Getting Started:

Challenges & Goals of Digitizing the Invertebrate Zoology Fluid Collection at AMNH

Christine Johnson, Curatorial Associate
Division of Invertebrate Zoology
The American Museum of Natural History
cjohnson@amnh.org

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Number of Digitized Plant Bug Specimens since the start of the TTD-TCN

233,828

(as of December 3, 2012)

Tri-Trophic Thematic Collection Network

Collaborative Research: Plants, Herbivores, and Parasitoids: A Model System for the study of Tri-Trophic Associations

Intellectual Merit: All of the nearly 20,000 species in the North American flora are attacked by phytophagous insects, and many of those insects are attacked by parasitic Hymenoptera. Data on plant taxa, insect herbivores, and their parasitoids are currently not accessible in a uniform manner nor are they integrated online. This project will mobilize an extensive workforce that will utilize the combined resources of 34 museums in one of the most relevant database projects ever, to capture and make available ~4 million specimen records and to unify a total of >7.8 million records. Our tri-trophic approach will have benefit for a wide range of research questions and practical applications, including agricultural sciences, conservation, ecosystems studies, climate change, and biogeography.

This Thematic Collection Network (TCN) will focus on one of the major herbivorous insect clades, the Hemiptera (aphids, scales, hoppers, cicadas, and true bugs), their host plants, and their parasitoids in a Tri-Trophic Databasing and imaging project—the TTD. It will treat the North American biota utilizing collections within the USA. Not only is the size of the problem tractable, but also

Goals of Digitizing IZ Fluid Collection at AMNH

1. Uniform system to track specimens for loans, names changes & historical treatments etc.
2. Share data as means to “access” to our collection & for other meta-analyses (ecological, phenological studies etc.)

Challenges of Digitizing IZ Fluid Collection at AMNH

- *collection (specimen) level perspective*

- *data collection level*

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- Size & scope of collection (~10 million specimens, diverse taxa)

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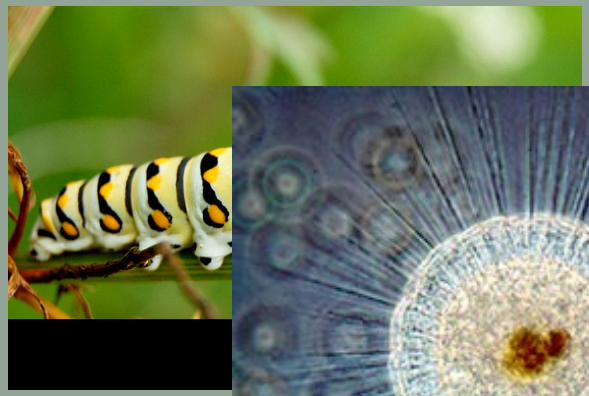
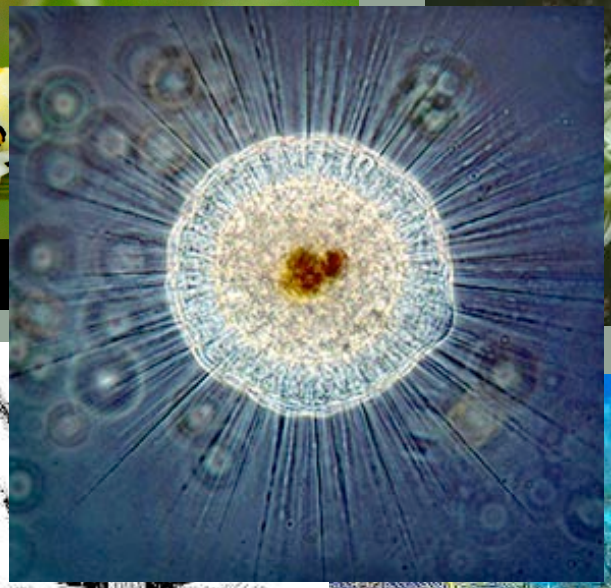
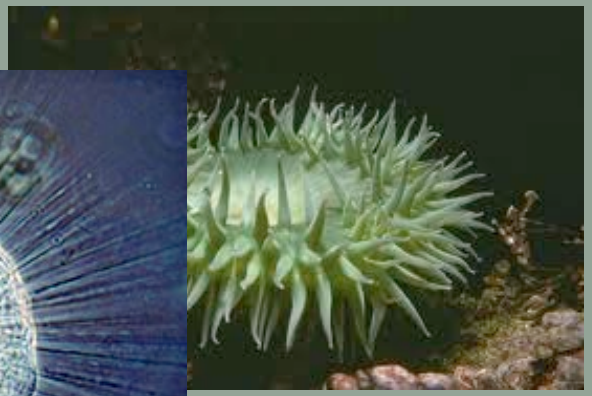


