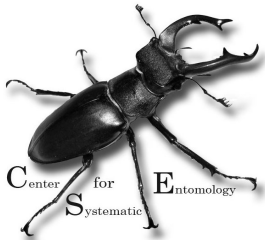


Note: All times are EST, Eastern Standard Times

Center for Systematic Entomology
Annual Meeting and Conference
3215 Hull Road, McGuire Center for Lepidoptera and
Biodiversity, upstairs conference room
February 10th, 2024
9 am to 6 pm
PROGRAM



Welcome!

Breakfast items provided by friends of the CSE

9:00 am: Opening, Introductions, and Instructions

9:10 am: *Jacqueline Y. Miller*. Highlights from the Miller Island Lepidoptera Archives. **Pre-recorded video.**

9:30 am: *Paul Masonick*. A revised classification of the assassin bugs (Hemiptera: Heteroptera: Reduviidae) based on combined analysis of phylogenomic and morphological data.

9:45 am: *James E. Hayden*. Systematics of Glaphyriinae, the cole-crambids (Lepidoptera: Pyraloidea).

10:00 am: *Min Suk Oh (presenter), Sora Kim and Seunghwan Lee*. Molecular phylogeny of Miridae (Hemiptera: Heteroptera), with discussion on its subordinate group classification. **Zoom, pre-recorded.**

10:15 am: *Daniele Sommaggio*. Old data, new information: the “Syrphidae of Italy” (Diptera) project. **Zoom.**

10:30 am: *Coffee Break*

10:45 am: *Adam Wallner (presenter), Breno Batisto Campos, and José Antônio Marin Fernandes*. Phylogenetics and taxonomy of the edible stinkbug genus *Ascra* (Pentatomidae: Edessinae) and its two species groups: *bifida* and *privata*. **Zoom.**

11:00 am: *Filippo Di Giovanni*. Italian recipe for a checklist: an updated list of Italian Darwin wasps (Hymenoptera: Ichneumonidae). **Zoom, pre-recorded.**

11:15 am: *Anna A. Namyatova (presenter) and Verónica D. Tytz*. Total-evidence phylogeny of the subfamily Cylapinae (Insecta: Heteroptera: Miridae) and the divergence dates for its subgroupings. **Zoom, pre-recorded.**

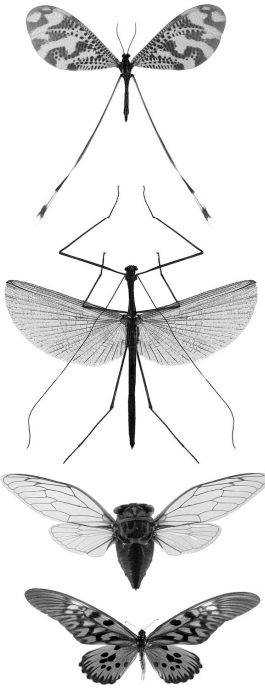
Julieta Brambila, organizer, Julieta.Brambila@usda.gov, and
cse.insectamundi@gmail.com, 352-281-0428 (text)

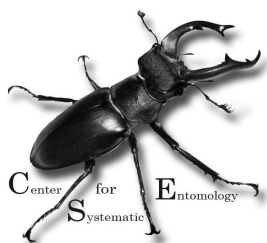
Davide Dal Pos, Alessandra Pandolfi, moderators

Your **Zoom Hosts** are David Plotkin at dplotkin@ufl.edu
and Davide Dal Pos daveliga@gmail.com

CSE: <http://centerforsystematicentomology.org>

Journal contact: insectamundi@gmail.com





11:30 am: R. Wills Flowers. Dangerous liaisons: From cryptic female choice to medieval battlefields in genital evolution of the Galerucinae s.s. (Coleoptera: Chrysomelidae).

11:45 am: Felipe N. Soto-Adames. Phylogeny and biogeography of Florida species of *Lepidocyrtus* (Collembola: Entomobryidae).

12:00 pm: Lunch (Provided by the CSE) and posters

1:00 pm: Aswaj Punnath (presenter), Jason L. Williams, John S. LaPolla, and Andrea Lucky. Taxonomic revision of the ant genus *Nylanderia* (Hymenoptera: Formicidae: Formicinae) in Vietnam.

1:15 pm: Polina A. Dzhelali (presenter) and Anna A. Namyatova. The integrative study of the subgenus *Orthops* (Insecta: Heteroptera: Miridae: Mirinae). **Zoom-prerecorded.**

1:30 pm: John Watts. I didn't know butterflies did that!: Interesting and unusual behaviors amongst the Scudders (Lepidoptera).

1:45 pm: Samuel Bolton. Why won't belief in mite monophyly just die already?

2:00 pm: Florencia Monti-Areco (presenter) and Juan Manuel Coronel. Beyond the roots: Unraveling the insect (and other invertebrates) fauna associated with Podostemaceae (Malpighiales) in Northeast Argentina. **Zoom, pre-recorded.**

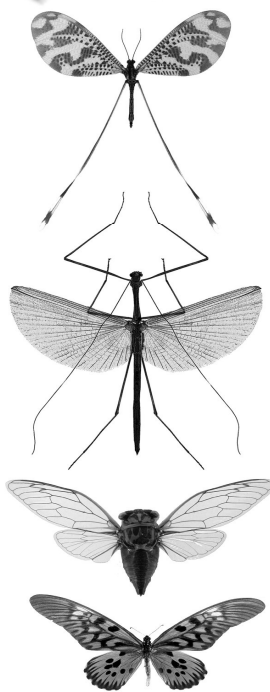
2:15 pm: Coffee Break.

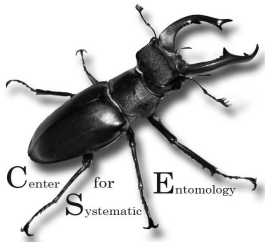
2:30 pm: Guillermo Luis Avalos (presenter), Darío Daniel Larrea, and Juan Manuel Coronel. First contribution to the Plant-bee (Apoidea) interaction network of 'El Impenetrable' National Park, Chaco, Argentina. **Zoom and poster.**

2:45 pm: Alana R. McClelland, Matthew R. Moore (presenter), Jonathan S. Bremer, Elijah J. Talamas, Susan E. Halbert, Bradley T. Brown, Matthew F. Purcell, and Matthew G. Hentz. You can run, but you will never escape: A new species of *Psyllaephagus* Ashmead (Hymenoptera: Encyrtidae), parasitoid of the classical biological control agent *Boreioglycaspis melaleuca* (Moore) (Hemiptera: Psyllidae) in Florida.

