

## New thrips pest of orchids

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### Introduction.

The cultivation of orchids as a serious hobby or a horticultural profession has an economic turnover in Australia of many millions of dollars annually. A number of thrips pests are known to affect native and cultivated orchids in Australia and this Primefact focuses on another thrips pest only recently recorded on orchids in Australia.

### Thrips as orchid pests in Australia

Very few pest thrips are associated with orchids in Australia. The species that are established in Australia that have occasionally be found on orchids include the Onion thrips (*Thrips tabaci* Lindemann), the plague thrips (*Thrips imaginis* Bagnall) and the citrus thrips (*Pezothrips kellyanus* (Bagnall) (APPD, 2008). Species of thrips in the genus *Dichromothrips* are specialist orchid feeders with *D. spiranthidis* (Bagnall) and *D. australiae* Mound both recorded as endemic and feeding on the flowers of ground orchids (Mound & Calder 2001). *Dichromothrips corbetti* (Priesner), a recent SE Asian introduction, has been recorded from vandaceous flowers in the Northern Territory (Mound 2002). This species has been a regular visitor to our shores as an occasional quarantine intercept on orchids. Other such intercepts include *Thrips palmi* Karny (now also established in tropical Australia), *Frankliniella* sp. and *Limotheptis cerealium* (Haliday) (also now established in Australia) (APPD, 2008). The occurrence of all these species on orchids is infrequent and likely to cause minimal impact to orchid growth, were they to be found. Most of these species have been found in association only with orchid flowers and only a few on the foliage. Damage to orchid plants from thrips tends to be limited to feeding damage, although a number of the species listed above have also been implicated with virus transmission but not with orchids (Lewis, 1997). Recently, the

discovery of *Helionothrips errans* (Williams) (Fig. 1) damaging orchids in NSW, represents the first record of this species in eastern Australia and the second record for Australia. It is unclear how widespread this species is in Australia. This is a species of thrips that specialises in feeding on orchid leaves and was found to cause extensive damage.

### *Helionothrips errans* biology

The minute yellow/green eggs are laid in the orchid



Fig.1 Adult *Helionothrips errans* (Scale bar=1mm)



Fig. 2 Nymphs and damaged orchid leaves (nymphs about 0.4mm long)

leaves by the adult female. After about a week, an immature (or nymph) emerges and starts feeding on the leaf surface. The nymphs go through four stages before becoming adults, with all stages feeding on the orchid leaf tissues. The nymphs are pale yellow in colour and are wingless and very small (less than 0.5 mm) (Figs 2 + 3). The nymphs pupate and the very dark adults emerge. The adults appear shiny black and are relatively docile. The adults are little more than a mm long (Fig 1). All life stages feed on the leaf surface. It is likely under optimal conditions (eg in a glass house) that the entire life cycle can be completed in about a month. The feeding damage results from these pests sucking the cell contents from the epidermal and underlying cells of the orchid leaf giving initially a 'silvered' look to the leaf but this quickly browns and dies off, possibly causing leaf fall of extensively damaged plants.

#### What orchids does it damage?

*H. errans* does not seem to have a preference and has been recorded on the leaves of *Cymbidium*, *Cattleya*, *Cattleya* hybrids, *Dendrobium*, *Dockrillia*, *Sarcochilus* and *Bulbophyllum*. It will undoubtedly damage orchids in other genera as well. It does prefer rapidly growing plants like seedlings (flask

stock) but will also damage the leaves of mature plants.

#### How can I be sure that I have *Helionothrips errans*?

Most of the thrips found on orchids in Australia are a pale colour as adults, whilst a few are dark none is as dark as *H. errans*. The wings of adults of *H. errans* are dark with a pale stripe near the tip and the body of *H. errans* is highly sculptured, both of these features being absent in the other species. To see these features you will likely require the use of hand lens. Damage will usually be restricted to leaves of orchids in the case of *H. errans* whilst in other species, the flowers are the usual feeding targets. It is easy to identify the nymphs of these pests with a hand lens. If in doubt about identification please consult with your local primary industries office about how samples can be identified.

#### OK, So I have *Helionothrips errans*, what do I do now?

Management of pest thrips can be problematic in some cases because of their small size but it should be relatively straight forward for this species. Careful examination of orchid plants, and



Fig. 3. Detail of young nymph and cell damage

particularly seedling orchids, should be done to check for the presence of the adults or nymphs. Special care should be taken when purchasing or trading orchid specimens, to examine the orchid leaves for damage or the presence of nymphs or adults. Infested plants should be isolated from other orchids and treated for this pest. A variety of pesticides and low impact formulations are commercially available to control thrips in ornamental plants. Care should be taken to follow the directions on the label. Be sure that the sprays reach the undersides of the orchid leaves where these pests prefer to feed.

## References

- APPD (2008). Australian Plant Pest Database. Viewed 10 June 2008.  
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- Mound, L.A. (2002). Thrips and their host plants: new Australian records (Thysanoptera: Terebrantia). *Aust. Entomol.* 29: 49-60 [53] (damaging flowers of *Vanda* sp.)
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