Digitising collections in the UK’s South West region

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‘Specimen biodiversity data’ = what, when, where, who collected
What: Orchid, *Broughtonia*

When: 1786-1790

Where: Jamaica

Who: Dr Arthur Broughton
• Research: past environment; endemic species
• Engagement: culture and history (remedies, recipes, folklore); modern context
• Collaboration!
One specimen = one point in time & space

Multiple specimens = a story of change through time, told by time capsules of the natural world

Introduction of the Tree Bumblebee to the UK (to 2010)
Big data

Research Spotlight: August 2016

Preserving historic bee specimens to protect future bee biodiversity

-- Contributed by Joan Meiners, PhD Student, Ernest Lab, School of Natural Resources and Environment, University of Florida
Why is digitisation important?

• “There is more information about biodiversity, about nature itself, in [the world’s] natural history collections than in all of the other sources of information combined.”
• iDigBio video ‘Why digitize’
• How do people discover and connect it?
Digitise: capture text and images about a specimen in a digital format

1) Specimen

2) Digital data and images
Mobilise:

1) Museum collections management databases

2) Research databases:

Local:
- ALERC
  Association of Local Environmental Records Centres

UK:
- NBN
  National Biodiversity Network

Global:
- GBIF
  Global Biodiversity Information Facility
  JSTOR | Global Plants
  VeriNet
What is the UK picture?

> 350 collections? (Natural History Near You, NatSCA)

> 130 million specimens? (NHM estimate)

Zero systematic sharing of data outside major institutions & projects?

[Map of the United Kingdom with 350 green dots indicating locations of natural history collections]

[Images of museums and institutions]
South West Area Natural Sciences collections (SWANS) project

• Funded by the John Ellerman Foundation, 2015-2018

• Led by Bristol Culture
  - in partnership with collections with a natural sciences specialist & South West Museums Development (SWMD)

• Geographic regional focus
  - provides access / support to smaller collections and those with no in house specialist; a regional picture for the UK

• Model:
  - 1) Specialists: maps skills, provides new network, training
  - 2) Cascades skills to wider sector museums - based on established SWMD networks, methods & user survey
South West region natural sciences collections:

- 65 organisations
- 3 – 3.5 million specimens
South West Region natural sciences collections:

- a predominance of organisations with small or very small collections (1 – 10,000 specimens)
- wide geographic spread
- high proportion of volunteer-led organisations
• 5 natural sciences collections specialists
SW wider sector: 2015/16 survey

- 27 institutions
- NS collection not used: 44%
- NS collection at risk: 26%

- "It is probably the most under used part of our collection"
- Wider sector museum

- "Natural sciences collections in wider sector museums are neglected above other collection types, due to lack of skills"
- South West Museums Development
South West Area Natural Sciences collections (SWANS) project

- A new model based on collaboration and networks
- Within this model, digitisation, or mobilising our biodiversity data, provides real opportunities for:
  - **Collaboration**: future co-working
  - **Value**: joining in with a UK / global narrative
  - **Audiences**: local reach; museum staff and volunteers
  - **Skills**
  - **Collections management**: documentation, care
SWANS digitisation model

- **Upskill** regional natural sciences collections specialists:
  - seek training & expertise
  - translate to regional resource & need
- **Export** ‘legacy’ data - ?
- **Purchase digitisation equipment:**
  - for future collaborative projects
  - to be based at key institutions
- **In depth surveys** with wider sector museums
- **Future:** small projects, one umbrella; explore crowdsourcing expertise; a UK bigger picture?
South West specimen data

- **Project partners:** 1.8 million natural sciences specimens
- Estimated 325,000 on collections management system: 16.25% (range: 4% - 65%)
- Estimated 16,000 exported (RCM beetles project): 0.8%
- **Zero systematic export**
Test export:

Bristol data to Local Environmental Records Centre

- Bristol’s collection: 1,200,000 specimens
- 28,000 biology specimen database records
- 6,500 West of England records
- 1,879 of a quality to export post-processing

= 29%
Issues:

• “Although this information can be interrogated by others it has routinely been used for internal purposes and had not been digitised to the standards required for easy migration to local or national data custodians.”

• Bristol Regional Environmental Data Centre

• Key issues:
  - Distinguishing original data
  - Data input quality
  - Geo-referencing
  - Feedback of data updates to Bristol database
Significance:

• “An initial analysis of the dataset has shown many of the records to be of great interest and significance”

• 294 species not previously recorded in West of England; >1 species new to the UK; 368 records of Notable species
• New local publications
• New stories for engagement
• 1,879 records to the National Biodiversity Network and Global Biodiversity Information Facility
South West specimen data: wider sector museums

Ilfracombe Museum:
South West specimen data: wider sector museums

Bournemouth Natural Sciences Society:
South West specimen data: wider sector museums

National Trust Arlington Court:
Map giving the specimen distribution within the collections. a - Home Counties around London; b - New Forest; c - Torbay region and d) Lake District. The latter two localities became popular holiday destinations during the late 1800s and early 1900s.

Why collaborate?

• “We are at a unique stage in our history. Never before have we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about it.”
  Sir David Attenborough, Blue Planet II

• Opportunity for a unique UK contribution to global issues
  – research and engagement; local to global; a shared narrative and value

• Together we are stronger
  – shared skills; individual approaches; increased reach

• Big challenges
  – the time is now...