3:00 pm: John M. Leavengood, Jr. (presenter) and Harry Brailovsky. Studies in the New World tribe Anisoscelini (including Leptoscelini) (Heteroptera: Coreidae: Coreinae).

3:30 pm: Michael Bernal (presenter), John M. Leavengood, Jr. and Dr. Nicole Quinn. The broad-nosed weevils (Coleoptera: Curculionidae: Entiminae) of Florida.





3:45 pm: Andrew J. Mongue (presenter) and Robert B. Baird. Faster Z under the sea: genetic drift drives sex chromosome evolution in salmon lice (Copepoda: Caligidae).

4:00 pm: Coffee Break.

4:15 pm: Seunghwan Lee (presenter) and Minho Lee. Two exotic, *Anoplophora horsfieldii* (Coleoptera: Cerambycidae) and *Cinara watsoni* (Hemiptera: Aphididae), identified recently from Korea.

4:30 pm: Sebastian Palmieri, David Serrano and Roberto Fernandez III. The Tales from the Vault: The Papilionoidea (Lepidoptera) found in the Phillip and Patricia Frost Museum of Science collection from the Little River neighborhood of Miami, Florida 1920-1950.

4:45 pm: Tracy Liesenfelt (presenter), Erin Powell, and Andrew J Mongue. Genomic insights of recent invasion of Lebeck mealybug in Florida (Hemiptera: Pseudococcidae).

5:00 pm: Bert Kohlmann (presenter), Ángel Solís, Renato Salomão, Matthias Rös and Raúl Rivera New World dung beetle (Coleoptera: Scarabaeinae) colonization of a new Miocene insular territory. **Zoom.**

5:15 pm: Erin Powell. A trash talk: Defensive behaviors of debris-carrying lacewing larvae (Neuroptera: Chrysopidae) and their mealybug prey (Hemiptera: Pseudococcidae).

POSTER: Kaloyan Ivanov, Liberty Hightower, Jackson Means, and Nathan Jones. The terrestrial isopod fauna (Isopoda: Oniscidea) of Virginia.

POSTER: Alex Rodríguez, Sebastian Palmieri and David Serrano. Progress of the Broward College Insect Collection (BROW:BCIC): Holdings, Goals and Current Undergraduates Research Projects.

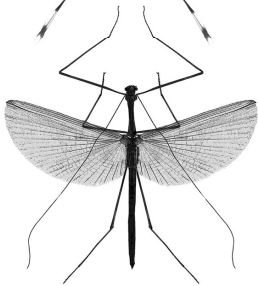
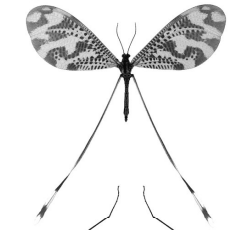
POSTER. Lorena Araujo Ivana, Juan Manuel Coronel, and Clara Etcheverry. Diversity of Isoptera in livestock areas of the Espinal Region of Northeast Argentina.

5:30 pm: Questions for all presenters, including poster presenters

5:45: Closing of event, announcements, photos

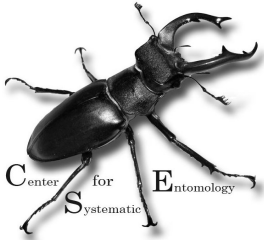
6:00 pm: CSE Annual Business meeting.

7:00-9:00 pm: Dinner at Bahama Breeze Restaurant, 3989 Plaza Blvd., Butler Plaza North, 352-378-7555 , <https://www.bahamabreeze.com/menu>



Center for Systematic Entomology
Annual Meeting and Conference
3215 Hull Road, McGuire Center for Lepidoptera and
Biodiversity, upstairs conference room
February 10th, 2024
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PROGRAM WITH SUMMARIES



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9:00 am: Opening, Introductions, and Instructions

1. 9:10 am: Jacqueline Y. Miller. Highlights from the Miller Island Lepidoptera Archives. **Pre-recorded video.**

2. 9:30 am: Paul Masonick. McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, Florida, USA.

pmasonick@gmail.com

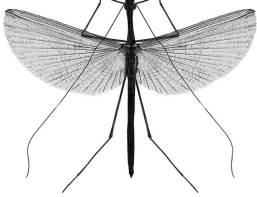
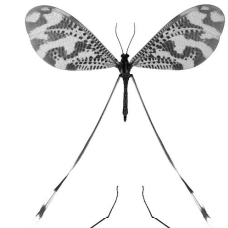
A revised classification of the assassin bugs (Hemiptera: Heteroptera: Reduviidae) based on combined analysis of phylogenomic and morphological data

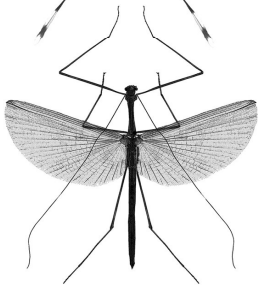
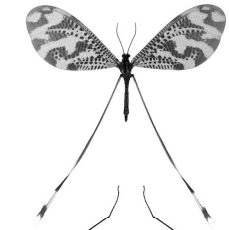
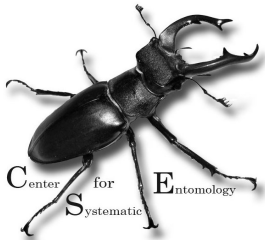
Summary: Assassin bugs (Hemiptera: Reduviidae) comprise one of the largest radiations of predatory animals (22 subfamilies; >6,800 spp.), but also include the medically important kissing bugs (Triatominae Jeannel). Reduviidae are morphologically diverse, engage in an astounding array of predatory strategies, and have evolved some of the most unique anti-predator and stealth techniques in the animal kingdom. While significant progress has been made to reveal the evolutionary history of assassin bugs and revise their taxonomy, the non-monophyly of the second largest assassin bug subfamily, Reduviinae Latreille, remains to be addressed. Leveraging phylogenomic data (2,291 loci) and 112 morphological characters, we performed the first data- and taxon-rich (195 reduvioid taxa) combined phylogenetic analysis across Reduivoidea and reconstructed morphological diagnostic features for major lineages. We corroborated the rampant polyphyly of Reduviinae that demands substantial revisions to the subfamilial and tribal classification of assassin bugs. Our new classification for Reduviidae reduces the number of subfamilies to 19 and recognizes 40 tribes. We describe three new subfamilies to accommodate distantly related taxa previously classified as Reduviinae and revise other groupings so that the updated taxonomy reflects contemporary phylogenetic evidence. This new classification represents a robust framework for future taxonomic and evolutionary research on assassin bugs.

