Peter Lillywhite
Senior Collection Manager
Entomology/Arachnology
Museum Victoria (Aust.)
THE PROCESSES, END USES AND UNEXPECTED BONUSES OF HIGH RESOLUTION IMAGING OF ENTOMOLOGY COLLECTION ITEMS

Salticidae
_Lycidas_ sp.6
Using imaging techniques to bring Museum collections to a wider audience is nothing new.
McCoy’s Prodromus
1878 - 1890
• In 2003 the Entomology Dept at Museum Victoria first started working with high resolution, stacked images.
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• Funding sources:

Money from Federal Department of Agriculture, Fisheries and Forestry DAFF and Plant Health Australia through Australian Quarantine and Inspection Services AQIS
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• Initially this paid for equipment and software, later a dedicated technician
PaDIL

An online tool for the identification of plant pests and diseases for the purposes of biosecurity control.
PaDIL – High quality images and Information tools designed for Biosecurity and Biodiversity.

Biosecurity and Biodiversity: protecting against invasive pests and diseases and discovery of native species.

The Plant Biosecurity Cooperative Research Centre (PBCRC) has taken over responsibility for maintaining PaDIL during 2014 pending the development of a Business Plan to determine its future role and viability.

During this period, please email padil@pbcrc.com.au for all PaDIL related enquiries.

Search-lite.

Search-lite is the simplest and fastest way to find something in PaDIL.
Large elm beetle

Scolytus scolythus (Fabricius, 1775)
(Coleoptera: Curculionidae: Scolytinae: Scolytini)

Head front male

Caption: Piesch-Olifu, Sil, CNHM 1955, Karl Branski
Coll. ex. Edward Knirsch

Source: Simon Hinkley & Ken Walker Museum Victoria

Diagnostic Images (10)
Diagnostic Images (10)

Other Images (6)

Diagnostic Notes
Cylindrical bark beetle with a shiny black pronotum and red-brown elytra; abdomen has a declivity with tubercles on the third and fourth sternites (more so in the male); edge of frons above mandibles has a minute tubercle on either side; male body length 3-5mm, frons flat, with dense cover of hair; laterocaudal regions of elytra with row of long, yellow bristles; female body length 4-5mm, frons weakly convex and with weak cover of short hair.

Source:

Related Species
- almond bark beetle - [Scolytus amygdali]
- White beech bark beetle - [Scolytus carpini]
- elm bark beetle - [Scolytus ensifer]
- European oak bark beetle - [Scolytus intricatus]
- Kirsche bark beetle - [Scolytus kirschi]
- middle elm tree split bark beetle - [Scolytus laevis]
- Larger shothole borer - [Scolytus mali]
- European elm bark beetle - [Scolytus multistriatus]
- Elm bark beetle - [Scolytus pygmaeus]
- The birch sapwood borer - [Scolytus rathzeburgi]
- Shothole Borer - [Scolytus rugulosus]
- Banded elm bark beetle - [Scolytus schevyrewi]
- bark beetle - [Scolytus sulcifrons]

More Information
- Author: Walker, K.
- Created: 30/04/2006 11:22 AEST
- Last Updated: 27/09/2010 09:54 AEST
- Image Use: Free for use under the Creative Commons Attribution 3.0 Australia License
Large elm beetle

Scolytus scolytus (Fabricius, 1775)
(Coleoptera: Curculionidae: Scolytinae: Scolytini)

Male Sternal characters

- No lateral sternal teeth
- Abdominal spines posteriorly on sterna 3 & 4

Caption: Pietsch-Ohliu, SII, CNHM 1955, Karl Branske
Coll. ex Edward Knirsch

Source: Simon Hinkley & Ken Walker Museum Victoria
Museum Victoria, Insect Primary Type Imaging Project
HOLOTYPE
T-11867
Asarapoda
meltonensis

This and many more of them were buzzing around and alighting on Loranthus.

Asarapoda ♀
meltonensis

TYPE
Asarapoda meltonensis, holotype T 11867, dorsal view.
Capturing high resolution images of whole drawers of insect specimens
Hasselblad H4D-200MS Camera
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<td>Paul, David</td>
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Description
Buprestidae, Jewel Beetle. Dry collection specimen
The bar-coding process
Better pictures of individual, single species, unit trays
Visionary Digital BK Plus Lab System
Educational and Exhibition related by-products of the programs
• School Holiday program. The variations in insect antennae
• School Holiday program. The variations in insect antennae
• Posters. The alphabet and number found in butterfly wings
• School Holiday program. The variations in insect antennae
• Posters. The alphabet and number found in butterfly wings
• Exhibitions. The Art of Science
Field guides

• Mobile phone and tablet apps.
  Bunurong Marine Park Field Guide.
  Field Guide to Victorian Fauna
BUNURONG Marine National Park
Field Guide

Explore diverse wildlife and discover outdoor activities on offer in the Bunurong Marine National Park on Victoria’s eastern coastline.
**Bivalve Mollusc**

*Spisula trigonella*

**Identifying Characteristics**

The shells of this species are small, quite solid, chalky and more or less triangular in shape. External coating (periostracum) brown. Hinge with grooved 'teeth'. Shell up to 25 mm across.

