Entomological Collections Network
Annual Meeting
Saturday, November 10 & Sunday, November 11, 2012
Hilton Knoxville, Salons A-C
Knoxville, TN

Friday, November 9, 2012
7:00 – 9:00 pm  Registration
Hilton Knoxville – Outside Salons A-C

Saturday, November 10, 2012
Hilton Knoxville – Salons A-C
7:30 am    Registration and Coffee
8:30 am     Welcome and Announcements

Biodiversity Data Journal
Making your data count

Innovations
Collaborative article authoring tool
External contributors (mentors, potential reviewers, linguistic editors) can watch and comment the writing process
Community peer review
Options for open and public peer review
Data publishing integrated with repositories (GBIF, Dryad, GenBank, CBOI, and others)
Standard-compliant (Darwin Core, Dublin Core, NLM JATS, etc.) Biological Code-compliant article templates
XML-based online editing, publication and dissemination
Semantic Web article and data enhancements
Article-level and data-level usage metrics
Articles published in PDF, HTML and XML to facilitate data mining

Editor-in-Chief: VINCENT SMITH
Natural History Museum, London, UK

Coming November 2012!

www.pensoft.net/journals
Session 1
General collection talks
Moderators: Floyd Shockley & Katrina Menard

8:40 am  Collection Profile: The University of Texas Insect Collection
John Abbott
Curator of Entomology, Texas Natural Science Center, University of Texas, Austin, TX

A profile is presented for The University of Texas Insect Collection, the second largest entomological collection in Texas with around two million specimens. The history and recent activities that contributed to the development of its present holdings are reviewed. An overview of the taxonomic and geographic strengths of its physical collections is presented, along with recent digitization efforts.

9:00 am   Design, sampling and storage of the NEON terrestrial insect collections
David Hoekman, Ph.D.
Insect Ecologist, National Ecological Observatory Network, 1685 38th St., Suite 100, Boulder, CO 80301, email: dhoekman@neoninc.org

The National Ecological Observatory Network (NEON) is a continental-scale observatory designed to provide 30 years of ecological data on the impacts of climate change, land use change and invasive species on natural resources and biodiversity. Several focal taxa have been chosen for sampling, including mosquitoes and ground beetles. These insects will be sampled at 60 sites across North America resulting in a large volume of samples to be archived. Methods of collection, sampling design and plans for archiving will be presented.

9:20 am   Update from the iDigBio HUB
Deborah Paul, Greg Riccardi and Gil Nelson
Integrated Digitized Biocollections (iDigBio), and Florida State University, Institute for Digital Information (iDigInfo)

iDigBio’s Second Summit is October 23 - 24, 2012 in Gainesville, FL. At this event, iDigBio - Integrated Digitized Biocollections - and the Thematic Collections Networks (TCNs) will meet to discuss progress during the first year and goals for upcoming years. At ESA/ECN, I will present an update of activities at iDigBio and answer frequently asked questions about our structure, including “What is iDigBio? Where did we come from and what makes us unique? When is iDigBio going live with real data? Where is the data coming from? What does the data portal look like?” My talk will also provide information about the services/tools currently available through iDigBio and what is proposed for the future. Finally, I will summarize the efforts of our current working groups, which include Workflows, Authority Files, Standards, Augmenting Optical Character Recognition (OCR), Cyberinfrastructure and Public Participation in Science. Interested parties are encouraged to join an existing TCN with a PEN proposal, propose a new TCN, suggest a workshop or join an existing working group.

9:40 am   Loans: Raising interest rates in our collections
Maxwell V.L. Barclay
Curator & Collection Manager, Coleoptera & Hemiptera, Department of Life Sciences; Entomology, Natural History Museum, London

At any time, the Entomology Collections of the Natural History Museum have around quarter of a million specimens on research loan to more than 2000 borrowers worldwide. In the Coleoptera section we rely on large volumes of loans to keep our collections relevant, make our type holdings accessible and ensure newly acquired material is made available quickly to the specialist community. Thus, even in areas where we lack in-house expertise, our collections develop and remain well used and well cited. I will discuss the logistics of a large scale loans system, and the benefits of intensive loan activity in a major insect collection.
10:00 – 10:20 am  Coffee Break

10:20 am  The Current Status and Future Prospects for Taxonomic Catalogs

Randall T. Schuh

George T. Willett Curator Emeritus, Division of Invertebrate Zoology, American Museum of Natural History, New York

Catalogs have long been a critical component of maintaining classifications and recording nomenclatural history, possibly most particularly in entomology. They are now playing a critical role in providing taxon-authority files for the NSF-funded ADBC program, among others. Database technology and the Internet now offer ways to create, update, and access catalogs that were not possible when printing was the only option. An overview of on-line catalogs is presented, with an indication of the types of technologies employed and the approaches used for structuring taxonomic and nomenclatural data. The pros and cons of the varied approaches are evaluated with comments on how to maintain these products beyond the life of their original creators.

