



Digitisation Workflows, Tools and Techniques - Whole-drawer imaging

Biological Collections Digitisation in the Pacific , Symposium IV: March 2014

Nicole Fisher

Slide 1

pin066 1 Pinzon Navarro, Sara (CES, Black Mountain), 3/25/2014

Section 1:

Introduction

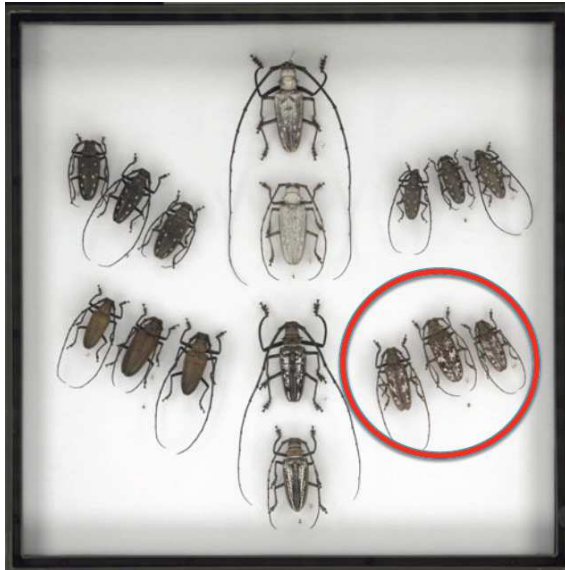
Section 1 : Introduction

**Examples -- Insects, pinned and slide material
-- non-insects**



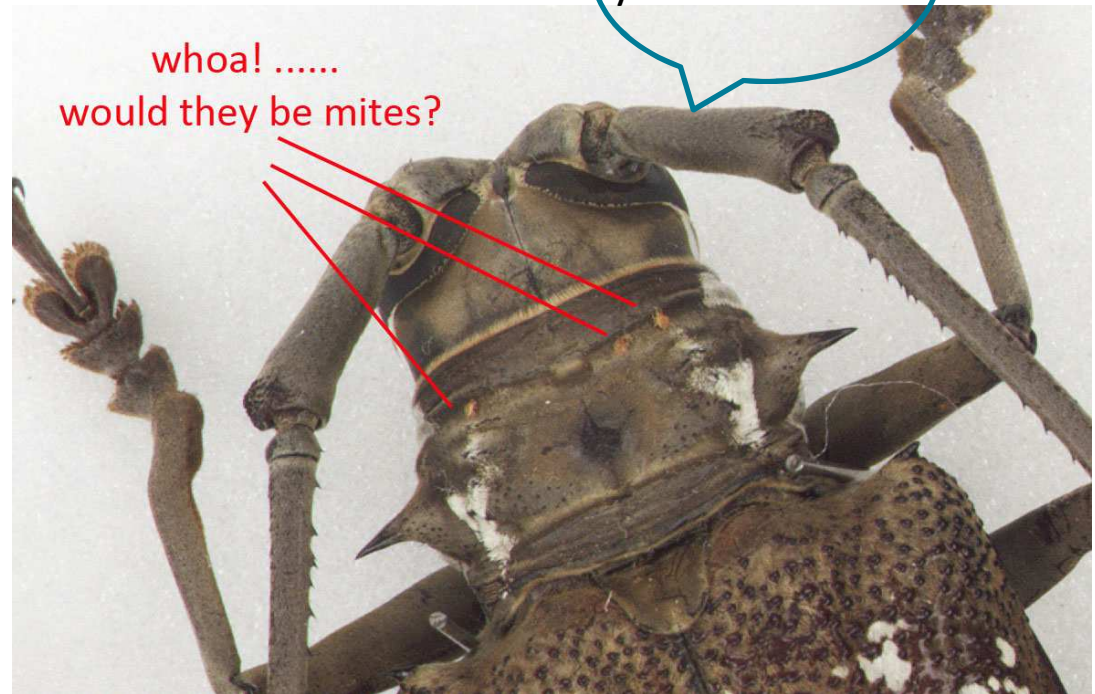
Section 1 : Introduction

Whole drawer imaging = High resolution images



Leads to unexpected discoveries

... look what you can find ...



