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To:

From: Archbold Biological Station

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Collecting Science

The world is full of interesting forms of life. Each time you wander out into the world you begin interacting with plants and animals, sometimes without ever knowing how that interaction influences or affects other organisms and the environment. At Archbold Biological Station, studying these plants and animals and their interactions with other organisms is what one branch of scientific study is all about. Because of this interest in how organisms behave, interact and influence the environment, scientists at Archbold have, over many years, collected a wide variety of useful and fascinating information, as well as thousands of actual specimens of the plants and animals in the scrub habitat of our own community. Three years ago, under a grant from the National Science Foundation, Archbold scientists began to digitize its on-site biological collection and upload the information online, making it more accessible to scientist from around the world.

The Archbold insect collection is large and well maintained for a Field Station. It is a reference collection, which allows for rapid, on-site identification of insect specimens. It allows scientists to document and preserve the biodiversity of such a unique and special place like the Florida scrub. It is also a repository for “voucher specimens”, the representative specimens of special projects at Archbold, such as the ants of Florida, insects that visit flowers, endemic plants and animals and insects found in dead wood. Getting all the data for the collection online allows the

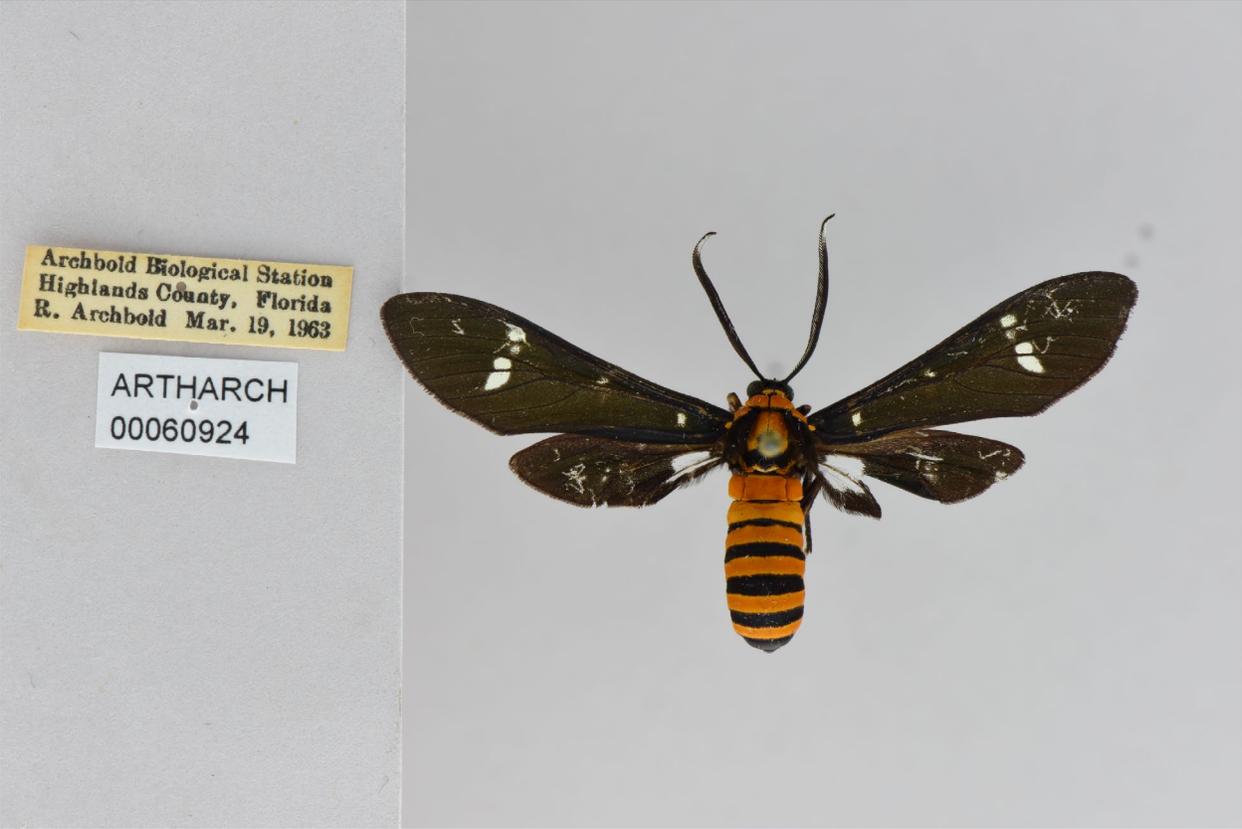
dissemination of data associated with specimens, which can help answer important ecological questions. “One example,” explains Stephanie Leon, Assistant Curator, “is our flower visitor dataset, which has more than 10,000 records of which bees, wasps, flies and beetles are visiting which flowers. This data can inform ecologists about relationships between insects and flowers they visit; the data can be used to generate visual networks which demonstrate the intricacies of these interactions.” The collection can also be considered a treasure trove for taxonomists, the scientists who classify animals, because it holds hundreds of specimens of insects not yet described as a new species. Currently, Dr. Mark Deyrup, Senior Research Biologist Emeritus, is working on a family of parasitoid wasps, which are wasps that lay their eggs on or in the bodies of other insects, and has found that one of the genera, a group of closely related species, contains more than 70 undescribed species!

The history of Archbold’s collection can be traced directly to Richard Archbold himself. Archbold, trained in museum traditions, not only wanted to develop a useful and interactive field station, he had the forethought and knowledge to ensure that the research done at the Station was well documented. Because of this, many of the specimens in the Archbold collection date back to as early as the 1950s and 60s. After decades of collecting and properly curating specimens, Archbold Biological Station has assembled an arthropod collection of more than 250,000 specimens and approximately 9,000 species. This includes over 3,600 species of beetles, more than 600 species of ants, 139 of those ants from Florida alone, 171 species of spiders, and over 600 species of flower-visiting bees, wasps, flies and beetles. If that is not amazing enough, the process for digitizing the collection is precise and lengthy. First, Dr. Deyrup curates and expands the collections, making sure every insect is correctly identified, spaced out, and placed in the correct cabinet. Once the specimens have been sorted out, an Archbold intern or volunteers and Assistant Curator Stephanie Leon type away, transcribing every label associated with that specimen. Finally, after all the data have been transcribed, Leon, photographs each specimen so that there is at least one image for each species in the collection. “This is an ongoing process which has been extremely fruitful,” says Leon “we now have more than 33,000 insect specimen digitized, including more than 7,600 species, and it is amazing to be able to share this wealth of knowledge with scientist from around the globe.”

Photo 1: One of many collection cabinets in the invertebrate lab



Photo 3: A Yellow Banded Wasp Moth collected by Richard Archbold in 1963



Archbold Biological Station
Highlands County, Florida
R. Archbold Mar. 19, 1963

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