10:40 am  Biodiversity Data in the Post-Web 2.0 Age

Ana Dal Molin* and J. B. Woolley

Department of Entomology, Texas A&M University, College Station, TX, 77840-2475

Since the early publications on biodiversity databases in the 1990s, this area has developed at an exponentially increasing speed, notably in the last decade. We look today at almost 700 of such projects, among data providers, aggregators and tools, and review conventions and standards. This can look overwhelming for the researcher that wants to start a project involving such resources. This is an attempt to summarize some lessons, considerations and intuitions one has about web-based interfaces, storage of data and dissemination of results from previous work on an online catalogue and a PEET project.

11:00 am  “A Moving Experience: Getting a Pinned Insect Collection from Here to There”

Christy Bills

Invertebrate Collections Manager, Natural History Museum of Utah, Salt Lake City, UT

As part of an entire natural history museum relocation process, our insect collection needed to be prepared for travel. Over the course of a year, we planned, prepped, packaged and palleted approximately 1000 insect drawers. Patience and plenty of reconfiguring eventually assured that we moved all safely.

11:20 am  Do juveniles have enough alcohol? Recurating a spirit collection to meet modern taxonomic demands

Dr. Duncan Sivell

The Natural History Museum, London

We anticipate that major advances in our understanding of Diptera taxonomy and biology will be made through the study of larvae and by applying molecular analyses to all life stages. Material preserved in alcohol can meet both these demands, but we estimate that only 3% of the Museum’s Diptera species are represented in our spirit collection. Here we describe how we are recurating and expanding our spirit collection to create a resource appropriate for modern taxonomic techniques.
Cynipid galls come in an amazing variety of sizes and types making curation practices nearly as varied as the galls themselves. Galls are important for collections because they are often diagnostic for the wasp species, provide host records, and are considered the extended phenotype of the wasp. With the primary emphasis being the insect, galls can end up being neglected or stored in a manner that doesn’t allow full utilization of the data galls can offer. The USNM has an extensive collection of cynipid galls and is in the process of updating curation of this collection with preservation and utility as principal goals. Innovative storage solutions have been developed to address these curatorial problems: clear, archival storage boxes help to contain large numbers of small galls while maintaining the visibility of the collection; and paper divider trays (designed for shipping candy) provide a secure storage solution for large, spherical galls, preventing them from rolling around and causing damage. As these methods are developed new questions are brought into focus about the status of galls as specimens and how they affect collection management.
Session 2
Digitization of Entomological Collections
Moderator: Floyd Shockley

1:15 pm  Viewing specimen data through the prism of collecting events: Expanding the utility and resolution of the traditional collection database
Andrew Short
Division of Entomology, Biodiversity Institute Department of Ecology & Evolutionary Biology, University of Kansas, Lawrence, KS

Collection databases populated with label data from museum specimens provide a wealth of information on the presence of organisms. However, focusing on specimens and their label data as the currency for biodiversity databases limits their potential utility in a variety of ways (e.g., the ability to separate absence data from collector bias). Building (or enhancing) a biodiversity database centered around the data, particularly collecting events (rather than the specimens), increases the likelihood the data will be useful for research purposes, as well as a management tool. Proactive digitization of collecting events (to which specimens can be associated later) is recommended as a way to save time and increase the accuracy of the data. As an example, the newly developed CReAC database (Collection Resources for Aquatic Coleoptera) will be demonstrated.

1:35 pm  Catalog magic: Behind the scenes of creating a world catalog of the Therevidae
Gail E. Kampmeier¹, Irina Brake², and Kristin Algmin³
¹Illinois Natural History Survey, Prairie Research Institute, University of Illinois, Champaign, IL; ²Natural History Museum, London, U.K.; ³University of Illinois, Champaign, IL.