3. 9:45 am: James E. Hayden. Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA. james.hayden@fdacs.gov

Systematics of Glaphyriinae, the cole-crambids (Lepidoptera: Pyraloidea).

Summary: Glaphyriinae (Lepidoptera: Crambidae) is a large, global radiation of moths that feed on Brassicales. In the past decade, Glaphyriinae has been expanded to include other subfamilies and miscellaneous genera, and its monophyly is supported by molecular analyses. Nevertheless, the subordinate taxa are still clearly diagnosable by morphology. Various odd taxa can be related and added. In particular, the former "Cybalomiinae" is defined, and Linostinae can be expanded to include other tropical genera.





4. 10:00 am: Min Suk Oh¹ (presenter), Sora Kim^{3,4} and Seunghwan Lee^{1, 2}.

¹ Insect Biosystematics Laboratory, Department of Agricultural Biotechnology, Seoul National University, Seoul, Republic of Korea, ² Research Institute for Agricultural and Life Sciences, Seoul National University, Seoul, Republic of Korea, ³ Insect Phylogenetics and Evolution Laboratory, Department of Plant Protection & Quarantine, Jeonbuk National University, Jeonju, Republic of Korea; ⁴ Department of Agricultural Convergence Technology, Jeonbuk National University, Jeonju, Republic of Korea.

ary364@snu.ac.kr

Molecular phylogeny of Miridae (Hemiptera: Heteroptera), with discussion on its subordinate group classification.

Summary: Although many suggestions for Miridae classification and phylogenetic position have been made, the composition and relationships among clades and taxa remain problematic. In this work, we provide new suggestions for the phylogeny of Miridae using a larger dataset than previous studies. The entire dataset comprises 16 outgroups and 188 ingroup taxa including all seven known subfamilies and 37 out of 45 known tribes. Furthermore, brief review about current phylogenetic studies on Miridae and its future prospect also be discussed.

5. 10:15 am: Daniele Sommaggio. Department of Life Sciences, University of Modena and Reggio Emilia, Italy. daniele.sommaggio@unimore.it

Old data, new information: the “Syrphidae of Italy” (Diptera) project. Zoom.

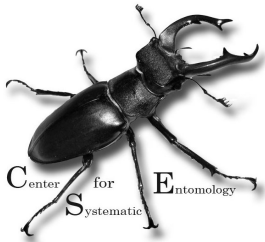
Summary: Flower flies (Diptera: Syrphidae) have always captivated the attention of the scientific community for their interesting biology (primarily Batesian mimicry) and the important ecosystem services they provide (e.g., biological control, bioindication, pollination). Despite Italy being the second country in Europe for the number of recorded species, our knowledge of Italian hoverflies remains notably incomplete. The study of hoverflies in Italy experienced a strong impetus in the second half of the nineteenth century thanks in large part to the contribution of authors such as C. Rondani and M. Bezzi. With a few exceptions, the research on Italian Syrphidae was largely forgotten in subsequent years, only to be recently revitalized. Therefore, to acquire a comprehensive picture of Italian Syrphidae, it is necessary to incorporate historical data, such as old collections and publications, with more recent collection and new collecting efforts in understudied areas. The challenge in Italy lies in the fragmentation of these collections across different local museums, starting from the two most important ones, Rondani’s and Bezzi’s. Examining these collections alone without a study of their associated publications can be misleading, as in the case of *Paragus coadonatus* and *Merodon italicus*. Recent collections will improve the information about old data, as exemplified by the remarkable finding of a specimen of *Cheilosia atriseta*. The “Syrphidae of Italy” project hosted in TaxonWorks aims to integrate all available information about hoverfly fauna in Italy functioning as a comprehensive resource for ongoing and future research in this field.

10:30 am: Coffee Break

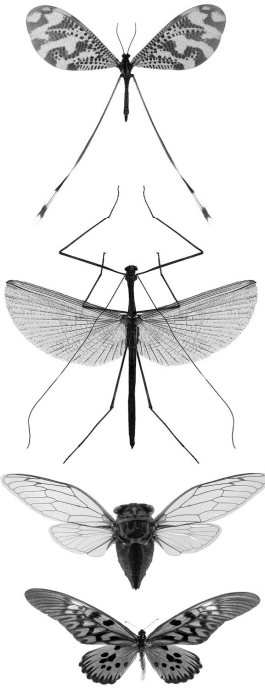
6. 10:45 am: Adam Wallner (presenter), Breno Batista Campos, and José Antônio Marin Fernandes. USDA-APHIS-PPQ, Linden New Jersey, USA.

adam.m.wallner@usda.gov

Phylogenetics and taxonomy of the edible stinkbug genus *Ascra* (Pentatomidae: Edessinae) and its two species groups: *bifida* and *privata*.



Summary: The pentomid genus *Ascra* is restricted to Mesoamerica and southern parts of the United States and is one of the most frequently detected pentatomid taxa at US ports-of-entry along the Mexican border and Florida ports. The current classification of this pestiferous genus includes seven species within the *bifida* species group. But examination of additional museum specimens has revealed seven more species, three of which are undescribed, in a newly proposed species group, *privata*, bringing the total number of taxa to 14 species. We conducted a cladistic evaluation on the monophyly of both of these species groups and the genus itself using the phylogenetic statistical software TNT based on 53 morphological characters. Our analyses reflected statistical support for the monophyly of *Ascra* as well as the *bifida* and *privata* species groups.



