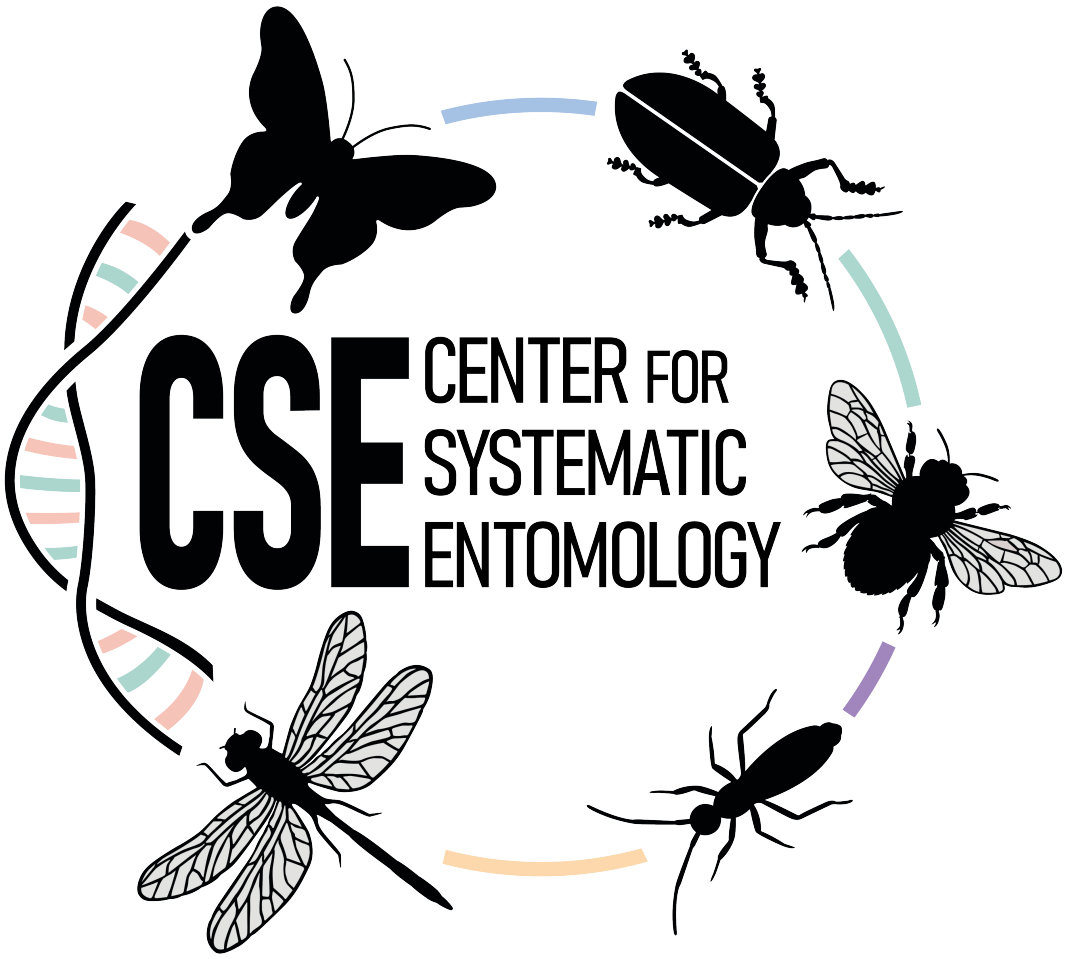

Annual Conference and Meeting

January 17th, 2026 • 9:30 am – 6:30 pm (ET)

Doyle Conner Building
1911 SW 34th St, Gainesville
Florida, USA

About us

For over 35 years, the **Center for Systematic Entomology** (CSE) has been a driving force in advancing arthropod systematics. As a non-profit organization, our mission is to support research, education, and collaboration in systematics across its broadest scope.

The CSE has played a pivotal role in supporting the **Florida State Collection of Arthropods** (FSCA). Through initiatives like the ***Peck Fund***, we offer opportunities for travel grants to the FSCA to further insect systematics and foster partnerships that strengthen our collective impact.

As part of its commitment to advancing arthropod systematics, CSE publishes ***Insecta Mundi***, a peer-reviewed journal entirely dedicated to the field, and the ***Memoirs Series***, for larger contributions. One key benefit of the CSE membership is the opportunity to publish in the journal without incurring page charges.

By joining the CSE, you actively support the FSCA and its systematics initiatives while becoming part of a passionate community dedicated to advancing entomological research.

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2026 CSE Annual Conference & Meeting

Organizers & Contributors

Program organizer: Alessandra Pandolfi
Program Layout: Davide Dal Pos & Alessandra Pandolfi
Logistics Coordinators: Felipe Soto-Adames, Julieta Brambila & Paul Skelley
Technical Support: David Plotkin & Davide Dal Pos
Moderators: David Serrano & Evan Waite

Certificates of Presentation and Attendance

Presenters can request a certificate of presentation or attendance starting Monday, January 19th, by contacting Alessandra Pandolfi at conference@csentomology.com

Code of Conduct

The CSE is dedicated to creating an inclusive, respectful, and engaging atmosphere where all attendees feel valued and supported. We encourage open and constructive communication with participants ensuring equitable opportunities for discussion, honoring time limits during presentations, and fostering connections with both new and returning members. All attendees are expected to maintain the integrity of the conference venue and associated spaces. Should you observe any behavior or language that is unprofessional or inappropriate, please bring it to the attention of the individual involved or notify the conference organizers promptly.

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Schedule at a glance

09:00 am	Registration & Presentation Upload
09:30 am	Opening & Instructions
09:35 am	**Morning - Session 1**
10:40 am	*Coffee Break & Posters*
10:50 am	**Morning - Session 2**
12:00 pm	*Lunch & Posters*
01:00 pm	**Afternoon - Session 1**
02:05 pm	*Coffee Break & Posters*
02:15 pm	**Afternoon - Session 2**
03:30 pm	*Coffee Break & Posters*
03:40 pm	**Afternoon - Session 3**
04:55 pm	Concluding Remarks & Announcements
05:00 pm	Tour of the FSCA
05:30 pm	CSE Business Meeting
07:00 pm	*Dinner* · Jalisco Town Modern Mexican Grill, Gainesville

Program

09:00 am. ***Registration & Presentation Upload***

09:30 am. ***Opening & Instructions***

09:35 am. **Assessing the availability of protected habitats for an imperiled Florida butterfly**

Ava Johnson[1], Rachel L. Walsh[1], Bert Foquet[1], & Akito Y. Kawahara[1]

[1]*University of Florida, FL – USA*

09:50 am. **Leaf litter springtails (Collembola: Entomobryomorpha and Symphypleona) of the Natural Area Teaching Laboratory (NATL) at the University of Florida, Gainesville**

Felipe Soto-Adames[1], Isabelle Atchia[1], & Kathryn Daly[1]

[1]*Florida Department of Agriculture and Consumers Services, DPI-FSCA, FL – USA*

10:05 am. **The millipedes of Virginia**

Jackson Means[1], Kal Ivanov[1], & Derek Hennen[2]

[1]*Virginia Museum of Natural History, VA – USA*
[2]*Virginia Department of Conservation and Recreation, VA – USA*

10:20 am. **Carabids of Florida: what we know and what we don't**

Evan Waite

Florida State Collection of Arthropods, FL – USA

10:35 am. **World Wasp Week 2026** [Zoom - Live]

