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New Invasive Aphid in Costa Rica**

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**GREENIDEA PSIDII (HEMIPTERA: APHIDIDAE: GREENIDEINAE)
NEW INVASIVE APHID IN COSTA RICA**

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The genus *Greenidea* comprises about 45 East Asian species of pear-shaped aphids with 6-segmented antennae, long hairy and pale reticulated siphunculi, rounded cauda with a median processus and 7.7.7 setae on first tarsal segments (Sugimoto 2008). The alatae viviparous females are more long-bodied and have longer siphunculi than the apterous ones. About half the species are included in subgenus *Trichosiphum*, in which the reticulation of the siphunculi is confined to the basal region. The genus occurs from Japan to Eastern Australia and from India to the Philippines (Blackman & Eastop 1994, 2006; Sugimoto 2008). They are mainly tree-living aphids and their biology is little known and sexual forms are generally unrecorded.

The apterae of *Greenidea (Trichosiphum) psidii* van der Goot 1916 (Fig. 1) are dark brown with long yellowish-brown siphunculi, apically curved outwards. There is a complete description, under the name *Greenidea formosana* (Maki), in Sugimoto (2008). They live on young shoots and undersides of leaves of species of Myrtaceae (mainly *Psidium guajava* L., but also on species of *Callistemon*, *Eucalyptus*, *Eugenia*, *Malaleuca*, *Metrosideros*, *Rhodomyrtus*, *Syzygium* and *Tristania*); also, samples identified as this species have been recorded on other plants such as *Ficus* (Moraceae), *Glycosmis* (Rutaceae), *Scurrula* (Loranthaceae), *Lagerstroemia* (Lythraceae), *Nesua* (Clusiaceae), *Rhamnus* (Rhamnaceae) and *Engelhardtia* (Juglandaceae) (Halbert 2004; Blackman



Fig. 1. Viviparous apterae and alatae of *Greenidea psidii* on *Psidium guajava*.

& Eastop 2006; Sugimoto 2008). The male of this species was described by Takahashi (1936).

Greenidea psidii has been reported in India, Bangladesh, Nepal, China, Taiwan, Japan (the Bonin Islands; Loochoo (Ryukyu) Islands), Indonesia (Java, Sumatra) and the Philippines; outside its region of origin it was recorded in Hawaii and California (USA) (Beardsley 1993; Gill 1998; Sugimoto 2008). Recently it was intercepted in Florida in a shipment of *Myrtus communis* L. cut flowers from California (Halbert 2004); also, this author wrote that she has a specimen from Australia (Brisbane).

In Costa Rica *G. psidii* was recorded for the first time in the locality of Monteverde (19.ii.08) on *P. guajava* L. and a survey in other areas of the country during 2008 was conducted to delimit its distribution (Fig. 2). The species was recorded in all localities sampled. On *Psidium guajava* it was recorded in the North Region [Aguacate (20.ii), Aranjuez (23.iv), Bijagua (21.ii), Cañas (23.iv),

Dos de Tilarán (20.ii), Filadelfia (23.iv), Hacienda Inocentes (22.ii), Jicarito (21.ii), La Fortuna (20.ii), La Tejona (20.ii), Liberia (22.ii), Limonal (23.iv), Nicoya (23.iv), Quebrada Grande (20.ii), San Rafael de Guatuso (21.ii), Santa Cruz (23.iv), Santa Elena (20.ii) and Upala (21.ii)], in the Central Valley [Coronado (22.iii), San José (22.iii), San José de Alajuela (29.ii), San Pedro (25.ii) and Santo Domingo de Heredia (24.ii)], in the Atlantic Region [Batán (27.iv), Colón Caribe (27.iv), Guápiles (27.iv), Guácimo (27.iv), Manzanillo (27.iv), Penhurst (27.iv), Pocora (27.iv), Puerto Viejo (27.iv), Río Frio (27.iv) and Siquirres (27.iv)], in El Guarco Valley [Cartago (26.ii) and Ujarrás (15.iii)], and in the South Region [Alto de San Juan (4.vii), Ceibo (4.vii), Curre (4.vii), Dominical (4.vii), Florida (4.vii), La Ese (28.ii), Ojochal (4.vii), Olla Cero (4.vii), Palmares (4.vii), Palmar Sur (4.vii), Platanillo (4.vii), San Buena (4.vii), Sonador (4.vii), Tinamastes (4.vii), Uvita (4.vii), Villa Colón (4.vii) and Villa Neily (4.vii)];