7. 11:00 am: Filippo Di Giovanni. Università di Siena, Dipartimento di Scienze della Vita, Evolutionary and Systematic Zoology Laboratory, Siena, Italy.

aphelocheirus@gmail.com

Italian recipe for a checklist: an updated list of Italian Darwin wasps (Hymenoptera: Ichneumonidae).

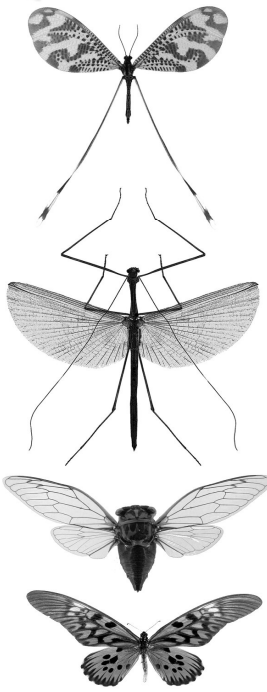
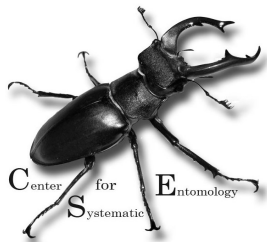
Summary: Species lists are an essential tool for taxonomists, serving as an indispensable scaffold for researchers embarking on the study of a particular taxon. Despite their apparent simplicity, redacting checklists requires adherence to guidelines to ensure that the information they contain is valuable, reliable, and can be easily accessed in the future. Within this perspective, the checklist of the Italian fauna of Darwin wasps (Ichneumonidae) not only represents the first and most complete ichneumonid list of taxa for the country in 30 years but also offers a unique opportunity to assess some challenges in creating species lists, highlighting practices that should be avoided and proposing suggestions that will improve the scientific value of checklists not only for Darwin wasps in other countries but also for other taxa in different geographical areas.

8. 11:15 am: Anna A. Namyatova (presenter) and Veronica D. Tytz.

Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia; All-Russian Institute of Plant Protection, St Petersburg, Russia. anna.namyatova@gmail.com

Total-evidence phylogeny of the subfamily Cylapinae (Insecta: Heteroptera: Miridae) and the divergence dates for its subgroupings.

Summary: Cylapinae is a subfamily of plant bugs or Miridae (Insecta: Heteroptera: Miridae) mostly inhabiting tropical and subtropical regions and living under the bark and in the leaf litter. This group is understudied, because species of this group are rare in the collections, and usually are represented by single or few specimens. The molecular based phylogenetic analysis focusing on Cylapinae has never been performed. We undertook the total-evidence analysis to test the monophyly of the subfamily and its tribes. The study was based on the morphological characters, mitochondrial (cytochrome oxidase b subunit I (COI) and 16S rRNA) and nuclear (18s rRNA and 28s rRNA) markers. We also calibrated the molecular trees with 10 fossils. The results suggested the non-monophyly of Cylapinae. Bothriomirini are monophyletic with high supports. Some of Cylapini genera are closely related to Vanniini, and other species of this tribe form monophyletic clade with Vanniini, but Vanniini are not monophyletic. Fulviini form at least two clades, which might be not closely related. Only two genera of Rhinomirini were included to the analysis, and they form a clade. Dating analysis shows that the Cylapinae subgrouping of the tribal level and above emerged at the end of the Cretaceous or beginning of the Cenozoic. The Australian clade originated in the Cenozoic. The work was supported by the Australian Biological Resources Study (ABRS) and the University of New South Wales to the first author (AN). Its final stages were supported by the Russian Foundation for Basic Research (grant number 20-04-01040 A).



9. 11:30 am: R. Wills Flowers. Florida A & M University, Tallahassee, Florida, USA.
rflowers7@earthlink.net

Dangerous liaisons: From cryptic female choice to medieval battlefields in genital evolution of the Galerucinae s.s. (Coleoptera: Chrysomelidae).

Summary: Internal genitalia of Galerucinae s.s. have a wide variety of structures in both males and females. In many species these structures could be consistent with either sexually antagonistic coevolution, or cryptic female choice, or a combination of both evolutionary models. However, in one galerucine clade both sexes bear heavy "armaments" that suggests a high frequency of traumatic mating. Internal genitalia morphology in Galerucinae has unrealized potential for taxonomic studies, as well in guiding behavioral studies of post-copulatory mating.

10. 11:45 am: Felipe N. Soto-Adames. Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA Felipe.Soto-Adames@fdacs.gov

Phylogeny and biogeography of Florida species of *Lepidocyrtus* (Collembola: Entomobryidae).

Summary: *Lepidocyrtus* Bourlet (Collembola: Entomobryidae) is one of the most species rich genera of Collembola. Although 54 species are known from the New World, only three species have been reported from Florida. In an effort to better understand the diversity and origin of the Floridian fauna of *Lepidocyrtus* we analyzed leaf litter samples from 22 counties, collected in the northcentral and extreme southern regions of the state. As a result, we report 13 species of *Lepidocyrtus* for Florida, including three new species and seven new records. The three new species and two previously described species, *Lepidocyrtus millsii* and *Lepidocyrtus floridensis* are endemic to the state. A morphology-based phylogenetic analysis of 36 New World species suggests that most species endemic to Florida are derived from Neotropical lineages. Only *Lepidocyrtus millsii* has clear affinities to Nearctic lineages.

12:00 pm: Lunch (Provided by the CSE) and posters

11. 1:00 pm: Aswaj Punnath¹ (Presenter), Jason L. Williams¹, John S. LaPolla², Andrea Lucky¹ ¹Entomology & Nematology Department, University of Florida, Gainesville, Florida, USA. ²Department of Biological Sciences, Towson University, Towson, Maryland, USA. aswajpunnath@ufl.edu

Taxonomic revision of the ant genus *Nylanderia* (Hymenoptera: Formicidae: Formicinae) in Vietnam.