Alexey Reshchikov

The University of Hong Kong, Hong Kong SAR – China

10:40 am. ***Coffee Break & Posters*** · Posters are listed on p. 10

10:50 am. **Reproductive and developmental variations in sexual and pathenogenic narrow-beaked katydids (Orthoptera: Tettigoniidae)**

Trevor Przestrzelski[1] & David Serrano[1]

[1]*Broward College, Davie, FL – USA*

11:05 am. **Pay-to-stay or parasite load: what limits myrmecophile abundance in ant nests?**

Ethan Wright[1] & Christina Kwapich[1]

[1]*University of Central Florida, Orlando, FL – USA*

11:20 am. **Lying is the most fun a beetle can have: honest vs. dishonest signaling in Coleoptera**

Sarah Jeffers[1], Gareth Powell[1], & Rafael Guerrero[1]

[1]*North Carolina State University, NC – USA*

11:35 am. **When evolution bites back: the complex history of Myrmeleontoidea**

Jose I. Martinez

Florida State Collection of Arthropods, FL – USA

11:50 am. **Integrative taxonomic revision of the Darwin wasp genus *Bathyzonus* Townes, 1970 (Ichneumonidae: Cryptinae)** [Zoom - Live]

Isamara Silva-Santos[1], Diego Galvão de Pádua[2], Rodrigo de Oliveira Araujo[2], Alejandro Zaldívar-Riverón[3], & Alexandre Somavilla[1]

[1]*Programa de Pós-Graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas – Brazil*

[2]*Laboratorio de Entomología General y Aplicada, Centro de Investigación de Estudios Avanzados del Maule, Universidad Católica del Maule, Talca – Chile*

[3]*Colección Nacional de Insectos, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de México – México*

12:00 pm. ***Lunch Break & Posters*** · Posters are listed on p. 10

01:00 pm. **Small collections, big impact: the role of regional entomological collections in addressing the Wallacean shortfall**

Davide Dal Pos[1,2], Sandor Kelly[2], David G. Jenkins[1], & Alessandra Pandolfi[1,2]

[1]*University of Central Florida, FL – USA*

[2]*University of Central Florida Collection of Arthropods, FL – USA*

01:15 pm. **New fruit fly identification course for pest diagnosticians**

Luc Leblanc[1], Jung W. Kim[2], Erick Rodriguez[3], & Severyn Korneyev[4]

[1]*University of Idaho, Moscow, ID – USA*

[2]*USDA-APHIS-PPQ – USA*

[3]*FSCA – USA*

[4]*CDFA – USA*

01:30 pm. **Making sense of the psychodid collection at the FSCA**

Eileen A. Buss[1], Gary Steck[1], & Erick Rodriguez[1]

[1]*FDACS-DPI, FL – USA*

01:45 pm. **Reorganization of the NCSU slide collection**

Lily A. Deeter[1], Gareth S. Powell[1], & Kyle E. Schnepp[1]

[1]*North Carolina State University, NC – USA*

02:00 pm. **Entertaining young visitors in our museums** [Zoom - Recorded]

Luc Leblanc

University of Idaho, Moscow, ID – USA

02:05 pm. ***Coffee Break & Posters*** · Posters are listed on p. 10

02:15 pm. **Studying the aquatic plant-pollinators of Southeast Florida**

Sebastian Palmieri[1], Lyn Gettys[1], Megan Reid[1], & Corey Callaghan [1]

[1]*University of Florida, FL – USA*

02:30 pm. **The more the merrier: inundative releases of biocontrol agents to improve management of waterhyacinth in south Florida**

Garcy Momplaisir[1,2], Megan Reid[1,2], Lyn Gettys[1,2] & Melissa Smith[1,2]

[1]*University of Florida, FL – USA*

[2]*USDA – USA*

02:45 pm. **Florida's agricultural inspection stations: intercepting pests on interstate truck shipments**

Catherine Nance[1], Erin Powell[1], Dyrana Russell[1], & Susan Halbert[1]

[1]*Florida Department of Agriculture and Consumer Services, Division of Plant Industry, FL – USA*

03:00 pm. **30 years of adventive aphids in Florida, USA**

Susan Halbert[1] & Catherine Nance[1]

[1]*FDACS, DPI, FL – USA*

03:15 pm. **The scarab beetles of Florida**

Emily Roeder[1], Kyle E. Schnepp[1], & Paul E. Skelley[2]

[1]*North Carolina State University, NC – USA*

[2]*Florida State Collection of Arthropods, FL – USA*

03:30 pm. ***Coffee Break & Posters*** · Posters are listed on p. 10

03:40 pm. **Pocket gophers aka Tuza, keystone species that create a unique ecosystem for many inquiline arthropods**

Paul Skelley

Florida State Collection of Arthropods, FL – USA

03:55 pm. **Revision of the West Indies genus *Nesanoplium* (Cerambycidae: Elaphidiini)**

Kenneth Geisert[1] & Gareth S. Powell[1]

[1]*North Carolina State University, NC – USA*

04:10 pm. **Neotropical Eumolpinae: male aggression, female choice, or evolutionary ships passing in the night?**

Wills Flowers

FAMU, CSE, FL – USA

04:25 pm. **Integrative taxonomy reaffirms generic boundaries in the seven genera of the *Prenolepis* genus group ants (Hymenoptera: Formicidae)**

Aswaj Punnath[1], Jason L. Williams[1], John S. LaPolla[2], & Andrea Lucky[1]

[1]*Entomology & Nematology Department, University of Florida, FL – USA*

[2] *Department of Biological Sciences, Towson University, MD – USA*

04:40 pm. ***Nylanderia* (Hymenoptera: Formicidae) of the Galápagos: endemic or not? The case of *N. nesiotis* stat. nov.**

Jason L. Williams[1], Corbin Puckett[1], Henri W. Herrera[2], John S. LaPolla[3], Gianpiero Fiorentino[4], María Camila Tocora Alonso[5], Fernando Fernández[6], Wouter Dekoninck [7], & Andrea Lucky[1]

[1]*University of Florida, FL – USA*
[2]*Escuela Superior Politécnica de Chimborazo – Ecuador*
[3]*Towson University, MD – USA*
[4]*New Jersey Institute of Technology, NJ – USA*
[5]*University of Toronto, Toronto, Ontario – Canada*
[6]*Universidad Nacional de Colombia – Colombia*
[7]*Royal Belgian Institute of Natural Sciences – Belgium*

04:55 pm. ***Concluding Remarks & Announcements***

05:00 pm. ***Tour of the Florida State Collection of Arthropods***

05:30 pm. ***Business Meeting***

07:00 pm. ***Dinner · Jalisco Town Modern Mexican Grill, 34401 NW 25th Pl. Ste A, Gainesville, FL 32606***

Posters

Digital identification tool for ambrosia and bark beetles of agriculture and forestry importance in Florida

Sandreika Laird[1], Ann Marie Robinson-Baker[1], Paul E. Skelley[2], & Muhammad Haseeb[1]

[1]*Center for Biological Control, College of Agriculture and Food Sciences Florida A&M University, Tallahassee, FL – USA*
[2] *Florida State Collection of Arthropods, Florida Department Agriculture and Consumer Services, DPI, FL – USA*

