

### Mini data sheet on *Thaumastocoris peregrinus*

Added in 2012 - Deleted in 2015

**Reasons for deletion:**

*Thaumastocoris peregrinus* has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries (in this particular case, a specific letter had been sent to eucalyptus-growing countries). The Panel on Quarantine Pests for Forestry and the Panel on Phytosanitary Measures agreed that it could be deleted. In 2015, it was therefore considered that sufficient alert has been given and the pest was deleted from the Alert List.

*Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae) - Bronze bug

Why	<i>Thaumastocoris peregrinus</i> is native to Australia where it feeds on a wide range of <i>Eucalyptus</i> species. The insect has become a pest on <i>Eucalyptus</i> trees in Sydney (AU) where heavy infestations are found on street and garden trees. In 2003, <i>T. peregrinus</i> was first detected in South Africa and in 2005 in Argentina. It has since spread to <i>Eucalyptus</i> trees in Brazil, Uruguay, Chile, Paraguay, Malawi, Kenya, Zimbabwe, Italy and New Zealand. In some cases, heavy infestations have led to tree mortality. Considering the invasive behaviour of this insect and its potential damage to eucalyptus trees, the EPPO Secretariat added <i>T. peregrinus</i> to the Alert List.
Where	Originating from Australia, in the last decade it has spread to many other countries in different parts of the world. <b>EPPO region:</b> Italy (first found in 2011, Lazio region - then found in Campania and Sicilia), Portugal (first found in 2012 near Lisbon). <b>Africa:</b> Kenya, Malawi, South Africa, Zimbabwe. <b>South America:</b> Argentina, Brazil (Bahia, Distrito Federal, Espirito Santo, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo), Chile, Paraguay, Uruguay. <b>Oceania:</b> Australia, New Zealand (first found in 2012 near Auckland).
On which plants	<i>Eucalyptus</i> species (including some <i>Corymbia</i> species, previously classified under <i>Eucalyptus</i> ). <i>T. peregrinus</i> has been recorded on many eucalyptus species: <i>Corymbia citriodora</i> , <i>C. henryi</i> , <i>C. maculata</i> , <i>E. argophloia</i> , <i>E. benthamii</i> , <i>E. botryoides</i> , <i>E. bridgesiana</i> , <i>E. camaldulensis</i> , <i>E. dorrigoensis</i> , <i>E. dunnii</i> , <i>E. globulus</i> , <i>E. gomphocephala</i> , <i>E. grandis</i> , <i>E. longirostrata</i> , <i>E. macarthuri</i> , <i>E. maidenii</i> , <i>E. nicholii</i> , <i>E. nitens</i> , <i>E. paniculata</i> , <i>E. pauciflora</i> , <i>E. punctata</i> , <i>E. robusta</i> , <i>E. saligna</i> , <i>E. scoparia</i> , <i>E. sideroxylon</i> , <i>E. smithii</i> , <i>E. tereticornis</i> , <i>E. urophylla</i> , <i>E. viminalis</i> , as well as hybrids (e.g. <i>E. camaldulensis</i> x <i>biscostata</i> , <i>E. grandis</i> x <i>camaldulensis</i> , <i>E. grandis</i> x <i>nitens</i> , <i>E. grandis</i> x <i>urophylla</i> ). <i>Eucalyptus</i> species present some variability in their susceptibility to the pest, and from the literature it seems that the most serious damage is observed on <i>E. camaldulensis</i> , <i>E. nicholii</i> , <i>E. scoparia</i> , <i>E. tereticornis</i> , and <i>E. viminalis</i> .
Damage	<i>T. peregrinus</i> feeds on <i>Eucalyptus</i> leaves causing leaf discoloration (bronzing, reddening, yellowing), early senescence and stunted growth. Heavy infestations can lead to severe defoliation, branch dieback, and eventually tree death. Severe damage has been observed on urban trees ( <i>E. scoparia</i> and <i>E. nicholii</i> ) in Sydney and tree mortality has been reported from South Africa and Brazil. However, studies about the economic impact could be not found. <i>T. peregrinus</i> is also considered as a nuisance, having been reported to 'sting' people in urban parks and playgrounds. Adults are light brown with a flattened body (2-3.5 mm long). Eggs are dark, oval (0.5 mm long - 0.2 mm wide) with a sculptured chorion. They are laid singly or more often in clusters on leaves and twigs. <i>T. peregrinus</i> has 5 larval instars (or nymphs). All instars can be present on the same leaf. The life cycle is rather short, approximately 35 days (20 days at 17-20°C in laboratory conditions). A female can lay approximately 60 eggs during its lifespan (30 days).

