The Museum Newsletter

Spring 2015

Museum of Biological Diversity

Dear Readers:

Welcome to the Spring 2015 issue of the ***Museum Newsletter***! Time for sunshine and for preparations for another field season. But before that, we want to re-cap the activities of our Annual Museum Open House which happened back on February 7. Please enjoy, and feel free to send your comments to the Editor (*osuc-curator@osu.edu*).

In this issue:

The **Museum Newsletter** is a publication featuring news and information on the collections at the **Museum of Biological Diversity. The Ohio State University**. The newsletter is produced by the Curators of the collections, with contributions from faculty, staff, students and associates of the collections. Available **online** at ***mbd.osu.edu/newsletter***.

Cover *– Jellyfish. Photo courtesy of Marymegan Daly.* ***Inside Front Cover*** *– Open House activities. Photos by (Top row, L to R): Isaac Rockwell (1 & 2), Orlando Combita, Amy Youngs. (Bottom row, L to R): Luciana Musetti, MaLisa Spring, Luciana Musetti.* ***Inside Back Cover*** *– Open House activities. Photos courtesy of (T to B): Katherine Beigel (1-5), Isaac Rockwell (6).*

Museum of Biological Diversity
Discovery · Documentation · Interpretation · Education
Newsletter
Editor: L. Musetti

2015 Museum Open House

By Marymegan Daly, Associate Professor, EEOB, Fish Division

The 2015 Museum of Biological Diversity Open House was a resounding success! The success of this event depends on two factors: visitors and volunteers. More than 2,800 people visited the collections, interacted with live animals, and spoke with resident experts about venoms, poisons, and the organisms that make them. Visitor turnout was the largest we have yet seen, and reflected the growing awareness of the event, a strong social media effort by volunteers and staff, and coverage by local media, including the *Columbus Dispatch*.

The record number of visitors this year was matched by a record number of volunteers. In addition to the voluntary participation of faculty, staff, and students working at the Museum, we benefited from coordinated efforts by GEES, the Graduate Evolution and Ecology Student organization, and members of the undergraduate Evolution and Ecology and Zoology Clubs.

Although we have many wonderful specimens, the energy and expertise of the staff and volunteers is the most significant "thing" we have on display at the Museum Open House. The record success of this event is not surprising given the incredible talent, creativity, and diligence of the MBD and EEOB scientists.

As we wrap up the 2015 event, our thoughts turn to next year. Please "Like" us on *Facebook* or visit the Museum's webpage at *mbd.osu.edu* to receive updates about the 2016 Open House or to stay informed about the research being conducted at the Museum of Biological Diversity. – *Photo by Luciana Musetti.*☘

T-shirt for the volunteers of the 2015 Museum Open House. Original design by Elizabeth Alvarez.

Arachnids: 8 legs & hopping!

By Hans Klompen, Professor, EEOB, Acarology Lab

L to R: Acarology displays show mites under high magnification. Toy microscope, a hit with pre-schoolers.

In the Arachnida area, we probably had the largest crew of volunteers ever (4 for the mites, 6 with Rich Bradley and the spiders), but everybody was still busy all the time. With this year's theme, venom, it was clearly the scorpions and spiders that stole the show for the 8-legged groups. To help that along, Rich Bradley helped dress up the hallways with a series of great spider pictures.

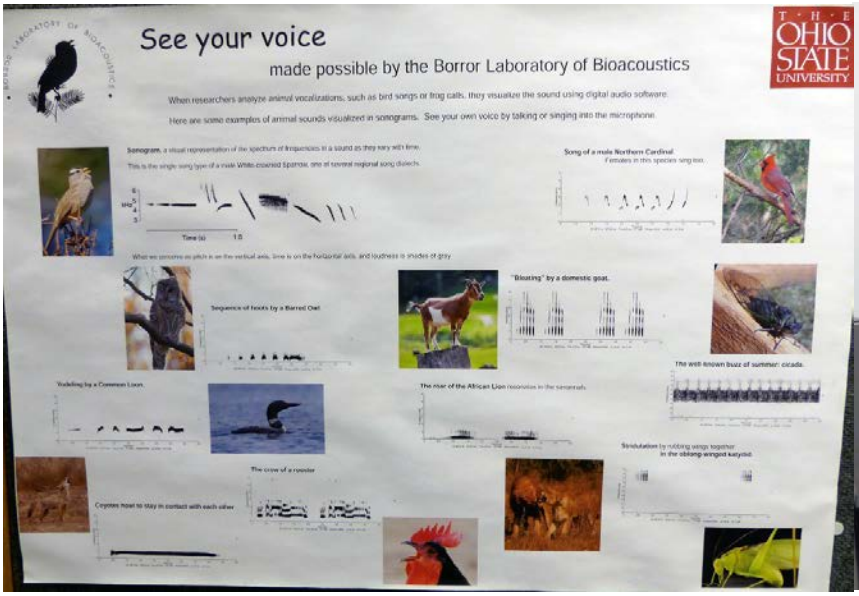
For the mites we had some live oribatids (the source of some of the poison in poison arrow frogs), but unfortunately no live *Pyemotes* (parasites that cause straw itch in humans) or cheyletids (ambush predators of other mites and small insects), so sadly little representation of the venomous species. For the live material, the Madagascar hissing cockroach mites were a big hit, but who would not love critters that eat spit (?!)