Establishment of *Sagra femorata* (Coleoptera: Chrysomelidae) in South Korea

Seunghwan Lee

Laboratory of Insect Systematics, Entomology Program, Seoul National University, Seoul, South Korea – Korea

Anthropogenic modification shifts pollinator phenology in the Northeastern United States

Marina Marquis[1], Brittany M. Mason[1], Bette Loiselle[1], Jake Francis[1], Thomas Lilkendey[1], Janina Mulling[1], & Corey T. Callaghan[1]

[1]*University of Florida, FL – USA*

Monitoring the diversity, seasonal abundance and distribution of pine bark and ambrosia beetles in the Florida Panhandle

Ann Marie Robinson-Baker[1], Muhammad Haseeb[2], Paul E. Skelley[3], & Muhammad Haseeb[2]

[1]*Florida Agricultural and Mechanical University, FL – USA*
[2]*Center for Biological Control, College of Agriculture and Food Sciences, Florida A&M University – USA*
[3]*Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS, DPI) – USA*

Holdings and project updates from the Broward College Insect Collection (BROW: BCIC)

Gabriella Rodriguez[1], Ryan Bruder[1], Trevor Przestrzelski[1] & David Serrano[1]

[1]*Broward College, FL – USA*

Integrative taxonomic revision of the Darwin wasp genus *Bathyzonus* Townes, 1970 (Ichneumonidae: Cryptinae)

Isamara Silva-Santos[1], Diego Galvão de Pádua[2], Rodrigo de Oliveira Araujo[2], Alejandro Zaldívar-Riverón[3], & Alexandre Somavilla[1]

[1]*Programa de Pós-Graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas – Brazil*

[2]*Laboratorio de Entomología General y Aplicada, Centro de Investigación de Estudios Avanzados del Maule, Universidad Católica del Maule, Talca – Chile*

[3]*Colección Nacional de Insectos, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de México – México*

Life history traits of silverfish (Nicoletiidae: Zygentoma) on ant colony islands

James Christopher Sloan[1], & Christina Kwapich[1]

[1]*University of Central Florida, FL – USA*

Presentations with abstracts

09:35 – 09:50 am

Assessing the availability of protected habitats for an imperiled Florida butterfly

Ava Johnson[1], Rachel L. Walsh[1], Bert Foquet[1], & Akito Y. Kawahara[1]

[1] *University of Florida, FL – USA* · *ava.johnson@ufl.edu*

Abstract: Insects play critical roles in ecosystems, from pollination to nutrient cycling. However, insects are declining globally, with U.S. butterfly declines documented at a rate of 22% over 20 years. Spatial ecology seeks to understand the distribution of organisms across space, and explain how resource availability, dispersal ability, and habitat fragmentation impact species persistence. Examining the availability of suitable habitats for at-risk species can provide insights into how the spatial structure of populations and landscapes influences conservation outcomes. The Loammi skipper (*Atrytonopsis loammi*) is a small, at-risk Florida butterfly. It is not clear how much of its habitat remains in Florida, and how much of it is protected. Here, we identify the most common land cover types in which *A. loammi* occurs based on publicly available data, and assess their availability within protected conservation lands as classified by the Florida Natural Areas Inventory (FNAI). We built a model in ArcGIS Pro to rank the top ten habitats in which *A. loammi* occurs. We then extracted habitat areas based on those that fall within Florida Land Managed Areas. Our findings show that *A. loammi* has a high reliance on protected lands, with over half of the top habitat areas falling within these sites. *A. loammi* occurrences in pasture, rural, and urban areas indicate that *A. loammi* can migrate through these areas. However, ongoing habitat loss and fragmentation may increase isolation of *A. loammi* habitat patches. Therefore, conserving suitable habitat to preserve movement corridors is critical.

09:50 – 10:05 am

Leaf litter springtails (Collembola: Entomobryomorpha and Symphypleona) of the Natural Area Teaching Laboratory (NATL) at the University of Florida, Gainesville

Felipe Soto-Adames[1], Isabelle Atchia[1], & Kathryn Daly[1]

[1] *Florida Department of Agriculture and Consumers Services, DPI-FSCA, FL – USA* · *felipe.soto-adames@fdacs.gov*

Studies on the ecology of leaf litter arthropods are often hindered by lack of accurate species identifications. The Natural Area Teaching Laboratory (NATL) at the University of Florida, Gainesville encompasses several types of habitats that may be used to study ecological aspects of leaf litter communities, such as the effect of vegetation type, effect of adventive species on native community composition and interactions, effect of climate change, and effectiveness of urban preserves in protecting native fauna. To provide a baseline database of leaf litter species diversity we present a first look at the composition of entomobryomorph and symphypleonan springtails at NATL. First results include a combined total of 39 species for the two orders. The 26 species of entomobryomorphs are distributed among 4 families and 18 genera, whereas the 13 species of symphypleonan represent five families and ten genera. The 39 species include 14 that are new reports for Florida, 4 Florida endemics, 26 natives and 9 are adventive. All endemic and all adventive species belong in Entomobryomorpha. A photographic gallery of species will be presented to help in species identification.

10:05 – 10:20 am

The millipedes of Virginia

Jackson Means[1], Kal Ivanov[1], & Derek Hennen[2]

[1] *Virginia Museum of Natural History, VA – USA* · *jackson.means@vmnh.virginia.gov*

[2] *Virginia Department of Conservation and Recreation, VA – USA*

Abstract: With five physiographic provinces, Virginia ranks as one of the most topographically diverse states in the southeastern US, with habitats ranging from high-elevation mountaintops to lowland Piedmont, to coastal sand dunes. The invertebrate fauna of Virginia is likewise diverse, and the state represents one of the best-studied areas in the world for millipedes due to the prolific work of myriapodologists Richard Hoffman, Rowland Shelley, and William Shear. Despite this, a comprehensive list of the millipedes of Virginia has never been compiled. Here, through an examination of literature records, museum specimens, and collections by the authors, we present the first millipede checklist for Virginia. In total, there are 47 genera containing 207 species and morphospecies, representing 20 families in nine orders. We also provide distribution maps for each species, and key morphological characteristics for each genus. Our hope is that this catalog will act as a helpful guide for those interested in millipedes and facilitate future work on the group within Virginia and the eastern United States.

10:20 – 10:35 am

Carabids of Florida: what we know and what we don't

Evan Waite[1]

Florida State Collection of Arthropods, FL – USA · *waitesevan@gmail.com*

Abstract: Ground beetles (Coleoptera: Carabidae) are one of the most species-rich beetle families worldwide and by far the most diverse in the suborder Adephaga. The most recent catalogue lists Florida as having 393 species, comprising only about 15% of the known fauna in the United States. This places Florida relatively low in diversity compared to other states, nevertheless, Florida is home to numerous interesting and noteworthy taxa that warrant continued study. In this presentation I will review the history of carabid research in Florida, discuss recent discoveries, highlight some unique species, and present plans for a compendium of the states carabid fauna.

10:35 – 10:40 am

World Wasp Week 2026

Alexey Reshchikov

The University of Hong Kong, Hong Kong SAR – China · *alexey.reshchikov@gmail.com*

Abstract: Citizen science has been proven as successful learning tool and scientific methodology for collecting data on biodiversity. Public events and bioblitzes became prominent drivers for discoveries and public-researchers cooperations. Already for two years I conduct global bioblitz World Wasps Week (WWW). It celebrates the beauty and diversity of Hymenopterans Insects (Ants, Bees and Wasps). It is

being held worldwide on iNaturalist.org platform. Naturalists all over the world of all ages are encouraged to participate and document wasps in their gardens, parks, and areas. Today my short talk is to promote World Wasps Week 2026.

