Dear Ian,

Thank you for showing us around the Sheffield Botanical Gardens last Tuesday. It was my first visit to the gardens and I was very impressed. As an entomologist I have to confess that I more interested in the pests that you have in the Pavilions than the plants. I took a small numbers of samples, on which I found 20 invertebrate taxa listed below. I must thank Sara Redstone of the Royal Botanic Gardens Kew for helping me search for pests and for identifying some of the host plants. My colleague Sharon Reid identified the aphids and Mark Delaney identified the thrips. I did not attempt to identify the mites to species.

As you probably know, thrips, aphids and mealybugs are the most common pests found in the Pavilions although this is likely to change as the season progresses. The *Howea forsteriana* had a large infestation of *Aspidiotus nerii* and the *Argyranthemum* sp. had extensive mining by *Chromatomyia ?syngenesiae*. One of the most interesting pests was the bamboo aphid *Takecallis taiwanus*, which is rarely recorded in Britain.

I trust that this report will not alarm you as several other botanical collections that I have looked at have many more pest species present.
List of arthropods found on plants growing in the Pavilions at Sheffield Botanical Gardens on the 23rd March 2010

Class: **ACARI** – mites

Order: **Astigmata**  
Family: **Acaridae**  
1. **Tyrophagus** spp. – mould mites  
Primarily mould feeders but will feed on ornamental plants causing chlorosis.  
Several adults on *Citrus medica*.

Order: **Mesostigmata**  
Family: **Phytoseiidae** – predatory mites  
2. Unidentified  
Predatory, often used for biological control.  
Single adult on *Citrus sinensis*.

Order: **Prostigmata**  
Family: **Tetranychidae** – spider mites  
3. Unidentified  
There are two species commonly found in botanical collections, *Panonychus citri* (McGregor) and *Tetranychus urticae* (Koch).  
Dead nymph, feeding damage and webbing found on *Citrus paradisi* and unidentified plants.

Class: **INSECTA** – insects

Order: **Hemiptera** – bugs  
Family **Aleyrodidae** – whiteflies

**Trialeurodes vaporariorum** adult  
**Trialeurodes vaporariorum** puparium

While all reasonable care is taken to ensure the accuracy and reliability of our identifications based on the sample submitted, no liability can be accepted by the Food and Environment Research Agency or its staff, nor the Department for Environment, Food and Rural Affairs in respect of any loss, damage or injury, howsoever caused, which may be suffered as a result of this work.
4. *Trialeurodes vaporariorum* (Westwood) – glasshouse whitefly
Cosmopolitan, polyphagous, major crop and ornamental pest.
Abundant, all developmental stages on *Eriobotrya japonica*, *Hibiscus* sp., *Reinwardtia indica* and *Solanum* sp.. Many of the puparia were parasitised.

Family **Aphididae** – aphids, greenfly, blackfly
In addition to the aphid species listed below there were unidentified aphid nymphs on *Argyranthemum* sp., *Eriobotrya japonica*, *Hibiscus* sp., Liliaceae and *Solanum* sp..

![Aulacorthum solani](image)

6. **Aulacorthum solani** (Kaltenbach) – glasshouse/potato aphid
Cosmopolitan, polyphagous.
Sparse, adults on *Phyllostachys* sp..

![Macrosiphum euphorbiae](image)

7. **Macrosiphum euphorbiae** (Thomas) – potato aphid
Cosmopolitan, polyphagous.
Adults and nymphs abundant on *Camellia sinensis*, *Datura* sp., *Eriobotrya japonica* and *Fuchsia arborescens*. 
8. **Myzus** sp.

Strongly suspect *Myzus persicae* (Sulzer), a cosmopolitan, polyphagous species.

Nymphs on *Fuchsia arborescens*

9. **Neomyzus circumflexus** (Buckton) – crescent-marked lily aphid

Cosmopolitan, polyphagous.

Single adult on an unidentified plant.

10. **Takecallis taiwanus** (Takahashi) – a bamboo aphid

Rarely recorded in Britain.

Large population on *Phyllostachys* sp.

**Family: Coccidae**

11. **Coccus ?hesperidum** Linnaeus – brown soft scale

Cosmopolitan, polyphagous.

Small numbers of nymphs found on *Citrus reticulata*, *Citrus sinensis* and *Metrosideros excelsa*.
12. *Pulvinaria flocifera* (Westwood) – cottony camellia scale

Cosmopolitan, polyphagous; this species has recently become far more important as a pest outdoors in the UK.

Small numbers on *Camellia sinensis* and *Pittosporum tobira*.

13. *Saissetia coffeae* (Walker) – hemispherical scale

Cosmopolitan, polyphagous.

Adult females on *Howea forsteriana* and *Solanum* sp..

Family: **Diaspididae**
14. *Aspidiotus nerii* Bouche – oleander scale
Cosmopolitan, polyphagous.
Large infestation on *Howea forsteriana*.

**Family: Pseudococcidae**

*Pseudococcus viburni*

15. *Pseudococcus viburni* (Signoret) – glasshouse mealybug
Cosmopolitan, polyphagous.
Relatively low numbers, mostly immature, on *Citrus medica*, *Citrus*, *sinensis*, *Citrus paradisi*, *Cordyline* sp., *Eriobotrya japonica*, *Hibiscus* sp., *Pittosporum tobira*, *Phoenix roebellini*, *Liliaceae*, *Musa velutina*, *Solanum* sp., *Tetrapanax papyrifex* and unidentified plants.

**Order: Diptera - flies**

**Family: Agromyzidae**

*Chromatomyia syngenesiae* leaf mine

*Chromatomyia syngenesiae* pupa

4. *Chromatomyia ?syngenesiae* Hardy – chrysanthemum leafminer
Extensive mining on *Argyranthemum* sp.. Large numbers of live pupae and one adult female. An adult male is required for positive species identification.
Order: **Lepidoptera** – butterflies and moths

Family: **Noctuidae**
16. Unidentified
One noctuid egg found on *Phyllostachys* sp..

Family: Unidentified
17. Chewing feeding damage on *Eriobotrya japonica*.

Order: **Neuroptera**

Family: **Chrysopidae** – lacewings
18. Unidentified
One live larva. Predatory on aphids and other arthropods.

Order: **Psocoptera** – bark lice

Family: Unidentified
19. Bark lice found on *Citrus paradisi*, *Hibiscus* sp. and unidentified plants.

Order: **Thysanoptera** – thrips

Family: **Thripidae**

*Hercinothrips haemorrhoidalis*  
Feeding damage
20. **Hercinothrips haemorrhoidalis** (Bouche) – black greenhouse thrips

Cosmopolitan, polyphagous.

Abundant (adults and larvae) and extensive feeding damage to many host plant species including *Callistemon* sp., *Citrus sinensis, Citrus medica, Citrus paradisi, Eriobotrya japonica, Ficus* sp., Liliaceae, *Metrosideros excelsa, Phoenix roebelinii, Rhododendron 'Hairy Tagg', Howea forsteriana, ?Jasminum* sp., *Hibiscus* sp. and unidentified plants.

I can provide more photographs and further information, if required. I would be grateful if you would let me know if you spot any mistakes in the plant names. Please do not hesitate to send me any samples of pests that you would like identifying?

Yours sincerely,

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