Great interest too in Steve Passoa's set-up with poisonous moths and caterpillars, and for the little kids, anything having to do with microscopes. Thanks to Orlando Combita and Ana Ceballos for bringing their cool toy microscope, a hit with the pre-school crowd. Overall, great event, took me 2 days to get my voice back. *Photos by MaLisa Spring.*☘

Borror Laboratory of Bioacoustics

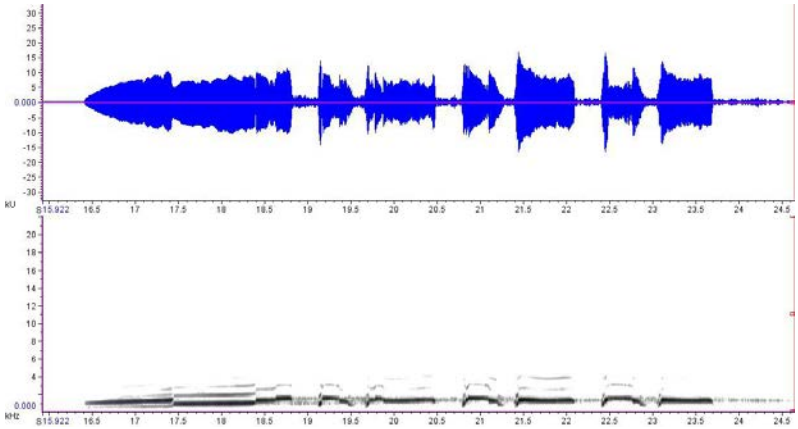
by Doug Nelson, Associate Professor, EEOB, Borror Lab of Bioacoustics

The Borror Lab continued its tradition of showing visitors what their own voices look like, along with the sounds made by other animals.



L to R: Visitors could see their own voice as well as that of many other animals. Doug Nelson testing his voice.

We use a microphone connected to a computer that displays in real time how the energy in a sound varies with frequency (what we perceive as pitch) and time. Children in particular take delight in speaking into the microphone and seeing what their voice looks like on the computer screen. Some young guests require some parental encouragement to participate, others are born performers and yield the microphone only reluctantly. All enjoy listening to themselves made to sound like Minnie Mouse or Darth Vader when the playback is speeded up or slowed down, respectively. There was much giggling. In addition to viewing their own voices, visitors could listen to, and see the voice print of, recordings from our collection. African lion, common loon, barred owl, and northern cardinal are perennial favorites. Visitors often imitated, in some cases quite convincingly, the sounds of these or other animals.



Voice print of the Common Loon, a perenial favorite at the Borror Lab Open House displays.

In addition to our interactive sound display we offered our lab-produced compilations for purchase: sounds of Ohio birds, insects, amphibians or frogs. For the first time we offered the recordings on CDs as well as flash drives, which proved to be very popular. All proceeds from these sales enable us to continue hire the undergraduate assistants who contribute so much to our collection. – *Photos by the author.*☘