10:40 – 10:50 am: *Coffee Break & Posters*

Poster titles & abstracts are listed on pp. 24-27

10:50 – 11:05 am

Reproductive and developmental variations in sexual and pathenogenic narrow-beaked katydids (Orthoptera: Tettigoniidae)

Trevor Przestrzelski[1] & David Serrano[1]

[1]*Broward College, Davie, FL – USA* · *przet@mail.broward.edu*

Abstract: *Turpilia rostrata* (Orthoptera: Tettigoniidae) is a species exhibiting both sexual and asexual reproduction. This is important to document as parthenogenesis in katydids is seen in less than 1% (Lehmann et al. 2011). The parthenogenetic population of *T. rostrata* we studied was collected in Tampa, Florida. We reared the parthenogenesis population from nymphs to adults and then separated them for individual egg laying. Aside from the asexual population, we studied a sexual population acquired in Broward Co. to compare survival rates, developmental time, reproduction speed, and other variations.

11:05 – 11:20 am

Pay-to-stay or parasite load: what limits myrmecophile abundance in ant nests?

Ethan Wright[1] & Christina Kwapich[1]

[1]*University of Central Florida, Orlando, FL – USA* · *ethan.wright@gmail.com*

Abstract: Many ant-associated parasites (myrmecophiles) occur in low numbers inside ant nests, despite being well-tolerated by their hosts and having unlimited access to host colony resources. This could be because myrmecophiles must produce energetically expensive secretions or movements to appease their hosts. Alternatively host colonies may die or abandon their nests if myrmecophiles become too numerous. To quantify the costs of hosting myrmecophiles across colony ontogeny, we changed the ratio of myrmecophiles to host ants by 1) increasing the number of parasites present or 2) reducing the number of ants present. We also measured the behavioral responses of colonies to high and low myrmecophiles loads across colony ontogeny, from founding to maturity. The beetle *Gnostus floridanus* Blatchley, 1930 (Coleoptera: Ptinidae) is a host-specialist that receives food by soliciting mouth-to-mouth food sharing with *Crematogaster* spp. colony members. It is constantly groomed and carried by the ants and can be exchanged between host nests without aggression. The Eastern ant cricket, *Myrmecophilus pergandei* Bruner, 1884 (Orthoptera: Myrmecophilidae), is a host generalist that eats host brood and is not tended or groomed by host ants. The costs imposed by internal parasites can differ depending on host size, age, and body condition. In contrast, the effects of parasites on superorganisms of different sizes and stages are largely unknown. Here, we report the effects of two different kinds of myrmecophiles on host survival, nest abandonment, and brood production (a proxy for fitness) across colony ontogeny. In

turn, we hope to discover why some myrmecophiles are rare in colonies despite the presence of abundant resources.

11:20 – 11:35 am

Lying is the most fun a beetle can have: honest vs. dishonest signaling in Coleoptera

Sarah Jeffers[1], Gareth Powell[1], & Rafael Guerrero[1]

[1]*North Carolina State University, NC – USA* · *sjeffer3@ncsu.edu*

Abstract: We review the literature on aposematic coloration and chemical defense across all Coleoptera families. We summarize the diversity of coloration across major lineages of beetles, getting a first approximation to the number of origins for aposematic color across the order. We then determine how many of these origins are coupled with known chemical defenses, and are therefore honest signals. While there are many uncharacterized taxa that could be chemically defended in some way, this is the preliminary step in investigating honest and dishonest signaling patterns in a hyperdiverse order.

11:35 – 11:50 am

When evolution bites back: the complex history of Myrmeleontoidea

Jose I. Martinez

Florida State Collection of Arthropods, FL – USA · *joemartinez@ufl.edu*

Abstract: Historically, studies of Neuroptera evolution have concentrated either on superfamily-wide frameworks or on isolated lineages, typically employing morphological or molecular approaches in isolation. This narrow focus has left major aspects of the orders overall evolutionary history insufficiently resolved. In recent years, there has been growing interest in lacewings, especially antlions, which represent the largest superfamily within Neuroptera. Earlier studies focused largely on morphological traits, with molecular data playing only a minor role. Conversely, contemporary research has relied almost entirely on genetic evidence, often neglecting key apomorphic and synapomorphic characters. This imbalance between morphological and molecular approaches has created notable systematic challenges, making it difficult to fully resolve the evolutionary history of this superfamily. Effective studies of systematics and evolutionary history require an integrated approach that combines morphological and molecular evidence. Over nearly a decade, I have collected both types of data from 420 myrmeleontoid taxa, encompassing all five recognized families within Myrmeleontoidea. My primary focus has been on the most diverse family, Myrmeleontidae, due to its continually evolving systematic classification. I examined 41 morphological characters across all sampled taxa and analyzed molecular sequences from 212 taxa, drawing on data from anchored hybrid enrichment, transcriptomics, and genomics. My results provide robust support, from both genomic and morphological perspectives, that among the 12 subfamilies studied (two Psychopsidae, two Nymphidae, two Ithonidae, two Nemopteridae, and four within Myrmeleontidae) and multiple tribes, five subfamilies and three tribes warrant elevation to full family status. Notably, I propose raising the subfamilies Ascalaphinae and Palparinae, currently within Myrmeleontidae, to family rank, as my data indicate that they are not derived antlions, contrary to previous classifications.

11:50 am – 11:55 am

Integrative taxonomic revision of the Darwin wasp genus *Bathyzonus* Townes, 1970 (Ichneumonidae: Cryptinae)

Isamara Silva-Santos[1], Diego Galvão de Pádua[2], Rodrigo de Oliveira Araujo[2], Alejandro Zaldívar-Riverón[3], & Alexandre Somavilla[1]

[1]*Programa de Pós-Graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas – Brazil*
asisantos.is@gmail.com

[2]*Laboratorio de Entomología General y Aplicada, Centro de Investigación de Estudios Avanzados del Maule, Universidad Católica del Maule, Talca – Chile*

[3]*Colección Nacional de Insectos, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de México – México*

Abstract: *Bathyzonus* Townes (Ichneumonidae) is a Neotropical cryptinae genus whose species have been recorded from Brazil, Costa Rica, Ecuador, Mexico, Peru, and Venezuela. The biology for most of its species is unknown, but one undescribed species is recorded as an egg sac pseudoparasitoid of an *Uloborus* Latreille (Uloboridae) spider. It has two valid species: *B. ruficauda* Townes, 1970 and *B. interruptor* Kasparyan & Ruíz, 2008. Males of both species are unknown. Here, we conducted a taxonomic review of *Bathyzonus* based on external morphology and the DNA barcoding (mitochondrial cytochrome oxidase subunit I gene, COI). The results revealed that *Bathyzonus* contains several undescribed species, seven of them are described as new species: *Bathyzonus* A sp. nov.; *Bathyzonus* B sp. nov.; *Bathyzonus* C sp. nov.; *Bathyzonus* D sp. nov.; *Bathyzonus* E sp. nov.; *Bathyzonus* F sp. nov.; and *Bathyzonus* G sp. nov. Moreover, we redescribe *B. ruficauda* and *B. interruptor* adding new diagnostic characters, described the male of *B. interruptor* for the first time, and updated the geographic distribution of *B. ruficauda* for its type locality. Here we provide the first register of *Bathyzonus* as a natural enemy of *Philoponela* sp. (Uloboridae). Our integrative taxonomic study revealed that *Bathyzonus* is a widely distributed genus in the Neotropics, with its species occurring in various ecosystems, including the Atlantic and Amazonian rain forests in South America. Digital photographs and key to the described species of *Bathyzonus* are also provided.