**Biology**

This species can be the dominant species in some locations. It is recorded by some earlier authors under a different scientific name.

**Diet**

Organic matter

**Habitat**

In sand and mud areas, particularly at river mouths, to depth of 1 m.

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**Commercial Scallop**

*Pecten fumatus*

**Brief Description**

One valve concave and one valve flat, 12-16 radial ribs.

**Identifying Characteristics**

Shells of this species are characterised by a flat left valve, and a strongly convex right valve, each with 12-16 strong radial ribs. The external shell colour is extremely variable among specimens, ranging from light brown to pink and orange. Shell up to 14 cm across.

**Biology**

Commercial Scallops were thought to be a number of different species because patterns on their shells are extremely variable, but genetic studies have shown...
MUSEUM VICTORIA
FIELD GUIDE
TO VICTORIAN FAUNA

Explore Australia’s unique and diverse wildlife at home or in the field.

Animals  About
Field guides

• Mobile phone and tablet apps. Bunurong Marine Park Field Guide.

Field Guide to Victorian Fauna

• Books. Moths of Victoria series
**Anisozyma insperata (Walker, 1861)**

- **Dromana**
  - 16 November, 1980
  - Wingspan: 24.5 mm
  - Collector: D.R. Holmes

- **St Kilda**
  - 25 October, 2005
  - Wingspan: 27 mm
  - Collector: A. Kallies

**Adult flight times**

96 specimens (Melbourne Museum, ANIC, A. Kallies, M. Hewish, author)

**Victorian localities include:**
- Brighton, Red Hill, Tyers Junction,
  - Gipsy Point

**Australian distribution:**
- Also Queensland, NSW (ANIC)

**Notes:**
- Larvae feed on *Cherry Ballart (Exocarpos cupressiformis)*. Males are far more common at lights than females.

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**Anisozyma metaspila (Walker, 1861)**

- **Gembrook**
  - 27 January, 2009
  - Wingspan: 31 mm
  - Collector: P. Marriott et al.

- **Tynong North**
  - 3 February, 2007
  - Wingspan: 32 mm
  - Collector: A. Kallies et al.

**Adult flight times:**

The Victorian records are for January and February.

**Victorian specimen data:**
- 3 specimens (A. Kallies, author)

**Victorian localities include:**
- Gembrook, Tynong North

**Australian distribution:**
- Also Queensland, NSW

**Notes:**
- Victorian specimens are among the more strongly marked of this variable species. This species may belong to the genus *Eucyclodes*. The name used here is from The Checklist of Australian Lepidoptera (1996).
• Data and Image aggregation sites such as: The Atlas of Living Australia
Australia's natural history collections

Learn about the institution, the collections they hold and view records of specimens that have been databased. Currently only the collections of Australia partners are shown. Over time this list will expand to include all natural history collections in Australia.

Click a button to only show those organisms.

**All collections**
Show all 164 collections.

**Fauna**
Mammals, birds, reptiles, fish, amphibians and invertebrates.

**Insects**
Insects, spiders, mites and some other arthropods.

**Microorganisms**
Protists, bacteria, viruses, microfungi and microalgae.

**Plants**
Vascular plants, algae, fungi, lichens and bryophytes.

164 collections in total.
159 collections are currently visible on the map.
### Rights
Dataset licensed under Creative Commons Attribution (CC-BY) 4.0 Australian license. Use of data of individual specimen occurrences does not require attribution on a per record basis.

### Associated Occurrence Status
Associated record

### Inferred Associated Occurrences
The occurrence is associated with a representative record. For more information see [inferred associated occurrence details](#).

### Institution id
NMV

### Photographer
Hoath, Kristy

### Collection code
Entomology

### Occurrence status
present

### Dataset id
Entomology

### Language
en

### Owner institution code
NMV

### Collection id
urn:uuid:biocoll.col:34978

### Taxonomy

#### Higher classification
Animalia; Arthropoda; Uniramia; Insecta; Coleoptera; Scarabaeoidea; Cetoniinae

#### Scientific name
*Dichotheza walteri*
Supplied scientific name "*Dichotheza walteri* Lea"

#### Original name
*Dichotheza walteri* Lea

#### Taxon rank
Species

#### Common name
Species

#### Kingdom
ANIMALIA

#### Phylum
ARTHROPODA

#### Class
INSECTA
Supplied as "Animalia; Arthropoda; Uniramia; Insecta; Coleoptera; Scarabaeoidea; Cetoniinae"

#### Order
COLEOPTERA

#### Family
SCARABAEIDAE

#### Genus
*Dichotheza*

#### Species
*Dichotheza walteri*

#### Taxonomic issues
No issues

#### Name match matrix
Canonical name match
Occurrence record: Entomology:T3225

Melobasis radiola

Dataset

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Images

Photographer: Gibson, Lucinda

Rights: Dataset licensed under Creative Commons Attribution (CC-BY) 4.0 Australian license.
• Data and Image aggregation sites such as:
AntWeb is the world's largest online database of images, specimen records, and natural history information on ants. It is community driven and open to contribution from anyone with specimen records, natural history comments, or images.