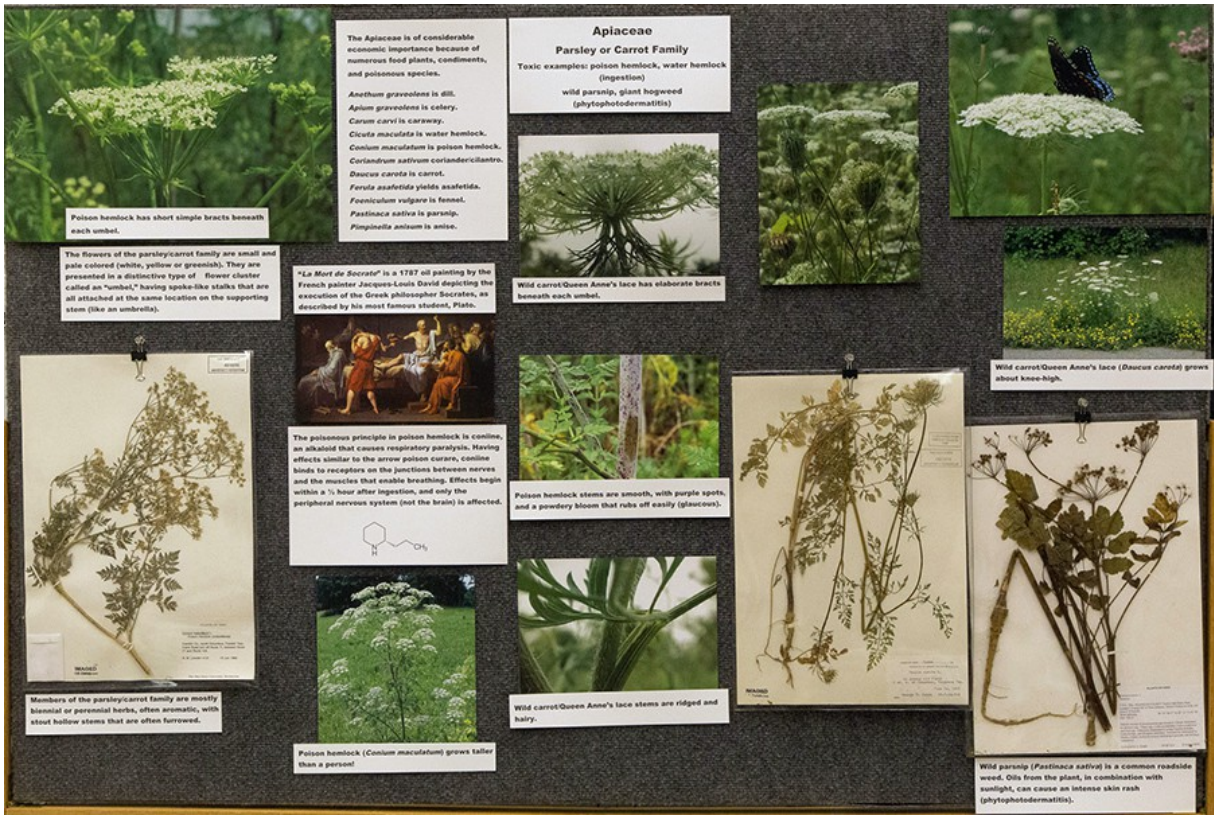
Toxic Plants or Not?

By Cynthia Dassler, Curator, EEOB, Herbarium

Poison ivy plant.

From poison ivy to fish toxins to belladonna, the Herbarium demonstrated how plant toxins impact human lives during the 2015 Museum Open House. Guests learned that compounds found in plants can be poisons or medicines, depending upon the dosage; that cultivation has allowed humans to eat certain parts of otherwise poisonous plants safely, that compounds that benefit plants often are detrimental to people, and that toxic plants have affected, and continue to affect, human culture and history.

The Herbarium displayed well-known or interesting toxic plant species by organizing them into their respective families. The display about the tomato family, Solanaceae, highlighted edible members of the family, such as tomato and eggplant, while showing that only select parts of the plants are edible to humans, such as the fruits, whereas other parts, like the leaves, are not. In addition to the usage of species for food, the exhibit demonstrated that some species in the tomato family were used for other purposes. For example, belladonna (*Atropa belladonna*) was used as the source of the medicine, atropine, to treat heart conditions and impacted human culture and history when women added it to their eyes to cause iris dilation to enhance beauty in Renaissance Europe.



The family Apiaceae contains both toxic and non-toxic plant species.

A display about the carrot/parsley family, Apiaceae (*above*), revealed the plant species that killed Socrates -- poison hemlock (*Conium maculatum*) – and species such as wild parsley, *Pastinaca sativa*, that can cause dermatitis after contact with the plant and exposure to the sun. Yet, many of our common vegetables and herbs (carrots, celery, dill, fennel, etc.) come from the same family as these poisonous members.

Other plant families that contain species with toxins that affect human food and culture in the herbarium displays included Asteraceae (the Sunflower family), exemplified by *Clibadium sylvestre*, and Fabaceae (the legume family) with Barbasco, *Lonchocarpus nicou*. Both of these species are found in Central and South America and have been used as sources of fish toxins to aid in harvesting fish for food. Herbarium visitors learned that the compound found in Barbasco, rotenone, and that kills fishes, has been developed commercially into an insecticide because it is also toxic to insects.

Lastly, displays of Ohio plants with compounds that are poisonous, or at least irritating, to humans, but beneficial to the plants like stinging nettle (*Urtica dioica*) in the family Urticaceae and poison ivy in the *Toxicodendron radicans* in the family Anacardiaceae were shown. The adverse action of the stinging hairs of the nettles on human skin was described beside a recipe for risotto with nettles, which, of course, included directions to boil the nettles to soften the hairs before eating. A whole display was devoted to informing guests on how to recognize poison ivy and distinguish it from the structurally similar species such as the Virginia creeper. Visitors learned that the compound in poison ivy, urushiol, which can be toxic to human skin, also provides a sunscreen for the plant,

protecting it from UV damage. As the guests learned how to avoid poison ivy, they also discovered that several plants in the poison ivy family provide food, including mangoes, cashews and pistachios.