12:00 – 01:00 pm: *Lunch Break & Posters*

Poster titles & abstracts are listed on pp. 24-27

01:00 – 01:15 pm

Small collections, big impact: the role of regional entomological collections in addressing the Wallacean shortfall

Davide Dal Pos[1,2], Sandor Kelly[2], David G. Jenkins[1], & Alessandra Pandolfi[1,2]

[1]*University of Central Florida, FL – USA* · *davide.dalpos@ucf.edu*

[2]*University of Central Florida Collection of Arthropods, FL – USA*

Abstract: Entomological collections are fundamental to biodiversity and taxonomic research, serving not merely as repositories of specimens but as rich sources of data that are critical for addressing the Wallacean (geographic) shortfall. Over the past 25 years, platforms such as the Global Biodiversity Information Facility (GBIF) have provided infrastructure for collections and other data holders to share these data widely, enabling large-scale biodiversity research. Yet, despite these advances, much of the data in entomological collections remains hidden trapped in drawers, poorly cataloged, or undigitized and is therefore largely inaccessible to the scientific community, limiting our ability to fully document species geographic distributions and perpetuating the Wallacean shortfall. In this presentation, we highlight the role of regional and smaller collections in filling these gaps, using the University of Central Florida Collection of Arthropods (UCFC) as a case study. With over 575,000 individually cataloged pinned specimens, UCFC exemplifies the potential of smaller collections to provide high-quality, regionally specific data. By digitizing and sharing its holdings, UCFC helps mitigate the Wallacean shortfall by complementing larger institutions and filling critical gaps in global biodiversity knowledge. This example demonstrates that maximizing the digital accessibility of small, regional collections is essential not only for documenting biodiversity today but also for empowering research, conservation, and ecological decision-making in the future. Unlocking these data is crucial, as entomological collections are not just archives of the past but indispensable pillars of the present global biodiversity research infrastructure.

01:15 – 1:30 pm

New fruit fly identification course for pest diagnosticians

Luc Leblanc [1], Jung W. Kim[2], Erick Rodriguez[3], & Severyn Korneyev[4]

[1]*University of Idaho, Moscow, ID – USA* · *leblancl@uidaho.edu*

[2]*USDA-APHIS-PPQ – USA*

[3]*FSCA – USA*

[4]*CDFA – USA*

Abstract: We are presenting the highlights of a USDA-funded course on the identification of pest tephritid fruit flies conducted in Gainesville (Feb 2025) and Sacramento (March 2025). The hands-on course was attended by 24 in-class participants and 51 additional entomologists following online. A key to the pest Dacini of the World was published in Insecta Mundi as the outcome of the course.

01:30 – 01:45 pm

Making sense of the psychodid collection at the FSCA

Eileen A. Buss[1], Gary Steck[1], & Erick Rodriguez[1]

[1]*FDACS-DPI, FL – USA* · *Eileen.Buss@fdacs.gov*

Abstract: The Florida State Collection of Arthropods (FSCA) at the Florida Department of Consumer Services Division of Plant Industry is the repository of a large phlebotomine sand fly (Diptera: Psychodidae) microscope slide collection that had been on loan and returned in need of considerable curation. Over about two years, more than 30,000 slides were physically organized by the classification system of Shimabukuro et al. (2017), all scientific names were updated, the country of origin and number of slides for each species were determined, each species description was located or downloaded, and the label data from all of the types were recorded. This collection is a vital resource for taxonomic, species diversity, and vector-related studies.

01:45– 02:00 pm

Reorganization of the NCSU slide collection

Lily A. Deeter[1], Gareth S. Powell[1], & Kyle E. Schnepp[1]

[1]*North Carolina State University, NC – USA* · *ladeeter@ncsu.edu*

Abstract: As part of revitalization efforts in the North Carolina State University (NCSU) Insect Collection, a newly-renovated slide collection room has been designed to consolidate the entire slide holdings for the first time in the institution's history. The space also includes a dedicated work space with a slide-preparation lab bench. This slide collection is currently under reorganization, with efforts to increase accessibility and consistency in curation.

02:00 – 02:05 pm

Entertaining young visitors in our museums

Luc Leblanc

University of Idaho, Moscow, ID – USA · *leblancl@uidaho.edu*

Abstract: This entertaining 3-minute film features the highlights of a tour for children of the William F. Barr Entomological Museum, at the University of Idaho.

02:05 – 02:15 pm: *Coffee Break & Posters*

Poster titles & abstracts are listed on pp. 24-27

02:15– 02:30 pm

Studying the aquatic plant-pollinators of Southeast Florida

Sebastian Palmieri[1], Lyn Gettys[1], Megan Reid[1], & Corey Callaghan [1]

[1] *University of Florida, FL – USA* · palmieris@ufl.edu

Abstract: Pollinators play a critical role in the reproduction of flowering plants and are essential to ecosystem health. Most previous pollinator research is focused on terrestrial systems, while aquatic plant flower pollinators are relatively understudied. Similarly, understanding the impacts of urbanization and invasive species is important to inform conservation and management strategies. Hence, seasonal surveys of pollinators and aquatic plant flowers will be conducted across wetlands under varying levels of urbanization, and a controlled outdoor experiment will test if invasive plants are competing with native plants for pollinator visits. It is hypothesized that both urban development and invasive species presence alter natural pollinator visitation patterns, with lower diversity expected under greater urbanization and in the presence of invasive species. Through assessing how the presence of urbanization and invasive plant species impact pollinator behavior and floral resource utilization, researchers can improve efforts to conserve pollinator diversity and fill knowledge gaps on aquatic plant pollinators.

02:30 – 02:45 pm

The more the merrier: inundative releases of biocontrol agents to improve management of waterhyacinth in south Florida

Garcy Momplaisir[1,2], Megan Reid[1,2], Lyn Gettys[1,2], & Melissa Smith[1,2]

[1] *University of Florida, FL – USA*

[2] *USDA – USA* · Garcymomplaisir@yahoo.com

Abstract: Waterhyacinth (*Pontederia crassipes*), a free-floating aquatic plant native to South America, is a widespread problematic invasive plant in Florida and around the world. Florida has high amounts of nutrient pollution in its waterbodies, which is problematic because waterhyacinth growths extremely rapidly, especially in eutrophic conditions. Waterhyacinth is known to outcompete native plants where it is introduced and also creates dense mats that block sunlight and disrupt waterways, food chains, and nutrient cycles. Additionally, waterhyacinth impedes boat traffic, clogs pipes and drainage canals, and costs millions of dollars to manage. Although management may include chemical and mechanical control, four biocontrol agents have also been introduced into Florida to suppress populations. In south Florida, recent research has focused on the use of two of these introduced biocontrol agents, the mottled waterhyacinth weevil (*Neochetina eichhorniae*) and the waterhyacinth plant hopper (*Megamelus scutellaris*), in frequent inundative releases to improve control of problematic waterhyacinth populations. This presentation highlights the methods used thus far to conduct this research, including techniques for mass rearing, and preliminary results at some field sites of the inundative release technique. Improving our understanding of how to maximize efficiency of waterhyacinth management is critical to reduce costs and improve conservation of Floridian wetlands.

