



## White cedar thrips

# *HOLOPOTHRIPS TABEBUIA*



**Figure 1.** White cedar or pink trumpet tree *Tabebuia heterophylla* foliage severely deformed by galls induced by *Holopothrips tabebuia* in Tortola, the British Virgin Islands © Chris Malumphy

### Background

In 2001 *Tabebuia* trees in Florida (USA) were observed with dramatically deformed galled foliage (Figs 1 and 3-5). The cause of this distorted foliage was found to be an exotic unnamed thrips that was subsequently recorded from the Dominican Republic and Puerto Rico. It was described under the name *Holopothrips tabebuia* Cabrera & Segarra (Thysanoptera: Phlaeothripidae) (Cabrera & Segarra, 2008) and spread rapidly across Puerto Rico galling the foliage of the majority of *T. heterophylla* trees present in the country (Jenkins, 2013). It is commonly called the white cedar gall thrips, white cedar thrips and *Tabebuia* gall thrips.

Within the UK Overseas Territories (UKOTs) *H. tabebuia* has only been recorded from the British Virgin Islands where galls were first observed in 2009. The thrips poses a plant health risk to all the UKOTs in the Caribbean, wherever *Tabebuia* species occur.



**Figure 2.** *Holopothrips tabebuia* adult in liquid, showing the bicoloured body and delicate wings © Jeffrey W. Lotz, Florida Department of Agriculture and Consumer Services, Bugwood.org



**Figure 3.** *Holopothrips tabebuia* attacks the new growth of *Tabebuia* species caused the leaf edges to become folded, rolled and crinkled © Chris Malumphy



**Figure 4.** *Tabebuia heterophylla* foliage galled by *Holopothrips tabebuia*; the thrips is having a social impact in the British Virgin Islands where the white cedar *T. heterophylla* is the Territorial Tree and Territorial Flower © Chris Malumphy



**Figure 5.** Apical growth of *Tabebuia heterophylla* can be severely damaged and young plants killed by *Holopothrips tabebuia*, British Virgin Islands © Chris Malumphy

## Geographical Distribution

*Holopothrips tabebuia* is native to the Neotropical region but its precise geographical origin remains unclear. It has been introduced to the USA (Florida, since 2001), Puerto Rico (since 2006), Dominican Republic, Guadeloupe (since 2007), Martinique (since 2007), British Virgin Islands (Tortola, since 2009), and Saint Lucia (misidentified as *H. inquilinus* (Bournier)) (Cabrera & Segarra, 2008; Michel *et al.*, 2008; Jn Pierre, 2008).

Galls on *Tabebuia* plants suspected to be caused by *H. tabebuia* have also been observed in the Bahamas (2012), Dominica, Saba and St. Eustatius.

## Host Plants

*Holopothrips tabebuia* feeds on *Tabebuia* spp. (Bignoniaceae) and exhibits a preference for *T. heterophylla* (pink trumpet tree, white cedar, roble rosada, roble blanco), and to a lesser degree *T. aurea* (silver trumpet tree). The genus *Tabebuia* contains approximately 67 species native to the American Tropics that range from Mexico in the north to Argentina in the south, and throughout the Caribbean.

Small numbers of adult *H. tabebuia* have also been found on black-calabash *Amphitecna latifolia* (Bignoniaceae), calabash *Crescentia cujete* (Bignoniaceae) and umbrella plant *Schefflera actinophylla* (Araliaceae), although there is no evidence of any biological association with these plants because they were lacking galls (Cabrera & Segarra, 2008).

## Description

The adult thrips are about 2.0-2.5 mm in length, have fully developed, delicate wings (Fig. 2) and distinctly bicoloured bodies (Figs 2). The head, thorax and body are mainly yellow to brownish yellow and the tip of the abdomen is dark brown. A detailed morphological description and illustrations of adult *H. tabebuia* are provided by Cabrera & Segarra (2008).

*Holopothrips* is a Neotropical genus of about 30 described species (Mound, 2007) that may be identified with the key by Mound & Marullo (1996). Using this key, *H. tabebuia* keys out closest to *H. inquilinus*, a species described from cecidomyid galls on an unspecified host on Guadeloupe (Bournier, 1993). The two species are readily distinguished morphologically using the descriptions provided by Cabrera & Segarra (2008).

## Biology

Adults and larvae of *H. tabebuia* feed on the young foliage at the growing tips, inducing obvious deformations (Figs 1 and 3-5) that become more conspicuous as the infested leaves mature. The leaf edges become crinkled, folded and rolled producing a gall in which all developmental stages of the thrips coexist. The galling is usually much more pronounced on the foliage of *T. heterophylla* than on other *Tabebuia* spp.. In Puerto Rico the severity of the attack seems more prevalent in humid districts (Cabrera *et al.*, 2008). The anthocorid bug *Montandoniola moraguezi* Puton (Hemiptera: Anthocoridae) has been observed predated on the thrips inside the galls. Mealybugs (Pseudococcidae) also occur inside the thrips galls.

## Dispersal and Detection

The thrips is most likely to be first detected by the presence of the conspicuous galls (Figs 1 and 3-5). There appears to be no published research on the dispersal rate of *H. tabebuia* but the adults are winged and it was recorded spreading rapidly in Puerto Rico wherever suitable host plants were available. It has also spread rapidly in Tortola, British Virgin Islands.

## Economic Impact

There do not appear to be any published reports of *H. tabebuia* having a significant economic impact but it has killed young plants in the British Virgin Islands. *Holopothrips tabebuia* is common and widespread in Puerto Rico and Tortola causing conspicuous galling to the young foliage of *T. heterophylla*, yet infested mature trees continue to flower and produce seeds. The long term affects to the plants are unknown.

The extensive galling of new growth reduces the aesthetic appearance of the plants and therefore may lower their commercial value in nurseries. The thrips may have a more significant social impact in the British Virgin Islands, where the white cedar is the Territorial Tree and Territorial Flower.

## Advisory Information

In most cases, chemical control is not warranted in the landscape. Young trees or high value trees in public areas may require management. Systemic pesticides recommended for thrips on ornamental plants may work. Pruning damaged leaves may help suppress the thrips numbers. Before using any pesticides the appropriate government body or plant protection service needs to be contacted to check the current regulations and the label instructions must be followed.

## References

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