We hope that guests left the Herbarium with the knowledge that toxins in plants are often useful to them and are sometimes useful or poisonous to people, depending on how much and what part of the plant is used. Visitors were able to reflect upon their newfound knowledge by gazing at mosses in a terrarium, plants that rarely produce toxins to people. Some would argue that our world would be much better and safer with more mosses in it! *Contributions to the displays by John Freudenstein, Bob Klips, Todd Stussey, and Mesfin Tadesse.* – *Photos by Bob Klips.*☘

Not just a shell: amazing (and sometimes deadly) molluscs.

By Caitlin Byrne, Collection Manager & G. Tom Watters, Curator, EEOB, Mollusc Division

To coincide with the 2015 Open House theme of toxins, the **Mollusc Division** had a beautiful display featuring deadly Cone Snails. These are large, marine snails that use a harpoon-like tooth attached to a venom gland to kill their prey.

Deadly Cone Snails. L to R: Princely Cone, Geography Cone, Textile Cone, Striate Cone.

The Cone Snail has some of the most complex venoms found, consisting of hundreds of different toxins in a deadly soup. Cone Snails, depending on the species, may feed on polychaete worms, other molluscs, or fishes. Unfortunately, the toxins evolved to kill fishes work equally well on other vertebrates, such as humans. In the Philippines these snails are known as Cigarette Snails from the belief that once you are stung, you have the amount of time it takes to smoke a cigarette to live. Cone Snails hazardous to humans are found in the tropical Indian and Pacific Oceans. Only a single fish-eating species is known from the western Atlantic-Caribbean seas and it has not been implicated in any human deaths. Nevertheless, many Cone Snails, regardless of their diet, may inflict a painful sting to the unwary shell collector.

Along with learning about the deadly Cone Snails, visitors also had the chance to learn about the slugs of Ohio and how they protect themselves. Contrary to popular belief, many people were surprised to learn that Ohio slugs produce a toxic slime which they use for protection. Therefore, the answer to our Open House quiz question was "toxic slime" and not "Lawyers, Guns and Money"! As usual, Bob the Giant Man Eating Clam was very popular.

Visitors seemed very interested in Bob's diet this year, due to evidence of Bob's last snack still present in his shell (see detail on the photo, right). He probably should have flossed better! – *Photos by Tom Watters (top) & Isaac Rockwell (right).* ☘

Bob the giant clam, a crowd favorite.

Stingers, stinkers, and sprayers, oh my!

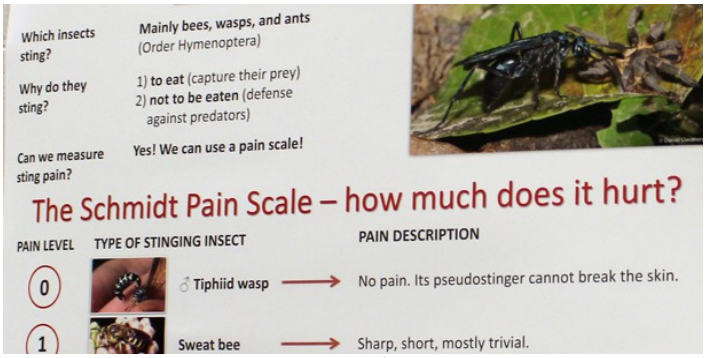
By Norman Johnson, Professor,EEOB, Triplehorn Insect Collection

"Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that." Red Queen proffering advice to Alice in Lewis Carroll's 'Through the Looking-Glass and What Alice Found There'.

L to R: Insect fauna from around the world on display. Detail of a display of Ohio entomofauna. Making an origami butterfly.

The quoted passage came to mind in reviewing the 2015 edition of the Museum Open House and, particularly, as it played out in the **Triplehorn Insect Collection**. The Open House is an annual event, and each year as the attendance grows we not only welcome new visitors, but we also welcome back old friends. Some displays are regular hits: the "*Oh, my!*" drawer (*above, left*) and the giant insects. The '*Bug Drawing*' table is a perennial favorite. But we also strive to provide something a bit new each time. We don't only pull out the same displays every year, but we also develop new displays and activities so that the experience is fresh and exciting every time.