02:45 – 03:00 pm

Florida's agricultural inspection stations: intercepting pests on interstate truck shipments

Catherine Nance[1], Erin Powell[1], Dyrana Russell[1], & Susan Halbert[1]

[1]*Florida Department of Agriculture and Consumer Services, Division of Plant Industry, FL – USA*

Catherine.Nance@fdacs.gov

Abstract: The interstate highways I-10, I-75, and I-95 are key routes for long-distance truckers carrying agricultural products between states and countries. These products often carry pests. Inspectors from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS-DPI) work with Agricultural Law Enforcement officers at agricultural inspection stations along these interstate highways. Samples of suspect pests are collected by DPI inspectors and sent for identification. From 2009 to 2021, there were 5,408 samples submitted to entomologists at DPI from inspection stations. These samples resulted in 14,835 interception identifications, of which 1,466 (9.9%) were pests of regulatory significance to Florida agriculture. Of the regulatorily significant pests, 61.3% were hemipterans. Several regulated hemipterans, including the potato psyllid, *Bactericera cockerelli* (ulc) (Triozidae), are known to be vectors of plant pathogens that do not occur in Florida. Inspection station interceptions are an important tool for monitoring potentially invasive pests, as is demonstrated in the case of the Ligurian leafhopper, *Eupteryx decemnotata* (Rey) (Cicadellidae), which was intercepted alive at the agricultural inspection stations several times and subsequently found to be established in Florida in 2021. Interceptions at Florida's agricultural inspection stations can include pests that are not yet present in the United States, such as the armored scale *Davidsonaspis aguacatae* (Evans, Watson & Miller) (Diaspididae). This species is regularly intercepted alive on avocados and threatens domestically grown avocados. Our data illustrate the importance of interstate highways as a pathway for agricultural pests and of inspection stations as an early warning system for invasive insects.

03:00 – 03:15 pm

30 years of adventive aphids in Florida, USA

Susan Halbert[1] & Catherine Nance[1]

[1]*FDACS, DPI, FL – USA* · *Susan.Halbert@FDACS.gov*

Abstract: In the past 30 years, the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) has found 35 aphid species new to Florida. Six North American native species found for the first time in Florida. The other 29 are native to localities outside North America. Twenty-two are Asian, and seven are Palearctic. Ten of those that came from outside North America were not known previously from the Western Hemisphere. Six were known previously from California, three were known from other US states, and three were known from the Neotropics or South America. Four of the 35 adventive aphid species are at least minor pests in Florida. *Aphis* (*Toxoptera*) *citricidus* (Kirkaldy) has been the only major pest, but its damage pales in comparison to that of the Asian citrus psyllid, *Diaphorina citri* Kuwayama, found three years later. Six other species are pests elsewhere in the USA but have not caused damage in Florida. Two species that arrived in Florida had no valid name and required description. One, *Neophyllaphis varicolor* (Miller & Halbert), has become a pest of *Podocarpus*. Pathways for arrival are unknown, although bonsai trade is suspected in several cases. *Phorodon*

cannabis Passerini was intercepted several times before one was found in a trap.

03:15 – 03:30 pm

The scarab beetles of Florida

Emily Roeder[1], Kyle E. Schnepp[1], & Paul E. Skelley[2]

[1]*North Carolina State University, NC – USA* · *emilyroeder01@gmail.com*

[2]*Florida State Collection of Arthropods, FL – USA*

Abstract: The Scarabaeioidea are a very diverse superfamily of Coleoptera, a group generally accepted as the most diverse order of insects and life on Earth. This superfamily is composed of seven families: Geotrupidae, Hybosoridae, Lucanidae, Ochodaeidae, Passalidae, Scarabaeidae, and Trogidae. While the publications The Scarab Beetles of Florida Volume I and II cover a portion of these scarabs, we will be covering all species, updating changed classifications, and adding many new taxa. The current study will document all species in each of these families found throughout the state of Florida and provide figures, keys, maps, and references for each species. With over 70,000 available museum records, combined with data from citizen science platforms, we will create a comprehensive guide to the more than 330 species of scarab beetles in Florida.

03:30 – 03:40 pm: *Coffee Break & Posters*

Poster titles & abstracts are listed on pp. 24-27

03:40 – 03:55 pm

Pocket gophers aka Tuza, keystone species that create a unique ecosystem for many inquiline arthropods

Paul Skelley

Florida State Collection of Arthropods, FL – USA · *Paul.Skelley@fdacs.gov*

Abstract: This talk reviews years of sampling for pocket gopher burrow inhabiting scarab beetles across North America. Topics covered include gopher habits, burrow structure, regional beetle diversity and faunal shifts across their range.

03:55 – 04:10 pm

Revision of the West Indies genus *Nesanoplium* (Cerambycidae: Elaphidiini)

Kenneth Geisert[1] & Gareth S. Powell[1]

[1]*North Carolina State University, NC – USA* · *kageiser@ncsu.edu*

Abstract: The West Indies genus *Nesanoplium* Chemsak, 1966 (Cerambycinae: Elaphiidini) is reviewed. We redescribe the genus based on the actual type species, *Cyrtomerus puberulus* Fleutiaux & Salle, 1889 and designate a neotype. Seven new species are described herein. We redescribe the type species, and we redescribe *Nesanoplium dalensi* Chalumeau & Touroult, 2005 in light of the new species. Revised distributional records are provided with an updated key to species.

04:10 – 04:25 pm

Neotropical Eumolpinae: male aggression, female choice, or evolutionary ships passing in the night?

Wills Flowers

FAMU, CSE, FL – USA · *rflowers7@earthlink.net*

Abstract: The tribe Eumolpini (Eumolpinae, Chrysomelidae) is hyperdiverse in the Neotropical Region, although its diversity elsewhere is limited. One of the evolutionary drivers of their Neotropical diversity may be a high level of sexual dimorphism for apparent male aggression. Most males have expanded tarsal segment on the front and middle legs, and variously elaborate structures on the hind tibiae. One case is known of males using their hind legs to keep female elytra apart during mating. Females of some genera have diverse irregularities on their elytra, which may discourage mounting by males. While this may appear to indicate an evolutionary "battle of the sexes" or a cryptic female choice adaptation cycle there is a small problem: evolution of male structures to assist copulation, and of female structures to discourage males is happening, but not in both sexes of the same genus.