Everyone wants to be able to push a button and have their data pour out perfectly formatted for publication. But what really goes on when preparing a catalog for a family of organisms? Sure, if the family is monotypic or has few genera or species, organizing a publication or providing your contribution to a larger catalog of a suborder may not be difficult to put together by hand, the old fashioned way. But what if you want the process to be reproducible or to be able to reuse the data for different purposes? Herein lies the tale of enhancing the database system, Mandala, to produce the upcoming World Catalog of the Diptera Family Therevidae.

1:55 pm  Species File Software: A foundation for taxonomic database development
R. Edward DeWalt, David C. Eades, and Matt J. Yoder
University of Illinois, Prairie Research Institute, Illinois Natural History Survey, 1816 S Oak St., Champaign, IL 61820. dewalt@illinois.edu, dceades@uiuc.edu, mjyoder@illinois.edu

The Species File Software group provides software, tools, and support services to taxonomists in their efforts to catalogue and understand the diversity of life and to share the resulting data with the global community. The group is endowment supported with commitment to continued development and bug fixing well into the future. Currently 11 insect species files are supported with nearly 92,000 total names and 56,000 valid species names being shared with the Catalogue of Life, Global Biodiversity Information Facility, and several other data aggregators indirectly through CoL. Species Files is fully web functional, capturing and displaying nomen-
Clature, literature, images, sound recordings, distribution, and specimen data Internet. New features include Life Science Identifiers enabled for all species files, the ability to produce private species files, tracking of nomenclatural history, Darwin Core Archives generation, and an updated key design. In the future, we are building additional workbench tools for taxonomists and offering services to the biodiversity and taxonomic community. We invite taxonomists to collaborate with us to build additional species files for their group of interest.

2:15 pm  

CalBug: Digitizing California Terrestrial Arthropod Collections

Peter T. Oboyski, Joan E. Ball, Rosemary G. Gillespie, Kipling Will

Essig Museum of Entomology, University of California, 1101 Valley Life Sciences Building #4780, Berkeley, California 94720

In 2010, the Essig Museum began a collaborative five-year project among eight California museums with a goal to digitize and geographically reference over one million specimens from target groups and localities. A major goal is streamlining data capture while maintaining data integrity and specimen safety. While each institution varies with respect to protocols and workflows, the Essig Museum chose to digitally image labels to reduce the need for repeated handling of specimens, allow enlargement of difficult to read text, and enable outsourcing of data transcription. Transcription is aided by a web-based citizen science program through collaboration with the Citizen Science Alliance. Data from each label are keyed by multiple volunteers and compared for consistency. Data are vetted in-house, normalized for variations in locality descriptions, then repatriated to an online, open-access MySQL data cache. Georeferencing of localities will occur later using semi-automated services following standard protocols. The greatest bottleneck in digitizing collections is the handling of individual specimens and labels. Using high-efficiency workstations labels are removed from pins, digitally imaged with unique identifiers, repinned, and returned to their trays. Annotation of images and naming of files are done with batch processing software. Other innovations and progress to date will be discussed.

2:35 pm  

SCAN - Emergence of the Southwest Collections of Arthropods Network Based on the Symbiota Software Platform and Filtered Push Technology for Remote Specimen Identifications

Nico M. Franz\(^1\), Neil S. Cobb\(^2\), Paul L. Heinrich\(^2\), Edward Gilbert\(^3\), Paul J. Morris\(^4\)

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4 Museum of Comparative Zoology, Harvard University, Cambridge, MA; e-mail: mole@morris.net

SCAN - the Southwest Collections of Arthropods Network - is a new project bringing together (initially) 10 arthropod collections at universities and museums throughout the Southwest U.S. region to create a virtual information network on ground-dwelling arthropods. These and other candidate natural history collections preparing to join SCAN document much of the Southwest’s biodiversity, but currently the data associated with their millions of arthropod specimens are virtually inaccessible to researchers interested in this region. Live at http://symbiota1.acis.ufl.edu/scan/portal/index.php since August, 2012, SCAN is developing methods for integrating existing databases, cataloging and imaging specimens, facilitating new electronic identification techniques, and collectively authoring a virtual library of ground-dwelling arthropods (e.g. beetles, grasshoppers, spiders and ants). SCAN is sustained primarily by the Symbiota Software Project (http://symbiota.org/tiki/tiki-index.php) which was instrumental in launching the Southwest Environmental Information Network (http://swbiodiversity.org/seinet/index.php). SCAN will also implement Annotation Ontology-based Filtered Pushed technology (http://etaxonomy.org/mw/FilteredPush) to enhance the ability of experts to carry out remote identifications and annotations of specimens that can flow back directly into the source databases and be shared across the network.
3:15 pm Digitization efforts and products from the USNM Hymenoptera Unit