This year, with the theme being venoms, we dug through the massive holdings of the insect collection to find examples of insects that sting, stink, or otherwise defend themselves with exotic chemistry. The impact of stings can be rated using a tool developed by one of our colleagues at the University of Arizona, the Justin Schmidt sting pain index. There's a nice video in which Justin explains his motivation and love of the natural world (go.osu.edu/JS-PI).



Detail of poster on wasp stings & the various levels of pain they cause, adapted from an original by Justin Schmidt.

Our focus is, naturally, the scientific study of insects, but we are also attuned to the intrinsic beauty and amazing diversity of color and form of these animals. In addition to showing how big – and how small – insects can be, the curator of the collection, Dr. Luciana Musetti, and her staff also brought out some striking beauties: delightful flower chafers (a type of scarab beetle), striking short-horned rhinoceros beetles, and a surprising variety of cicadas. They also introduced a new hands-on activity: *origami butterflies*. That was a tremendous hit: parents and kids were so eager that we went through over 600 sheets of paper (none wasted)! Another innovation this year was the *aquatic insect display*. Jon Bossley braved the icy cold of February to collect specimens that very morning so that visitors could poke through the samples and discover for themselves the richness of insect life in Ohio's streams, alive and kicking even in the middle of winter. You can read more about the insect collection's activities during the Open House in our blog, ***Pinning Block*** (go.osu.edu/thatsawrap). More photos on Facebook (go.osu.edu/FB-Photos).

Insect displays and activities: captivating and educational.

This year was not only another record high for visitors, but a record for the number of people that volunteered to help in the insect collection. They ranged from professors (active and retired), to middle & high school students, all united by a love for insects, a dedication to science, and a passion for service and outreach. Special thanks to the grad students in the Department of Entomology for their enthusiastic participation!

Back to the Red Queen, I think that in 2015 we really got someplace through hard running. We worked for months to prepare the displays in the collection. Our thoughts now turn to next year and how to make the experience richer and more rewarding. On your mark, get set … – *Photos by (L to R & T to B) Huayan Chen, Isaac Rockwell, Luciana Musetti & Katherine Beigel.* ☘

Tetrapods at the 2015 Open House

The Tetrapod collection had a variety of displays that focused on toxins in birds, recent additions to the collection (a manatee skeleton), keeping track of animals on OSU campus through project BioPresence, and local bird casualties finding their way into the collection (adopt-a-bird).

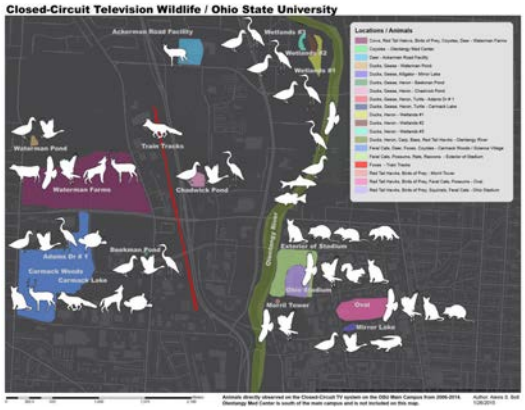
Hooded Pitohui, drawing by Stephanie Wright, graduate student, EEOB.

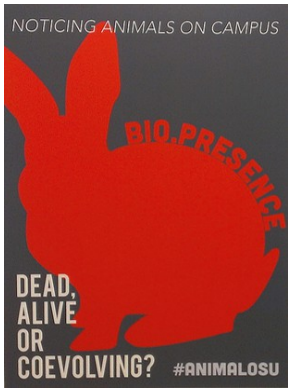
• **Toxic birds.** *By Angelika Nelson* – No species of bird is known to actively inject or even produce venom, but some birds are known to be poisonous to touch or eat. These birds usually sequester toxins from animals and plants that they feed on, commonly from poisonous insects. We find toxins similar to the ones used by poison dart frogs in the skin and feathers of the Hooded Pitohui (New Guinea) and the Little Shrikethrush (Australia, Indonesia and New Guinea). Stephanie Wright made drawings of these two species to show at the event.

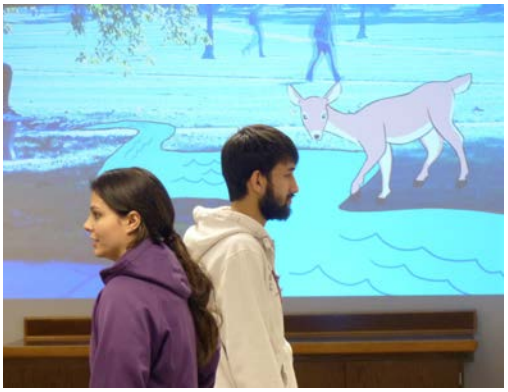
• **Willoughby, the manatee (1995-2007).** *By Andy Yoak* – The tetrapod museum welcomed a new skeleton to the collection just in time for the open house. The skeleton of Willoughby, a nine-foot long Caribbean manatee (*Trichechus manatus latirostris*), was donated in 2013 by the Columbus Zoo and Aquarium. The skeleton was meticulously cleaned, articulated, and hung by Andrew Calinger-Yoak, Kellen Calinger-Yoak, and Kevin Lumney. Stephanie Malinich, Emily Archibald and Anna Smith, undergraduate assistants in the collection, were excited to help with the final positioning of the skeleton. A few bones had been lost during the process and these were replaced by Beth Yoak and the OSU College of Engineering using 3D printing, restoring much of the specimen's value.