04:25 – 04:40 pm

Integrative taxonomy reaffirms generic boundaries in the seven genera of the *Prenolepis* genus group ants (Hymenoptera: Formicidae)

Aswaj Punnath[1], Jason L. Williams[1], John S. LaPolla[2], & Andrea Lucky[1]

[1]*Entomology & Nematology Department, University of Florida, FL – USA* · *aswajpunnath@ufl.edu*

[2] *Department of Biological Sciences, Towson University, MD – USA*

Abstract: Using an integrative framework that incorporates morphological examination along with phylogeny reconstruction based on Ultra-Conserved Elements (UCEs), we reassess and reaffirm the generic boundaries within the *Prenolepis* genus group: a clade of Formicinae ants containing the genera *Euprenolepis*, *Nylanderia*, *Paraparatrechina*, *Paratrechina*, *Prenolepis*, *Pseudolasius*, and *Zatania*. Our reconstructed phylogeny, based on 45 newly generated and 56 reference sequences representing

these genera from around the world, supports the monophyly of all seven genera and clarifies the taxonomic placement of several ambiguous species with atypical generic characteristics in *Nylanderia*, *Paratrechina*, and *Zatania*. We report the first records of *Zatania* in Asia: six species, including two newly described, form a well-supported sister clade to the Neotropical *Zatania*, which were previously known only from the Greater Antilles and Central America. Other taxonomic changes supported by the molecular phylogeny include the transfer of four Asian species previously classified as *Nylanderia* to *Zatania*; the transfer of *Paratrechina umbra* to *Nylanderia*; and the description of one new species of *Paratrechina* from Vietnam. Based on a combination of well-supported phylogeny and detailed morphological examination, we present reliable diagnostic characters that consistently distinguish *Nylanderia*, *Paratrechina*, and *Zatania* globally. These taxonomic changes across the genus group represent a significant advance toward establishing monophyletic, clearly defined, and consistently identifiable genera. We anticipate these advances will improve the ease of identification of these ants for future taxonomic work, as well as for biodiversity conservation and invasive species monitoring.

04:40 – 04:55 pm

Nylanderia (Hymenoptera: Formicidae) of the Galápagos: endemic or not? The case of *N. nesiotis* stat. nov.

Jason L. Williams[1], Corbin Puckett[1], Henri W. Herrera[2], John S. LaPolla[3], Gianpiero Fiorentino[4], María Camila Tocora Alonso[5], Fernando Fernández[6], Wouter Dekoninck [7], & Andrea Lucky[1]

[1]*University of Florida, FL – USA* · *jleewill@gmail.com*
[2]*Escuela Superior Politécnica de Chimborazo – Ecuador*
[3]*Towson University, MD – USA*
[4]*New Jersey Institute of Technology, NJ – USA*
[5]*University of Toronto, Toronto, Ontario – Canada*
[6]*Universidad Nacional de Colombia – Colombia*
[7]*Royal Belgian Institute of Natural Sciences – Belgium*

Abstract: The ant genus *Nylanderia* Emery comprises 138 known species and is common across most terrestrial regions worldwide. At least 15 *Nylanderia* species have spread beyond their native ranges, some becoming ecologically and economically destructive. Subtle morphology and unresolved taxonomy make many of these species difficult to identify, complicating efforts in biodiversity hotspots like the Galápagos Islands, where protecting native species and managing non-natives is a priority. The *N. guatemalensis* complex comprises six species and is particularly widespread. Here, based on comprehensive examination of Neotropical *Nylanderia*, we confirm two species of the *N. guatemalensis* complex in the Galápagos: the non-native *N. guatemalensis* (Forel) and the endemic *N. nesiotis* (Wheeler), stat. nov. While eight other ant species in the Galápagos have been considered probable endemics, *N. nesiotis* is the first confirmed as endemic through combined morphological and molecular evidence. We also recognize a new species from the Lesser Antilles, described herein as *N. insularis*, sp. nov. We synonymize *N. lietzi* (Forel), *N. steinheili* (Forel), *N. guatemalensis cocoensis* (Forel), and *N. guatemalensis itinerans* (Forel) with *N. guatemalensis* (syn. nov.), and *N. guatemalensis edenensis* (Linsley & Usinger) with *N. nesiotis*. Species boundaries are supported by combined evidence from Ultraconserved Element (UCE) phylogenomics and morphology, and results strongly support monophyly of the *N. guatemalensis* complex. We provide distributions, a worker-based key, and high-resolution images of available castes to facilitate rapid species recognition, support biodiversity monitoring, and improve detection and management of invasive *Nylanderia* in one of the worlds most sensitive island ecosystems.

4:55 – 05:00 pm: *Concluding Remarks & Announcements*

5:00 – 05:30 pm: *Tour of the Florida State Collection of Arthropods*

05:30 – 06:30 pm: *Business Meeting*

07:00 pm: *Dinner · Jalisco Town Modern Mexican Grill, 34401 NW 25th Pl. Ste A, Gainesville, FL 32606*

Posters with abstracts

Digital identification tool for ambrosia and bark beetles of agriculture and forestry importance in Florida

Sandreika Laird[1], Ann Marie Robinson-Baker[1], Paul E. Skelley[2], & Muhammad Haseeb[1]

[1]*Center for Biological Control, College of Agriculture and Food Sciences Florida A&M University, Tallahassee, FL – USA*

sandreika1.laird@famu.edu

[2] *Florida State Collection of Arthropods, Florida Department Agriculture and Consumer Services, DPI, FL – USA*

Abstract: Florida and other United States Forest ecosystems are seriously threatened by ambrosia and bark beetles [Coleoptera: Curculionidae: (Scolytinae: Platypodinae)]. In the landscape and natural habitats, these species have a significant affinity for coniferous hosts, especially pine trees (*Pinus* spp.). Significant financial damages may result from these beetles in the paper, resin, and lumber sectors. In the United States, numerous invasive beetle species have established themselves after being brought in by imported goods. Each year, a few of these species roam between woodlands and orchard trees, causing significant ecological and economic challenges. Proper identification of these beetles collected by us in the Florida Panhandle is therefore warranted for effective pest management. This digital tool showcases the identification of 25 species within 18 beetle genera, including *Ambrosiodmus, Ambrosiophilus, Cnestus, Cryptocarenus, Cyclorhipidion, Dendroctonus, Dryoxylon, Euplatypus, Gnathotrichus, Hypothenemus, Ips, Monarthrum, Myoplatypus, Phloeotribus, Stenoscelis, Xyleborinus, Xyleborus,* and *Xylosandrus*. High-resolution images were developed using a stereomicroscope (Leica MZ16) for the dorsal and lateral habitus of beetles. In order to focus on diagnostic traits including size, color, shape, antennal structure, pronotal shape, elytral punctation, seta type, scale, spine, tubercle, and others, the specimens were analyzed using multi-pathway entomological keys. This tool is under construction and, upon deployment, will support the end-users, including pest screeners, identifiers, scientists, students, extension agents, pest managers, foresters, and the public. Indeed, this digital tool will assist the regulatory agencies in Florida and the neighboring states to manage these pests effectively.

Establishment of *Sagra femorata* (Coleoptera: Chrysomelidae) in South Korea

Seunghwan Lee

Laboratory of Insect Systematics, Entomology Program, Seoul National University, Seoul, South Korea – Korea

seung@snu.ac.kr

Abstract: We report the first establishment of *Sagra femorata* (Drury, 1773) in Yeosu, South Korea, in July 2025. A preliminary field survey of 20 sites with suitable habitats near the initial detection site revealed the beetles presence in seven sites. The only host plant observed was *Pueraria montana* (kudzu), consistent with reports from non-native populations in Japan. Prior records of interceptions as maritime hitchhikers highlight the importance of marine quarantine and proper documentation. Given the excessive spread of kudzu in Korea and the limited crop impact reported in nearby regions, *S. femorata* warrants sustained monitoring over immediate eradication efforts.