Section 1 : Introduction

Whole drawer imaging = contains a wealth of information

- Drawer imaging is a fast way to expose a collection's entire holdings



Section 1 : Introduction

How to go about scanning
20,000 drawers in ANIC ?

- ✓ Recruit volunteers / students
- ✓ Gather a pool of them with the right abilities

Contact information :
CV's & questions
post or email to

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Australian National Insect Collection,
CSIRO Ecosystem Sciences,
Clunies Ross Street,
Black Mountain ACT 2601

by May 27th 2011

Phone: 6246 4261
Email: nicole.fisher@csiro.au



Volunteer at the
Australian National Insect Collection
(ANIC)

WE WANT YOU

Digitisation Volunteer Project :

- Project is part of national and international initiatives that harness emerging digital technologies to support biodiversity and improve efficiency in taxonomy.
- You will gain experience using photography, scanning equipment, conducting microscope photography, processing images for storage & upload to the internet, and familiarity with methods of managing digital information.
- Project will take place between June and December 2011.

Volunteer with Us !

Section 1 : Introduction

We couldn't do it without .. 

Our Volunteers ...



Our Hero's!



Our Students ...

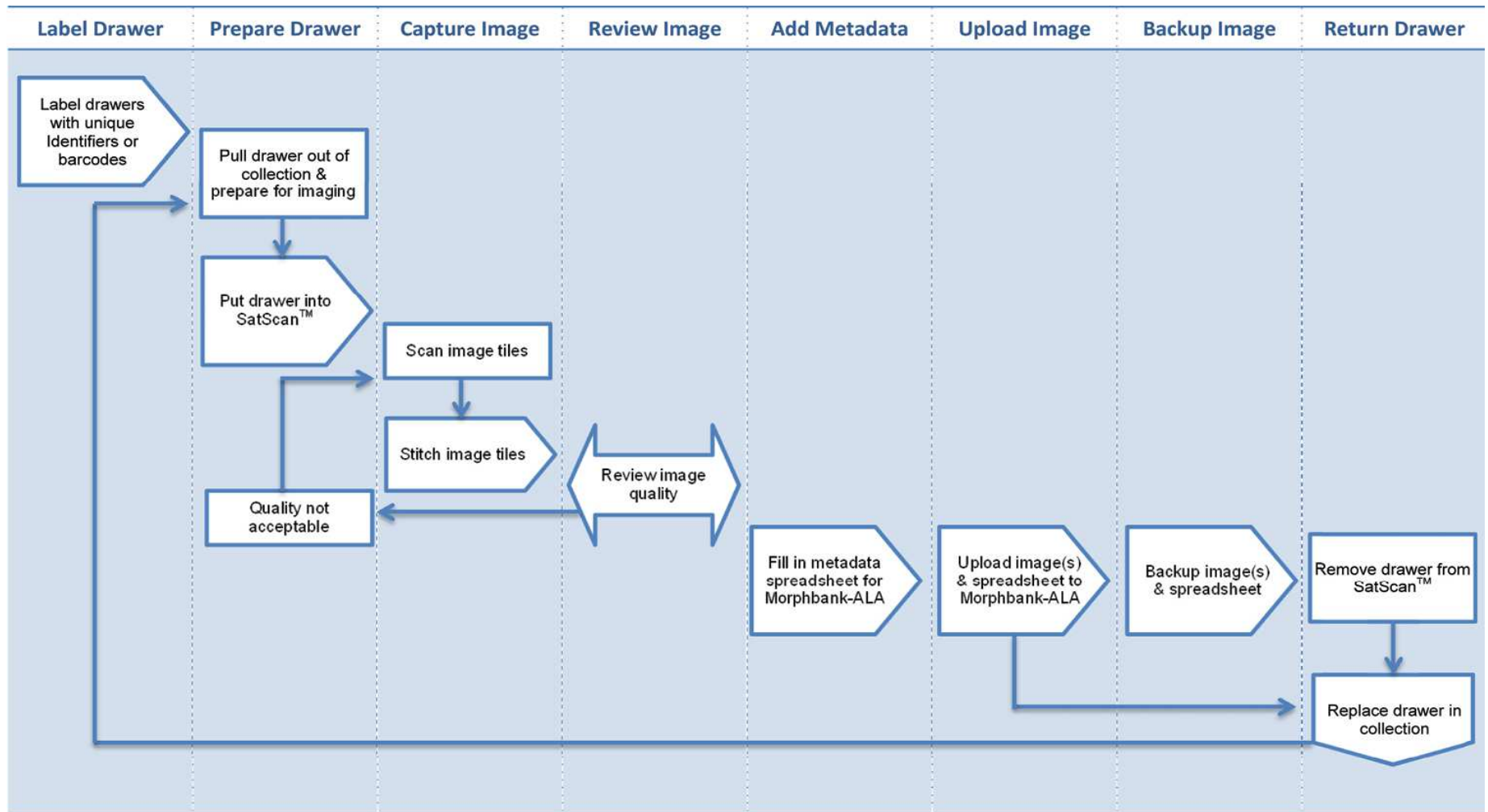


Section 2:

Whole-drawer imaging Workflow

Section 2 : Whole-drawer imaging Workflow

Developing workflows



Section 2 : Whole-drawer imaging Workflow

Pinned Things in Trays and Drawers Working Group - Dried Insects

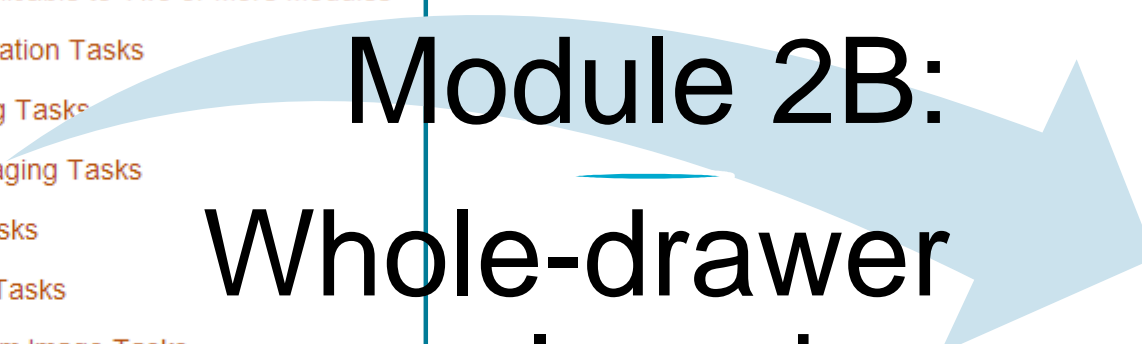


<https://www.idigbio.org/content/workflow-modules-and-task-lists>

Pinned Things in Trays and Drawers Working Group - Dried Insects

- Module 0 Generic Tasks Applicable to Two or More Modules
- Module 1 Pre-digitization Curation Tasks
- Module 2A Specimen Imaging Tasks
- Module 2B Whole-drawer Imaging Tasks
- Module 2C Label Imaging Tasks
- Module 3 Image Processing Tasks
- Module 4A Data Capture From Image Tasks
- Module 4B Data Capture From Specimen Tasks
- Module 4C Event Data Capture Tasks
- Module 5 Quality Assurance Tasks

Module 2B: Whole-drawer Imaging



Section 3:

Whole-drawer imaging Tools



Section 3 : Whole-drawer imaging Tools

- Whole-drawer imaging is an effective **tool** for rapid digitisation of a insect collection.
- On-line, Whole-drawer images as a **tool** can facilitate more effective -
 - Collection Management
 - virtual curation and
 - public engagement
- Still more development of software / **tools** are needed for whole drawer imaging eg. annotations of drawers specimens, 3D or angled imaging for capture of label data, OCR for data capture etc

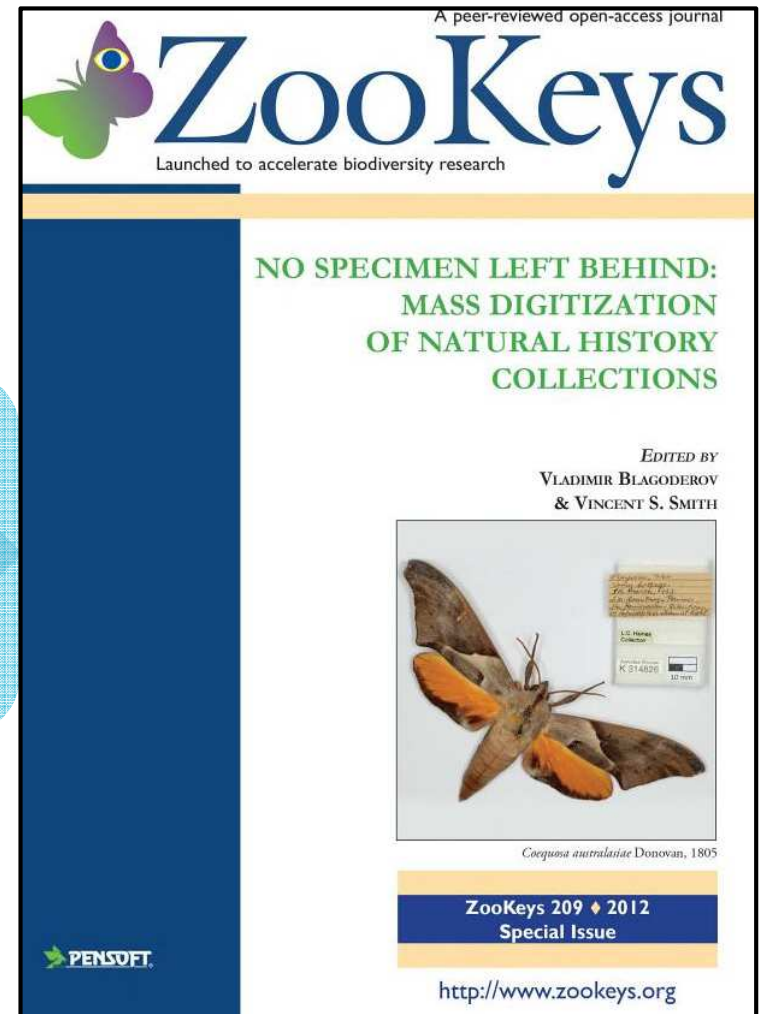


Section 3 : Whole-drawer imaging Tools

Different whole drawer imaging tools, see :

- Special edition of Zookeys, 2012 – **No specimen left behind: mass digitization of natural history collections**

doi: 10.3897/zookeys.209.3699



Section 3 : Whole-drawer imaging Tools



Workshop content and discussion topics will include but not be limited to:

17) the establishment of international working and interest groups for sustainable sharing of digitization practices and discoveries across nations

International Whole-drawer Digitisation Interest Group



https://www.idigbio.org/wiki/index.php/Drawer_Imaging_Group

Presentations (PDFs and links)