Andy Yoak explains the 3-D printing process of bones to visitors.

• **BioPresence at the Open House.** *By Amy Youngs* – The BioPresence "presence" at the Museum of Biological Diversity Open House event was a great success! Our project aims to notice and report animal sightings on The Ohio State University campus. We had moving image screenings, art posters, an interactive campus bird strike map, dead birds collected on OSU campus, and a surveillance camera map. – *Photo by the author.*






L to R: Campus map with animals picked up by surveillance cameras. Project poster. Moving image screening.

If you want to find out where the animals on campus are, just ask the people who watch the security cameras. While they see mostly human activity, they also do see animals - especially at night. Alexis S. Bolt's job is to keep an eye on the cameras (he has been working over a span of 7 years). He also happens to be a geography major, who volunteered to make a map of where the animals have been seen. Wild animals have been observed on camera in natural areas such as the bike path, Waterman farm and the wetlands. Some rather unusual reports of animals on campus include a red tail hawk stuck in the Neil Ave garage, the infamous bull incident on south stadium practice fields, rabbits setting off motion alarms, and frequent cow escapes on Lane Ave.

Noticing local, non-human animals and tweeting about what others notice too. If you see an animal at the Ohio State University - past or present - please post it online with #animalOSU tag so we can add it to our inventory. We are an interdisciplinary group of faculty, staff and students who hope to feel the presence of non-human animals at the Ohio State University. – *Photos by the author.*


Stephanie Malinich prepared most of the birds that went for adoption.

• **Adopt-a-bird!** *By Angelika Nelson* – Have you ever thought about adopting a museum

specimen? Visitors loved the idea and adopted birds such as a Red-headed Woodpecker, House Finch, Indigo Bunting, Blackburnian Warbler and even a Pigeon Guillemot. The latter was not a recent casualty but any bird in the collection can be adopted! If you adopt a bird for one year you will receive your name displayed with the bird skin in the museum, and a photo documentation of the process of preparing your bird for the museum (*tetrapods.osu.edu*) including sounds and fun facts of your species. Part (10%) of your donation will go to the Ohio Bird Conservation Initiative for projects on how to prevent future bird collisions. For more information and how you can contribute visit *www.ohiolightsout.org/adopt-a-bird/*. – *Photo by the author.* ☘

In the Fish Division

By Marc Kibbey, Associate Curator, Fish Division

Scorpionfish, one of the venomous species of fish on display.

The Fish Division has seen a recent series of changes in our staff, with expected although bittersweet losses and serendipitous gains. Some of the changes were simply part of the expected moving on for student employees and volunteers, but over the past year we saw two full-time employees move forward in their professional lives. Just before the Summer of 2014 we said goodbye to Fish Division Collecting Assistant Justin Baker, and former Cataloging Coordinator Charles Wentzel. Justin and Charles were hired under a grant from the Ohio Division of Wildlife to help document distribution of Ohio's fishes. Justin, after receiving a PhD in fish genomics from the University of Saint Louis, brought a substantial knowledge of fish identification skills to help Cataloging Coordinator Brian Zimmerman collect new data on Ohio's rare fish species in particular. He also developed much of our protocol for growing collection of ichthyological genetic materials. But our loss is an outstanding gain for an ecological consulting firm based in Missouri, and we look forward to hearing of great things to come in Justin's future endeavors. Charles, who came here with a Master's degree from the University of Wyoming, worked tirelessly to enter and/or update thousands of records while helping develop new procedures for our cataloging processes. Charles was hired away by a database development firm here in Columbus where he looks forward to learning new skills while providing the company an associate with integrity, innovation and dedication to details.

Brian Zimmerman and Nick Radabaugh, Fish Biologist with ODNR-Division of Wildlife, on the Scioto River.