Anthropogenic modification shifts pollinator phenology in the Northeastern United States

Marina Marquis[1], Brittany M. Mason[1], Bette Loiselle[1], Jake Francis[1], Thomas Lilkendey[1], Janina Mulling[1], & Corey T. Callaghan[1]

[1]*University of Florida, FL – USA*

marina.marquis@ufl.edu

Abstract: Understanding the effects of increasing anthropogenic changes on ecological communities is integral to predicting and mitigating such changes in the future. Insect pollinators are vital to ecosystem health. Quantifying pollinator phenology (i.e., flight period) offers insight into human impacts on ecosystem function, yet research is often constrained to narrow geographic and taxonomic scales. To address these constraints, we conducted a large-scale assessment of pollinator phenology across an anthropogenic modification gradient in the eastern United States using citizen science data from iNaturalist. We integrated 83,012 pollinator observations of 52 species with a remotely-sensed layer of human modification to quantify species-specific differences in phenological change. We tested whether anthropogenic modification was a predictor of phenology. Results reveal both taxonomic and spatial variation across a gradient of anthropogenic modification, with 21 species from 4 orders experiencing phenological shifts. We found evidence that pollinators in more anthropogenically modified areas of the eastern United States have extended seasons of activity that end later in the year. By leveraging abundant citizen science data, this study expands phenological research and provides a broader assessment across taxanomic and spatial scales.

Monitoring the diversity, seasonal abundance and distribution of pine bark and ambrosia beetles in the Florida Panhandle

Ann Marie Robinson-Baker[1], Muhammad Haseeb[2], Paul E. Skelley[3], Lambert H.B. Kanga[2]

[1]*Florida Agricultural and Mechanical University, FL – USA* · *Annmarie1.robinson@famu.edu*

[2]*Center for Biological Control, College of Agriculture and Food Sciences, Florida A&M University – USA*

[3]*Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS, DPI) – USA*

Abstract: Several Pine bark and Ambrosia beetles are present in different counties in Florida in the pine forests. Some of these species cause extensive damage to pines and other hardwood trees. This study was carried out to monitor and report the diversity and abundance of pine bark and ambrosia beetles in Leon and Gadsden Counties, Florida. Trapping and monitoring surveys were carried out in Leon County; (Center for Viticulture and Small Fruit Research) and Gadsden County (FAMU Research and Extension Center Quincy). The survey was conducted from July of 2022 to October of 2023. In this study, commercial ethanol gel (hand sanitizer was used as a beetle attractant) was used in the Lindgren funnel traps to capture the adult beetles. Data were collected twice per week, and specimens were taken to the Center of Biological Controls (CBC) labs for determination. A total of 1,657 individuals representing 18 genera and 24 species were captured, with the majority belonging to the tribe Xyleborini and closely related tribes. More than 90% of the beetle captured belong to invasive species. The final determination of the bark beetle species was carried out by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, and new records in selected counties were reported. Here, we report the survey results from the Southeastern Forest and provide useful information on the diversity and abundance of bark beetles present in Florida.

Holdings and project updates from the Broward College Insect Collection (BROW: BCIC)

Gabriella Rodriguez[1], Ryan Bruder[1], Trevor Przestrzelski[1] & David Serrano[1]

[1]*Broward College, FL – USA*

gabbisaburnto@gmail.com

Abstract: Current holdings and project updates from the Broward College Insect Collection (BROW: BCIC) reported.

Integrative taxonomic revision of the Darwin wasp genus *Bathyzonus* Townes, 1970 (Ichneumonidae: Cryptinae)

Isamara Silva-Santos[1], Diego Galvão de Pádua[2], Rodrigo de Oliveira Araujo[2], Alejandro Zaldívar-Riverón[3], & Alexandre Somavilla[1]

[1]*Programa de Pós-Graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas – Brazil*

asisantos.is@gmail.com

[2]*Laboratorio de Entomología General y Aplicada, Centro de Investigación de Estudios Avanzados del Maule, Universidad Católica del Maule, Talca – Chile*

[3]*Colección Nacional de Insectos, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de México – México*

Abstract: *Bathyzonus* Townes (Ichneumonidae) is a Neotropical cryptinae genus whose species have been recorded from Brazil, Costa Rica, Ecuador, Mexico, Peru, and Venezuela. The biology for most of its species is unknown, but one undescribed species is recorded as an egg sac pseudoparasitoid of an *Uloborus* Latreille (Uloboridae) spider. It has two valid species: *B. ruficauda*Townes, 1970 and *B. interruptor* Kasparyan & Ruíz, 2008. Males of both species are unknown. Here, we conducted a taxonomic review of *Bathyzonus* based on external morphology and the DNA barcoding (mitochondrial cytochrome oxidase subunit I gene, COI). The results revealed that *Bathyzonus* contains several undescribed species, seven of them are described as new species: *Bathyzonus* A sp. nov.; *Bathyzonus* B sp. nov.; *Bathyzonus* C sp. nov.; *Bathyzonus* D sp. nov.; *Bathyzonus* E sp. nov.; *Bathyzonus* F sp. nov.; and *Bathyzonus* G sp. nov. Moreover, we redescribe *B. ruficauda* and *B. interruptor* adding new diagnostic characters, described the male of *B. interruptor* for the first time, and updated the geographic distribution of *B. ruficauda* for its type locality. Here we provide the first register of *Bathyzonus* as a natural enemy of *Philoponela* sp. (Uloboridae). Our integrative taxonomic study revealed that *Bathyzonus* is a widely distributed genus in the Neotropics, with its species occurring in various ecosystems, including the Atlantic and Amazonian rain forests in South America. Digital photographs and key to the described species of *Bathyzonus* are also provided.

Life history traits of silverfish (Nicoletiidae: Zygentoma) on ant colony islands

James Christopher Sloan[1] & Christina Kwapich[1]

[1]*University of Central Florida, FL – USA*

jameschristopher.sloan@ucf.edu

Abstract: Colonies of the red imported fire ant (*Solenopsis invicta*) aggressively defend their nests against invaders and are famous for their powerful stings. Despite their defenses, fire ant nests are home to many creatures that are not ants, known as myrmecophiles. Myrmecophilous silverfish are a group of understudied insects belonging to the order Zygentoma. While research on overall biodiversity of such silverfish exists, there is limited research on the life history and behavior of this group of insects. Myrmecophiles differ greatly in physical form from their free-living relatives and have special physical adaptations that allow them to live with ant colonies. All silverfish are flightless, but the myrmecophilous, nicoletiid silverfish are also blind, potentially increasing the degree of which they are isolated in host nests separated in space. Because myrmecophiles are isolated on anthill islands, their life history traits are expected to differ from their relatives that are not bound to such islands. Field surveys were conducted in Econlockhatchee Sandhills Conservation Area, University of Central Florida Arboretum, and Lake Claire Natural Areas to collect silverfish from fire ant nests. Using a key by K. Eschrich (1905), I identified the silverfish species collected with *S. invicta* as *Grassiella wheeleri* (Zygentoma: Nicoletiidae). From the three study areas, the total sampled population percentage of males and females were 32% and 68%, respectively, which is significantly different from the expected 50:50 ratio of males and females in diploid organism populations. I also found that smaller *S. invicta* nests tend to house a smaller number of silverfish. Additionally, I have observed these silverfish consuming animal matter, including both *S. invicta* larvae and dead fruit flies. This study reveals new details not only of myrmecophile biology, but also the functions of biogeography, island syndrome, and evolution on differing geographical scales.

Notes

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