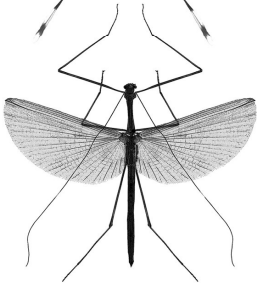
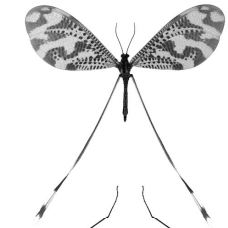
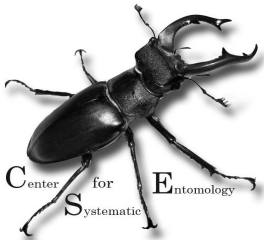
Summary: Invasive species pose threats to human health, are costly to manage, and disrupt ecosystems. The inability to identify non-native species in their early stages of invasion is challenging and can hinder efforts towards effective invasive species management. This is exemplified by *Nylanderia* ants, a widely collected ant genus with over 130 described species and hundreds more awaiting description. The regions with the highest number of *Nylanderia* species and needing taxonomic revision are Australasia and Asia, which are believed to be the native ranges of the most widely distributed and invasive *Nylanderia* species. In this study, we revise the taxonomy of Vietnamese *Nylanderia* with the description of a new species. A total of 9 species are documented including four new records. Our molecular phylogeny of Vietnamese *Nylanderia*, based on Ultra Conserved Elements (UCE) data, suggests that *Nylanderia integra* is not a true member of the genus *Nylanderia* and is thus revived as *Paratrechina integra* (comb. rev.). Additionally, the present work provides an illustrated identification key for the *Nylanderia* species occurring in Vietnam based on the worker caste.

12. 1:15 pm: Polina A. Dzhelali (presenter) and Anna A.

Namyatova. Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia.

p.dzhelali@gmail.com

The integrative study of the subgenus *Orthops* (Insecta: Heteroptera: Miridae: Mirinae).



Summary: *Orthops* is a widespread genus of plant bugs (Insecta Heteroptera: Miridae) and includes 35 species. The nominative subgenus includes seven species known mainly from the Palearctic. Five of these species are widespread, and their distribution area spans thousands of kilometers. They might live in sympatry and can be very similar morphologically. The species limits within the subgenus *Orthops* have never been tested using the molecular data. The aim of this work is to test whether these species represent the distinct groups and to find their interrelationships using an integrative approach. Morphological studies of the external characters and male and female genitalia were performed. Molecular studies were based on mitochondrial (cytochrome c-oxidase subunit I (COI), 12S rRNA) and nuclear (internal transcribed spacer I (ITS1) and Ca-ATPase) markers and included comparison of intraspecific and interspecific distances, automatic species delimitation analyses (ABGD, BPP, bGMYC, PTP, bPTP), and phylogenetic analyses. All markers showed interspecific differences, and COI was found to be the most variable. All species differed morphologically, with parameres and genitalia of females being the most reliable for the species identification. *Orthops kalmii* and *O. campestris* were monophyletic in all phylogenetic analyses. *Orthops basalis* formed a clade in most phylogenetic trees. Most species delimitation analyses confirmed the status of these three species. *Orthops scutellatus* was subdivided into two clades, Palearctic and Nearctic, this finding was also confirmed by the species delimitation analyses. The representatives of those two clades have slight differences in the parameres. *Orthops campestris* and *O. scutellatus* form a clade in all analyses, and *O. basalis* forms a clade with *O. kalmii* in most analyses. This study was supported by a grant of the Ministry of Science and Higher Education of the Russian Federation (no. 075-15-2021-1069).

13. 1:30 pm: John Watts.

Texas Discovery Gardens at Fair Park, Dallas, Texas. jwatts@txdg.org

I didn't know butterflies did that!: Interesting and unusual behaviors amongst the Scudders (Lepidoptera).

Summary: When speaking to the public about butterflies most visitors are surprised to discover that these creatures have so much interesting behavior. The author uses this in his interactions with visitors during the release done at noon. The author will introduce behaviors seen in a tropical conservatory that are not normally known by most individuals, including multispecies aggregation, audible noises produced by a number of genera, flower hoarding, unusual defecating habits, and memorization of familiarity in our ambassadors to the insect world.

14. 1:45 pm: Samuel Bolton. Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA

samuel.bolton@fdacs.gov

Why won't belief in mite monophyly just die already?

Summary: Ideas that shaped our views on whether mites represent a single taxon can be rooted to early ideas about arthropod evolution. Mite monophyly was largely assumed early on based on misunderstandings about key characters, including the mouthparts. These characters have not been adequately scrutinized, leading most mite biologists to mistakenly view mites as a natural group for more than a century.

15. 2:00 pm: Florencia Monti-Areco (presenter) and Juan Manuel Coronel. Argentina. fmonti16@hotmail.com

Beyond the roots: Unraveling the insect (and other invertebrates) fauna associated with Podostemaceae (Malpighiales) in Northeast Argentina.

Summary: Aquatic macrophytes play an essential role in aquatic ecosystems, generating a microenvironment conducive to a diverse community of organisms and providing fundamental resources for the surrounding fauna. This study focuses on Podostemaceae communities in rheophilic aquatic environments in northeastern Argentina, adapted to unique biotopes due to their exposure to water drag forces. Despite the considerable number of studies on Podostemaceae in South America, information regarding associated invertebrates, particularly insects, in the northeastern Argentine region is limited. The aim of this investigation is to communicate preliminary findings on the diversity of insects, and other invertebrate groups, associated with Podostemaceae in the Province of Misiones. The analyzed Podostemaceae species include *Podostemum muelleri*, *Tristichia trifaria*, and *Apinagia yguazuensis*. Samples were collected between 2003 and 2007 at three different locations. Fauna identification followed specific literature and taxonomic keys for each group, employing stereoscopic microscopy, with a photographic record of the analyzed organisms. Preliminary results underscore the prevalence of insect larval stages, particularly dipterans and trichopteran, alongside the presence of adult beetles, gastropod mollusks, and rotifers. Additionally, the study reports, for the first time in Argentina, the occurrence of galls on containing chironomid larvae or pupae, introducing a novel element to existing knowledge. This investigation not only addresses an information gap in the region but also emphasizes the significance of comprehending the ecology of these aquatic communities in terms of associated insect diversity. Preliminary findings highlight the complexity and uniqueness of these communities, providing a valuable foundation for future research aimed at the preservation of these environments and a deeper understanding of their ecology.