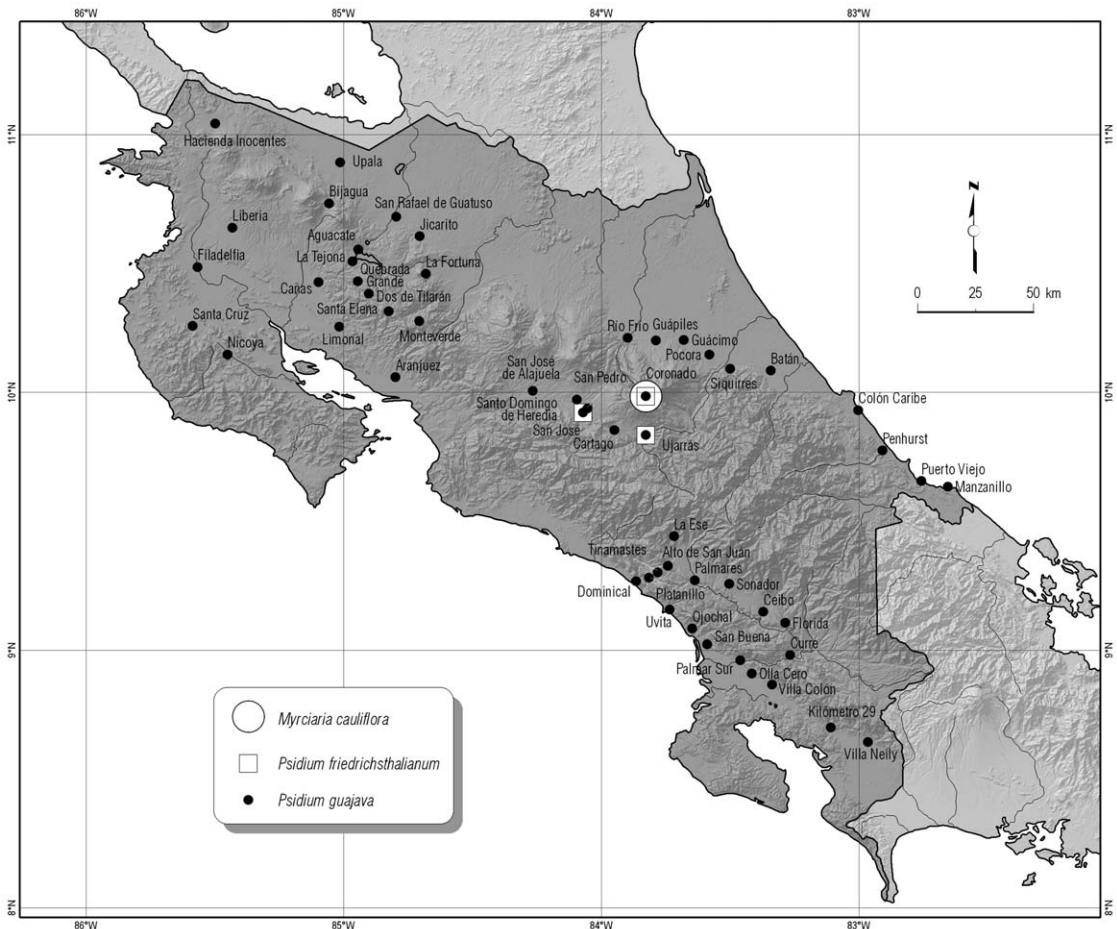


Fig. 2. Distribution of *Greenidea psidii* on *Psidium guajava*, *Psidium friedrichsthalianum* and *Myrciaria cauliflora* in Costa Rica.

on *Psidium friedrichsthalianum* (O. Berg) Nied.) in the Central Valley [Coronado (22.iv) and San José (22.iv)] and in El Guarco Valley [Ujarrás (15.iii)], and on *Myrciaria cauliflora* (Mart.) O. Berg only in the Central Valley [Coronado (22.iv)]. All vouchers are deposited in the aphidological collection of the University of León (Spain).

Given the widespread distribution of *G. psidii* in the country (Fig. 2) and the abundance of its populations, it seems that the introduction of this aphid species occurred a long time ago, although it has never been caught in yellow traps and is therefore not included in the guide of winged aphids of Costa Rica (Voegtlin et al. 2003).

Psidium guajava is an important food crop and medicinal plant in tropical and subtropical countries and is widely used as food and in folk medicine around the world (Pérez Gutiérrez et al. 2008). It is also considered to have been translocated to most tropical and frost-free subtropical countries and naturalized in many others (Howard 1989); for this reason *G. psidii* must probably be more widely distributed in Central America and neighboring countries. To date 8 species of aphids (*Greenidea ficicola* Takahashi 1921, *G. psidii* and 6 polyphagous species) have been recorded on *P. guajava* (Blackman & Eastop 2000), but they are not considered a serious pest for guava trees (Morton 1987). However, further studies and monitoring are necessary to confirm this point.

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SUMMARY

Greenidea (Trichosiphum) psidii van der Goot 1916 is recorded for the first time in Costa Rica and Central America. The species has been recorded on *Psidium guajava*, *Psidium friedrichst-*

halianum and *Myrciaria cauliflora* and seems to be widely distributed in all parts of the country and probably in all Central America.

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