

Life Discovered

To share knowledge and improve education, health, agriculture, the economy, and conservation in the world

Vol. 1, Issue 3: *The Plant Issue*

The Importance of Being Botanic

Helianthus grosseserratus

Bobby Hattway was first described to me as *Discover Life's* "plant guy." From then I had expectations. I expected him to be delightfully nerdy like the rest of us in the lab. I knew he was a retired professor, so I expected him to teach me something new. What I did not expect was an individual who, despite more than 30 years in his field, is probably more passionate about his subject, plants, than when he first received his Ph.D. 29 years ago from Pennsylvania State University.



Photo by Bobby Hattaway

I should have expected that. If there is one unifying characteristic that flows through the contributors of *Discover Life.org* it is an undying, unfiltered, unmitigated zeal for all that is life and our mission to discover it. "Plant guy" is a misnomer for Bobby. His album on *Discover Life.org* is rife with creatures of all varieties, often interacting with one another. He handles garden snakes with the same confidence as when he clasps the leaves of *Leucodon julaceus*. He not only posts beautiful diagnostic photos of his specimens, but his commitment to comprehensive data compels him to also post microscopic photos. He embodies *Discover Life*, which is why he is featured in this issue.

Yet for each contributor like Bobby there are hundreds more uploading everyday, which has allowed *Discover Life* to grow beyond our imaginations to have more than 2 billion hits. While over a million fantastic diagnostic photos hosted on our servers are enough to let the halls ring with applause, the data produced by contributors are starting to add to the annals of science. We are noticing trends that only years of information can corroborate. Maps, charts, and other visualizations are becoming more available on *Discover Life.org* through joint projects such as SIAD, allowing scientists all over the world to make their arguments for how species adapt to each other and to a changing environment. Then there are the unexpected discoveries that only come with such a breadth of information available, such as the sudden decrease in size but increase in population of *Spilosoma congrua*, or Agreeable Tiger Moth, this past summer in Athens-Clarke County, Georgia (more on this story in the next issue). In this article, we celebrate Bobby's contributions to the field of botany and the next chapter of *Discover Life*, one where data becomes evidence.

Discover Life is thriving because of people like Bobby—people like you. *Thank you!*

—Anthony Sadler

The Outer Margin:

Miscellany news from the edges of our wings

Two Billion Hits and Beyond!

As anticipated, *Discover Life* surpassed the 2 billion hit mark on 20 August! The number of hits per month has steadily increased since the inception of www.discoverlife.org in 1998. In September, *Discover Life* received a 101 million hits from 829,000 IP addresses. *We owe it all to you, our contributors. Thank you from the bottom of our fluttering hearts!*

Discover Life Celebration, 1-3 November, Athens, Ga

There is much to celebrate at *Discover Life*. We will host a 3-day event in Athens, Georgia, from 1-3 November to celebrate, plan, and learn together. The meeting is designed to allow our contributors to see and participate in some of the ongoing projects sponsored by *Discover Life* in and around the Athens area.

The itinerary for the meeting is located here: <http://www.discoverlife.org/events>. *We look forward to a great weekend of discovering life together!*

1,100 Species Identified at Blue Heron Site

In 2010, Pick began an almost daily routine of standing on chairs at 4 a.m., risking his neck, to take photos of moths at the *Discover Life* Observation Site at Blue Heron Drive. In October, he took a photo of the 1,100th species to fly under his light. Pick would like to thank everyone who contributed to this benchmark, especially Cameron, Tori, and Mary for taking photos while he was travelling.

Also in September, the *Discover Life* Observation Site at Sandy Creek Nature Center breached 500 species photographed. The site was launched in February 2013, and was established by *Discover Life* staff member Tori Staples.

Discover Life Building a Network of Digital Collections

Discover Life is proposing to help 12 national and a large number of regional institutions digitize their collections of selected species of pollinators and flowering plants. The goal of this project is to better assess responses to large-scale environmental change.

We will crowdsource, error check, and integrate the images and other data to increase each occurrence record's value and make our data publicly-available in maps, analytical tools, and files shared via iDigBio, the Global Biodiversity Information Facility (GBIF), and other initiatives.

Bobby Hattaway Featured in Georgia Botanical Society Winter Newsletter

The Georgia Botanical Society winter newsletter featured an article written by *Discover Life*'s resident Botanik Man, Bobby Hattaway. In the article, Bobby highlights the need for an online herbarium for efficient scientific research. He discusses his work in Georgia and the necessity for both regional and national volunteers to continue the project. For more information about Bobby, his work, and his partnership with *Discover Life*, read the article on page 4 of this newsletter. If you are interested in volunteering for the project contact Bobby @ botanikman@gmail.com or *Discover Life* @ dl@discoverlife.org.