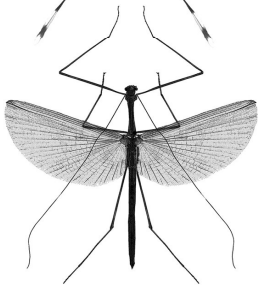
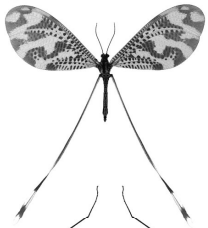
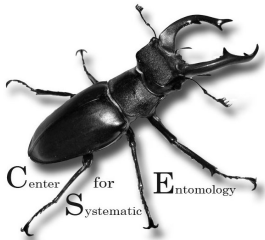
2:15 pm: Coffee Break.

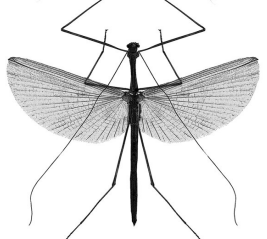
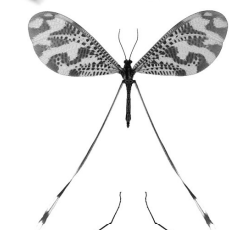
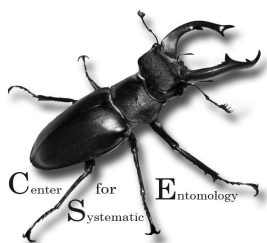
16. 2:30 pm: Guillermo Luis Avalos (presenter), Darío Daniel Larrea, and Juan Manuel Coronel. Laboratorio Biología de los Invertebrados y Protistas, Universidad Nacional del Nordeste (UNNE), Corrientes, Argentina.

guillermo.avalos.94@gmail.com

First contribution to the Plant-bee (Apoidea) interaction network of 'El Impenetrable' National Park, Chaco, Argentina.

Summary: The Chacoan 'Impenetrable' region encompasses a great diversity, with many endemic and poorly studied species. Among them, bees (Hymenoptera: Apoidea) are important for the ecosystem functioning. In Argentina, five families are represented: Colletidae, Andrenidae, Halictidae, Megachilidae, and Apidae; nevertheless, there are few contributions to the study of bee communities and the ecology of plant-pollinator interaction networks in different ecosystems. This work reports the potential interactions between some of the bee species found at 'El Impenetrable' and plant species likely associated to them according to entomo-palynological studies. Eleven bee and 24 pollen taxa were classified. A priori, we observed that the classified bee species showed a varying and differential diet, which could indicate a clear botanical preference in some bees. Asteraceae and Fabaceae, were the most frequently plant families foraged by bees. The park's plant-bee network tends to be specialized and cohesive.





17. 2:45 pm: Alana R. McClelland, Matthew R. Moore (presenter), Jonathan S. Bremer, Elijah J. Talamas, Susan E. Halbert, Bradley T. Brown, Matthew F. Purcell, and Matthew G. Hentz. Molecular Diagnostics Laboratory, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA. matthew.moore@fdacs.gov

You can run, but you will never escape: A new species of *Psyllaephagus* Ashmead (Hymenoptera: Encyrtidae), parasitoid of the classical biological control agent *Boreioglycaspis melaleucae* (Moore) (Hemiptera: Psyllidae) in Florida.

Summary: In 2020, an unidentified species of *Psyllaephagus* Ashmead (Hymenoptera: Encyrtidae) was reared from wild populations of the biological control agent *Boreioglycaspis melaleucae* (Moore) (Hemiptera: Psyllidae) in Palm Beach County, Florida. Subsequent collections of the wasp indicate that it has established in Florida. Investigation into the taxonomy of the wasp indicated that it was an undescribed species. Morphological and molecular comparison of the Florida specimens to those reared from the same psyllid in Australia demonstrated that the *Psyllaephagus* was adventive in Florida, having arrived by unknown means. The new species is described and its effects on *B. melaleucae* populations in Florida are discussed.

18. 3:00 pm: John M. Leavengood, Jr. (presenter) and Harry Braïlovsky. United States Department of Agriculture (APHIS, PPQ), Tampa, Florida, USA.

john.m.leavengood@usda.gov

Studies in the New World tribe Anisoscelini (including Leptoscelini) (Heteroptera: Coreidae: Coreinae).

Summary: An overview of 9 years of work on the New World tribe Anisoscelini (including Leptoscelini) (Heteroptera: Coreidae: Coreinae) is presented. The products of this study include over 90 new country records, updated and corrected distributions for many species, nomenclatural changes (synonymy of one genus and one species; restored status of the genus *Bitta*; new, reinstated, and resurrected combinations), a key to the 29 genera of the tribe, and a key to the species of *Anisoscelis Latreille* and *Bitta Osuna*.

19. 3:30 pm: Michael Bernal (presenter), John M. Leavengood Jr. and Dr. Nicole Quinn. USDA, APHIS, PPQ, Tampa, Florida, USA.

Michael.bernal@USDA.gov

The broad-nosed weevils (Coleoptera: Curculionidae: Entiminae) of Florida.

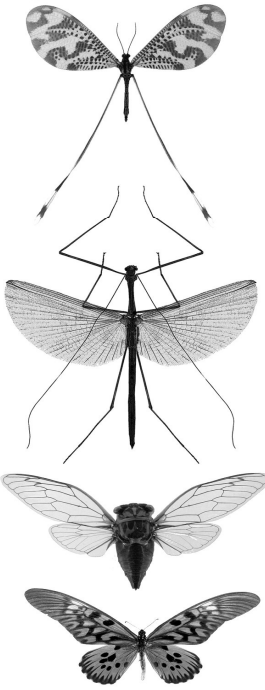
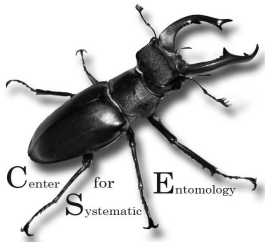
Summary: An overview of my ongoing thesis work focused on the Entiminae of Florida, both work completed, notable discoveries thus far and work that I plan to complete in the short term.