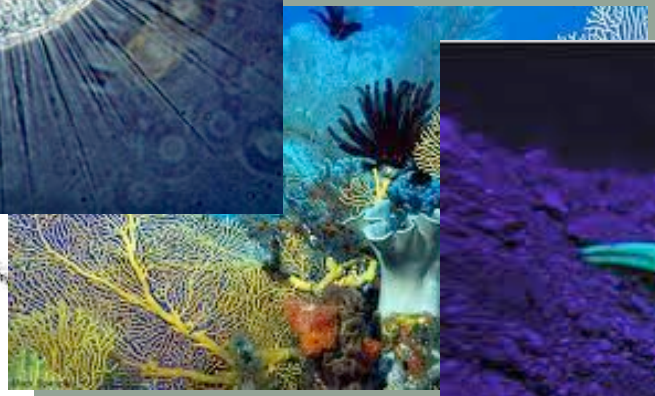


Challenges of Digitizing IZ Fluid Collection at AMNH
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  - Entire organism in single preservation type

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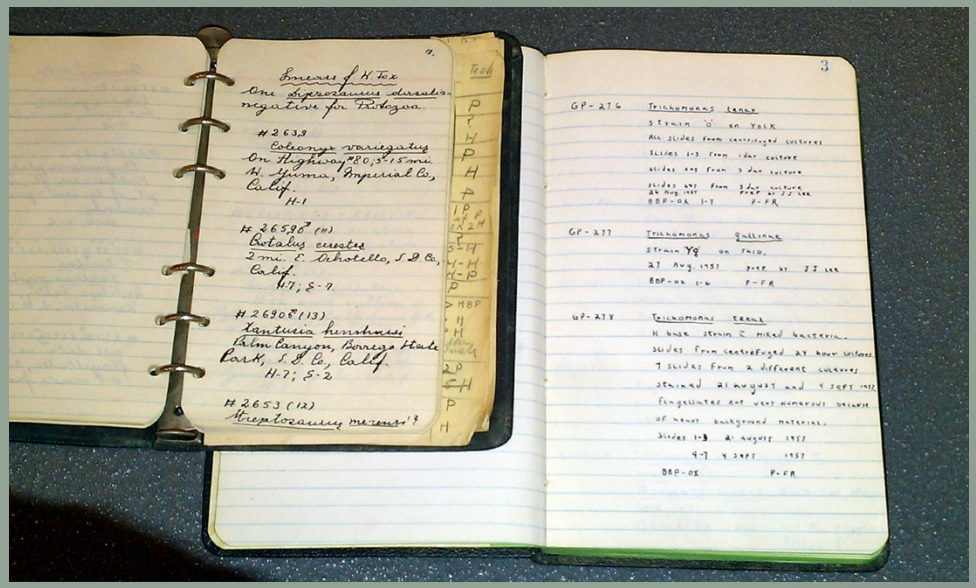

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- Trade-off between rehousing/triage needs vs digitization desire

Challenges of Digitizing IZ Fluid Collection at AMNH
- data collection level

- Multiple existing databases/catalogs with pre-existing numbers
  - Access (loans)
  - “Personal” Excel Spreadsheets
  - Filemaker Pro (Molluscs, RINMS)
  - PHP (Arthropod Easy Capture, Type Collection)

Challenges of Digitizing IZ Fluid Collection at AMNH
- data collection level

- Multiple existing databases/catalogs with pre-existing numbers
- Choosing a database
  - Does it fulfill most goals (cataloging and loans)?
  - Are everyone's needs met to a good extent?
  - Open source, Proprietary, NSF-funded?
  - Efficient (speedy) data entry?

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- Multiple choices for level of digitization (single specimen per vial, multiple specimens per vial, jar of vials; social insects)

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- Standardizing and migrating data

Challenges of Digitizing IZ Fluid Collection at AMNH
- role of the institution

- IT support: server space, software & hardware maintenance
- Institution-wide goal? May limit choices
- Part of support staff job description vs completely dedicated support

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Where to start?