* for the first time as host of *Blastopsylla occidentalis*.

Acknowledgments

We thank Amnon Freidberg (Tel Aviv) and Toni van Harten (Almada, Portugal) for the loan or gift of material. We are grateful to IAP (permits 002/2017 and 493.13), Prefeitura de Curitiba and Ibama/Sisbio (permits 11832-2 and 41169-6) for granting collecting permits for Brazil and Toba Pulp Lestari (TPL) for permits in Sumatra.

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