For Bobby's article in the Georgia Botanical Society newsletter, go here:

http://www.gabotsoc.org/?page_id=5803

Be sure to check out the progress of these ongoing initiatives and future events @

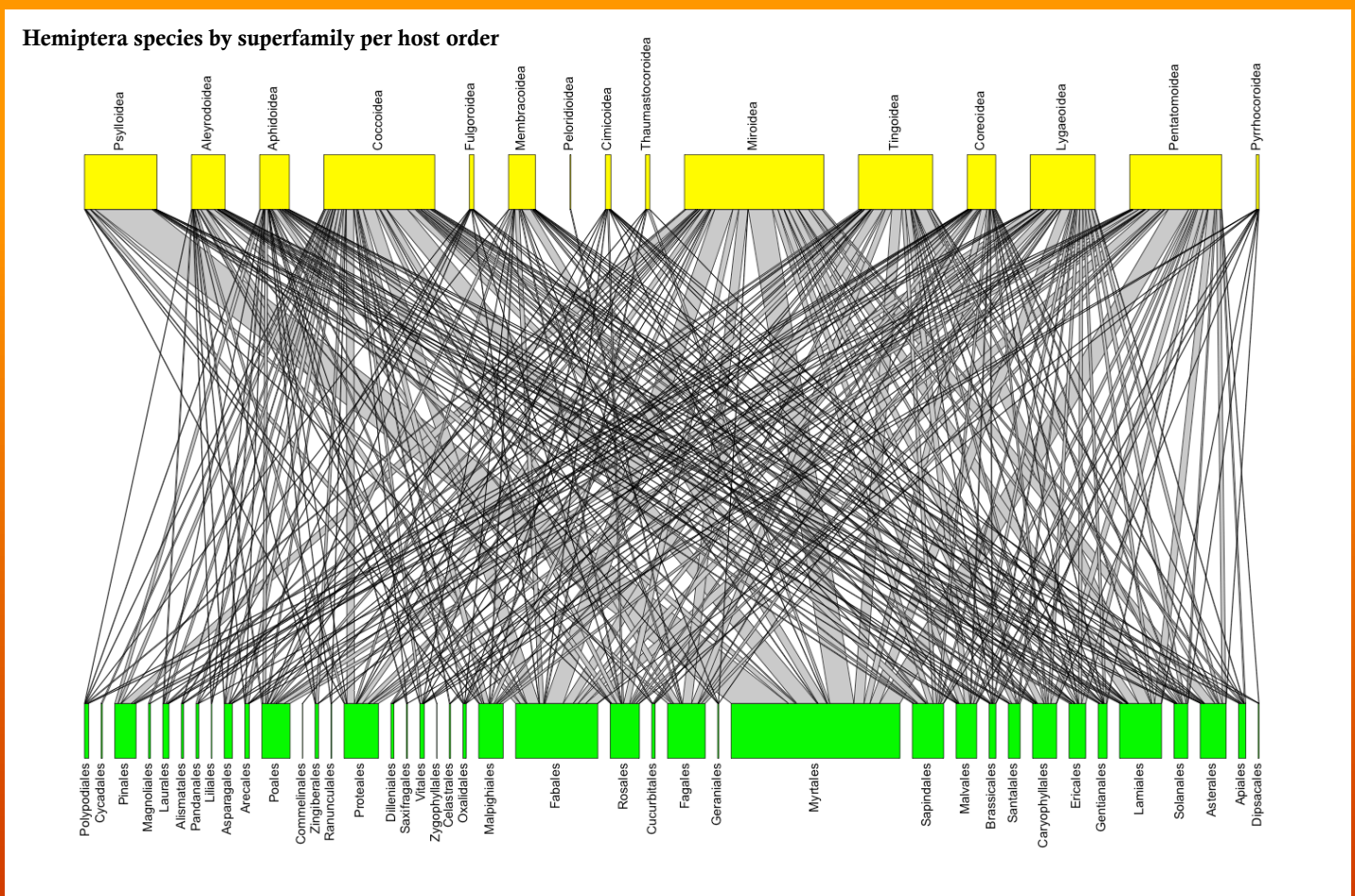
<http://www.discoverlife.org/news/>

SIAD: Joint Project adds Species Interaction Data

In the last issue of *Life Discovered*, we mentioned a new joint project with Gerry Cassis of the University of New South Wales to help create the Species Interactions of Australia Database (SIAD). The first fruits of this project are the species interaction data and visualization tools available on *Discover Life.org*. These data can be used to establish species interactions such as what occurs between insects and their host plants using data uploaded to *Discover Life* by our contributors and associates.

The goals and directives for SIAD in 2014 are to develop more online visualization tools and make them available on *Discover Life.org*. The graph below is an example.

Check out the data provided by SIAD at <http://www.discoverlife.org/siad/>



The Top Row (yellow) represents insect superfamilies.
 The bottom row (green) represents host plant orders.
 The lines represent herbivorous interactions.