Our mission is to publish for the scientific community high quality images of all the world's ant species. AntWeb provides tools for submitting images, specimen records, annotating species pages, and managing regional species lists. More...

Background Image: Specimen: CASENT006837 Species: Mymoteras ilicium

Featured Curators

Phil Ward
University of California, Davis

James Trager
Missouri Botanical Garden

Lloyd Davis
Florida Ant Mafia

Jack Longino
University of Utah

Conrie S. Moreau
Field Museum

Brian L. Fisher
California Academy of Sciences

Meet the rest of the team!

Many curators already contribute to AntWeb - would you like to join us? Curators can edit the home page of the geographic section they curate, upload specimen data and authority files, and control a number of other aspects of their project. Learn how to submit data to Antweb.

If you would like to join us, contact us at antweb@calacademy.org.

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The 11-county Bay Area is home to more than 100 types of ant species. Visit AntWeb's Bay Area Ant Survey to find out how to become a Citizen Naturalist and help discover and learn about the ants in your backyard, schools and local Bay Area parks.

World Ant Collections

We at AntWeb have been busy taking photos of many of the world's greatest ant collections. Visit the AntWeb World Ant Collection to see the collections and get information about where they are housed.
Virtual loans
A request for information on a rare British Bug. Our specimen is over 200 years old

Dear all,

I am writing to request information on British examples of Carpocoris (Insecta: Hemiptera: Pentatomidae) which may be present in collections.

Only about 14 examples have ever been recorded in Britain, mainly prior to 1900. They have been recorded from Essex (1 record, Harwood collection), Kent (2 records, one of which has already been located from Wye), Cornwall (2 records, cited in JC Dale collection and JE Mason collection) and Devon (up to 9 records, of which only one has been located to date in Brewer collection), the remaining Devon specimen whereabouts are unknown, but were collected by JJ Reading, Parfitt, Captain Blumer (Teignmouth), Saunders and Bignell (2 exx Bigley Woods). In collections can be variously named as Pentatoma nigricorne, Palomena fuscispina, Carpocoris fuscipina, Carpocoris purpureipennis, Carpocoris pudicus form fuscipina. I would be grateful for any assistance in locating any of the above specimens in order to reexamine them to determine which species of Carpocoris have been recorded in Britain, as part of ongoing work in producing a new Royal Entomological Society handbook to the group.

Many thanks
• In 1862, the first director of Museum Victoria, Melbourne Australia, Sir Fredrick McCoy purchased the John Curtis collection for 680 pounds. The collection consisted of some 20,000 specimens in 5 large and small cabinets plus the Curtis hand written diaries which contains taxonomy and location notes for every species in the collection. McCoy also purchased the John Curtis agricultural collection. McCoy had the cabinets sealed in lead lined containers and sailed out to Australia. The British Museum had rejected first offer on the collection due to disagreements they had had with Curtis.

• Although purchased over 150 years ago, there is hardly a month goes past without us needing to reference this wonderful collection.

• A search for the species named “Pentatoma nigricorne” revealed no specimens but there is one specimen in the Curtis collection named “Pentatoma nigricornis” – which I presume is the same species.

• I have attached a series of images associated with this specimen. The drawer image, a close up, the diary entry and a series of montaged images which hopefully show the diagnostic features of this species. With the Curtis collection, we often try to avoid posting away specimens by taking a series high quality montaged images.

• I have 16MB high resolution images available for these montage images. If you use DropBox, I can create a folder and share these high res images with you.

• Best wishes,

• Ken
Identification tools

Australian Blowflies: Calliphoridae

Adrianna Thomas, Research Associate, Museum Victoria
Common Blowflies

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- **Chrysomya megacephala**
- **Lucilia cuprina**
- **Lucilia porphyrina**
- **Lucilia sericata**
Comparison of setae on genal dilation

Lucilia poryphryna  Chrysomya megacephala

Genal dilation  Genal dilation
Future Projects that value-add to the existing and future, high resolution images.
Future Projects that may value-add to high resolution imaging.

1. Online investigation of an entomology collection.
BUPRESTIDAE (Jewel beetles)
BUPRESTIDAE BUPRESTINAE
Stigmoderini - Stigmoderina

Castiarina abd - and
Castiarina adelaidae

Castiarina adelaidae
Registration No. COL-72060

Distribution

Month collected
Future Projects that may value-add to high resolution imaging.

1. Online investigation of an entomology collection.

2. Build your own virtual collection