Matthew L. Buffington and Michael W. Gates
Systematic Entomology Lab, USDA, c/o Smithsonian NMNH, 10th & Constitution Ave NW, Washington, DC; email: Matt.Buffington@ars.usda.gov, Michael.Gates@ars.usda.gov

The USNM Hymenoptera collection is home to ca. 9000 holotypes and ca. 2.5 million non-type specimens. Digitization efforts in a collection this size have to be carefully conceived in order to maximally use time and resources, producing digital products that other researchers can use. We first present on our efforts to digitize the Hymenoptera holotype collection, from imaging of holotypes, vetting of type data, and serving the combined data through USNMHymtypes.com. We also provide a model for how these data can interact with CiteBank, BHL, GNITE, and ZooBank under a meta-database schema. Second, we present our preliminary results on whole drawer Gigapanning of the USNM Hymenoptera collection, starting first with the gallwasp (Cynipidae) collection. We argue that whole-drawer imaging is an incredibly efficient, cost-effective way to digitize large collections, capturing an enormous amount of data (much of which would be difficult to database even with adequate resources). Our preliminary results regarding camera equipment and work-flow of Gigapanning are discussed.

3:35 pm Entomology specimens develop dissociative identity disorder

Jennifer C. Thomas
Assistant Collection Manager, Division of Entomology, 1501 Crestline Drive, Suite 140, University of Kansas, Lawrence, KS

What is a UUID, a GUID, an LSID, or an EZID? An overview of current common practices for managing and maintaining persistent unique identifiers for entomology specimens including a developing conundrum: multiple unique identifiers for a single collection object.

3:55 pm IDs In and Out of the Database

Deborah Paul and Greg Riccardi
Integrated Digitized Biocollections (iDigBio), and Florida State University, Institute for Digital Information (iDigInfo)

Identifiers, both human-readable and not, are being applied to specimens and their values stored in databases exposed for public use. Others interacting with the data use the specimen identifiers in publications, web sites, and again insert the data and identifiers into yet other databases where they are exposed again for re-use. What happens to those original identifiers? What are the ramifications of our choices for storing and maintaining (or not) all of our identifiers? What happens if a collection decides to change its institution code or collection code where those have been used in creating already published specimen identifiers? What practices can we encourage and adopt to enable the Semantic Web to work for us - revealing relationships and discovering new data exists for a given specimen? And just remember we already know the answer to all of this is 42, so don’t panic. (Thank you Douglas Adams).
Where would you publish:

S single taxon treatments (new taxa, re-descriptions)?
S single nomenclatural acts (new synonyms, re-validations, changes in taxonomic status, etc.)?
S sampling reports, local observations and occasional inventories?
L local or regional checklists?
H habitat-based checklists and inventories?
E ecological and biological observations of species and communities?
S single identification keys (dichotomous and/or multi-access interactive keys)?
B biodiversity-related databases, including genomic, ecological and environmental data?
D descriptions of biodiversity-related software tools?
Sunday, November 11, 2012
Hilton Knoxville – Salons A-C

Session 3

The pain of ownership: dealing with the accessioning of insect collections: the pros, cons, and if entomological collections are a special case

Moderator: Katrina Menard

8:30 am  Standardizing “Ownership”: Dealing with accessioning standard based on other natural history collections that are applied to entomological collections, and what does it mean to really “own” collections?

Dr. Katrina Menard
Curator of Recent Invertebrates, Collections Division, Sam Noble Oklahoma Museum of Natural History:

Many Natural History Museums in the United States belong to the American Alliance of Museums, whose accreditation process requires that the collections be cataloged and accessioned by a registrar. The ongoing effort to catalog and accession material, especially for very large collections such as entomological collections, brings in special considerations and issues to this process. Three areas will be highlighted: 1.) dealing with backlog of material that not only has to be cataloged but also accessioned, and whether it can be done in a time-feasible manner while also allowing for the possibility of accepting new material; 2.) Once specimens are accessioned, how does this affect transferring of material for collecting permit agreements, taxonomic revisions, and other activities? And lastly 3.) once a specimen is “owned” by an institution, does that mean that the associated information derived from that specimen also property of the museum (e.g. digital images).