While Brian Zimmerman continues with the demands from collecting fishes and pulling together Ohio fish records from multiple sources, he's also been quite busy with educational outreaches. In January of this year Brian presented a talk about the Museum and fish in general to students and parents attending the Reynoldsburg Middle School STEM night, and presented a discussion on the Fishes of Ohio project to to the OSU Fisheries Management Class. In February he presented the Fishes of Ohio project to the Joint OH/PA annual AFS chapter meeting, and co-hosted a fish identification seminar in Pennsylvania for about 60 fisheries professionals. In March Brian will present the Fishes of Ohio project and basic fish identification skills to an Ohio Natural History Class, and to contribute displays and discussions on Ohio fishes to 600-700 middle school kids for the AEP Earthday event in Conesville OH in May. There is a lot of work yet to be done in processing and always plenty to do in maintaining the collections here at the museum, but it can be hard to find good help, particularly when funds to hire people are limited. So, how do we find people to assist us in carrying out our mission? Successful methods include web site invitations, interactions with classes and presentation groups, and coordinating with advisors. Fortunately there are college students, and former Alumni looking for something interesting to do that fits with their goals. What do they, our volunteers (and our employees), get in return?

We offer them a range of experiences including our discipline in particular and museum collections in general working with our collections and identifying, species, credit toward their college degree, the opportunity to flesh out their resume and a reference for prospective higher education and employment, and finally an understanding that they are helping to document and thus benefit biodiversity preservation and knowledge. Our current crop of dedicated undergrad student volunteers includes Kelly Ann, Austin and Ben Arthur. One of the successful resources we enjoy access to help with our work is high school students, particularly *The Graham School*. We've enjoyed a relationship over the past several years with that school where they provide opportunities to students to experience real world work for a few hours during the middle of the day on two days per week. This year we were

provided with three fine students, Alex, Andrea and Emma. These students are all strongly interested in the biological sciences, with one of them having had a father that is a longtime archaeological curator. Our sincere gratitude goes out to these fine volunteers, interns and employees. Thanks guys! – *Photos by Huayan Chen (left) and the author (right).*☘

Live Animals

The Museum auditorium was abuzz with activity during the 2015 Open House. There visitors could look at, and sometimes handle, live animals of various kinds. Here's the scoop on some of the live animal displays:

• **Arthropods!** *By George Keeney* – The arthropod zoo at the 2015 Open House was a huge hit as always. The zoo was set up in the middle of the auditorium and utilized 5 eight foot tables. Typically 6-9 people manned the stations at any given time and everyone was needed, given the growing popularity of the Open House. Visitors particularly seem to enjoy interacting with our live specimens and engaging our volunteers in discussion about what they are seeing.



In the arthropod zoo visitors have a chance to see, and sometimes handle, various arthropods from around the world.

We had several species of tropical stick insects on display, a couple of which we used as hands-on opportunities for the public. These were the Thai and the Peruvian Black Velvet stick insects. We also had a compliment of Eastern walkingsticks on hand as well.

Other hands-on species included Madagascan Hissing Cockroaches and Giant Drummer Cockroaches from Costa Rica. We placed these in large Plexiglas containers for ease of handling by the general public. Others on display included a variety of arachnids, such as Emperor Scorpions, Chilean Rose-Hair Tarantula, Guyana Bird-eating Tarantula, Tailless Whipscorpion, and Northern Black Widow. The myriapods included Vietnamese Orange-legged Centipede, Giant Black East African Millipedes from Kenya and Olive Millipedes from Angola. Larger ant colonies of the Black Carpenter Ant and the introduced Pavement Ant were present as well, with queens present to demonstrate the size differences between the castes and reproductive capabilities. Another local species, the Large Milkweed Bug was displayed to discuss aposematism and the relationships between milkweed and the insects that feed on it.

In keeping with the general theme "TOXIC", there was also a separate display in the back corner just on scorpions and included a demonstration on scorpions ability to florescence under ultraviolet light. Many thanks to Cody Cardenas for supplying a variety of other scorpion species for display! – *Photos by MaLisa Spring (left & center) & Katherine Beigel (right).*☘

• **The Limnology Lab.** *By Jennifer Pfaff* – *We* presented information about the toxic algae blooms found in Lake Erie in the summer of 2014. The presentation incorporated information on the causes of these toxic blooms, as well as information on plankton ecology in general. This included a presentation on zooplankton and other invertebrates that can be found in most fresh water bodies.

Limnology lab featured live zooplankton and other aquatic invertebrates.

Examples of live zooplankton and fairy shrimp that had been collected in a local spring fed pond were on display in fish bowls. The presentations were carried out by Dr. Culver accompanied by two shifts of three volunteers, with Kim Winslow, Lindsay Collart, and Cathy Doyle in the morning, and Ruth Briland, Mike Kulasa, and Jenny Pfaff in the afternoon. – *Photo by the author.*☘

• **Myths around snakes and salamanders – how toxic are they?** *By Matt Holding* – A team of graduate and undergraduate students answered questions about snakes and salamanders: David Salazar, Matt Holding, Rob Denton, and the Gibbs' Lab undergraduates introduced how we study venom, how venom and anti-venom work, and the concept of bright colors as a warning. The table allowed visitors to interact with live salamanders with differing degrees of warning colorations, and featured a very special guest, the endangered Eastern Massasauga rattlesnake.