20. 3:45 pm: Andrew J. Mongue (presenter) and Robert B. Baird.

Entomology & Nematology Department, University of Florida, 1881 Natural Area Drive, Gainesville, Florida, USA. andrew.mongue@ufl.edu

Faster Z under the sea: genetic drift drives sex chromosome evolution in salmon lice (Copepoda: Caligidae).

Summary: Sex chromosome evolution is a particularly complex sub-field of population genetics and there are still unresolved questions about how quickly and adaptively these chromosomes should evolve compared to autosomes. One key limitation has historically been an intense focus on only a handful of taxa, resulting in uncertainty about whether observed patterns reflect general processes or are idiosyncratic to the few widely studied clades. In particular, the Z chromosomes of female heterogametic (ZW) systems have only been studied in birds and butterflies and moths (Lepidoptera). In birds Z chromosomes tend to be quickly but not adaptively evolving, while in butterflies and moths Z chromosomes tend to be evolving adaptively, but not always faster than autosomes. To understand how these two



observations fit into overall patterns, we explore, for the first time, patterns of Z chromosome evolution outside of these two well-studied clades. We utilize a publicly available high quality genome, gene expression, population and outgroup data for the salmon louse copepod *Lepeophtheirus salmonis*, an important aquacultural pest. We find that the Z chromosome is evolving faster than the autosomes, but that this is driven by drift rather than adaptive evolution. This faster-Z effect seems to be a result of a very low effective population size of the Z chromosome, as well as high rates of female reproductive failure mitigating the typical advantages of the Z chromosome for adaptation. These results highlight the utility of organismal life history in calibrating population genetic expectations and demonstrate the value of the ever-expanding wealth of modern publicly available genomic data to help resolve outstanding evolutionary questions.

4:00 pm: Coffee Break.

21. 4:15 pm: Seunghwan Lee (presenter) and Minho Lee. Insect Biosystematics Laboratory, Department of Agricultural Biotechnology, Seoul National University, Seoul, Republic of Korea. seung@snu.ac.kr

Two exotic, *Anoplophora horsfieldii* (Coleoptera: Cerambycidae) and *Cinara watsoni* (Hemiptera: Aphididae), identified recently from Korea.

Summary: *Anoplophora horsfieldii* (Hope, 1843), a yellow banded longhorn beetle, is originated from the South East, the subtropical Asia including Southern China. Recently, in 2019, few samples have been reported in very limited regions in a southern most island, Jeju-do, spreading and increasing the population on the major host, *Celtis sinensis*. The other exotic, *Cinara watsoni* (Aphididae), originated from FL North America, is also discovered in the central region of Korean Peninsula, Gyeonggi-do. This is the second exotic *Cinara* sp on *Pinus rigida* in Korea, after *Cinara (Cinara) atlantica* (Wilson, 1919) (Seo et al., 1994). As the species of the genera *Anoplophora* and *Cinara* travelling worldwide as the World's Worst 100 Invasive Species, the Asian Longhorn beetle, *Anoplophora glabripennis*, and the Cypress Aphid, *Cinara (Cupressobium) cupressi*, we are curious and need to monitor their dispersion and impact on native trees. Recent survey on two exotic species in Korea will be discussed.

22. 4:30 pm: Sebastian Palmieri, David Serrano and Roberto Fernandez III. Broward College, Environmental Science BS Program, Davie, Florida, USA. dserrano@broward.edu

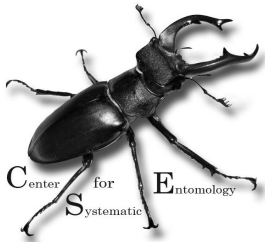
The Tales from the Vault: The Papilionoidea (Lepidoptera) found in the Phillip and Patricia Frost Museum of Science collection from the Little River neighborhood of Miami, Florida 1920-1950.

Summary: During the Phillip and Patricia Frost Museum of Science's relocation an assessment of the vault holding was conducted by David Serrano. Among various interesting arthropod finds were a collection of butterflies from the Little River neighborhood of Miami, Florida ranging from the 1920's to the 1950's. We present a history of the area, current conditions and the butterfly specimens.

23. 4:45 pm: Tracy Liesenfelt (presenter), Erin Powell, and Andrew J Mongue. Entomology & Nematology Department, University of Florida, 1881 Natural Area Drive, Gainesville, Florida, USA. tliesenfelt@ufl.edu

Genomic insights of recent invasion of Lebeck mealybug in Florida (Hemiptera: Pseudococcidae).

Summary: As genomic technology continues to advance it has become more accessible to study non-model insects. One of the greatest benefits has been using this technology to study invasive pests. One such pest is *Nipaecoccus viridis*, the Lebeck mealybug, which is a



generalist hemipteran agricultural pest. This insect has invaded Florida's commercial citrus in 2019 and has since been documented in at least 16 counties within Florida. We took samples from 9 counties obtained through the Florida Department of Agriculture and Consumer Services Division of Plant Industry to analyze for genetic variation. Then using a lab-reared colony of *Nipaeococcus viridis*, we created a highly contiguous de-novo reference genome assembly using PacBio Hifi reads in combination with Illumina Hi-C for scaffolding. We use this reference genome along with Illumina short-read alignments of our individual population samples to examine the genetic variation across Florida. We find evidence for three distinct populations of *Nipaeococcus viridis* within Florida, not clustered by geography, suggesting the unintentional dispersal through human interactions and distribution.