8:50 am  Managing legacy and newly acquired specimens of a large diverse Collection

Dr. Christine Johnson
Curatorial Associate, Division of Invertebrate Zoology, The American Museum of Natural History

The relatively recent merger of the non-insect invertebrate and entomological collections into a unified Division of Invertebrate Zoology at The American Museum of Natural History resulted in a collection of over 26.7 million specimens. The different overall methods by which these respective collections are collected, preserved, accessioned and databased present unique challenges in developing a cohesive, all-encompassing system to manage legacy and newly acquired collections. Here, I will present these challenges and current efforts to coordinate these collections to facilitate proper accession and digitization of specimens.
9:10 am Accessions In Entomology – regulations and impacts on collections at The Natural History Museum (NHM), London

Dr Erica McAlister

Collections Manager and Senior Curator, Diptera, Department of Life Sciences, Natural History Museum, London, UK

Since Rio 92' there has been increased legislation in relation to collection enhancement in terms of obtaining new material for collections. Whether the material is donated or collected through fieldwork if the appropriate paperwork (permits, transfer of titles) are missing, not available or non-existent, then it is cannot be accessioned into the collections at the NHM. Also, with increased access and benefit sharing there is a need to track all material which, when dealing with insect collections, puts a considerable strain on Curators to specimen level database the collections (and this may be in the thousands). In this talk I will discuss where we are in terms of incorporating accessions at the present and some of the future developments that are being implemented.

9:30 am Keep the cash flowing: specimens as currency

Dr. John Longino

Professor of Biology, University of Utah, Salt Lake City, UT

Specimens are like cash. Entomology collections are megamillionaires in this regard. But cash needs to flow to get anything done. Specimen digitization efforts can either enhance or impede flow, depending on how it’s done. Encouraging the adoption and use of specimen identifiers enhances the flow. Treating them as ownership labels impedes it. Museums should have flexible approaches to specimen acquisitions, donations, and loans, while promoting the use of generic (non-institutional) specimen identifiers.

9:50 – 10:10 am Coffee Break

10:10 am Bringing LLAMA home: the legalities and logistics of managing the “by-catch” of a large arthropod survey

Dr. Zack Falin

Entomology Collection Manager, University of Kansas. Lawrence, KS

The Leaf Litter Arthropods of Mesoamerica project has generated thousands of arthropod samples spanning five years and five Central American countries. As the non-focal taxon collaborator for Coleoptera, I was charged with accessioning, prioritizing, sorting, preparing, data basing and distributing to third party specialists the non-weevil component of the LLAMA collecting regime. I will present an overview of the KU Biodiversity Institute’s model for accessioning specimens, how the LLAMA material fit (and did not fit) that model and how I managed (or not) the internal and external flow of specimens and their ultimate place of deposition/ownership status. I will offer personal observations on the process as well as raw statistical data that may help to inform the design and implementation of the “back end” of future large-scale survey projects and collaborations.

10:30 am Incorporating Carabus Accessions into the Natural History Museum World Collection: 200 years in two months!

Beulah Garner

Curator of Coleoptera, Department of Life Sciences; Entomology, Natural History Museum, London

The NHM world collection of Carabus, a large and popular beetle genus, was recurated. It comprises over 60 drawers with approximately 670 of the 850 known species, 73 represented by type material. The question of how to treat differing taxonomic concepts and the many synonyms, subspecies and infrasubspecific taxa was addressed. All accession material of Carabus, some dating back decades or centuries, was critically assessed and incorporated, and the whole collection databased using Ke-Emu. The entire project took two months, involving one curator and two volunteers.
10:50 – 11:10 am Session Discussion & Announcements

11:15 am – 12:00 pm BUSINESS MEETING

Acknowledgements:

Organizers:
Floyd Shockley, Cara Gibson, Pam Horsley, Katrina Menard, and Katja Seltmann

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Katja Seltmann
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The Entomological Society of Washington was founded in the nation's capital in 1884. As a founding member, C.V. Riley held the first meeting in his home, and was the Society's first President. Publishing the Proceedings of the Entomological Society of Washington, the Society has served the DC Metropolitan entomological community continuously since 1886.

Membership costs $25. Membership benefits include:
- A subscription to the Proceedings
- Access to digital content through BioOne
- The ESW newsletter
- Invitations to special events
And new for 2013: A student award for best paper!

Stop by our table here at ECN to learn more, become a member, and check out our merchandise. Information is always available online at www.entsocwash.org.

Regular meetings of the Society are held in the Natural History Building, Smithsonian Institution, on the first Thursday of each month from October to June, inclusive, at 7 P.M. Our Annual Meeting is in December and our Annual Banquet is in June.
Acknowledgements

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