View pictures:	<a href="http://photos.eppo.org/index.php/album/584-thaumastocoris-peregrinus-thmcp">http://photos.eppo.org/index.php/album/584-thaumastocoris-peregrinus-thmcp</a>
Dissemination	Adults and nymphs are agile and can move rather quickly on the leaves. Data is lacking about the potential for natural spread of <i>T. peregrinus</i> . Over long distances, although the exact pathways of introduction remain unknown, <i>T. peregrinus</i> has shown a high potential for spread between continents. Studies on the invasion patterns of <i>T. peregrinus</i> in South Africa and South America have shown that 3 distinct introductions originating from the Sydney area occurred before 2005. These introductions coincide in time with the outbreaks in Sydney that have occurred regularly on urban <i>E. nicholli</i> and <i>E. scoparia</i> during the last decade. In Brazil, natural spread from neighbouring countries (Argentina and Uruguay) but also spread in association with international trade has probably taken place. In the state of Sao Paulo, it is suspected that the pest arrived via airplanes because it was found in eucalyptus trees near the international airports of Viracopos/Campinas and of Guarulhos (near São Paulo city). The pest was found regularly near the main highways of São Paulo (possibly spread by trucks carrying eucalyptus logs with leaves and branches attached).
Pathway	Plants for planting, cut branches, wood? (as a hitchhiker) from countries where <i>T. peregrinus</i> occurs.
Possible risks	In the Southern part of the EPPO region, eucalyptus trees are planted on a large scale for the production of wood, wood pulp, charcoal and biomass fuel. They are also largely used as ornamental trees in parks and gardens in many parts of the EPPO region. Control of <i>T. peregrinus</i> is difficult. Systemic insecticides (imidacloprid) applied as trunk injections have been found to be an effective in controlling <i>T. peregrinus</i> in some urban trees near Sydney in Australia, but this approach cannot be used for large scale application in forest plantations or on large numbers of urban trees. Biological control methods are being investigated. Egg parasitoids ( <i>Clerochoides noackae</i> , <i>Stethynium</i> sp. both Hymenoptera: Mymaridae) have been identified in Australia. In Brazil, several natural enemies have been reported, such as predators, <i>Chrysoperla externa</i> (Neuroptera: Chrysopidae), <i>Atopozelus opsimus</i> (Rhynchota: Reduviidae), and entomopathogenic fungi (e.g. <i>Beauveria bassiana</i> ). However, the efficacy of these potential biological agents remains to be demonstrated. Studies have identified a male aggregation pheromone but for the moment, the potential use of this compound for the management of <i>T. peregrinus</i> in eucalyptus plantations also needs to be further investigated. <i>T. peregrinus</i> is a serious pest of <i>Eucalyptus</i> species in the Southern Hemisphere and could become a forest and urban pest in Southern Europe and in the Mediterranean Basin. Finally, it should be underlined that <i>T. peregrinus</i> is now part of an already a long list of exotic pests of eucalyptus which have recently been introduced into the EPPO region (e.g. <i>Blastospylla occidentalis</i> , <i>Ctenarytaina eucalypti</i> , <i>C. spatulata</i> , <i>Glycaspis brimblecombei</i> , <i>Ophelimus maskelli</i> , <i>Leptocybe invasa</i> , <i>Phoracantha recurva</i> ).
Sources	Carpintero DL, Dellapé PM (2006) A new species of <i>Thaumastocoris</i> Kirkaldy from Argentina (Heteroptera: Thaumastocoridae: Thaumastocorinae). <i>Zootaxa</i> no. 1228, 61-68. Garcia A, Figueiredo E, Valente C, Monserrat V, Branco M (2013) First record of <i>Thaumastocoris peregrinus</i> in Portugal and the neotropical predator <i>Hemerobius bolivari</i> in Europe. <i>Bulletin of Insectology</i> 66(2), 251-256. González A, Calvo MV, Cal V, Hernández V, Doño F, Alves L, Gamenara D, Rossini C, Martínez G (2012) A male aggregation pheromone in the bronze bug, <i>Thaumastocoris peregrinus</i> (Thaumastocoridae). <i>Psyche</i> , 7 pp. doi:10.1155/2012/868474 Hurley B, Slippers B, Wingfield M (2011). <i>Thaumastocoris peregrinus</i> in Africa and South America. In: Supplement to the Montesclaros Declaration. IUFRO meeting (Montesclaros Monastery, ES, 2011-0523/27), p 21. <a href="http://www.iufro.org/science/divisions/division-7/70000/publications/montesclaros-declaration/">http://www.iufro.org/science/divisions/division-7/70000/publications/montesclaros-declaration/</a> Ide M, Ruiz SG, Sandoval C, Valenzuela AEJ (2011) [Detection of <i>Thaumastocoris peregrinus</i> (Hemiptera: Thaumastocoridae) associated to Eucalyptus spp. in Chile]. <i>Bosque</i> 32(3), 309-313 (in Spanish). INTERNET Regione Campania. <i>Thaumastocoris peregrinus</i> Carpintero & Dellapé (Hemiptera: Thaumastocoridae), cimicetta della bronzatura dell'Eucalpto. <a href="http://www.sito.regione.campania.it/agricoltura/difesa/files/Thaumastocoris.pdf">http://www.sito.regione.campania.it/agricoltura/difesa/files/Thaumastocoris.pdf</a> Laudonia S, Sasso R (2012) First record of the bronze bug, <i>Thaumastocoris peregrinus</i> Carpintero & Dellapé (Heteroptera: Thaumastocoridae), a new exotic pest of <i>Eucalyptus</i> trees in Italy.