- [Collections Digitization at Naturalis Biodiversity Center, Joost van Leusen](#)
- [Drawer Registration Project, Naturalis Biodiversity Center, Joost van Leusen](#)
- [Geologystreet, Naturalis Biodiversity Center, Joost van Leusen](#)
- [MetaData Creator software, Vlad Blagoderov \(Vimeo\)](#)
- [InvertNet Robotic Whole-drawer imaging project, Chris Dietrich & David Raila](#)
- [Whole-drawer digitization in paleontology collections, Ann Molineux](#)
- [Whole-drawer digitisation at Australian National Insect Collection, Nicole Fisher](#)
- [Hasselblad H4D-200MS Drawer Imaging, Geoff Thompson, Queensland Museum](#)
- [Slide imaging at Naturalis Biodiversity Center, Joost van Leusen](#)
- [DScan, Stefan Schmidt](#)
 - [PDF version](#)
 - [Power Point version](#)

International Whole-drawer Digitisation Interest Group



https://www.idigbio.org/wiki/index.php/Drawer_Imaging_Group

Relevant Papers and Documents

- Results and insights from the NCSU Insect Museum GigaPan project, Bertone, et al. [↗](#)
- Whole-drawer imaging for digital management and curation of a large entomological collection, Mantle, et al. [↗](#)
- InvertNet: a new paradigm for digital access to invertebrate collections, Dietrich, et al. [↗](#)
- DScan – a high-performance digital scanning system for entomological collections, Schmidt, et al. [↗](#)
- van de entomologische collecties van Naturalis Biodiversity Center, Leusen, et. al [↗](#)
- Digitization of the entomological collections of Naturalis Biodiversity Center, Leusen paper referenced above, tra
- Guide to digitising whole drawers of specimens by Bryan Kalms [↗](#)
- Building a Long-Bed Inverted Scanner for Digitizing Biological Collections, Jeff Holland
- A Marriage of Science and Contemporary Art-working with Maria Fernanda Cardoso, Geoff Thompson, Queensl
- Biodiversity into your hands - A call for a virtual global natural history 'metacollection', Michael Balke, Stefan Sch
- Soup for crowds: A new source of data on insect richness, diversity and abundance, Paul Flemons and Beth Ma
- Bycatches of ecological field studies: bothersome or valuable?, Sascha Buchholz, Martin Kreuels, Andreas Kron

• Power Point version [↗](#)



Section 2 : Whole-drawer imaging Tools

International Whole-drawer Digitisation Interest Group



https://www.idigbio.org/wiki/index.php/Drawer_Imaging_Group

Relevant Links

- [Drawer Digitization Project - Hymenoptera \(Zoologische Staatssammlung in Munich\)](#)
- [Drawer Digitisation Project - Hymenoptera \(United States National Museum\)](#)
- [Whole drawer scanning at the NCSU Insect Museum](#)
- [Some of the members at the second meeting](#)
- [Crowd Sourcing project for glass slides at Naturalis Biodiversity Center \(Google Chrome translates the site nicely\)](#)
- [listserv IDIGBIOWDD-L@LISTS.UFL.EDU](mailto:IDIGBIOWDD-L@LISTS.UFL.EDU)