24. 5:00 pm: Bert Kohlmann¹ (presenter), Ángel Solís¹, Renato Salomão², Matthias Rös³ and Raúl Rivera³. ¹BioAlfa Barcoding Project, Santo Domingo de Heredia, Costa Rica; ²Facultad de Estudios Superiores Iztacala, UNAM, México; ³CIIDIR (Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional), Oaxaca, México. bkohlmann64@gmail.com

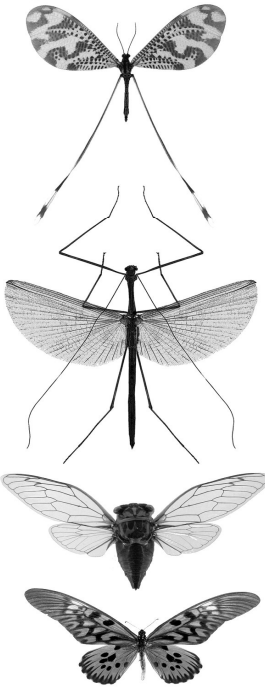
New World dung beetle (Coleoptera: Scarabaeinae) colonization of a new Miocene insular territory

Summary: Costa Rica emerged from the seas as a new geological territory during the Miocene under the form of an insular archipelago. It later became part of a continental area once it became a segment of Central America. Two dung-beetle genera, *Canthidium* and *Onthophagus* (Scarabaeidae: Scarabaeinae), are studied here. Their body size, biogeographic, and distribution patterns are studied concerning their elevational species richness gradients, endemism patterns, and the geological history of Costa Rica. The study suggests that present-day island syndromes, like high brachyptery and endemism levels, compliance with Foster's Rule, and highland species richness deficiency, are a product of the Miocene insular origin of Costa Rica.

25. 5:15 pm: Erin Powell. Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, Florida, USA. Erin.Powell@fdacs.gov

A trash talk: Defensive behaviors of debris-carrying lacewing larvae (Neuroptera: Chrysopidae) and their mealybug prey (Hemiptera: Pseudococcidae).

Summary: The interactions between the lacewing *Ceraeochrysa claveri* (Navás) (Neuroptera: Chrysopidae) larva and the coconut mealybug *Nipaeococcus nipae* (Maskell) (Hemiptera: Pseudococcidae) were recorded. The third-instar lacewing larva constructed a dorsal packet using mealybug wax from both male pupal cases and the bodies of adult females. Surprisingly, live nymphs were also frequently placed into the dorsal packet. When disturbed, adult female mealybugs reflex bled from their dorsal ostioles, contacting the mouthparts of the lacewing. The lacewing quickly retreated to clean the mouthparts on the substrate, providing further evidence that ostiolar fluids act as a defense mechanism for mealybugs. Video footage of dorsal packet construction and ostiolar reflex bleeding will be provided. This is the first report of *C. claveri* preying on *N. nipae*, the first evidence of *C. claveri* using mealybug wax to construct the dorsal packet, and the first account of reflex bleeding via the dorsal ostioles to deter predators in *N. nipae*.



26. POSTER: *Kaloyan Ivanov¹, Liberty Hightower¹, Jackson Means¹, and Nathan Jones²*. ¹ Department of Recent Invertebrates, Virginia Museum of Natural History, Martinsville, Virginia, USA. ² American Isopod and Myriapod Group.

Kal.Ivanov@vmnh.virginia.gov

The terrestrial isopod fauna (Isopoda: Oniscidea) of Virginia.

Summary: We present the first comprehensive list of the terrestrial isopods of Virginia based on published records, museum collections, review of online databases, and original collecting. Currently, 29 species and subspecies of terrestrial isopods from 20 genera and 12 families are reliably reported from Virginia including 10 native and 19 exotic taxa. Ten new state records are presented, and county-level distributions are provided for all but the widespread taxa.

27. POSTER: *Alex Rodríguez, Sebastian Palmieri and David*

Serrano: Undergraduates Research Projects. Broward College, Environmental Science BS Program, Davie, Florida, USA. dserrano@broward.edu

Progress of the Broward College Insect Collection (BROW:BCIC): Holdings, Goals and Current Undergraduates Research Projects

Summary: An update of current holdings, goals and undergraduates research projects at the Broward College Insect Collection (BROW:BCIC)

28. POSTER: *Lorena Araujo Ivana, Juan Manuel Coronel, and Clara Etcheverry.* Facultad de Ciencias Exactas y Naturales y Agrimensura. UNNE.

Corrientes, Argentina. ivanalorena.araujo@gmail.com.

Diversity of Isoptera in livestock areas of the Espinal Region of Northeast Argentina.

Summary: Diversity of Isoptera in livestock areas of the Espinal Region of Northeast Argentina. Termites play a crucial role in terrestrial ecosystems. Their presence and activity have a significant impact on the decomposition of organic matter, stimulating the recirculation of nutrients in the soil. The role of termites as bioindicators of habitat disturbances is increasingly highlighted. Species associations show a marked response to changes in land use, making them valuable tools for evaluating and monitoring environmental health. One of the most influential disturbances in Isoptera communities is livestock activity, which involves the replacement of forests with grasslands. This trend has been evidenced in various analyses, recognizing a general decrease in termite diversity with the intensification of earth use. The Espinal region in Argentina covers the southern parts of the provinces of Corrientes, the northern areas of Entre Ríos, parts of Santa Fe, Córdoba, San Luis, La Pampa, and the southern region of Buenos Aires. It is characterized by gently rolling plains, low mountain ranges, grassland savannas, and grasslands interspersed with isolated trees. The climate varies from humid and hot to dry and temperate. The rainfall regime fluctuates from 1,170 mm annually in the east to 350 mm in the west and south. It is one of the regions that has suffered significant environmental degradation, but no studies to date have analyzed the impact of these disturbances on termite communities, as has been done for the Chaco and Paraná regions. This study is the first to examine the effect of livestock activities on the termites assemblages in the Espinal region. The surveys followed a standardized sampling protocol for Isoptera. The samples were fixed in 80% alcohol and then transferred to the laboratory for taxonomic identification. Only six taxa were detected in this study, which is significantly lower than the diversity observed in other regions.

5:30 pm: Questions for all presenters, including poster presenters

5:45: Closing of event, announcements, photos

6:00 pm: CSE Annual Business meeting

7:00-9:00 pm: Dinner at Bahama Breeze Restaurant, 3989 Plaza Blvd., Butler Plaza North, 352-378-7555, <https://www.bahamabreeze.com/menu>