- [http://www.eppo.int/QUARANTINE/special\\_topics/Thaumastocoris\\_peregrinus/Thaumastocoris\\_peregrinus.htm](http://www.eppo.int/QUARANTINE/special_topics/Thaumastocoris_peregrinus/Thaumastocoris_peregrinus.htm)
- Laudonia S, Sasso R (2012) The bronze bug *Thaumastocoris peregrinus*: a new insect recorded in Italy, damaging to Eucalyptus trees. *Bulletin of Insectology* 65(1), 89-93.
- Martinez G, Bianchi M (2010) [First record in Uruguay of the bronze bug, *Thaumastocoris peregrinus* Carpintero and Dellapé, 2006 (Heteroptera: Thaumastocoridae)]. *Agrociencia* 14(1), 15-18 (in Spanish).
- Martins CBC, Soldi RA, Barbosa LR, Aldrich JR, Zarbin PHG (2012) Volatile chemicals of adults and nymphs of the eucalyptus pest, *Thaumastocoris peregrinus* (Heteroptera: Thaumastocoridae). *Psyche*, 6 pp. doi:10.1155/2012/275128
- Nadel RL, Slippers B, Scholes MC, Lawson SA, Noack AE, Wilcken CF, Bouvet JP, Wingfield MJ (2010) DNA bar-coding reveals source and patterns of *Thaumastocoris peregrinus* invasions in South Africa and South America. *Biological Invasions* 12, 1067-1077.
- Nadel RL, Wingfield MJ, Scholes MC, Lawson SA, Noack AE, Naser S, Slippers B (2012) Mitochondrial DNA diversity of *Cleruchoides noackae* (Hymenoptera: Mymaridae): a potential biological control agent for *Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae). *BioControl* 57(3), 397-404.
- Noack AE, Coviella CE (2006) *Thaumastocoris australicus* Kirkaldy (Hemiptera: Thaumastocoridae): first record of this invasive pest of eucalyptus in the Americas. *General and Applied Entomology* 35, 13-15.
- Noack AE, Kaapro J, Bartimote-Aufflick K, Mansfield S, Rose HA (2009) Efficacy of imidacloprid in the control of *Thaumastocoris peregrinus* on *Eucalyptus scoparia* in Sydney, Australia. *Arboriculture & Urban Forestry* 35(4), 192-196.
- Noack AE, Rose HA (2007) Life-history of *Thaumastocoris peregrinus* and *Thaumastocoris* sp. in the laboratory with some observations on behaviour. *General and Applied Entomology* 36, 27-33.
- NPPO of Italy (2012-10).
- NPPO of Portugal (2014-07, 2014-05).
- Queiroz DL (2009) Pragas exóticas e potenciais à eucaliptocultura no Brasil. Manejo Fitossanitário de Cultivos Agroenergéticos. Sociedade Brasileira de Fitopatologia, 239-249. <http://www.celso-foelkel.com.br/artigos/outros/Pragas%20exoticas%20e%20potenciais%20a%20eucaliptocultura%20no%20Brasil.pdf>
- Ruiz de M SG, Sandoval C, Valenzuela AEJ (2011) [Detection of *Thaumastocoris peregrinus* (Hemiptera: Thaumastocoridae) associated to *Eucalyptus* spp. in Chile]. *Bosque* 32(3), 309-313 (in Spanish).
- Soliman EP, Wilcken CF, Pereira JM, Dias TKR, Saché B, Dal Pogetto HFA, Barbosa LR (2012) Biology of *Thaumastocoris peregrinus* in different eucalyptus species and hybrids. *Phytoparasitica* 40(3), 223-230.
- Sopow S, George S, Ward N (2012) Bronze bug, *Thaumastocoris peregrinus*: a new Eucalyptus pest in New Zealand. *Surveillance* 39(2), 43-46.
- Wilcken CF, Barbosa LR, Nogueira de Sá LA, Soliman EP, Coutinho Lima AV, Dal Pogetto MHFA, Ribeiro Dias TC (2011) Manejo de pragas exóticas em florestas de eucalipto. Proceeding of the II Encontro Brasileiro de Silvicultura (Campinas, BR, 2011-04-11/12), 129-134. <http://www.alice.cnptia.embrapa.br/bitstream/doc/912870/4/LV4021p.129134.pdf>
- Wilcken CF, Soliman EP, Nogueira de Sá LA, Rodrigues Barbosa L, Ribeiro Dias TK, Ferreira-Filho PJ, Rodrigues Oliveria RJ (2010) Bronze bug *Thaumastocoris peregrinus* Carpintero & Dellapé on *Eucalyptus* in Brazil and its distribution. *Journal of Plant Protection Research* 50(2), 184-188.