- [Building a Long-Bed Inverted Scanner for Digitizing Biological Collections, Jeff Holland](#)
- [A Marriage of Science and Contemporary Art-working with Maria Fernanda Cardoso, Geoff Thompson, Queensland](#)
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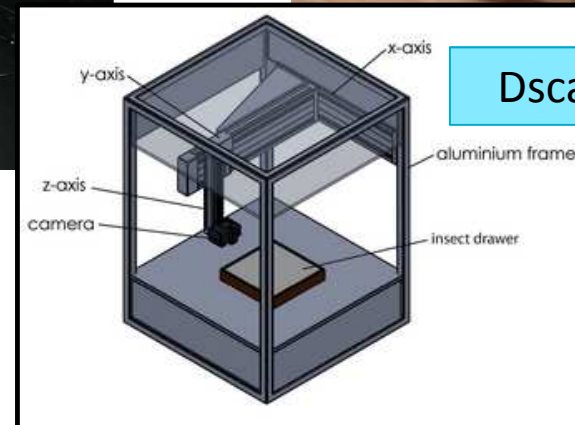
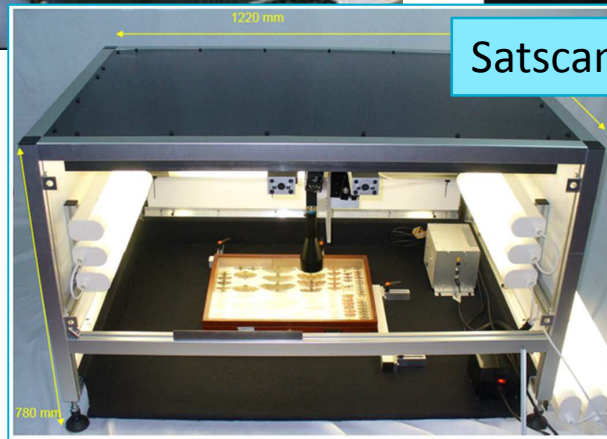
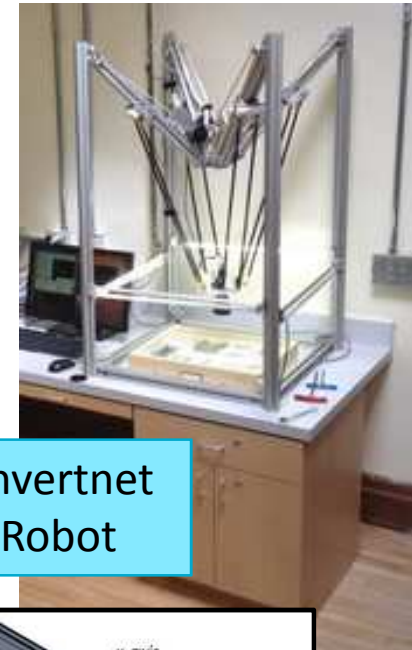
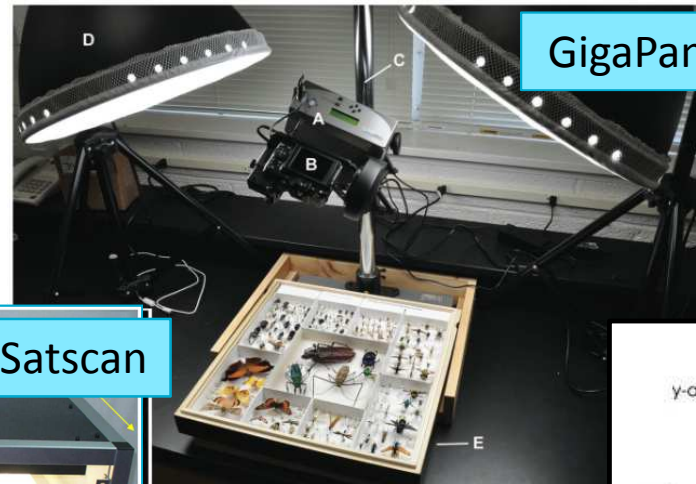
- [Power Point version](#)



Section 3 : Whole-drawer imaging Tools

Various machines / systems used globally to capture images -

- Satscan, GigaPan, Dscan, Hasselblad, Invertnet Robot



Section 4:

Whole-drawer imaging Techniques



Section 4 : Whole-drawer imaging Techniques

Can use Whole-Drawer Imaging techniques to :

- ✓ See, extract and record label data (as used in the BVP)
- ✓ Promote and encourage remote curation of unsorted specimens
- ✓ Use current technology to put more order into the collections and make it available for others
- ✓ Assist with image and loan requests
- ✓ Encourage public engagement with biological collections
- ✓ Expose soups, bycatch and bulk sample collections (re: Flemons)
- ✓ Permit morphometric analysis of at least some specimens (Johnson, L. et al, 2013)
- ✓ Creating virtual collections

Mahalo

Thank you

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