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Final Report – Samples collected at Sheffield Botanical Gardens

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.

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**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

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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

6. ***Aulacorthum solani*** (Kaltenbach) – glasshouse/potato aphid

Cosmopolitan, polyphagous.

Sparse, adults on *Phyllostachys* sp..



Macrosiphum euphorbiae

7. ***Macrosiphon euphorbiae*** (Thomas) – potato aphid

Cosmopolitan, polyphagous.

Adults and nymphs abundant on *Camellia sinensis*, *Datura* sp., *Eriobotrya japonica* and *Fuchsia arborescens*.



Myzus persicae

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**



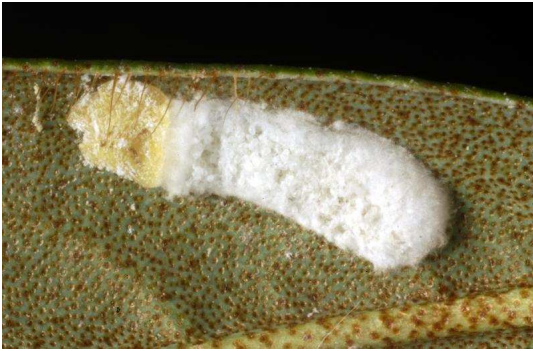
Coccus hesperidum



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

Cosmopolitan, polyphagous.

Small numbers of nymphs found on *Citrus reticulata*, *Citrus sinensis* and *Metrosideros excelsa*.



Pulvinaria floccifera adult female with ovisac



Pulvinaria floccifera nymphs

12. *Pulvinaria floccifera* (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*.



Saissetia coffeae adult female



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

Cosmopolitan, polyphagous.

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

Family: Diaspididae



Aspidiotus nerii adult female scales



Aspidiotus nerii causing leaf distortion

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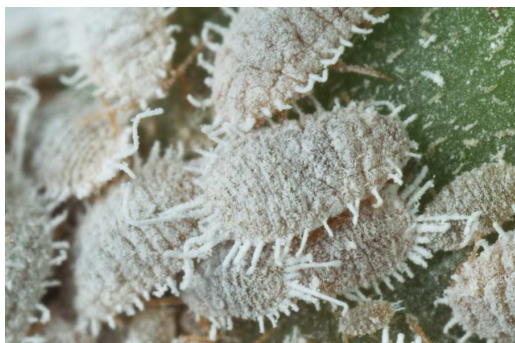
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14. ***Aspidiotus nerii*** Bouche – oleander scale

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 roebelinii*, 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.

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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



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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,

Chris Malumphy

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