Graph Courtesy of www.discoverlife.org



Botanik Man:

Bobby Hattaway's Quest for Botanical Revival

Sitting outside of one of the best restaurants in Athens, Georgia, Bobby Hattaway, botanist and recently retired professor, has more concern for his pets, which wait in a well-ventilated truck, than his hunger.

Bobby is a shy and passionate 65 year-old. (Trying to take a clear photo of him is as difficult as capturing a picture of a moth in flight.) Yet he has a great proclivity to teach. "This is a terrible grass," he taught without prompt as he sat down holding a bunch of Johnson Grass (*Sorghum*

halepense), "it's highly invasive."

Throughout our conversation there were several teaching moments, which remarkably made sense to this non-science major. He is genuinely proud of the students he turned on to botany throughout his long teaching career but is very concerned about the diminishing value placed on botany as a field and plants in general. Bobby seeks a Botanical Revival.

"Towards the end of the 20th century the modern human, at least in so-called developed countries, was already losing touch with plants," he stated. "It is a phenomenon that has been

documented called 'plant blindness.'" This, according to Bobby, has led to a decline in the number of botanists in the United States.

Bobby focuses on plants because of their keystone relationship with biomes. "You could consider plants the real unsung heroes of our planet," he continues, "because they and their ancestral relatives, the algae, perform the photochemical reactions that make life on Earth as we know it possible."

In a world with exponentially advancing technology, Bobby's concern is apt. "It is hard to be

a good steward of your environment if you don't have an appreciation for what a healthy environment or planet looks like," he explained. "Spending most of your waking hours glued to an electronic gadget is no way to assess the health of your surroundings or discover life and all its wonders. Our gadgets are tools that, if used judiciously, can do a lot of short-term good," he continued, "but if we allow them to consume us and distract us from environmental stewardship, they are ultimately detrimental."

Which is where *Discover Life* comes in.

Bobby first met Pick at a *Discover Life* workshop, "Liking Lichens," in 2011.

After years of photographing plants as a hobby, the workshop challenged him to produce better photos. "I began to focus on quality over quantity, on diagnostic versus aesthetic photos," he explained. That is when an endeavor was born, which keeps Bobby treading through Georgia cataloging plant species.

In *Discover Life*, Bobby found a conduit to create a virtual online herbarium that also supports physical herbariums. "When it comes to collecting and preserving plants by traditional means," he explained, "a virtual herbarium can not only provide a cheaper alternative but can also provide geographical and phenological (e.g. flowering time) documentation that can lead to

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later collection of actual herbarium specimens as resources become available."

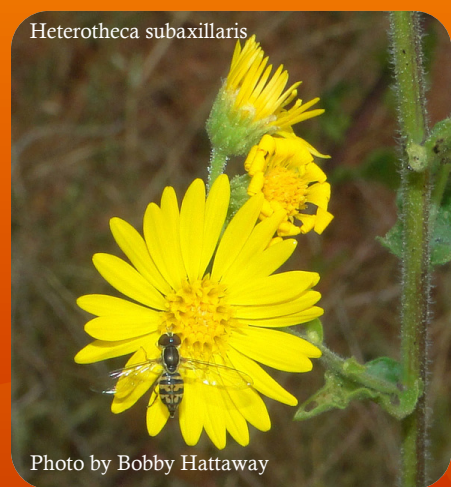
Bobby believes in the infinite possibilities of *Discover Life*, which is why he chose to contact Pick about his idea for an online herbarium.

Discover Life shares Bobby's vision for a virtual museum of the future. We envision teams of citizen scientists, students, and professors collecting data on species diversity and phenology using diagnostic photos and uploading them to *Discover Life* databases for scientific research.

Bobby has collected over 4,000 species in Georgia, more than a quarter of the total, but we need volunteers to complete the job in the Southeast and beyond.

"In the 19th century and earlier," Bobby stated, "physicians, who were also pharmacists, actually gathered their botanicals from the fields and forests and made their own medicines." Today, according to Bobby, "the present generation is not only largely unaware of their environment in general but they are unaware of plants in particular." This project aims to bring people closer

to their environment, especially plants, and to enrich scientific data on plant diversity and phenology.



“The technology that is part of the problem can be part of the solution,” he concludes. “Perhaps the greatest, often initially at least, overlooked benefit of this type of endeavor is that . . . this type of activity sharpens their senses including their environmental and situational awareness. Ultimately participants will have the potential to become better stewards of their environment.”

As mentioned above, Discover Life needs volunteers interested in contributing to Bobby's quest for an online herbarium. If interested, please contact Bobby @ botanikman@gmail.com, or Discover Life @ dl@discoverlife.org. To visit Bobby's Discover Life album, go to http://www.discoverlife.org/mp/20p?see=1_TQBH.



Agraulis vanillae

All Photos by Bobby Hattaway



Anagallis arvensis



Ipomoea hederacea

For more information go to www.discoverlife.org

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