The exhibit included an interactive series of construction blocks that allowed visitors to explore how venom binds to specific chemical components in the bodies of the animals that snakes eat, as well as the way anti-venoms are used. Many visitors of all ages plaid the "Anti-venom Game" where they had to try to find the matching anti-venom blocks to inactivate each of the snake's venom proteins before the timer ran out! Ongoing research at Ohio State on venom toxicity and natural anti-venoms found in small mammals was featured and discussed with guests using this interactive display. – *Photos by Huayan Chen (left) and the author (right).*☘

Spotted salamander (Amystoma maculatum), one of Ohio's most common salamanders.

Live reptiles displays and activities in the auditorium.

☘ ☘ ☘ ☘ ☘ ☘ ☘ ☘

Heartfelt thanks to all the contributors in this issue!

Photo by Huayan Chen

Next issue of the Museum Newsletter:
Fall 2015

We greatly enjoy hearing from our readers!
Please send your feedback to the Editor at *osuc-curator@osu.edu*

Show your support by giving to the Museum!

Photo by Brian Zimmerman

Your tax-deductible gift to the **Museum of Biological Diversity at Ohio State University** helps support our *community outreach activities* such as the Museum Open House, the *training of undergraduate and graduate students*, and the *long-term preservation of the collections*. To join our community of supporters online, simply **click on the number of your preferred fund** (*below*), ***OR*** visit *go.osu.edu/search-funds* and search for the funds listed below by number. **The donation will go directly to your fund of choice.** For assistance, contact Samara Preisler, Associate Director of Development (*preisler.7@osu.edu*), (614) 292-6059.

Funds Associated with the Museum of Biological Diversity:

- **George and Mildred Wharton Endowment for Acarology Fund** (***607675***): Supports the Acarology Laboratory.
- **The Hoogstraal Memorial Acarology Student Fund** (***603280***): Supports Acarology students at the OSU Acarology Summer Program.
- **Donald J. Borror Fund for Bioacoustical Studies** (***600654***): Supports bioacoustical research, teaching and service programs.
- **D.J. and J.N. Knull Fund in Entomology** (***603756***): Supports systematic Entomology research and curatorial work in Entomology.
- **The Josef N. Knull Memorial Fund in Entomology** (***603759***): Supports systematic Entomology research and curatorial work in Entomology.
- **Friends of the C.A. Triplehorn Insect Collection Fund** (***314967***): Supports students, outreach, education, and curation at the Triplehorn Insect Collection.
- **The Ichthyology Research Endowment Fund** (***603357***): Supports research and publication in the Fish Collection.
- **OSU Herbarium Fund** (***307052***): Provides for maintenance and development of the OSU Herbarium.
- **The David H. Stansbery Bivalves Endowment Fund** (***606910***): For the enrichment and maintenance of the Bivalve Mollusc Collection, including expeditions, purchase of collections, and related expenses.
- **The Museum of Zoology Fund** (***607989***): Supports expeditions, purchase of collections and related expenses of the Museum of Zoology.
- **Tetrapod Collection Support Fund** (***314614***): Supports students, specimen acquisition and maintenance in the Tetrapod collection.

Mission

We are dedicated to the ***Preservation***, ***Documentation***, ***Scientific Study*** & ***Interpretation*** of the biological diversity of Ohio, the nation and the world.

The **Museum of Biological Diversity at The Ohio State University** houses all the university's biological collections, except fossils. We are part of the Department of Evolution, Ecology and Organismal Biology in the College of Arts and Sciences.

We fulfill our mission by:

- building and maintaining extensive collections of specimens and information for future generations;
- creating and disseminating knowledge on evolution and biological diversity through the publication of cutting-edge collections-based research, books, online databases and websites;
- providing service to the broader scientific community through loans of specimens to qualified users for study and identification;
- training the next generation of biodiversity scientists.

The Ohio State University | College of Arts and Sciences | Department of Evolution, Ecology and Organismal Biology

Museum of Biological Diversity

Acarology Laboratory
www.biosci.ohio-state.edu/~acarolog/collection

Borror Laboratory of Bioacoustics
blb.osu.edu

Fish Division
fish-division.osu.edu/

Herbarium
herbarium.osu.edu

Mollusc Division
www.biosci.ohio-state.edu/~molluscs/OSUM2

Tetrapod Division
tetrapods.osu.edu

Triplehorn Insect Collection
insects.osu.edu

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THE OHIO STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES