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J. BARRY LOMBARDINI: EDITOR

MAJOR HABITATS FOR SEMINOLE CRESCENT (*ANTHANASSA TEXANA SEMINOLE*) IN LOUISIANA. PART THREE: INDIAN BAYOU NATIONAL WILDLIFE REFUGE

BY

GARY NOEL ROSS AND BRANDON JEROME JOHNSON

Seminole crescent (A*nthanassa texana seminole*)

This is a continuation in a series of short articles on the Seminole crescent (A*nthanassa texana seminole*). [See "Update on the Seminole crescent in Louisiana" in *News of The Lepidopterists' Society*, Winter 2023, Vol. 65:4, pages 172-182, 200.]

Indian Bayou National Wildlife Refuge is a protected area is within Louisiana's Atchafalaya Basin, the original floodplain of the Atchafalaya River, an enormous distributary of the even larger Mississippi River. Contained by natural levees formed from abandoned courses of the larger Mississippi River, the Basin begins near Simmesport, Louisiana and stretches 140 miles southward to the Gulf of Mexico. Most of the Basin lies within St. Martin Parish and St. Landry Parish; the official designation is Atchafalaya Natural Heritage Area. Indian Bayou National Wildlife Refuge consists of 28,500 acres administered

by the United States Army Corps of Engineers, New Orleans District. The massive floodplain contains almost one million acres of cypress swamps and bayous, backwater lakes, and bottomland hardwood forests – the largest such wetland within the United States (larger than the Everglades in southern Florida). The actual refuge is in the heart of the Basin. The venue is easily accessible from the Butte La Rose Rest Stop, Exit #121 of Interstate highway I-10. This is 40 miles west of Baton Rouge, and approximately five miles east of the famous crawfish-producing communities of Henderson and Breaux Bridge. Indian Bayou is a modern recreational area. Trails for hiking, hunting, nature-watching, photographing, and ATV navigation are well maintained. In addition, the area accommodates several boat ramps for access to water for those individuals pursuing fishing, canoeing. or swamp boat tours.

The specific sites where *A. texana seminole* has been observed are along the main ATV trail that initiates near the tourist bathrooms in the rest area. The trail dissects thick bottomland hardwood landscapes. Most of the shadowy trail is flanked by shallow vegetated ditches that capture rain runoff so that the trail remains relatively dry except during major floods. *A. t. seminole* was observed by BJJ on the following dates: July 11 and 28, October 6 – all 2024. Most individuals (as many as 34 in one small site) were basking on sun-speckled patches of ground or on sunny vegetation between mid-morning and mid-afternoon on sunny days. Several individuals were nectaring on opposite leaf spotflower (*Acmella oppositifolia*), strangler daisy (*Calyptocarpus vialis*), and blue mistflower (*Conoclinium coclestinum*) – all within the family Asteraceae. No species within the family Acanthaceae, potential hosts for the butterfly, were identified.

On November 12, 2024, Craig Marks visited Indian Bayou. He reported observing ten Seminoles, two of which were mating; most were in fresh condition. All were along the St. Martin Trail within the sanctuary.

Seminole crescent
(*Anthanassa texana seminole*)

Seminole crescent
(*Anthanassa texana seminole*)

A compilation of other notable butterflies observed by both Johnson and Marks include: cloudless sulphur (*Phoebis sennae*), little yellow (*Pyrisitia lisa*), (*Libytheana carinenta*), Gulf fritillary (*Dione vanillae*), phaon crescent (*Phyciodes phaon*), pearl crescent (*Phyciodes tharos*), question mark (*Polygonia interrogationis*), red admiral (*Vanessa atalanta*), red-spotted purple (*Limenitis arthemis astyanax*), viceroy (*Limenitis archippus*), hackberry emperor (*Asterocampa celtis*), Carolina satyr (*Hermeuptychia sosybius*), long-tailed skipper (*Urbanus proteus*), Hayhursts's scallopwing (*Staphylus hayhurstii*), southern skipperling (*Copaeodes minimus*), tropical checkered skipper (*Burnsius oileus*), and fiery skipper (*Hylephila phyleus*). The most abundant species was *Polygonia interrogationis* – 45 individuals by Marks.

[All photographs by Brandon Jerome Johnson]

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INDEX

Page

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"Cover illustrations: First known drawing of a North American butterfly from the Modern Age: Eastern Tiger Swallowtail *(Papilio glaucus*) by John White, North Carolina, 1587 (original design by J.V. Calhoun, 1996)."

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SYMPISTIS CHIONANTHI (SMITH, 1797)(LEPIDOPTERA: NOCTUIDAE) IN LOUISIANA

BY

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Sympistis chionanthi male captured October 8-2018,
Caddo Parish, Louisiana, USA

This illustrated male is the first to be captured (state record) in Louisiana using a high-wattage ultraviolet light trap. The primary larval foodplant for ***Sympistis chionanthi*** (Smith) is ***Chionanthus virginicus*** Linnaeus, the common name white fringetree, is a commonplace tree in northwest Louisiana and also disjunct populations in extreme southeast Louisiana which continues to Florida and northward to New York state. Despite operating insect light traps for over one million trap hours over the past 42 years at the *AESS where fringtrees are present, no ***S. chionanthi*** were seen nor taken. Brown (1945) reported in Louisiana ***C. virginicus*** is widely distributed in pinelands, but absent from the Mississippi River floodplain.

The invasive emerald ash borer (Agrilius ***planipennis*** Fairmaire, 1888) native too Russia, China, Japan and North Korea not only has attacked ash trees in North America, but also the related white fringetree ***Chionanthus virginicus*** and others. White fringetree is a close relative of ash and is native to the United States and grows wild from New Jersey to Florida and Texas (Peterson and Cipollini, 2017). These authors reported on ***A. planipennis*** , unfortunately to the majority of interested readers, through a pay to access publication. Another ash relative, devilwood ***Osmanthus americanus*** B & H occurs in extreme southeast Louisiana (Brown, 1945), and is also reported to be attacked by ***A. planipennis*** (Cipollini and Rigsby, 2015).

S. chionanthi was not covered by Covell (1984) nor by Heppner (2003).

*Abita Entomological Study Site (AESS): sec.24,T6S,R12E, 4.2 miles northeast of Abita Springs, St. Tammany Parish, Louisiana USA.

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Phyciodes phaon

David Rupe reports the following: "On September 18, 2024, I collected a gulf fritillary (*Dione vanillae*) and a female white m hairstreak (*Parrhasius m-album*) in my backyard near Deane Solomon Drive in Fayetteville, Washington Co., Arizona".

"I also photographed a phaon crescent (*Phyciodes phaon*) on an undeveloped parcel in Lincoln, Washington Co., Arizona on September 26, 2024".

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NEW MOTHS OBSERVED AT TRINITY RIVER NATIONAL WILDLIFE REFUGE BETWEEN AUGUST 1, 2024 AND OCTOBER 31, 2024.

BY
STUART MARCUS

GELECHIIDAE:
Dichomeris agonia

CRAMBIDAE: *Vaxi auratellus*
(Curve - lined Vaxi)

EREBIDAE: *Idia rotundalis*
(Rotund Idia Moth)

CRAMBIDAE: *Donacaula tripunctellus*
(TENTATIVE ID)

NOCTUIDAE: *Schinia lynx*
(Lynx Flower Moth)

PYRALIDAE: *Pococera robustella*
(Pine Webworm)

PYRALIDAE: *Laetilia sp.*

SPHINGIDAE: *Pachysphinx modesta*
(Modest Sphinx)

(Stuart Marcus, E-Mail: stuart.marcus13@gmail.com)

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The *Sesiidae* Boisduval, 1828 of Caddo Parish, Louisiana, USA

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Royal Hills Tree Farm Caddo Parish Louisiana

Fig. 1. Topographical Aerial Site Map. Placement of Sesiid traps at Royal Hills Tree Farm,

Caddo Parish, Louisiana in 2018-20. Trap numbers 1-87.

Beginning in April 2018, the authors placed 65 self-designed automatic-capture insect traps utilizing commercial semiochemical lures for capturing clearwing moths at Royal Hills Tree Farm,13302 Mailbox Road, Vivian, Caddo Parish, Louisiana, 71082 (cover and Fig. 1) for the purpose of surveying the clearwing moths of the Lepidoptera family ***Sesiidae*** Boisduval. This location was selectively logged in the past, and is comprised of 153 acres of rolling hills woodlands, with minimally disturbed flora, and interspersed with dirt roads and food plots, intersected by two buried pipeline right of ways. There are about 25 acres of bottomland (creek drains), and about 120 acres of mostly thinned pines with surrounding lower flora.

The area contains a remarkable diversity of plants and animals. Animals include: white-tailed deer ***Odocoileus virginianus*** (Zimmermann, 1780), raccoons ***Procyon lotor*** (Linnaeus, 1758), eastern cottontails ***Sylvilagus floridanus*** (J.A. Allen, 1890), swamp rabbits ***Sylvilagus aquaticus*** (Bachman, 1837), and large numbers of eastern grey squirrels ***Sciurus carolinensis*** Gmelin, 1788, but surprisingly no fox squirrels ***Sciurus nigra*** Linnaeus, 1758 even though habitat has matured to the point they should occur there as well. Southern flying squirrels ***Glaucomys volans*** (Linnaeus, 1758) are also present and occasionally seen. Common bird species include: indigo buntings ***Passerina cyanea*** (Linnaeus, 1766), summer tanagers ***Fringilla rubra*** (Linnaeus,1758), northern cardinals ***Cardinalis cardinalis*** (Linnaeus, 1758), and eastern bluebirds ***Sialia sialis*** (Linnaeus, 1758), which are primarily around the home place. Some less commonly seen species which are abundant include the Louisiana pocket gophers ***Geomys breviceps*** (Baird, 1855), bobcats ***Lynx rufus*** (Schreber, 1777), and southeastern coyotes ***Canis latrans*** (Say, 1823), (note: currently 19 subspecies of coyotes are recognized across North America [Wozencraft, 2005]), and the western rat snake ***Pantherophis obsoletus*** (Say in James, 1823).

Some trees occurring at this location: ridges are dominated by native shortleaf pine ***Pinus echinata*** Miller, and loblolly pine ***Pinus taeda*** Linnaeus, with some interplanted loblolly pines at regeneration approximately in year 1999. Other common species are sweetgum ***Liquidambar styraciflua*** Linnaeus, winged elm ***Ulmus alata*** Michaux, red maple ***Acer rubrum*** Linnaeus 1753, and southern red oak ***Quercus falcata*** Michaux. In lesser numbers but still common on the ridges are Black Oak ***Quercus velutina*** Lamarck, flowering dogwood ***Cornus florida*** Linnaeus, sassafras ***Sassafras albidum*** (Nuttall.) Nees, woolly buckthorn also known as gum Bumelia ***Sideroxylon lanuginosum*** Michaux, post oak ***Quercus stellata*** Wangenheim. These are concentrated on areas around the home place and other similar areas with less logging and silvicultural activities. Understory shrubs include large numbers of American beautyberry ***Callicarpa americana*** Linnaeus, red buckeye ***Aesculus pavia*** Linnaeus, fringe tree ***Chionanthus virginicus*** Linnaeus interspersed with sweetgum, and red maple sprouts, aralia Aralia spinosa Linnaeus, and may apple ***Podophyllum peltatum*** Linnaeus. Bottomlands contain both poorly drained areas and well drained areas including typical tree species: bald cypress ***Taxodium distichum*** (Linnaeus) Richard, water oak ***Quercus nigra*** Linnaeus, willow oak ***Quercus phellos*** Linnaeus, black gum ***Nyssa sylvatica*** Marshall, white oak ***Quercus alba*** Linnaeus, and various species of ***Crataegus*** Tourn ex Linnaeus.

Our self-designed automatic-capture semiochemical lure traps (Traps 1, 2, 3) operated 24 hours of every day/night continuously without interruption throughout twenty-six months, and the captured adult sesiid specimens were retrieved every month or two on an irregular schedule during periods of adult flights, depending upon weather, or competing activities of the researchers personal schedules and other variables. The majority of the adult captures were identified to genus and/or species, pinned and labeled with capture date spans or specific dates of capture along with labels indicating which semiochemical lures were used to attract each individual specimen. The placements of the traps are illustrated from an aerial perspective on **Fig. 1**. The identifications of the commercially available semiochemicals (pheromones, attractants, and lures) used in this study are provided in **Figs. 2, 3** and **4**. A small number of custom ordered lures were included in a few of the traps. Many additional combinations of different lures were experimented with, especially during 2019-20. Lures utilized in this study included those of several semiochemical brands, manufacturers and retail suppliers including: Alpha Scents, Aptiva, Great Lakes IPM, Pherobank, Pherobase, Pherobio, Scentry, Scenturian, Trece, and a few were custom ordered here in North America, Austria, China, Japan, The Netherlands, and others abroad (**Fig. 6b**)

We used some lures in this study for targeting species that do not occur in or anywhere near Louisiana, but do attract other clearwing moth species as well e.g. the lure ***Synanthedon sequoiae*** (Edwards, 1881), a species occurring in NW North America. The various lures utilized were identified using scientific names and were part of different manufactured batches or by different manufactures (**Figs. 2, 3,** and **4**). A particular identified lure by different manufacturers may be labelled using several different variations of seemingly similar (species) common names and may or may not be equivalent to others similarly identified by other manufacturers in semiochemical composition. The composition of all semiochemical lures varies, not only when created by different manufacturers, but over time also varies with each batch made even by a single manufacturer. This conclusion is based upon observations of using many tens of thousands of semiochemical lures over 48 years in Louisiana by the senior author. Causes of this could be different origins of the feedstock, the occasionally changing or replacement of the manufacturing and laboratory production and analysis equipment, manufacturing processes, tweaks to formulations, techniques, or human interventions. For example, any assumptions that ***Synanthedon rubrofascia*** (Edwards, 1881) lures attract only ***S. rubrofascia is*** misleading and unproven, because 16 additional different lures have attracted ***S. rubrofascia*** during this study alone, and also using many other semiochemical lures in other unpublished clearwing moth studies in Louisiana.

Early in 2018 we designed, refurbished and/or newly fabricated over 125 new sesiid semiochemical lure traps, some are illustrated in (**Traps 1, 2** and **3**). The initial batch of 65 traps were placed across the tree farm study site and immediately began capturing adult sesiids in April 2018, and continued to operate 24 hours daily nonstop throughout each of the years until early June 2020, though no sesiids at all were captured at this study site during the months of December 2018 and January 2019 due to cooler winter temperatures at this location during those months. No species of sesiidae occurring in the state of Louisiana are known to have naturally occurring broods occurring or peaking during the colder winter months. Though, adults of a few ***Synanthedon*** species e.g. ***Synanthedon scitula*** (Harris, 1839) and several of the unknown ***pictipes***-like species have been captured numerous times each year via ultraviolet light traps at other Louisiana locations occasionally during winter months. The nocturnally active species ***Synanthedon acerni*** (Clemens, 1860) has been captured every day of the calendar year using ultraviolet light traps across Louisiana, e.g. St. Tammany Parish at the *Abita entomological study site, (Brou and Brou, 2022) where sesiid traps and other insect traps have operated continuously 24 hours each day for the past 42 years and continually at other locations across Louisiana since 1968.

In March 2019 the authors replaced the initial 2018 batch of 65 traps (**Figs. 2** and **3**) using newly obtained semiochemical lures along with reusing some of the 2018 lures creating revised lure identities (**Fig. 5**) and recharged traps with new killing agent NaCn. In this study, the number of operating semiochemical traps in early 2019 was increased to 87 traps containing 456 lures. As was done in 2018 resulting captures were retrieved approximately monthly (documenting quantities of adults by species and the lure identities used to capture them) and captures 2019 into 2020 and all years were documented in **Fig. 6**. Note that many of the lures used in 2018 (206) were reused as part of the (456) lures used during 2019 and to the end of the study. Our semiochemical lure inventory for this entire study included around 600 pieces, roughly $2,000.00 in capital output. Throughout the study period our traps were subject to severe weather conditions of temperature, wind, rain, falling branches and falling trees, flying squirrels, and anoles, including damages to both lures and killing agent. Traps and lures were repaired or replaced during subsequent visits throughoutthe study when problems occurred. Damaged traps usually resulted in the loss of the clearwing moth captures and killing agent as well. We used around 60-70 pounds of industrial-grade NaCn as the killing agent in all of the lure traps and light traps throughout the duration of this study. The majority of the retained captures (**Fig. 8**) currently reside in the entomological research collection of the senior author, and destined for ultimate placement in the Louisiana State Arthropod Museum (LSAM).

This study was entirely self-funded, each of the authors contributed to the success of the project and each incurred significant financial and man-hour burdens. We utilized at various times three pick-up trucks, one off-road four-wheeler, one riding lawn tractor, protective clothing of various descriptions, several pairs of boots or shoes, especially in navigating the heavily wooded terrain and wet areas. Skin protection and topical treatments were needed for bites from ticks, mosquitoes and redbugs. On several occasions six portable light traps were

operated sporadically at various microhabitat locations on the farm, and one large-capacity automatic capture stationary mercury vapor light trap was specifically designed and fabricated for use at this site. This large volume automatic-capture trap operated continuously using photo-electric on-off controls nightly beginning April 14, 2019, ending in April/May 2020 (**Traps 5**). Surprisingly, the only species of clearwing moth captured in any of the light traps were all 129 ***Synanthedon acerni*** adults logged in this study. As many as ~30 other species (among hundreds of thousands of wild captured adults of clearwing moths) were previously captured and recorded in ultraviolet light traps at other locations in Louisiana over the past 55 years by the senior author, but none of those were logged in light traps during this Caddo Parish study.

During the 26 months of this project, ~20 round trip visits were logged by the senior author (VB) who traveled ~14,000 vehicle miles in visiting the site, one co-author (RP) similarly traveled ~8,300 vehicle miles. Additional vehicle miles were also logged on the tree farm study site by all three authors. Two of the study members (VAB and RP) made (one to three-days) visits to the study site and were provided with an air-conditioned/heated camping house for a sheltered work area and overnight sleeping, and we are most grateful for these accommodations from our co-author Royal Tyler. Additionally, several high quality digital cameras were used, along with several personal computers and related software programs and various office supplies involved in documenting this project and details of our research.

It is important for readers to understand that every batch of semiochemical lures is composed differently from every other batch, regardless if manufactured by the same company or dozens of different companies from across the world Consider e.g., the senior author has used sesiid lures continuously since beginning in 1975, being the recipient of some of the first experimental clearwing moth 'pheromones' created during the early 1970s from developmental research into clearwing moth lures by the U.S. Dept. of Agriculture. The senior author has used commercial sesiid lures by numerous worldwide manufacturers 52 weeks continuously every year for the past 48 years. Because of this, it has been possible to test and evaluate in non-stop field trials for over four decades the efficacy of numerous thousands of lures singly and in multiple combinations of varying percentages. This remarkable 48-year effort is unique, in that a large volume of hundreds of lure-traps were used every year included using most all available lures originating from several manufacturers domestic and foreign, along with hundreds of special order lures. A significant number of traps (+/-100) always operated without fail at the senior author's home *Abita Entomological Study Site (AESS), near Abita Springs, St. Tammany Parish, Louisiana for the past 42 years (1982-2024), and for thirteen prior years at Edgard, St. John the Baptist Parish, and several other parish locations. As a result of more than four decades of field observations and comparative results at the same exact locations, revealed an unparalleled unique perspective regarding the use and efficacy of these many lures within Louisiana.

More recently intensive sesiid semiochemical research and lure development has revealed that sometimes the tiniest amount of an unwanted chemical component will cause the lures to fail at attracting a target species, or in some cases to actually repel the desired species coming to the lures (Leskey et al, 2006). The voluminous scientific literature by researchers published over several decades has resulted in the reporting of numerous misidentified species of Sesiidae.These problems occurred due to several reasons, and exemplified by misconceptions of many inexperienced researchers incorrectly assumimg the only species attracted are the ones identified by the manufacturer-labeled lure names (the target species). Inherent within this matter is that these researchers are reporting upon taxonomical matters for which they have no expertise or at best a rudimentary understanding, but report their research findings based upon ill-conceived perceptions of species identity. Some researchers are unaware that there are dozens of other described and undescribed species (new to science) which are also attracted to these very same numerous single-species labeled semiochemical lures as evidenced in this study by the information we illustrate in **Fig 6a part 1** and **6a part 2.** Discussions with several published sesiid researchers revealed the consensus that it was not necessary to accurately identify all specimens they reported about as being a particular species in their publications. These non-target species are often mistakenly reported to be similar looking existing described species. For example, lures labeled LPTB (Lesser Peachtree Borer) ***Synanthedon pictipes***, as do nearly all labeled lures for particular target species do attract several to many dozens of other different species of sesiids (**Fig. 6a parts 1,2,3**), including numerous similar appearing species and also dissimilar appearing species, some of which have yet to be described as valid new species in scientific literature. In fact, in this study we have also captured numerous hundreds of bycatch Lepidoptera, Coleoptera, Orthoptera, Hymenoptera, and other insect orders, including e.g., over 40 specimens of

Fig. A. Example of a clearwing moth trap basket containing assorted bycatch without any clearwing moths captured.

lepidoptera bycatch in a single clearwing moth semiochemical trap over just a one month interval without capturing during this same period even a single clearwing moth (**Fig. A**). Capture of specimens such as these can often be mistakenly included in studies using sticky traps where a patch of scales or a few legs are mistakenly logged as captured target specimens Brou Jr. et al (2020) were able to report upon adults of the Thyridid moth species ***Pseudothyris sepulchralis*** (Bdv.) taken as non-targeted bycatch during this same Caddo Parish clearwing moth study, and these were in a larger seperate statewide reporting of this small moth. Since bycatch adults taken in our NaCn dispatching traps remained in very good condition, the identity of the specimens were without the negative and questionable identity outcomes of when sticky traps are used. Some of the bycatch specimens were also retained and data labels were placed noting which semiochemicals were used in capturing them. The ultimate repository of retained bycatch materials will accompany the placement of the captured clearwing moths in this Caddo Parish study.

(Contnue to next page)

2018- 1. Eichlinia cucurbitae X 2
2018- 2. Phero Base Pennisetia hylaeiformis X 2
2018- 3. Scentry Synanthedon bibionipennis X 3
2018- 4. Scentry L-103 X 3
2018- 5. Scentry L-103 X 3
2018- 6. *Phero Base Synanthedon vespiformis X 2
2018- 7. Vitacea polistiformis X 3
2018- 8. Scentry Synanthedon pictipes X 3
2018- 9. Synanthedon sequoiae X 3
2018- 10. Synanthedon fatifera X 3
2018- 11. Scentry Synanthedon scitula X 3
2018- 12. Scentry Synanthedon scitula X 3
2018- 13. Scentry Synanthedon scitula X 4
2018- 14. Vitacea polistiformis X 3
2018- 15. Scenturian (Paranthrene robiniae X 10) X 3
2018- 16. Scenturian (Paranthrene robiniae X 10) X 4
2018- 17. Scentry Synanthedon viburni X 3
2018- 18. Scentry Synanthedon rubrofascia X 4
2018- 19. Eichlinia cucurbitae X 4
2018- 20. Scentry Synanthedon rubrofascia X 4
2018- 21. Eichlinia cucurbitae X 4
2018- 22. Scentry Paranthrene asilipennis X 3
2018- 23. Eichlinia cucurbitae X 4
2018- 24. Synanthedon culiciformis X 3
2018- 25. Scentry Synanthedon pictipes X 4
2018- 26. Scentry Paranthrene asilipennis X 3
2018- 27. *Holland-1 X 1
2018- 28. Scentry Vitacea polistiformis X 4
2018- 29. *Eichlinia cucurbitae X 2
2018- 30. *(1:1:1) EZ3,13OH : EZ2,13OH, : 13Ald X 1
2018- 31. Synanthedon tipuliformis X 1
2018- 32. Scentry Synanthedon scitula X 4
2018- 33. Scentry Synanthedon pictipes X 4
2018- 34. Scentry Vitacea polistiformis X 4
2018- 35. Synanthedon tipuliformis X 2
2018- 36. Scenturian Synanthedon sequoiae X 3
2018- 37. *Sesia apiformis X 2
2018- 38. *ZZ2,13OH (new) X 1
2018- 39. Scentry Synanthedon pictipes X 3
2018- 40. Scentry Synanthedon sequoiae X 2 :
Scenturian Paranthrene robiniae X 10 X 2
2018- 41. Scentry Synanthedon fatifera X 4
2018- 42. Scentry Synanthedon sequoiae X 2 :
Scenturian Paranthrene robiniae X 10 X 2
2018- 43. Scentry Synanthedon fatifera X 4
2018- 44. Scentry Synanthedon rubrofascia X 4
2018- 45. Scentry Paranthrene asilipennis X 3
2018- 46. Scentry L-103 X 3
2018- 47. *Scenturian Synanthedon pictipes X 4
2018- 48. Scenturian Synanthedon pictipes X 4
2018- 49. Scentry Synanthedon fatifera X 3
2018- 50. Synanthedon myopaeformis X 2
2018- 51. Scentry Synanthedon fatifera X 3
2018- 52. Scentry Synanthedon bibionipennis X 4
2018- 53. Scentry L-103 X 3
2018- 54. Scentry Synanthedon viburni (15 mg, a.i) X 4
2018- 55. Scenturian (Paranthrene robiniae X 10) X 4
2018- 56. Scenturian (Paranthrene robiniae X 10) X 4
2018- 57. *Phero Base Pennisetia hylaeiformis X 2
2018- 58. Scentry Synanthedon pictipes X 3
2018- 59. Scentry Synanthedon scitula X 3
2018- 60. Scentry Synanthedon bibionipennis X 4
2018- 61. Scentry Synanthedon scitula X 3
2018- 62. *Alpha Scents Pennisetia bohemica X 4
2018- 63. Eichlinia cucurbitae X 4
2018- 64. Scentry Synanthedon scitula X 3
2018- 65. Scentry Synanthedon pictipes X 4

Fig. 2. 2018 -Numbers of commercial and special order semiochemical lures used in each trap (1-65). Explanation: X 4 indicates the use of e.g. four lures of a stated identity in a particular trap. Traps/lures which captured no adult sesiids during this study year *

# Traps	semiochemical lures	total lures
8	Synanthedon pictipes	29
7	Synanthedon scitula	23
5	Vitacea polistiformis	20
5	Eichlinia cucurbitae	18
5	Synanthedon fatifera	17
4	Paranthrene robiniae	15
4	Scentry L-103	12
3	Synanthedon rubrofascia	12
3	Synanthedon bibiopennis	11
3	Paranthrene asilipennis	9
2	Synanthedon viburni	7
2	Synanthedon sequoiae	6

# Traps	semiochemical lures	total lures
2	Pennisetia hylaeiformis	4
2	(1:1) Paranthrene robiniae : Synanthedon sequoiae	4
2	Synanthedon tipuliformis	3
1	Pennisetia bohemica	4
1	Synanthedon culiciformis	3
1	Sesia apiformis	2
1	Synanthedon myopaeformis	2
1	Synanthedon vespiformis	2
1	Holland-1 (40:40:10:10) EZOH:EZ2, 13A:EZ2,13: ocadecadienal: Z13A.	1
1	(1/1/1) EZ3,13OH : EZ2,13OH : 13Ald	1
1	ZZ2,13OH (new)	1

Fig. 3. 2018 -Numbers of traps (65) using specific semiochemical lures (206) in this study.

2019- 1. Pherobase Eichlinia cucurbitae X 6
2019- 2. Scentry Synanthedon scitula : EZ2, 134 ALD 100% X 1
2019- 3. *Pherobio Maruca vitrata X 3
2019- 4. Scentry L-103 X 6
2019- 5. Scentry L-103 X 3 : Scentry Paranthrene asilipennis X 2
2019- 6. *Osminia ruficornis X 1
2019- 7. Scentry Vitacea polistiformis X 3 : Scentry Synanthedon bibionipennis X 3
2019- 8. Scentry Synanthedon pictipes X 5
2019- 9. Scentry Synanthedon sequoiae X 3 : Scenturian (Paranthrene robiniae X 10) X 3
2019- 10. Scentry Synanthedon fatifera X 3 : Scentry L-103 X 3
2019- 11. Scentry Synanthedon scitula X 5
2019- 12. Scentry Synanthedon scitula X 6
2019- 13. Scentry Synanthedon scitula X 6
2019- 14. Scentry Vitacea polistiformis X 6
2019- 15. Scenturian (Paranthrene robiniae X 10) X 3 : Pherobase Paranthrene robiniae X 3
2019- 16. Scenturian (Paranthrene robiniae X 10) X 8
2019- 17. Scentry Synanthedon viburni X 5
2019- 18. Scentry Synanthedon rubrofascia X 4 : Scentry Synanthedon pictipes X 4
2019- 19. Pherobase Eichlinia cucurbitae X 4 : Scentry L-103 X 4
2019- 20. Scentry Synanthedon rubrofascia X 4 : Scentry L-103 X 4
2019- 21. Eichlinia cucurbitae X 4
2019- 22. Scentry Paranthrene asilipennis X 3
2019- 23. Eichlinia cucurbitae X 4 : Scentry Vitacea polistiformis X 2
2019- 24. Scentry Synanthedon bibionipennis X 4
2019- 25. Scentry Synanthedon pictipes X 8
2019- 26. Scentry Paranthrene asilipennis X 3 : Scentry L-103 X 3
2019- 27. Scentry Synanthedon pictipes X 4
2019- 28. Scentry Vitacea polistiformis X 4 : Scentry Synanthedon scitula X 2
2019- 29. Eichlinia cucurbitae X 6
2019- 30. Scenturian (Paranthrene robiniae X 10) X 5
2019- 31. Scentry Synanthedon scitula X 3
2019- 32. Scentry Synanthedon scitula X 4 : Scentry L-103 X 4
2019- 33. Scentry Synanthedon pictipes X 6
2019- 34. Vitacea polistiformis X 4 : Pherobase Eichlinia cucurbitae X 4
2019- 35. Synanthedon tipuliformis X 2 : Scentry Vitacea polistiformis X 3
2019- 36. Scenturian Synanthedon sequoiae X 3 : Scentry Synanthedon sequoiae X 3
2019- 37. Scentry Paranthrene asilipennis X 6
2019- 38. Scentry L-103 X 4
2019- 39. Scentry Synanthedon pictipes X 3 Scenturian (Paranthrene robiniae X 10) X 3
2019- 40. Scentry Synanthedon sequoiae X 2 : Scenturian (Paranthrene robiniae X10) X 4
2019- 41. Scentry Synanthedon fatifera X 4 : Scentry L-103 X 4
2019- 42. Scentry Synanthedon sequoiae X 2 : Paranthrene robiniae X 6
2019- 43. Scentry Synanthedon fatifera X 4 : Scentry L-103 X 4
2019- 44. Scentry Synanthedon rubrofascia X 4 : Scentry L-103 X 4
2019- 45. Scentry Paranthrene asilipennis X 5
2019- 46. Scentry L-103 X 6
2019- 47. Scentry Synanthedon pictipes X 4
2019- 48. Scenturian Synanthedon pictipes X 4 Pherobio Paranthrene tabaniformis X 5
2019- 49. Scentry Synanthedon fatifera X 3 Scentry L-103 X 3
2019- 50. Scentry Synanthedon scitula X 3
2019- 51. Synanthedon fatifera X 3 : Scentry L-103 X 3
2019- 52. Scentry Synanthedon bibionipennis X 4 : Scentry asilipennis X 4
2019- 53. Scentry L-103 X 6
2019- 54. Scentry Synanthedon viburni (15 mg, a.i) X 4 : Scentry L-103 X 3
2019- 55. Scenturian (Paranthrene robiniae X 10) X 3 : Scentry Synanthedon sequoiae X 3
2019- 56. Scenturian (Paranthrene robiniae X 10) X 6
2019- 57. Scentry Paranthrene asilipennis X 4
2019- 58. Scentry Synanthedon pictipes X 3 Scentry Synanthedon sequoiae X 3
2019- 59. Scentry Synanthedon scitula X 6
2019- 60. Scentry Synanthedon bibionipennis X 4 : Scentry L-103 X 4
2019- 61. Scentry Synanthedon scitula X 6
2019- 62. Scentry Synanthedon rubrofascia X 2
2019- 63. Eichlinia cucurbitae X 8
2019- 64. Scentry Synanthedon scitula X 3 : Scentry L-103 X 3
2019- 65. Scentry Synanthedon pictipes X 8
2019- 66. Scenturian (Paranthrene robiniae X 10) X 3
2019- 67. Scentry Paranthrene asilipennis X 4
2019- 68. Scentry Paranthrene asilipennis X 4
2019- 69. Pherobio Paranthrene regalis X 4
2019- 70. Scenturian (Paranthrene robiniae X 10) X 4
2019- 71. Scentry L-103 X 5
2019- 72. Scentry Paranthrene robiniae X 4
2019- 73. Pherobio Sesia siningensis X 4
2019- 74. Scentry Synanthedon scitula X 3
2019- 75. Scentry Paranthrene asilipennis X 3
2019- 76. Scenturian (Paranthrene robiniae X 10) X 3 : Scentry Synanthedon pictipes X 3
2019- 77. Scentry Synanthedon bibionipennis X 3 : Scentry Synanthedon pictipes X 3
2019- 78. Scentry Paranthrene asilipennis X 4
2019- 79. Scentry Vitacea polistiformis X 4
2019- 80. Pherobio Paranthrene tabaniformis X 5
2019- 81. Pherobio Paranthrene regalis X 6
2019- 82. *Holland 4 - EZ 3,13 OH (40%), EZ 2,13 OH (40%), ZE 3,13 A (5%), EE 3,13 A (5%), EZ 2,13A (5%) and Z 13 A (5%).
2019- 83. *Alpha EZA - EZ 3,13A (45%), EZ 2,13 A (45%), and ZE 3, 13 A (10%)
2019- 84. Scentry L-103 X 2 : Vitacea polistiformis X 2
2019- 85. Scentry L-103 X 2 : Vitacea polistiformis X 2
2019- 86. EZ2, 13OH : EZ2, 13A
2019- 87. Scentry Synanthedon scitula X 4

Fig. 4. (2019-2020) Numbers and identities of commercial and special order semiochemical lures used in each trap (1-87). Explanation: X 4 indicates the use of e.g. four lures of a stated identity in a particular trap. Traps (lures) which captured no adult sesiids during this study (*).

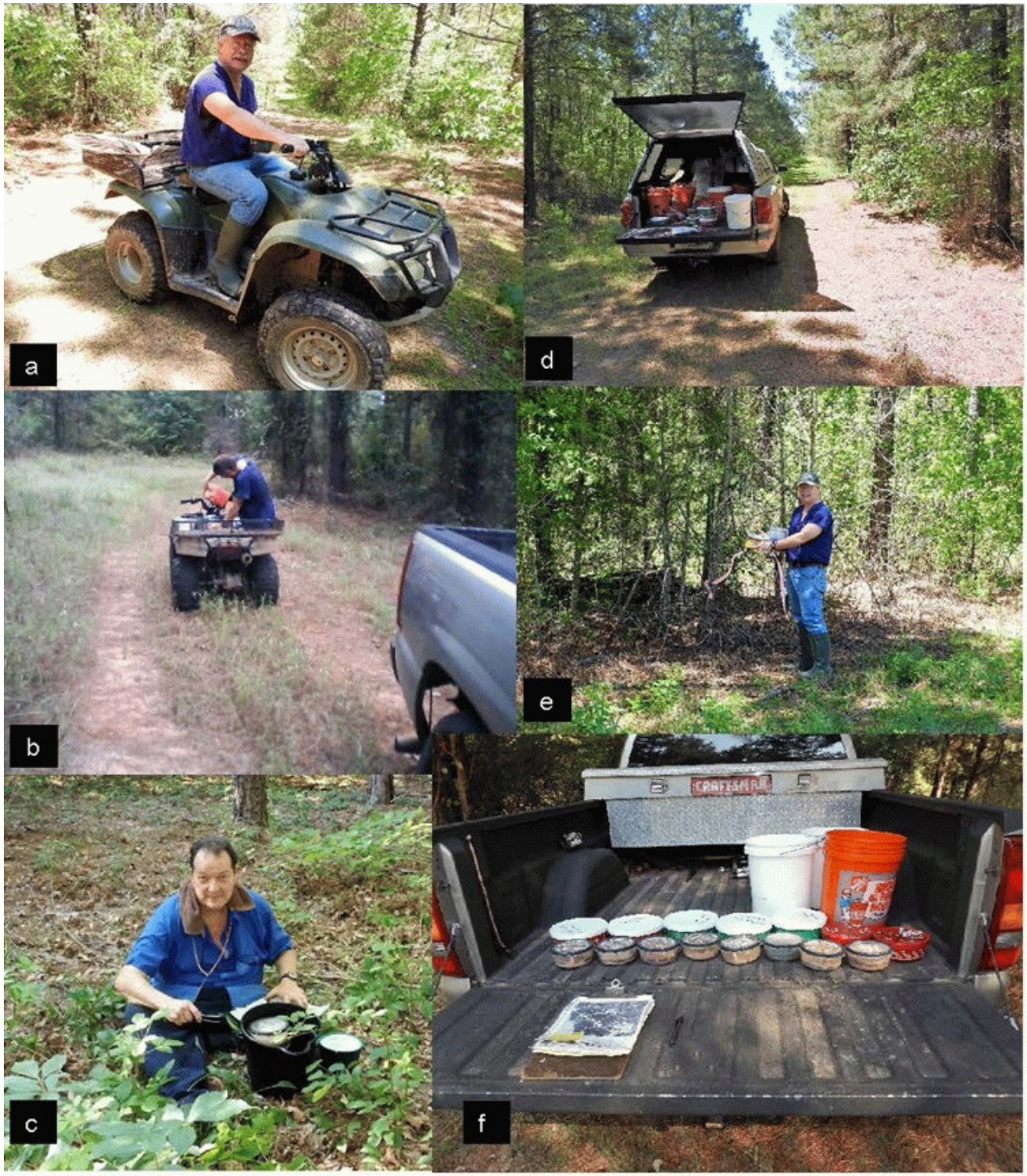

Fig. 5.a, b. Ricky Patterson running trap line, c. Vernon Brou logging field captures from the traps, d. pick-up truck #1 with sesiid field-recovery relaxing containers, e. Ricky Patterson retrieving traps f. pick-up truck #2 with sesiid field-recovery, lure-specific, segregated relaxing containers.

a. ***Paranthrene simulans*** (Grote, 1881)
Pherobase Eichlinia cucurbitae
Pherobase Vitacea polistiformis
Scentry L-103
Scentry Synanthedon scitula
Scentry Synanthedon bibionipennis
Scentry Synanthedon viburni
Scentry Synanthedon rubrofascia
Scentry Synanthedon tipuliformis
Scentry Synanthedon fatifera
Scentry Synanthedon myopaeformis
Scentry Synanthedon pictipes
Scentry Paranthrene asilipennis
Pherobio Sesia siningensis
(1:1) E2Z13-18Ac 1000 µg : Z3Z13-18Ac 1000 µg
(1:1) Synanthedon sequoiae : Scenturian Paranthrene robiniae X 10
(1:1) Scentry L-103 : Scentry Synanthedon scitula
(1:1) Synanthedon rubrofascia : Scentry Synanthedon pictipes
(1:1) Scentry Eichlinia cucurbitae: Scentry L-103
(4:3) Scentry Synanthedon viburni : Scentry L-103
(1:1) Scentry Vitacea polistiformis : Pherobase Eichlinia cucurbitae
(1:1) Scentry Synanthedon fatifera : Scentry L-103
(1:1) Scentry Synanthedon rubrofascia : Scentry L-103
(1:1) Scentry Paranthrene asilipennis : Scentry L-103
(1:1) Scentry Eichlinia cucurbitae: Pherobase Vitacea polistiformis
(1:1) EZ2, 13OH : EZ2, 13A.
Ultraviolet light traps

b. ***Paranthrene asilipennis*** (Boisduval in Guerin-Meneville, [1832])
(1:1) Scentry Paranthrene asilipennis : Scentry L-103.
Hand netting

c. ***Paranthrene dollii*** (Neumoegen, 1894)
Pherobase Eichlinia cucurbitae
Pherobase Paranthrene tabaniformis
Scentry L-103
Scentry Vitacea polistiformis
Scentry Synanthedon pictipes
Scentry Synanthedon fatifera
Scenturian Paranthrene robiniae X10
Pherobio Paranthrene tabaniformis
(1:1) Scentry Paranthrene robiniae : Scentry Synanthedon pictipes
(1:1) Scentry rubrofascia : Scentry Synanthedon pictipes
(1:1) Scenturian Paranthrene robiniae X10 : Scentry Synanthedon pictipes
(1:3) Scentry Synanthedon sequoiae : Scentry Paranthrene robiniae
(1:1) E3Z13-18OH : Z3Z13-18OH
(1:1) Z3Z13-18OH 1000 µg : E3Z13-18OH 1000 µg
E3Z13-18OH
Ultraviolet light traps
Hand netting

d. ***Paranthrene tabaniformis*** (Rottemburg, 1775)
Scentry Synanthedon fatifera
Scentry Paranthrene robiniae
Scentry Paranthrene asilipennis
Pherobase Paranthrene tabaniformis
Scenturian Paranthrene robiniae X10
E2Z13-18Ac
E3Z13-18OH
Malaise flight interceptor traps
Hand netting

e. ***Podosesia syringae*** (Harris, 1839)
Scentry L-103
Scentry Synanthedon scitula
Scentry Synanthedon fatifera
Scentry Synanthedon cuculiformis
Scenturian Paranthrene robiniae X 10
Scenturian Synanthedon scitula
Scentry Paranthrene asilipennis
(3:4) Scentry L-103 : Scentry Synanthedon viburni
(1:1) Scentry L-103 : Scentry Paranthrene asilipennis
(1:1) Scentry Synanthedon pictipes : Synanthedon sequoiae
(1:1) Scentry Paranthrene robiniae : Scentry Synanthedon sequoiae
(1:1) Scentry-L-103: Scentry Synanthedon fatifera
(1:1) Scentry L-103 : Scentry Eichlinia cucurbitae
(1:1) Scentry L-103 : Scentry Synanthedon rubrofascia
(1:1) Scentry L-103 : Scentry Synanthedon scitula
(4:3) Synanthedon viburni : Scentry L-103
(1:3) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(1:1) Scentry Vitacea polistiformis : Scentry L-103
(1:1) Scentry Synanthedon scitula : EZ2, 13A.
Ultraviolet light traps
Hand netting

f. ***Podosesia aureocincta*** Purrington & Nielsen, 1977
Scentry L-103
Scentry Synanthedon scitula
Scentry Synanthedon fatifera
Scentry Synanthedon culiciformis
Scentry Synanthedon pictipes
Scenturian Paranthrene robiniae X10
(10:1:10) Z3Z13-18Ac 1000 µg : Z3Z13-18OH 100 µg : E3Z13-18OH 1000 µg
(1:3:20) Z3Z13-18Ac 50 µg : Z3Z13-18OH 150 µg : E3Z13-18Ac 1000 µg
Ultraviolet light traps
Hand netting

g. ***Sannia uroceriformis*** Walker, 1856
Pherobase Paranthrene robiniae
Scentry L-103
Scentry Paranthrene robiniae
Scentry Synanthedon bibionipennis
Scenturian Synanthedon sequoiae
Scenturian Paranthrene robiniae X10
Pherobio Paranthrene regalis
Pherobio Paranthrene tabaniformis
E3Z13-18OH
Z3Z13-18Ac
(1:1) E3Z13-18Ac : E3Z13-18OH
(1:1) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(1:2) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(1:3) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(1:1) Synanthedon sequoiae : Pherobase Paranthrene robiniae
(1:1) Vitacea polistiformis : Synanthedon bibionipennis
(1:1) Scentry Synanthedon sequoiae : Scenturian Synanthedon sequoiae
(1:1) Scenturian Paranthrene robiniae X10 : Pherobase Paranthrene robiniae
(1:1) Scenturian Synanthedon pictipes : Scentry Synanthedon pictipes
Ultraviolet light traps
Hand netting

h. ***Alcathoe caudata*** (Harris, 1839)
Scentry L-103
Scentry Synanthedon pictipes
Scentry Synanthedon fatifera
Scentry Synanthedon bibionipennis
Scenturian Paranthrene robiniae X10
Paranthrene tabaniformis
E3Z13-18OH
(1:1) E3Z13-18Ac : E3Z13-18OH
(1:1) Scentry L 103 : Scentry Synanthedon rubrofascia
(3:5) Synanthedon pictipes : Scenturian Paranthrene robiniae X10
Ultraviolet light traps
Hand netting

j. ***Synanthedon rubrofascia*** (Edwards, 1881)
Pherobase Eichlinia cucurbitae
Scentry Synanthedon rubrofascia
Scentry L-103

Fig. 6a part 1. Species captured in this study (a-j) – All known semochemidcal lures/methods used to capture the species mentioned here as well as these same species throughout Louisiana (1969- 2024)

Scentry Vitacea polistiformis
Scentry Synanthedon pictipes
Scentry Synanthedon viburni
Scentry Synanthedon fatifera
Scentry Synanthedon bibionipennis
Scentry myopaeformis
Scentry Synanthedon scitula
Scentry Synanthedon sequoiae
Synanthedon myopaeformis
Scenturian Paranthrene robiniae X10
Scenturian Synanthedon sequoiae
Z3Z13-18Ac
(1:1) Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
Ultraviolet light traps
Fermenting fruit bait traps
Malaise flight interceptor traps
Hand netting

k. *Synanthedon decipiens* (Edwards, 1881)
Scentry L-103
Scentry Synanthedon fatifera
Scentry Synanthedon sequoiae
(1:1) Synanthedon sequoiae : Paranthrene robiniae
Ultraviolet light traps
Scentry Synanthedon scitula
Scenturian Synanthedon sequoiae
(1:1) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
Ultraviolet light traps

m. *Synanthedon accerubri* Engelhardt, 1925
Scentry L-103
Scentry Paranthrene asilipennis
Scentry Eichlinia cucurbitae
Scentry Synanthedon scitula
Scenturian Synanthedon sequoiae
Synanthedon scoliaeformis
(1:1) Scenturian Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
E2Z13-18Ac
Ultraviolet light traps

n. *Synanthedon pictipes** (Grote & Robinson, 1868)
Scentry L-103
Synanthedon exitiosa
Scentry Synanthedon rubrofascia
Scentry Synanthedon viburni
Scentry Synanthedon pictipes
Scentry Synanthedon bibionipennis
Scenturian Synanthedon pictipes
Pherobase Pennisetia hylaeiformis
(3:1) Scentry L-103 : Scentry Synanthedon pictipes
(1:1) Scentry Vitacea polistiformis : Scentry Synanthedon bibionipennis
(1:1) Scentry Synanthedon pictipes : Scentry Paranthrene robinae
E3Z13-18Ac
(1:1:1) Z3Z13-18Ac 1000 µg : E3Z13-18Ac 1000 µg : Z3E13-18Ac 1000 µg
Fermenting fruit bait traps
Ultraviolet light traps

o. *Synanthedon kathyae* Duckworth & Eichlin, 1977
Pherobase Pennisetia hylaeiformis
Pherobase Paranthrene tabaniformis
Scentry Synanthedon fatifera
Scentry L-103
Scentry Synanthedon bibionipennis
Scenturian Synanthedon sequoiae
Scenturian Paranthrene robiniae X10
Z3Z13-18Ac
E3Z13-18OH
E2Z13-18Ac
E3Z13-18Ac
(1:1) E3Z13-18Ac : E3Z13-18OH
Ultraviolet light traps
Malaise flight interceptor traps

p. *Synanthedon rileyana* (Edwards, 1881)
Pherobase Pennisetia hylaeiformis
Scentry L-103
Scenturian Synanthedon sequoiae
Scentry Paranthrene robiniae
Scentry Synanthedon pictipes
Scentry Synanthedon scitula
Scentry Synanthedon bibionipennis
Pherobio Paranthrene tabaniformis
Holland 4 (6 components)
Scenturian Paranthrene robiniae X10
E3Z13-18OH
Z3Z13-18Ac
(3:3:10) Z3Z13-18OH 300 µg : E3Z13-18Ac 300 µg : E3Z13-18OH 1000 µg
(1:1) (E3Z13-18OH : Z3Z13-18Ac)
(1:1) Scenturian Synanthedon sequoiae : Scent. Paranthrene robiniae X10
Ultraviolet light traps
Hand netting

q. *Synanthedon exitiosa* (Say, 1823)
Scentry L-103
Scentry Synanthedon scitula
Scentry Synanthedon pictipes
Scentry Synanthedon fatifera
Scentry Synanthedon rubrofascia
Synanthedon exitiosa
Scentry Synanthedon bibionipennis
Z3Z13-18Ac
Z13-18Ac 96%: E2,Z13-18Ac 04%
Synanthedon cuculiformis
Vitacea polistiformis
(1:1) Scentry L-103 : Scentry Synanthedon pictipes
(3:1) Scentry L-103 : Scentry Synanthedon pictipes
Scenturian Paranthrene robiniae X10
Ultraviolet light traps
Hand netting

r. *Synanthedon acerni* (Clemens, 1860)
Scentry L-103
Scentry Synanthedon scitula
(1:1) Scentry Synanthedon fatifera : Scentry L-103
(1:1) L-103 : Synanthedon scitula
Ultraviolet light traps

s. *Vitacea scepsiformis* (Edwards, 1881)
Pherobase Eichlinia cucurbitae
Pherobase Vitacea polistiformis
Scentry Synanthedon tipuliformis
Scentry Paranthrene asilipennis
Scentry Vitacea polistiformis
Scentry Synanthedon scitula
(1:1) Scenturian Synanthedon sequoiae : Scentu. Paranthrene robiniae X10
E2Z13-18Ac
Z3Z13-18Ac
(3:10) Z3Z13-18Ac 300 µg : E3Z13-18Ac 1000 µg
Ultraviolet light traps
Hand netting

t. *Vitacea polistiformis* (Harris, 1854)
Pherobase Eichlinia cucurbitae
Pherobase Vitacea polistiformis
E2Z13-18Ac
(10:1) E2Z13-18Ac 1000 µg : Z3Z13-18Ac 10 µg
Ultraviolet light traps
Hand netting

Fig. 6a part 2. Species captured in this study (k-t) – All known semiochemcal lures/methods used to capture the species mentioned here as well as these same species throughout Louisiana (1969-2014).

u. *Carmenta odda* Duckworth & Eichlin, 1977
Scentry L-103
Scentry Paranthrene asilipennis
(1:1) Scentry L-103 : Scentry Vitacea polistiformis
v. *Carmenta pyralidiformis* (Walker, 1856)
Scentry L-103
Scentry Synanthedon scitula
Scentry Synanthedon fatifera
Scentry Paranthrene robiniae
Scenturian Synanthedon sequoiae
Synanthedon scoliaeformis
Pherobase Eichlinia cucurbitae
(1:1) Scenturian Synanthedon sequoiae : Scentry Paranthrene robiniae
Z3Z13-18OH
E3Z13-18OH
E2Z13-18Ac
(1:1) E3Z13-18OH : Z3Z13-18OH
Ultraviolet light traps
(by hand / killing jar) without use of a net
w. *Synanthedon scitula* (Harris, 1839)
Scentry Synanthedon scitula
Scentry L-103
Scentry Paranthrene asilipennis
(1:1) Scentry L-103 : Scentry Vitacea polistiformis
Z3Z13-18Ac
E2Z13-18Ac
(1:10:1) E2Z13-18:Ac 100 µg : Z3Z13-18:Ac 1000 µg : Z3E13-18:Ac 100 µg
Ultraviolet light traps
Malaise flight interceptor traps
Fermenting fruit bait traps
x. *Synanthedon* unknown near *scitula* -
Scentry Synanthedon scitula
y. *Synanthedon alleri* (Engelhardt, 1946)
Scentry L-103
Scentry Synanthedon pictipes
Scentry Synanthedon bibionipennis
Pherobase Pennisetia hylaeiformis
Scenturian Paranthrene robiniae X10
Pherobio Paranthrene tabaniformis
Z3Z13-18Ac
E3Z13-18OH
(1:1) E3Z13-18Ac : E3Z13-18OH
Ultraviolet light traps
Malaise flight interceptor traps

Fig. 6a part 3. Species captured in this study (u-y) - All known semiochemical lures/methods used to capture the species mentioned here as well as these same species throughout Louisiana (1969-2024).

NB. *Synanthedon pictipes* amounts listed for this species in this study appear to be composed of several currently unrecognized and undescribed similar appearing species. Also, lures listed for *S. pictipes* attracted additional *S. pictipes* - like species not illustrated.

***The genus of the Squash vine borer *Mellitia* and other Western Hemisphere Melittiini (Lepidoptera: Sesiidae) members was revised (Gorbunov, 2020) creating the new replacement genus *Eichlinia*.**

Pherobase
Pherobase Eichlinia cucurbitae
Pherobase Vitacea polistiformis
Pherobase Synanthedon vespiformis
Pherobase Pennisetia hylaeiformis
Scentry
Scentry L-103
Scentry Paranthrene asilipennis
Scentry Synanthedon pictipes
Scentry Synanthedon bibionipennis
Scentry Synanthedon viburni
Scentry Synanthedon rubrofascia
Scentry Synanthedon tipuliformis
Scentry Synanthedon fatifera
Scentry Synanthedon myopaeformis
Scentry Synanthedon scitula
Scentry Vitacea polistiformis
Scentry Synanthedon vespiformis
Scentry Osmina ruficornis
Scentry Western Poplar
Scenturian
Scenturian Paranthrene robiniae X10
Scenturian Synanthedon pictipes
Scenturian Synanthedon sequoiae
Alpha Scents
Synanthedon scitula
Pennisetia marginata
Pennisetia bohemica
ZZA, EZ 2,13 A, ZEA.
Pherobio
Pherobio Paranthrene regalis
Pherobio Sesia sinengensis
Pherobio Paranthrene tabaniformis
Pherobio Maruca vitrata
Other
ZZ2,13OH
Z3, Z13-18AC
E2, Z13-18 AC

Combination lures
(1:1) Scentry Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(2:4) Scentry Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(2:6) Scentry Synanthedon sequoiae : Scenturian Paranthrene robiniae X10
(1:1) Scentry Synanthedon rubrofascia : Scentry Synanthedon pictipes
(1:1) Scentry Synanthedon pictipes : Scentry Synanthedon sequoiae
(1:1) Scentry Eichlinia cucurbitae : Scentry L-103
(4:3) Scentry Synanthedon viburni : Scentry L-103
(1:1) Scentry Vitacea polistiformis : Pherobase Eichlinia cucurbitae
(1:1) Scentry Vitacea polistiformis : Scentry Synanthedon bibionipennis
(3:2) Scentry Vitacea polistiformis : Scentry Synanthedon tipuliformis
(1:1) Scentry Synanthedon fatifera : Scentry L-103
(1:1) Scentry Synanthedon rubrofascia : L-103
(1:1) Scentry Paranthrene asilipennis : Scentry L-103
(2:3) Scentry Paranthrene asilipennis : Scentry L-103
(1:1) Scenturian Synanthedon sequoiae : Scentry Synanthedon sequoiae
(1:1) Scentry Synanthedon scitula : Scentry L-103
(1:1) Scentry Synanthedon scitula : EZ 2,13 ALD.
(1:1) Scentry Synanthedon bibionipennis : Scentry asilipennis
(1:1) Scentry Synanthedon bibionipennis : Scentry L-103
(1:1) Scentry bibionipennis : Scentry Synanthedon pictipes
(1:1) Scentry L-103 X 2 : Vitacea polistiformis X 2
(3:5) Scentry Synanthedon pictipes : Scenturian Paranthrene robinae X10
(1:1) Scentry Synanthedon sequoiae : Scentry L-103
(1:1) EZ2,13OH : EZ2, 13
(1:1) E3, Z13-18 AC : EZ13-18-OH
(1:1) Scenturian Paranthrene robiniae X 10 : Pherobase Paranthrene robiniae
(1:1) Scenturian Paranthrene robiniae X 10 : Scentry Synanthedon pictipes
(4:5) Scenturian Synanthedon pictipes : Pherobio Paranthrene tabaniformis
(1:10:1) E2Z13-18:Ac 100 µg : Z3Z13-18:Ac 1000 µg : Z3E13-18:Ac 100 µg
Pherobank
Osminia ruficornis - (99:1) EZ 2,13 OH : ZZA
Holland 1 - (40:40:10:10) EZOH : EZ 2,13 A : EZ 2,13 octadecadienal : Z13A
Holland 4 - (40:40:5:5:5:5) EZOH : EZ 2,13OH : ZEA : EEA : EZ 2, 13A : Z13A
Sesia apiformis - (40:60) ZZOH : EZ 2,13 octadecadienal

Fig 6b. Comprehensive listing of the semiochemical lures used in the Caddo Parish study.

To explain why we did not confirm species identities using DNA barcodes for those who do not fully understand the origins of these criteria. Findings e.g. that a particular ***Synanthedon pictipes*** specimen matches barcodes on record for that species does not mean that these specimens are actually ***S. pictipes***. Think about who, what, when, where did the provided barcodes originate and what criteria and parameters were used to establish the DNA signature for particular barcodes. We are told to blindly accept these barcode signatures from we know not where, nor are we provided images to confirm to the users where or how exactly did these master barcodes originate. There are thousands of species which are indeterminable based upon DNA barcodes. Many obviously different appearing valid species will have very similar to near identical barcodes, and conversely some which are well known individual single species have barcoded out to as many as 13 different species that we are aware of. DNA barcodes are not magical absolutes or final solutions, but they are just one of several methods for determining the identities of species that taxonomists have available to use for ova, larvae, pupae and adults concerning morphology, genitalia, DNA barcodes, phenology, and others. These same non-absolute phenomena can also occur either misunderstood or to differing degrees in morphology and genitalia criteria. The recent few decades of DNA based taxonomic entomological literature on record is terribly flawed, as definitive answers can often be wanting. There are no official or widely accepted absolute rules concerning what constitutes a different species based upon DNA criteria, though here in North America, currently (2% or more differences) constitutes what is considered to be a distinct species. Some researchers even foolishly report discovering perceived subspecies using DNA findings, where there is a total void in governing subspecies status using DNA.

The earliest publication mentioning clearwing moths in Louisiana was the listing of six species by von Reizenstein (1863)(Fig. 7)

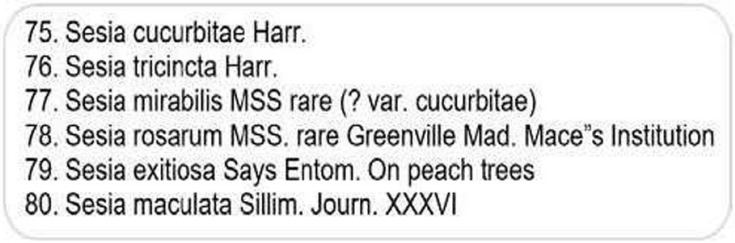
75. Sesia cucurbitae Harr.
76. Sesia tricincta Harr.
77. Sesia mirabilis MSS rare (? var. cucurbitae)
78. Sesia rosarum MSS. rare Greenville Mad. Mace"s Institution
79. Sesia exitiosa Says Entom. On peach trees
80. Sesia maculata Sillim. Journ. XXXVI

Fig. 7. Clearwing species listed by Ludwig von Reizenstein. 75. = *Eichlinia cucurbitae* , 76. = *Paranthrene tabaniformis* , 77. = unknown, 78. = unknown, 79. = *Synanthedon exitiosa* , 80. = unknown.

The next publications concerning wild clearwing moths in Louisiana occurred 134 years later (Brou, 1997a-d). Brou and Lemann (2012) published a one year field survey of the clearwing moths during 2011 from two distant study sites in Orleans Parish, recording the capture of 1,043 wild adult male clearwing moths.

Additional published accounts on certain species of wild clearwing moths occurring in Louisiana are: (Brou, 2001a, b, 2002, 2012, 2013a, b, c, d) (Patterson and Brou 2016) and (Brou and Brou, 2019a, b, and 2021)

Among the problematic issues which caused delays in publishing the results of our Caddo Parish Sesiidae research activities is the capture of several presumed to be currently undescribed probable new species. Some of these questionable morphotypes have been existing and known about for many decades from other Louisiana Parishes and some known and existing for decades in the southeast U.S. Not a single one of these unknowns were addressed in the very inadequately edited and poorly executed Moths of North America Fascicle (Eichlin and Duckworth, 1988). Among the 5,496 adults reported upon in this Caddo Parish study, we captured around six possible new species involving more than 2,000 adult specimens of questionable identity. Among our captured moths were e.g. 324 wild adults of ***Paranthrene simulans*** (Grote, 1881) (Fig. 10f) which we logged under this one species name in this studyEichlin and Duckworth's opinion is that nominate ***P. simulans*** has two additional color forms '***palmii***' Type locality Enterprise, Florida and '***luggeri***' Type locality St. Anthony Park, Minnesota. These names were originally described and earlier treated as valid species not color forms, ***Fatua palmii*** Hy Edwards, 1887 and ***Trochilium luggeri*** Hy. Edwards, 1891. Later Engelhardt (1946) treated ***T. luggeri*** as a form of ***P. simulans***, and he treated ***F. palmii*** as a full species ***Paranthrene palmii*** (Hy. Edwards).

Eichlin and Duckworth (1988) did nothing to resolve the species viability of these problematic entities nor any other similarly problematic North American clearwing moths, including those which were previously deemed 'races', 'forms', and 'varieties' by earlier authors in their treatment of all North American clearwing moths. These authors disregarded without any proofs in doing so concerning Engelhardt's 1946 treatment of N.A. clearwing moths by lumping other author's trinomial names simply as 'color forms', and befuddling the true taxonomical status of some of these ambiguous, confusing and unrecognized suspected distinct species. These authors did not mention looking at the genitalia of these three different appearing entities of ***P. simulans***, nor did they mention ruling out whether or not these three names are in fact just one species. Their personal anecdotal opinions have no basis in fact nor was evidence provided in MONA (1988). Under their treatment of ***Paranthrene pellucida*** Greenfield and Karandinos, Eichlin and Duckworth anecdotally stated the genitalia of both sexes of this species are indistinguishable from that of ***P. simulans***. But, these authors did not provide genitalia images nor proofs concerning any of these ***Paranthrene*** forms or species in MONA, so readers do not know which entities these authors were anecdotally commenting upon, making their text only statements meaningless, resulting in expansion and a continuation of unproven, unresolved clutter among today's scientific literature.

Covell (1984) stated "sesiid moths are day-fliers; only the Maple Callus Borer comes to light". Obviously, this generalized blanket statement is not true, as 19 of the 23 clearwing moth names identified and reported just in this study have been captured in the past by the senior author using UV light traps in Louisiana (Fig. 6a parts 1, 2, 3). In fact, the senior author has captured more than 100,000 adult clearwing moths (representing ~30 different species) in the state of Louisiana using high-wattage automatic-capture UV light traps (+/- 365nm), though the majority (99%) were *Synanthedon acerni.* Some of the ~30 may not truly be nocturnally active, ***sensu stricto***. Three hundred thousand additional clearwing moths were captured in the state of Louisiana using mostly semiochemical lures by the senior author over the past half century.

The reader will note that the two males of ***P. simulans*** we illustrate (Fig. 10f) were captured together and photographed together in the very same lure trap in the field; not only are differently colored, but also are of two different sizes, despite both entities being captured on the very same capture period using the very same semiochemical lures manufactured and labeled to attract a different species ***Eichlinia cucurbitae***. No intermediates of the two morphotypes of ***P. simulans*** we illustrate (Fig. 10f) were captured in this study or any time elsewhere in Louisiana over the past half century. It is also important to mention that we have personally captured these same two morphotypes of ***P. simulans*** previously and elsewhere in Louisiana over many decades. We captured ***P. simulans-***like adults using semiochemical lures of more than 25 differently labeled identities (Fig. 6a, part 1) also in high-wattage automatic-capture mercury vapor light traps and by hand netting across the state of Louisiana.

Another species we report upon here is ***Synanthedon pictipes*** (Grote and Robinson) which we logged 1,750 wild adults (1/3 of the total specimens of clearwing moths captured in this study). Among these numerous specimens in this localized study are several currently unrecognized similar looking ***pictipes*** -like morphotypes (Fig. 11y and 11z) And besides the two shown in (Fig. 11y and 11z), we captured others in this study not illustrated here. Brou first brought this multi-species '***pictipes***-like' complex in Louisiana to the attention of T. Eichlin around 40 years ago (1983), sending to him multiple boxes of pinned, spread, and labeled adults representing about eight assumed and morphologically different Louisiana ***S. pictipes***-like species, including some we earlier dissected for him placed in glycerine vials attached to the associated pinned adults, some of these with very different appearing genitalia. All of these ***S. pictipes***-like specimens were subsequently returned to Brou with (Eichlin and Duckworth) determination labels identifying them all as ***S. pictipes*** (G&R) (Fig. 12) without any discussions or comments. Answers concerning these potential undescribed species may require another lifetime to properly resolve. Over decades Eichlin subsequently ignored answering questions about these differently appearing morphotypes of ***S. pictipes***.

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Braxton and Raupp (1995) reported similar and illogical conclusions we also call attention to and briefly discuss here in this study e.g., 1. identifying features of some moths are destroyed in traps caused by self-destruction in sticky glue traps. 2. lures marketed for a particular species may be less effective at attracting the target species than other lures at the same locations, as we also report here in this Caddo Parish study. 3. Scentry dogwood borer lures also attracted a broad range of species. In our Caddo Parish study 13 of the 23 species names of clearwing moths we list here were captured using ***S. scitula*** semiochemical lures (Fig. 6a, part3), but no ***S. scitula*** using ***S. scitula*** lures were

captured. 4. Without proofs or justification these authors stated they were able to identify S. pictipes when captured using ***S. pictipes*** lures, but were unable to identify ***S. pictipes*** captured using four other lures they did not identify with that same specific target species name. Confirming our earlier half century of observations, species-specific named lures attract many additional non-target species, and these authors obviously didn't identify any ***S. pictipes*** specimens, but wrongly assummed all the ***S. pictipes*** attracted to ***S. pictipes*** lures must be that species. These same authors used sticky (glue) traps which snares wings, antennae, legs, clumps of scales and other appendages of live frantically flapping adults attracted to lures, just like nearly all researchers in North America have used over the past half century, even to present day (2024), even capturing and recording insects of other species, genera and orders. Our 55 year use of automatic-capture non-destructive specimen capture methods is novel. The clearwing moths captured using sticky traps are typically unidentifiable blobs of sticky specimen parts/scales, often eaten by birds, lizards, frogs and toads, ants and other insects, creatures and other pests in the field while on the glue traps. In our uniquely designed traps and better developed methods used continually over the past half century, rarely ever were identifying features of most moths damaged or destroyed. Even when more than 100 or more dispatched adults were captured on hundreds of occasions in a single clearwing moth lure trap, all adults were recovered in pristine condition and placed into chlorocresol relaxing containers for subsequent spreading and labeling (Brou, 2014) directly from the traps in the field. As reported (Braxton and Raupp, 1995) some lures can be less effective at attracting the target species than other lures. These authors reported some of the very same observations and findings that we report for many species of clearwing moths here (Fig. 6a parts 1, 2, 3).

McKern and Szalanski (2008) examined DNA sequence variation in the 603 bp region of the mitochondrial cytochrome oxidase I gene (COI), tRNA-leu and cytochrome oxidase II gene (COII) from 114 specimens captured at Clarksville, Springdale and Fayetteville populations of '***S. pictipes*** 'in Arkansas. These three locations are clustered in the Boston Mountains area northwest Arkansas, and these reported 'subspecies 'could not possibly be valid subspecies because multiple subspecies are not known to occur together at a same geographical location. Clearly these researchers do not have a clear taxonomical understanding of what a species or subspecies is. Sequence divergence among haplotypes of their study specimens ranged from 0.2% to 8.8%. Today, researchers consider greater or equal to 2% difference can indicate full species status. These researchers reported phylogenetic analysis of the 12 haplotypes in their study supports the existence of three genetically distinct but perceived morphologically indistinguishable of what they concluded are 'subspecies ' of S. pictipes. These researchers stated "After specimens were collected from traps, they were identified using morphological keys (Eichlin and Duckworth 1988)". It must be stated that 1988 MONA publication is the most inept seriously flawed fascicle published in the past 55 years of MONA. Also McKern and Szalanski (2008) used "Trece Pherocon IC wing traps (sticky glue traps) and stated their clearwing moth captures were morphologically indistinguishable, but conversely in this very same publication saying moths were identified using morphological keys found in Eichlin and Duckworth (1988). How did these authors accomplish this double entendre feat? These authors reported illogical opposing methods and findings as fact. These authors proclaimed and assumed, but never proved any of the Arkansas specimens are actually true ***S. pictipes*** (described from TYPE locality: Pennsylvania). There was no basis provided establishing a foundation where these authors obtained their independent evidence as having ***S. pictipes*** to base their DNA study assessments upon. Also, no images nor morphological evidence was provided, nor any genitalic proofs. These authors stated "all subspecies were collected with the same pheromone" but never once told the reader which 'pheromone' they used. They also never identified which 'subspecies' they were referring to, as no valid currently existing recognized subspecies of ***S. pictipes*** has ever been described in scientific literature. This poorly-executed publication is seriously flawed and lacks substance, merit, proper oversight review and has improper grammatical form. Other unknown specimens **Fig. 11 'x'**, captured in our study were four males of a suspected undescribed small species somewhat similar to ***Synanthedon scitula*** (Harris) **Fig. 11 'w'**. Brou and Brou (2019) published a half century long species account concerning the not often captured ***S. scitula*** in Louisiana. The senior author is aware of the existence of five or more different adults of currently probable undescribed species similar in appearance to a species complex involving ***S. scitula*** and ***Synanthedon arkansasensis*** Duckworth and Eichlin occurring in the southeast U.S. Eichlin identified for the senior author at least four of these other differently-marked and differently-sized Louisiana ***S. scitula***-like species all as being ***S. scitula***; but none of these four are actually ***S. scitula*** . We have no plans to further expound on this ***S. scitula*** matter at this time. Ironically, in this study no ***S. scitula*** adults were captured using ***S. scitula*** (Dogwood borer) semiochemical lures, but four adults of '***Synanthedon*** unknown near ***S. scitula***' (Fig. 11x) were

taken using the Scentry ***Synanthedon scitula*** lure. This same ***S. scitula*** lure also attracted and captured 13 other different clearwing moth species just in this Caddo Parish study. Braxton and Raupp (1995) also reported capturing eight different species of clearwing moths in their study using this same lure identity. These findings match what the senior author has observed across Louisiana over the past four decades concerning all commercial brands of dogwood borer lures in that very few adults of ***S. scitula*** are attracted to these target specific lures (Brou and Brou, 2019b). Because of this problem (Leskey et al 2006) researched trinary and binary blends of the female sex pheromone components in dogwood borer (***S. scitula***) lures and compared with those in traps baited with the most effective commercially available lure in apple orchards in West Virginia, Virginia, and North Carolina. These authors reported '*traps baited with the trinary blend [88:6:6 vol:vol:vol (Z,Z)-3,13 octadecadienyl acetate (ODDA):(E,Z)-2,13-ODDA:(Z,E)-3,13-ODDA] and the binary blend [96:4 (Z,Z)-3,13-ODDA:(E,Z)-2,13-ODDA] captured significantly more male dogwood borers than traps baited with the best commercial lure. The trinary blend captured the most males. Chemical analysis revealed that a commercial lure contained 91.5% (Z,Z)-3,13-ODDA, 7.3% (Z,E) -3,13-ODDA, and a third component 1.2% (E,Z)-3,13-ODDA (a potent behavioral antagonist of dogwood borers*)'. Fortuitously, it appears they identified why existing commercial lures of ***S. scitula*** attract few adults.

Brou and Brou (2019b) reported the vast majority of their ***scitula*** sample (n = 385) in Louisiana represents adults captured flying into automatic-capture ultraviolet light traps under unadulterated wild conditions, which operated unabated beginning in 1969 and continued dusk to dawn, every night of every year regardless of severity of rains, winds, temperatures down to 6°F to greater than 100°F, with the occurrence of hurricanes, tropical storms, or any adverse conditions into 2019 (50 contiguous years). These authors recorded about 51,000,000 trap hours involving nearly 500 novel insect traps of several types: high-wattage automatic-capture mercury vapor light traps, automatic-capture fermenting fruit bait traps, automatic-capture malaise (flight) traps, automatic-capture semiochemical lure traps, and (live and kill) automatic-capture beetle traps. Over this time Brou and Brou (2019b) and in unpublished research have confirmed the majority of the small ***Synanthedon arkansasensis*** Duckworth and Eichlin look-alike species complex of similar-in-appearance ***Synanthedon*** species (described and undescribed) occurring in the S.E. USA are predominately on the wing nocturnally and most often are collected using both low and high intensity ultraviolet light +/- 365nm.

We are leaving many of these difficult and lengthy taxonomical issues for future workers to attempt to resolve. Now that we have documented the existence of these unknowns, we can put these taxonomical quandaries aside for the time being and address the remainder of our Caddo Parish discoveries and study results. The few probable new species we mention capturing in this study are a small part of the larger quantity of about 35 described clearwing moth species and 25 possible undescribed species the senior author has logged or newly discovered in Louisiana over the past 55 consecutive years. Half of those probable 25 undescribed clearwing moths have no DNA profiles matching currently known described species, the remainder have not been checked.

(Continue to next page)

Species	start 2018 Pickup→								start 2019 Pickup→									2020 Pickup→							
months →	4	5	6	7	8	9	10	11	3	4	5	6	7	8	9	10	11	1	4	6		2018	2019	2020	grand total
1 *Paranthrene simulans*		245	3	3	1						53	9	4	1						5		252	67	5	324
2 *Paranthrene asilipennis*										1												0	1		1
3 *Paranthrene dolli*		1		1			1				8	2	1	2						2		3	13	2	18
4 *Paranthrene tabaniformis*											4											0	4		4
5 *Podosesia syringae*		54	111	9						123	87	46	102	1					109	116		174	359	225	758
6 *Podosesia aureocincta*							86	1								19	28	76				87	47	76	210
7 *Sannia uroceriformis*		113	176	135							11	138	8							36		424	157	36	617
8 *Alcathoe caudata*		1																				1	0		1
9 *Synanthedon rubrofascia*		15	54	35	40	38	21				1	9	13	6	24	15		1		9		203	68	10	281
10 *Synanthedon decipiens*				3		4	3					1	3	4	11	14				2		10	33	2	45
11 *Synanthedon accerubri*		1								9									2	3		1	9	5	15
12 *Synanthedon pictipes*		97	128	153	57	195	198			154	65	91	99	102	196	81	8	21	50	55		828	796	126	1750
13 *Synanthedon kathyae*			4									1								1		4	1	1	6
14 *Synanthedon rileyana*			1	13	5	16	7						11	24	33	42		20				42	110	20	172
15 *Synanthedon exitiosa*			15	117	29	393	63					1	24	42	279	65						617	411		1028
16 *Synanthedon acerni*										2	72	2	1		1	1			45	5		0	79	50	129
17 *Vitacea scepsiformis*			30	23	3								18	8						1		56	26	1	83
18 *Vitacea polistiformis*				2		2																4	0		4
19 *Carmenta odda*				1								1	2		1							1	4		5
20 *Carmenta pyralidiformis*						11	12								6	10						23	16		39
21 *Synanthedon scitula*							2							2	1							2	3		5
22 *Synanthedon* unknown near *scitula*							1															1	0		1
23 *Synanthedon alleri*																		1						1	1
		527	**522**	**495**	**135**	**659**	**394**	**1**		**289**	**301**	**301**	**286**	**192**	**552**	**247**	**36**	**119**	**206**	**235**	subtotal -	2733	2204	560	**5,497**
																									Grand total

Fig. 8. Tally for numbers of each species captured in this Caddo Parish study and timeline of batch retrievals.

Traps 1. Illustrations of semiochemical lure traps used in this study (#1-30)

Traps 2. Illustrations of semiochemical lure traps used in this study (#31-60)

Traps 3. Illustrations of semiochemical lure traps used in this study (#61-90).

Traps 4. Illustrations of adult clearwing moth captures from our semiochemical lure traps in the field.

Traps 5. **a.** Single large capacity four drawer size-separating stationary light trap, Royal Tyler standing next to light trap, **b.** drawer #1 empty illustrating rain drain, **c.** drawer #1 rain drain removed, typical captures **d.** drawer #2 typical captures, **e.** drawer #3 typical captures, **f.** drawer #4 typical captures.

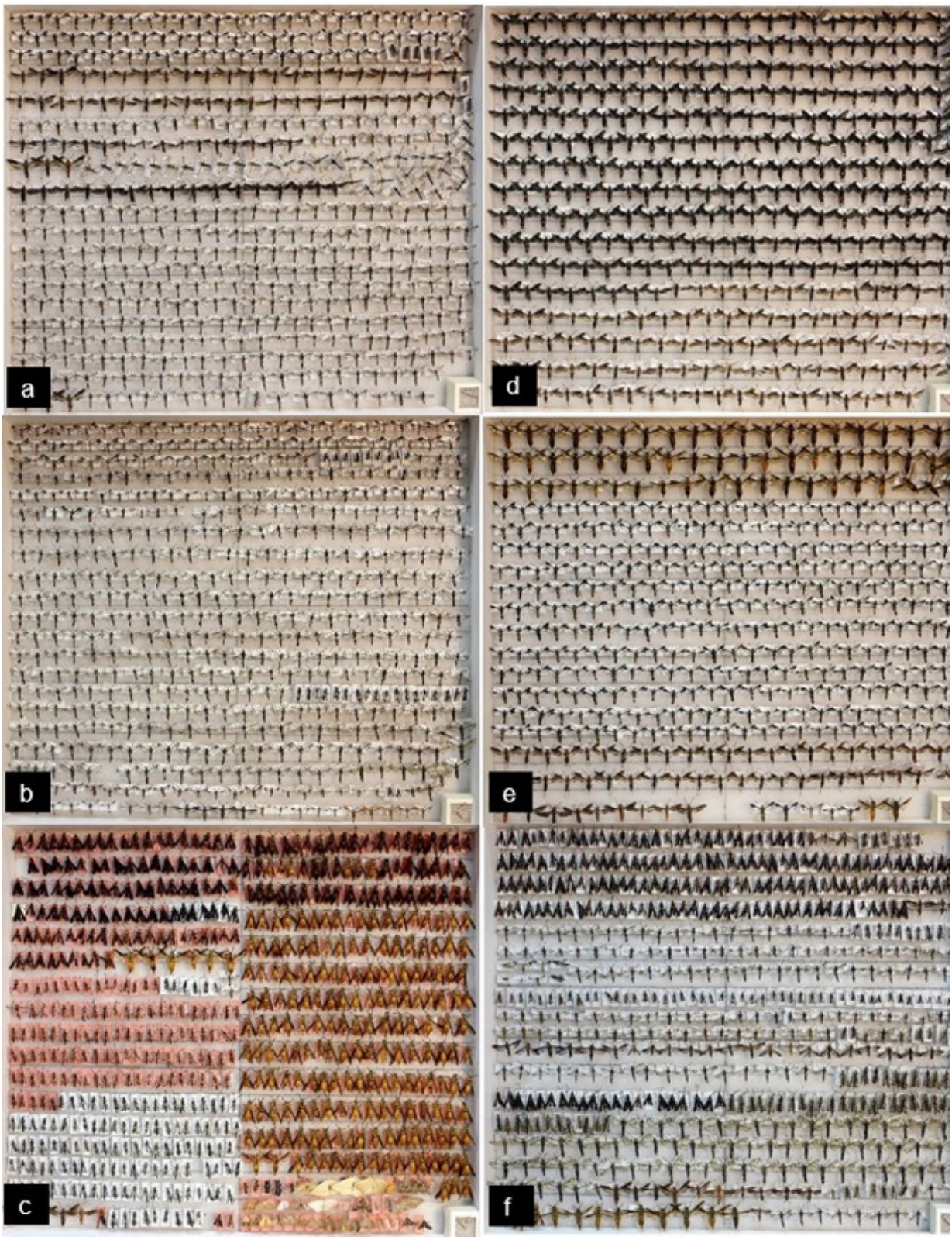

Fig. 9a-f. Illustrations of Cornell-size drawers of the adult sesiidae captured and retained during this study.

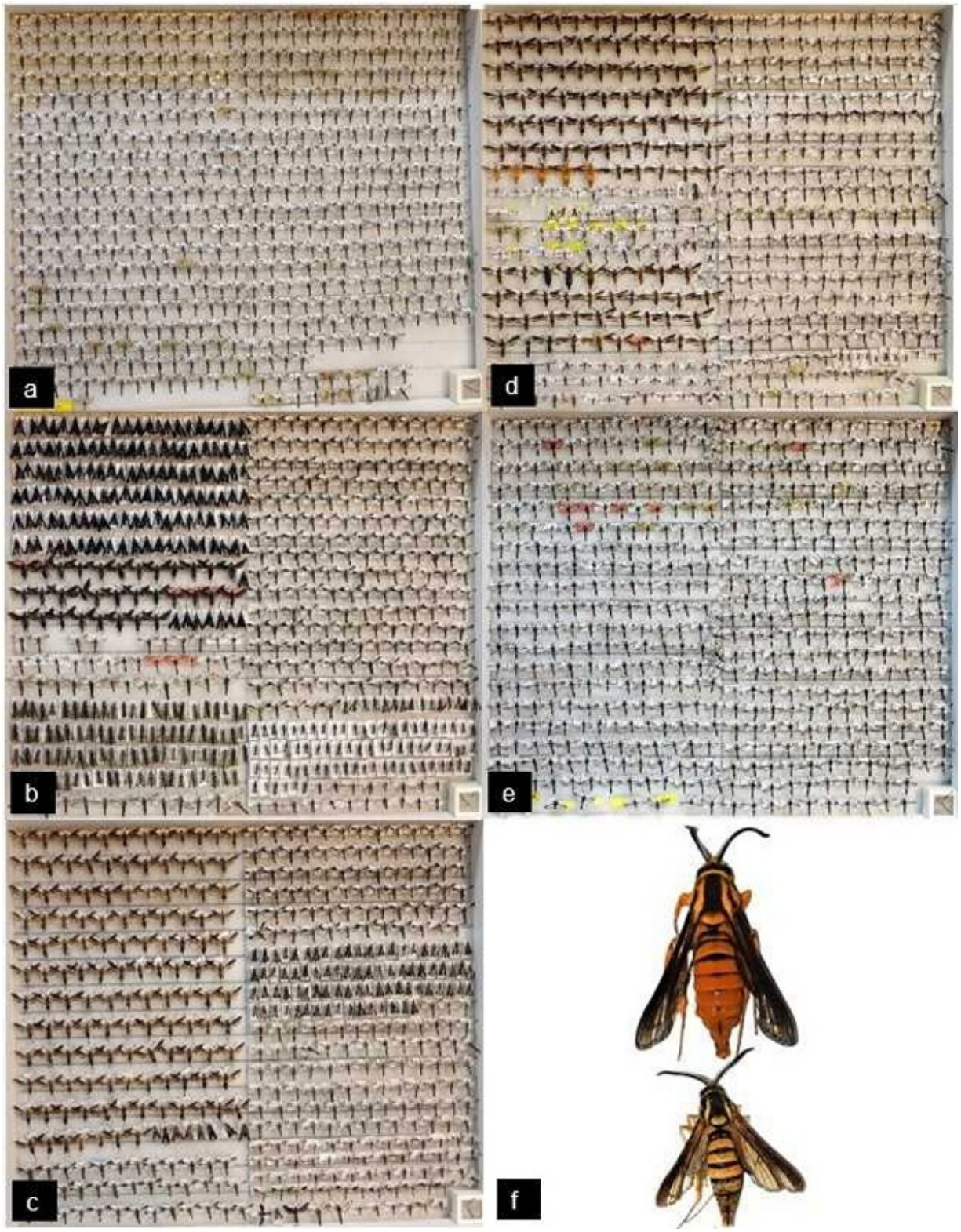

Fig. 10a-e. Illustrations of Cornell-size drawers, adult sesiidae captured and retained during this study.
Fig. 10f. Males of *Paranthrene simulans* captured in the same field trap using the same lure identity.

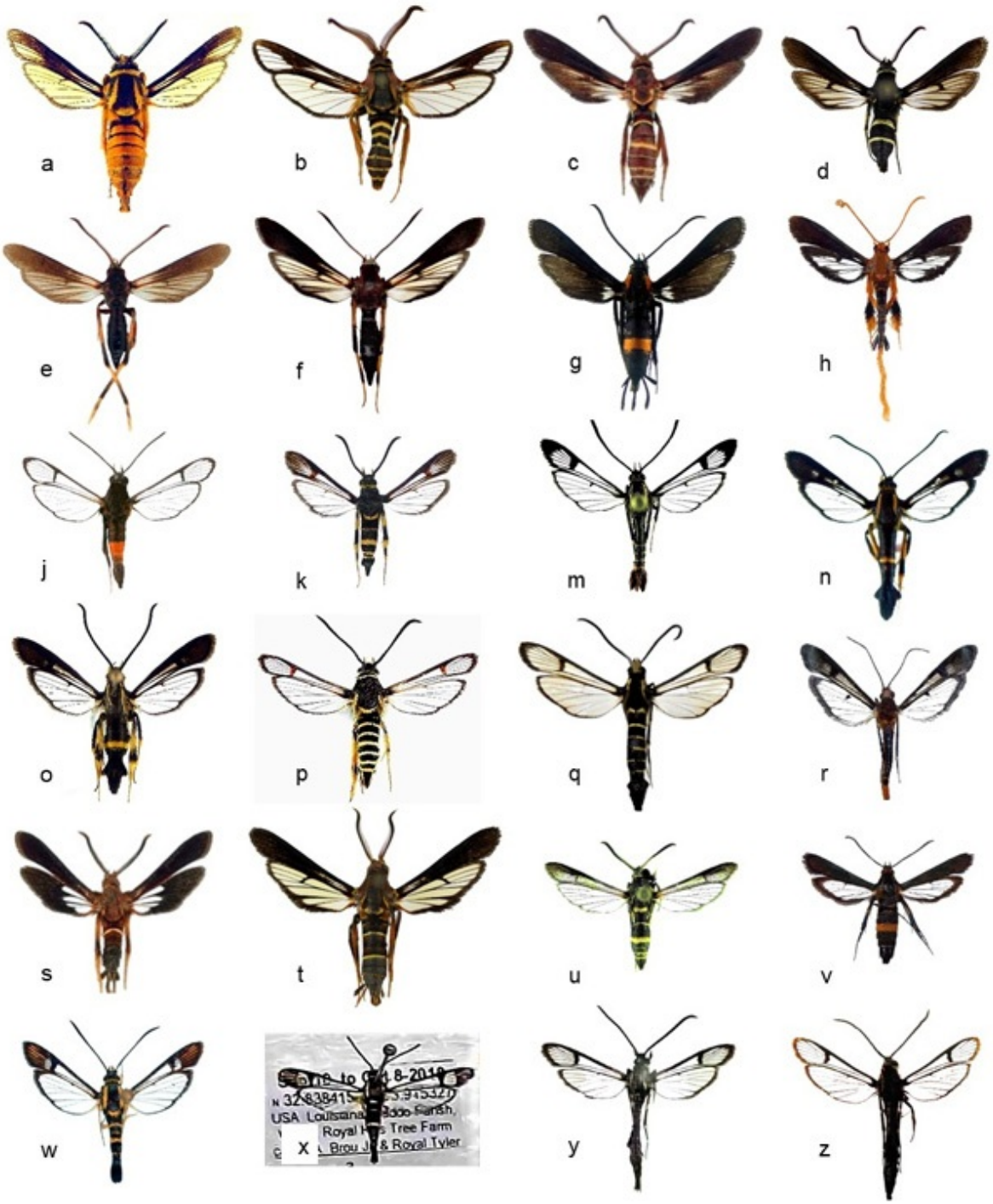

Fig. 11. Examples of 24 adult male Louisiana clearwing moth species captured during this Caddo Parish study. a. ***Paranthrene simulans*****,** b. ***Paranthrene asilipennis*****,** c. ***Paranthrene dolli*****,** d. ***Paranthrene tabaniformis*****,** e. ***Podosesia syringae*****,** f. ***Podosesia aureocincta*****,** g. ***Sannia uroceriformis*****,** h. ***Alcathoe caudata*****,** j. ***Synanthedon rubrofascia*****,** k. ***Synanthedon decipiens***, m. ***Synanthedon accerubri*****,** n. ***Synanthedon alleri*****,** o. ***Synanthedon kathyae*****,** p. ***Synanthedon rileyana*****,** q. ***Synanthedon exitiosa*****,** r. ***Synanthedon acerni*****,** s. ***Vitacea, scepsiformis*****,** t. ***Vitacea polistiformis*****,** u. ***Carmenta odda*****,** v. ***Carmenta pyralidiformis*****,** w. ***Synanthedon scitula*****,** x. ***Synanthedon*** n. sp. near ***scitula***, y. ***Synanthedon* '*pictipes*-**like1**',** z. ***Synanthedon* '*pictipes*-**like2**'.**

Fig. 12. ♂ left, ♀ right *Synanthedon pictipes* from TYPE locality (Pennsylvania). from MONA (1988).

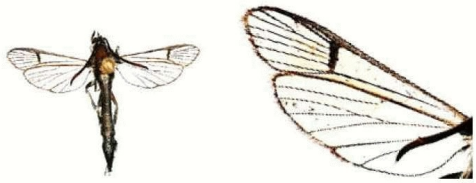

Fig. 13. ♂ *Synanthedon pictipes* (Pennsylvania), confirmed DNA per BOLD. Enlarged view illustrating maculation, venation and transverse forewing band.

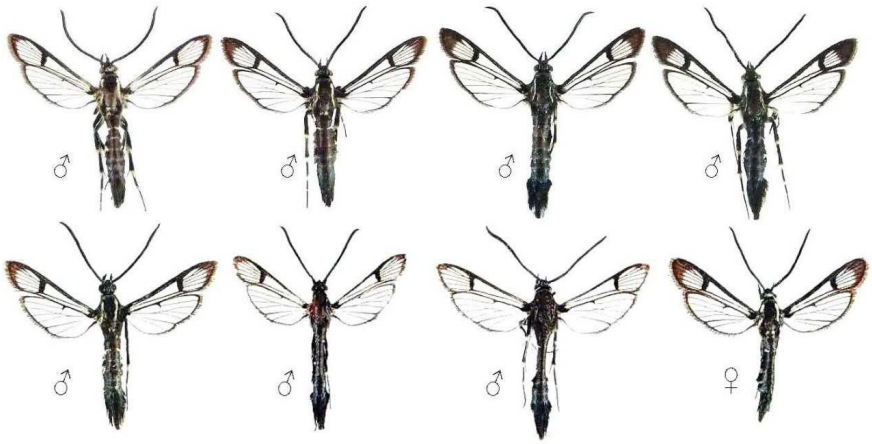

Fig. 14. Eight additional '*S. pictipes*'-like morphotypes captured in Louisiana. All eight illustrated were determined by T. Eichlin as being *S. pictipes.*

Acknowledgements

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***Abita Entomological Study Site** (AESS): sec.24,T6S,R12E, 4.2 miles northeast of Abita Springs, Louisiana USA.

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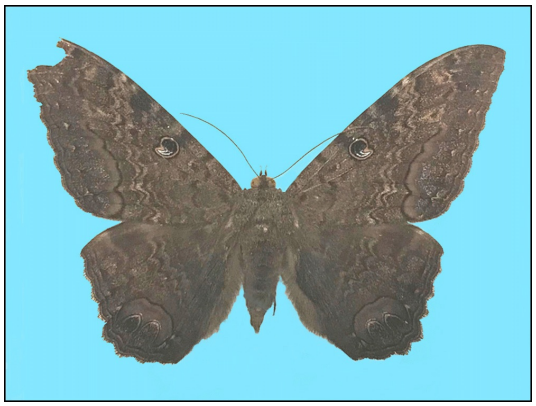
ASCALAPHA ODORATA (THE BLACK WITCH)



Male (dorsal)
July 22, 2024

Male (ventral)
July 22, 2024

Female (dorsal)
May 31, 1976

Female (ventral)
May 31, 1976

Fairly common in my backyard (Lubbock, Texas) coming to bait (mashed bananas with sugar) traps.

J. Barry Lombardini

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Starr County Butterflies (Texas)

COMMON MESTRA (*MESTRA AMYMONE*) LIFE HISTORY

BY
BERRY NALL

A wet September produced a bumper crop of Brush Noseburn (*Tragia glanduligera*) in a nearby arroyo. I followed a female Common Mestra around as she deposited eggs on various vines. The eggs were placed in seeming random fashion: on seeds, under leaves, and on new leaves. After I had watched her a while, I went back to some of the plants I had seen her visit and collected three eggs. The eggs I collected were most likely laid by this female, and if so they took only four days to eclose.

Egg, 10-10-09

Day-old, 10-14-10

The false antennae on the head appeared in the second instar, and seemed to lengthen with every molt. The coloration of the caterpillars is highly variable, unpredictably mixing greens and browns in any amount or location. The 10-26-10 picture of the brown caterpillar shows a typical resting position: the face is pressed to a leaf or branch, and the "shoulders" and rump are raised up a little. In photos or in hand, the caterpillars do not appear highly camouflaged, but they blend in amazingly well on the plant: I often thought I had lost one or another of the caterpillars, only to discover it was right in front of my eyes. Also, larger Mestra caterpillars could easily be confused with smaller Red Rim larvae - examine them carefully if you are seeking one or the other.

The caterpillars pupated after about 2 weeks and emerged a week later.

10-16-10

10-18-10

10-21-10

10-23-10

Final instar, 6-7-10

A different final instar, 10-26-10

A green-form final instar, 10-8-12

A brown-form final instar, 10-26-10

Face of brown-form caterpillar, 10-27-10

Chrysalis #1, 10-27-10

Chrysalis #2, 10-31-10

Ventral of first adult, 11-2-10

Dorsal of second adult, 11-3-10

Many thanks to Mr. Berry Nall for allowing me to use his Life Histories of a number of butterflies and their life cycles that he observed in Starr County, Texas, to be published in the Southern Lepidopterists' Society Newsletter. Mr. Nall's article on the common *Mestra amymone* can be found on the internet at:
https://leps.thenalls.net/content2.php?ref=Species/Biblidinae/amymone/life/amymone_life.htm

J. Barry Lombardini - The Editor

MOTH DIVERSITY AT A PITCHER PLANT BOG IN SOUTHEASTERN GEORGIA, USA, BASED ON MONTHLY LIGHT SHEET RECORDS

BY

LANCE A. DURDEN and ANNA YELLIN

North American pitcher plant bogs support unique insect faunas. These include several species of flesh flies (Sarcophagidae), the pitcher plant mosquito, *Wyeomyia smithii* (Coquillett), a suite of three species of pitcher plant noctuid moths *Exyra fax* (Grote), *Exyra riddingsii* (Riley) and *Exyra semicrocea* (Guenée) and the pitcher plant borer noctuid moth, *Papaipema appassionata* (Harvey) (Rymal & Folkerts, 1982). All of these insects are obligate associates of pitcher plants. Larvae of another two species of polyphagous tortricid moths, *Endothenia herbesana* (Walker) and *Choristoneura parallela* (Robinson), and of one polyphagous noctuid, *Morrisonia mucens* (Hübner), have also been recorded to feed facultatively on pitcher plants (Lamb & Kalies, 2020). Only one of the obligate pitcher plant moths, *E. semicrocea*, is shown to occur in Georgia in Moth Photographers Group (MPG) but one of us (Durden) has also recorded *E. riddingsii* from a pitcher plant bog in Coffee County, Georgia. The other two species, *E. fax* and *P. appassionata,* have not yet been recorded in Georgia. Conversely, the facultative pitcher plant feeders, *E. herbesana, C. parallela* and *M. mucens* are all widespread in Georgia as shown by distribution maps for these species on MPG.

Fig. 1: Photographing moths at a light sheet at Canoochee Bog

Canoochee Bog consists of six privately owned conservation priority bogs (total land area, ~110 acres) near Manassas in northern Tattnall County, southeastern Georgia. Georgia Department of Natural Resources (DNR) requests that the exact location of the bogs is not publicized. Although the bogs are privately owned, Georgia DNR oversees conservation activities and biological studies on the sites with consent of the land owners. We were granted permission to conduct a non-destructive moth survey on a 10-acre parcel of the bog. This bog is populated by three species of pitcher plants and one hybrid, including *Sarracenia flava* Linnaeus (yellow pitcher plant), *Sarracenia purpurea* Linnaeus (purple pitcher plant) var. *venosa, Sarracenia minor* Walter (hooded pitcher plant) and a hybrid between *S. flava* and *S. purpurea* known as Sarracenia x catesbaei. Together, these pitcher plants could theoretically support populations of all three species of *Exyra* in addition to *P. appassionata*. The bog also has scattered native pines, a few deciduous trees and other bog associated plants such as sundews (*Drosera* spp.)

Fig. 2: *Triclonella pergandeella* (Cosmopterigidae) ←

Fig. 3: *Pelochrista fraudabilis* (Tortricidae) on pine tree next to light sheet. Note bark charring from previous bog burning →

In order to provide invertebrate inventory data for Georgia DNR, we set up 2-4 light sheets, about 50 m apart just before dusk on at least one night of each month. Fluorescent blacklights (15 Watt or 50 Watt), powered by 12 Volt batteries, were hung from each sheet. The project started in March 2018 and ended in April 2021. We were not able to cover all months in a single year but, throughout the project, all months were covered. Exact monthly recording dates were as follows: 19-20 March 2018, 9-10 May 2018, 28-29 June 2018, 18-19 July 2018, 30-31 August 2018, 23-24 September 2018, 18-19 October 2018, 2 December 2018, 6 February 2019, 29 March 2019, 29-30 May 2019, 26-27 June 2019, 15 January 2020, 7-8 November 2020, 23-24 April 2021. All selected recording nights were mild to warm for the time of year, to ensure that moths were flying, for example, during late fall, winter, and early spring Moth species were recorded on the sheets for several hours each night, sometimes until 1:30 AM during the summer months. Species that could not be identified in the field were photographed using close-up macrophotography and identified later. Undoubtedly, some moths, especially smaller species, were missed, despite our attempts to record all species.

Table 1 lists the 579 species of moths that we recorded during the survey including 121 species of erebids, 101 noctuids, 81 geometrids, 77 crambids, 52 torticids, and 41 pyralids. This is a fairly impressive list for a unique habitat consisting largely of pitcher plants and other bog-associated plants, although some moths obviously flew to our sheets from nearby habitats. For example, some moths that utilize bald cypress [*Taxodium distichum* (Linnaeus)] as their larval foodplant, such as *Dioryctria pygmaella* Raganot (Pyralidae), *Iridopsis pergracilis* (Hulst), *Nemoria elfa* Ferguson (both Geometridae), and *Cutina distincta* (Grote) (Erebidae) were recorded (Table 1).

Fig. 4: *Anageshna primordialis* (Crambidae) ←

Fig. 5: *Chilo erianthalis* (Crambidae) on pine tree next to light sheet. Note bark charring from previous bog burning →

We recorded several species of moths that are rare or not recorded from Georgia in MPG (bolded entries in Table 1). One of these species, *Photedes carterae* (Schweitzer), is shown in MPG to only occur in North Carolina but this species has also been recorded from two additional wetland sites in southern Georgia (James Adams and Lance Durden, personal observations), one of them, another pitcher plant bog.

Fig, 6: *Vaxi auratellus* (Crambidae) ←

Fig. 7: *Prionapteryx serpentella* (Crambidae) →

Probably related to the uniqueness of the habitat, some moth groups were well represented in our survey whereas other groups, that can be abundant in other habitats in southeastern Georgia, were rare or absent. Among the well represented moth groups were members of the noctuid genus *Schinia* (flower moths) (9 species recorded) (Table 1) which fly mainly from late August through October in Georgia when the bog has a variety of late season plants in bloom. The noctuid genus *Acronicta* (dagger moths) (14 species) was also well represented (Table 1).

Fig. 8: *Eumacaria madopata* (Geometridae) ←

Fig. 9: *Xanthotype rufaria* (Geometridae) →

Among the poorly represented moth groups were the lasiocampids (2 species), saturniids (6 species), sphingids (2 species) notodontids (7 species), and members of the erebid genera *Catocala* (4 species) and *Argyrostrotis* (3 species) (Table 1). One of the three species we recorded in the last listed genus, *A. quadrifilaris* (Hübner), was only represented by a single specimen. Typically, five or six species of *Argyrostrotis* are common in southeastern Georgia throughout much of the year. Perhaps the low number of *Catocala* species we recorded was related to the fact that few deciduous larval hostplant trees were close to the bog. Remarkably, we did not record any tent caterpillar moths (Lasiocampidae, genus, *Malacosoma*), or luna moths, *Actias luna* (Linnaeus) (Saturniidae), which can be abundant throughout Georgia.

Fig. 10: *Eupithecia matheri* (Geometridae) ←

Fig. 11: *Baileya doubledayi* (Nolidae) →

Some species that we recorded frequently at Canoochee Bog are not shown to occur in Georgia on MPG. These include the geometrid, *Scopula timandrata* (Walker), and the noctuid *Ozarba nebula* Barnes & McDunnough. However, both of these species appear to actually be widespread in southern Georgia (James Adams and Lance Durden, unpublished). An invasive species, the Asian erebid, *Simplicia cornicalis* (Fabricius), was also recorded, but only represented by two specimens, so it does not appear to pose a threat to the bog.

Fig. 12: *Anisota pellucida*, female (Saturniidae) ←

Fig. 13: *Apantesis placentia*, male (Erebidae: Arctiinae) →

Interestingly, we did not record any obligate pitcher plant feeding moths during this survey. Because of the abundance of suitable pitcher plant hostplants at the site, this was not expected. However, we did record one tortricid, *Choristoneura parallela* (Robinson), and one noctuid, *Morrisonia mucens* (Hübner) (Table 1), that have been reported to facultatively feed on pitcher plants as larvae (Lamb & Kalies, 2020). We do not know, of course, whether the moths we recorded belonging to these two species had fed on pitcher plants as larvae. However, we did notice some lepidopteran larval feeding damage to some *S. flava* pitchers at the bog that resembled damage caused by *M. mucens* larvae as illustrated by Lamb & Kalies (2020).

Fig. 14: *Syntomeida ipomoeae* (Erebidae: Arctiinae) ←

Fig. 15: *Ptichodis bistrigata* (Erebidae) →

Why did we not record any obligate pitcher plant moths during this survey? One possible explanation may be related to the fact that we switched off our lights (and stopped recording) between midnight and 1 AM on most nights. Therefore, if pitcher plant moths fly later during the night, we would have missed them. If this is true, we almost certainly missed some other moth species as well. Counter to this argument, at least for *Exyra* spp., Stephens & Folkerts (2012) stated that adult *E. semicrocea* typically fly just after dusk. Another potential reason for the absence of pitcher plant moths is that they may have been rare at the site, and, by chance, none landed on the sheets on the particular nights we visited. A third, more likely, reason that we did not record pitcher plant moths is that the site is frequently burned in to maintain the pitcher plants by preventing plant succession. Prescribed burning of pitcher plant bogs is widespread but has been shown previously to reduce or eliminate pitcher plant moth populations, at least for *E. semicrocea*, especially if the entire bog is burned at the same time (Stephens et al., 2011). Burning different sections of a bog in different years has been shown to be less detrimental to moth populations because moths can survive in the unburned sections and then repopulate the burned areas in subsequent seasons (Stephens & Folkerts, 2012). Because pitcher plant bogs are fairly isolated in Georgia, it may take several years for pitcher plant moths to

re-colonize them following a burn that encompasses an entire bog. Adult *E. semicrocea* have been shown to fly away from smoke (Lee et al., 2016), implicating some form of partial protection from a burning habitat, but moth eggs, pupae and probably also larvae, would not be able to evade smoke and fire. Even moths flying away from a burning habitat might not be able to locate and colonize another pitcher plant bog.

Fig. 16: *Hyperstrotia flaviguttata* (Noctuidae: Acontiinae).

Fig 17: *Photedes carterae* (Noctuidae Amphipyrinae) on pine tree next to light sheet. Note bark charring from previous bog burning.

Fig. 18: *Schinia petulans* (Noctuidae: Heliothinae) .

Despite the absence of obligate pitcher plant feeding moth records at the site during our survey, an impressive list of moths was compiled. We have provided a baseline species list against which any future moth studies at the site can be compared. As a side note, we also recorded two butterflies on the light sheets, *Polites vibex* on 9 May 2018 and *Junonia coenia* on 18 Oct. 2018.

Fig. 19: One of the authors (Anna Yellin) with a female *Automeris io* (Saturniidae) at Canoochee Bog.

ACKNOWLEDGMENTS

We thank the land owner and Georgia DNR for approving the survey, Lisa Kruse (Georgia DNR) for botanical information about the site, Dirk Stevenson (Altamaha Environmental Consulting, Hinesville, Georgia) and Lisa Kruse for helping to set up the survey, Abigail Abouhamdan, Ashley (Morris) Gooch, Reagan Montalvo, Sabrina Sewell, Katie O'Shields and Dan Shulimson for helping to set up light sheets and for photographing moths on some of the survey nights, and James Adams (Dalton State College, Dalton, Georgia) for checking some of the moth identifications.

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TABLE 1: MOTHS RECORDED ON LIGHT SHEETS IN A PITCHER PLANT BOG IN TATTNALL COUNTY, SOUTHEASTERN GEORGIA, USA, 2018-2021.

Moth Taxa*	Months Recorded
NEPTICULIDAE (1 species)	
Ectodemia sp.	Jun
PRODOXIDAE (1 species)	
Tegeticula yucasella (Riley)	Apr, May, Jun
TINEIDAE (1 species)	
Diachorisia velatella Clemens	Jul
ACROLOPHIDAE (11 species)	
Acrolophus arcanella (Clemens)	Jun, Jul
Acrolophus cressoni (Walsingham)	Jun, Jul
Acrolophus forbesi Hasbrouck	Jun
***Acrolophus heppneri* Davis**	Jul
Acrolophus mortipennella (Grote)	May, Jul, Sep
Acrolophus mora (Grote)	Aug
Acrolophus plumifrontella (Clemens)	Jun, Jul
Acrolophus popeanella (Clemens)	May, Jun, Jul, Aug, Nov
Acrolophus texanella (Chambers)	May, Jun
Amydria dyarella Deitz	Jul
Amydria effrenatella Clemens	Dec
PSYCHIDAE (3 species)	
Basicladus tracyi (Jones)	Aug
Cryptothelea gloverii (Packard)	Jun, Aug, Sep
Prochalia pygmaea Barnes & McDunnough	Jul, Aug
GRACILLARIIDAE (3 species)	
Caloptilia sassafrasella (Chambers)	Jul, Aug
Caloptilia violacella (Clemens)	Jun
Parectopa robiniella Clemens	Sep

DEPRESSARIIDAE (8 species)

Antaeotricha albulella (Walker)	Jul, Sep
Antaeotricha humilis (Zeller)	Aug, Sep
Antaeotricha leucillana Zeller	May, Jun, Aug
Antaeotricha osseella (Walsingham)	May, Jun
Antaeotricha schlaegeri (Zeller)	Apr, Jun, Aug
Eupragia hospita Hodges	Feb, Apr
Psilocorsis reflexella Clemens	Jan, Apr
Rectiostoma xanthobasis (Zeller)	May

OECOPHORIDAE (2 species)

Inga cretacea (Zeller)	Jun, Jul
Inga sparsiciliella (Clemens)	May, Jun, Jul, Aug

BLASTOBASIDAE (2 species)

Blastobasis glandulella (Riley)	Apr, Jun, Jul, Aug, Sep
Blastobasis sp.	May, Jul

MOMPHIDAE (1 species)

Mompha passerella (Busck)	Jul

COSMOPTERIGIDAE (2 species)

Euclemensia bassettella (Clemens)	Jul, Sep
Triclonella pergandeella Busck	Mar

GELECHIIDAE (16 species)

Anacampsis coverdalella Kearfott	Mar, May, Jul
Arogalea cristifasciella (Chambers)	Feb, Mar
Aroga compositella (Walker)	Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Nov
***Aroga epigaeella* (Chambers)**	Jun
Aroga trialbamaculella (Chambers)	May, Jun
Battaristis vittella (Busck)	Jun
Deltophora sella (Chambers)	Jul
Dichomeris aglaja Hodges	May, Jun, Jul, Aug
Dichomeris flavicostella (Clemens)	May, Jun, Jul
Dichomeris glenni Clarke	May, Jun, Aug
Dichomeris isa Hodges	Apr, May, Jul
Dichomeris juncidella (Clemens)	Jul
Fascista cercerisella Chambers)	Jun, Aug
Gnorimoschema saphirinella (Chambers)	Jun, Jul
Stegasta bosqueella (Chambers)	Apr, Jun, Sep
Strobisia iridipennella Clemens	Sep

ATTEVIDAE (1 species)

Atteva aurea (Fitch)	Jan, Feb, May, Oct, Nov, Dec

URODIDAE (1 species)

Urodus parvula (Edwards)	Jan, Feb, Mar, May, Jul, Aug, Oct, Nov

YPONOMEUTIDAE (1 species)

Zelleria retiniella Forbes	Jun

SESIIDAE (1 species)

Synanthedon acerni (Clemens)	Mar, Dec

COSSIDAE (4 species)

Cossula magnifica (Strecker)	Apr, May
Givira anna (Dyar)	May, Jun
Givira francesca (Dyar)	Jun, Jul
Prionoxystus robiniae (Peck)	May

TORTRICIDAE (52 species)

Acleris curvulana (Kearfott)	Jun, Jul
Acleris semipurpurana (Kearfott)	Apr, May
Aethes seriatana (Zeller)	Jun
Amorbia humerosana Clemens	Apr, May, Jun
Argyrotaenia alisellana (Robinson)	May, Jun
Argyrotaenia floridana Obraztsov	Apr, May, Jun, Jul
Argyrotaenia kimballi Obraztsov	Mar, Apr, Jun
Argyrotaenia quercicfoliana (Fitch)	May, Jun
Argyrotaenia volutinana (Walker)	May, Jun, Jul
Cenopis cana (Robinson)	May
Cenopis pettitana (Robinson)	Jul, Aug
Cenopis reticulatana (Clemens)	May, Jun
Choristoneura obsoleta (Walker)	May, Jul
Choristoneura parallela (Robinson)	Jan, May, Sep
Choristoneura pinus Freeman	Apr, Jun
Choristoneura rosaceana (Harris)	Jan, May, Jun, Sep
Clepsis peritana (Clemens)	Apr, May, Jun, Jul
Cochylis caulocatax Razowski	Jun
Cydia latiferreana (Walsingham)	Jan, Apr, May, Jun, Jul, Sep, Dec
Cydia toreuta (Grote)	Jan, Mar, Apr, Jun, Jul, Sep, Oct
Decodes basiplagana (Walsingham)	Apr, May, Jun, Sep
Epiblema abruptana (Walsingham)	Apr, May, Jun, Jul
Epiblema otiosana (Clemens)	May, Jul, Oct
Epiblema scudderiana (Clemens)	Mar, Jun, Jul
Epiblema strenuana (Walker)	May, Jun
Epiblema tabulana Freeman	Apr, Oct
Eucosma giganteana (Riley)	May, Jun
Eucosma raracana (Kearfott)	Jul
Eugnosta bimaculana (Robinson)	May, Jun, Aug, Sep, Dec
Eugnosta erigeronana (Riley)	May, Jul, Aug
Eugnosta sartana (Hübner)	May, Jun, Jul, Aug, Sep, Nov
Eumarozia malachitana (Zeller)	May, Jun, Aug, Sep
Gymandrosoma punctidiscanum Dyar	May, Jun, Jul, Aug, Sep
Larisa subsolana Miller	Mar, May, Jun
Olethreutes griseoalbana (Walsingham)	Apr, Sep
Pandemis limitata (Robinson)	Aug, Nov
Pelochrista fraudabilis (Heinrich)	Jun, Jul
***Pelochrista guttulana* (Blanchard)**	Feb, Oct
Pelochrista quinquemaculana (Robinson)	Jun, Aug, Oct
Pelochrista robinsonana (Grote)	Apr, May, Jun, Jul, Aug, Sep
Platynota flavedana Clemens	Mar, May, Jun, Aug, Sep, Nov
Platynota idaeusalis (Walker)	May, Jul
Platynota rostrana (Walker)	Mar, Apr, Jun
Platynota semiustana Walsingham	Jun, Jul
Retinia gemistrigulana (Kearfott)	Apr, May, Jun
Rhyacionia frustrana (Comstock)	Jan, Feb, Jun
Rhyacionia rigidana (Fernald)	Mar, Jul, Dec
Sonia paraplesiana Blanchard	Jun, Jul
Sparganothis caryae (Robinson)	Aug, Sep

Sparganothis pulcherrimana (Walsingham)	May
Sparganothis sulfureana (Clemens)	Jan, Feb, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Zomaria interruptolineana (Fernald)	May

ZYGAENIDAE (2 species)

Acoloithus falsarius Clemens	Jun, Jul, Aug
Harrisina americana (Guérin-Méneville)	May, Aug

MEGALOPYGIDAE (3 species)

Megalopyge crispata (Packard)	May
Megalopyge lacyi (Barnes & McDunnough)	Jun
Megalopyge opercularis (Smith)	May, Jun, Jul

LIMACODIDAE (8 species)

Acharia stimulea (Clemens)	Jul, Aug
Apoda biguttata (Packard)	May, Jul
Apoda rectilinea (Grote & Robinson)	Jun, Jul
Euclea delphinii (Boisduval)	Jul, Aug
Euclea nanina Dyar	Jun, Jul
Isochaetes buetenmuelleri (Edwards)	Jun, Aug, Sep
Lithacodes fasciola (Herrich-Schäffer)	May, Jun, Aug
Prolimacodes badia (Hübner)	Jul, Aug, Oct

CRAMBIDAE (77 species)

Aethiophysa invisalis (Guenée)	Jul
Agriphila vulgivagellus (Clemens)	Jan, Feb, May
Anageshna primordialis (Dyar)	Mar, May, Jun, Jul, Aug, Sep
Apogeshna stenialis (Guenée)	Mar, May, Jun, Jul, Aug, Oct
Argyria gonogramma Dyar	Feb, May, Jun, Jul, Aug, Sep, Oct, Nov
Argyria nummulalis Hübner	May
Ategumia ebulealis (Guenée)	May, Jun, Oct, Nov
Blepharomastix ranalis (Guenée)	Apr, May
***Chilo erianthalis* Capps**	Jul
Chrysendeton imitabilis (Dyar)	May, Jun, Jul, Aug, Sep, Oct, Nov
Chrysendeton kimballi Lange	May, Jun, Jul
Chrysendeton medicinalis (Grote)	Apr, May, Jun, Jul, Aug
***Conchylodes diphteralis* (Geyer)**	Jul
Conchylodes ovulalis (Guenée)	May, Jun, Jul
Crambus agitatellus Clemens	Apr, Jun, Aug
Crambus multilinellus Fernald	Jan, Apr, May, Sep
Crambus praefectellus (Zincken)	Apr, May, Oct, Nov
Crambus quinquareatus Zeller	Jun, Jul, Aug, Sep
Crambus satrapellus (Zincken)	Mar, Apr, May, Jun, Jul, Aug, Sep, Nov
Desmia funeralis (Hübner)	Apr, May, Jun
Desmia maculalis Westwood	Apr, May, Jul
Diacme adipaloides (Grote & Robinson)	May, Aug
Diasemiodes janassialis (Walker)	May, Jun, Aug, Sep
Diasemiopsis leodocusalis (Walker)	Apr, Sep, Dec
Diastictis argyralis Hübner	Mar, May, Jun, Jul
Diastictis ventralis (Grote & Robinson)	Mar
Diatraea evanescens Dyar	Mar, Jul
Dicymolomia julianalis (Walker)	May, Jul, Sep
Donacaula maximellus (Fernald)	Jun, Oct
Donacaula roscidellus (Dyar)	Mar
Donacaula unipunctellus (Robinson)	Apr
Elophila gyralis (Hulst)	Mar, Apr, May, Jun, Jul, Sep, Nov, Dec

Elophila icciusalis (Walker)	May, Jun, Jul, Aug
Elophila obliteralis (Walker)	Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov
Elophila tinealis (Munroe)	Mar, Apr, May, Jun, Jul, Aug, Nov
Eoparagyractis irroratalis (Dyar)	May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Eoreuma densellus (Zeller) 5492	Aug
Euchromius ocellea (Haworth)	May, Jun
Eudonia heterosalis (McDunnough)	Jul
Eudonia strigalis (Dyar)	Jul, Nov, Dec
***Eurrhyparodes lygdamis* Druce**	May
Fissicrambus mutabilis (Clemens)	Apr, May
Fissicrambus profanellus (Walker)	May, Sep
Glaphyria cappsi Munroe	Jun
Glapyria glaphyralis (Guenée)	Jul, Sep
Glaphyria sesquistrialis Hübner	May, Jun, Jul, Sep
Herpetogramma aeglealis (Walker)	Sep, Nov
Herpetogramma phaeopteralis (Guenée)	Apr, Nov, Dec
***Langessa nomophilalis* (Dyar)**	May
Lygropia tripunctata (Fabricius)	Jul
Marasmia cochrusalis (Walker)	May, Jul
Microcrambus elegans (Clemens)	May, Jun, Jul, Aug, Sep, Nov
Microtheoris ophionalis (Walker)	May, Jun
Neocataclysta magnificalis (Hübner)	Apr, May
Nomophila nearctica Munroe	Mar, May
Palpita illibalis (Hübner)	Nov
Palpita magniferalis (Walker)	Feb, Apr, May, Nov
Parapediasia decorellus (Zincken)	Apr, May
Parapoynx allionealis (Walker)	Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Parapoynx seminealis (Walker)	Jun, Sep
Pediasia trisecta (Walker)	Feb, May, Nov
***Prionapteryx serpentella* Kearfott**	May, Jun, Jul
Psara obscuralis (Lederer)	Jun, Aug
Pyrausta acrionalis (Walker)	Jun
Pyrausta bicoloralis (Guenée)	Jun, Jul, Aug
Pyrausta subsequalis (Guenée)	Mar, Apr
Samea castellalis Guenée	May, Dec
Samea multiplicalis (Guenée)	Mar, May, Aug, Nov
Spoladea recurvalis (Fabricius)	Nov
Syngamia florella (Stoll)	Jul, Aug, Nov
Udea rubigalis (Guenée)	Jan, Apr, May, Jul, Oct
Uresiphita reversalis (Guenée)	May, Nov
Urola nivalis (Drury)	Mar, May, Jun, Jul, Aug, Sep, Nov
Vaxi auratellus (Clemens)	May, Jul, Aug
Vaxi critica (Forbes)	Apr, Jun, Sep
***Vaxi tripsacas* (Dyar)**	May
Xubida panalope (Dyar)	May, Jun, Jul

PYRALIDAE (41 species)

Acrobasis demotella Grote	Mar, Jul
***Ancylostomia stercorea* (Zeller)**	Sep
Arta olivalis Grote	May, Jun, Sep
Arta statalis Grote	Aug, Nov
Atascosa glareosella (Zeller)	May, Jun, Aug, Sep
***Atheloca subrufella* (Hulst)**	May
Caudellia apyrella Dyar	Jul, Oct
Clydonopteron sacculana (Bosc)	Apr, May, Sep

***Diathrausta reconditalis* (Walker)**	Aug
Diatraea lisetta (Dyar)	May, Aug, Sep
Diorycria amatella (Hulst)	Jan, Mar, Apr, May, Jun, Sep
Dioryctria clarioralis (Walker)	Apr, Jul, Oct
Dioryctria pygmaeella Raganot	Apr
Elasmopalpus lignosella (Zeller)	Jul, Aug, Sep
Etiella zinckenella (Treitschke)	Mar, May
Eulogia ochrifrontella (Zeller)	Apr, Jun
Euzophera magnolialis (Capps)	Nov
Euzophera ostricolorella Hulst	May, Jul, Nov
Euzophera semifuneralis (Walker)	May, Jun, Jul
Homoeosoma deceptorium Heinrich	Jun, Jul
Homosassa ella (Hulst)	Sep
Hypsopygia binodulalis (Zeller)	May, Jul, Aug
Hypsopygia nostralis (Guenée)	Aug, Sep
Hypsopygia olinalis (Guenée)	May, Jun, Jul, Aug
Macalla zelleri (Grote)	May, Jun, Jul
Moodna ostrinella (Clemens)	May, Jun, Sep
Omphalocera cariosa Lederer	Aug
Parachma ochracealis Walker	May, Jun, Aug, Sep
Penthesilea sacculalis Raganot	Jun, Jul
Peoria approximella (Walker)	Apr, May, Jun, Jul, Aug, Sep, Oct
Peoria bipartitella Raganot	May
Peoria roseotinctella (Raganot)	Jun, Jul
Pococera asperatella (Clemens)	May, Jun, Jul, Aug
Pococera expandens (Walker)	Sep
Pococera melanogrammos (Zeller)	May, Jun, Jul
Pococera robustella (Zeller)	Feb, Apr, May, Jun, Aug
Pococera scortealis (Lederer)	Jan, May
Talulla atrifascialis (Hulst)	May, Jun
Tampa dimediatella Raganot	Jun, Aug, Sep
Tlascala reductella (Walker)	May
Tosale oviplagalis (Walker)	Jun, Aug, Sep

PTEROPHORIDAE (4 species)

***Buckleria parvulus* (Barnes & Lindsey)**	May
Emmelinia monodactyla (Linnaeus)	May, Jun, Aug
Hellinsia unicolor (Barnes & McDunnough)	Feb, Nov
Hellinsia balanotes (Meyrick)	Jun

MIMALLONIDAE (1 species)

Lacosoma chiridota Grote	Jul

APATELODIDAE (1 species)

Apatelodes torrefacta (Smith)	Jun, Jul

GEOMETRIDAE (81 species)

Anavitrinella pampinaria (Guenée)	Mar, May, Jun, Jul, Aug, Sep
Chlorapteryx tepperaria (Hulst)	Jul
Chloroclamys chloroleucaria (Guenée)	Jan, Mar, May, Jun
Costaconvexa centrostrigaria (Wollaston)	Jan, Mar, Jun, Aug
***Cyclophora myrtaria* (Guenée)**	Feb, Sep
Cyclophora packardi (Prout)	Sep, Oct
Cymatophora approximaria Hübner	Oct, Nov
Digrammia eremiata (Guenée)	Jan, Mar, Jun, Jul

Digrammia gnophosaria (Guenée)	Apr, May, Jun
Disclisioprocta stellata (Guenée)	Apr, Aug, Dec.
Dyspteris abortivaria (Herrich-Shäffer)	Apr, May
Ectropis crepuscularia (Denis & Schiffermüller)	May, Jun
Epimecis hortaria (Fabricius)	May, Jul, Aug
Euchlaena amoenaria (Guenée)	Apr, May
Euchlaena deductaria (Walker)	Apr
Eumacaria madopata (Guenée)	Mar, May, Jun, Jul
Euchlaena obtusaria (Hübner)	Apr
Eupithecia miserulata Grote	Jan, Mar, May, Jun, Jul, Aug, Nov
***Eupithecia matheri* Ringe**	Mar
***Eupithecia peckorum* (Heitzman & Enns)**	Apr
Eusarca confusaria Hübner	Jun, Nov
Eusarca fundaria (Guenée)	Jan, Apr, May, Aug, Nov, Dec
Eutrapela clemataria (Smith)	Feb, May, Jun, Jul
Exelis pyrolaria Guenée	Jun, Jul, Aug
Glenoides texanaria (Hulst)	Mar, Apr, May, Jun, Oct, Nov
Hypagyrtis esther (Barnes)	Mar, Sep
Hypagyrtis unipunctata (Haworth)	Aug, Nov
Hypomecis umbrosaria (Hübner)	May, Jul
Idaea demissaria (Hübner)	May, Jun, Jul, Aug, Sep
Idaea obfusaria (Walker)	May, Jun
***Idaea retractaria* (Walker)**	Aug, Nov
Idaea tacturata (Walker)	Jan, May, Jun, Aug
Idaea violacearia (Walker)	May, Jul
Ilexia intractata (Walker)	Apr, May, Jul, Oct
Iridopsis defectaria (Guenée)	Mar, Apr, May, Jun, Jul, Aug
Iridopsis ephyraria (Walker)	Jul
Iridopsis pergracilis (Hulst)	Jun, Jul
Iridopsis velivollata Hulst)	May, Jun
***Leptostales crossii* (Hulst)**	Oct, Nov, Jan
Leptostales pannaria (Guenée)	Sep, Dec
Lobocleta ossularia (Geyer)	Jun, Jul, Sep
Lomographa vestaliata (Guenée)	May, Jun
Macaria aemulataria Walker	Jun, Jul
Macaria aequiferaria Walker	Apr, May, Jun
Macaria bicolorata (Fabricius)	Feb, Mar, May, Jun, Nov
Macaria distribuaria (Hübner)	Jan, Feb, Mar, Apr, May, Jun, Jul, Nov
Macaria pustularia (Guenée)	May, Jun
Macaria transitaria Walker	Aug, Nov
Melanolophia canadaria (Guenée)	Apr, Jul, Aug, Sep
Melanolophia signataria (Walker)	Jan, Mar
Metarranthis obfirmaria (Hübner)	Mar
Metarranthis homuraria (Grote & Robinson)	Jun, Jul
Nematocampa baggettaria Ferguson	May, Aug
Nematocampa resistaria (Herrich-Schäffer)	May, Jun, Nov
Nemoria bistriaria Hübner	Feb, Mar, May
Nemoria catachloa (Hulst)	Apr, May, Jul, Sep, Oct, Nov
Nemoria elfa Ferguson	Jun
Nemoria lixaria (Guenée)	Jan, Feb, Mar, May, Jun, Jul, Nov
Orthonama obstipata (Fabricius)	Jan, May, Jun, Oct
Petrophora divisata Hübner	Mar, Apr
Phaeoura quernaria (Smith)	Mar
Phigalia denticulata Hulst	Jan, Feb
Phigalia strigataria (Minot)	Jan

Pimaphera sparsaria (Walker)	May
Pleuroprucha insulsaria (Guenée)	May, Jun, Jul, Aug, Sep
Prochoerodes lineola (Goeze)	Jan, Feb, Apr
Protoboarmia porcellaria (Guenée)	Mar, May, Jun, Jul, Sep
Protitame virginalis (Hulst)	Mar
***Psammatodes abydata* (Guenée)**	Jan, Jun, Jul
Scopula inductata (Guenée)	Jul, Sep
Scopula lautaria (Hübner)	Jan, Jun, Aug, Sep
Scopula limboundata (Haworth)	May, Jun, Jul
***Scopula timandrata* (Walker)**	Jun, Jul
Scopula umbilicata (Fabricius)	Jan, Jun
Synchlora aerata (Fabricius)	Jun, Jul
Synchlora frondaria Guenée	Jan, Mar, Apr, Jul, Aug
Tacparia zalissaria Walker	Apr, May
Tetracis crocallata Guenée	May, Sep, Oct
***Tornos cinctarius* Hulst**	Mar
Tornos scolopacinaria (Guenée)	Feb, Mar, May, Aug, Sep
***Xanthotype rufaria* Swett**	Aug

LASIOCAMPIDAE (2 species)

Artace cribrarius (Ljungh) 7683	Aug, Sep
Tolype velleda (Stoll)	Nov

SATURNIIDAE (6 species)

Anisota pellucida (Smith)	Jul, Aug
Anisota stigma (Fabricius)	Jun, Jul
Antheraea polyphemus (Cramer)	May, Jun
Automeris io (Fabricius)	May, Jun, Jul, Aug
Callosamia angulifera (Walker)	Mar, May, Jun, Jul, Aug
Callosamia securifera (Maassen)	May, Jul, Aug

SPHINGIDAE (2 species)

Darapsa myron (Cramer)	May, Jun, Aug
Enyo lugubris (Linnaeus)	Sep, Nov

NOTODONTIDAE (7 species)

Cecrita guttivitta Walker	Mar, May
Datana angusii Grote & Robinson	Jul
Datana perspicua Grote & Robinson	Jun, Jul
Datana ranaeceps (Guérin-Méneville)	May
Peridea angulosa (Smith)	Jul, Sep
Schizura ipomaeae Doubleday	Apr, May
Symmerista sp.	Jul, Aug

EREBIDAE (121 species)

Anticarsia gemmatalis Hübner	Sep, Oct, Nov, Dec
***Apantesis doris* (Boisduval)**	May
***Apantesis figurata* (Drury)**	Jul
Apantesis phalerata (Harris)	Mar, May, Jun, Jul. Nov, Dec
Apantesis placentia (Smith)	Mar, Apr, May, Jul
Apantesis virgo (Linnaeus)	Oct
Apantesis vittata (Fabricius)	Mar, May, Sep
Argyrostrotis flavistriaria (Hübner)	Feb, Mar, Jul, Aug, Nov
Argyrostrotis quadrifilaris (Hübner)	Nov
Argyrostrotis sylvarum (Guenée)	Sep
Arugisa latiorella (Walker)	Jun, Jul, Sep

Bleptina caradrinalis Guenée	May, Jun, Sep, Nov
Bleptina inferior Grote	Jun, Nov
Bleptina sangamonia Barnes & McDunnough	Jun
Caenurgia chloropha Hübner	Feb, Mar, May, Jun, Aug, Sep
***Catocala amestris* Strecker**	May
Catocala amica (Hübner)	Jun
Catocala lineella Grote	Jun
Catocala micronympha Guenée	Jun
Cisthene packardii (Grote)	Jul, Aug
Cisthene plumbea Stretch	Feb, Jun
Cisthene subjecta Walker	Jan, Feb, Jul, Aug, Sep
Clemensia ochreata Schmidt & Sullivan	Mar, Apr, Jul, Oct
Crambidia lithosioides Dyar	May, Aug, Sep
Crambidia pallida Packard	Mar, Apr, May, Jun, Jul, Oct, Nov
Crambidia uniformis Dyar	Jan, Mar, Apr, May, Jun
Cutina distincta (Grote)	May
Dasychira basiflava (Packard)	Jun, Jul
Dasychira manto (Strecker)	Mar, May, Jun
Dasychira meridionalis (Barnes & McDunnough)	May, Aug
Estigmene acraea (Drury)	Mar
Eublemma minima (Guenée)	Jun, Jul, Sep
***Gabara distema* (Grote)**	Aug
***Gabara subnivosella* Walker**	Jun, Jul, Aug
Gondysia similis (Guenée)	Aug
Halysidota tessellaris (Smith)	Mar, Apr, May, Jun, Jul, Aug
Hemeroplanis habitalis (Walker)	May, Jul
Hemeroplanis scopulepes (Haworth)	Mar, May, Jun, Jul
Hormoschista latipalpis (Walker)	Jun, Sep
Hypena baltimoralis Guenée	Sep, Oct, Nov
Hypena degasalis Walker	Oct, Nov
Hypena scabra (Fabricius)	Jan, Jul, Aug, Oct, Nov
Hypenodes fractilinea (Smith)	Sep
Hypenopsis macula (Druce)	May, Sep, Nov
Hyphantria cunea (Drury)	Mar, May, Jun, Jul
Hypoprepia fucosa Hübner	Apr, May, Jun
Hypoprepia miniata (Kirby)	May, Jun, Jul, Aug
Hypsoropha hormos Hübner	May
Idia aemula Hübner	Jan, Feb, Mar, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Idia americalis (Guenée)	Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
Idia diminuendis (Barnes & McDunnough)	Apr, May, Jul, Aug, Nov
Idia lubricalis (Geyer)	May, Aug
Idia majoralis (Smith)	Jun
Idia scobialis (Grote)	May
Idia rotundali (Walker)	Apr, May, Jun, Jul, Sep
Isogona tenuis (Grote)	Nov
Lascoria ambigualis (Walker)	May, Jul, Aug, Sep, Oct, Dec
Lesmone detrahens (Walker)	Apr, May, Jun, Jul
Lesmone hinna (Geyer)	Jan, Mar, May
Leucanopsis longa (Grote)	May, Aug
Macrochilo hypocritalis Ferguson	Jun, Aug, Sep, Oct
Macrochilo orciferalis (Walker)	Mar, May, Jul
Metallata absumens (Walker)	Nov
Metalectra quadrisignata (Walker)	May, Jun, Aug
Metria amella (Guenée)	Feb, Apr
Mocis disseverans (Walker)	Sep, Oct, Nov, Dec

Mocis latipes (Guenée)	Sep, Oct, Nov, Dec
Mocis marcida (Guenée)	May, Aug, Sep
Mocis texana (Morrison)	Jul, Aug, Nov
Nigetia formosalis Walker	Mar, Sep
***Ommatochila mundula* (Zeller)**	Jun
Orgyia definita Packard	May, Jun, Jul, Oct
Orgyia detrita (Guérin-Méneville)	Jun
Orgyia leucostigma (Smith)	May, Jun
Palthis angulalis (Hübner)	Apr, Jul
Palthis asopialis (Guenée)	Apr, Aug, Oct, Dec
Pangrapta decoralis Hübner	Apr, May, Jun, Jul, Aug
Panopoda carneicosta Guenée	Jul
Panopoda rufimargo (Hübner)	May, Jun, Jul, Aug
Parallelia bistriaris Hübner	May, Jul
Phalaenophana pyramusalis (Walker)	Sep, Oct
Phalaenostola larentioides Grote	May, Jun, Jul, Aug, Sep, Nov
Phyprosopus callitrichoides Grote	Jun, Jul
Phytometra rhodarialis (Walker)	Mar, Aug
Plusiodonta compressipalpis Guenée	May, Jun
***Ptichodis bistrigata* Hübner**	Mar
Ptichodis herbarum (Guenée)	Mar, Apr,
Ptichodis vinculum (Guenée)	Jul, Oct, Dec
***Pygarctia abdominalis* Grote**	Jun
Pyrrharctia isabella (Smith)	Mar
Redectis vitraea (Grote)	Jun, Sep
Renia adspergillus (Bosc)	Apr, May, Jun, Jul, Sep
Renia discoloralis Guenée	May, Jun, Sep
Renia flavipunctalis (Geyer)	Apr, May, Jun, Aug, Sep
Renia fraternalis Smith	Apr, May, Jun, Sep
Rivula propinqualis Guenée	May, Jul
Scolecocampa liburna (Geyer)	Jul, Aug
Sigela brauneata (Swett)	Mar, May
***Sigela eoides* (Barnes & McDunnough)**	Jan, Mar
***Simplicia cornicalis* (Fabricius)**	Oct
Spilosoma congrua Walker	May, Jul
Spilosoma dubia (Walker)	Mar, May
Spilosoma virginica (Fabricius)	Mar, May, Jul, Aug
***Syntomeida ipomoeae* (Harris)**	May
Tetanolita floridana Smith	Mar, May, Oct
Tetanolita mynesalis (Walker)	May, Jun, Aug, Oct
Utetheisa ornatrix (Linnaeus)	Aug, Sep
Virbia aurantiaca (Hübner)	Apr, May, Jun, Jul, Aug, Sep, Oct, Nov
Virbia laeta (Guérin-Méneville)	Mar, May, Jun, Jul
Virbia opella (Grote)	May, Jul, Sep
Virbia rubicundaria (Hübner)	Apr, May
Zale aeruginosa (Guenée)	Jan, Mar
***Zale buchholzi* McDunnough**	May
***Zale fictilis* (Guenée)**	Apr, May
Zale lunata (Drury)	Feb, Apr, Jun, Nov
Zale lunifera (Hübner)	Feb, Mar
Zale squamularis (Drury)	Mar, Aug
Zale undularis (Drury)	May
Zanclognatha lituralis (Hübner)	Jun, Jul
Zanclognatha obscuripennis (Grote)	Sep, Oct
Zanclognatha theralis (Walker)	Aug, Dec

EUTELIIDAE (2 species)

Marathyssa basalis Walker	Jun
Marathyssa inficita (Walker)	Jun, Jul, Aug

NOLIDAE (9 species)

Baileya doubledayi (Guenée)	Mar
Baileya dormitans (Guenée)	Apr
Meganola miniscula (Zeller)	Mar, May, Jun, Aug, Sep
Meganola phylla (Dyar)	Mar, Apr, Jun
Meganola spodia Franclemont	Mar, May, Jun, Aug
Nola cereella (Bosc)	Jul, Aug
Nola clethrae Dyar	Feb, Mar, Apr. Jul
***Nola ovilla* Grote**	Mar
Nola triquetrana (Fitch)	May, Jun

NOCTUIDAE (101 species)

***Acherdoa ferraria* Walker**	Jun, Jul. Aug, Sep, Oct
Acronicta afflicta (Grote)	May, Jun
Acronicta americana (Harris)	Jun, Aug, Sep
Acronicta betulae (Riley)	Mar
Acronicta brumosa (Guenée)	Jun, Jul, Aug
Acronicta connecta (Grote)	Jun
Acronicta hamamelis (Guenée)	Jul
Acronicta hasta (Guenée)	Jun, Jul
Acronicta impleta (Walker)	Mar, May, Sep
Acronicta laetifica (Smith)	Jul
Acronicta lobeliae (Guenée)	Apr, May, Aug
Acronicta longa (Guenée)	Mar, Apr
Acronicta retardata (Walker)	Jun, Jul
Acronicta tritona (Hübner)	Mar, Apr, Oct
Acronicta vinnula (Grote)	May, Aug
Agrotis ipsilon (Hufnagel)	Aug, Sep
Amolita fessa Grote	May, Jun, Nov
Amphipyra pyramidoides Guenée	Jul, Sep
Amyna stricta (Walker)	Nov
Anicla illapsa (Walker)	Mar, Aug, Oct, Dec
Anicla infecta (Ochsenheimer)	Feb, Aug, Oct, Nov, Dec
***Argillophora furcilla* Grote**	May
Athetis tarda (Guenée)	Mar, Apr, Jun, Jul
Callopistria cordata (Ljungh)	Apr, May
Callopistria floridensis (Guenée)	May, Jun
Callopistria granitosa (Guenée)	Apr, May, Jun, Jul
Callopistria mollissima (Guenée)	May, Jul, Aug
Cerma cerintha (Treitschke)	May, Jun, Jul
Chaetaglaea sericea (Morrison)	Nov, Jan
Chaetaglaea tremula (Harvey)	Nov
Charadra deridens (Guenée)	Aug
Chloridea subflexa (Guenée)	Sep
Choephora fungorum Grote & Robinson	Oct, Nov
Chryxodeixus includens (Walker)	Jul, Aug, Sep
Chytonix palliatricula (Guenée)	May, Jun, Jul
Chytonix sensilis Grote	Jul, Aug
Cissusa spadix (Cramer)	Mar, Apr
Condica mobilis (Walker)	May, Jul, Aug
Condica sutor (Guenée)	Mar, Apr, May, Jun, Jul, Aug

Condica vecors (Guenée)	May, Jun, Aug
Condica videns (Guenée)	Jan, Feb, Mar, Apr, May, Jun, Jul. Aug, Sep
Ctenoplusia oxygramma (Geyer)	Aug, Sep
Egira alternans (Walker)	Jan, Mar
Elaphria chalcedonia (Hübner)	Feb, Mar, May, Dec
Elaphria exesa (Guenée)	Jul, Sep, Oct, Dec
Elaphria festivoides (Guenée)	May, Jun, Jul, Aug, Oct
Elaphria fuscimacula (Grote)	Mar, Aug
Elaphria georgei (Moore & Rawson)	Mar, May
Elaphria grata Hübner	Mar, Jun
Elaphria nucicolora (Guenée)	Nov, Dec
Emarginea percara (Morrison)	Jul
Feltia manifesta (Morrison)	Mar, May, Jun
Feltia subterranea (Fabricius)	Jun, Aug, Sep, Nov
Galgula partita Guenée	May, Jun, Sep
Globia oblonga (Grote)	Mar
Helicoverpa zea (Boddie)	Sep, Oct
Hyperstrotia aetheria (Grote)	May, Jun, Jul, Aug
Hyperstrotia flavigutatta (Grote)	May, Jun, Aug
Hyperstrotia nana (Hübner)	May, Jun
Hyperstrotia pervertens (Barnes & McDunnough)	May, Jun
Iodopepla u-album (Guenée)	Jan, Nov, Dec
Leucania adjuta (Grote)	Feb, Jun, Nov
Leucania extincta Guenée	Jan, Feb, Mar, May, Jun, Jul, Oct, Nov, Dec
Leucania incognita (Barnes & McDunnough	Apr
Leucania scirpicola Guenée	Jan, Mar, May, Dec
***Magusa divaricata* (Grote)**	Oct
Marimatha nigrofimbria (Guenée)	Apr, May, Jun, Jul, Aug
Meropleon cosmion Dyar	Oct
Metaxaglaea viatica (Grote)	Nov, Jan
Metaxaglaea violacea Schweitzer	Nov
Morrisonia mucens (Hübner)	May, Apr
Mythimna unipuncta (Haworth)	Mar, Jun, Sep, Dec
Nedra ramosula (Guenée)	Feb, Mar, Dec
Orthosia maguscla Herrich-Schaffer	Mar, Jul
Ozarba aeria (Grote)	May, Jun
***Ozarba nebula* Barnes & McDunnough**	Jun, Sep
Paectes abrostoloides (Guenée)	May, Jul
Phosphila turbulenta Hübner	Jan, Mar
***Photedes carterae* (Schweitzer)**	Nov
Polygrammate cadbury (Frenclemont)	Mar, May
Polygrammate hebraeicum Hübner	May, Jun, Jul, Aug
***Ponometia parvula* (Walker)**	Apr
Ponometia semiflava (Guenée)	Apr, May, Jun, Jul
Protodeltote muscosula (Guenée)	Jun, Jul
Schinia arcigera (Guenée)	Aug
Schinia lynx (Guenée)	Aug, Sep
Schinia nubila (Strecker)	Sep
Schinia nundina (Drury)	Aug
Schinia petulans (Edwards)	Sep
Schinia saturata (Grote)	Sep
Schinia siren (Strecker)	Sep
Schinia sordidus Smith	Aug, Sep
Schinia trifascia Hübner	Sep, Oct

Spodoptera frugiperda (Smith)	Oct, Nov
Spodoptera latifascia (Walker)	Jun, Sep
Spodoptera ornithogalli (Guenée)	Jan, May, Oct
Spragueia leo (Guenée)	Jul, Aug
Spragueia onagrus (Guenée)	Jul, Aug
***Tripudia flavofasciata* Grote**	Jun
Ulolonche culea (Guenée)	Mar
Xestia dilucida (Morrison)	Oct, Nov
Xestia elimata (Guenée)	Aug, Oct, Nov

*Genera are arranged alphabetically, not phylogenetically, within each family.
**Bolded taxa represent rarer species, range extensions and (for *S. cornicalis*), invasive species.

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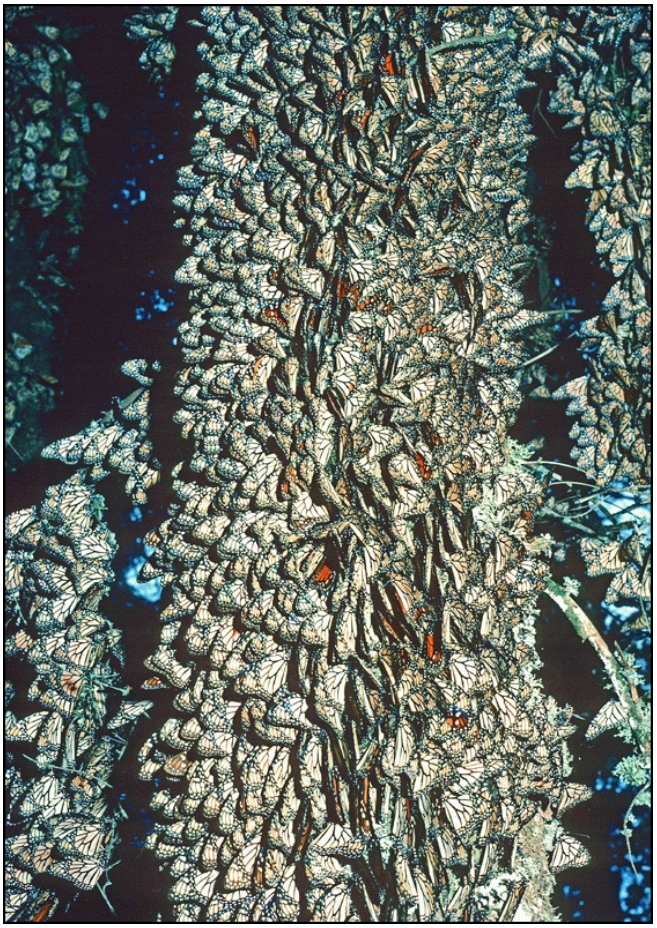
MONARCHS IN MEXICO

BY

GARY N. ROSS



"Thousands of monarchs. Most have their wings closed so that the color is grayish and not orange as with those few individuals with wings open. Tree was still in shade so that most butterflies were resting, and so they were not preparing for flight."

INDIAN BAYOU WILDLIFE MANAGEMENT AREA: ST. MARTIN AND ST. LANDRY PARISHES, LOUISIANA

BY

CRAIG W. MARKS

Two of the five butterfly counts I coordinate in Louisiana are in a region known as Acadiana or Cajun Country. This region refers to an area that stretches from west of New Orleans to the Texas border along the Gulf of Mexico, and about 100 miles inland to Marksville and which encompasses 22 parishes. Despite the frequent association of Cajuns with swamplands, Acadiana actually consists mainly of low gentle hills in the north and dry land prairies, with marshes and bayous closer to the coast, increasing in frequency in and around the Atchafalaya and Mississippi River basins. Acadiana also is filled with fields of rice, soybeans and sugarcane.

One of two counts I coordinate in Acadiana is at Indian Bayou Wilderness Management Area (WMA) [the other is at Thistlethwaite WMA, see SLS News, Vol. 41, No. 3 (2019) pp 202-4]. Located in the heart of the Atchafalaya Basin, Indian Bayou WMA is a wilderness area of hardwood forests, cypress stands, marshes and bayous. It is one of the last great river swamps left in the nation. This wildlife management area was established in 1995 to provide public access and environmental protection in the Atchafalaya Basin. The area encompasses 28,500 acres located in St. Landry and St. Martin Parishes and is located between Baton Rouge and Lafayette, north of Interstate 10, south of U.S. Highway 190 and west of the Atchafalaya River.

There are 25 miles of trails throughout Indian Bayou. Of these, 13 miles of trails are designated specifically for hiking. There are also 8 miles of ATV all-weather trails. The area contains levees, forested wetlands, bayous and shallow lakes. Numerous species of reptiles are common, including water moccasins and alligators. Over the years I have seen a female alligator in the same general area of a wide slough. She has to be at least 8-9 feet long, and, despite knowing she is there, she always startles me when she jumps from the bank into the slough. One year, while riding my mountain bike, I saw several baby alligators sunning on a downed log in a small pool across the ATV trail from the slough. I stopped to take a phone picture, but then realized that "mother gators" are known to stay in the area of their babies to protect them. Suspecting she was somewhere in the immediate area, watching me, I made the decision to look for butterflies elsewhere so I quickly got back on my bike and left.

Indian Bayou offers excellent hunting including deer and wild turkey. One day in June a few years ago, I walked into a small clearing where two young bucks (with velvet antlers) and 10 wild turkeys were feeding. I've never seen so many animals moving in different directions at one time. Indian Bayou's prime location within the Atchafalaya Basin, in the center of the Mississippi Flyway, produces superb waterfowl hunting and is an important route for migratory birds. The area's lakes, sloughs and bayous offer both commercial and recreational fishing opportunities.

Indian Bayou is the oldest count I coordinate. The first count was on Juny 27, 2001, coordinated by Gary N. Ross from Baton Rouge. He invited me to participate in that one and the next few and then to take over responsibility in 2006. The count dates have stretched over the years from early May (5/05/12) into early October (10/08/23), (with three counts in May, five in June, nine in July, three in August, three in September and one in October). The only year missed was 2013. Indian Bayou was also the subject of NABA sponsored Memorial and Labor Day Counts in 2004. The highest species count, 36, was recorded in 2022 & 2021 with 34 species recorded in 2019. The least number of species was 22 in 2004 and 2017. The most individual butterflies counted was 1205 in 2024 and 1082 in 2012. The least number of individual butterflies counted was 169 in 2017 and 179 in 2017.

We typically start at 9:30, meeting at the Visitor's Center under I-10 at Exit 121 (Butte Larose). About 5 years ago, under the guidance of Linda Auld, New Orleans' Buglady, a butterfly garden with milkweed was planted near the restrooms. Since then, we have regularly found Monarchs (adults, pupa and caterpillars) in that garden. From there

we typically divide into three groups of two or three counters and drive north by northeast into the WMA, along the levee road.

I should note that the access road into the WMA along the levee is actually two roads, the upper road along the top of the levee and a lower road along the left side of the levee. There is a continuing ditch along the lower levee road with wildflowers (including frogfruit and Brazilian vervain) which is a good place to find Gulf Fritillaries, Phaon and Pearl Crescents, Fiery, Clouded and Dun Skippers. There are often puddles after recent rains on that lower road, and Snouts, Red-spotted Purples, Viceroys, Question Marks and an occasional Eastern Comma can be found puddling. Black Swallowtails, Cloudless Sulphurs, Little Yellows, Sleepy Oranges, Orange Sulphurs and Variegated Fritillaries are regularly counted along the upper levee road. Eastern Tailed-blues occasionally have been seen in the grass along the levee between the two roads.

The first stop for one of the groups is some open fields to the right of the upper levee road, a good location for Buckeyes and Southern Skipperlings. In 2021, that group photographed a Broad-winged Skipper in one of those fields, the first seen on this count or in St. Martin Parish. The other two groups continue a short distance down the levee road to the St. Martin and Atchafalaya ATV trails. The third group joins us and covers the Pelbay ATV trail. These trails are on the left side of the levee road, accessible from the lower levee road. These 3 ATV trails lead back into hardwood bottoms and are mostly shaded. Here we look for three of the count's target butterflies, Appalachian Browns (Ap Browns), Duke's Skippers and Hayhurst Scallopwings. Other butterflies seen on these trails include Question Marks, Red-spotted Purples, Viceroys, Tropical and Common Checkered-skippers, Carolina Satyrs and Pearl Crescents. Occasionally, Delaware Skippers and Texan "Seminole" Crescents have been recorded in the area of these trails.

Broad-winged Skipper (Photo by P. Wallace)

In August 2007, while scouting for that year's Indian Bayou NABA count at the Oxbow ATV trail location, I found an area of moist hardwood bottoms in the St. Landry Parish portion of that WMA. There was some standing water present with stands of a Carex sedge that is a host plant for Dukes' Skippers. In addition to several Dukes', I found two Appalachian Browns (*Satyrodes Appalachia*) flitting among that sedge, the first record of this species in Louisiana west of the Mississippi River. Not known to be a migrant species, I assumed there was a small colony at Indian Bayou. However, I did not see another one in the unit until early June 2015, when I found a tattered female back at the Oxbow trail. Since 2015, multiple specimens have been seen at that trail as well as along the St. Martin ATV trail and the Indian Bayou hunter's station area. Most recently, during the 2023 NABA count in early October, a single specimen was still flying along the St. Martin trail.

Appalachian Brown (Photo by C. Marks)

I have found other colonies in very similar habitat in St. Mary and Point Coupee Parishes. East of the Mississippi River, other sightings have been reported in four parishes. The combined Louisiana sightings suggest four broods: Mar-Apr, May–June, July–Aug, and Sept. It is reported to use sedges as the larval foodplant, and I have found Carex sedges present in all of the locations where I have found it.

Hayhurst's Scallopwings (*Staphylus hayhurstii*) are small, dark skippers. They fly low, don't tend to move around a lot, and can be easily overlooked. They could possibly be confused with the Common Sootywing as their appearance is similar; however, their wing margins and flight patterns are different. The flight pattern of the Hayhurst's Scallopwing is typically slower with a more fluttery flight. In contrast, the Common Sootywing's flight is swift and darting like a skipperling.

Hayhurst Scallopwing (Photo by B. Moon)

I've seen Hayhursts at Indian Bayou WMA numerous times, primarily in the heat of the summer, but twice as early as late March, most often in the oak hardwoods inside the levee road. Typically, they were flying in the low grass along several different ATV trails, but also in a pipeline cut at the Indian Bayou hunter's station. This little brown skipper has been recorded multiple times during this particular count, with highs of one hundred eight during the 2020 count, seventy-seven during the 2018 count and forty-six during the 2015 count, each time at multiple locations over the WMA. Most recently I found it about 20 miles (as a crow flies) north of Indian Bayou in Sherburne WMA in Point Coupee Parish in virtually identical habitat. Total sightings include 16 of Louisiana's 64 parishes, mostly along the Mississippi River corridor. It is clearly multi-brooded, flying from late March into September. It is reported by various sources to use pigweed, lamb's quarters, alligator weed, goosefoot and joy weed.

As we continue driving along the levee road, north by northeast, our next stop is at the Oxbow ATV trail referenced above. The actual ATV trail is in the open sunshine and is a good place to see Eastern Tiger Swallowtails, Gulf Fritillaries, Hackberry and Tawny Emperors and Silver-spotted Skippers. Toward the end of the main ATV trail is an open area that abuts the Atchafalaya River and is often inhabited by Viceroys and Gulf Fritillaries. There is a large stand of canna at what probably was an old hunting camp, and we have found Brazilian Skipper caterpillars on the canna.

At this location, one group will usually walk both sides of the levee road and the associated ditches in that immediate area while a second group walks the Oxbow ATV trail. A third group walks the slough where, as discussed above, the Ap Browns were first found. That slough is immediately inside of the tree line on the left of the ATV trail and typically has some water in it but is walkable with boots. In addition to Ap Browns and Dukes Skippers, Least Skippers, Carolina Satyrs and, on one occasion, a Delaware Skipper have been recorded in that slough. In addition to mosquitos, huge Banana Spiders, and moccasins, I am certain I have seen alligator trails through the sedge, but I've yet to see the alligator(s) that made those trails. I would refer the reader to my article in the SLS News, Vol. 46, No. 2 (2024) pp 7-21, for more details about Duke's Skippers.

Delaware Skipper (Photo by P. Wallace)

We stop for lunch at the Indian Bayou hunter's station which is about a half mile further down the levee road and includes bathrooms, a parking area and a circular gravel road with two ATV trails that spin off from that road. This is the center of the count circle. Here we regularly see both of the Checkered-skippers, Cloudless Sulphurs and puddle clubs along the gravel road consisting of Red-spotted Purples, Question Marks, Hackberry Emperors and Red Admiral Admirals.

Red-spotted Purples (Photo by B. Kaufman)

Question Marks and Hackberry Emperors (Photo by B. Kaufman)

After lunch, one group has historically crossed the Atchafalaya River into Sherburne WMA. Traveling east on I-10 from Indian Bayou, Sherburne WMA can be accessed at exit 127 (Whiskey Bay). Sherburne WMA is in the Morganza Floodway system of the Atchafalaya Basin east of the Atchafalaya River. The area is classified as bottomland hardwoods. Sherburne presents very similar habitat as Indian Bayou and includes access routes into the interior via a series of all-weather roads and ATV trails. The group that covers this area counts along the River Road (975) which connects with Hwy 190 east of Krotz Springs to the north and I-10 at Whiskey Bay to the south. Along with many of the same butterflies seen in Indian Bayou, others include Spicebush and Zebra Swallowtails.

A second group crosses the levee at the hunter's station and works those ATV trails between the levee and the Atchafalaya River to the east. I lead a third group that walks one of the ATV trails off the circular gravel road to a point where the trail crosses a pipeline cut, then we walk that cut. Texan "Seminole" Crescents have sometimes been found in this cut. This is a southern species with, traditionally, two recognized subspecies, A. t. texana in the US Southwest and A. t. seminole in the US Southeast. Both subspecies have been found in Louisiana, but the subspecies at Indian Bayou is the Seminole subspecies. It is multivoltine, with three to four, possibly five, annual broods. The adults fly from April to November. It is colonial and is often found immediately adjacent to water. Gary Ross has described it as a swampland specialist although its preferred habitat can include trails through moist, deciduous woods and shaded but open, disturbed areas adjacent to moist woods. It flies low to the ground, perching on low-growing grasses and weeds. It has been reported on two counts here (2008 & 2020), and several times outside of this count including ten in June of 2021.

Texan "Seminole" Crescent (Photo by B. Moon)

The pipeline cut eventually crosses a second ATV trail which circles back to where we started. Some of the other butterflies seen here include more Hayhurst Scallopwings, Silvery Checkerspots, Red-spotted Purples, Question Marks, both Emperors, Black and Eastern Tiger Swallowtails, Carolina Satyrs, both Checkered-skippers and Pearl Crescents. In 2024, we found Brazilian and Longtailed Skipper caterpillars along this route. In 2015, it was in this area that the first White M Hairstreak was recorded for this count, found on the forest floor along an infrequently used ATV trail in deep woods.

E. Tiger Swallowtails (Photo by B. Kaufman)

Occasionally, the coloring of the Hackberry Emperors in this area can be very light, causing them to appear almost ghostlike as they flit through the forest. They remind me of the Gray Crackers I've seen in Mexico. This "bleaching" may be a result of extended exposure to sunlight while basking/perching or unusual climatic conditions such as an unseasonal heat wave at a sensitive time in their development, producing a "washed out" form. These bleached specimens are significantly more prevalent at Indian Bayou than elsewhere, particularly in this and the next area of the WMA.

My group's last stop is the White Shell ATV trail, located between the Oxbow ATV trail and the Indian Bayou hunter's station. The main trail is a shaded grassy trail into the interior of the WMA. Near its front parking lot, the trail crosses a pipeline cut which we check in both directions. Typical butterflies include both Emperors, Red-spotted Purples, Viceroys, Carolina Satyrs, both Checkered-skippers, Pearl Crescents and Snouts. It was in this location, during the 2001 Count, that a Red-spotted Purple/Viceroy hybrid was found, L archippus x arthemis astyanax, taxonomically recognized as hybrid form "rubidus" Strecker. Hybrids between these two congeneric species are not uncommon. This one was marked more like a Red-spotted Purple but the black lines present on Viceroys were visible.

In past years, I have ridden my mountain bike along the trail here, deep into the WMA where a lesser traveled ATV trail branches off to the left. At the end of that trail, during one of the July counts I found two Harvesters to the left or east of that trail's end. That was the farthest south I have found that species. Both were in dense deciduous woods near drying creek beds that still had some moist mud. One was actually down on the mud while the other was perched in a tree above the mud. To the right or west of that trail's end, is an even lesser used ATV trail, leading deeper into the woods. There I have found Delaware Skippers associated with a large swath of savannah panicgrass, one of their larval foodplants. Also present at this site are Red Admirals, Pearl and Phaon Crescents, Carolina Satyrs, Dun Skippers and Southern Broken-dashes.

Red Admiral (Photo by B. Kaufman)

This annual NABA count has generated a species list totaling 61 species. I don't mean to suggest the butterflies on this list have only been seen on our counts; rather, virtually each one has also been recorded on other non-count related surveys. Examples include "Summer" Azures, Eastern Commas, American Ladies and Silvery Checkerspots. I first began surveying Indian Bayou long before the count started in 2001, even before the Corp of Engineers took control of the area in 1995. Prior to the Corp's purchase of the area, there was a series of hunting camps along the levee road, and my brother had a small camp in the area now known as the Indian Bayou hunter's station. Using one of his ATVs, I was actually able to explore more of the area than I can now access by walking or by bicycle. I haven't noticed any difference in butterfly numbers or species since the Corp of Engineers took control.

Anyway, through my non-count related surveys I have, over the years, added another 10 species to the WMA's species list, for a grand total of 71. Some of those non-count related species are beyond their expected range, some significantly so (e.g., Great Southern Whites and Large Orange Sulphurs). For others such as Palamedes Swallowtails and Whirlabouts, Indian Bayou does not reflect their typical habitat. The most recent species added to the list is the Falcate Orangetip. The first one I ever saw after over 30 years of surveying this WMA was at the St. Martin ATV trail on March 19, 2022. The sighting was a new parish record. Several were seen in 2023 from late February into early March, also at the St. Martin ATV Trail Parking area, as well as at other locations within the WMA. These orangetips are single brooded, spring-time butterflies which would explain why they have not shown up on a count.

Falcate Orangetip (Photo by C. Marks)

Count List
Species occurence (A=Abundant, C=Common, U=Uncommon, R=Rare, V=Vagrant):

Pipevine Swallowtail (C-U, on several counts, typically in single digits)

Zebra Swallowtail (R, recorded on two counts, 2015 & 2018)

Black Swallowtail (A-C, on multiple counts, count high of 40)

Giant Swallowtail (A-C, on multiple counts, count high of 36)

E. Tiger Swallowtail (A-C, on multiple counts, count high of 26 twice)

Spicebush Swallowtail (mostly U, on several counts, count high of 34)

Orange Sulphur (U, on several counts in single digits)

Cloudless Sulphur (C, on several counts mostly in single digits)

Sleepy Orange (C, on multiple counts, in single digits)

Little Yellow (C, on multiple counts, in single digits)

Harvester (R, see text for more details)

Red-banded Hairstreak (C-U, on multiple counts, count high of 52)

Gray Hairstreak (C-U, on multiple counts in single digits)

White M Hairstreak (R, seen during counts in 2015 & 2018)

"Summer" Spring Azure (R, one during 2022 count and one during the 2004 Labor Day Count)

American Snout (A-C, on multiple counts, count highs of 188 and 166)

Gulf Fritillary (A-C, on multiple counts, count high of 53)

Variegated Fritillary (C-U, on several counts, typically in single digits)

Silvery Checkerspot (U, on several counts, count high of 16)

Phaon Crescent (A-C, on multiple counts, count highs of 218 and 137)

Pearl Crescent (A-C, on multiple counts, count highs of 363 and 258)

Texan "Seminole" Crescent (R, see text for more details)

Question Mark (A-C, on multiple counts, count highs of 112 and 104)

Eastern Comma (R, reported on one count in 2005 and the 2004 Labor Day count)

Painted Lady (U, recorded during 2003 & 2019 counts)

American Lady (U, reported on two counts, 2006 & 2012)

Red Admiral (C-U, on multiple counts in single digits)

Common Buckeye (A-C, on multiple counts, count high of 217)

Red-spotted Purple (A-C, on multiple counts, count high of 264)

Viceroy (A-C, on multiple counts, count high of 105)

Goatweed Leafwing (R, recorded on 2014 & 2015 counts)

Hackberry Emperor (A-C, on multiple counts, count highs of 112 and 105)

Tawny Emperor (C-U, on multiple counts, count high of 50 during the 2004 Labor Day count)

Appalachian Brown (U, on several counts, count highs of 11 on 2 separate counts)

Carolina Satyr (A-C, on multiple counts, count highs of 260 and 259)

Gemmed Satyr (R, one on the 2015 count)

Little Wood Satyr (U, seen during 2008, 2015 & 2017 counts)

Common Wood Nymph (R, one seen during 2018 count)

Monarch (C-U, on multiple counts but in low numbers)

Silver-spotted Skipper (A-C, on several counts, count high of 69)

Long-tailed Skipper (A-C, on several counts, count high of 23)

Common Sootywing (U, 2003, 2006 & 2020 counts)

Hayhurst's Scallopwing (A-C, on multiple counts, count highs of 108 and 77)

Horace's Duskywing (C, on multiple counts, count high of 25)

Zarucco Duskywing (U, 5 seen during 2007 count, 1 on each of 2014 & 2021 counts)

Tropical Checkered-Skipper (A-C, on multiple counts, count highs of 106 & 63)

Common Checkered-Skipper (C, on multiple counts, count highs of 32 & 20)

Swarthy Skipper (R, reported once during 2010 count)

Clouded Skipper (A-C, on multiple counts, count high of 47)

Least Skipper (A-C, on multiple counts, count high of 98)

Southern Skipperling (U, on multiple counts in single digits)

Fiery Skipper (C-U, on multiple counts in single digits)

Southern Broken-dash (C-U, on several counts in single digits)

Northern Broken-dash (U, reported during 2022 & 2023 counts)

Delaware Skipper (U, on multiple counts in single digits)

Broad-winged Skipper (R, one reported in 2021)

Dukes' Skipper (A-U, on multiple counts, count highs of 117 and 116)

Dun Skipper (A-U, on multiple counts, count highs of 48 and 33)

Twin Spotted Skipper (R, 9 reported during 2006 count)

Brazilian Skipper (R, caterpillars reported on 2020 & 2024 counts)

Other species recorded at Indian Bayou outside a NABA count:

Ocola Skipper (C-U. on multiple counts in single digits)

Palamedes Swallowtail (R, one record in 7/96)

Checkered White (V, a single male flying along the levee in the mid '90's)

Falcate Orangetip (U-R, see text for more details)

Great Southern White (V, a male in 9/97)

Large Orange Sulphur (V, a tattered male in 9/95)

Southern Dogface (R, recorded 3 times, 10/91, 6/92, 5/96, all males)

E. Tailed Blue (U, see text)

Southern Cloudywing (R)

Confused Cloudywing (R, one record in 7/98))

Whirlabout (R)

I believe there are additional species to be found at Indian Bayou. Just to name a few, the habitat is correct for Banded, Striped and Oak Hairstreaks. The area is accessible enough to the Gulf that should allow for an occasional Queen to appear. My brother tells me there are stands of switch cane that I have yet to locate, and which raise the possibility of finding one of the four cane-feeders present in Louisiana. I see no reason why Northern Cloudywings or Juvenal's Duskywings should not be present in the spring, or Funereal Duskywings in the late fall. With Duke's Skippers documented in several locations, I would anticipate Dion Skippers as well. We have found Sachems in extremely similar habitat at Thistlethwaite, and I expect them to be here too.

I hope to continue coordinating this count in the future. It is close to Lafayette so I can be home at the end of the day at a reasonable time. I very much appreciate the several people who participate in the count, some who make much longer drives than I. The regulars include Rosemary Seidler, Jean Trahan, Vicki Lefever, Phillip Wallace, Brad Moon, Dave Patton and Annette Parker. Through their combined efforts working as three teams, the counts are usually successful. It is always nice to spend a day in the Basin, but their company and the butterflies make the day much more enjoyable. I also thank Annette and Dianne Keller for their editing suggestions.

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(Craig W. Marks, E-Mail: cmarks@landcoasr.com)

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WELCOME TO THE NEW MEMBER OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY

David Hardy
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A MITE ON A MOTH COLLECTED FROM LOWER MATECUMBE KEY, MONROE COUNTY, FLORIDA

BY

LAWRENCE J. HRIBAR

On 7 August 2024, a single female small brown moth was found in a dry ice-baited light trap set on Lower Matecumbe Key, City of Islamorada, Monroe County, Florida. The specimen has not been identified although one taxonomist to whom I sent photos wrote to me that it "looks like" a blastobasid moth. I previously reported a mite from a female *Pigritia* sp. (Blastobaside) collected on Vaca Key (Hribar 2022). The mite was attached to the moth's abdomen and it appears to be another Erythraeidae (Figs. 1A and 1B).

Figs. 1A and 1B. Moth with mite. A. Dorsal, B. Ventral.

LITERATURE

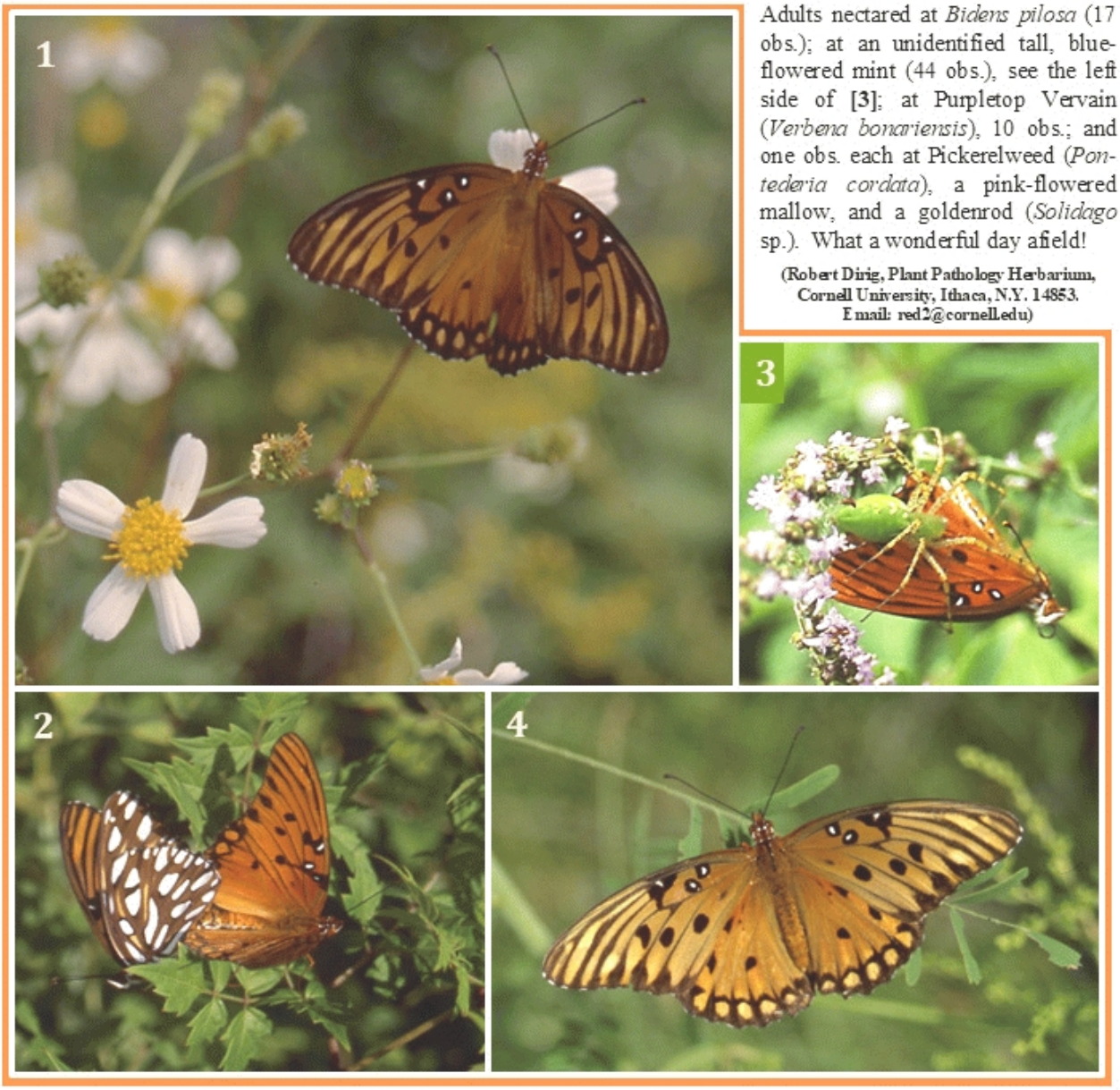
Hribar, L. J. 2022. A parasitic mite larva (Erythraeoidea: Erythraeidae taken from a blastobasid moth (Gelechioidea: Blastobasidae) from Vaca Key, Florida. *Southern Lepidopterists' News*, 44: 259-261.

(E-mail: lhribar@keysmosquito.org)

GULF FRITILLARIES AT PAYNES PRAIRIE PRESERVE STATE PARK, NEAR GAINESVILLE, ALACHUA COUNTY, FLORIDA

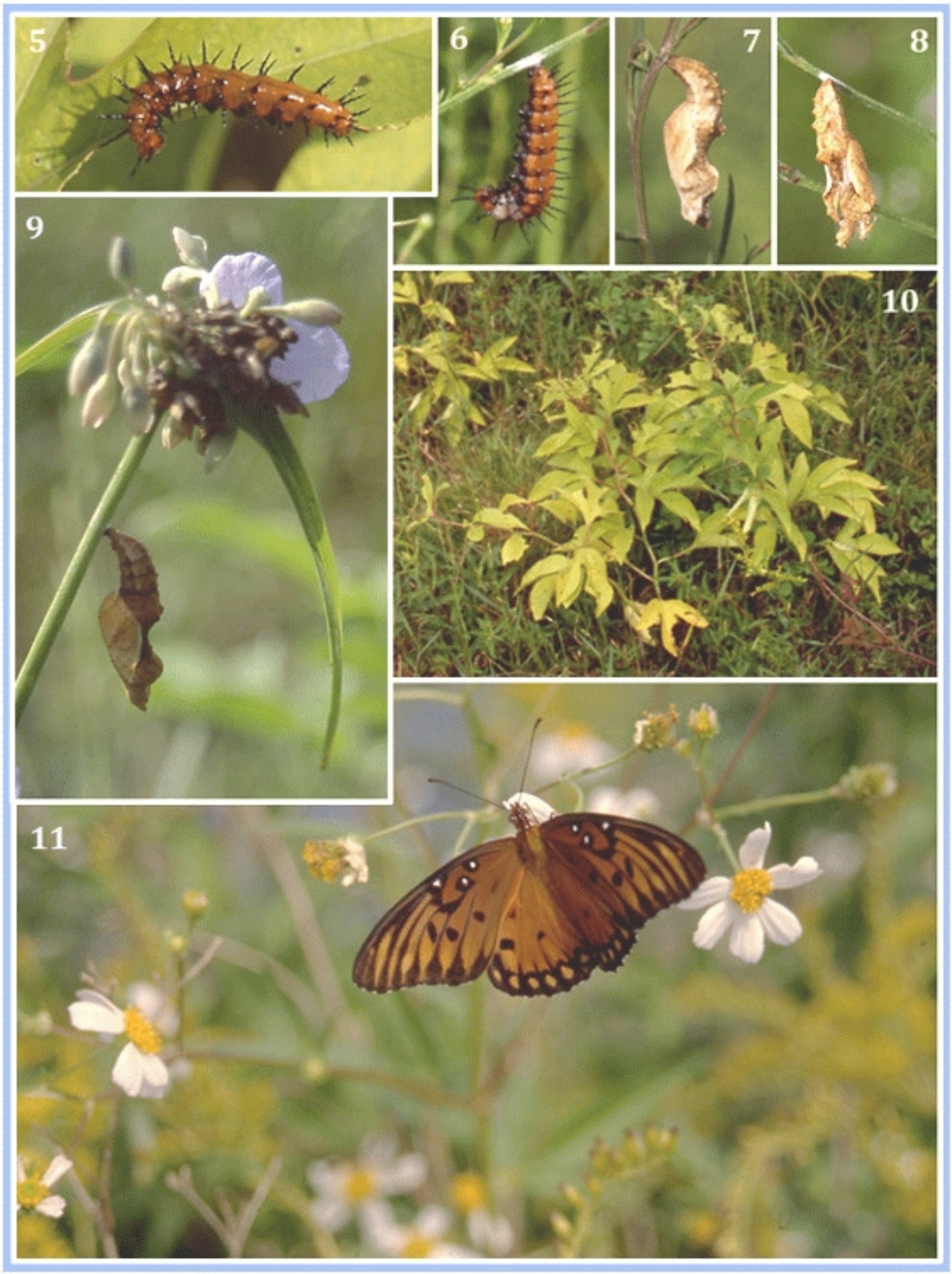
BY
ROBERT DIRIG

On *September 30, 2003*, I visited the PAYNES PRAIRIE PRESERVE from 10:15 a.m. to 4:45 p.m. It was sunny, clouding later, and 66°-80°F. **Gulf Fritillaries** (*Agraulis vanillae*) were present everywhere throughout the day, providing an opportunity to photograph their behavior and life cycle. A beautiful "smoky" female was nectaring at Spanish Needles (*Bidens pilosa*) **[1** & **11]**, and another nearby **[4]**. I flushed a mated pair at 10:45 (male on the right, he flew) **[2]**. Another male was the prey of a Green Lynx Spider (*Peucetia viridans*) **[3]**. Final instar larvae were feeding on Purple Passionflower (*Passiflora incarnata*) **[5, 10]**, and one was hanging to pupate **[6]**. I found two chrysalids, one hanging from a spiderwort (*Tradescantia* sp.) **[7** & **9]**. An empty chrysalis shell spoke of a successful emergence **[8]**. I did not notice any ovipositions or wild eggs.



Adults nectared at *Bidens pilosa* (17 obs.); at an unidentified tall, blue-flowered mint (44 obs.), see the left side of **[3]**; at Purpletop Vervain (*Verbena bonariensis*), 10 obs.; and one obs. each at Pickerelweed (*Pontederia cordata*), a pink-flowered mallow, and a goldenrod (*Solidago* sp.). What a wonderful day afield!

(Robert Dirig, Plant Pathology Herbarium, Cornell University, Ithaca, N.Y. 14853. Email: red2@cornell.edu)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SOUTHERN LEPIDOPTERA STRAYS AND EPHEMERAL MIGRANTS RECORDED FROM OUTAGAMIE AND SHAWANO COUNTIES (WISCONSIN) AND DUPAGE COUNTY (ILLINOIS) DURING 2024

BY

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Abstract

Fifty-four Lepidoptera species hypothesized to be strays or ephemeral migrants of southern origin were recorded from Outagamie and Shawano Counties, Wisconsin, during the 2024 season. Records for these species are provided. Records of southern Lepidoptera strays and ephemeral migrants recorded from Wheaton, Illinois (DuPage County) in late August and early September of 2024 are also provided. The highest species diversity of strays and ephemeral migrants in the Outagamie County area occurred from late September to early November, with peaks in late September and late October. Nights with strong south winds in October and early November yielded numerous records of southern ephemeral migrants. Many migrants disappeared from the area after a cold front/north wind on the night of 4 November, although no freezing temperatures occurred prior to 20 November. *Mellilla xanthometata* (Geometridae) may have expanded its range northward and colonized Appleton (Outagamie County) in 2024. Specimens and/or live photos are illustrated for 93 Lepidoptera species.

Introduction

Kons (2024) provides a detailed account of southern Lepidoptera strays and ephemeral migrants recorded from Outagamie County, Wisconsin, and adjacent areas up through 2023. This prior paper discusses the basis for hypothesizing the migratory status of individual species in the Outagamie County area, as well as general criteria for inferring migratory status from comparing phenological patterns between seasons. Kons (2024) also compared records of strays and ephemeral migrants for Outagamie County and adjacent areas from 1989-1995 and 2016-2022, and noted greater diversity and abundance of these species within the recent study interval (175 versus 60 species).

Kons (2024) distinguished between annual and ephemeral migrants: annual migrants migrate into an area outside of their overwintering range every year, whereas ephemeral migrants appear during some years but not others. Strays or accidentals occur as isolated occurrences outside of their permanent range. This paper covers records of strays and ephemeral migrants from throughout the 2024 season, but data for annual migrants are limited to the end of the season.

My studies of Lepidoptera in Wheaton, Illinois, are limited to recent surveys: 11-17 August 2022, 18 September-2 October 2023, and 30 August-10 September 2024. I have much less basis for determining which species are migratory to the Wheaton area as I have nothing comparable to the season long phenological studies conducted over multiple years in the Outagamie County area. However, some species can be inferred as being migratory north of Gainesville, Florida, or Ohio, based on the data presented in Kons and Borth (2006) and Rings *et al.* (1992), respectively. This is discussed for individual species in Kons (2024). For another set of species that I recorded from Wheaton, I am uncertain if they are migrants or residents at or near the northern limit of their ranges. These are species that I hypothesized to occur as strays or ephemeral migrants in Outagamie County or southern Wisconsin in Kons (2024), but they could potentially occur as permanent residents somewhat farther south.

A note on family classification: I do not adopt the proposed families Crambidae, Erebidae, Nolidae, and Euteliidae. Rather, I maintain the family concepts of Pyralidae and Noctuidae in the Hodges et al. (1983) check list, with the exception of treating Arctiinae and Lymantriinae as subfamilies of Noctuidae rather than separate families. This approach adopts only those changes needed to correct errors in the previous classification, while otherwise maximizing nomenclatural stability with previous literature. Maximizing nomenclatural stability with previous literature aids in comparing faunal check lists over time.

Methods

Specimens were collected at MV/UV sheets, UV sheets, MV or UV light traps, trees and vegetation baited with mashed rotten bananas and brown sugar, a bait trap baited with rotten bananas, or with a net during the day or night. See Kons and Borth (2007) for a more detailed account of these survey methods. Many individuals were also photographed live with a Canon PowerShot SX70HS camera. All unique records are based on voucher specimens, but multiple records of the same species with identical data may include individuals that were only photographed. Many records of ephemeral migrants from sheets or bait trails include both voucher specimens and live photos for the same individuals. For common and readily identifiable annual migrants, I recorded the minimum number of individuals present at sheets or bait trails primarily based on sight records and live photos, but also retained one or two voucher specimens for unique records.

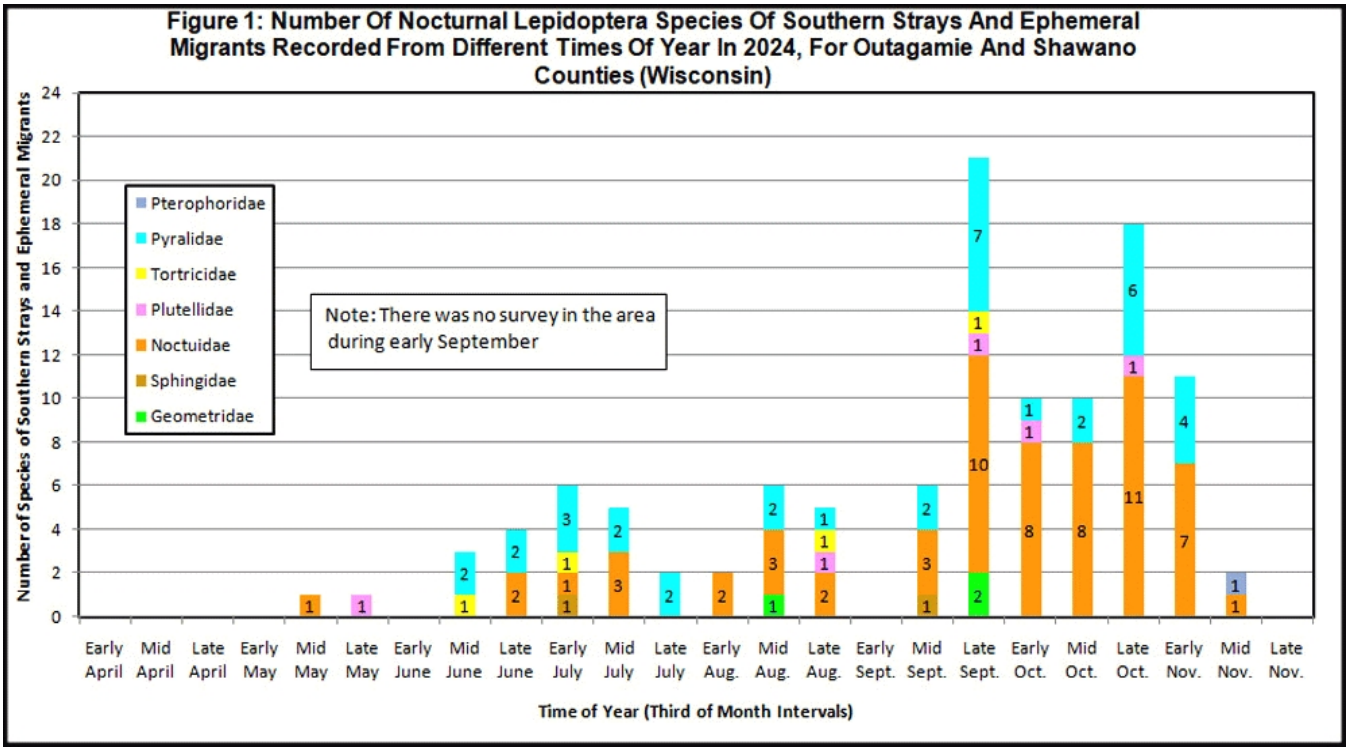
All data and specimens in the tables and figures were collected by the author, and all photos in the figures were taken by the author. Voucher specimens are currently housed in the author's research collection.

Outagamie County Lepidoptera surveys in 2024 were conducted at Mosquito Hill Nature Center, Fallen Timbers Environmental Center, suburban Appleton, Prairie Hill Park, the Fox Cities Paper Trail near Fox Valley Technical College, and a power line cut on the corner of Bluemound Drive and Highway 96. One additional study site is in southern Shawano County: the Navarino Wildlife Management Area. These localities are described in Kons (2024, pages 79-82).

Wheaton, IL, Lepidoptera surveys were conducted from 30 August-10 September 2024. Study localities included a suburban yard and two contiguous preserves managed by DuPage County: the Danada Forest Preserve and the Herrick Lake Forest Preserve. Collectively, these preserves contain mesic prairie plantings, fields, mesic hardwood forest, shrubby areas, and wetlands around ponds. Research on Forest Preserve District of DuPage County Preserves was conducted under research permit "23-24 Kons".

Results

Fifty-four Lepidoptera species hypothesized to be strays or ephemeral migrants of southern origin were recorded from Outagamie and Shawano Counties, Wisconsin, during the 2024 season. Table 1 includes the 2024 records for these species, including specific coordinates, habitats, dates, and survey methods. Table 2 provides the same information for Wheaton, Illinois. Table 3 includes data for species recorded from Wheaton, Illinois, for which I am unsure whether they are strays or migrants north of their permanent ranges, or resident species near the northern limit of their permanent ranges. The Hodges *et al.* (1983) MONA number in Tables 1-4 and Figures 2-20 serves as a citation for the author and year of description for individual species. Figure 1 shows how many species of southern strays or ephemeral migrants were recorded from Outagamie and Shawano Counties by third of month intervals for 2024. The highest species diversity was found from late September to early November, with peaks in late September and late October. Selected voucher specimens are shown in Figures 2-5, whereas Figures 6-20 contain live photos. Specimens and/or live photos are illustrated for 93 Lepidoptera species.



Discussion

Summary Of Southern Strays And Migrants Found In Outagamie And Shawano Counties, Wisconsin, In 2024

The previously reported trend of greater diversity and abundance of southern migrants with recent versus historical surveys continued in 2024. The fifty-four species of southern strays or ephemeral migrants recorded from Outagamie and Shawano Counties during the single 2024 season approaches the 60 species total recorded over the seven years from 1989-1995. Species found in 2024 that were not recorded at all during the historical (1989-1995) Outagamie County area surveys include: Geometridae: *Cyclophora packardi, Cyclophora nanaria;* Noctuidae*: Parahypenodes quadralis, Hypena minualis, Mocis latipes, Hyperstrotia pervertens, Condica mobilis, Condica sutor, Callopistria floridensis, Acronicta clarescens, Anorthodes tarda, Elaphria chalcedonia;* Plutellidae: *Plutella porrectella,* Tortricidae: *Eumarozia malachitana, Rhyacionia buoliana, Diedra cockerellana*; Pyralidae: *Pyrausta nicalis, Hymenia perspectalis, Diasemiodes janassialis, Palpita quadristigmalis, Patania silicalis, Herpetogramma bipunctalis, Herpetogramma phaeopteralis, Pilocrocis ramentalis, Platytes vobisne, Euchromius ocellea, Caristanius decoloralis;* and Pterophoridae*: Anstenoptilia marmarodactyla.* Most of the southern strays and ephemeral migrants recorded during 2024 had been found in the Outagamie County area during one or more other recent seasons (Kons 2024). Three exceptions, found in the area for the first time during 2024, are single specimens of *Anorthodes tarda* (Noctuidae), *Caristanius decoloralis* (Pyralidae) and *Anstenoptilia marmarodactyla* (Pterophoridae). The latter two species may be accidentals rather than naturally occurring strays, as discussed in the species accounts below.

Summary Of Southern Strays And Migrants Found In Wheaton (DuPage County, Illinois) In Late August And Early September Of 2024

Table 2 includes sixteen species that are likely to be migratory as far north as the Wheaton, IL area, based on phenology data from Rings *et al.* (1992) and Kons and Borth (2006). Fifteen of these species were also found in the

Outagamie County area during 2024, although many of them did not appear until later in the season (Table 1). Table 3 includes eighteen additional species that could be either migratory or resident species near or at the northern limit of their range. Only five of these species were also found in the Outagamie County area during 2024, although all but three of them were recorded from Outagamie County during a different recent season (Kons 2024). Two univoltine species found in Wheaton during 2024, which are rare strays or accidentals in Outagamie County (single specimens recorded), are probable residents in Wheaton and are not included in Table 3: *Catocala junctura* and *Cirrhophanus triangulifer.* Kons (2024) noted that there were no known cases of univoltine species migrating in numbers outside of their permanent range into either northern Florida or Wisconsin. *Catocala junctura* was found in numbers in Wheaton during 2023 and 2024, and a number of individuals encountered in 2024 were in fresh condition. Two worn *Cirrhophanus triangulifer* were found perched on a yellow flowering *Bidens* (the hostplant genus), and two individuals in fresh condition were found at lights.

Migrants And Wind Currents: Observations From October And Early November 2024

For the following discussion, asterisks "*" denote those species found for the first time during the 2024 season, and the minimum number of individuals encountered on a given date appears in parenthesis "()" after the species name.

Kons (2024) provided examples where southern migrants appear to migrate northward with warm fronts, and back southward with cold fronts. In 2024, many mild nights with south winds occurred from October-early November, and these nights produced numerous records of ephemeral migrants (Table 4)

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The 2024 season had a mild fall, with no freezing temperatures in Appleton until 25 November when the temperature dropped to 27F. On 20 November, the temperature dropped to 32.4F in Appleton for about two hours, and there may have been a mild freeze in cooler habitats outside of the city. Most of the southern migrants found in the Outagamie County area during the fall of 2024 are known to survive mild freezes in Gainesville, Florida, but some of them may not be able to survive nights that drop into the upper 20sF or colder. Consequently, there were no nights cold enough to kill southern migrants in the Outagamie County area prior to 20 November, and probably none prior to 25 November. Thus, abrupt disappearances of species that had been present in the area in numbers prior to those dates, are likely due to southward return migrations.

Phenological data (in part) for ephemeral and annual migrants from the end of the season are presented in Table 4, as well as wind speed/direction and temperature on survey nights. On the nights included in this table, I put out long bait trails (with at least one gallon of bait) at one of the following three localities: Mosquito Hill Nature Center, Fallen Timbers Environmental Center, or the Navarino Wildlife Area. On these survey dates, most individuals of migrants were recorded from bait rather than lights. Many variables differ between these nights besides wind speed and direction (*e.g.* temperature, humidity, locality, time spent in the field, distribution of bait, freshness of bait, number and placement of UV lights, etc.), but this table is useful for seeing cases where species abruptly appeared in or disappeared from the area. Table 4 cells highlighted in blue are nights when I hypothesize that most or all of the individuals of a particular species migrated back south. Kons (2024) noted that the species covered in Table 4 are widespread habitat generalists in both their permanent and temporary ranges. Except for strays recorded from one or a few specimens, all of these species have been found in both suburban and more natural habitats. Thus, I expect that the migratory species found in numbers during 2024 are likely to have been present at all three study sites, but it is only possible to survey one site with a long bait trail reasonably well on any given night.

Kons (2024) provided examples when species arrive too late in the season to produce progeny on nights with strong south winds, and then appear to leave on the first subsequent night with a north wind. I also observed this phenomenon during 2024, most notably on 4 November. On 4 November, I put out a bait trail at the Navarino

Wildlife Area on a night with a southwest wind (3-10mph before midnight); temperatures ranged from 64-60F from dusk-1:05 am. The following ephemeral migrants were found: **Hypena minualis* (9), *Anticarsia gemmatalis* (25), *Condica sutor* (7), *Magusa divaricata* (4), *Elaphria chalcedonia* (1), and **Herpetogramma phaeopteralis* (2), as well as the annual migrants *Spodoptera ornithogalli* (66) and *Spodoptera frugiperda* (171). A 15 watt UV light trap added *Condica sutor* (1), *Elaphria grata* (1), *Spoladea recurvalis* (1), and *Euchromius ocellea* (1). After 1:00 am, a cold front moved through with a north wind up to 10mph. All of these species appear to have migrated out of the area with this cold front, as none of them were encountered again during the 2024 season, despite the occurrence of a number of subsequent mild nights with large numbers of moths at bait. For example, 9 November was a mild night (54-50F) with more than 1,300 individual moths on the bait trail at Fallen Timbers Environmental Center (12 miles southeast of Navarino). Additional nights with 500-1,000 individual moths on a bait trail at Fallen Timbers included 13, 14, 16, and 18 November. However, the only ephemeral migrant found after 4 November was a single specimen of *Megalographa biloba* on 9 November.

November 9, 13, 16, 17, 18, and 19 were seasonably mild nights with a south wind, when I visited Fallen Timbers and checked a long bait trail. While there were still large numbers of annual migrants at bait, only one species appears to have migrated into the area on these nights. The annual migrant *Orthonama obstipata* was not found from 23 October to 13 November, but it was found in low numbers every night from 14-19 November.

Some species of annual migrants remained common in the area after the cold front on 5 November (Table 4), including Geometridae: *Orthonama centrostrigaria, Eupithecia miserulata;* Noctuidae: *Hypena scabra, Zale lunata, Pseudaletia unipuncta, Agrotis ipsilon, Peridroma saucia;* Pyralidae: *Udea rubigalis;* and Pterophoridae: *Emmelina monodactyla*. The most common species was *Peridroma saucia*, for which an increase in abundance was observed on 9, 13, and 14 November. On these dates over 500 individuals were seen on single checks of a bait trail. From 20-24 November, dusk temperatures were in the low forties (F) or upper thirties (F), so it was not possible to evaluate whether most of the remaining annual migrants left the area before the first hard freeze on 25 November (few moths would have been found under these cold conditions even if many were still present in the area).

Strays or Accidentals Newly Recorded From Outagamie County In 2024

***Chrysanympha formosa* (8904) (Noctuidae) [Figure 3(5)]:** The single somewhat worn specimen from 3 July 2024 at Mosquito Hill [Figure 3(5)] is almost certainly a stray from the north. This specimen was found along the south side of the hill, at the interface between mesic hardwood forest and upland prairie planting, in an area that has been surveyed a number of times at a similar time of year without finding this species. The closest known resident population is 19 miles to the northeast at the Navarino Wildlife Area, but there may be closer populations in unsurveyed portions of northern Outagamie County, such as the Deer Creek Wildlife Area. The typical habitat for this species in Wisconsin is Canadian to Northern Transition Zone open to partially forested areas with sandy soils and ericaceous plants. Recorded hostplants are *Vaccinium* species (Ericaceae) (Mass Moths 2024).

***Anorthodes tarda* (9650) [Noctuidae) (Figure 3(11)]:** The single worn 2024 specimen from Appleton [Figure 3(11)]is almost certainly a southern stray, but I am uncertain of the species' current status in southern Wisconsin. This species occasionally shows up in Wisconsin's southern counties; I have single specimens from Waukesha and Dane Counties: 26 August 1994 and 23 August 2021, respectively, and Steve Bransky found it in Kenosha County on 21 August 2023. I collected five specimens in Wheaton, Illinois in 2024 (Table 3), none of which were in fresh condition. However, since I did not conduct surveys there earlier in the season, I do not know if these specimens are worn because they were near the end of their flight or if they are migrants which arrived in worn condition. This oak feeder is widespread in the Lower Austral and southern Upper Austral Life Zones.

***Caristanius decoloralis* (5742) (Pyralidae) [Figures 2(9) & 16(16)]:** This is a rather unusual record, as MPG (2024) has distributional records only from Florida and South Carolina. This raises the possibility that the Mosquito Hill specimen (Table 1) might derive from accidental transport by human activity, rather than being a naturally occurring stray or migrant.

***Anstenoptilia marmarodactyla* (6117) (Pterophoridae) [Figures 2(10) & 16(1)]:** The specimen found at Fallen Timbers in 2024 (Table 1) is in fresh condition. Matthews and Watkins (2011) suggest that this is typically a western species, but that it might be transported to the eastern U.S. via shipments of ornamental plants. Matthews and Watkins (2011) and Wikipedia (2024) report that larval hosts include: *Ageratum, Agastache, Lantana , Lepechinia, Mentha, Monardella, Pycnanthemum, Salvia, Scrophularia,* and *Trichostema*. While to my knowledge none of the aforementioned plant genera are present at Fallen Timbers, there are numerous residential yards in proximity to the property that could potentially contain some of these plants. *Ageratum, Salvia,* and *Lantana* are planted as annuals in Appleton gardens, and are sold in the garden centers of a number of Appleton businesses. I planted *Ageratum* and/or *Lantana* in the suburban Appleton study site from 2017-2024, but did not encounter this moth there. *Agastache foeniculum* (Anise Hyssop) is a native Wisconsin species which has been planted at Mosquito Hill and in my suburban Appleton yard.

A Potential New Colonization Of A Southern Species Expanding Its Range North

Kons (2024) provides numerous examples of southern species which have expanded their ranges north into Outagamie County subsequent to the 1988-1995 study interval. One potential new colonization was added in 2024.

***Mellilla xanthometata* (6322) [Figures 2(11-12) & 18(1-2)]:** This species was found in Outagamie County for the first time in 2024, based on two male specimens from suburban Appleton: UV sheet, 27 June and 3 August. The larval host plants, *Gleditsia* species, are not native to the area, but *Gleditsia triacanthos* has been planted extensively in suburban Appleton. *Gleditsia triacanthos* and *Mellilla xanthometata* are native to southwestern Wisconsin. One other *Gleditsia* specialist is established in suburban Appleton, *Catocala minuta,* with records dating back to 1988. This species can be found commonly in suburban Appleton during years when bait is attracting many moths in late June or the first half of July. Several other *Gleditsia* specialists have never shown up in Appleton, including *Sphingicampa bisecta, Sphingicampa bicolor, Heteropacha rileyana, Spiloloma lunilunea,* and *Catocala illecta.* Occasional worn specimens of the *Gleditsia* specialist *Catocala innubens* have shown up in suburban Appleton (Kons 2024), but due to the absence of fresh specimens or consistent occurrences, it does not appear to be established there.

Species Status Updates

***Renia discoloralis* (8381) (Noctuidae) (Figures 3(1) & 6):** I suspect that this species is now an established resident as far north as the Navarino Wildlife Area. At least 54 individuals were found at the Navarino Wildlife Area during 2024 (Table 1), many in fresh condition. This species was also found there in numbers during 2022, but none were found during 2023. However, this species was primarily found at bait, and bait was attracting few moths during the flight season in 2023. Kons (2024) provides additional records for Outagamie County, with the first record in 2019, but so far, the Navarino Wildlife Area is the only site where more than two individuals were found at a time. In most of the range this species is multivoltine, and in 2024 I found a specimen in early September in northern Illinois (Wheaton). However, all records from the Outagamie County area occurred between mid July and mid August, suggesting univoltinism. Kons (2024) noted there were no clear examples of a univoltine species migrating regularly or in numbers, and that most occurrences of univoltine species north of their permanent range consisted of isolated records of single specimens.

***Renia adspergillus* (8386) (Noctuidae) [Figures 2(13-14), 5(7-8), 7(1-4), & 20(3-4)]:** *Renia adspergillus* may now be a resident species as far north as the Navarino Wildlife Area. It has been found in Outagamie and/or Shawano Counties in the late June to late July interval for three consecutive seasons (2022-2024), and fresh specimens were found at both Mosquito Hill and the Navarino Wildlife Area. Records from 2024 are included in Table 1. All local records are between late June and late July, suggesting univoltinism. In most of its range this species is multivoltine, including in northern Illinois where I found fresh specimens in late August and early September during 2024 (Wheaton, DuPage County). The colonization appears to be recent, as there were only two local specimens prior to 2022, from 1995 and 2012 (Kons 2024).

***Mycterophora inexplicata* (8413) (Noctuidae) [Figure 2(15)]:** This species may be a resident as far south as the Navarino Wildlife Area, as opposed to being a stray from the Canadian Zone. A somewhat worn specimen from sandy oak-pine barrens at the Navarino Wildlife Area on 5 August 2022 was the first time I had found this species south of the Canadian Zone, and in Kons (2024) I postulated that this record might represent a stray. However, on 12 July 2024 I collected two more specimens at the Navarino Wildlife Area south of the Pike's Peak Flowage, at a UV light trap in oak-pine woods with an ericaceous understory next to a sedge meadow with bog elements. One specimen is in fairly fresh condition and the other very worn. This species does not appear to come reliably to lights and I have never found it at bait; on 29 July 1995 I netted three individuals at barrens northwest of Dunbar in Marinette County, but none came to lights or bait in close proximity.

***Oruza albocostaliata,* or species near (9025) (Noctuidae):** Evidence has mounted of a disjunct resident population in the Northern Transition Zone, as opposed to occurrences from northward migrations from the Austral Zone. For the third consecutive season, this species was found at the Navarino Wildlife Area (27 July), with no records from the Outagamie County study sites farther south. The gap in the range appears to occur between southern Shawano County and the latitude of south-central Missouri, Illinois, and Indiana. A taxonomic evaluation is needed for comparing material from disjunct Wisconsin populations with populations from the Austral Zone. Most of my Wisconsin specimens are in worn condition, but a fairly fresh specimen was collected in both 2023 and 2024.

Acknowledgments

I want to express my gratitude to the retiring editor, J. Barry Lombardini, for his outstanding work on the Southern Lepidopterists' News over his 23 year tenure.

Sharon Kons assisted with many collecting trips and was supportive of this research in numerous ways. Mike Hibbard and Adam Brandt have been supportive of Lepidoptera research at Mosquito Hill, and likewise Matthew Gottfredsen at Fallen Timbers Environmental Center. Kevin Kons hosted me during my Lepidoptera surveys in Wheaton, Illinois, and one of the study sites is his yard. Tom Velat and Jennifer Rydzewski assisted with my research on DuPage County Preserves. Robert Borth joined me in the field during some of the September bait trails in the Appleton area. Robert Borth, Kyle Johnson, and Richard Merkhofer contributed to the body of knowledge on the Lepidoptera of Outagamie County during previous seasons. Steve Bransky shared recent information on some of the taxa included in this paper for southeastern Wisconsin. Robert Borth, John Douglass, and Lance Durden provided helpful reviews of this manuscript.

Table 1: Lepidoptera Strays And Ephemeral Migrants Recorded From Outagamie and Southern Shawano Counties (WI) In 2024

No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
Strays and Ephemeral Migrants of Southern or Southwestern Origin									
MACROLEPIDOPTERA									
GEOMETRIDAE									
***Cyclophora packardi* (7136)**									
1	20 Aug. 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
***Cyclophora nanaria* (7140) [New record for Shawano County/Navarino WMA]**									
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Coryphista meadii* (7290)**									
1	24 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	29 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
SPHINGIDAE									
***Sphinx eremitus* (7796)**									
1	3 July 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Hyles lineata* (7894)**									
1	20 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Prairie planting	Netted	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
NOCTUIDAE (Including Synonyms Erebidae, Nolidae, and Euteliidae)									
***Tetanolita mynesalis* (8366)**									
1	21 Oct. 2024	Shawano	Navarino Wildlife Area	sedge meadow/shrubs along stream west of Highway K	UV Trap 23	Exact	44.66605	88.58147	sedge meadow/shrubby corridor along stream
***Renia discoloralis* (8381) [Probably now an established resident species/recent colonization]**									
1	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
3	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, site 6 to obsv. Deck	Bait Trail 3	Vicinity	44.6475	88.537	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
6	27 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, parking lot to site 6	Bait Trail 3	Vicinity	44.6478	88.5431	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
19	27 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, site 6 to obsv. Deck	Bait Trail 3	Vicinity	44.6475	88.537	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
2	27 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, parking lot to site 6	on leaf	Vicinity	44.6478	88.5431	Oak-pine savanna-forest/mesic pine-hardwoods/sedge meadow w. bog elements
1	27 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
1	27 July 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae
1	28 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Rd S of Pikes Peak Flowage, parking lot to obsv. deck	Bait Trail 3	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
19	28 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Rd S of Pikes Peak Flowage, parking lot to obsv. deck	Bait Trail 3	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	14 Aug. 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Rd S of Pikes Peak Flowage, parking lot to obsv. deck	Bait Trail 3	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Renia adspergillus* (8386) [Probably now an established resident species/recent colonization]**									
1	25 June 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and west trails on sides of prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	3 July 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and west trails on sides of prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
5	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, site 6 to obsv. Deck	Bait Trail 3	Vicinity	44.6475	88.537	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Parahypenodes quadralis* (8430) [Migratory Status Uncertain]**									
1	28 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage, parking lot to site 6	Bait Trail 3	Vicinity	44.6478	88.5431	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Hypena minualis* (8457) [Highest numbers found in area to date]**									
9	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	4 Nov. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Hypena humuli* (8461)**									
1	25 June 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
1	26 June 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and west trails on sides of prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	8 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	9 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	14 Aug. 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
1	22 Aug. 2024	Outagamie	Appleton	719 West Summer Street; Nectaring on *Eupatorium purpureum*		Exact	44.27157	88.41659	Suburban Yard
3	25 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	29 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	3 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
4	10 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	10 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
16	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on hill: top, west, and north sides	Bait Trail 1	Vicinity	44.382	88.705	Southern mesic hardwood forest/maple-birch-shite pine forest/oak opening

Table 1: Lepidoptera Strays And Ephemeral Migrants Recorded From Outagamie and Southern Shawano Counties (WI) In 2024

No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
***Hypena humuli* (8461)**									
9	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on hill: top, west, and north sides	Bait Trail 1	Vicinity	44.382	88.705	Southern mesic hardwood forest/maple-birch-shite pine forest/oak opening
2	21 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
3	22 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	22 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Anomis erosa* (8545) [Third record for area, new record for Shawano County/Navarino WMA]**									
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Anticarsia gemmatalis* (8574)**									
1	21 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	22 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
4	28 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
5	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
16	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	29 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
25	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Mocis latipes* (8743)**									
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	10 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
2	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	29 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Garella nilotica* (8771)**									
1	25 June 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Hyperstrotia pervertens* (9037) [Third record for area]**									
1	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
***Condica mobilis* (9696) [Second record for area, in fresh condition]**									
1	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on west side of hill	Bait Trail 1	Vicinity	44.381	88.707	Southern mesic hardwood forest with oaks & hickories
***Condica sutor* (9699)**									
2	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	5 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
2	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
7	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae
1	4 Nov. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Trichoplusia ni* (8887)**									
1	18 July 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
1	18 July 2024	Outagamie	Appleton	719 West Summer Street; Nectaring on Lantana: 9:33, 9:40pm		Exact	44.27177	88.41654	Suburban Yard
2	19 Aug. 2024	Outagamie	Appleton	719 West Summer Street; Nectaring on Lantana		Exact	44.27177	88.41654	Suburban Yard
1	26 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	27-28 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	3 Oct. 2024	Outagamie	Fox Cities Paper Trail	Fox Cities Paper Trail by Fox Vally Tech.	UV Trap 2	Exact	44.28646	88.46351	mesic prairie planting and field
1	7 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
***Ctenoplusia oxygramma* (8889)**									
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on west side of hill	Bait Trail 1	Vicinity	44.381	88.707	Southern mesic hardwood forest with oaks & hickories
***Pseudoplusia includens* (8890)**									
1	24 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	26 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden: 6:59pm		Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
***Rachiplusia ou* (8895)**									
1	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden: 6:54pm		Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
1	21 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard

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No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
***Megalographa biloba* (8907)**									
1	19 May 2024	Shawano	Navarino Wildlife Area	Sand barrens E of Hwy K (worn specimen)	MV Sheet 8	Exact	44.65613	88.57876	sandy oak-pine barrens (jack pine, red pine, blackjack oak)
1	4 July 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	26 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	29 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	1 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
2	10 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	MV Trap 24	Exact	44.37935	88.70632	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Shelter in prairie planting	UV Trap 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
5	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden: 7:04pm		Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
1	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on west side of hill	Bait Trail 1	Vicinity	44.381	88.707	Southern mesic hardwood forest with oaks & hickories
2	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Mesic hardwoods just east of prairie planting	UV Trap 34	Exact	44.37798	88.70239	Mesic hardwood forest facing wet-mesic prairie planting, near floodplain
5	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden: 6:54, 6:56, 7:01, 7:06, 7:15pm		Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
2	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on hill: top, west, and north sides	Bait Trail 1	Vicinity	44.382	88.705	Southern mesic hardwood forest/maple-birch-shite pine forest/oak opening
1	21 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	22 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
2	28 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
9	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	9 Nov. 2024	Outagamie	Fallen Timbers Env. Center	Aspen Circle, Goldenrod Lane, start of Deep Forest Trails	Bait Trail	Vicinity	44.4778	88.406	Hydric hardwood forest with rich understory/grassland edge
***Autographa californica* (8914)**									
1	9 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden	Diurnal	Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
1	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on west side of hill	Bait Trail 1	Vicinity	44.381	88.707	Southern mesic hardwood forest with oaks & hickories
***Callopistria floridensis* (9630)**									
1	27-28 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	29 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Acronicta clarescens* (9246)**									
1	3 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
***Achatodes zeae* (9520) [Stray]**									
1	7 July 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
***Trachea delicata* (9626)**									
1	26 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Shelter in prairie planting	UV Trap 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Magusa divaricata* (9637)**									
1	18 July 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	14 Aug. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	19 Aug. 2024	Outagamie	Prairie Hill Park	Margin of pond, on sedge blade		Vicinity	44.29	88.463	Pond margin with dense willows, cattails, sedges, and various wetland plants
1	22 Aug. 2024	Outagamie	Appleton	719 West Summer Street; Nectaring on Butterfly Bush: 11:17pm		Exact	44.27181	88.41663	Suburban Yard
1	28 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	17 Sept. 2024	Outagamie	Prairie Hill Park	Bait trail around pond and hill	Bait Trail	Vicinity	44.2926	88.4643	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
2	19 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	24 Sept. 2024	Outagamie	Power Line Cut	power line cut at corner of N Bluemound Drive X Hwy 96	UV Trap 3	Exact	44.27359	88.45856	mesic prairie planting/field near mesic hardwoods
1	24 Sept. 2024	Outagamie	Fox Cities Paper Trail	Fox Cities Paper Trail by Fox Vally Tech.	UV Trap 1	Exact	44.28647	88.46333	mesic prairie planting and field
1	24 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	26 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
6	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Trail along s edge of prairie west of shelter, by ironweed	UV Trap 26	Exact	44.37867	88.70592	Mesic-wet prairie planting/floodplain forest edge
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Shelter in prairie planting	UV Trap 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
8	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
2	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sand barrens E of Hwy K	Bait Trail	Vicinity	44.6559	88.5784	sandy oak-pine barrens (jack pine, red pine, blackjack oak)
1	30 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	2 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	3 Oct. 2024	Outagamie	Fox Cities Paper Trail	Fox Cities Paper Trail by Fox Vally Tech.	UV Trap 2	Exact	44.28646	88.46351	mesic prairie planting and field

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No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
Magusa divaricata **(9637)**									
6	5 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
3	10 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
4	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	MV Trap 24	Exact	44.37935	88.70632	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	20 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden: 7:16pm		Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
1	21 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	28 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
4	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	29 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
4	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
Anorthodes tarda **(9650) [New record for area]**									
1	13 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
Elaphria chalcedonia **(9679)**									
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
Elaphria grata **(9684)**									
1	9 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	17 Sept. 2024	Outagamie	Prairie Hill Park	Bait trail around pond and hill	Bait Trail	Vicinity	44.2926	88.4643	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae
Anicla infecta **(10911)**									
1	5 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	10 Oct. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	21 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
RHOPALOCERA									
HESPERIIDAE									
Hylephila phyleus **(4013) [Highest numbers found in area to date; also includes records for southeast WI]**									
1	29 Aug. 2024	Outagamie	Appleton	719 West Summer Street: nectaring on Butterfly Bush	Diurnal	Exact	44.27181	88.41663	Suburban Yard
3	29 Aug. 2024	Fond du Lac	Lomira	Highway 49 south bound wayside	Diurnal	Exact	43.56122	88.43161	Nectaring on butterfly bush; lawns/fields/hardwoods
2	11 Sept. 2024	Kenosha	WI Welcome Center	Field, nectaring on New England Aster	Diurnal	Vicinity	42.52146	87.94927	Field with New England Aster
12	11 Sept. 2024	Ozaukee	Mequon:Westport Circle	nectaring on butterfly bush	Diurnal	Vicinity	43.2055	87.9278	Suburban yard, near hardwoods and fields
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden	Diurnal	Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
16	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster in garden	Diurnal	Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
NYMPHALIDAE									
Vanessa cardui **(4435)**									
2	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster & Stiff Goldenrod in garden	Diurnal	Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
Junonia coenia **(4440)**									
1	15 Sept. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: on bee balm seed head	8:51pm	Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	21 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	Diurnal	Vicinity	44.3793	88.7063	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	Diurnal	Vicinity	44.3793	88.7063	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	Diurnal	Vicinity	44.3793	88.7063	Mesic prairie planting with dogbane, indian plantain, & rosinweed
4	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	nectaring on New England Aster & Stiff Goldenrod in garden	Diurnal	Vicinity	44.3806	88.7075	Garden in parking lot with New England Aster
2	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	Diurnal	Vicinity	44.3793	88.7063	Mesic prairie planting with dogbane, indian plantain, & rosinweed
"MICROLEPIDOPTERA"									
PLUTELLIDAE									
Plutella porrectella **(2363) [Three previous records for area]**									
1	19 May 2024	Shawano	Navarino Wildlife Area	Trail west of Highway K	UV Trap 12	Exact	44.6572	88.58282	Mesic hardwood-pine-hemlock forest, near hardwood swamp
1	21 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	29 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
2	3 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	11 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	MV Trap 24	Exact	44.37935	88.70632	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	22 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard

Table 1: Lepidoptera Strays And Ephemeral Migrants Recorded From Outagamie and Southern Shawano Counties (WI) In 2024

No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
TORTRICIDAE									
***Eumarozia malachitana* (2749) [One previous record for area]**									
1	17 June 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	25 Aug. 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Rhyacionia buoliana* (2867)**									
1	25 June 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Diedra cockerellana* (3630)**									
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	Shelter in prairie planting	UV Trap 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
PYRALIDAE (Including Synonym Crambidae)									
***Dicymolomia julianalis* (4889)**									
1	12 June 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	20 June 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
1	23 June 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
1	23 June 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	24 June 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
3	25 June 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
11	3 July 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
1	3 July 2024	Outagamie	Mosquito Hill Nature Center	South side of prairie planting	on grass blade	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	6 July 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	7 July 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	8 July 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: on milkweed leaf		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	10 July 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
10	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
1	19 July 2024	Outagamie	Prairie Hill Park	Pavilion: at lights		Vicinity	44.29002	88.46324	Fields/prairie planting/pond/willow-cat-tail wetland/mesic hardwoods
8	27 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
1	20 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	21 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: nectaring on Narrow Leaf Goldenrod		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	22 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: on milkweed leaf		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	22 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: on ironweed stem		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
2	22 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: nectaring on Canada Goldenrod		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	22 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: nectaring on Stiff Goldenrod		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	22 Aug. 2024	Outagamie	Prairie Hill Park	Fields & prairie planting: nectaring on Bonaset		Vicinity	44.2926	88.4643	Prairie planting/fields with New England Aster
1	22 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
3	25 Aug. 2024	Outagamie	Mosquito Hill Nature Center	Start of prairie trail just past building	UV Trap 24	Exact	44.37935	88.70632	Mesic prairie planting with dogbane, indian plantain, & rosinweed
3	25 Aug. 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
1	11 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	13 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	15 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	18 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
1	18 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	22 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Hahncappsia* species**									
1	17 Aug. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
***Uresiphita reversalis* (4992)**									
1	25 June 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
***Pyrausta nicalis* (5032) [second season found in area, fourth record for area]**									
1	24 July 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard

Table 1: Lepidoptera Strays And Ephemeral Migrants Recorded From Outagamie and Southern Shawano Counties (WI) In 2024

No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
***Hymenia perspectalis* (5169)**									
1	18 Sept. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	5 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Edge of prairie trail just past building	MV Trap 33	Exact	44.37959	88.70652	Mesic prairie planting with dogbane, indian plantain, & rosinweed
1	5 Oct. 2024	Outagamie	Mosquito Hill Nature Center	Shelter in prairie planting	UV Trap 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
1	5 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	6 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	22 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	29 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	4 Nov. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Spoladea recurvalis* (5170)**									
2	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	27-28 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	19 Oct. 2024	Outagamie	Mosquito Hill Nature Center	trail on hill: top, west, and north sides	Bait Trail 1	Vicinity	44.382	88.705	Southern mesic hardwood forest/maple-birch-shite pine forest/oak opening
1	21 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	22 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	28 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	4 Nov. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae
***Diasemiodes janassialis* (5172)**									
1	27-28 Sept. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
***Palpita quadristigmalis* (5218) [One previous record for area]**									
1	14 Aug. 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
1	20 Oct. 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
1	22 Oct. 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae

Table 1: Lepidoptera Strays And Ephemeral Migrants Recorded From Outagamie and Southern Shawano Counties (WI) In 2024

No.	Date	County	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
***Patania silicalis* (5243)**									
1	28 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
1	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Herpetogramma bipunctalis* (5272)**									
1	27 Sept. 2024	Outagamie	Mosquito Hill Nature Center	South, east, and and middle trails in prairie planting	Bait Trail: prairie	Vicinity	44.3786	88.7035	Wet-mesic prairie planting/floodplain forest edge
5	30 Sept. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Herpetogramma phaeopteralis* (5274)**									
1	4 Nov. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
2	4 Nov. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Pilocrocis ramentalis* (5281)**									
1	29 Oct. 2024	Shawano	Navarino Wildlife Area	Sandy trail east of Highway K	Bait Trail 1	Vicinity	44.65713	88.57	mesic-xeric oak-pine-hardwood forest/bracken grassland/hydric hardwoods
***Platytes vobisne* (5394) [One previous record for area]**									
1	17 June 2024	Outagamie	Appleton	719 West Summer Street	UV Light front porch	Exact	44.2719	88.4166	Suburban Yard
3	3 July 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
2	4 July 2024	Outagamie	Mosquito Hill Nature Center	Trail along N side of prairie, netted at 7:05am		Exact	44.38049	88.70547	Sandy upland prairie planting
1	12 July 2024	Shawano	Navarino Wildlife Area	Trail E of McDonald Road S of Pikes Peak Flowage	MV Sheet 6	Exact	44.64787	88.54208	oak-pine uplands/shrubby savanna near sedge meadow w. bog elements
***Euchromius ocellea* (5454)**									
1	29 Oct. 2024	Outagamie	Appleton	719 West Summer Street	MV Trap	Exact	44.27166	88.41656	Suburban Yard
1	4 Nov. 2024	Shawano	Navarino Wildlife Area	Pike's Peak Flowage	UV Trap 18	Exact	44.64801	88.54398	sedge meadow with bog elements/oak-pine woodland with Ericaceae
***Caristanius decoloralis* (5742) [New Record for Area]**									
1	3 July 2024	Outagamie	Mosquito Hill Nature Center	Paved trail next to shelter in prairie planting	MV Sheet 10	Exact	44.37886	88.70471	Mesic-wet prairie planting/floodplain forest edge
PTEROPHORIDAE									
***Anstenoptilia marmarodactyla* (6117) [New Record for Area]**									
1	16 Nov. 2024	Outagamie	Fallen Timbers Env. Center	Goldenrod Lane Trail	Bait Trail	Vicinity	44.4778	88.406	Hydric hardwood forest with rich understory/grassland edge
Strays of Northern Origin									
***Eupithecia mutata* (7575)**									
1	10 July 2024	Outagamie	Appleton	719 West Summer Street	UV Sheet	Exact	44.27166	88.41656	Suburban Yard
***Chrysanympha formosa* (8904) [Probably a stray from the Northern Transition Zone, a resident species at the Navarino Wildlife Area 19 miles to the northeast]**									
1	3 July 2024	Outagamie	Mosquito Hill Nature Center	South side of hill facing prairie planting	UV Trap 6	Exact	44.37933	88.70369	Mesic hardwood forest edge facing upland prairie planting

Table 2: Southern Lepidoptera Strays And Ephemeral Migrants Recorded From Wheaton (DuPage County, IL) In 2024

No.	Date	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
GEOMETRIDAE								
***Cyclophora nanaria* (7140)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	30 Aug. 2024	Danada Preserve	N of Regional Trail, N of Equestrian Center	UV Trap 2	Exact	41.82199	88.11624	Mesic field with prairie planting/hill with dense sumac
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
SPHINGIDAE								
***Hyles lineata* (7894)**								
1	30 Aug. 2024	Danada Preserve	N of Regional Trail, N of Equestrian Center	UV Trap 2	Exact	41.82199	88.11624	Mesic field with prairie planting/hill with dense sumac
NOCTUIDAE (Including Synonyms Erebidae, Nolidae, and Euteliidae)								
***Tetanolita mynesalis* (8366)**								
1	29 Aug. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
1	30 Aug. 2024	Danada Preserve	N of Regional Trail, N of Equestrian Center	UV Trap 2	Exact	41.82199	88.11624	Mesic field with prairie planting/hill with dense sumac
***Mocis latipes* (8743)**								
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
***Ctenoplusia oxygramma* (8889)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	4 Sept. 2024	Danada Preserve	N of Regional Trail, 0.2 miles S of Butterfield Road	UV Trap 11	Exact	41.82599	88.11917	Mesic prairie planting next to shrubby-wooded area
***Pseudoplusia includens* (8890)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
***Autographa californica* (8914)**								
1	10 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
***Condica sutor* (9699)**								
3	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	2 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	8 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
***Callopistria floridensis* (9630)**								
1	30 Aug. 2024	Wheaton: Suburban Yard	Salford Court: back yard	Bait Trail	Vicinity	41.8293	88.0886	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
1	31 Aug. 2024	Wheaton: Suburban Yard	Salford Court: back yard	Bait Trap	Exact	41.82926	88.08865	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals

Table 2: Southern Lepidoptera Strays And Ephemeral Migrants Recorded From Wheaton (DuPage County, IL) In 2024

No.	Date	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
***Magusa divaricata* (9637)**								
1	29 Aug. 2024	Wheaton: Suburban Yard	Salford Court: between fence and Butterfield Road	MV Trap 2	Exact	41.82935	88.08866	Dense buckthorn dominant, Silver Maple, Hackberry, Juglans
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	1 Sept. 2024	Danada Preserve	S of Regional Trail, N of Equestrian Center	UV Trap 1	Exact	41.82096	88.11316	Mesic prairie planting
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
1	5 Sept. 2024	Herrick Lake Preserve	Open area on west side of Bluebird Trail	UV Trap 12	Exact	41.81816	88.12941	Mesic prairie planting/field
1	9 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
***Elaphria chalcedonia* (9679)**								
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
***Anicla infecta* (10911)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
3	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
HESPERIIDAE								
***Hylephila phyleus* (4013)**								
1	1 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
100+	2 Sept. 2024	Cantigny Park	over 100 seen, 26 photographed, nectaring on Zinnia, Globe Amaranth, Sedum, Pickeralweed					Manacured gardens
PYRALIDAE (Including Synonym Crambidae)								
***Achyra rantalis* (4975)**								
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
***Hymenia perspectalis* (5169)**								
3	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	4 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
***Diasemiodes janassialis* (5172)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
***Herpetogramma bipunctalis* (5272)**								
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory

Table 3: Lepidoptera Recorded From Wheaton (DuPage County, IL) In 2024 Of Uncertain Status (Southern Strays/Migrants or Residents?)

No.	Date	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
GEOMETRIDAE								
***Macaria aequiferaria* (6335) [Fresh specimens found for 3 consecutive seasons in suburban Wheaton; usually associated with cypress in the southeastern U.S.]**								
1	29 Aug. 2024	Wheaton: Suburban Yard	Salford Court: between fence and Butterfield Road	MV Trap 2	Exact	41.82935	88.08866	Dense buckthorn dominant, Silver Maple, Hackberry, Juglans
***Glenoides texanaria* (6443)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	3 Sept. 2024	Danada Preserve	N of Regional Trail, N of Equestrian Center	UV Trap 2	Exact	41.82199	88.11624	Mesic field with prairie planting/hill with dense sumac
1	3 Sept. 2024	DuPage County Forest Preserve District Headquarters		Loading Dock Light	Exact	41.81931	88.11258	Mesic prairie planting/wooded to shrubby areas/planted trees
1	5 Sept. 2024	Herrick Lake Preserve	Open area on west side of Bluebird Trail	UV Trap 12	Exact	41.81816	88.12941	Mesic prairie planting/field
***Iridopsis defectaria* (6586)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
***Nemoria bistriaria* (7046) [Worn specimens]**								
2	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
***Coryphista meadii* (7290)**								
1	10 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
NOCTUIDAE (Including Synonyms Erebidae, Nolidae, and Euteliidae)								
***Zanclognatha pedipilalis* complex sp. B (8348b)**								
1	5 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
***Zanclognatha cruralis* complex sp. B (8351b)**								
1	2 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	8 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 13	Exact	41.8168	88.13461	Mesic hardwood forest with oaks and hickories, rich understory
***Tetanolita* sp. near *palligera* (8367.1)**								
1	29 Aug. 2024	Wheaton: Suburban Yard	Salford Court: between fence and Butterfield Road	MV Trap 2	Exact	41.82935	88.08866	Dense buckthorn dominant, Silver Maple, Hackberry, Juglans
1	30 Aug. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
2	4 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	Bait Trail 1	Vicinity	41.8176	88.1361	Mesic hardwood forest with oaks and hickories, rich understory
1	4 Sept. 2024	Danada Preserve	N of Regional Trail, 0.2 miles S of Butterfield Road	UV Trap 11	Exact	41.82599	88.11917	Mesic prairie planting next to shrubby-wooded area
1	4-5 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
1	10 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals

Table 3: Lepidoptera Recorded From Wheaton (DuPage County, IL) In 2024 Of Uncertain Status (Southern Strays/Migrants or Residents?)

No.	Date	Study Site	Locality	Survey Station	Exact/ Vicinity	Latitude ° N	Longitude ° W	Habitat
Palthis asopialis **(8398)**								
3	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
1	8 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 13	Exact	41.8168	88.13461	Mesic hardwood forest with oaks and hickories, rich understory
Parahypenodes quadralis **(8430)**								
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
Paectes abrostoloides **(8962) [Fresh condition; The larval host plant (*Liquidambar styraciflua*) is native to southern Illinois, but has been planted at the nearby Morton Arboretum]**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
Tripudia rectangula **(9003.1)**								
1	2 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
Marimatha nigrofimbria **(9044)**								
1	29 Aug. 2024	Wheaton: Suburban Yard	Salford Court: back yard	on Lilac Leaf	Vicinity	41.8293	88.0886	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
2	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	5 Sept. 2024	Herrick Lake Preserve	Crossroads Rest Area: forest edge by open area in N quadrant	UV Trap 10	Exact	41.82129	88.13784	Open mesic hardwood forest next to field with prairie planting
Acronicta clarescens **(9246) [Fresh condition]**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
Anorthodes tarda **(9650) [Fair to worn condition]**								
2	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
1	31 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
2	4 Sept. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	UV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
TORTRICIDAE								
Diedra cockerellana **(3630)**								
1	10 Sept. 2024	Wheaton: Suburban Yard	Salford Court: back yard	MV Trap 1	Exact	41.82917	88.08861	Suburban yard with Silver Maple, Apple, Juniper, Ornamentals
PYRALIDAE (Including Synonym Crambidae)								
Uresiphita reversalis **(4992)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory
Pyrausta tyralis **(5069)**								
1	30 Aug. 2024	Herrick Lake Preserve	Forest southeast of Crossroads Rest Area, S of Regional Trail	MV Trap 9	Exact	41.81687	88.13499	Mesic hardwood forest with oaks and hickories, rich understory

Table 4: 2024 Late Season Phenology Of Nocturnal Ephemeral And Annual Migrants (Part), With Wind Speeds And Directions

		26 Sept. Mosquito Hill	27 Sept. Mosquito Hill	28 Sept. Mosquito Hill	29 Sept. Navarino WMA	30 Sept. Navarino WMA	5 Oct. Mosquito Hill	10 Oct. Mosquito Hill	11 Oct. Mosquito Hill	18 Oct. Mosquito Hill	19 Oct. Mosquito Hill	20 Oct. Mosquito Hill	21 Oct. Navarino WMA	22 Oct. Navarino WMA	24 Oct. Navarino WMA	Night of 24 Oct.	28 Oct. Navarino WMA	29 Oct. Navarino WMA	30 October	4 Nov. Navarino WMA	4 Nov. after 1am	9 Nov. Fallen Timbers	13 Nov. Fallen Timbers	14 Nov. Fallen Timbers	16 Nov. Fallen Timbers	17 Nov. Fallen Timbers	18 Nov. Fallen Timbers	19 Nov. Fallen Timbers
Wind Speed (mph)/Direction, Time:		0-6 S & N, 8:17pm-3:12am	5-8 NE, 7:41-10:32pm	5-6 NE, 7:39-11:44pm	0-8 NE, 8:26pm-12:50am	6-12 S/SE/SW, 7:38-2:04	16-28 SE,8-14 SW,7:45-5:30a	3-7 SW, 7:19pm-5:34am	5-9 NE, 0-3 N/NE, 7:52pm-5a	7-10 S/SW, 8:50-10:35am	7-15 S/SW, 7:06pm-4:01am	6-10 SW, 7:23pm-5:49am	6-12 SW, 7:47pm-5:34am	8-15 SW, 7:06pm-2:50am	6-23 S, 6:50pm-12:44am	0-7 N, 1-4am, No Survey	5-15 S/SE, 7:25pm-3:20am	13-24 S/SW, 6:29pm-4:43am	4-24 NE, No Survey	3-10 SW, 5:37pm-1:05am	0-10 N, No Survey	8-14 SE, 5:10-9pm	8-9 E/ESE, 5:06-8:04pm	5-7 N, 5:10-8:28pm	14-16 SE, 5:39-8:22pm	7-10 SW, 5:12-6:50pm	12-14 E/SE, 4:45-6:19pm	10-12 SW, 4:50-7:36pm
High Temperature During Bait Survey:		71	67	64	64	65	69	62	64	?	66	76	66	58	56		59	76		64		54	48	47	50	48	50	52
Low Temperature During Bait Survey:		58	61	60	53	64	57	54	47	57	57	59	46	58	47		57	70		60		50	44	46	48	48	50	51
Ephemeral Migrants		■	=Suspected night with a southward return migration, when most or all individuals present in the area left.																									
GEOMETRIDAE																												
7140	*Cyclophora nanaria*					1																						
NOCTUIDAE																												
8366	*Tetanolita mynesalis*												1															
8457	*Hypena minualis*																			9	■							
8461	*Hypena humuli*		1			1		4	1		16	9	3	3	3	■												
8545	*Anomis erosa*																	1										
8574	*Anticarsia gemmatalis*												1	1			5	16		25	■							
8743	*Mocis latipes*		1					1										2										
9693	*Condica mobilis*											1																
9699	*Condica sutor*		2				1											2		8	■							
8887	*Trichoplusia ni*	1				1																						
8889	*Ctenoplusia oxygramma*		1			1					1																	
8890	*Pseudoplusia includens*	1	1			1						1																
8895	*Rachiplusia ou*											1																
8907	*Megalographa biloba*	1	1			1		2	3		3	11	2				2	9			■	1						
8914	*Autographa californica*								1		1																	
9637	*Magusa divaricata*	1	1	8		10	6	4	5				1	1			1	5		4	■							
9679	*Elaphria chalcedonia*																	1		1								
9684	*Elaphria grata*																			1								
10911	*Anicla infecta*						1	1					1					1										
TORTRICIDAE																												
3630	*Diedra cockerellana*			1																								

Table 4: 2024 Late Season Phenology Of Nocturnal Ephemeral And Annual Migrants (Part), With Wind Speeds And Directions

	Wind Speed (mph)/Direction, Time:	10-12 SW, 4:50-7:36pm	12-14 E/SE, 4:45-6:19pm	7-10 SW, 5:12-6:50pm	14-16 SE, 5:39-8:22pm	5-7 N, 5:10-8:28pm	8-9 E/ESE, 5:06-8:04pm	8-14 SE, 5:10-9pm	0-10 N, No Survey	3-10 SW, 5:37pm-1:05am	4-24 NE, No Survey	13-24 S/SW, 6:29pm-4:43am	5-15 S/SE, 7:25pm-3:20am	0-7 N, 1-4am, No Survey	6-23 S, 6:50pm-12:44am	8-15 SW, 7:06pm-2:50am	6-12 SW, 7:47pm-5:34am	6-10 SW, 7:23pm-5:49am	7-15 S/SW, 7:06pm-4:01am	7-10 S/SW, 8:50-10:35am	5-9 NE, 0-3 N/NE, 7:52pm-5a	3-7 SW, 7:19pm-5:34am	16-28 SE,8-14 SW,7:45-5:30a	6-12 S/SE/SW, 7:38-2:04	0-8 NE, 8:26pm-12:50am	5-6 NE, 7:39-11:44pm	5-8 NE, 7:41-10:32pm	0-6 S & N, 8:17pm-3:12am
		19 Nov. Fallen Timbers	18 Nov. Fallen Timbers	17 Nov. Fallen Timbers	16 Nov. Fallen Timbers	14 Nov. Fallen Timbers	13 Nov. Fallen Timbers	9 Nov. Fallen Timbers	4 Nov. after 1am	4 Nov. Navarino WMA	30 October	29 Oct. Navarino WMA	28 Oct. Navarino WMA	Night of 24 Oct.	24 Oct. Navarino WMA	22 Oct. Navarino WMA	21 Oct. Navarino WMA	20 Oct. Mosquito Hill	19 Oct. Mosquito Hill	18 Oct. Mosquito Hill	11 Oct. Mosquito Hill	10 Oct. Mosquito Hill	5 Oct. Mosquito Hill	30 Sept. Navarino WMA	29 Sept. Navarino WMA	28 Sept. Mosquito Hill	27 Sept. Mosquito Hill	26 Sept. Mosquito Hill
PYRALIDAE																												
5169	*Hymenia perspectalis*											1					1						2			1		
5170	*Spoladea recurvalis*									1		1	1				1											
5218	*Palpita quadristigmalis*															1								1				
5243	*Patania silicalis*																							1		1		
5272	*Herpetogramma bipunctalis*																							6				
5274	*Herpetogramma phaeopteralis*									2																		
5281	*Pilocrocis ramentalis*											1																
5454	*Euchromius ocellea*									1																		
Annual Migrants																												
GEOMETRIDAE																												
6982	*Prochoerodes lineola* species 1	19	7	1	4	200+	11	5	1			1					1				1							
7132	*Pleuroprucha insulsaria*		2	1		7		5	5				3	3			1	2					1					
7414	*Orthonama obstipata*	1	2	1		8	2	1	1								2	2								1	2	1
7416	*Orthonama centrostrigaria*	4	48	6	1	200+	102	248	186	2	46	91	60	70	100+		76	100+	73		79	4	25	9	12	50	18	
7474	*Eupithecia miserulata*		2	2		10	2	8	8	1	3	1	4	10	50+		11	8	6		28			1		12	16	
NOCTUIDAE																												
8267	*Cissops fulvicollis*					2						1		1														
8404	*Rivula propinqualis*	1	2	2			1																					
8465	*Hypena scabra*	7	19	5	4	88	245	500+	500+	7	92	176	76	52	27		89	200+	200+		86	3	1	8		38	4	
8689	*Zale lunata*	11	4	1	4	88	19	31	12		11	46	29	31	26		33	96	29		8		1	1		2	4	
9053	*Pseudeustrotia carneola*						1		1										1									
9720	*Ogdoconta cinereola*	1	1																									

Table 4: 2024 Late Season Phenology Of Nocturnal Ephemeral And Annual Migrants (Part), With Wind Speeds And Directions

Wind Speed (mph)/Direction, Time:		0-6 S & N, 8:17pm-3:12am	5-8 NE, 7:41-10:32pm	5-6 NE, 7:39-11:44pm	0-8 NE, 8:26pm-12:50am	6-12 S/SE/SW, 7:38-2:04	16-28 SE,8-14 SW,7:45-5:30a	3-7 SW, 7:19pm-5:34am	5-9 NE, 0-3 N/NE, 7:52pm-5a	7-10 S/SW, 8:50-10:35am	7-15 S/SW, 7:06pm-4:01am	6-10 SW, 7:23pm-5:49am	6-12 SW, 7:47pm-5:34am	8-15 SW, 7:06pm-2:50am	6-23 S, 6:50pm-12:44am	0-7 N, 1-4am, No Survey	5-15 S/SE, 7:25pm-3:20am	13-24 S/SW, 6:29pm-4:43am	4-24 NE, No Survey	3-10 SW, 5:37pm-1:05am	0-10 N, No Survey	8-14 SE, 5:10-9pm	8-9 E/ESE, 5:06-8:04pm	5-7 N, 5:10-8:28pm	14-16 SE, 5:39-8:22pm	7-10 SW, 5:12-6:50pm	12-14 E/SE, 4:45-6:19pm	10-12 SW, 4:50-7:36pm
		26 Sept. Mosquito Hill	27 Sept. Mosquito Hill	28 Sept. Mosquito Hill	29 Sept. Navarino WMA	30 Sept. Navarino WMA	5 Oct. Mosquito Hill	10 Oct. Mosquito Hill	11 Oct. Mosquito Hill	18 Oct. Mosquito Hill	19 Oct. Mosquito Hill	20 Oct. Mosquito Hill	21 Oct. Navarino WMA	22 Oct. Navarino WMA	24 Oct. Navarino WMA	Night of 24 Oct.	28 Oct. Navarino WMA	29 Oct. Navarino WMA	30 October	4 Nov. Navarino WMA	4 Nov. after 1am	9 Nov. Fallen Timbers	13 Nov. Fallen Timbers	14 Nov. Fallen Timbers	16 Nov. Fallen Timbers	17 Nov. Fallen Timbers	18 Nov. Fallen Timbers	19 Nov. Fallen Timbers
8908	*Autographa precationis*	8	25			10			1					3						5								
8924	*Anagrapha falcifera*			2	2		1	3	1		1	6	2	3			4	3										
11068	*Helicoverpa zea*	2	1	1		2					4	3	8	3	1		1	12	1									
9578	*Hyppa xylinoides*			1		1	1	1																				
9666	*Spodoptera frugiperda*	16	25	4	3	33	32	9	8		2	8	25	14			11	24		171								
9669	*Spodoptera ornithogalli*		9	3	3	4	155	32	14		6	9	22	14	3		7	21		66		6						
9688	*Galgula partita*		4		1		4	8	7		4	4	4	2	2		5	7		12								1
10397	*Lacinipolia renigera*	1	1			3	3		1					1				1		1								
10438	*Pseudaletia unipuncta*	33	99	70	18	74	200+	200+	200+	8	101	118	92	100+	100+		109	200+		100+		200+	96	43	57	16	111	16
10663	*Agrotis ipsilon*	23	50	33	6	95	300+	500+	500+	22	143	166	121	200+	300+		172	300+		200+		200+	86	22	29	10	51	9
10915	*Peridroma saucia*	15	49	40	3	103	200+	500+	500+	46	178	188	127	200+	300+		233	400+		200+		500+	500+	500+	400+	69	400+	32
	PLUTELLIDAE																											
2366	*Plutella xylostella*							2	2											1		1			2			
	ATTEVIDAE																											
2401	*Atteva aurea*							1	1																			
	TORTRICIDAE																											
3230	*Proteoteras aesculana*											1	1				1											
	PYRALIDAE																											
5079	*Udea rubigalis*	5	200+	3		80	28	220	127		4	10	11	19			2	6		73		22	1	3	1		12	8
5156	*Nomophila nearctica*	1	3	1		1			2			1		1				2				5						
5399	*Agriphila ruricolellus*			1																								
	PTEROPHORIDAE																											
6234	*Emmelina monodactyla*			2	1	4		6	1				1		19		9						1	3		2	7	2

NOTE: Dates refer to the date at dusk; Green colored cells are nights with a south wind, rose colored cells are nights with a north wind.
NOTE: Wind speeds are from the Appleton Airport (Weather Underground 2024); Temperatures were recorded at survey sites.
NOTE: Survey times are for the bait trail, light traps may have been run longer. Only sites/dates with long bait trails (1 gallon or more of bait) are included in this table.

Figure 2: Selected Voucher Specimens From 2024 Surveys in Outagamie And Shawano Counties.

1. ***Plutella porrectella*** **(2363) (Plutellidae)**
WI Outagamie County: Suburban Appleton: MV Trap, 3 October 2024.

2. ***Plutella porrectella*** **(2363) (Plutellidae)**
WI Outagamie County: Suburban Appleton: MV Trap, 3 October 2024.

3. ***Eumarozia malachitana*** **(2749) (Tortricidae)**
WI Outagamie County: Suburban Appleton: UV porch lights, 17 June 2024.

4. ***Pyrausta nicalis*** **(5032) (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch lights, 24 July 2024.

5. ***Uresiphita reversalis*** **(4992) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV sheet 10, wet-mesic prairie planting near hydric hardwood forest edge, 25 June 2024.

6. ***Palpita quadristigmalis*** **(5218) (Pyralidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

7. ***Platytes vobisne*** **(5394) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: upland prairie planting, 4 July 2024, 7:05am.

8. ***Platytes vobisne*** **(5394) (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch lights, 17 June 2024.

9. ***Caristanius decoloralis*** **(5742) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV sheet 10, wet-mesic prairie planting near hydric hardwood forest edge, 3 July 2024.

10. ***Anstenoptilia marmarodactyla*** **(6117) (Pterophoridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 16 November 2024.

11. ***Mellilla xanthometata*** **(6322) (Geometridae)**
WI Outagamie County: Suburban Appleton: UV Sheet, 3 August 2024.

12. ***Mellilla xanthometata*** **(6322) (Geometridae)**
WI Outagamie County: Suburban Appleton: UV Sheet, 27 June 2024.

13. ***Renia adspergillus*** **(8386) (Noctuidae)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 June 2024.

14. ***Renia adspergillus*** **(8386) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 12 July 2024.

15. ***Mycterophora inexplicata*** **(8413) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: UV Trap 18, oak-pine forest with Ericaceous understory, facing into sedge meadow with bog elements in the Pike's Peak Flowage, 12 July 2024.

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Figure 3: Selected Voucher Specimens From 2024 Surveys in Outagamie And Shawano Counties (Noctuidae).

1. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: MV Sheet 6, oak-pine uplands, just south of the Pike's Peak Flowage with sedge meadow with bog elements, 12 July 2024.

2. ***Anomis erosa*** **(8545)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

3. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

4. ***Hyperstrotia pervertens*** **(9037)**
WI Shawano County: Navarino Wildlife Area: MV Sheet 6, oak-pine uplands, just south of Pike's Peak Flowage with sedge meadow with bog elements, 7 July 2024.

5. ***Chrysanympha formosa*** **(8904) (Noctuidae)**
WI Outagamie County: Mosquito Hill Nature Center: UV trap 6, mesic hardwood forest edge facing into upland prairie planting, 3 July 2024.

6. ***Mocis latipes*** **(8743)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

7. ***Condica mobilis*** **(9696)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

8. ***Achatodes zeae*** **(9520)**
WI Outagamie County: Suburban Appleton: UV porch lights, 7 July 2024.

9. ***Autographa californica*** **(8914)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

10. ***Heliothis ascecias*** **(11072)**
WI Shawano County: Navarino Wildlife Area: MV Sheet 6, oak-pine uplands, just south of Pike's Peak Flowage with sedge meadow with bog elements, 27 July 2024.
[This is a new record for Shawano County and the farthest north I have found this species in eastern Wisconsin. My other WI specimens are from prairie remnants or prairie plantings in the Southern Transition Zone. I found it as far north as Mosquito Hill (19 miles to the southwest) in 2022. The Navarino record might be a stray from the south or a recent colonization; there is a prairie planting around the Navarino Nature Center, although not in the immediate vicinity of the collection site.]

11. ***Anorthodes tarda*** **(9650)**
WI Outagamie County: Suburban Appleton: UV porch lights, 13 September 2024.

12. ***Ctenoplusia oxygramma*** **(8889)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

13. ***Anagrapha falcifera*** **() [The right forewing shows aberration]**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

14. ***Eucoptocnemis fimbrialis*** **(10694)**
WI Outagamie County: Suburban Appleton: UV porch lights, 12 September 2024.
[This is the first record from Outagamie County. It is almost certainly a disperser to the suburbs from sandy grassland habitat. The closest known population is 26 miles to the northwest at the sandy oak-pine barrens east of Highway K in the Navarino Wildlife Area.]

15. ***Acronicta clarescens*** **(9246)**
WI Outagamie County: Suburban Appleton: landed on garage in close proximity to a UV sheet, 3 August 2024.

16. ***Elaphria chalcedonia*** **(9679) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

17. ***Anicla infecta*** **(10911)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

18. ***Peridroma saucia*** **(10915) [Atypical phenotype]**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

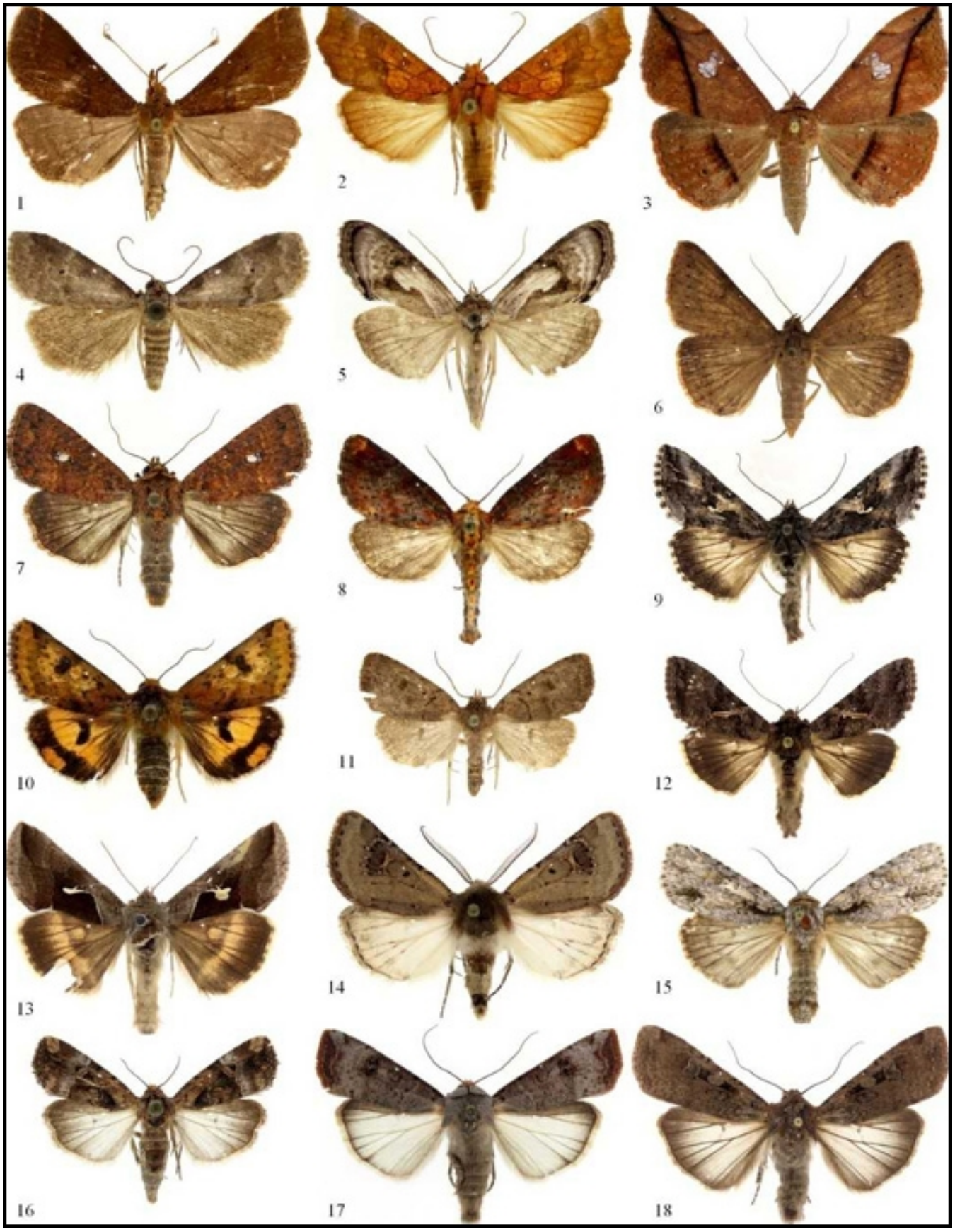
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Figure 4: Selected Voucher Specimens From Recent Surveys In Wheaton, Illinois.

1. ***Diedra cockerellana*** **(3630) (Tortricidae)**
IL DuPage County: Suburban Wheaton, MV Trap, 8 September 2024.

2. ***Pyrausta tyralis*** **(5069) (Pyralidae)**
IL DuPage County: Herrick Lake Preserve: MV Trap 9, hardwood forest south of Crossroads Rest Area, 30 August 2024.

3. ***Achyra rantalis*** **(4975) (Pyralidae)**
IL DuPage County: Herrick Lake Preserve: UV Trap 10, hardwood forest south of Crossroads Rest Area, 30 August 2024.

4. ***Uresiphita reversalis*** **(4992) (Pyralidae)**
IL DuPage County: Herrick Lake Preserve: MV Trap 9, hardwood forest south of Crossroads Rest Area, 30 August 2024.

5. ***Hymenia perspectalis*** **(5169) (Pyralidae)**
IL DuPage County: Suburban Wheaton, MV Trap, 4 September 2024.

6. ***Sericoplaga externalis*** **(4991) (Pyralidae) [Status Unknown, Recorded During One Season]**
IL DuPage County: Suburban Wheaton, MV Trap, 17 August 2022.

7. ***Macaria aequiferaria*** **(6335) (Geometridae)**
IL DuPage County: Suburban Wheaton, MV Trap, 15 August 2022.

8. ***Macaria aequiferaria*** **(6335) (Geometridae)**
IL DuPage County: Suburban Wheaton, MV Trap, 16 August 2022.

9. ***Iridopsis defectaria*** **(6586) (Geometridae)**
IL DuPage County: Suburban Wheaton, MV Trap, 14 August 2022.

10. ***Cyclophora nanaria*** **(7140) (Geometridae)**
IL DuPage County: Herrick Lake Preserve: UV Trap 9, hardwood forest south of Crossroads Rest Area, 31 August 2024.

11. ***Cyclophora nanaria*** **(7140) (Geometridae)**
IL DuPage County: Herrick Lake Preserve: MV Trap 9, hardwood forest south of Crossroads Rest Area, 30 August 2024.

12. ***Cyclophora nanaria*** **(7140) (Geometridae)**
IL DuPage County: Herrick Lake Preserve: MV Trap 9, hardwood forest south of Crossroads Rest Area, 30 August 2024.

13. ***Glenoides texanaria*** **(6443) (Geometridae)**
IL DuPage County: Danada Preserve: UV Trap 2, mesic field/prairie planting/sumac covered hill, 3 September 2024.

14. ***Glenoides texanaria*** **(6443) (Geometridae)**
IL DuPage County: Herrick Lake Preserve: UV Trap 12, mesic field/prairie planting, 5 September 2024.

15. ***Coryphista meadii*** **(7290)**
IL DuPage County: Suburban Wheaton, MV Trap, 13 August 2022.


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Figure 5: Selected Voucher Specimens From Recent Surveys In Wheaton, Illinois (Noctuidae)

1. *Tetanolita* sp. near *palligera* (8367.1)
IL DuPage County: Suburban Wheaton, MV Trap, 29 August 2024.

2. *Tetanolita mynesalis* (8366)
IL DuPage County: Danada Preserve: UV Trap 2, mesic field/prairie planting/sumac covered hill, 30 August 2024.

3. *Palthis asopialis* (8398)
IL DuPage County: Herrick Lake Preserve: UV Trap 13, hardwood forest south of Crossroads Rest Area, 8 September 2024.

4. *Zanclognatha cruralis* complex sp. B (8351b)
IL DuPage County: Herrick Lake Preserve: UV Trap 13, hardwood forest south of Crossroads Rest Area, 8 September 2024.

5. *Zanclognatha pedipilalis* complex sp. B (8348b)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 5 September 2024.

6. *Anomis illita* (8551) [A Tropical Ephemeral Migrant]
IL DuPage County: Suburban Wheaton, MV Trap, buckthorn dominated wooded strip along Butterfield Road, 1 October 2023.

7. *Renia adspergillus* (8386)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 4 September 2024.

8. *Renia adspergillus* (8386)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 2 September 2024.

9. *Tripudia rectangula* (9003.1)
IL DuPage County: Suburban Wheaton, MV Trap, 2 September 2024.

10. *Paectes abrostoloides* (8962)
IL DuPage County: Herrick Lake Preserve: MV Trap 9, hardwood forest south of Crossroads Rest Area, 30 August 2024.

11. *Plagiomimicus spumosum* (9748) [Status Unknown]
IL DuPage County: Suburban Wheaton, MV Trap, 13 August 2022.

12. *Schinia bifascia* (11142) [Status Unknown]
IL DuPage County: Danada Preserve: MV Trap 3, mesic field/prairie planting, 22 September 2023.

13. *Callopistria floridensis* (9630)
IL DuPage County: Suburban Wheaton, Bait Trail, 30 August 2024.

14. *Callopistria floridensis* (9630)
IL DuPage County: Suburban Wheaton, MV Trap, 15 August 2022.

15. *Anicla infecta* (10911)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 30 August 2024.


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Figure 6: Probable Recent Colonization Of A Southern Species Expanding Its Range North Into Outagamie And Shawano Counties (Noctuidae).

1. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 7 July 2024.

2. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 7 July 2024.

3. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 27 July 2024.

4. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 27 July 2024.

5. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 27 July 2024.

6. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 27 July 2024.

7. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 27 July 2024.

8. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 28 July 2024.

9. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 28 July 2024.

10. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 28 July 2024.

11. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 28 July 2024.

12. ***Renia discoloralis*** **(8381)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 28 July 2024.

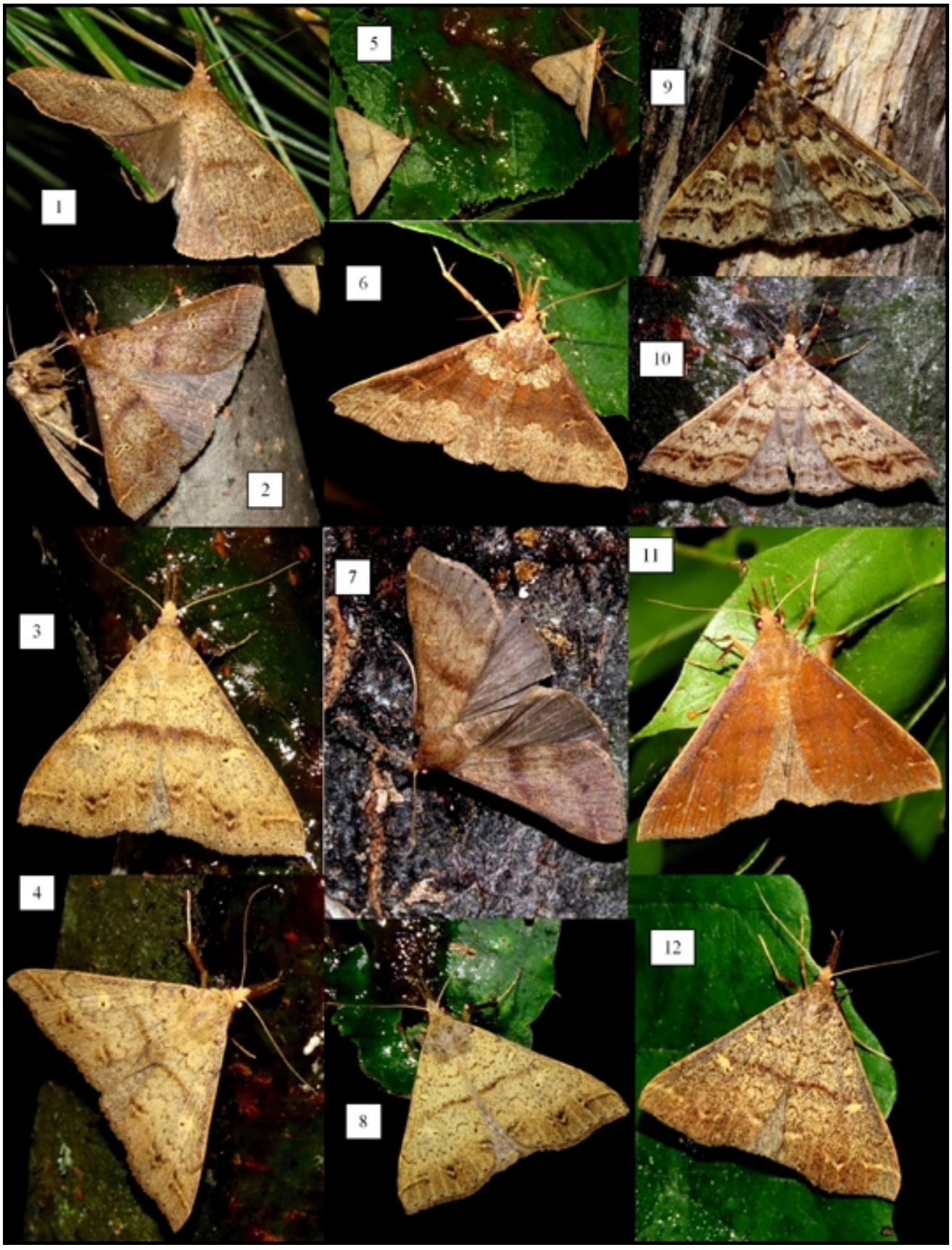
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Figure 7: 1-4: Probable Recent Colonization Of A Southern Species Expanding Its Range North Into Outagamie And Shawano Counties; 5-13: Southern Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Renia adspergillis*** **(8386)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 25 June 2024.

2. ***Renia adspergillis*** **(8386)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 3 July 2024.

3. ***Renia adspergillis*** **(8386)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 12 July 2024.

4. ***Renia adspergillis*** **(8386)**
WI Shawano County: Navarino Wildlife Area: bait trail 3, 12 July 2024.

5. ***Hypena minualis*** **(8457)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

6. ***Hypena minualis*** **(8457)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

7. ***Hypena minualis*** **(8457)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

8. ***Hypena minualis*** **(8457)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

9. ***Hypena minualis*** **(8457)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

10. ***Hypena scabra*** **[X2] (8465)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 11 October 2024.

11. ***Hypena humuli*** **(8461)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

12. ***Hypena humuli*** **(8461)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 22 October 2024.

13. ***Hypena humuli*** **(8461)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

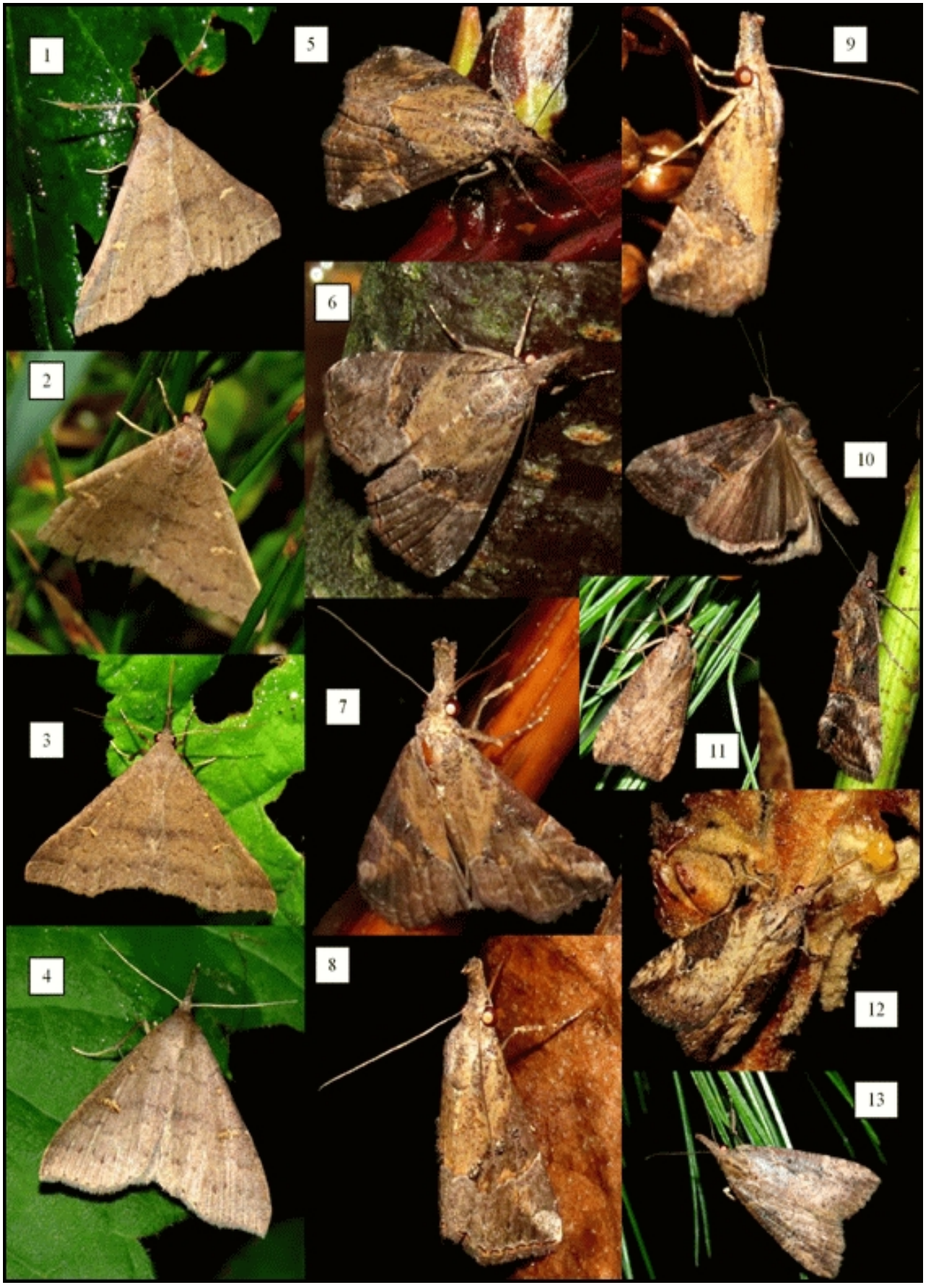
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Figure 8: Southern Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae & Pyralidae).

1. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

2. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

3. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

4. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

5. ***Udea rubigalis*** **(5079)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

6. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

7. ***Hypena humuli*** **(8461)**
WI Outagamie County: Suburban Appleton: UV porch light, 10 October 2024.

8. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

9. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

10. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

11. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

12. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

13. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

14. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

15. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

16. ***Hypena humuli*** **(8461)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

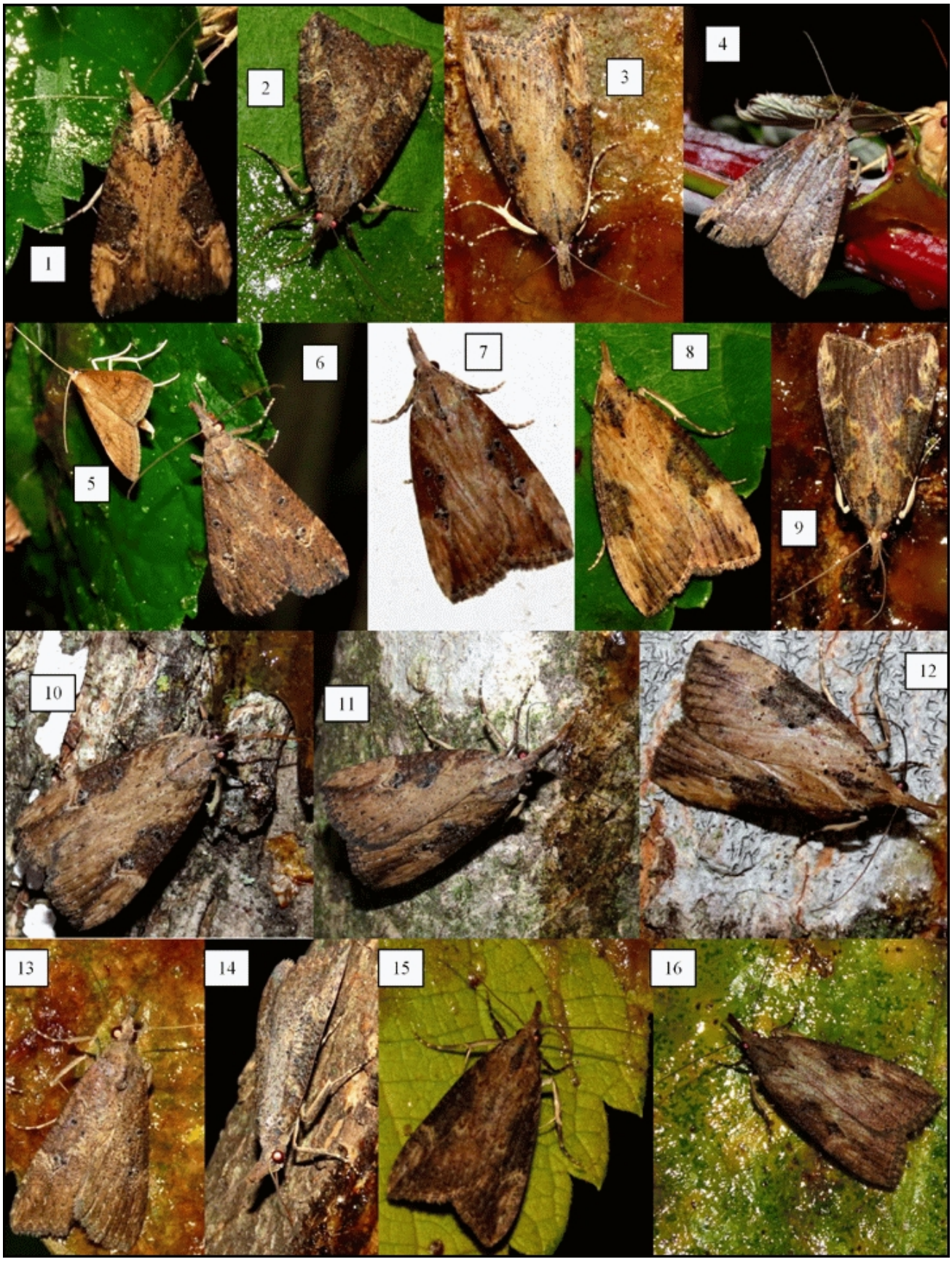
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Figure 9: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 22 October 2024.

2. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

3. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

4. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

5. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

6. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

7. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

8. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

9. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

10. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

11. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

12. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

13. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

14. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

15. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

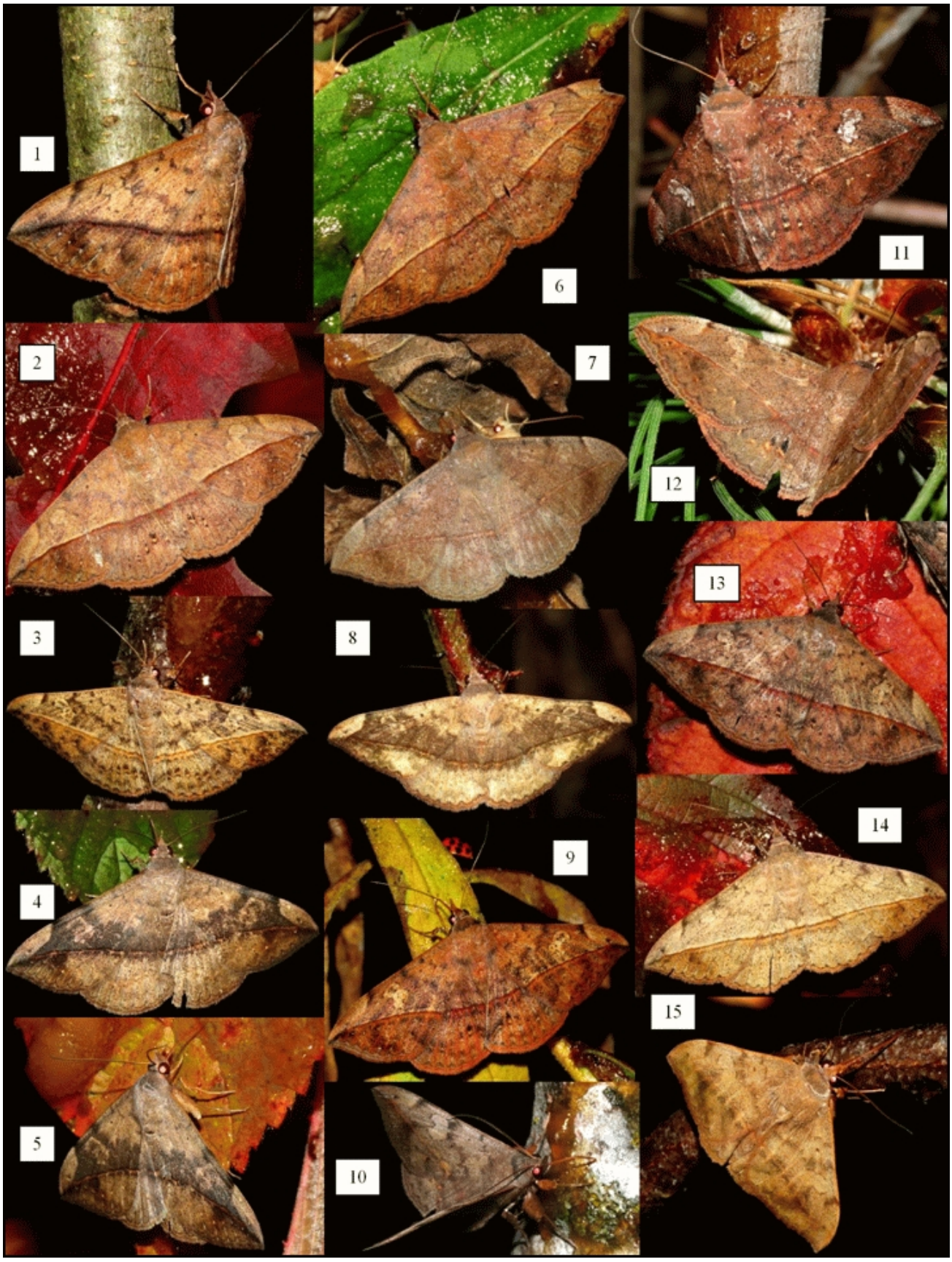
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Figure 10: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

2. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

3. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

4. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

5. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

6. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

7. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

8. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

9. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

10. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

11. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

12. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

13. ***Anticarsia gemmatalis*** **(8574)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

14. ***Anomis erosa*** **(8545)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

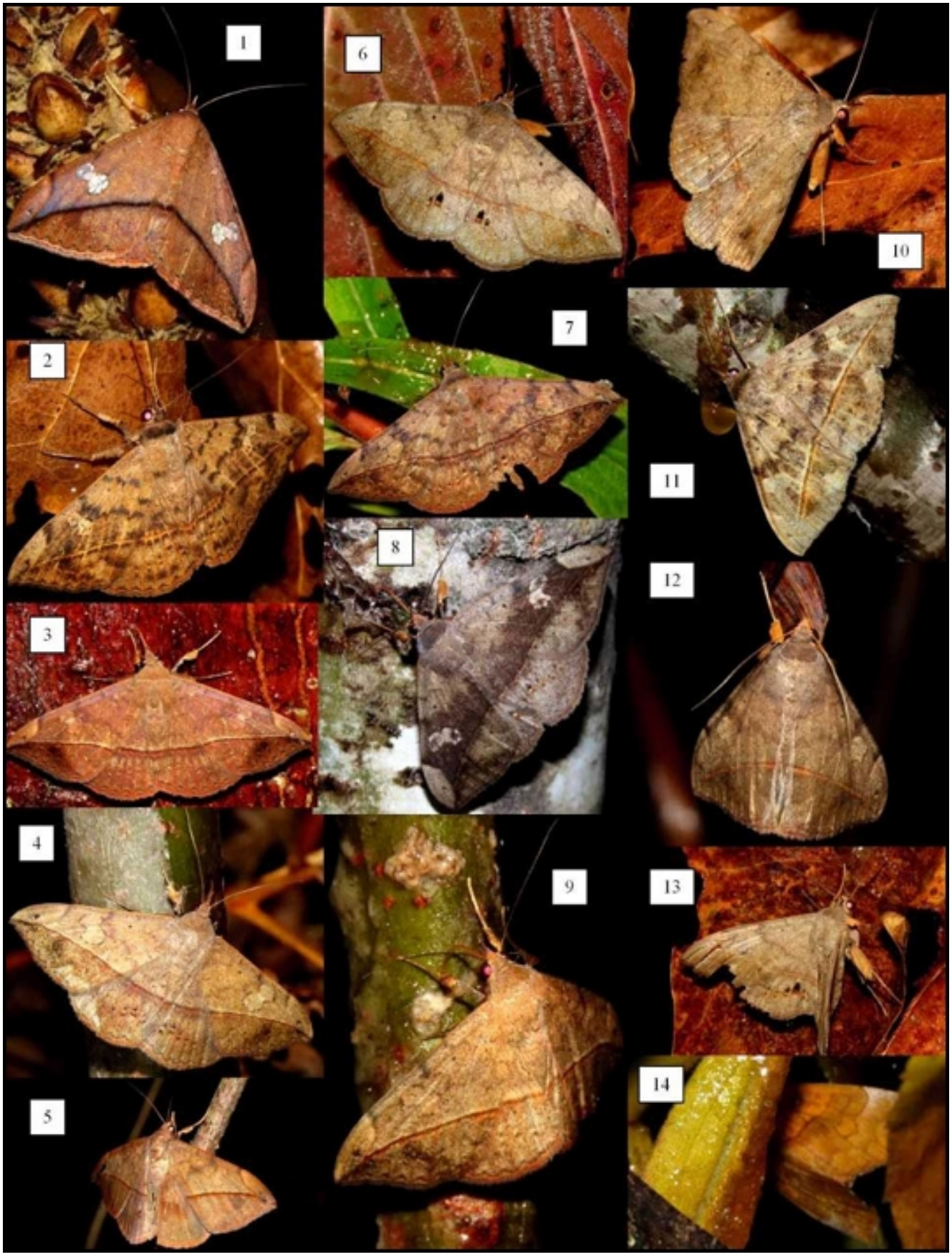
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Figure 11: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Mocis latipes*** **(8743)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

2. ***Mocis latipes*** **(8743)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

3. ***Mocis latipes*** **(8743)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

4. ***Condica mobilis*** **(9693)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

5. ***Condica sutor*** **(9699)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 5 October 2024.

6. ***Condica sutor*** **(9699)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

7. ***Condica sutor*** **(9699)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

8. ***Condica sutor*** **(9699)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

9. ***Condica sutor*** **(9699)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

10. ***Condica sutor*** **(9699)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

11. ***Hyperstrotia pervertens*** **(9037)**
WI Shawano County: Navarino Wildlife Area: MV Sheet 6, oak-pine uplands, just south of Pike's Peak Flowage with sedge meadow with bog elements, 7 July 2024.

12. ***Acronicta clarescens*** **(9246)**
WI Outagamie County: Suburban Appleton: landed on garage in close proximity to a UV sheet, 3 August 2024.

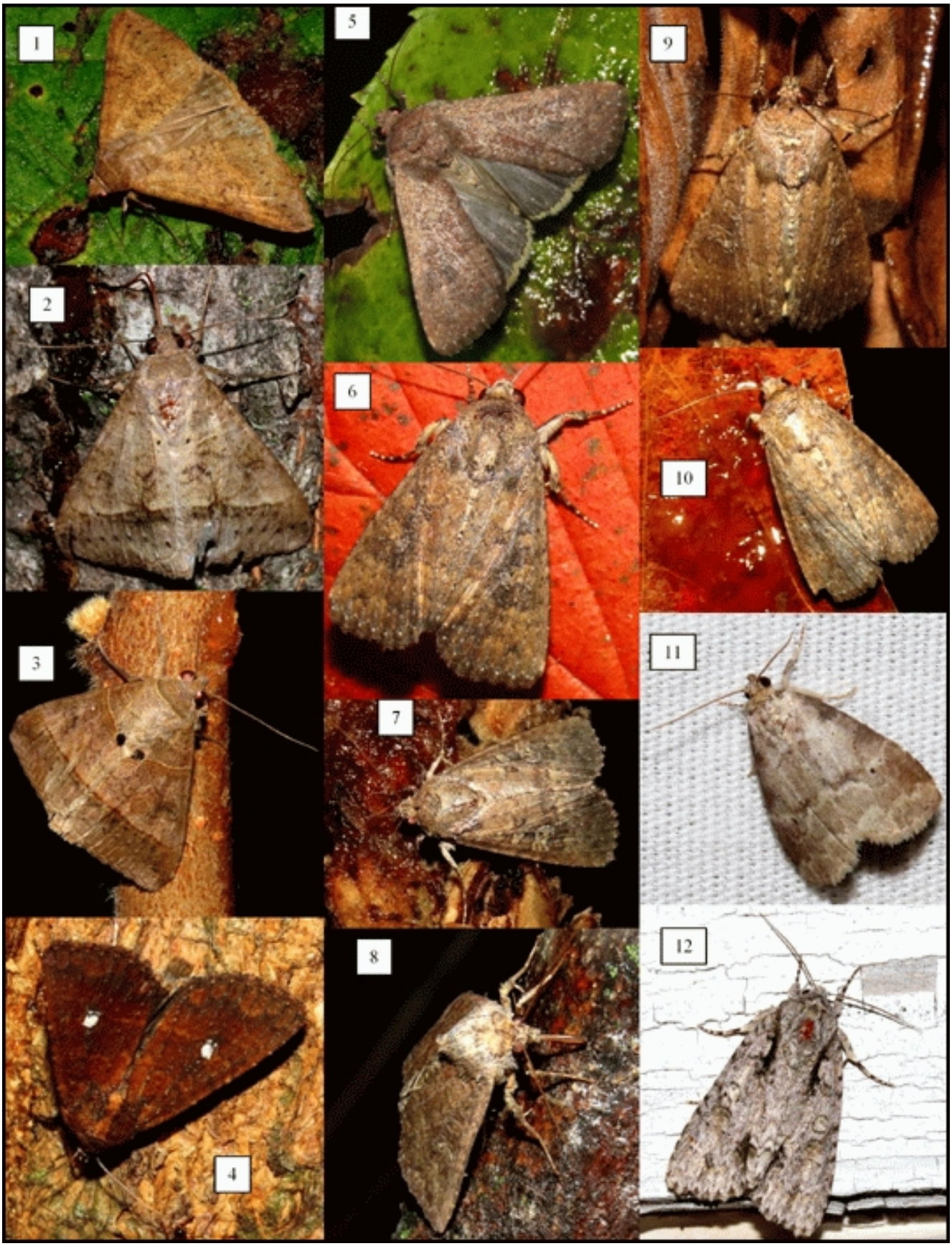
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Figure 12: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 6:54pm.

2. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 6:56pm.

3. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 7:06pm.

4. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 7:01pm.

5. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 20 October 2024.

6. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 19 October 2024, 7:04pm.

7. ***Megalographa biloba*** **(8907)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

8. ***Megalographa biloba*** **(8907)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 22 October 2024.

9. ***Megalographa biloba*** **(8907)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

10. ***Megalographa biloba*** **(8907)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

11. ***Megalographa biloba*** **(8907)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

12. ***Megalographa biloba*** **(8907)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

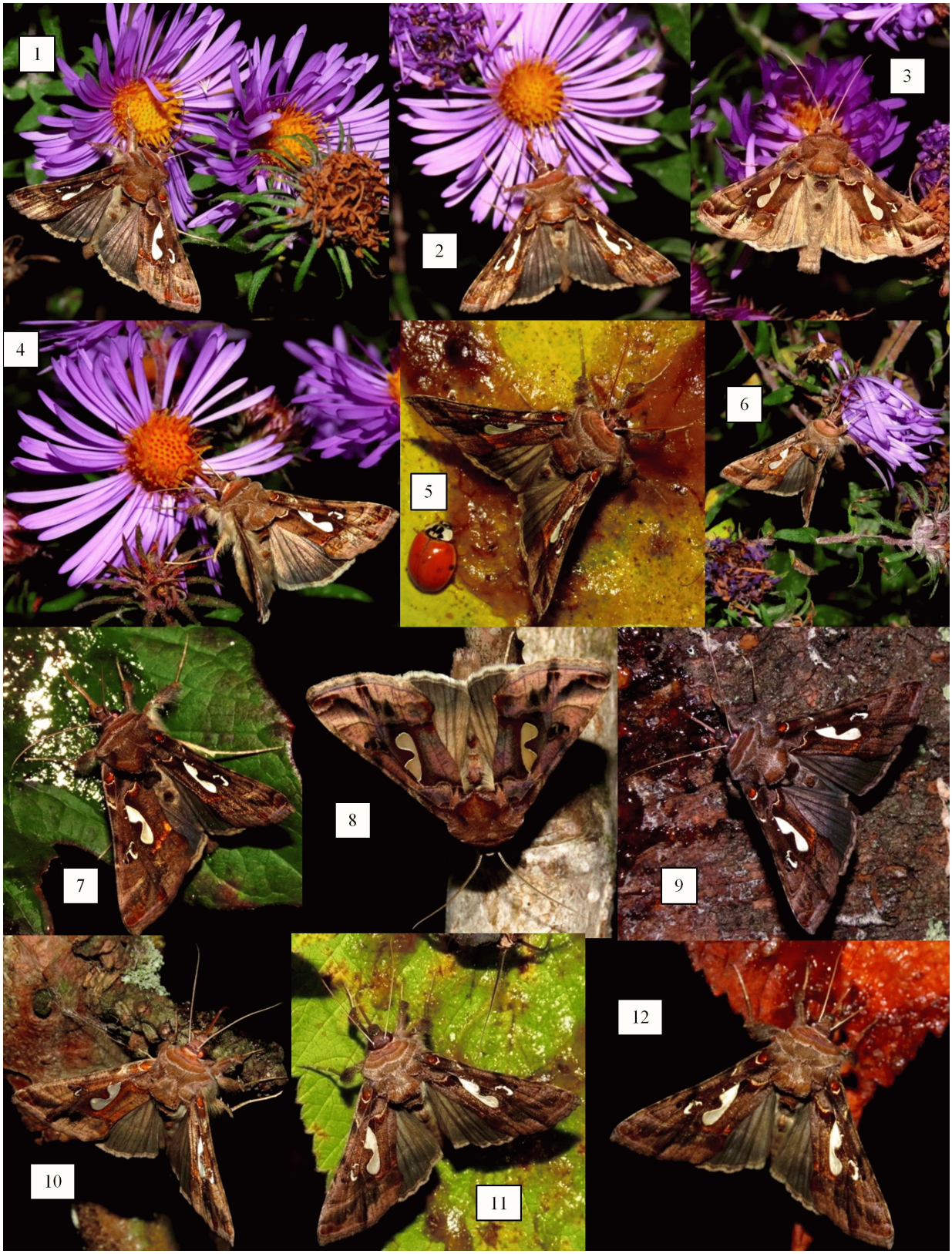
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Figure 13: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. *Megalographa biloba* (8907)
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 9 November 2024.

2. *Megalographa biloba* (8907)
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

3. *Megalographa biloba* (8907)
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 September 2024.

4. *Megalographa biloba* (8907)
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 10 October 2024.

5. *Megalographa biloba* (8907)
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

6. *Megalographa biloba* (8907)
WI Outagamie County: Suburban Appleton: UV porch light, 4 July 2024.

7. *Rachiplusia ou* (8895)
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 6:59pm.

8. *Autographa californica* (8914)
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

9. *Autographa californica* (8914)
WI Outagamie County: Suburban Appleton: UV porch light, 9 October 2024.

10. *Ctenoplusia oxygramma* (8889)
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

11. *Ctenoplusia oxygramma* (8889)
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

12. *Trichoplusia ni* (8887)
WI Outagamie County: Suburban Appleton: nectaring on *Lantana*, 18 July 2024, 9:25pm.

13. *Trichoplusia ni* (8887)
WI Outagamie County: Suburban Appleton: nectaring on *Lantana*, 19 August 2024, 9:33pm.

14. *Trichoplusia ni* (8887)
WI Outagamie County: Suburban Appleton: UV porch light, 7 October 2024.

15. *Trichoplusia ni* (8887)
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 September 2024.

16. *Pseudoplusia includens* (8890)
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 6:54pm.

17. *Pseudoplusia includens* (8890)
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 September 2024.

18. *Garella nilotica* (8974)
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 25 June 2024.


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Figure 14: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Noctuidae).

1. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 7:07pm.

2. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 September 2024.

3. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 28 September 2024.

4. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 5 October 2024.

5. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 11 October 2024.

6. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 11 October 2024.

7. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

8. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

9. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

10. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

11. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

12. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Suburban Appleton: UV porch light, 18 July 2024.

13. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

14. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Prairie Hill Park: 19 August 2024.

15. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

16. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

17. ***Magusa divaricata*** **(9637)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 11 October 2024.

18. ***Magusa divaricata*** **(9637)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

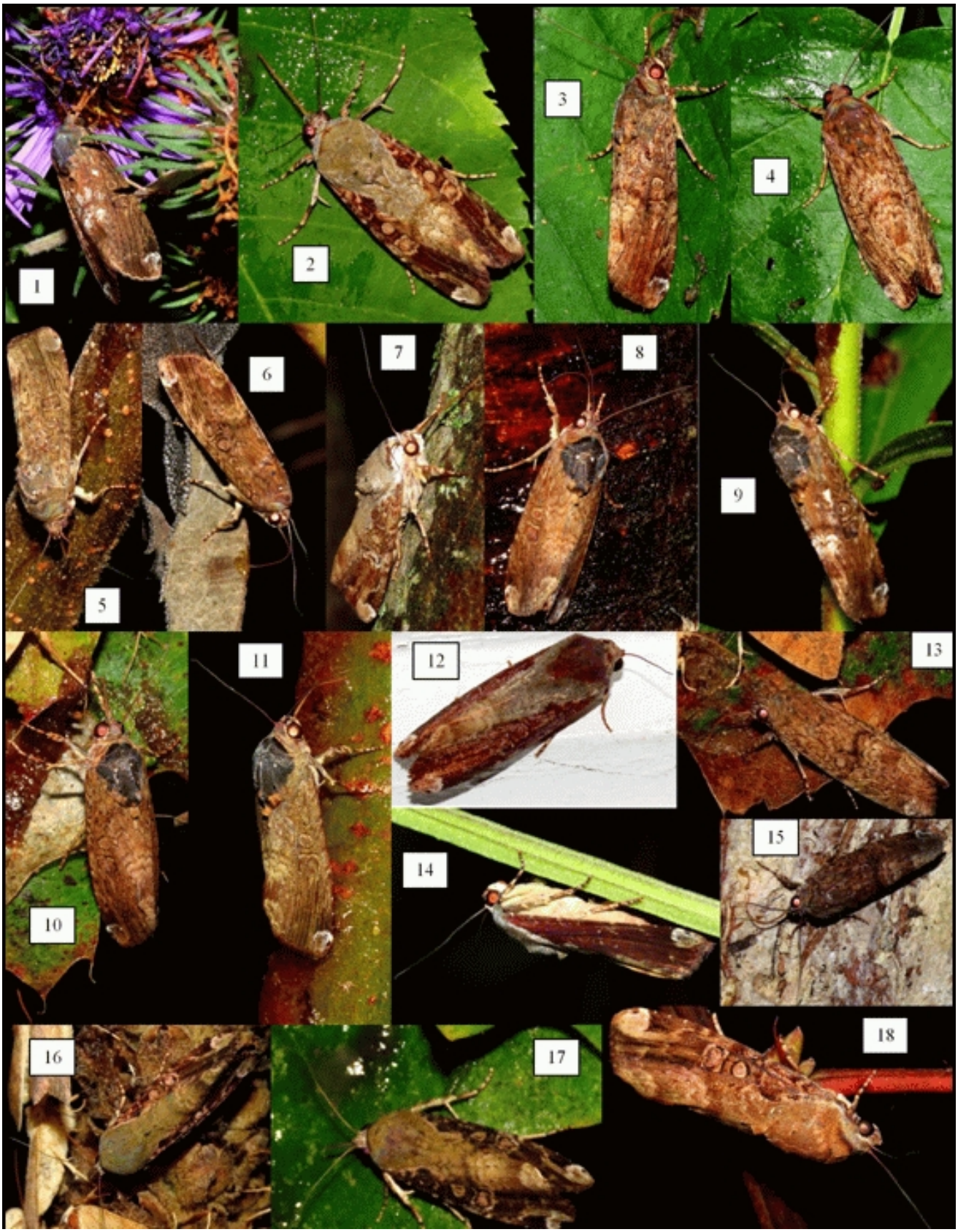
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Figure 15: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Hesperiidae, Nymphalidae, & Noctuidae).

1. ***Hylephila phyleus*** **(4013)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 27 September 2024.

2. ***Hylephila phyleus*** **(4013)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 11 October 2024.

3. ***Hylephila phyleus*** **(4013)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 11 October 2024.

4. ***Hylephila phyleus*** **(4013)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 11 October 2024.

5. ***Hylephila phyleus*** **(4013)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 11 October 2024.

6. ***Hylephila phyleus*** **(4013)**
WI Dodge County: Lomira: Highway 41 rest area number 63, nectaring on butterfly bush, 29 August 2024.

7. ***Junonia coenia*** **(4440)**
WI Outagamie County: Prairie Hill Park: on dried bee balm seed head at night, 16 September 2024.

8. ***Junonia coenia*** **(4440)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Solidago rigida* (stiff goldenrod), 11 October 2024.

9. ***Junonia coenia*** **(4440)**
WI Outagamie County: Mosquito Hill Nature Center: start of prairie trail just past building, 21 September 2024.

10. ***Vanessa cardui*** **(4435)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 11 October 2024.

11. ***Anicla infecta*** **(10911)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

12. ***Elaphria grata*** **(9684)**
WI Outagamie County: Prairie Hill Park: bait trail, 17 September 2024.


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Figure 16: Southern Ephemeral Migrants, Strays, Or Accidentals Collected In Outagamie And Shawano Counties (WI) In 2024 (Pterophoridae, Plutellidae, Tortricidae, & Pyralidae).

1. ***Anstenoptilia marmarodactyla*** **(6117) (Pterophoridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 16 November 2024.

2. ***Plutella porrectella*** **(2363) (Plutellidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 20 October 2024.

3. ***Plutella porrectella*** **(2363) (Plutellidae)**
WI Outagamie County: Suburban Appleton: UV sheet, 21 August 2024.

4. ***Eumarozia malachitana*** **(2749) (Tortricidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 17 June 2024.

5. ***Eumarozia malachitana*** **(2749) (Tortricidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 25 August 2024.

6. ***Rhyacionia buoliana*** **(2867) (Tortricidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 25 June 2024.

7. ***Hahncappsia*** **species (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 17 August 2024.

8. ***Dicymolomia julianalis*** **(4889) (Pyralidae)**
WI Outagamie County: Prairie Hill Park: on milkweed leaf, 8 July 2024.

9. ***Dicymolomia julianalis*** **(4889) (Pyralidae)**
WI Outagamie County: Prairie Hill Park: nectaring on *Solidago canadensis* (Canada goldenrod), 22 August 2024.

10. ***Dicymolomia julianalis*** **(4889) (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 13 September 2024.

11. ***Pyrausta nicalis*** **(5032) (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 24 July 2024.

12. ***Platytes vobisne*** **(5394) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 3 July 2024.

13. ***Uresiphita reversalis*** **(4992) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 25 June 2024.

14. ***Herpetogramma phaeopteralis*** **(5274) (Pyralidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

15. ***Platytes vobisne*** **(5394) (Pyralidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 17 June 2024.

16. ***Caristanius decoloralis*** **(5742) (Pyralidae)**
WI Outagamie County: Mosquito Hill Nature Center: MV Sheet 10, prairie planting near floodplain forest edge, 3 July 2024.

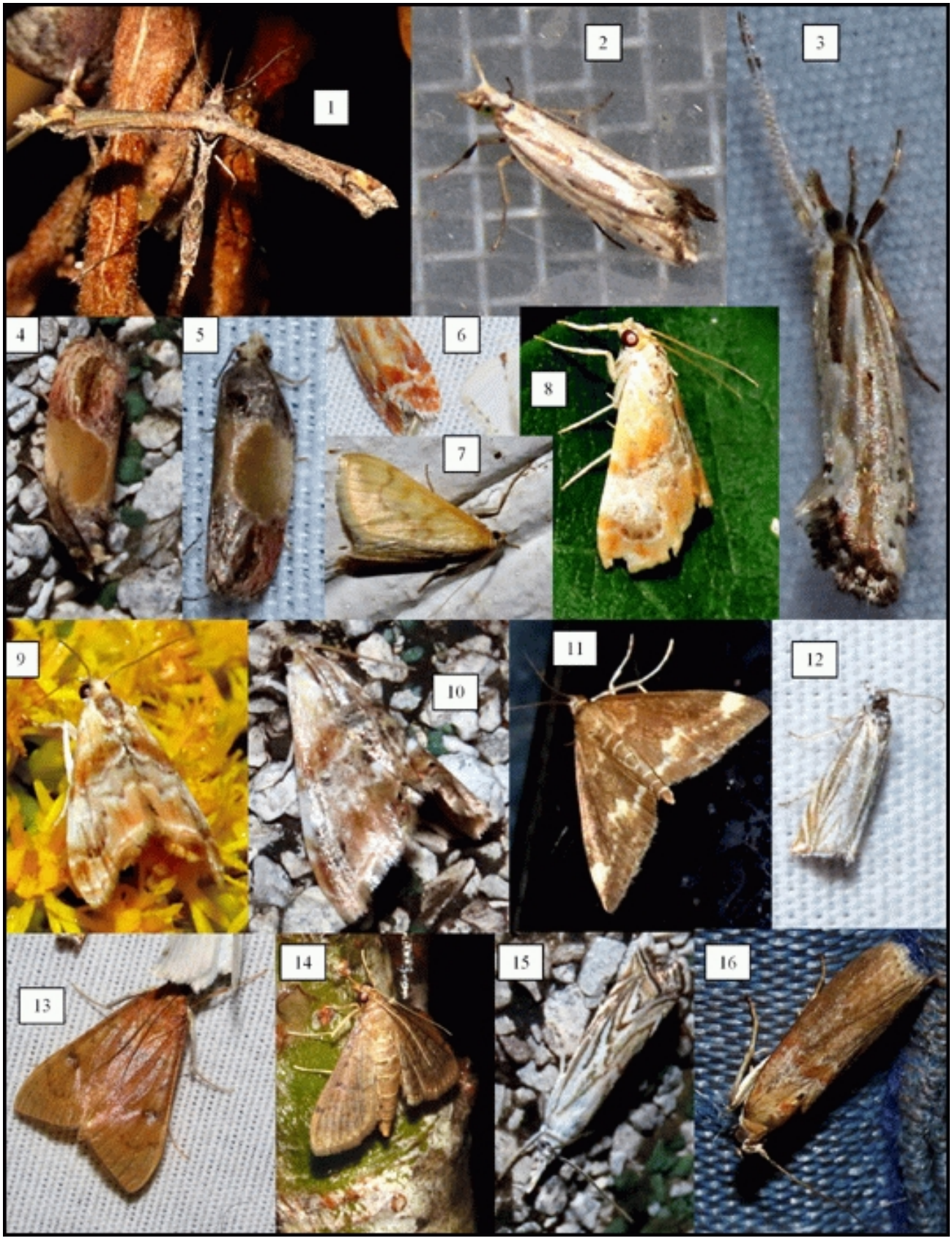
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Figure 17: Southern Ephemeral Migrants Collected In Outagamie And Shawano Counties (WI) In 2024 (Pyralidae).

1. ***Spoladea recurvalis* (5170)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

2. ***Spoladea recurvalis* (5170) &**
3. ***Udea rubigalis* (5079) [An annual migrant in the same photo as Number 2]**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

4. ***Spoladea recurvalis* (5170)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

5. ***Spoladea recurvalis* (5170)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail on hill, 19 October 2024.

6. ***Spoladea recurvalis* (5170)**
WI Outagamie County: Suburban Appleton: UV porch light, 28 October 2024.

7. ***Hymenia perspectalis* (5169)**
WI Outagamie County: Suburban Appleton: UV porch light, 5 October 2024.

8. ***Hymenia perspectalis* (5169)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 28 September 2024.

9. ***Hymenia perspectalis* (5169)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

10. ***Patania silicalis* (5243) [ventral, identified after specimen collected]**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 28 September 2024.
{Seemingly undeterred by a *Polistes fuscatus* (Hymenoptera: Vespidae) feeding at the bait right next to it.}

11. ***Pilocrocis ramentalis* (5281)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

12. ***Herpetogramma phaeopteralis* (5274)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

13. ***Herpetogramma bipunctalis* (5272)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

14. ***Palpita quadristigmalis* (5218)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

15. ***Hymenia perspectalis* (5169)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 29 October 2024.

16. ***Palpita quadristigmalis* (5218)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

17. ***Palpita quadristigmalis* (5218)**
WI Outagamie County: Suburban Appleton: UV porch light, 20 October 2024.

18. ***Patania silicalis* (5243)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 30 September 2024.

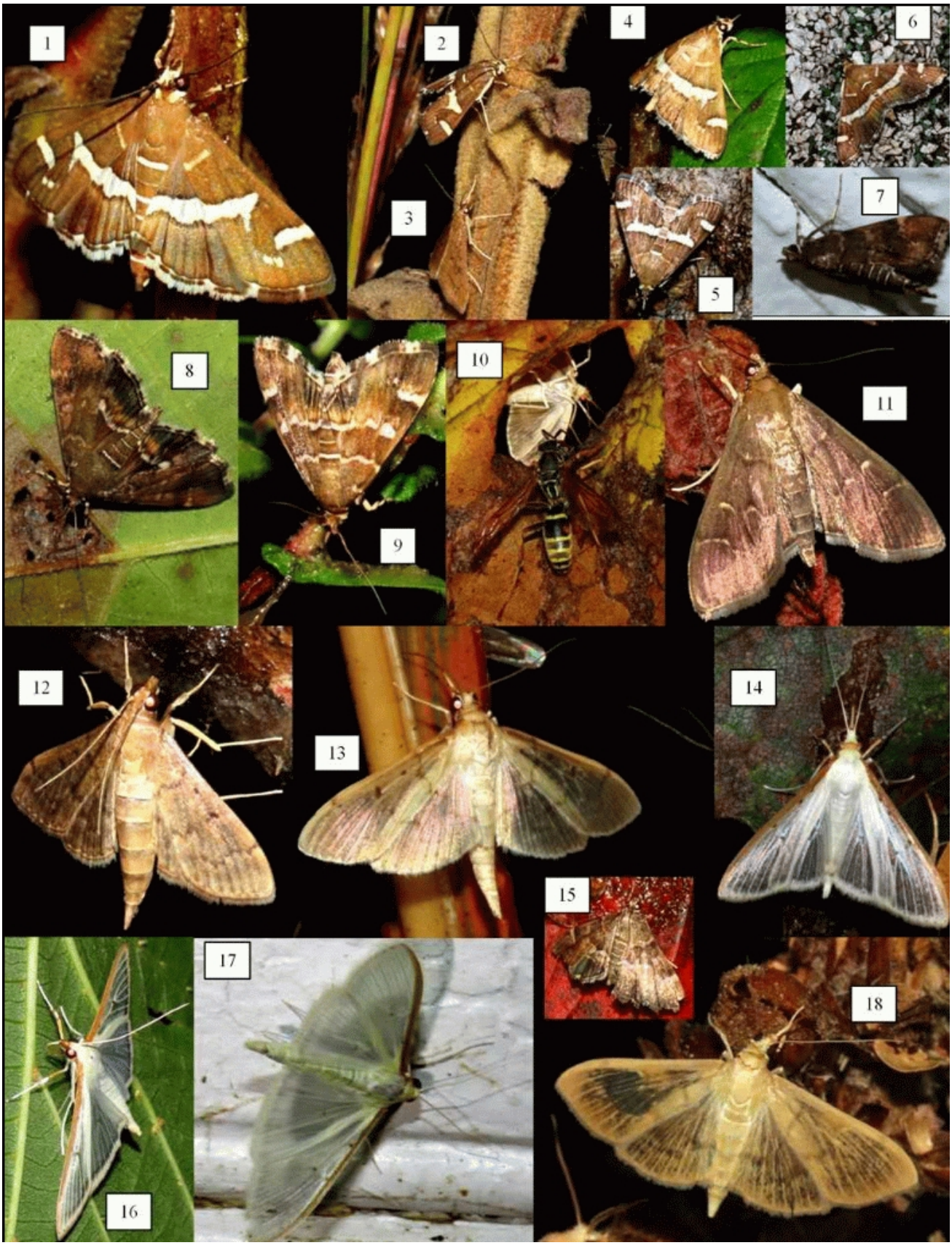
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Figure 18: 1-2: Potential Recent Colonization; 3: Southern Ephemeral Migrant; 4: Northern Stray; 5-19: Annual Migrants Found In Outagamie And Shawano Counties (WI) In 2024.

1. ***Mellilla xanthometata*** **(6322) (Geometridae)**
WI Outagamie County: Suburban Appleton: UV Sheet, 3 August 2024.

2. ***Mellilla xanthometata*** **(6322) (Geometridae)**
WI Outagamie County: Suburban Appleton: UV Sheet, 27 June 2024.

3. ***Cyclophora packardi*** **(7136) (Geometridae)**
WI Outagamie County: Prairie Hill Park: pavilion lights, 20 August 2024.

4. ***Eupithecia mutata*** **(7575)**
WI Outagamie County: Suburban Appleton: UV Sheet, 10 July 2024.

5. ***Atteva aurea*** **(2401) (Attevidae)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 11 October 2024.

6. ***Plutella xylostella*** **(2366) (Plutellidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 16 November 2024.

7. ***Emmelina monodactyla*** **(6234) (Pterophoridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 17 November 2024.

8. ***Nomophila nearctica*** **(5156) (Pyralidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 9 November 2024.

9. ***Udea rubigalis*** **(5079) (Pyralidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

10. ***Nomophila nearctica*** **(5156) (Pyralidae)**
WI Outagamie County: Suburban Appleton: killed by spider, 13 September 2024.

11. ***Nomophila nearctica*** **(5156) (Pyralidae)**
WI Outagamie County: Prairie Hill Park: nectaring on *Helianthis*, 16 September 2024.

12. ***Emmelina monodactyla*** **(6234) (Pterophoridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

13. ***Orthonama obstipata*** **(7414) (Geometridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

14. ***Pleuroprucha insulsaria*** **(9637) (Geometridae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

15. ***Orthonama centrostrigaria*** **(7416) (Geometridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

16. ***Orthonama obstipata*** **(7414) (Geometridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 16 November 2024.

17. ***Eupithecia miserulata*** **(7474) (Geometridae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

18. ***Lacinipolia renigera*** **(10397) (Noctuidae)**
WI Outagamie County: Suburban Appleton: UV porch light, 25 October 2024.

19. ***Prochoerodes lineola*** **species 1 (6982) (Geometridae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

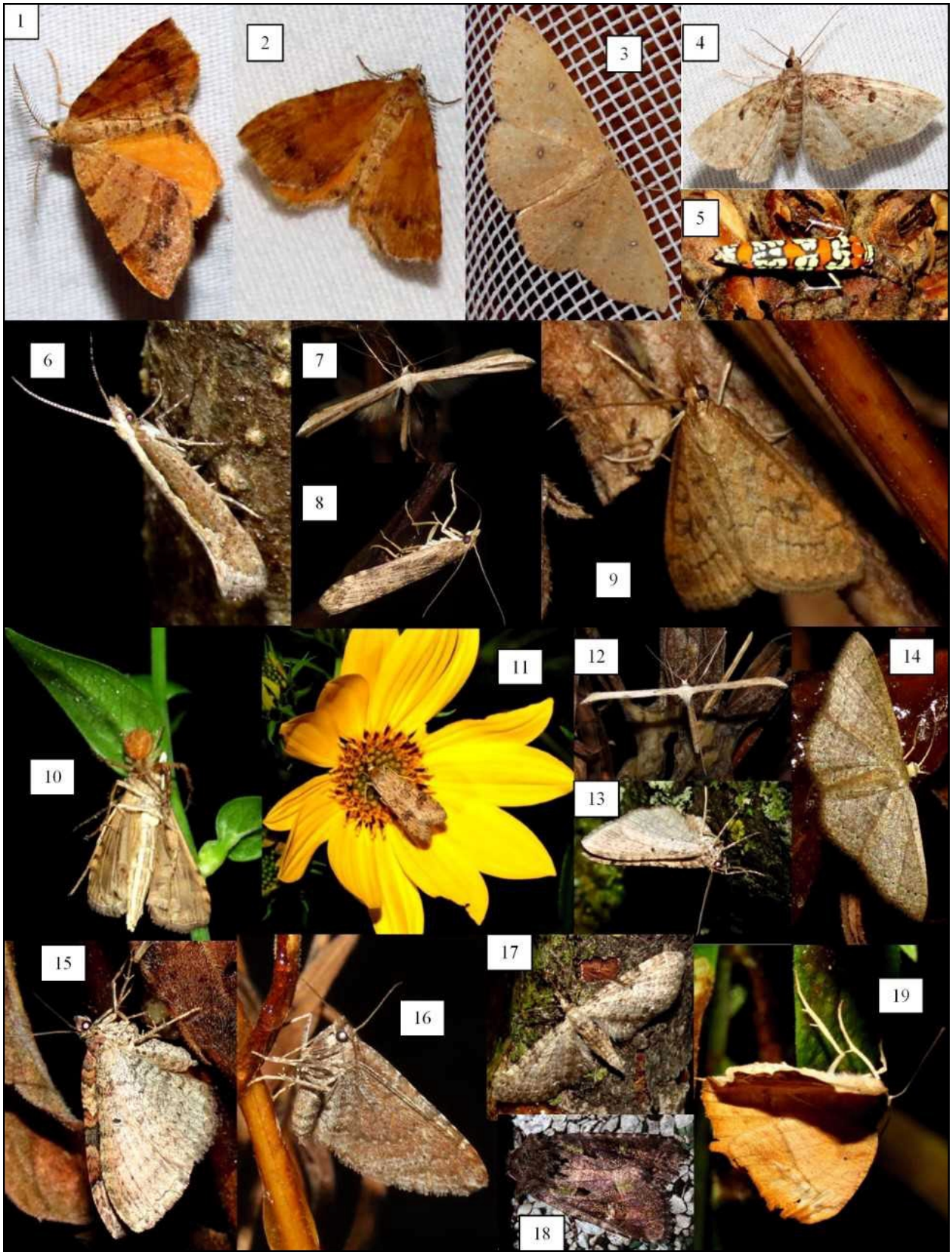
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Figure 19: Annual Migrants Found In Outagamie And Shawano Counties (WI) In 2024.

1. ***Prochoerodes lineola*** **species 1 (6982) (Geometridae)**
WI Outagamie County: Prairie Hill Park: bait trail, 16 September 2024.

2. ***Hypena scabra*** **(8465) (Noctuidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

3. ***Zale lunata*** **(8689) (Noctuidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

4. ***Zale lunata*** **(8689) (Noctuidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

5. ***Helicoverpa zea*** **(11068) (Noctuidae)**
WI Outagamie County: Mosquito Hill Nature Center: Garden in parking lot, nectaring on *Aster novae-angliae* (new england aster), 20 October 2024, 7:14pm.

6. ***Helicoverpa zea*** **(11068) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 28 October 2024.

7. ***Autographa precationis*** **(8908) (Noctuidae)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 27 September 2024.

8. ***Anagrapha falcifera*** **(8924) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

9. ***Ogdoconta cinereola*** **(9720) (Noctuidae)**
WI Outagamie County: Mosquito Hill Nature Center: bait trail, prairie planting/floodplain forest edge, 26 September 2024.

10. ***Spodoptera frugiperda*** **(9666) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

11. ***Spodoptera frugiperda*** **(9666) (Noctuidae) &**
12. ***Acleris bowmanana*** **(3553) (Tortricidae) [A resident that overwinters as an adult and flies with fall migrants]**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

13. ***Spodoptera ornithogalli*** **(9669) (Noctuidae)**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 4 November 2024.

14. ***Peridroma saucia*** **(10915) (Noctuidae) [A Typical Form]**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

15. ***Peridroma saucia*** **(10915) (Noctuidae) [A Typical Form]**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

16. ***Peridroma saucia*** **(10915) (Noctuidae) [A Phenotype I Have Seen Only Once]**
WI Shawano County: Navarino Wildlife Area: bait trail 1, 21 October 2024.

17. ***Agrotis ipsilon*** **(10663) (Noctuidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

18. ***Galgula partita*** **(9688) (Noctuidae)**
WI Outagamie County: Fallen Timbers Environmental Center: Aspen Circle/Goldenrod Lane, bait trail 1, hydric hardwood forest/mesic grassland, 19 November 2024.

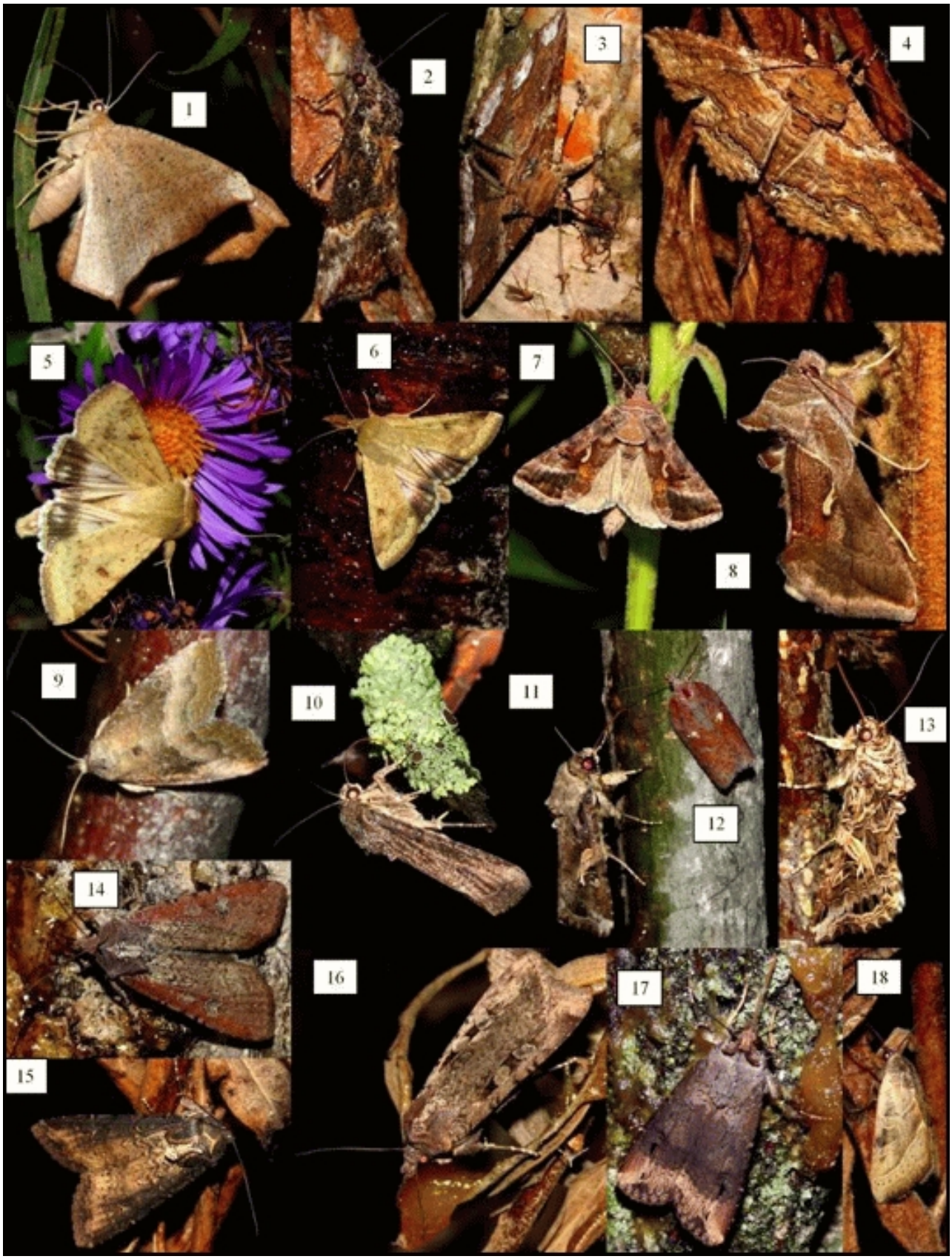
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Figure 20: Southern Lepidoptera Species Found In Wheaton, Illinois, In 2024

1. *Glenoides texanaria* (6443) (Geometridae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 30 August 2024.

2. *Hymenia perspectalis* (5169) (Pyralidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

3. *Renia adspergillus* (8386) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

4. *Renia adspergillus* (8386) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

5. *Tetanolita* sp. near *palligera* (8367.1) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 4 September 2024.

6. *Tetanolita* sp. near *palligera* (8367.1) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: nectaring on *Ageratina altissima*, hardwood forest south of Crossroads Rest Area, 4 September 2024.

7. *Tetanolita* sp. near *palligera* (8367.1) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: killed by crab spider on *Cirsium vulgare*, Crossroads Rest Area, 4 September 2024.

8. *Mocis latipes* (8743) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

9. *Marimatha nigrofimbria* (9044) (Noctuidae)
IL DuPage County: Suburban Wheaton, on Lilac leaf, 29 August 2024, 11:14pm.

10. *Elaphria chalcedonia* (9679) (Noctuidae)
IL DuPage County: Suburban Wheaton, UV light on porch, 29 August 2024.

11. *Callopistria floridensis* (9630) (Noctuidae)
IL DuPage County: Suburban Wheaton, on Lilac leaf, night of 10 September 2024, 12:16am

12. *Callopistria floridensis* (9630) (Noctuidae)
IL DuPage County: Suburban Wheaton, bait trail, 30 August 2024.

13. *Condica sutor* (9699) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

14. *Anicla infecta* (10911) (Noctuidae)
IL DuPage County: Herrick Lake Preserve: bait trail 1, hardwood forest south of Crossroads Rest Area, 31 August 2024.

15. *Hylephila phyleus* (4013) (Hesperiidae)
IL DuPage County: Cantigny Park, nectaring on *Gomphrena globosa*, 2 September 2024.

16. *Hylephila phyleus* (4013) (Hesperiidae)
IL DuPage County: Cantigny Park, in flight after nectaring on Zinnia, 2 September 2024.

17. *Hylephila phyleus* (4013) (Hesperiidae)
IL DuPage County: Goebbert's, nectaring on *Rudbeckia*, 7 September 2024.


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ANOTHER SURPRISING RECORD FOR *EUDOCIMA APTA* (WALKER)

BY
WILLIAM H. TAFT
1430 Locher Road, Dewitt, Michigan, 48820 USA
VERNON ANTOINE BROU JR.
74320 Jack Loyd Road, Abita Springs, Louisiana, 70420 US

Fig. 1. ***Eudocima apta*** (Walker) male

On October 3, 2024, a male ***Eudocima apta*** (Walker) Fig. 1 was captured in a bucket of ripe pawpaws at Dewitt, located north of Interstate 69 and west of U.S. Route 127, north of the city of Lansing, Michigan. This latest capture appears to be the second Michigan record for this far-afield tropical migrant. In an earlier Season Summary for the Lepidopterists' Society, Kyle E. Johnson reported a specimen (state record) for ***Eudocima apta*** taken on September 11-2016 at Upper Peninsula Michigan, Delta Co., Charboneau Lake, 45.725194-86.539634, +/-229 meters (Fig.2).

This tropical moth is common in southern Mexico and ranges south to Guatemala, Bolivia, Brazil (Type locality), and Ecuador (Brou, 2013). It also has been captured in Canada [two adults at Quebec and one in Ontario (Handfield, 2011) and (Brou, 2013)]. Handfield stated this species is a very rare migrant into Canada.

Brou (2013) also reported dates of capture and locations for ~30 adults captured in North America, north of Mexico. The US records were from Florida (12 adults), Missouri (1), North Carolina (1), Louisiana (4), Oklahoma (1), Texas (5), New Mexico (2), Arizona (1), Vermont (1), Wisconsin (1). There were a handful of additional U.S. captures not included at the time of this 2013 publication.

Fig. 2. Locations where ***Eudocima apta*** (Walker) were captured at Charboneau Lake and Dewitt, Michigan.

Brou (2006) addressed the genus ***Eudocima*** in North America.

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The Lepidopterists' Society Season Summary, 2016.

(Vernon Brou, E-Mail: vabrou@bellsouth.net)

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Gary N. Ross sent the following 3 images of butterfly Zuni fetishes:

"*Zuni fetishes are small carvings made from primarily stone but also shell fossils, and other materials by the Zuni people. Within the Zuni community, these carvings serve ceremonial purposes for their creators and depict animals and icons integral to their culture. As a form of contemporary Native American art, they are sold with secular intentions to collectors worldwide. Prior to the establishment of a non-Native market for fetishes, Hopi, Navajo, and other Pueblo peoples, especially at Kewa Pueblo also carved and used fetishes*." [1, 2]

1. Bahti, Mark (1999, 2016) Spirit in the Stone: A Handbook of Southwest Indian Animal Carvings and Beliefs ISBN 978-1-88789-6092

2. Wikepidea: https://en.wikipedia.org/wiki/Zuni_fetishes#

NOTES ON THE *PHYLLODES IMPERIALIS* COMPLEX

BY
ROBERT J. BORTH

The Southern Lepidopterist News has published a number of interesting articles on primarily Latin American species of *Eudocima* (Brou 1994, Brou 2006 and Brou & Aguila 2013). We published a comprehensive paper on the mitochondrial genetics of the Ophiderini tribe including the *Eudocima* in Zootaxa (Borth & Kons, 2022). This paper left a number of unanswered questions relative to the tribe's largest species, *Phyllodes imperialis*. This Australasian species or species complex is known for its large size with a forewing length of up to 85mm. Mitochondrial DNA results have now provided new pieces to the *P. imperialis* puzzle.

Our previous work had recovered two distinct clades of 658 base pair (bp) sequences separated by 12 COI 5' bp, which raised the possibility that there may be two species included under the name *P. imperialis*. One clade was represented by a single specimen from the Papua New Guinea (PNG) highlands (Figure 1E) and the other clade by six specimens from Indonesia or Australia. In 2024 I submitted samples from two specimens of *P. imperialis* collected together near the Solomon Islands type locality to the Barcode of Life Data Systems (BOLD) for sequencing. I also submitted a sample from a specimen (Figure 1A) provided by Dominik Ramik which was collected in July 2024 in the Tafea Province of Vanuatu, east of New Caledonia. All three of these sequences came within a single base pair of the aforementioned Indonesian/Australian *P. imperialis* clade. A distribution map of sequence vouchers is provided using SimpleMappr in Figure 2.

Sands (2012) had reviewed four subspecies of *P. imperialis* including *P. i. meyricki* Oliff from northeastern Australia and New Guinea, *P. i. imperialis* Druce from the Solomon Islands, *P. i. dealbata* Holloway from New Caledonia and *P. i. smithersi* Sands from northeastern New South Wales and southeastern Queensland. Their diagnoses included external wing character variations in size, the extent of the pink hind wing band and the presence or absence of white sub-triangular spots at the vein ends of the hind wing termen. Note that these white spots may be quite variable in individuals from the same Solomon Island's locality (See Figure1). Due to the mere one base pair difference, mitochondrial DNA evidence would suggest that these lowland taxa are in fact a single species, *P. imperialis*.

The question remains whether the single specimen with the smaller pink hind wing band sampled from PNG highlands at 1636 m. represents a closely-related but separate species. Unlike the rare New Guinea endemic *P. diversiplapus* (Fig. 1B), *P. imperialis* complex specimens are not uncommon. Gerard (gee912 on iNaturalist) has submitted over 100 observations of the *C. imperialis* complex from the Nipa-Kutubu District photographed at 1200 m. in the southern highlands of Papua New Guinea. In addition to confirming the COI difference with multiple samples, the genitalia should be examined to see if any consistent differences exist. Examples of three-dimensional genitalia *Ophiderini* dissections by Hugo Kons Jr. can be found in the original 2022 publication.

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A. *Phyllodes imperialis, Vanuatu*
(Photo by Dominik Ramik)

B. *P. diversipalpus*, Western New Guinea
(Photo by Imam Hidayaf)

C. *P. imperialis*, Solomon Islands

D. *P. imperialis*, Solomon Islands

E. *P. imperialis* complex, Kerowagi, PNG

Figure 1. Phyllodes from Australasian Region

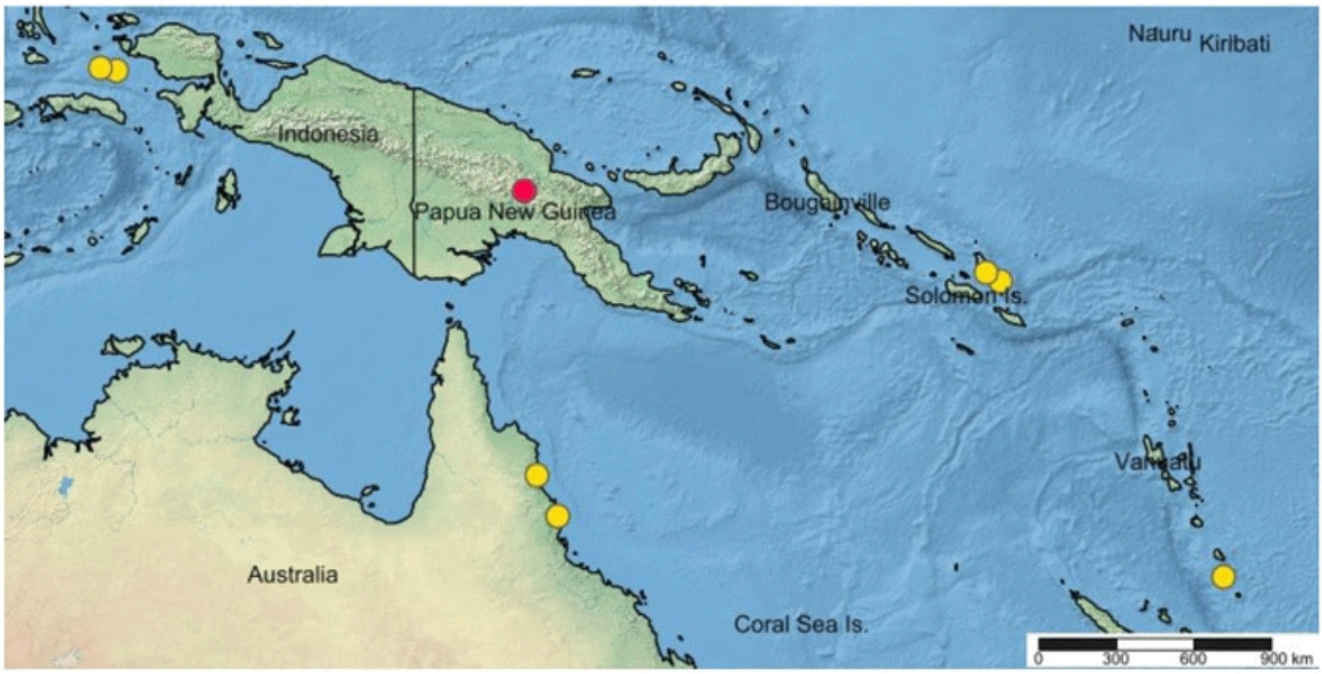

Figure 2. Distribution of DNA sequence vouchers. Yellow dots: *P. imperialis*; red dot: *P.i.* complex

(Robert Borth, E-Mail: bobbotth@sbcglobal.net

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Many Thanks to the Members of the SL Society for their Donations

Sustaining	Contributor	Benefactor+
Dale Clark	Rosemary Seidler	John F. Fisher

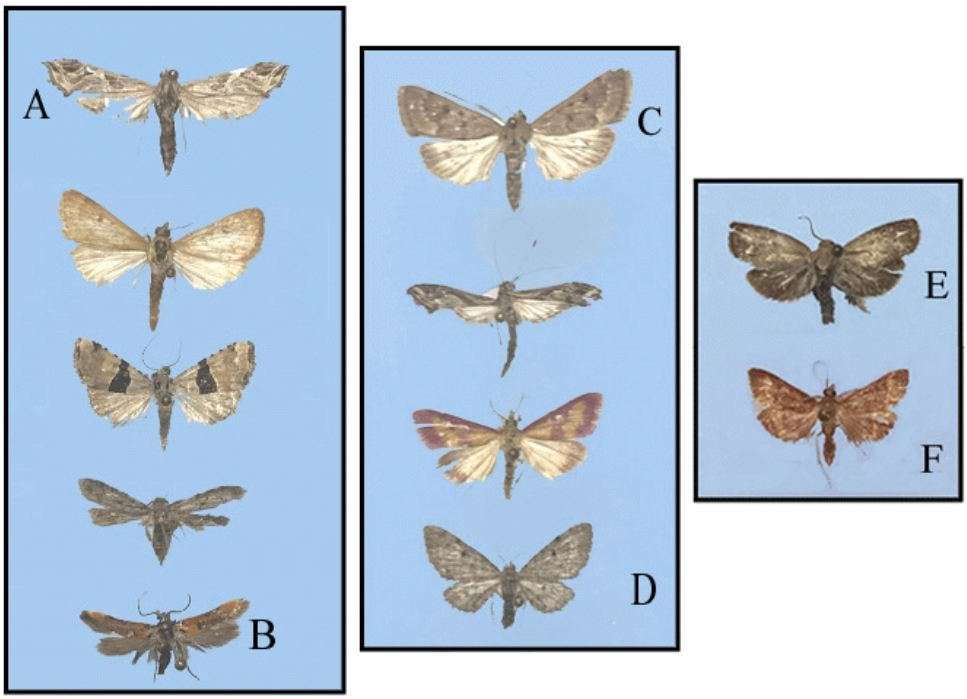
MOTHS ARE GETTING SMALLER (IN SIZE) IN MY COLLECTION

BY
J. BARRY LOMBARDINI

In the middle months (June, July, August) of 2024 collecting butterflies and moths in my backyard in the middle of Lubbock, Texas, was fairly good with Catocala, Mourning Cloak, Common Mestra (*Mestra amymone)* and other medium and large butterflies and moths (see page 314 for the Black Which) which came to my traps (a: bait traps contained mashed bananas and sugar and b: UV light traps). However when the temperature dropped and Fall and Winter were approaching (September, October) only small moths mainly came to the traps. So obviously I started collecting small moths and pinned a bunch (also wrecked a bunch).

The measurements on the moths were in centimeters and were made from wingtip to wingtip. The measurements were made on pinned moths not from photos.

A. 2.20 cm
B. 1.50 cm
C. 2.20 cm
D. 1.45 cm
E. 1.50 cm
F. 1.30 cm



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BUTTERFLIES OF BIG PINE KEY, MONROE COUNTY, FLORIDA: CHANGES OVER 50 YEARS

BY

MARC C. MINNO

INTRODUCTION

I first visited the Florida Keys and Big Pine Key in November 1982. Where else in the continental United States of America can you explore more than 100 miles of Caribbean Islands by car? The tropical forests, coral reefs, and sparkling blue and green water were amazing. Unfortunately, a lot has changed in the Keys since then. Much of the native vegetation has been replaced by urban settings with exotic landscaping. The coral reefs are in serious decline due to coral bleaching and the clear water is now subject to periodic algal blooms.

Of all the islands in the Florida Keys, Big Pine Key is an especially important hotspot for biodiversity because it has tropical pine forest known as pine rockland. It is the population center of the Key Deer (*Odocoileus virginianus clavium*) and other special animals and plants.

The butterflies of the Florida Keys were not well known until the 1970s. In 1971 Frank Rutkowski published a short note on some butterflies he found on Big Pine Key. Richard A. Anderson (Andy) lived in Key West in the early 1970s and collected butterflies. He kept detailed notes about the various species he found, a copy of which he later gave to me. He found at least 48 kinds of butterflies on Big Pine Key. Andy published a few notes about the more unusual butterflies he found in the Journal of the Lepidopterists' Society (Anderson, 1974; Calhoun and Anderson, 1991).

Charles V. Covell, Jr. (Charlie) started monitoring the Schaus' Swallowtail in the Upper Keys in 1972, at first with George W. Rawson. Charlie often brought students from the University of Louisville, where he taught, to the Keys during spring breaks to search for butterflies. His recommendations helped result in the Schaus' Swallowtail being listed as Threatened by the U.S. Fish and Wildlife Service in 1976 and later updated to Endangered in 1984. That same year Thomas C. Emmel (Tom) at the University of Florida was contracted by Biscayne National Park to monitor the now Endangered Schaus' Swallowtail. That sparked decades of research projects on the Schaus' Swallowtail and other butterflies in the Florida Keys. I was among the many students that worked with Tom on those projects. There was increasing concern for butterflies in the Keys at that time due to expanding urban development and especially unintended consequences of spraying insecticides to kill mosquitoes.

In those earlier days, amateur lepidopterists' provided data on the status of butterflies and collected voucher specimens. In 1978 the Southern Lepidopterists' Society (SLS) was established and members reported their findings in the SLS newsletter and also in the Season Summary published by The Lepidopterists' Society. The Florida Keys were exciting places to visit because of their special tropical butterflies. One never knew what may turn up! I still remember the thrill of seeing the Florida Leafwing, Bartram's Scrub-Hairstreak, Florida Duskywing, and Meske's Skipper for the first time as well as other special butterflies such as the Miami Blue and Palatka Skipper in the pinelands of Big Pine Key.

Albert Schwartz lived in Miami and began collecting butterflies in the 1980s. In 1986 he published a booklet on the butterflies of the Lower Florida Keys. He listed 55 kinds of butterflies for Big Pine Key. I had visited the Keys a number of times when Maria and I lived in Davie in 1982 to 1984 and many times between 1986 and 1990 when I was working on butterfly projects with Tom Emmel. In 1993 Tom and I published a book on the butterflies of the Florida Keys. We listed 68 kinds of butterflies from Big Pine Key.

Butterfly watching started to become popular in the 1990s. Hurricane Andrew passed over Biscayne National Park in August 1992 and caused extensive damage in Homestead and Florida City. It was feared that this storm may have wiped out the Endangered Schaus' Swallowtail, but it survived. Afterward, however, butterfly

watchers were having trouble finding some species such as the Miami Blue (Ruffin and Glassberg, 2000). It became apparent that even formerly common butterflies of the Florida Keys were disappearing.

David Fine published an article in Southern Lepidopterists' News (Fine, 2006) that included butterflies of the Florida Keys. He mentioned visiting Big Pine Key nearly 100 times between 1998 and 2006 to look for butterflies. His list for Big Pine Key includes 53 kinds of butterflies. Even after all that effort David still had not found Zestos Skipper, Meske's Skipper, Mimosa Yellow, Lyside Sulphur, Miami Blue, Amethyst Hairstreak, Tropical Buckeye, or Dingy Purplewing anywhere in the Keys.

Many butterflies in southern Florida and the Keys have been declining since the 1970s. Here I report on butterfly monitoring that I conducted in the Florida Keys in 2006 through 2014 and update the list of species reported from Big Pine Key. This turned out to be an interesting period to study butterflies in the Keys because so many were disappearing. Included in the update are notes and comments from long term residents of Big Pine Key, Paula Cannon, Leigh Williams, and Amy Grimm whose careful observations and knowledge of butterflies are invaluable. I also comment on factors that are contributing to Keys butterfly population declines.

BIG PINE KEY BACKGROUND

Big Pine Key is the second largest island in the Florida Keys with an estimated extent of 6,235 acres. That's about 10% of the total land area of the Keys. The highest documented natural elevation on Big Pine Key is eight feet (The Nature Conservancy, 2012), but that is exceptional. Most of the island is less than five feet above sea level.

Big Pine Key is a sheet of limestone rock with a cracked and eroded surface. There is little soil on Big Pine Key. Plants grow in cracks in the rock and in shallow basins where a few inches of gravelly marl and detritus have accumulated. There is a low sandy berm on the southern shore of Big Pine Key called Long Beach where butterfly attracting plants such as *Heliotropium angiospermum*, *Heliotropium gnaphalodes*, *Stachytarpheta jamaicensis*, and *Suriana maritima* grow.

About 25% of Big Pine Key has been altered for residential and commercial uses. The 2020 census reported 4,521 people living on the island. In addition, about one million tourists passed over Big Pine Key on their way to Key West in 2024 alone. As for natural vegetation, pine rockland habitat accounts for about 20% of Big Pine Key, another 23% is tropical hardwood forest, 30% is wetlands (mangrove swamps, salt flats, marshes), and about 2% is water.

Big Pine Key has more than 80% of the pine rockland found in the Keys and has the best quality habitat. Degraded rocklands also occur on No Name Key (164 acres), Cudjoe Key (85 acres), Sugarloaf Key (45 acres), Little Torch Key (too small to map), and Little Pine Key (80 acres), but pines no longer occur on most of these islands. The majority of the natural areas on Big Pine Key are included in the National Key Deer Refuge. More than half of Big Pine Key is owned by the U.S. Fish and Wildlife Service (Monroe County *et al*., 2006).

METHODS

From August 2006 through January 2014 I searched for adult and immature butterflies on Big Pine Key and other islands throughout the Florida Keys. At each site I made wandering pedestrian surveys and recorded the date, observation time, weather conditions, habitats, species and abundance of butterflies, species of plants flowering, butterfly host plants, and other information. Later, field data were entered into Excel spreadsheets for comparison and analysis. I visited at least 39 different sites on Big Pine Key including coastal scrub, salt flat, mangrove swamp, marsh, tropical hardwood hammock, and pine rockland natural communities as well as ruderal areas such as roadsides, trails, weed lots, parks, brush lands, yards, and butterfly gardens.

RESULTS

On Big Pine Key I searched for butterflies on 89 days between Aug 20, 2006 and May 24, 2014 and spent 369.25 hours in the field. I found 54 kinds of butterflies. Appendix 1 has an annotated list of the 87 kinds of butterflies that have been reported from Big Pine Key including published records, my findings, and other observations by Paula Cannon, Leigh Williams and Amy Grimm.

The butterfly fauna of Big Pine Key is a mixture of resident species, temporary colonizers, visitors from the mainland, and strays from Cuba. Twenty six kinds are breeding residents that occur on a regular basis on Big Pine Key, 35 are occasional visitors or temporary colonists from elsewhere in Florida, 13 likely came from Cuba and six of these were temporarily breeding, and 13 have disappeared from Big Pine Key.

I found butterflies on Big Pine Key visiting the flowers of 52 kinds of plants, most of which are native. The most attractive nectar plants to butterflies represented a variety of families and flower types including Asteraceae (*Bidens alba*, *Flaveria linearis*, *Pluchea carolinensis*), Boraginaceae (*Heliotropium gnaphalodes*), Convolvulaceae (*Jacquemontia pentanthos*), Euphorbiaceae (*Croton linearis*), Fabaceae (*Pithecellobium keyense*), Nyctaginaceae (*Pisonia rotundat*a), Rubiaceae (*Spermacoce* sp.), and Surianceae (*Suriana maritima*).

LOST BUTTERFLIES OF BIG PINE KEY

About 15% of Big Pine Key butterflies have disappeared from the island since the 1970s. Lost butterflies represent around 30% of the present and former resident species. The butterflies that disappeared from Big Pine Key were associated with different natural communities. The Florida Purplewing and Zesto Skipper occurred in tropical hardwood hammocks. The Bartram's Scrub-Hairstreak, Florida Leafwing, Georgia Satyr, Little Metalmark, Meske's Skipper, Palmetto Skipper, and Twin-spot Skipper were pine rockland species. These were especially devastating losses because the Big Pine Key rockland populations were so isolated from those on the Florida Peninsula. There's no chance of those species naturally returning to the Keys. In addition the Eufala Skipper, Tropical Checkered-Skipper, and Zarucco Duskywing occurred in weedy habitats. Weedy butterflies are adapted to surviving in ephemeral habitats, so it's surprising that they disappeared. The Miami Blue occurred in a variety of habitats on Big Pine Key including coastal scrub, tropical hardwood hammock, and pine rockland, but that diversity did not protect it. Of the lost species, the Zestos Skipper and Meske's Skipper (rockland subspecies) are presumed extinct. The Bartram's Scrub-Hairstreak, Florida Leafwing, and Miami Blue still occur in Florida but are in danger of extinction.

Host plants of the lost butterflies still occur on Big Pine Key, but some may have diminished in abundance. The hosts included a variety of plant forms including grasses, herbs, shrubs, and vines. Various plant families were represented including Asteraceae (Purple Thistle), Arecaceae (Saw Palmetto), Euphorbiaceae (Pineland Croton, Crabwood), Fabaceae (Florida Hammock Milkpea, True Indigo, Gray Nicker, Fewflower Holdback), Malvaceae (Common Wireweed), and Poaceae. Four of the lost butterflies were grass feeders and two (Bartram's Scrub-Hairstreak and Florida Leafwing) used the same host (Pineland Croton). Pineland Croton is also a nectar source for many butterflies on Big Pine Key.

An interesting case study is the Nickerbean Blue. This very small butterfly somehow flew over from Cuba and colonized the island in the 1990s. It became locally common on Big Pine Key in the late 1990s and early 2000s, but then declined after Hurricane Wilma in 2005 and never recovered. The last sighting on Big Pine Key was in 2013. It's host plant, Pineland Acacia, is still locally common on the island.

Of the butterflies that occur on Big Pine Key, the species of most concern are the Florida Duskywing, Palatka Skipper, and Martial Scrub-Hairstreak. Big Pine Key is a population center for these butterflies. Although the skippers are currently doing well, the Palatka Skipper nearly disappeared after Hurricane Wilma. The Martial Scrub-Hairstreak is at risk because a favorite host plant, Bay Cedar, grows along shorelines such as Long Beach The vegetation in that area of Big Pine Key was damaged and destroyed by Hurricane Irma in 2017.

Whereas the Florida Duskywing visits the flowers of many different plants for nectar, I rarely found the Palatka Skipper at flowers. Often I observed adults of the Florida Duskywing perched on twigs with wings outstretched in shady places, resting during the day. Perhaps this species is more active towards dusk. Adults of the Palatka Skipper were most often seen in patches of Sawgrass, the larval host. Males would perch on the sawgrass leaves and chase other males or insects such as dragonflies that wandered by, and then return. Female Palatka Skippers would fly low through the Sawgrass leaves stopping occasionally to lay an egg. On the morning of January 26, 2018 Paula Cannon set out on the ground in her garden a cob of cooked corn for her pet tortoises. A female Palatka Skipper and a Florida Duskywing found it and were feeding on the corn nearly all day.

FACTORS AFFECTING BIG PINE KEY BUTTERFLIES

Many interacting factors are likely affecting butterfly populations on Big Pine and other Florida Keys. In the following sections I discuss some of factors that influence butterfly abundance and distribution in the Keys.

Key Deer

In 2024, the population of Key Deer in the Florida Keys was estimated to be between 700 and 800 animals. The majority of Key Deer live on Big Pine Key. Just as overly abundant typical deer have changed forest understory plant communities in the northeastern U.S.A. (Schweitzer *et al*., 2011), Key Deer have greatly affected the natural communities of Big Pine Key. It's nearly impossible to have gardens on Big Pine Key unless they are protected from Key Deer. Anything edible to Key Deer will be immediately destroyed.

Luckily, Pineland Croton, an important butterfly host and nectar plant, is not much eaten by Key Deer and is locally common on Big Pine Key. Not so for the only native milkweed on Big Pine, Green Antelopehorn - *Asclepias viridis* (Asclepidaceae). This milkweed is a host for the Monarch and Queen butterflies and is uncommon in Florida. I saw mature flowering plants of Green Antelopehorn on Big Pine Key in the 1980s. More recently, the only individual that I found was just one small plant with a few leaves in the grassy pine rockland to the east of the Winn Dixie Shopping Plaza in 2007. This plant disappeared shortly after I found it – most likely having been eaten by Key Deer. The deer continue to affect some host and nectar plants through their daily foraging.

Mosquito Control

Controlling mosquitoes with insecticides has long been used in the Florida Keys where abundant populations of salt marsh breeding species can make the outdoors inhospitable. The chemicals, equipment, methods, and regulations covering mosquito control have changed greatly over the years (Lloyd *et al*., 2018). The targeted use of the bacterium *Bacillus thuringiensis israelensis* in key larval breeding areas has dramatically decreased mosquito populations in the Keys.

Spraying insecticides via trucks and aircraft, usually in the evening or night, is also used to kill adult mosquitos in times of abundance, often in response to complaints from the public. Organophosphates such as Malathion and Naled or pyrethroids such as Resmethrin may be alternated at different times to help prevent pesticide resistance in mosquito populations. The spray equipment used these days produces tiny droplets that tend to float in the air for a long time in order to better encounter and stick to flying mosquitoes. The amount of chemicals applied is typically lower now than in former years, often as low as half an ounce of chemical per acre. The Florida Keys Mosquito Control District is normally limited in the number of times it can spray per year.

Mosquito insecticides may also kill butterflies. However, based on my findings of abundant butterflies in urban parks on islands that are sometimes sprayed with mosquito adulticides such as Fort Zachary Taylor State Park in Key West and the Key West Tropical Forest and Botanical Garden on Stock Island, I believe that some mosquito control spraying may not be detrimental to butterfly populations. Occasional mosquito control spraying may actually benefit butterflies by differentially killing off the parasitoids (which tend to be small and mosquito like) that attack butterfly eggs and caterpillars.

Research by Mark Salvato (1999) on Big Pine Key also supports this view. He found no difference in the abundance of Florida leafwing larvae in sprayed versus unsprayed areas of Big Pine Key. He also found greater numbers of Bartram's Scrub-Hairstreaks in the sprayed areas. Although several studies have shown lethal effects

to butterflies in the laboratory and in some field trials, additional research is needed to determine whether occasional spraying of mosquito adulticides harms or benefits populations of wild, free-ranging butterflies.

Sea Level Change

Most scientists agree that sea levels are rising in response to global warming. Habitat change and loss in the Keys may be inevitable. Worst case estimates would have much of the Keys under water by the year 2100 (The Nature Conservancy, 2012). There is clear evidence of vegetation change in Florida Keys. South Florida Slash Pines (*Pinus elliottii* var. *densa*) are one of the most visible indicators of change. The pine rocklands on Big Pine Key and other keys were extremely damaged by Hurricane Wilma on October 24, 2005, especially by saltwater storm surge, and again by wind and storm surge from Hurricane Irma on September 10, 2017. Hundreds of pines, especially in areas less than three feet elevation, were killed. Pines have disappeared from the rocklands on most other keys. Another indicator of climate change on Big Pine Key is Key Thatch Palm (*Thrinax morrisii*), which has been increasing greatly in abundance for no obvious reason.

Hurricanes

A number of hurricanes have affected Big Pine Key in recent times: Hurricane Georges (September 25, 1998), Hurricane Irene (October 15, 1999), Hurricane Wilma (October 24, 2005), and Hurricane Irma (September 10, 2017). The last two storms have been the most damaging. Large pines on Big Pine Key were either blown over or snapped in two by Hurricane Irma, a category 4 storm. Not only are adult butterflies killed by such intense storms, any survivors will find little to eat afterward because flowers were also destroyed. Following Hurricane Irma, Paula Cannon did not find any butterflies on Big Pine Key until two weeks later when she saw a single Florida Duskywing.

Land Management

Some butterflies need open, grassy habitat with wildflowers for nectar and larval plants in order to survive. On Big Pine Key stands of native grasses in the pine rocklands have become hard to find. Grasses such as *Aristida purpurea* and *Sorghastrum secundum* tend to occur along trails and fire breaks. An abundance of these grasses indicates high quality habitat.

Some of the pine rockland habitat on Big Pine Key has become too shrubby for most butterflies, except perhaps the Florida duskywing, which is a woodland butterfly. Pine rockland is a fire maintained habitat. Without fire, hardwoods tend to increase and pines to decrease. The National Key Deer Refuge has experimented with using prescribed fire as a management tool. However, the 2011 prescribed fire jumped fire lines, went out of control, and nearly burned some houses. In recent times land managers on Big Pine Key have been reducing fuel loads before applying prescribed fire, which likely will reduce the risk of harm to large pines and help keep fires from getting out of control.

I have seen that many pines were killed in prescribed fire areas on Big Pine Key and the fires did not seem to encourage grassy understories afterward. At The Nature Conservancy Terrestris Preserve (now part of the National Key Deer Refuge) Bracken Fern (*Pteridium aquilinum* var. *caudatum*) came to dominate some of the burned areas rather than grasses and wildflowers.

Sawgrass, the larval host of the Palatka Skipper, is a fire adapted species. If ignited, entire stands of Sawgrass will burn quickly and intensely, destroying immature stages of the butterfly. Planning for prescribed fires should take into account stands of Sawgrass and allow for unburned refugia to protect the butterfly.

Pineland Croton, the larval host of the Endangered Florida Leafwing and Bartram's Scrub-Hairstreak, is a disturbance adapted plant. It especially grows along roads and fire breaks. However, after a wildfire burned a block of densely vegetated pine rockland just north of the Big Pine Motel, the pines were killed, but luxuriant stands of Pineland Croton grew back apparently from seeds in the ground. This area was a hotspot for Bartram's Scrub-Hairstreak for a few years, but the plants later declined and were replaced by shrubs and Bracken Fern. More study is needed, but Pineland Croton may benefit from prescribed fire.

It is not certain if the use of prescribed fire can restore the pine rocklands on Big Pine Key since Key Thatch Palms are increasing and are very tolerant of fire. Intervals between fires are not well understood in the Keys, but are likely to be much less than on the mainland. Land managers should look to pine dominated islands in the Bahamas for guidance on prescribed fire frequency, extent, and benefits.

Habitat Fragmentation

The butterflies of the Keys fit a metapopulation model of dispersion in which their populations are not evenly distributed over the landscape. Rather, they consist of disjunct colonies on various islands. During favorable years, the butterflies disperse and colonize new areas, and much of the available habitat is occupied, perhaps even some of marginal quality. However, favorable conditions are often fleeting and of uncommon occurrence. During average or unfavorable conditions (most years), some colonies may die out, and the population shrinks. In general, the butterflies survive only in places of high quality habitat offering an abundance of adult nectar plants, larval hosts, and freedom from predators. Urban development has altered the metapopulation dynamics of many species in the Keys. Key Largo and Big Pine keys were once reservoirs for many butterflies due to their large size and varied habitats, but the natural communities on these islands have been much degraded by urbanization, perhaps to the point where some butterflies cannot survive unfavorable years.

Butterfly Gardens

Most butterflies are closely associated with their larval host plants. People have introduced many kinds of exotic plants to Big Pine Key, some of which are butterfly hosts, such as Coconut Palms. A number of the butterflies on Big Pine Key would be difficult to find if not for certain plants in gardens that serve as hosts such as the Brazilian Skipper on Canna, Polydamas Swallowtail on Pipevine, Atala on cycads, etc. Paula Cannon grew the native *Dicliptera sexangularis* in her garden for 19 years before a female Cuban Crescent finally appeared and laid eggs on it! She also observed other unusual butterflies in her garden including Caribbean Daggerwing, Disguised Scrub-Hairstreak, Checkered White, and Bahamian Swallowtail. Her neighbor Donna Coffin had Black Swallowtails breeding on herbs she planted in her garden and also found the Silver-banded Hairstreak for the first time on Big Pine Key. Leigh Williams and Amy Grimm discovered the Amethyst Hairstreak in their garden on Big Pine Key and noted its unusual evening behavior. Even using certain native plants in gardens on Big Pine Key can help rare butterflies such as the Lyside Sulphur.

Exotic Predatory Ants

Exotic predatory ants, such as *Solenopsis invicta* Buren, *Pseudomyrmex gracilis* (Fabricius), and *Wasmannia auropunctata* (Roger) have become established throughout the Keys and are likely to be causing harm to butterflies. Paula Cannon (2006) lamented that ants were destroying the eggs laid by a female Bahamian Swallowtail in her garden. I believe that exotic predatory ants are a major cause of butterfly declines and loss in Florida. More research is needed on the impacts of exotic ants on butterflies in the Keys.

Roads

Fragmentation, disturbance, and edge effects caused by roads and urbanization have likely had a significant destabilizing influence on butterfly populations in the Keys. There are over 900 miles of roads in the Florida Keys and U.S.-1 cuts most of the islands in two. Big Pine Key is crisscrossed with roads that divide the pine rockland habitat into blocks that are harder to manage. Roads allow invasive exotic predators of butterflies such as the Red Imported Fire Ant (*Solenopsis invicta*) to spread and colonize areas that would otherwise be unfavorable to them. In addition, the sheer number of vehicles driving on roads in the Keys has increased mortality to adult butterflies.

DISCUSSION

Butterfly populations on Big Pine Key are dynamic and chaotic. Many species are vagrants or temporary colonists. Even resident species may be abundant only in certain months or years. Rainfall is sporadic on Big Pine Key. Droughts can extend for months. During dry times many plants quit growing and flowering and butterflies often become scarce. Many times I walked for miles in the pine rocklands of Big Pine Key and saw very few butterflies.

For unknown reasons, some butterflies such as the Florida Duskywing, Bartram's Scrub-Hairstreak, and Amethyst Hairstreak are more abundant during the first half of the year. Butterflies are also more likely to be present

following significant rainfall events. Dispersing butterflies from the mainland such as the Monarch are most likely to show up in fall and winter months.

With diligent searching over several years one can expect to find about 50 species of butterflies on Big Pine Key. Currently undocumented species that may eventually turn up on Big Pine Key include the White Checkered-Skipper - *Burnsius albezens* Grishin, 2022, Mimosa Yellow - *Pyrisitia nise nise* (Cramer, 1775), and Caribbean Cracker - *Hamadryas februa ferox* (Staudinder, 1886). The latter two butterflies are likely strays from Cuba that have been found in the Upper and Middle Keys including Long Key. The Mimosa Yellow breeds on Key Largo some years, but then disappears for long periods of time.

The White Checkered-Skipper was first documented in Florida in the early 1990s (Calhoun, 2002) under the name *Pyrgus albescens*, but recent genetic studies have shown that the White Checkered-Skipper in Florida and other areas was a different and undescribed species and subsequently named *Burnsius albezens* by Nick Grishin. This skipper spread rapidly throughout the state and even into the Keys. I first found *B. albezens* in the Keys in Sep. 2007. It is a breeding resident at Fort Zachary Taylor State Park in Key West and on other Lower Keys. Although *B. albezens* has not yet been reported from BPK, it likely occurs there at least occasionally.

RECOMMENDATIONS

Since the 1970s monitoring techniques have changed from collecting specimens to butterfly watching. Now anyone with a cell phone can document occurrences by snapping images of plants and animals. Butterfly images can be identified by posting them at BugGuide, Butterflies and Moths of North America, iNaturalist, or North American Butterfly Association. Field guides are not much used these days. Many more people are looking for butterflies now than earlier days. Regular monitoring of butterflies is needed in the Florida Keys to track their abundance and distribution, particularly of the imperiled species.

The Florida White and Lyside Sulphur are imperiled butterflies of the Lower Florida Keys that occasionally appear on Big Pine Key. With proper management it may be possible to start colonies of these declining pierids on Big Pine Key, especially the Lyside Sulphur, which breeds in parks and gardens.

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Appendix 1. Butterflies of Big Pine Key (BPK), Monroe County, Florida. Plant names are from the online Atlas of Florida Plants (Wunderlin *et al*., 2025).

FAMILY HESPERIIDAE
SUBFAMILY EUDAMINAE (Broad-winged Skippers)
Cecropterus dorantes dorantes (Stoll, 1790) - Dorantes Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Dorantes Skipper from BPK. I found single adults on BPK on Oct. 12, 2006, Dec. 14, 2011, and Feb. 28, 2012.
FLOWERS VISITED: *Jacquemontia pentanthos* (Convolvulaceae).
HOST PLANTS: *Alysicarpus vaginalis*, *Grona triflora*, and *Desmodium incanum* (Fabaceae) occur on BPK.

Epargyreus zestos oberon (Worthington, 1881) - Zestos Skipper
STATUS: Schwartz (1986) listed the Zestos Skipper from BPK. None have been reported in Florida since 2004 and this butterfly is presumed to be extinct. I did not observe any Zestos Skippers during this study.
HOST PLANTS: *Galactia striata* (Fabaceae) is present on BPK.

Phocides batabano okeechobee (Worthington, 1881) - Mangrove Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Mangrove Skipper from BPK. Adults were seen on 34% of my sampling days. A total of 76 adults were observed.
FLOWERS VISITED: *Coccoloba diversifolia* (Polygonaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Pithecellobium keyense* (Fabaceae), *Solanum bahamense* (Solanaceae), *Sophora tomentosa* var. *truncata* (Fabaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: *Rhizophora mangle* (Rhizophoraceae) occurs mostly along the coast of BPK. I found one pupa on the leaves of this plant on Feb. 27, 2008.

Polygonus histrio Röber, 1925 - Hammock Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986) and Fine (2006) all reported the Hammock Skipper from BPK. Adults were present on 49% of my sampling days. A total of 268 adults were observed.
FLOWERS VISITED: *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Pithecellobium keyense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Stachytarpheta jamaicensis* (Verbenaceae), *Suriana maritima* (Surianaceae).
HOST PLANTS: I observed females laying eggs on *Piscidia piscipula* or Jamaican Dogwood (Fabaceae) leaves on Feb. 16, 2008,Apr. 20, 2008,Aug. 24, 2008,Dec. 21, 2008, and Oct. 6, 2011. I found eggs on Jamaican

Dogwood leaves on Nov. 30, 2011, Mar. 26, 2012, and larvae in leaf shelters on Dec. 24, 2006, May 6, 2007, Jun. 22, 2007, Nov. 23, 2007, Oct. 26, 2008, Dec. 20, 2009, Jan. 31, 2010, Nov. 29, 2011, Dec. 13, 2011, Feb. 28, 2012, Mar. 26, 2012, Apr. 25, 2012, Jul. 23, 2012, and Oct. 7, 2012. The exotic *Millettia pinnata* or Karum Tree (Fabaceae) occurs in some gardens on BPK and is also a potential host.

Urbanus proteus proteus (Linnaeus, 1758) - Long-tailed Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Long-tailed Skipper from BPK. I found one adult on Nov. 22, 2007 and two on Nov. 7, 2010 on BPK.
HOST PLANTS: *Alysicarpus vaginalis*, *Centrosema virginianum*, *Desmodium incanum*, *Galactia* spp., and *Vigna luteola* (Fabaceae) have been reported from BPK. The exotic *Clitoria ternatea* (Fabaceae) occurs in some gardens on BPK. Paula Cannon had larvae feeding on the leaves of *Phaseolus vulgaris* (Green Beans) planted in her garden in Jan. 2017.

SUBFAMILY HESPERIINAE (Grass Skippers)
Atalopedes huron (W. H. Edwards, 1863) - Sachem
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Sachem from BPK. This butterfly was uncommon in 2007 and 2008 and then temporarily disappeared from BPK. I did not find any on BPK after 2008. A total of 30 adults were seen in 2007-2008. Adults were present on 13.3% of my sampling days. More recently Leigh Williams and Amy Grimm found Sachems on BPK on Mar. 18, Apr. 17, and May 5, 2016, Mar. 5, 2017, Sep. 18, 2018, May 25 and Dec. 31, 2019, Jan. 5, Jan. 30, Feb. 6, and Mar. 15, 2020, and Apr. 1, 2021.
FLOWERS VISITED: *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: The grasses used on BPK are not known, but *Distichlis spicata* (Poaceae) may be a potential host since the Sachem occurs in coastal areas including salt flats.

Calpodes ethlius (Stoll, 1782) - Brazilian Skipper
STATUS: Schwartz (1986) and Fine (2006) both reported the Brazilian Skipper from BPK. I saw individual adults on Nov. 7, 2010 and Oct. 6, 2011 on BPK.
HOST PLANTS: There are no known wild host plants for the Brazilian Skipper in the Florida Keys, but Canna (Cannacae) is planted in some gardens. I found a few eggs on Canna leaves in Paula Cannon's garden on Jan. 16, 2011 and later a last instar larva on Nov. 29, 2011.

Choranthus capucinus (Lucas, 1857) - Monk Skipper
STATUS: Both Anderson (pers. comm.) and Fine (2006) found the Monk Skipper on BPK. Adults were present on 42% of my sampling days. A total of 111 adults were observed.
FLOWERS VISITED: *Asclepias curassavica* (Apocynaceae), *Bidens alba* (Asteraceae), *Flaveria linearis* (Asteraceae), *Pisonia rotundata (Nyctaginaceae), Pithecellobium bahamense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Plumbago auriculata* (Plumbaginaceae), *Sophora tomentosa* var. *truncata* (Fabaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: The larvae feed on the leaves of various palms (Arecaceae). A female was observed ovipositing on *Coccothrinax argentata* on Oct. 12, 2006 and a last instar larva was found on this host on Feb. 27, 2009. I found larval shelters on *Serenoa repens* on Jun. 22 and Jul. 27, 2007 and a pupal exuvium in a shelter on this plant on Jul. 18, 2010. I found a shelter on *Sabal palmetto* on Sep. 11, 2012 and two pupal exuvia in shelters on *Thrixax morrisii* on Jul. 18, 2010. The Monk Skipper also likely uses *Cocos nucifera* and other exotic palms planted in gardens on BPK.

Cymaenes tripunctus tripunctus (Herrich-Schäffer, 1865) - Three-spotted Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Three-spotted Skipper from BPK. Adults were present on 30% of my sampling days. A total of 81 adults were seen. This skipper was sometimes common in Paula Cannon's garden on BPK. The adults become especially active just before sunset and so may have been missed on my daytime surveys.
FLOWERS VISITED: *Jacquemontia pentanthos* (Convolvulaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: This butterfly occurs in shady places with grasses such as trails through hardwood hammocks, disturbed uplands, along roadsides, and in yards. I found a larva on *Paspalm caespitosum* (Poaceae) on Feb. 17, 2008 and another on *Stenotaphrum secundatum* (Poaceae) on May 24, 2009 on BPK.

Euphyes arpa (Boisduval & Le Conte, [1837]) - Palmetto Skipper
STATUS: Anderson (pers. comm.) reported the Palmetto Skipper from BPK. This butterfly disappeared from the Florida Keys in the late 1970s or early 1980s. I have never seen it in the Florida Keys.
HOST PLANTS: *Serenoa repens* (Arecaceae) is locally common in pine rockland habitats on BPK.

Euphyes pilatka klotsi L. Miller, Harvey, & J. Miller, 1985 - Palatka Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Palatka Skipper from BPK. Adults were present 28% of my sampling days. A total of 85 adults were observed.
FLOWERS VISITED: *Conocarpus erectus* (Combretaceae), *Plumbago auriculata* (Plumbaginaceae), *Sophora tomentosa* var. *truncata* (Fabaceae).
HOST PLANTS: The host plant, *Cladium jamaicense* or Jamaica Swamp Sawgrass (Cyperaceae) occurs in solution holes in the pine rocklands and other wetlands on BPK. I observed a female laying eggs on the leaves of sawgrass May 6, 2007. I also found larvae on sawgrass on Dec. 25, 2006, Mar. 19, 2007, Jun. 22, 2007, Jun. 8, 2008, Mar. 1, 2009, Mar. 31, 2010, Sep. 11, 2012, Oct. 6, 2011 and pupae on Jun. 22, 2007, Jul. 27, 2007, Jan. 16, 2011, Mar. 20, 2011, Oct. 6, 2011, Nov. 29, 2011, Dec. 13 2011, Feb. 28, 2012, Mar. 26, 2012, Oct. 7, 2012, and Jan. 21, 2013.

Hedone vibex vibex (Geyer, 1832) - Whirlabout
STATUS: Fine (2006) reported the Whirlabout from BPK. I saw one adult on BPK on Jan. 28, 2007.
HOST PLANTS: Various potential host grasses (Poaceae) occur on BPK such as *Stenotaphrum secundatum*.

Hesperia meskei pinocayo Gatrelle & Minno, 2003 - Meske's Skipper
STATUS: Anderson (pers. comm.) reported Meske's Skipper from BPK and Gatrelle *et al*. (2003) list other records. The only one that I have seen on BPK was a female on Mar. 11, 1984. The last sighting for BPK was in May 1998 (Salvato, 1999). I did not observe any during this study.
HOST PLANTS: Mark Salvato (1999) stated *Aristida purpurascens* (Poaceae) to be a host on BPK. Other potential grasses include *Sorghastrum secundum* and *Andropogon glomeratus* var. *pumilus*.

Hylephila phyleus phyleus (Drury, 1773) - Fiery Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Fiery Skipper from BPK. Adults were present on 72% of my sampling days. A total of 363 adults were observed.
FLOWERS VISITED: *Capraria biflora* (Scrophulariaceae), *Centrosema virginianum* (Fabaceae), *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Lycium carolinianum* (Solanaceae), *Phyla nodiflora* (Verbenaceae), *Pisonia rotundata (Nyctaginaceae), Pithecellobium keyense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Sophora tomentosa* var. *truncata* (Fabaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: *Cynodon dactylon*, *Dichanthelium* spp., *Stenotaphrum secundatum* (Poaceae) and other potential host grasses occur on BPK.

Lerema accius (J. E. Smith, 1797) – Clouded Skipper
STATUS: Anderson (pers. comm.) and David Fine (2006) reported the Clouded Skipper from BPK. I did not see any there during this study.
HOST PLANTS: Various potential host grasses (Poaceae) occur on BPK such as *Stenotaphrum secundatum*.

Lerodea eufala eufala (W. H. Edwards, 1869) - Eufala Skipper
STATUS: Rutkowski (1971) found a few Eufala Skippers on BPK in December visiting the flowers of *Croton linearis* (Euphorbiaceae). Anderson (pers. comm.) and Schwartz (1986) also reported it from BPK. I did not see any Eufala Skippers on BPK. The only colony that I found in the Florida Keys during this study period was at Fort Zachary Taylor State Park in Key West where it occurred in very low abundance in the grassy field west of the fort.
HOST PLANTS: Various potential host grasses (Poaceae) occur on BPK such as *Stenotaphrum secundatum*.

Oligoria maculata (W. H. Edwards, 1865) - Twin-spot Skipper
STATUS: Anderson (pers. comm.) and Schwartz (1986) both reported the Twin-spot Skipper from BPK. I did not see any during this study. This butterfly is extirpated from the Florida Keys.
HOST PLANTS: The grasses (Poaceae) used on BPK are not known, but *Andropogon glomeratus* var. *pumilus* is likely.

Panoquina ocola ocola (W. H. Edwards, 1863) - Ocola Skipper
STATUS: Anderson (pers. comm.) and David Fine (2006) reported the Ocola Skipper from BPK. I found one adult on BPK on Nov. 7, 2010. Lee Williams and Amy Grimm have seen individual adults on May 5, 2016, Feb. 26, 2017, and Apr. 11, 2017.
HOST PLANTS: Various grasses (Poaceae) occur on BPK, but a favorite host in Florida, *Leerisa hexandra*, is not present.

Panoquina panoquin (Scudder, 1863) - Salt Marsh Skipper
STATUS: Anderson (pers. comm.) listed the Salt Marsh Skipper from BPK. I found one adult visiting *Bidens alba* flowers in Paula Cannon's garden on BPK on Jan. 16, 2011.
HOST PLANTS: Potential host grasses on BPK include *Distichlis spicata* and *Spartina patens* (Poaceae).

Panoquina panoquinoides (Skinner, 1891) - Obscure Skipper
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Obscure Skipper from BPK. Adults were present on 41% of my sampling days. A total of 131 adults were observed.
FLOWERS VISITED: *Bidens alba* (Asteraceae), *Blutaparon vermiculare* (Amaranthaceae), *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Sesuvium portulacastrum* (Aizoaceae).
HOST PLANTS: The grasses used on BPK are not known, but *Distichlis spicata* (Poaceae) is likely.

Polites otho otho (J. E. Smith, 1797) - Southern Broken-Dash
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Southern Broken-Dash from BPK. It is one of the most abundant butterflies on the island. Adults were present on 83% of my sampling days. A total of 628 adults were observed.
FLOWERS VISITED: *Agalinis fasciculata* (Orobanchaceae), *Angadenia berteroi* (Apocynaceae), *Bidens alba* (Asteraceae), *Blutaparon vermiculare* (Amaranthaceae), *Borrichia frutescens* (Asteraceae), *Cirsium horridulum* (Asteraceae), *Croton linearis* (Euphorbiaceae), *Flaveria linearis* (Asteraceae), *Funastrum clausum* (Apocynaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Lantana involucrata* (Verbenaceae), *Morinda royoc* (Rubiaceae), *Pisonia rotundata (Nyctaginaceae), Pluchea carolinensis* (Asteraceae), *Stachytarpheta jamaicensis* (Verbenaceae), *Suriana maritima* (Surianaceae).
HOST PLANTS: The grasses (Poaceae) used on BPK are not known.

SUBFAMILY PYRGINAE (Spread-winged Skippers)
Burnsius oileus (Linnaeus, 1767) - Tropical Checkered-Skipper
STATUS: David Fine (2006) listed the Tropical Checkered-Skipper from BPK. *Burnsius oileus* disappeared from the Florida Keys around 2011. I did not see any on BPK during this study.
HOST PLANTS: *Sida ulmifolia* (Malvaceae) is present in weedy places on BPK.

Ephyriades brunnea floridensis E. Bell & W. Comstock, 1948 - Florida Duskywing
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Florida Duskywing from BPK. It is one of the most abundant butterflies on the island. Adults were present on 75% of my sampling days. A total of 990 adults were observed.
FLOWERS VISITED: *Bidens alba* (Asteraceae), *Citharexylum spinosum* (Verbenaceae), *Croton linearis* (Euphorbiaceae), *Flaveria linearis* (Asteraceae), *Guettarda* sp. (Rubiaceae), *Heliotropium angiospermum* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Lantana involucrata* (Verbenaceae), *Metopium toxiferum* (Anacardiaceae), *Morinda royoc* (Rubiaceae), *Piscidia piscipula* (Fabaceae), *Pisonia rotundata (Nyctaginaceae), Pithecellobium bahamense* (Fabaceae), *Pithecellobium keyense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Randia aculeata* (Rubiaceae), *Sabal palmetto* (Arecaceae), *Simarouba glauca* (Simaroubaceae), *Vachellia farnesiana* var. *pinetorum* (Fabaceae).

HOST PLANTS: The host shrub, *Byrsonima lucida* or Locustberry (Malpighiaceae), is locally common in the pine rocklands of BPK. I observed females laying eggs on the leaves of Locustberry Nov. 22, 2007 and Mar. 28, 2010. I found larvae on Locustberry on Apr. 20, 2008, May 9, 2008, Jun. 8, 2008, Dec. 20, 2009, Oct. 6, 2011, Nov. 29, 2011, Dec. 13 2011, and Jan. 23, 2012.

Gesta zarucco (Lucas, 1857) - Zarucco Duskywing
STATUS: Michael Israel (pers. comm.) reported the Zarucco Duskywing from BPK. I also saw a specimen from BPK in the Harris Collection located at Tall Timbers Research Station. This butterfly has not been reported from BPK for many years. I did not see any during this study. Recently Leigh Williams and Amy Grimm rediscovered the Zarucco Duskywing at the Florida Keys Naval Air Station on Boca Chica Key. This appears to be the last remaining colony in the Keys.
HOST PLANTS: The host on Boca Chica Key is *Indigofera tinctoria* (Fabaceae), which has also been reported for BPK.

FAMILY PAPILIONIDAE
SUBFAMILY PAPILIONINAE (SWALLOWTAILS)
Battus polydamas lucayus (Rothschild & Jordan, 1906) - Polydamas Swallowtail
STATUS: Adults were present on 12% of my sampling days. A total of 40 adults were observed.
FLOWERS VISITED: *Bourreria succulenta* (Boraginaceae).
HOST PLANTS: There are no wild hosts for the Polydamas Swallowtail in the Lower Florida Keys. I found larvae on the leaves of the exotic vine, *Aristolochia gigantea* (Aristolochiaceae), in Paula Cannon's garden on Feb. 24, 2007, Feb. 16, 2008, Jul. 24, 2011, Dec. 14, 2011, and Feb. 28, 2012.

Heraclides andraemon andraemon Hübner, [1823] - Bahamian Swallowtail
STATUS: A rare immigrant and temporary colonist from Cuba. I saw one adult visiting *Stachytarpheta jamaicensis* flowers at Long Beach on Nov. 18-19, 2006 with Mark and Holly Salvato.
HOST PLANTS: A female Bahamian Swallowtail laid eggs on the leaves of *Citrus* x *aurantiifolia* and *Zanthoxylum fagara* (Rutaceae) in Paula Cannon's garden on BPK in Sep. 2006 (Cannon, 2006), but *H. a. andraemon* failed to become established and disappeared from there by 2007. However, similar looking individuals have been found in Biscayne National Park flying with *Heraclides andraemon taylori* (Warren, 2014).

Heraclides cresphontes (Cramer, 1777) - Giant Swallowtail
STATUS: Schwartz (1986) and Fine (2006) both reported the Giant Swallowtail from BPK. Adults were present on 33% of my sampling days. A total of 44 adults were observed.
FLOWERS VISITED: *Jacquemontia pentanthos* (Convolvulaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: The native host tree, *Zanthoxylum fagara* or Wild Lime (Rutaceae), grows in tropical hardwood hammocks on BPK. I found eggs on the leaves of this plant on Jan. 28, 2007 and Mar. 19, 2007 and young larvae on Jul. 13, 2009 and Feb. 27, 2009. The Giant Swallowtail also uses the exotic *Citrus* x *aurantiifolia* (Rutaceae) (Cannon, 2006). Both these trees are sometimes planted in gardens on BPK.

Papilio polyxenes asterius Stoll, 1782 - Black Swallowtail
STATUS: An infrequent visitor/temporary colonist in the Florida Keys. I did not see any during this study. Leigh Williams and Amy Grimm observed individual Black Swallowtail adults flying on BPK on May 31, 2015 and again on Jan. 5, 2020.
HOST PLANTS: Wild host plants are not known to occur on BPK. There may be some introductions via plants with immatures purchased on the mainland and then planted in gardens in the Keys. Paula Cannon found 27 caterpillars feeding on *Foeniculum vulgare* and *Petroselinum crispum* (Apiaceae) in Donna Coffin's garden on BPK in May 2015. These plants, however, had not been recently planted.

FAMILY PIERINDAE
SUBFAMILY COLIADINAE (Sulphurs)
Abaeis nicippe (Cramer, 1779) - Sleepy Orange
STATUS: Anderson (pers. comm.) and Fine (2006) both reported the Sleepy Orange from BPK. I did not see any during this study. Leigh Williams and Amy Grimm observed one on BPK on Sep. 7, 2024.
HOST PLANTS: The most likely potential host plants on BPK are the native *Senna mexicana* var. *chapmanii* and the exotic *Senna alata* (Fabaceae), which is planted in some gardens.

Anteos maerula (Fabricius, 1775) - Yellow Angled-Sulphur
STATUS: A rare immigrant. Bennett and Knudson (1976) found five adults visiting flowers along a roadside on BPK in Aug. 1973. These were likely part of a dispersal from Cuba. I did not see any during this study.
HOST PLANTS: This butterfly feeds on certain *Senna* species (Fabaceae) in Cuba which do not occur in Florida.

Aphrissa orbis orbis (Poey, 1832) - Orbis Sulphur
STATUS: A rare immigrant from Cuba. Bennett and Knudson (1976) found one adult male visiting flowers along a roadside on BPK in Apr. 1973. I did not see any during this study.
HOST PLANTS: The host plant in Cuba is *Caesalpinia pulcherrima* (Fabaceae), which is sometimes planted in gardens in the Florida Keys for its attractive flowers and tropical look.

Eurema daira daira (Godart, 1819) - Barred Yellow
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Barred Yellow from BPK Adults were present on 16% of my sampling days. A total of 31 adults were observed. Leigh Williams and Amy Grimm have seen Barred Yellows on BPK on Nov. 11, 2016, May 10, 2018, Dec. 31, 2019 and May 30, 2020.
HOST PLANTS: *Stylosanthes hamata* (Fabaceae) grows in mown and weedy areas, especially roadsides. *Stylosanthes calcicola* is also a potential host in the pine rocklands, but is not very common on BPK.

Eurema daira palmira (Poey, [1852]) - Barred Yellow (Caribbean population)
STATUS: A rare immigrant and temporary colonist from Cuba. Anderson (pers. comm.) found a male and female on BPK. I found two females on BPK on Sep. 1987 (Minno and Emmel, 1993).
HOST PLANTS: The most likely host on BPK is *Stylosanthes hamata* (Fabaceae) which grows along roadsides and other weedy areas.

Kricogonia lyside (Godart, 1819) - Lyside Sulphur
STATUS: I saw one adult flying along the coast of BPK at Long Beach on July 27, 2007. Paula Cannon saw individual adults in her garden in Aug. 2016 and July 2017. Leigh Williams and Amy Grimm have seen individual adults on Jun. 8, 2014, Jun. 11, 2017, and Sep. 21, 2024 on BPK.
HOST PLANTS: The native host tree *Guaiacum sanctum* (Zygophyllaceae) is not known to occur naturally on BPK, but has been planted in some gardens. The exotic *Guaiacum offinale* is also sometimes planted in gardens in the Keys such as at the Key West Tropical Forest and Botanical Garden on Stock Island and is used by the Lyside Sulphur (Warren, 2014). The Lyside Sulphur breeds only in parks and gardens in the Lower Keys where these trees have been planted.

Nathalis iole iole Boisduval, 1836 - Dainty Sulphur
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Dainty Sulphur from BPK. I did not see any during this study. Paula Cannon had one adult in her garden on June 3, 2014.
HOST PLANTS: The host plant, *Bidens alba* (Asteraceae), is locally common in weedy areas of BPK.

Phoebis agarithe maxima (Neumoegen, 1891) - Large Orange Sulphur
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Large Orange Sulphur from BPK. It is one of the most abundant butterflies on the island. Adults were present on 71% of my sampling days. A total of 493 adults were observed.
FLOWERS VISITED: *Cordia sebestena* (Boraginaceae), *Ernodea littoralis* (Rubiaceae), *Hamelia patens* var. *patens* (Rubiaceae), *Pithecellobium keyense* (Fabaceae), *Solanum bahamense* (Solanaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: I saw a female laying eggs on the young leaves of *Pithecellobium keyense* (Fabaceae) on Mar. 28, 2010 on BPK.

Phoebis philea philea (Linnaeus, 1763) - Orange-barred Sulphur
STATUS: Schwartz (1986) and Fine (2006) both reported the Orange-barred Sulphur from BPK. Adults were present on 23% of my sampling days. A total of 43 adults were observed.
FLOWERS VISITED: *Cordia sebestena* (Boraginaceae).
HOST PLANTS: I saw a female laying eggs on the leaves of the native shrub *Senna mexicana* var. *chapmanii* (Fabaceae) on Jan. 28, 2007, and I found two last instar larvae on the exotic *Senna alata* (Fabaceae) in Paula Cannon's garden on BPK on July 23, 2012. Paula also had larvae feeding on *Cassia fisula* (Fabaceae) flowers in her garden a number of times.

Phoebis sennae eubule (Linnaeus, 1767) - Cloudless Sulphur
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Cloudless Sulphur from BPK. Adults were present on 37% of my sampling days. A total of 50 adults were observed.
FLOWERS VISITED: *Cynophalla flexuosa* (Capparaceae), *Ernodea littoralis* (Rubiaceae).
HOST PLANTS: I did not find any immatures on BPK but the native *Chamaecrista lineata var. keyensis*, *Chamaecrista nictitans var. aspera*, and *Senna mexicana* var. *chapmanii* (Fabaceae) occur in pine rocklands and the exotic *Senna alata* (Fabaceae) occurs in gardens are likely used by the Cloudless Sulphur. Paula Cannon had larvae feeding on *Cassia fisula* (Fabaceae) flowers in her garden on June 3, 2014.

Pyrisitia lisa lisa (Boisduval & Le Conte, [1830]) - Little Yellow
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Little Yellow from BPK. Adults were present on 13% of my sampling days. A total of 18 adults were observed. Lee Williams and Amy Grimm found Little Yellows on BPK on Jan. 4 and Jul. 4, 2017, May 26 and Dec. 31, 2019, and Jun. 29, 2021. Paula Cannon saw one in her garden on Oct. 11, 2016.
FLOWERS VISITED: *Spermacoce* sp. (Rubiaceae).
HOST PLANTS: *Chamaecrista lineata* var. *keyensis* and *Chamaecrista nictitans* var. *aspera* (Fabaceae) are likely host plants on BPK.

SUBFAMILY PIERINAE (Whites)
Ascia monuste phileta (Fabricius, 1775) - Great Southern White
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Great Southern White from BPK. It is one of the most abundant butterflies on the island. Adults were present on 60% of my sampling days. A total of 697 adults were seen. Paula Cannon noted large population eruptions of hundreds/thousands of Great Southern Whites flying on some of the Lower Keys in May-June 2014 and Feb.-May 2016, and in the Middle Keys in July 2017.
FLOWERS VISITED: *Alternanthera flavescens* (Amaranthaceae), *Avicennia germinans* (Acanthaceae), *Bidens alba* (Asteraceae), *Blutaparon vermiculare* (Amaranthaceae), *Capraria biflora* (Scrophulariaceae), *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Psychotria nervosa* (Rubiaceae), *Stachytarpheta jamaicensis* (Verbenaceae), *Suriana maritima* (Surianaceae).
HOST PLANTS: I saw a female laying eggs on *Batis maritima* (Bataceae) on Aug. 20, 2006 at Long Beach. I also found eggs on the leaves of *Cynophalla flexuosa* (Capparaceae) on Jan. 28, 2007, Jun. 22, 2007, Jul. 27, 2007, Oct. 13, 2007, Feb. 17, 2008 and larvae on Oct. 13, 2007, Feb. 17, 2008, and Jul. 13, 2009. Paula Cannon had larvae eating the leaves of crucifers, including Collards (*Brassica oleracea*), Yu Choy (*Brassica rapa* var. *parachinensis*), and Broccoli Raab (*Brassica rapa* var. *ruvo*), in her garden on Apr. 28, 2016.

Glutophrissa drusilla neumoegenii (Skinner, 1894) - Florida White
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Florida White from BPK. On Jan. 22, 2012 Paula Cannon and I observed eight adults visiting the flowers of *Heliotropium gnaphalodes* (Boraginaceae) at Long Beach. Paula had individuals in her garden on Aug 4, 2014 and July 10, 2017 (very worn). She also saw a few on Feb 12, 2016 and Feb 16, 2017 at long beach.
HOST PLANTS: Paula Cannon found a few Florida White larvae together with dozens of Great Southern White caterpillars on *Cynophalla flexuosa* (Capparaceae) at Long Beach on Feb 18, 2016.

Pontia protodice (Boisduval & Le Conte, [1830]) - Checkered White
STATUS: An uncommon visitor on BPK. On June 10, 2014 Paula Cannon saw one adult in her garden.
HOST PLANTS: *Lepidium virginicum* (Brassicaceae) occurs in the Florida Keys.

FAMILY LYCAENIDAE
SUBFAMILY THECLINAE (Hairstreaks)
Calycopis cecrops (Fabricius, 1793) - Red-banded Hairstreak
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Red-banded Hairstreak from BPK. I only found one adult on BPK on Dec. 14, 2011. Paula Cannon saw three adults in her garden in May 2016. Leigh Williams and Amy Grimm have only seen Red-banded Hairstreaks on May 17, 2014, Aug. 3, 2014, Feb. 15, 2015, and Aug. 19, 2015 on BPK. The adults become especially active just before sunset and so may have been missed on my daytime surveys.

HOST PLANTS: The exotic tree *Schinus terebinthifolia* (Anacardiaceae) is present on BPK and Mango (*Mangifera indica*) (Anacardiaceae) is planted in Paula's garden and others.

Chlorostrymon maesites (Herrich-Schäffer, 1865) - Amethyst Hairstreak
STATUS: Resident but local and secretive. In May 2014, Leigh Williams, Amy Grimm, and later Paula Cannon (2014a) discovered that the adults gather near the tops of tall trees a few hours before sunset, often with Fulvous Hairstreaks and Martial Scrub-Hairstreaks, to perch and frantically chase each other. They have observed Amethyst Hairstreaks on many occasions in their yards since that time, but not in fall and winter months. Paula and I saw and photographed three adults flying at the top of a mature Slash Pine (*Pinus elliottii*) in her yard on Aug. 16, 2014.
FLOWERS VISITED: *Avicennia germinans* (Acanthaceae), *Canella winterana* (Canellaceae), *Citharexylum spinosum* (Verbenaceae), *Conocarpus erectus* (Combretaceae), *Laguncularia racemosa* (Combretaceae), *Piscidia piscipula* (Fabaceae).
HOST PLANTS: We found five larvae of the Amethyst Hairstreak on *Piscidia piscipula* (Fabaceae) flowers in Leigh and Amy's yard on May 24 2014. Paula later found a larva on the flower buds of *Conocarpus erectus* (Combretaceae) in her yard (Cannon 2014b).

Chlorostrymon simaethis simaethis (Drury, 1773) - Silver-banded Hairstreak
STATUS: An uncommon visitor/temporary colonizer in the Lower Keys. I did not see any on my surveys. Donna Coffin observed one perched on the host vine growing in her garden on BPK in 2015. Paula Cannon also had the vine in her garden for many years, but never saw this butterfly.
HOST PLANTS: *Cardiospermum corindum* (Sapindaceae) does not occur naturally on BPK or other Lower Florida Keys. It does grow wild in the Upper Florida Keys and the Silver-banded Hairstreak is resident there.

Electrostrymon angelia angelia (Hewitson, 1874) - Fulvous Hairstreak
STATUS: Schwartz (1986), and Fine (2006) both reported the Fulvous Hairstreak from BPK. Adults were present on 26% of my sampling days. A total of 80 adults were observed. Adults become especially active just before sunset and so may have been missed on my daytime surveys. Paula Cannon as well as Leigh Williams and Amy Grimm have had this butterfly in their gardens on a regular basis, but less commonly in fall and winter. Paula sometimes had dozens of adults present and reported hundreds in her garden on June 1, 2014.
FLOWERS VISITED: *Bidens alba* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Lantana involucrata* (Verbenaceae), *Morinda royoc* (Rubiaceae), *Pluchea carolinensis* (Asteraceae), *Schinus terebinthifolia* (Anacardiaceae), *Vachellia farnesiana* var. *pinetorum* (Fabaceae),
HOST PLANTS: A likely host plant on BPK is the naturalized exotic, *Schinus terebinthifolia* (Anacardiaceae). Paula Cannon had a Mango (*Mangifera indica*) (Anacardiaceae) in her garden and Fulvous Hairstreaks were likely using that potential host. She also observed a female laying eggs on the leaves and flower buds of a *Hibiscus poeppigii* (Malvaceae) planted in her garden on July 3, 2017.

Eumaeus atala (Poey, 1832) - Atala
STATUS: An uncommon introduction on BPK. I have never seen the Atala in the Keys. However, iNaturalist has photos of larvae (Apr. 18, 2024) and an adult (Jul. 26, 2024) from BPK. These may have been deliberately introduced or brought in accidentally via immatures on landscaping plants.
HOST PLANTS: The larval hostplant *Zamia integrifolia* (Zamiaceae) does not occur naturally in the Florida Keys, but is likely planted in some gardens. The exotic *Zamia furfuracea* or Cardboard Palm also occurs in gardens on BPK.

Ministrymon azia (Hewitson, 1873) - Gray Ministreak
STATUS: Fine (2006) reported the Gray Ministreak from BPK. I found single adults on Dec. 21, 2008, Nov. 6, 2010, and Feb. 28, 2012. Leigh Williams and Amy Grimm saw one adult on Jun. 12, 2017 on BPK.
FLOWERS VISITED: *Croton linearis* (Euphorbiaceae).
HOST PLANTS: Host plants on BPK include *Vachellia farnesiana* (Calhoun *et al*., 2000) and *Leucaena leucocephala* (Fabaceae).

Strymon acis bartrami (W. Comstock & Huntington, 1943) - Bartram's Scrub-Hairstreak
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported Bartram's Scrub-Hairstreak from BPK. Bartram's Scrub-Hairstreak was listed as Endangered by the U.S. Fish and Wildlife Service in 2014.

During this study, adults were present on 59% of my sampling days. A total of 229 adults were seen. This butterfly no longer occurs in the Florida Keys. My last observation on BPK was of one adult seen on Jan. 21, 2013. The last Bartram's Scrub-Hairstreak on BPK that I could document was seen by Leigh Williams and Amy Grimm on Nov. 11, 2016.
FLOWERS VISITED: *Bidens alba* (Asteraceae), *Croton linearis* (Euphorbiaceae), *Flaveria linearis* (Asteraceae), *Mikania scandens* (Asteraceae), *Pluchea carolinensis* (Asteraceae), *Spermacoce* sp. (Rubiaceae).
HOST PLANTS: The host plant, *Croton linearis* or Pineland Croton (Euphorbiaceae) is locally common on BPK. I observed females laying eggs on the flower buds of Pineland Croton on May 6, 2007, Jul. 18, 2010, Jan. 16, 2011, Nov. 29, 2011, and Mar. 26, 2012. I found larvae on the leaves of Pineland Croton on Feb. 24, 2007 and Jan. 12, 2008.

Strymon istapa modesta (Maynard, 1873) - Mallow Scrub-Hairstreak
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Mallow Scrub-Hairstreak from BPK. Adults were present on 29 of my sampling days. A total of 70 adults were observed.
FLOWERS VISITED: *Avicennia germinans* (Acanthaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae).
HOST PLANTS: I photographed a female laying eggs on *Portulaca oleracea* (Portulacaceae) in Donna Coffin's garden on BPK on May 29, 2016. Other likely host plants on BPK are *Suriana maritima* (Surianaceae) and *Waltheria indica* (Malvaceae).

Strymon limenia (Hewitson, 1868) - Disguised Scrub-Hairstreak
STATUS: A rare stray from Cuba. I have never seen this butterfly in Florida. Andy Anderson found one on BPK on Dec. 23, 1972 and more recently Paula Cannon saw one in her garden on March 22, 2004.
HOST PLANTS: The host plants in Cuba include *Malvastrum* sp. (Malvaceae). *Malvastrum corchorifolium* grows in the Florida Keys.

Strymon martialis (Herrich-Schäffer, 1865) - Martial Scrub-Hairstreak
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Martial Scrub-Hairstreak from BPK. Adults were present on 35% of my sampling days. A total of 201 adults were observed. The adults become especially active just before sunset and so may have been missed on my daytime surveys.
FLOWERS VISITED: *Avicennia germinans* (Acanthaceae), *Bidens alba* (Asteraceae), *Conocarpus erectus* (Combretaceae), *Croton linearis* (Euphorbiaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Lantana involucrata* (Verbenaceae), *Pisonia rotundata* (Nyctaginaceae), *Schinus terebinthifolia* (Anacardiaceae), *Stachytarpheta jamaicensis* (Verbenaceae), *Suriana maritima* (Surianaceae).
HOST PLANTS: On BPK I observed a female laying eggs on *Suriana maritima* flower buds on Nov. 23, 2007 and another laying on *Conocarpus erectus* (Combretaceae) flower buds on Jun. 5, 2011. I found eggs on *Sophora tomentosa* var. *truncata* (Fabaceae) flower buds on Oct. 25, 2008, Oct. 6, 2011, Nov. 20, 2011 and a larva on this plant on Nov. 29 2011. Paula Cannon found a larva on *Conocarpus erectus* flower buds.

Strymon melinus melinus (Hübner, [1813]) - Gray Hairstreak
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Gray Hairstreak from BPK. Adults were present on 13% of my sampling days. A total of 15 adults were observed.
FLOWERS VISITED: *Bidens alba* (Asteraceae), *Spermacoce* sp. (Rubiaceae).
HOST PLANTS: Potential host plants on BPK include *Herissantia crispa*, *Sida ulmifolia* (Malvaceae) and *Vigna luteola* (Fabaceae).

SUBFAMILY POLYOMMATINAE (Blues)
Brephidium pseudofea pseudofea (Morrison, 1873) - Eastern Pygmy-Blue
STATUS: Schwartz (1986) and Fine (2006) both reported the Eastern Pygmy-Blue from BPK. This is one of the most abundant butterflies on BPK, but the colonies are very local. The salt flat at Long Beach has the most robust colony. Adults were present on 58% of my sampling days. A total of 2,292 adults were seen.
FLOWERS VISITED: *Blutaparon vermiculare* (Amaranthaceae), *Borrichia arborescens* (Asteraceae), *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae).
HOST PLANTS: The most likely host plants on BPK include *Salicornia ambigua*, *Salicornia bigelovii*, and *Suaeda linearis* (Amaranthaceae).

Cyclargus ammon (Lucas, 1857) - Nickerbean Blue
STATUS: Tom Kral first found this butterfly on BPK on Apr. 5, 1984 (also a first for the U.S.A. - News Lepidopterists' Society 1985, Number 2, page 29). However, it was not until 1997 that those from BPK were properly differentiated from the Miami Blue (Calhoun *et al*., 2002). The Nickerbean Blue was locally common in pine rockland habitats on BPK in the late 1990s and early 2000s (Calhoun *et al*., 2002; Fine, 2003), but then declined after Hurricane Irma in 2005. I did not see any during this study. The last observation on BPK was by Susan Kolterman on April 11, 2013.
HOST PLANTS: The host plants on BPK include *Vachellia farnesiana* var. *pinetorum* or Pineland Acacia, *Vachellia farnesiana* var. *farnesiana* (Sweet Acacia), and *Denisophytum pauciflorum* (Fabaceae) (Calhoun *et al*., 2002). David Fine (2003) reared some to adults from eggs laid by a captive female. He and others have noted how small the wild Nickerbean Blues were on BPK. Specimens David reared at home on *Vachellia farnesiana* were about 25% smaller than those he reared on *Guilandina bonduc* (Fabaceae).

Cyclargus thomasi bethunebakeri (W. Comstock & Huntington, 1943) - Miami Blue
STATUS: Anderson (pers. comm.) and Schwartz (1986) both reported the Miami Blue from BPK. The Miami Blue was listed as Endangered by the U.S. Fish & Wildlife Service in 2012. It disappeared from BPK during the 1990s. I did not see any on BPK during this study. Reintroduction of laboratory bred individuals was tried on BPK by the University of Florida in 2017 and 2018, but was not succeeded. The Florida population is nearly extinct in the wild.
HOST PLANTS: Several potential host plants occur on BPK including *Denisophytum pauciflorum* and *Guilandina bonduc* (Fabaceae).

Hemiargus ceraunus antibubastus Hübner, [1818] - Ceraunus Blue
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Ceraunus Blue from BPK. Adults were present on 62% of my sampling days. A total of 371 adults were observed.
FLOWERS VISITED: *Croton linearis* (Euphorbiaceae), *Flaveria linearis* (Asteraceae), *Galactia volubilis* (Fabaceae), *Phyla nodiflora* (Verbenaceae), *Spermacoce* sp. (Rubiaceae).
HOST PLANTS: In Feb. 2000 John Calhoun and Jeffrey Slotten found larvae on *Vachellia farnesiana* var. *farnesiana* (Sweet Acacia) flowers on BPK (Calhoun, 2000). I observed females laying eggs on the flower buds of *Vachellia farnesiana* var. *pinetorum* (Fabaceae) on May 6, 2007 and Mar. 1, 2009 on BPK.

Leptotes cassius theonus (Lucas, 1857) - Cassius Blue
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Cassius Blue from BPK. It is one of the most abundant butterflies on BPK. Adults were present on 86% of my sampling days. A total of 1,239 adults were observed.
FLOWERS VISITED: *Avicennia germinans* (Acanthaceae), *Byrsonima lucida* (Malpighiaceae), *Crotalaria pumila* (Fabaceae), *Croton linearis* (Euphorbiaceae), *Heliotropium angiospermum* (Boraginaceae), *Indigofera tinctoria* (Fabaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Lantana involucrata* (Verbenaceae), *Morinda royoc* (Rubiaceae), *Phyla nodiflora* (Verbenaceae), *Piscidia piscipula* (Fabaceae), *Pithecellobium keyense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Schinus terebinthifolia* (Anacardiaceae), *Suriana maritima* (Surianaceae).
HOST PLANTS: I observed a female laying eggs on the flower buds of the exotic tree *Albizzia lebbeck* (Fabaceae) on June 21, 2009 and on the young leaves of *Pithecellobium keyense* (Fabaceae) on May 24, 2014 on BPK. I also found several larvae on the flowers of *Piscidia piscipula* or Jamaican Dogwood (Fabaceae) on May 24, 2014.

FAMILY RIODINIDINAE (Metalmarks)
Calephelis virginiensis (Guérin-Méneville, [1832]) - Little Metalmark
STATUS: Rutkowski (1971) found a colony on BPK, but the Little Metalmark has not been reported from BPK since then. I have never seen it in the Keys.
HOST PLANTS: The likely host plant, *Cirsium horridulum* (Asteraceae), is still locally present in the pine rocklands of BPK.

SUBFAMILY BIBLIDINAE (Purplewings, etc.)
Eunica monima (Stoll, 1782) - Dingy Purplewing
STATUS: The Dingy Purplewing has not been reported from BPK for many years. I did not see any on BPK.
HOST PLANTS: *Bursera simaruba* or Gumbo Limbo (Burseraceae) is a common tree throughout the Keys and on BPK.

Eunica tatila tatilista Kaye, 1926 - Florida Purplewing
STATUS: Not reported for many years from BPK. I did not see any during this study. It nearly disappeared from Florida by the early 2000s. Around 2010 the last known colony was on Lignumvitae Key, but it has since increased and recolonized former habitats on Key Largo and in Biscayne National Park.
HOST PLANTS: *Gymnanthes lucida* (Euphorbiaceae) occurs on BPK.

SUBFAMILY CHARAXINAE (Leafwing Butterflies)
Anaea troglodyta floridalis F. Johnson & W. Comstock, 1941 - Florida Leafwing
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Florida Leafwing from BPK. This butterfly was listed as Endangered by the U.S. Fish & Wildlife Service in 2014. It was formerly a fairly common resident, but it disappeared from BPK shortly after Hurricane Wilma in 2005. I did not see any during this study.
HOST PLANTS: The host plant, *Croton linearis* or pineland croton (Euphorbiaceae), is locally common in the pine rocklands of BPK.

SUBFAMILY CYRESTINAE (Daggerwings, etc.)
Marpesia chiron (Fabricius, 1775) - Many-banded Daggerwing
STATUS: A rare stray most likely from Cuba. Richard Boscoe and Frank Fee found one visiting the flowers of *Lantana involucrata* (Verbenaceae) on BPK on Nov. 7, 1985 (News of the Lepidopterists Society, 1986 Number 2, page 34). I did not see any on BPK during this study.
HOST PLANTS: The host plant in Cuba is probably a tree in the Moraceae, but this butterfly does not seem to eat *Ficus* spp.

Marpesia eleuchea Hübner, 1919 - Caribbean Daggerwing
STATUS: A rare stray most likely from Cuba. I did not see any during this study. Paula Cannon has seen a few in her garden on BPK.
HOST PLANTS: Potential host plants on BPK include *Ficus aurea* and *Ficus citrifolia* (Moraceae).

Marpesia petreus petreus (Cramer, 1776) - Ruddy Daggerwing
STATUS: Fine (2006) reported the Ruddy Daggerwing from BPK. I did not see any during this study. Leigh Williams and Amy Grimm saw one on May 29, 2017 and another individual on June 9-10, 2017.
HOST PLANTS: *Ficus aurea* and *Ficus citrifolia* (Moraceae) occur on BPK.

SUBFAMILY DANAINAE (Milkweed Butterflies)
Danaus eresimus tethys W. Forbes, [1944] - Soldier
STATUS: An uncommon visitor and potential temporary colonist in the Florida Keys. Adults were present on 11% of my sampling days. A total of 29 adults were observed.
FLOWERS VISITED: *Capraria biflora* (Scrophulariaceae), *Cynophalla flexuosa* (Capparaceae), *Funastrum clausum* (Apocynaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: Several potential host plants such as *Asclepias curassavica* and *Funastrum clausum* (Apocynaceae) occur on BPK.

Danaus gilippus berenice (Cramer, 1779) - Queen
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Queen from BPK. Adults were present on 37% of my sampling days. A total of 85 adults were observed.
FLOWERS VISITED: *Asclepias curassavica* (Apocynaceae), *Croton linearis* (Euphorbiaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: I observed a female laying eggs on the leaves of *Metastelma blodgettii* (Apocynaceae) on Nov. 30, 2011 and another ovipositing on *Asclepias curassavica* (Apocynaceae) on Dec. 14, 2011 on BPK. I found a larva on *Asclepias curassavica* on Nov. 28, 2008.

Danaus plexippus plexippus (Linnaeus, 1758) - Monarch
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Monarch from BPK. Adults were present on 32% of my sampling days. A total of 96 adults were observed.

FLOWERS VISITED: *Piscidia piscipula* (Fabaceae), *Pluchea carolinensis* (Asteraceae).
HOST PLANTS: I found a young larva on Jul. 24, 2011 and a last instar on Nov. 29, 2011, both on *Asclepias curassavica* (Apocynaceae) on BPK.

SUBFAMILY HELICONIINAE (Passionflower Butterflies)
Dione incarnata nigrior (Michener, 1942) - Gulf Fritillary
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Gulf Fritillary from BPK. It is one of the most common butterflies on BPK. Adults were present on 80% of my sampling days. A total of 549 adults were observed.
FLOWERS VISITED: *Asclepias curassavica* (Apocynaceae), *Crotalaria rotundifolia* (Fabaceae), *Ernodea littoralis* (Rubiaceae), *Heliotropium gnaphalodes* (Boraginaceae), *Pithecellobium keyense* (Fabaceae), *Pluchea carolinensis* (Asteraceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: I found a last instar larva on *Passiflora suberosa* (Passifloraceae) on BPK. Paula Cannon had a few larvae on the exotic *Passiflora edulis* in her garden on May 19, 2014.

Dryas iulia largo Clench, 1975 - Julia
STATUS: Although rarely seen on BPK, the Julia is locally common on the Upper Keys. Rutkowski (1971) found a worn female on BPK. Fine (2006) also reported it from BPK. The only one I found on BPK was on Aug. 29, 2010.
HOST PLANTS: *Passiflora suberosa* (Passifloraceae) occurs on BPK. The main host in the Upper Keys, *Passiflora multiflora*, does not occur in the Lower Keys.

Euptoieta claudia claudia (Cramer, 1775) - Variegated Fritillary
STATUS: Not reported from BPK for many years. Rutkowski (1971) observed occasional fresh individuals, including a female, on BPK. I did not see any during this study.
HOST PLANTS: The potential host, *Linum arenicola* (Linaceae), occurs on BPK. The Variegated Fritillary does not seem use *Passiflora suberosa* (Passifloraceae).

Heliconius charithonia tuckeri W. Comstock & F. Brown, 1950 - Zebra Heliconian
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Zebra Heliconian from BPK. Adults were present on 23% of my sampling days. A total of 60 adults were observed.
HOST PLANTS: *Passiflora suberosa* (Passifloraceae) occurs on BPK.
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SUBFAMILY NYMPHALINAE (Brush-footed Butterflies)
Anartia chrysopelea Hübner, [1831] - Cuban Peacock
STATUS: A rare stray or temporary colonist from Cuba. Anderson (1974) reported on one (as *Anartia lytrea*) he found on BPK in 1972 and Bennett and Knudson (1976) found six fresh specimens on BPK in Apr. 1973 suggesting that the Cuban Peacock was temporarily breeding there. I did not see any during this study.
HOST PLANTS: The host plants in Cuba are species of *Phyla* (Verbenaceae) and *Ruellia* (Acanthaceae). *Phyla nodiflora*, *Ruellia ciliatiflora*, and *Ruellia succulenta* occur on BPK.

Anartia jatrophae guantanamo Munroe, 1942 - White Peacock
STATUS: Schwartz (1986) and Fine (2006) both reported the White Peacock from BPK. Adults were present on 15% of my sampling days. A total of 21 adults were observed.
FLOWERS VISITED: *Flaveria linearis* (Asteraceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: *Phyla nodiflora* (Verbenaceae) and *Bacopa monnieri* (Plantaginaceae) occur on BPK.

Anthanassa frisia frisia (Poey, 1832) - Cuban Crescent
STATUS: An uncommon visitor/temporary colonist in the Florida Keys. Fine (2006) reported the Cuban Crescent from BPK. I did not see any during this study.
HOST PLANTS: *Dicliptera sexangularis* (Acanthaceae) occurs on BPK. Paula Cannon had a Cuban Crescent laying eggs on this plant in her garden in June 2017.

Hypolimnas misippus (Linnaeus, 1764) - Mimic
STATUS: A rare stray probably from Cuba. Mark and Holly Salvato found one male adult at Long Beach that I observed with them on Nov. 18, 2006.
HOST PLANTS: The potential host plant, *Portulacca oleracea* (Portulacaceae), occurs on BPK.

Junonia coenia Hübner, [1822] - Common Buckeye
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Common Buckeye from BPK. Adults were present on 14% of my sampling days. A total of 30 adults were observed.
HOST PLANTS: *Agalinis fasciculata*, *Buchnera americana* (Orobanchaceae), and *Phyla nodiflora* (Verbenaceae) are present on BPK.

Junonia neildi Brévignon, 2004 - Mangrove Buckeye
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Mangrove Buckeye from BPK. Adults were present on 38% of my sampling days. A total of 113 adults were observed.
FLOWERS VISITED: *Conocarpus erectus* (Combretaceae), *Flaveria linearis* (Asteraceae), *Heliotropium gnaphalodes* (Boraginaceae), *Jacquemontia pentanthos* (Convolvulaceae), *Stachytarpheta jamaicensis* (Verbenaceae).
HOST PLANTS: The host plant *Avicennia germinans* or Black Mangrove (Acanthaceae) occurs in coastal areas of BPK. The larvae feed on Black Mangrove seedlings and are secretive and difficult to find.

Junonia zonalis zonalis C. Felder & R. Felder, 1867 - Tropical Buckeye
STATUS: A rare immigrant and likely temporary colonist from Cuba. I found six adults on Nov. 30, 2011, three on Dec. 14, 2011, and one on Jan. 22, 2012, all at Long Beach.
HOST PLANTS: *Stachytarpheta jamaicensis* (Verbenaceae) is a common potential host at Long Beach.

Phyciodes phaon phaon (W. H. Edwards, 1864) - Phaon Crescent
STATUS: Anderson (pers. comm.) and Fine (2006) both reported the Phaon Crescent from BPK. I observed single adults on Nov. 29, 2011 and Oct. 7, 2012 on BPK.
HOST PLANTS: *Phyla nodiflora* (Verbenaceae) occurs in mown and weedy areas such as along roadsides on BPK.

Phyciodes tharos tharos (Drury, 1773) - Pearl Crescent
STATUS: Anderson (pers. comm.), Schwartz (1986), and Fine (2006) all reported the Pearl Crescent from BPK. I did not see any during this study. Leigh Williams and Amy Grimm have only seen one Pearl Crescent on BPK.
HOST PLANTS: Several species of *Symphyotrichum* (Asteraceae) occur on BPK.

Polygonia interrogationis (Fabricius, 1798) - Question Mark
STATUS: A rare visitor in the Florida Keys. Paula Cannon and I saw an adult in a her garden on Nov. 25, 2008 (Minno and Cannon, 2009).
HOST PLANTS: There are no known host plants of the Question Mark reported from the Florida Keys.

Siproeta stelenes biplagiata (Fruhstorfer, 1907) - Malachite
STATUS: Rutkowski (1971) found a colony of Malachites on Big Pine Key associated with *Ruellia blechum* (Acanthaceae). The adults visited the flowers of *Lantana involucrata* (Verbenceae). Howe (1975) illustrates a male from Long Beach, BPK collected on Oct. 23, 1968 by Frank Rutkowski. Fine (2006) also listed it for BPK. Only stray individuals, probably from Cuba, have shown up on BPK since then. I saw one adult on Nov. 18, 2006 at Long Beach with Mark and Holly Salvato. Leigh Williams and Amy Grimm also saw one on Big Pine on Feb. 7, 2021.
HOST PLANTS: *Ruellia blechum* (Acanthaceae) occurs in weedy places in the Florida Keys.

Vanessa atalanta rubria (Fruhstorfer, 1909) - Red Admiral
STATUS: Schwartz (1986) and Fine (2006) both reported the Red Admiral from BPK. I did not see any on BPK during this study. Paula Cannon had one in her garden on Jan. 28, 2018. Leigh Williams and Amy Grimm saw many individuals on nine different days at eight different sites on BPK, from Jan. 11 through Mar. 18, 2018, but none since then.

HOST PLANTS: Paula Cannon observed a female laying eggs on *Parietaria floridana* (Urticaceae) in her garden.

Vanessa cardui (Linnaeus, 1758) - Painted Lady
STATUS: An uncommon visitor in the Florida Keys. Anderson (pers. comm.) reported the Painted Lady from BPK. I did not see any on BPK during this study. Paula Cannon saw one visiting the flowers of *Heliotropium gnaphalodes* (Boraginaceae) at Long Beach on Feb. 16, 2017. Leigh Williams and Amy Grimm photographed one feeding at the flowers of *Stachytarpheta jamaicensis* (Verbenaceae) on Dec. 29, 2018 at Long Beach.
HOST PLANTS: A potential host plant, *Cirsium horridulum* (Asteraceae), is uncommon in the pine rocklands of BPK.

Vanessa virginiensis (Drury, 1773) - American Lady
STATUS: An uncommon visitor in the Florida Keys. I saw one adult on BPK on March 26, 2012. Leigh Williams and Amy Grimm observed a worn individual on May 19, 2019 on BPK.
HOST PLANTS: *Gamochaeta antillana* (Asteraceae) occurs in the Florida Keys.

SUBFAMILY SATYRINAE (Satyrs and Woodnymphs)

Neonympha areolatus areolatus (J. E. Smith, 1797) - Georgia Satyr
STATUS: Kimball (1965) reported the Georgia Satyr from BPK, but it has not been found there for many years. I have never seen it in the Keys.
HOST PLANTS: The host grasses/sedges in southern Florida are not known.

(Marc Minno, E-Mail: marccmino@gmail.com)

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NOTES ON THE LIFE HISTORIES OF *EUERYTHRA TRIMACULATA* SMITH 1888 AND *EUERYTHRA PHASMA* HARVEY 1876

BY

TOM NEAL AND JEFF SLOTTEN

I met Tom Neal in the late 1970s when I moved to Gainesville, Florida. Tom was familiar with the lepidoptera fauna of the region and also had a knowledge of the native plants. I took a trip to Apalachicola Bluffs and Ravines in Liberty County, Florida, where I had a permit to collect moths. On June 4, 1994 I collected a female of the moth *Euerythra phasma* and she laid a clutch of eggs in a bag I placed her in. The problem was that I had no idea what the moth larvae fed on. I brought her back to Gainesville where I was living. I contacted Tom and he suggested gum bumelia, *Sideroxylon lanuginosum* (Figure 1) based on a conversation he had with the late Roy Kendall who once found an unidentified arctiine larva on that plant in San Antonio, Texas.

We subsequently reared several generations of *Euerythra phasma* on *Sideroxylon*. In addition, Jeff took a trip to San Antonio, Texas, and collected a female *Euerythra trimaculata*. He obtained eggs and both he and Tom reared several generations of this sister species on *Sideroxylon*. Tom and Jeff presented talks at some of the Southern Lepidopterists' Society (SLS) meetings on the rearing of these moths. No formal written information had been provided on these moths until SLS member Royal Tyler contributed an excellent article in Volume 42 No. 3 of the SLS News on the life history of *Euerythra phasma*.

Figure 1. Gum bumelia, *Sideroxylon lanuginosum*,, showing characteristic thorns.

In this paper we present life history notes on *Euerythra trimaculata* with relevant references to *Euerythra phasma* for comparison and identification purposes. *Euerythra phasma*, the red-tailed specter, and *Euerythra trimaculata*, the three-spotted specter, are moths of the subfamily Arctiinae in the family Erebidae.

As shown on Figure 2, *E. trimaculata* has a rather restricted range in central and south-central Texas whereas *E. phasma* has a wide range through much of the southeastern states and through Texas northward to at least Missouri. The two species overlap in at least a few counties in Texas, namely Tarrant and Brown Counties (records from Knudson). Both species generate up to three broods through the warmer months from February through November. Many of these records can be found on the iNaturalist website. There is only one species of *Sideroxylon* that occurs in the region of Texas where *E. trimaculata* is found. This species is *S. lanuginosum,* known as gum bumelia. It ranges from south-central United States into Mexico. Most records for *E. phasma* also fit nicely into the range of gum bumelia. Although there are five other *Sideroxylon* species, most have a limited range in Florida. Of these, both species of *Euerythra* have also been reared on tough bumelia, *Sideroxylon tenax.*

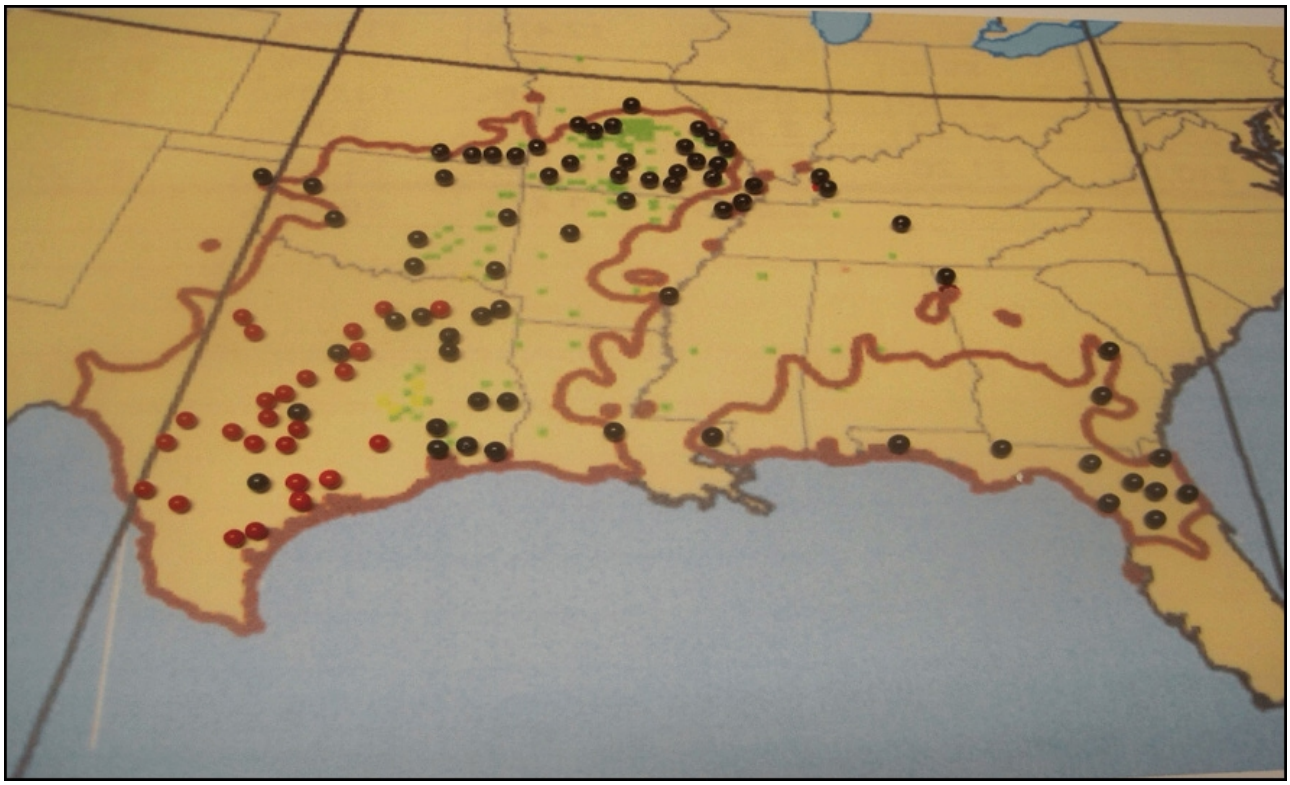

Figure 2. Red outline denotes the range limit of *Sideroxylon lanuginosum*. Red pins represent records for *E. trimaculata;* black pins for *E. phasma.* Map courtesy of Ed Knudson.

Eggs (Figures 3, 4, 5) are deposited on the underside of new growth leaves in groups of 5 to 10 and hatch in approximately 7 days at 20 degrees C. The first two instars feed as leaf skeletonizers on the underside of the leaf (Figures 6 & 7). The undersides of the leaves of *S. tenax* and *S. lanuginosa* frequently have dense pubescence. The larvae of both species begin the process of feeding by first plucking and then bulldozing these hairs forward to move them out of the way so they can begin the feeding process (Figure 8). When leaf is minimally pubescent or glabrous larvae feed directly. The larvae disperse in the third instar and stop skeletonizing the leaves. Then they will feed on the entirety of the leaf; pubescence removal continues. When disturbed, larvae will frequently drop to the ground on a thread of silk. Later instars of *E. trimaculata* are illustrated below (Figures 9 – 12).

Figure 3. Showing the cluster of *E. trimaculata* eggs laid on underside of *Sideroxylon* host leaf.

Figure 4. Showing enlarged eggs (Actual size: 0.22 mm).

Cocoons and pupae of *E. trimaculata* (Figures 13 & 14) are very similar to those of *E. phasma.* Cocoons are formed inside rolled leaves or other debris. Silk is fairly minimal and many body hairs are incorporated into the structure. The pupa is black and its surface is quite rugose.

The duration of a generation from egg to adult averaged 74.4 days at 20 degrees celsius for non-diapausing generations. Diapause occurs in the pupal state of the final brood of the year with adults emerging in February.

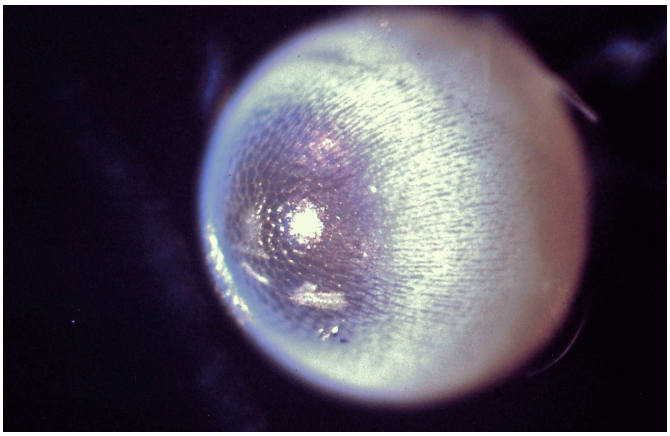

Figure 5. Microscopic enlargement, *E. trimaculata* egg.

Figure 6. First instar larvae of *E. trimaculata* skeletonizing leaves of *Bumelia*.

Figure 7. Second instar larvae of *E. trimaculata* feeding.

Figure 8. Skeletonized leaf showing removed pubescence.

Figure 9. *E. trimaculata:* third instar (L), fourth instar (R).

Figures 10. Fifth instar *E. trimaculata*.

As an aid to field identification last instar larvae of the two species are pictured together (Figure 15) to emphasize the differences in general coloration; the *E. trimaculata* having an almost silvery aspect whereas *E. phasma* coloration appears more yellowish. The dorsal area of *E. phasma* also presents as a broad dark stripe (Figure 16) contrasting to the much paler dorsum of *E. trimaculata*. Figures 17 and 18 depict adult *E. trimaculata*. Figure 1 is provided to show a hostplant *Siderolxylon lanuginosum* branch growing in the wild.

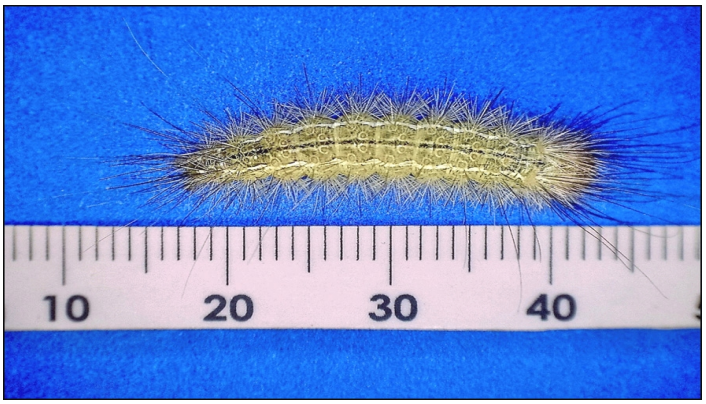

Figure 11. Fifth instar *E. trimaculata*.

Figure 12. Head capsule of last instar *E. trimaculata larva.*

Figure 13. Cocoon and pupa of *E. trimaculata*.

Figure 14. Exposed pupa of *E. trimaculata*

Figure 15. Last instar *E. trimaculata* (top), *E. phasma* (bottom).

Figure 16. Last instar of *E. phasma* top view showing wide black dorsal stripe.

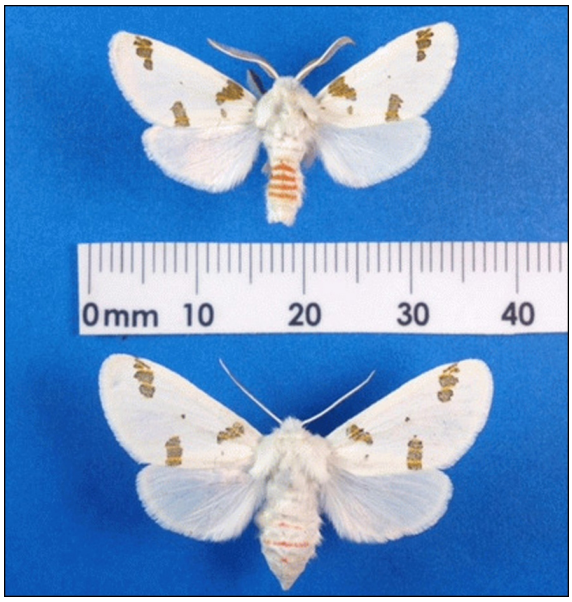

Figure 17. Adult male (top), female (bottom) *E. trimaculata.*

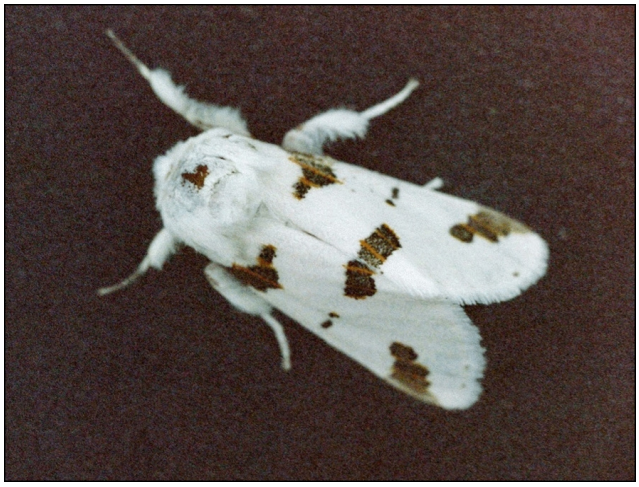

Figure 18. Living adult *E. trimaculata*.

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Tom Neal, E-Mail: chouwah@aol.com:: Jeff Slotten, E-Mail: jslotten@bellsouth.net)

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Southern Lepidopterists' Society
Treasurer's Report For 2024
(As of December 31, 2024)

by Jeffrey R. Slotten

Bank Account Summary

There are **141** paid members and two complimentary issues are sent out quarterly to Library of Congress and Library at Division of Plant Industry in Gainesville, Florida.
Truist of Gainesville Account (43rd and 39th Ave):
Beginning Balance: **$11,547.18** (as of 12/29/2023)
Ending Balance: **$10,891.66 (**as of 12/31/2024)
Deposits and Credits: **$6,490.00***
Withdrawals and Fees**: $7145.52**
***Includes member dues and donations, collections from meetings and sales of old newsletters.

Newsletter Summary

Printing Newsletters*:
Vol. 45 #4 $1355.16 (postage Vol. 45 #4 was $735.00)
Vol. 46 #1 $1409.31
Vol. 46 #2 $1175.05
Vol. 46 #3 $1018.04
Postage for Newsletters:
Vol. 46 #1 $564.00
Vol. 46 #2 $861.30 (large increase in postage rates starting July 2024)
Vol. 46 #3 $342.35
Supplies for Newsletters: $165.16
Bank Fees: $0.00
H & R Block Fee For Filing 990N Postcard for 2023: $50
Truist Bank Fee For New Bank Deposit Slips And Checks: $99.00
Special Award For our Editor, Barry Lombardini, For Outstanding Work That Was Going To Be Presented At The SLS/ATL Meeting In October 2024: $27.20

*Printing costs include printer cartridges for Barry Lombardini's home computer.

Newsletter Budget

Barry Lombardini has continued to do an excellent job as editor of the Southern Lepidopterists' News.

Due to the generosity of many members we have continued to produce excellent newsletters. Irving Finkelstein's Investment Account Gift is managed by Edward Jones Financial Advisors. Its value as of December 31, 2024 is $64,447.34.

We produce 4 newsletters each year. We spent $5370.05 to produce three newsletters so far. If we had 141 members paying $30 each, that would bring in revenue of only $4230.00 which would not cover the costs of the newsletters. We still have one more newsletter to produce for 2024. Thanks to the generosity of many of our members and the donation from Irving Finkelstein in 2017, the society still has reserves to cover the newsletters for the next few years.

Dues are currently:

Student Membership	$15.00	Conributor Membersiop	$55
Regular Membership	$30.00	Benefactor Membershniop	$75
Sustaining Membership	$35.00	Life Membersnhip	$1200 (2 life members)

Many members have contributed more than the regular membership.

IMPORTANT NEWS LETTER AND MEMBERSHIP UPDATES – PLEASE READ

BY
DAVID FINE

For more than 2 decades, the Southern Lepidopterists' Society has enjoyed the gifted and passionate editorial prowess of Barry Lombardini. Barry has served as our volunteer editor for this time and the SLS membership has enjoyed Barry's love for Lepidoptera and producing a high quality, visually pleasing and educational newsletters. Recently, Barry has expressed that he is going to retire from his volunteer role and this issue will be his last official newsletter serving as editor. On behalf of the SLS board, officers and membership, we wish to extend a huge "thankyou" to Barry for his years of faithful service as editor.

The Southern Lepidopterists' Society will be referred to as: 'SLS' throughout the rest of this article.

With this gaping hole in the production of our newsletters, we are on the hunt for someone willing to step into this role and help the SLS continue to provide a platform for increasing knowledge of Lepidoptera in the southeastern United States as well as creating community among amateur and professional lepidopterists. At the beginning of November, an email was sent to all of the SLS membership to seek out interest for a potential future volunteer editor. We did not receive any leads, so as of the Spring of 2025, I will temporarily step in as the SLS editor until a new editor steps up to volunteer for the role. If anyone has an interest in assisting the society in editing newsletters, please send me an email expressing your interest in serving.

For the submission of future articles, please email them to David@keysmoths.com

The SLS board also felt it prudent to communicate to the membership a state of the union in regards to our budget and the health of the Society. We also wanted to keep the membership informed on decisions that were made by the board to ensure the future health of the society as well as adjusting our philosophy to include reaching the next generation of lepidopterists on digital, on-line based platforms while continuing to produce a high-quality printed newsletter.

Balancing the Budget

On top of volunteering his time to edit the newsletters, Barry Lombardini also went to great lengths to expend practical and financial recourses as well to create and produce the newsletters with color photos and high quality, high gloss paper. In order to continue creating, printing and shipping these newsletters, the organization now finds itself in an annual deficit of about $2000. Upon lengthy discussions, over various Zoom and phone call meetings, we have determined a few next steps to try and be better stewards of our resources obtained through dues and donations in an attempt to operate within a balanced budget.

2-Tiered SLS Membership

It became very obvious that our newsletters cost more to produce than we are taking in with dues and donations. Many members have expressed an interest in obtaining electronic PDF newsletters instead of the printed paper copies while others strongly expressed the desire to have the printed copies in hand. Upon observing other entomological societies comparable in size and financial capacity and we have found that most societies have transitioned to produce solely digital files and have moved away completely from printed newsletters. In an effort to continue to produce printed copies of our newsletters for those that want them, we are going to try and meet the needs on both sides of this matter.

Moving forward, the SLS newsletter will be produced into a digital PDF file. Members will be emailed a link to a downloadable PDF version of the newsletter and will be able to access on line, likely through our website. Starting in the Spring of 2025, the SLS will move to 2-tiered membership.

Membership Tier 1: The first membership tier will require $30 annual dues payment. This tier will include being on our email list for the distribution of electronic newsletter PDF files.

Membership Tier 2: The second tier of our membership will require $50 annual dues payment. Members that elect to be part of the second tier will be mailed a paper hard copy of the newsletter much like we have been receiving until this point. They will also have access to the electronic version of the newsletter.

The board and officers also found it necessary to provide more options for members to find value in the SLS as well as finding new ways to increase interest in the society, particularly from the next generation. In an attempt to create more community, we will begin having several Zoom meetings per year where short papers and field observations can be shared with interested members. This will be a great way for people to connect on-line in a more feasible way than attending the annual in-person meeting. Also, over the course of the 2025 year, we are going to explore developing a private Facebook Page for SLS members only as well as an SLS Instagram account where members can tag photographs and short videos of Lepidoptera that they take. Perusing these social media platforms will be a concerted effort moving forward in an attempt to reach the next generation and get them involved with our society. If someone would like to serve as an administrator in either Meta/Facebook or IG/Instagram platforms, please email me as this will be something that is developed sometime within the next year.

Format of Newsletter Articles

Another change that we will be making is format of the newsletters moving forward. In order to reduce the costs of the printed newsletters, the board discussed a format that we will ask authors to use as they submit articles to be printed in the SLS. Moving forward, we will limit articles submitted for SLS newsletter to no more than 10 printed pages. We also will ask that authors select images to be used in their article not to exceed 20 images per article. We will also require articles that are written for the SLS newsletter on Lepidoptera to be focused on species and research from within the southeastern states as described in the SLS Constitution: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia.

Southern Lepidopterists' Society news letter criteria:

- 10 pages or less
- 20 color images or less
- Based on Lepidoptera of southeastern states listed above.

These criteria are meant to be a guideline and are open to editorial discretion. If an author wishes to publish through the SLS newsletter and finds their work landing outside of these guidelines, please reach out and we will discuss. We may ask that a donation to the SLS organization be made in order to publish more lengthy or photographically heavy articles to help offset printing costs.

At this time, we would like for you to help us organize our new 2-tiered membership list and let us know which of these tiers you would like be part of as an SLS member. Please find the insert in this newsletter, fill it out indicating which membership tier you wish to be part of and mail it to treasurer Jeff Slotten. When your dues are up for renewal, you can begin paying dues at the adjusted rate at that time if you choose the $50 tier with printed newsletters. There will be more information coming in following newsletters describing the new social media and zoom meeting opportunities. In the meantime, we appreciate your patience as we adjust to making these newsletters happen without our beloved Barry Lombardini. His service will be missed!

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LAND RESTORATION MEASURED BY INCREASING NUMBERS OF THE NATIVE GOLD MOTH (*BASILODES PEPITA* [NOCTUIDAE]) FOLLOWING REMOVAL OF INVASIVE CHINESE PRIVET (*LIGUSTRUM SINENSE* [OLEACEAE]) IN SHOAL CREEK SANCTUARY, CLARKE COUNTY, GEORGIA

BY

JOHN PICKERING

In 2010 we started an ongoing study of how weather and other factors affect insect diversity, abundance, and flight activity. As described in Pickering (2015) we try to photograph all the individual moths, beetles, caddisflies, and some other groups that come to lights at 275 Blue Heron Drive, Athens, Georgia [33.888°N 83.303°W]. We have now sampled 5,300 nights and photographed 430,000 individual moths, 34,000 beetles, and 16,000 caddisflies. Since 2010 we have an almost complete time series of nightly samples, missing only 7 nights during the last 14 years. All photographs and associated data are online at **https://www.discoverlife.org/moth**.

We identified moths with greatly appreciated help from taxonomic experts, notably James Adams, Charlie Covell, Jackie Miller and Brian Scholtens. In cases where photographs were insufficient to determine species, we identified individuals to a species-group, typically a pair of species within a genus. To date we have identified 386,000 (90%) of the lepidoptera to 1,560 taxa. These include 105 morphospecies (7% of the taxa),which are either undescribed species or ones that we have not yet identified. Most of the remaining 44,000 moths are identified to family or genus and await more precise determination. They include additional taxa above the 1,560.

These data enable us to examine detailed changes in the abundance of the site's rich insect diversity. As an example, here I consider *Basilodes pepita*, the beautiful, easily-recognized noctuid in Fig. 1; show its nightly abundance over 15 years in Fig. 2, and describe the study site and likely reason why this species increased sharply in abundance in the last two years.

Fig. 1. *Basilodes pepita* photographed in Mitchell County, North Carolina on 16 August, 2015.

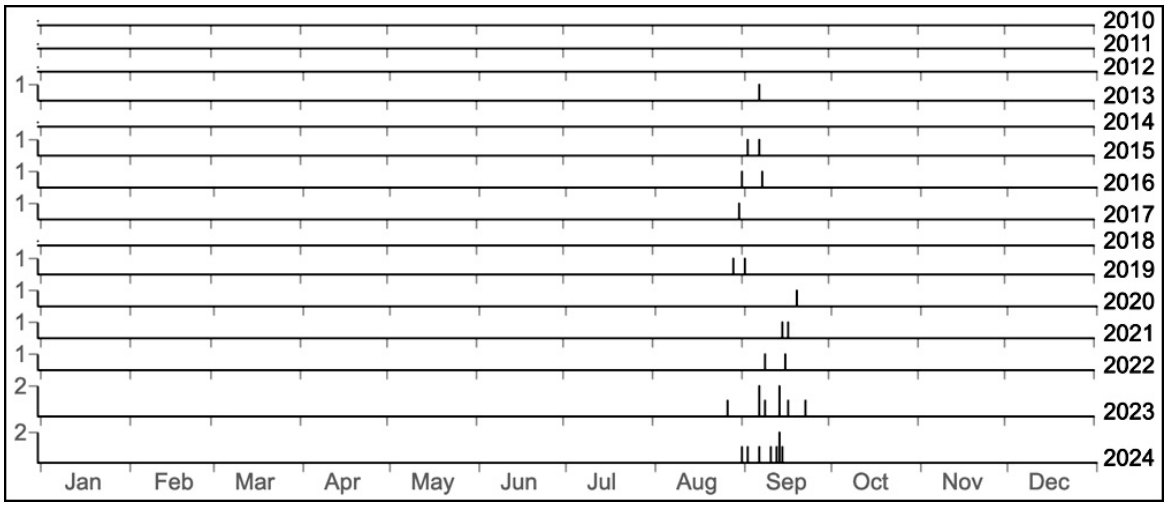

Fig. 2. The nightly number of *B. pepita* photographed at the Blue Heron Drive lights between 2010 and 2024. Their abundance increased from an average of one per year in the first 13 years to 8 specimens per year in both 2023 and 2024. We sampled all nights in August and September across the15 years except for 24-27 September, 2010.

In 2019 we bought land adjacent to the Blue Heron study site and started Shoal Creek Sanctuary, a square kilometer that includes a conservation easement overseen by the Oconee River Land Trust. This land is typical of much of Georgia's wooded piedmont in that it includes a patchwork of upland, slope, riparian and floodplain forest; unforested areas, and aquatic habitats. Fig. 3 is an aerial photograph that shows the house where we run the lights and its surrounding habitat. More information on the sanctuary's history, biology, and management is at **https://www.discoverlife.org/sanctuary**.

Fig. 3. Viewed from a drone camera facing northwest on 21 November, 2021, Shoal Creek Sanctuary stretches 1 km towards Athens, which is just visible on the horizon at 1 o'clock. The Blue Heron Drive study site lights are at the white house on the lower right. The house is surrounded by 40 -70 year-old upland forest and older "legacy" slope forest – "legacy " forest being defined as areas that were forested in 1938, when the first aerial photographs of the county were taken, and that remain so today. The upland forest consists largely of the green Loblolly Pine (*Pinus taeda* [Pinaceae]) and here-leafless Sweetgum (*Liquidambar styraciflua* [Hamamelidaceae]). The slope forest, which has browning leaves here, is dominated by oaks (*Quercus* spp. [Fagaceae]) and hickories (*Carya* spp. [Juglandaceae]). The floodplain is the band of largely leafless forest from 9 o'clock to 3 o'clock. It was unforested farmland in1938 and partially forested in 1951. Its larger species are Tulip Trees (*Liriodendron tulipifera* [Magnoliaceae]), Green Ash (*Fraxinus pennsylvanica* [Oleaceae]), Water Oak (*Quercus nigra* [Fagaceae]), Sweetgum, River Birch (*Betula nigra* [Betulaceae]), and Black Walnut (*Juglans nigra* [Juglandaceae]). Other than within 7 relatively small fenced plots built in 2024, the ground vegetation in the sanctuary is heavily impacted by selective feeding by deer. The dark area at 6 o'clock is the dammed end of Blue Heron Pond, which is 0.7 hectares in size. For scale – the back porch lights are 110 m across Shoal Creek to the nearest flood plain trees.

The sanctuary is atypical in that we use no herbicides, insecticides or other chemicals, although there may be some yet-unmeasured contamination by drift and runoff from surrounding terrain. There is no substantial light pollution, and its air quality is excellent, as reflected by a profusion of lichens and lichen moths.

Our goal has been to restore the sanctuary from disturbances caused by intensive cotton farming in the previous centuries, the presence of 40 or more invasive species, and heavy feeding by White-tailed Deer (*Odocoileus virginianus*). Here we report on removing 10 hectares of mid-story Chinese Privet and some changes subsequently occurring in the plant and insect community.

Starting in 2019 through 2021, we chainsawed about 3,000 large, reproductive privet trees. Fig. 4 shows their stumps in a cleared area and describes how we have learned to kill privet without using herbicide. The aerial photographs in Fig. 5 show the extent of the removal. Before removal little grew under the privet because of its shade and allelochemicals. Now privet is a minor ecological component of the floodplain. Two deer-tolerant native wildflowers have large patches where the privet once was. These are Small's Ragwort (*Packera anonyma* [Asteraceae]) and Yellow Crownbeard (*Verbesina occidentalis* [Asteraceae]), a patch of which is shown in Fig. 6 and which is fed on by Gold Moth larvae (Fig. 7).

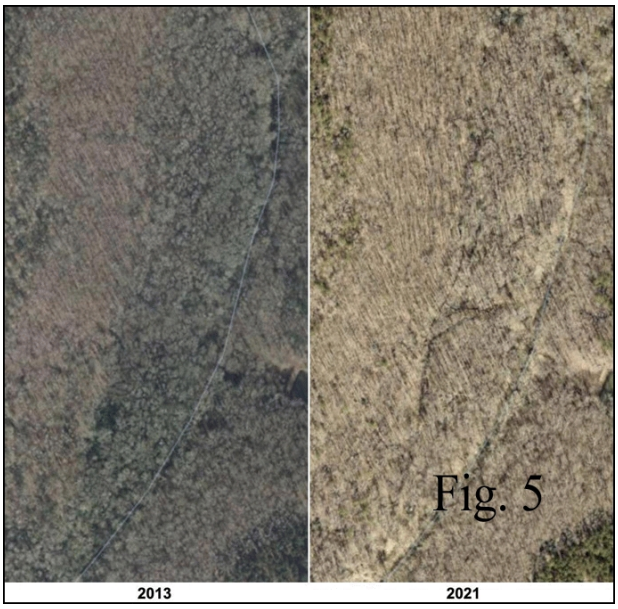

Fig. 4. This image faces downstream with Shoal Creek on the left, the man-made levy in the center, and the floodplain on the right. It was taken on 17 January, 2023, two weeks after a flood deposited white sand below this beach in the levy. The dead stumps on the levy and floodplain show the density of privet that we cut approximately 30 months before. This is the height at which beaver cut privet, causing most to die. Over 200 people have helped in our on going endeavor to uproot smaller privet plants, either by hand or with wrenches. Without the privet's shade and allelochemicals, this area now supports a profusion of wildflowers and grasses, both native and invasive.

Fig. 5. The extent of our privet removal is shown by comparing the 2013 and 2021 aerial photographs from qPublic.net. These were taken after the deciduous trees had dropped their leaves. In each image Shoal Creek is marked with a blue line. The floodplain is to the west (left) of the creek. Rattlesnake Slope, a deciduous largely oak-hickory stand, is immediately west of the floodplain. On the upper far left are some upland Loblolly Pines. There is also a dense stand of these pines in the lower right corner. The dammed end of Blue Heron Pond is at 3 o'clock on the right edge. The green in the flood plain in the 2013 image shows that much of it was then covered by dense privet trees. The 2021 photograph shows that we cleared them.

Fig. 6. A patch of Yellow Crownbeard photographed on the floodplain on 16 September, 2024 that was established after we removed the privet mid-story between 2019 and 2021. This patch is about 280m through forest to the back porch lights.

Fig. 7. Gold Moth larva feeding on a flower head of Yellow Crownbeard on the floodplain on 15 October, 2023.

On the downside, much of the cleared area is now covered by invasive Japanese Stiltgrass (*Microstegium vimineum* [Poaceae]), an annual that has a seedbank lasting up to 7 years. We are tackling this grass by weed whacking before it releases seed and by introducing two native perennial competitors, River Oats (*Chasmanthium latifolium* [Poaceae]) and Virginia Wildrye (*Elymus virginicus*, [Poaceae]), both of which set seed in 2024.

Other plants that have increased since privet removal are Beefsteak Plant (*Perilla frutescens* [Lamiaceae]), Jerusalem Cherry (*Solanum pseudocapsicum* [Solanaceae]), Deertongue (*Dicanthelium* (formerly *Panicum*) *clandestinum* [Poaceae]), and some native sedges, such as Cherokee Sedge (*Carex cherokeensis* [Cyperaceae]). The first two of these are invasives that we pull manually. The Deertongue is native. It is the host plant of *Idioglossa miraculosa* [Elachistidae], two specimens of which came to the lights for the first time in 2023 (Fig. 8).

Fig. 8. *Idioglossa miraculosa* (Elachistidae), the larvae of which skeletonize Deertongue. This specimen came to the lights on 25 September, 2023. Another came on 6 August, 2023. These two are the only ones of this species observed between 2010 and 2024. In 2023 we first observed a few Deertongue on the floodplain near the Yellow Crownbeard patch shown.

Chinese Privet is one of the most widespread invasive species in the Southeast. Research shows how its removal benefits native plants (Hanula, Horn & Taylor 2009; Greene & Blossey 2012; Maynard-Bean & Kaye 2019), pollinating bees, and butterflies (Hanula & Horn 2011); Hudson, Hanula & Horn 2013; Ulyshen, Horn & Hanula 2020), beetles (Ulyshen, Horn & Hanula 2010), songbirds (Wilcox & Beck 2007) and earthworms (Lobe et al. 2014).

My report here shows that native moths have increased after privet removal. While this observation is in itself trivial, the point is to show that we can detect such changes. We now have the ability to address how plant-herbivore communities are put together within a landscape from the bottom up, by examining both their abundance and species interactions with their hosts. Theory suggests that patch size (Fahrig 2013), plant diversity (Lange et al. 2023) and forest succession (Hilmers et al. 2018) play important roles in structuring ecological communities. Let's take it to the next level with detailed abundance data. Can we understand how plant-insect relationships and weather determine the diversity, phenology, and abundance of 1,560 moth taxa in a successional landscape? Am I dreaming? Stay tuned.

Acknowledgments

I thank the over 200 volunteers and other individuals who have helped me remove invasives and restore native species in the sanctuary. These include University of Georgia students in Dr. James Anderson's leadership classes, Cedar Shoals High School students led by Coriander McGreevy, Martin Luther King day and Earth Week participants, and other community members, many recruited by Audrey Hughes. My particular thanks go to Dillon Downing, Brian, Ian & Keira Drake, Rae Kretzer, Tyler Lewis, Bill & Sammy Pickering, Tiffany Rogers, and Zach Williams.

Since we started studying biodiversity at Blue Heron Drive, over 70 individuals listed on Discover Life have contributed photographs and helped with identification. For recent identification work not acknowledged before, I thank Coriander McGreevy and Shannie Chang.

Besides volunteer work, private donations to the Polistes Foundation run by Kevin Weick have provided support. In particular I thank Dac Crossley and Amy & Rick Rosemond for their generosity.

I thank Don Windsor and Albert & Ouida Meier for their advice and useful editorial comments.

I deeply appreciate Barry Lombrdini's 23 years of service as editor of SLN and wish him the very best in his retirement. It has been an absolute pleasure to work on seven publications with him. Barry, from me and your many other contributors, the greatest of thanks for your kindness.

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DORSAL BODY PATTERNS IN THE ENNOMINAE [LEPIDOPTERA: GEOMETRIDAE]

BY
JOHN PICKERING

For over two centuries lepidopterists have used wing patterns to understand and describe the rich diversity of moths and butterflies. We have collected, pinned and spread millions of specimens, destroying and ignoring the largely unknown characters under our pins. Here with photographs of live specimens, I reveal some of the wonders that we have missed.

Since 2010 we have photographed moths at lights in Clarke County, Georgia [33.888°N 83.303°W] as described by Pickering (2015, 2024). We have amassed over 600,000 images that are online with their associated data at https://www.discoverlife.org/moth. Here I present the dorsal patterns of thirteen species in Ennominae: *Anavitrinella pampinaria,* Common Gray (Fig. 1), *Cymatophora approximaria*, Late Gray (Fig. 2), *Ectropis crepuscularia*, The Small Engrailed (Fig. 3), *Epimecis hortaria*, Tulip-tree Beauty (Fig. 4), *Glena cribrataria*, Dotted Gray (Fig. 5), *Glena plumosaria*, Dainty Gray (Fig. 6), *Glenoides texanaria*, Texas Gray (Fig. 7), *Hypomecis umbrosaria*, Umber Moth (Fig. 8), *Iridopsis defectaria*, Brown-shaded Gray (Fig. 9), *Iridopsis larvaria*, Bent-line Gray (Fig. 10), *Protoboarmia porcelaria*, Porcelain Gray (Fig. 11), *Phigalia denticulata*, Toothed Phigalia (Fig. 12), and *Euchlaena amoenaria*, Deep Yellow Euchlaena (Fig. 13). These species are all in the tribe Boarmiini, except for *P. denticulata*, which is in Bistonini, and *E. amoenaria*, which is in Angeronini.

The figures show that many individuals have patterns that appear face-like to us. I first described these patterns on the thoraxes of *G. texanaria* in Pickering (2022), playfully calling them Spirits of Nature, possible psychopomps of Greek mythology that guide our souls to the underworld. I now consider these patterns in the broader context of the Ennominae. Despite hours spent contemplating thousands of them, I have made little headway in trying to explain their existence. Until a plausible explanation emerges, I consider them to be delightful Ambassadors to the Unknown. I seek your help in explaining their mystery and hope that you enjoy them as much as me.

On the practical side, these face-like patterns help us recognize individual moths. Without marking them, we can determine whether individuals were photographed more than once in a nightly sample or returned on subsequent nights. It is like studying individual whales by their flukes, but on a smaller scale. How many individuals can you find duplicated in the figures? Start by matching two *E. amoenaria* in Fig. 13, the species that returns to our lights on subsequent nights more than the other species. I first photographed the matched individual on 13 September, 2023 and then again the following day.

Why do the face-like patterns exist? I am inclined to reason that they are favored by natural selection for something to do with mate choice, either in terms of within-species sexual selection or between-species recognition, but don't hold me to it. My reasoning is speculative at best. Greek mythology may currently better explain them than Darwin or me.

Consider the following: (1) The face-like patterns are present in many Ennominae but not all. Within the genus *Euchlaena*, for example, *E. amoenaria* has them but *Euchlaena obtusaria* (Obtuse Euchlaena Moth) and *Euchlaena pectinaria* (Forked Euchlaena) do not. (2) They are small, about 1 mm across, thus unlikely to be aggressive mimicry to spiders or larger predators. (3) They may reflect some spandrel of San Marcos à la Gould & Lewontin (1979), but if so, then why do not all geometrids with similar underlying "arches" have them? (4) It seems doubtful that they evolved to help camouflage their owners, fine tuning the cryptic patterns on the wings, though some wing markings do blend into them, especially in *E. hortaria* (Fig. 4). And (5) the two main bilateral spots on the thorax (the face's "eyes") may be developmentally linked to bilateral spots on the anterior abdominal segments, most notably as in *G. cribrataria* (Fig. 5), but less likely in species with other abdominal patterns.

Moths find and select mates visually, with pheromones, and/or by ultrasound. Of the Ennominae presented, with the exception of *E. crepuscularia*, males have plumose antennae and females filamentous ones. Presumably their antennae help males to locate calling females. Do they then mate? The face-like patterns are surrounded in both sexes by "bouffed-up hair jobs," which are largely destroyed by pinning. Do these unstudied "hair jobs" play a role in mate selection, possibly by helping to retain, emit or detect pheromones? Their primary function is probably not thermoregulation. Three winter-flying *Phigalia* in the Ennominae, *Phigalia denticulata* (Toothed Phigalia, Fig. 12), *Phigalia strigataria* (Small *Phigalia*) and *Phigalia titea* (The Half-wing), have less hair than *E. hortaria* (Fig. 4), which flies in warmer months between March and September and usually has a "great hair-do." Furthermore, supporting the possibility that the "hair" around the "faces" is involved in mate choice, is the fact that a few individuals exhibit some hair that is blue – an unusual color in the geometrids. For example, see Fig. 14, a male *G. texanaria*, who also has unusual red "eyes", and whom we have named Wicked, just for fun.

So, can we scientifically explain what is driving the patterns shown? If we can't, then I hope that my soul will get a flight on a moth to the Elysian Fields when I snuff it!

(Continue to next page)

Fig. 1. ***Anavitrinella pampinaria*****, Common Gray**

Fig. 2. ***Cymatophor approximaria, Late Gray***

Fig. 3. ***Ectropis crepuscularia*****, The Small Engrailed**

Fig. 4. ***Epimecis hortaria*****, Tulip-tree Beauty**

Fig. 5. ***Glena cribrataria*****, Dotted Gray**

Fig. 6. ***Glena plumosaria*****, Dainty Gray**

Fig. 7. ***Glenoides texanaria*****, Texas Gray**

Fig. 8. ***Hypomecis umbrosaria*****, Umber Moth**

Fig. 9. ***Iridopsis defectaria*****, Brown-shaded Gray**

Fig. 10. ***Iridopsis larvaria*****, Bent-line Gray**

Fig. 11. ***Protoboarmia porcelaria*****, Porcelain Gray**

Fig. 12. ***Phigalia denticulata*****, Toothed Phigalia**

Fig. 13. ***Euchlaena amoenaria*****, Deep Yellow Euchlaena**

Fig. 14. Moth number I_JP168992, which we call Wicked, is a male *Glenoides texanaria*. I photographed it on 14 July, 2014. The ruler below the left image is in millimeters. The right image zooms in on its thorax. Its "face" pattern is unusual in that it exhibits both red "eyes" and some blue in its "hair job." This specimen is also presented with other *G. texanaria* in Fig. 7.

Acknowledgements

I'm trying to be Barry's last customer as our 23-year-long editor of SLN. Whether I succeed or not, it has been super fun. Thank you, Barry. I hope that this makes you wonder and laugh.

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(John Pickering, E-Mail: pick@discoverlife.org)

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REPORTS OF STATE COORDINATORS

Alabama: C. Howard Grisham, 573 Ohatchee Road, Huntsville, AL 35811, E-Mail: chgrisham@Comcast.net

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Check out the GA leps website at: http://www.galeps.org/

The 4th summary for 2024:

Most records are from James Adams (JA or no notation) and Lance Durden (LD). Other contributors are spelled out with the records. Most records are of first of the year specimens, uncommon species, county records, and records for new locations. Records are from 2024 unless otherwise indicated.

Carbondale, Whitfield Co., exit 326, off I-75:
NOCTUIDAE: *Lithophane signosa*, Oct. 22.

Taylor's Ridgeline, 5 mi. W of Villanow, Walker Co.:
September 15-16:
EREBIDAE: *Lycomorpha pholus, Apantesis virgo, Catocala luctuosa, C. robinsonii*. **NOCTUIDAE:** *Argyrogramma verrucae, Papaipema arctivorens, Dichagyris grotei.*
September 28-29:
NOCTUIDAE: *Papaipema marginidens, P. polymniae, Phlogophora periculosa.*
Oct.5-6:
NOCTUIDAE: "*Platypolia*" *mactata*, *Papaipema marginidens*.
Oct. 26-27:
EREBIDAE: *Catocala robinsonii*. NOCTUIDAE: "*Platypolia*" *mactata*, *Xylotype capax*.

Calhoun, 346 Sunset Drive SE (James Adams' house), Gordon Co.:
EREBIDAE: *Mocis marcida*, Oct. 27.

1314 Plainview Rd., Adairsville, Gordon Co., GA:
SATURNIIDAE: *Hemileuca (maia) sandra*, Nov. 17 (first date of flight noticed).

Palmetto, Fulton Co., Feb. 28, 2022, Giff Beaton:
DEPRESSARIIDAE: *Semioscopis merriccella* (COUNTY; see image on next page).

Alligator Creek WMA, Wheeler Co, with Jeff Slotten and Lance Durden:
Sept. 20-22:
CRAMBIDAE: *Condylorrhiza vestigialis*. **GEOMETRIDAE:** *Narraga georgiana* (LATE). **SPHINGIDAE:** *Eumorpha fasciatus*. **EREBIDAE:** *Idia gopheri, Selenisa sueroides*. **NOCTUIDAE:** *Amyna stricta, Callopistria granitosa, Condica cupentia, Pyrrhia aurantiago, Schinia scissoides, S. fulleri, S. sanguinea, S. psamathea, S. arefacta, S. nundina, Sideridis ruisa* (the most abundant I have ever seen it)*, Spodoptera albula, Lacinipolia erecta*.

UGA-Tifton Campus, Tifton, Tift Co., Oct. 25, Rebekah D. Wallace (31.47708 N, 83.52502 W):
EREBIDAE: *Sigela lynx* (COUNTY; see image on next page).

With Hurricane Helene coming through the state in late September, there were not many opportunities in October for collecting in southern Georgia, and the collecting in north Georgia was pedestrian.

Semioscopis merriccella

Sigela lynx

Louisiana: Michael Lockwood, 215 Hialeah Avenue, Houma, LA 70363, E-Mail: mikelock34@hotmail.com

Ricky Patterson sends in the following report for Louisiana. All specimens collected or observed by Ricky Patterson unless specified otherwise:

30 September 2024, Florida Beach, Cameron county, LA: *Schinia arcigera, Schinia volupia, Schinia nubila, Schinia saturata, Schinia gracilienta, Schinia thoreaui, Schinia siren, Eumorpha vitis*

30 September/1 October 2024, Rockefeller Wildlife Refuge (under permit), Cameron Parish, LA: *Poanes aaroni bordeloni, Anatryton logan logan, Lerodea eufala, Panoquina panoquin, Panoquina panoquinoides, Euphyes bayensis, Urbanus proteus proteus, Copaeodes minima, Burnsius oileus, Junonia coenia coenia, Phyciodes tharos tharos, Dione incarnata nigrior, Strymon melinus melinus, Pyrisita lisa lisa, Bellura densa, Schinia trifascia,*

Mississippi: Ricky Patterson, 400 Winona Rd., Vicksburg, MS 39180, E-Mail: rpatte42@aol.com

Ricky Patterson sends in the following report for Mississippi. All specimens collected or observed by Ricky Patterson unless specified otherwise:

20 September 2024, Grand Bay NWR (under permit), Jackson county, MS: *Leptotes cassius theonus* (STATE, ID confirmed by Andy Warren), *Euphyes berryi, Euphyes dion alabamae, Euphyes vestris metacomet, Anatrytone logan logan*

20 September 2024, Sandhill Crane NWR (under permit), Jackson county, MS: *Polites themistocles themistocles, Nastra lherminier, Neonympha areolatus areolatus, Euphyes pilatka pilatka, Anatrytone logan logan, Cercyonis pegala pegala, Schinia sanguinia* (resting on *Liatris* blooms)

North Carolina: Harry LeGrand, 1109 Nichols Drive, Raleigh, NC 27605, E-Mail: hlegrandjr@gmail.com

FALL BUTTERFLY RECORDS FOR NORTH CAROLINA – 2024
BY
HARRY LEGRAND

Records are from September through November 2024, unless otherwise indicated. Names in parentheses are counties; when in bold, a first county record. Records from iNaturalist that contain only the submitter's username, but not real name, are included as "unnamed person"; several authors and editors have decided to

give userid names in publications in hopes that they will use their real names in the future, as well as some usernames being quite silly.

This fall was characterized by the most devastating hurricane damage to a portion of the state that most of us have ever seen. Not only did Hurricane Helene dump up to 20" of rain in parts of the mountains on September 27, the storm washed away thousands of homes and businesses into roaring rivers and creeks, damaged or destroyed most roads, and likely laid waste to most of the region's butterfly eggs, larvae, and pupae. This damage also included parts of the upper Piedmont as well. The remainder of the state had more than enough rain in September as well, but escaped the "Wrath of Helene". On the other hand, it barely rained at all statewide in October and into November, a blessing for cleanup operations. November was very much warmer than normal, yielding a number of late records. This late season drought probably caused little impact to butterfly populations, as most came as the plant growing season was declining.

Southern immigrants are usually the highlight of the fall season, and this year was about average for recent years. Heliconius charithonia had a small outbreak in Craven County, and there were a few other records for it in the eastern counties. Urbanus proteus and Dione incarnata were found across the state, for the most part. As for other strays, there were only two reports of Burnsius oileus, disappointing for a species that I had hoped was becoming a resident species (and maybe will soon).

PAPILIONIDAE:
Heraclides cresphontes, always an excellent find in the Piedmont, one was photographed by Susie Moffat in her yard in northeastern Chatham County on October 2. Jeff Lewis saw four at Pine Island (Currituck) on September 1; this is one of our better state counts in recent years.

PIERIDAE:
Pyrisitia lisa, though somewhat widespread in the state this fall, numbers were rather low, with no double-digits counts anywhere.

Pontia protodice, sadly, this quite rare species went unreported all fall, a disturbing situation. Only a handful were noted in the state earlier in the year.

LYCAENIDAE:
Feniseca tarquinius, one photographed by Zoe Lloyd on September 17 was a very rare find at Cliffs of the Neuse State Park (Wayne). The species is difficult to find east of the Fall Line.

Lycaena hypophlaeas, one seen by Paul Super at high-elevation Purchase Knob in Great Smoky Mountains National Park (Haywood) on September 10 was a good find that far south.

Atlides halesus, quite rare in the mountains, one was very late in Macon County on October 8, when photographed by Brian Bockhahn.

Parrhasius m-album, there were disappointing very few fall reports. One was notable in Durham County on October 15, as photographed by an unnamed person.

Calycopis cecrops, though locally quite common at times in the Coastal Plain, a tally by Jeff Pippen and party of 70 on mainland Dare County on September 19 was quite noteworthy.

Strymon melinus, though a reasonably common species in the state, a tally of 65 on mainland Dare County on September 19 by Jeff Pippen, Audrey Whitlock, and Rachel Veal was one of the highest one-day counts ever for the state.

RIODINIDAE:
Calephelis virginiensis, there were a handful of fall reports, but as almost always, at the same few well-known sites. Rather late was one photographed by an unnamed person in Carteret County on October 19.

NYMPHALIDAE:

Danaus gilippus, as expected a handful of them were reported from Bald Head Island (Brunswick) and Fort Fisher (New Hanover) along the southern half of the coast. One at Fort Fisher photographed by John Lynch on November 19 was rather late, topped by one seen there even later on November 25 by John Taggart. The highest tally was 14 on September 11, as noted by John Taggart at Fort Fisher. Away from the coast, where seldom reported, individuals were found by Bob Cavanaugh in his Newport (Carteret) yard on September 21 and by Tayloe Moye far-inland in a Southern Pines (Moore) yard on September 22. The only previous record for Moore County was in 1908!

Heliconius charithonia, this was one of the very few "Florida immigrants" that made it to NC this season. Adding to a few summer reports, one photographed near Albertson (**Duplin**) on September 23 by Jessica Lopez was a notable record. Another far inland record was one seen by Marc Ribaudo in his Garner (Wake) yard on October 14. Singles were photographed on three occasions from September 28 to October 12 near New Bern (Craven) by unnamed persons. Singles were also found in Carteret County on September 26, October 10, and October 13, the first and last by Randy Newman at Fort Macon State Park. But topping these were a stunning count of **five** seen by Bob Cavanaugh at Lynaire Kennels in New Bern on October 9; this is likely the state's highest count since a major outbreak in the region in 2008, when over 30 were seen on several occasions in nearby Carteret County.

Dione incarnata, John Taggart had an excellent count of 57 at the New Hanover County Landfill Revegetation Project on August 26.

Argynnis diana, a female photographed in Macon County by an unnamed person on October 3 was very late; few are reported in that month.

Vanessa cardui, this was a moderately "good" fall for them, being seen in well over a dozen counties, but numbers were always just of one or two individuals on a trip, other than three seen by Sparrel Wood on Butler Mountain (Buncombe) on September 6 and by Salman Abdulali at the Pitt County Arboretum on October 12.

Phyciodes incognitus, Sparrel Wood counted six on Butler Mountain Bald (Buncombe) on September 6 and one on September 10, nice finds there and adding to the relatively few documented second brood records in the state.

Phycoides phaon, as many as four were seen in coastal Dare County – from Pea Island to Cape Hatteras Point – on the rather late date of October 24 by Jeff Pippen and Kenn Kaufman; as expected, individuals were mostly rather worn. The Pea Island refuge seems to be the northernmost regular site for the species in its Eastern range.

Lethe anthedon, rare in October in the state, one was late on the 6th of that month, as photographed by an unnamed person in Durham County.

Lethe creola, quite rare in the mountains was one photographed by Owen Carson near Brevard (Transylvania) on the late date of September 20.

HESPERIIDAE:

Thorybes bathyllus, seldom found in the northeastern corner of the state, one was photographed by Elijah Freeman at Poplar Branch (Currituck) on September 25. There is just one other record – in this county – for this corner of the state.

Staphylus hayhurstii, the only fall report was one seen by Randy Newman on September 11 at Fort Macon State Park (Carteret). This species continues to be quite elusive in the state.

Burnsius communis/albezens, John Taggart observed a good total of 22 at the New Hanover County Landfill Revegetation Project on October 23. Are these B. albezens? As mentioned in previous reports, that advancing species has previously been collected in Brunswick and Carteret counties, though we have no idea what percentage of Burnsius individuals in these three counties is which species.

Burnsius oileus, the only fall reports were both new county records. The first was one photographed by Josh Emm in northern **Duplin** on September 23. The second was the second ever for the Piedmont province, and the most northerly record in the state – one photographed by an unnamed person in Durham city (**Durham**) on November 18, the latest date ever for the state as well!

Erynnis baptisiae, one photographed at Hillsborough (Orange) on September 12 by an unnamed person was a relative rarity for the Piedmont.

Euphyes pilatka, the thorough, many-hour survey of the Alligator River refuge (Dare) hotspot on September 19 by Jeff Pippen and party tallied a remarkable **261** individuals! The previous state high count was "just" 70 individuals.

Euphyes dukesi, the large colony near Coinjock (Currituck) still contained 25 adults as late as September 12, as reported by Jeffrey Smith. The last report there was on October 7, photographed by an unnamed person.

Problema byssus, for some odd reason, reports were scarce this season, though few people worked in the Croatan National Forest (Craven and Carteret) and southward where it can be numerous at times.

Hesperia attalus, Richard Stickney had a decent total of five, seen in the Sandhills Game Land (Richmond) on September 12.

Hesperia meskei, daily counts in recent years have typically been of five or less, but Richard Stickney found ten in the Sandhills Game Land (Scotland) on October 13, a rather late date for so many.

Poanes aaroni, the local "hotspot" at Alligator River National Wildlife Refuge (Dare) yielded a few individuals into mid-season, with the last noted on September 19 (Jeff Pippen et al.).

Poanes yehl, on mainland Dare County, where numbers can be quite high in fall, Jeff Pippen and party tallied 40 on September 19, and Audrey Whitlock tallied an outstanding **73** nearby on September 22.

Oligoria maculata, this species is near the northern edge of its range on mainland Dare County, and by mid-September, the species is nearly finished its second brood. Yet, the Jeff Pippen party tallied an outstanding 12 still there on September 19.

Amblyscirtes carolina, one seen on mainland Dare County was late, on September 19 (Jeff Pippen party).

Nastra lherminier, a good local tally of 14 was made by Nick Flanders at the Voice of America Game Land (Beaufort) on September 9.

Copaeodes minima, the memorable push of this tiny species into the Piedmont continued into fall, with it being found at four or five Wake County sites, perhaps radiating out from the huge colony in western Raleigh. A tally of 15 was made there on September 9 by Harry LeGrand, and a few were still remaining there into November, when LeGrand counted four on the 16th of that month. A few were also found, as expected, in Mecklenburg County, at the western edge of the range in the state. One seen by Jeff Pippen on October 7 in **Orange** was not completely unexpected this fall but was a first for that well-studied county.

Panoquina ocola, as usual, numbers of this partial immigrant picked up considerably in the fall, highlighted by an excellent tally of 50 at a Raleigh (Wake) arboretum on October 14 by Harry LeGrand, and by 30 in the Sandhills Game Land (Richmond) on October 11 by Will Stuart.

Calpodes ethlius, there were not as many state reports as hoped for this fall, after a decent handful this summer; nonetheless, there were over a half-dozen reports, most coastally. Notable well inland was an adult photographed in Durham County on October 7 by Dan Levine, as was one seen by Harry LeGrand at Raleigh (Wake) on October 4. Coastally, others were photographed by Jeff Lewis at Duck (Dare) on September 1, by Kevin Metcalf and Rob Van Epps at Duck on September 15, by Andrew Thornton at Wanchese (Dare) on September

19, by Jeff Lewis at Airlie Gardens (New Hanover) on September 22, and by Rachel Veal at Manteo (Dare) on October 23. One was seen by Randy Newman at Fort Macon State Park (Carteret) on September 12.

South Carolina: Brian Scholtens, College of Charleston, Charleston, SC 29424, E-Mail: scholtensb@cofc.edu

Brian sends in the following Moth Records for SC Nov 2024:

Nepticulidae:
Zimmermania obrutella – 30 Mar, 15 May, Santee Coastal Reserve, Charleston Co. **County Record**

Opostegidae:
Pseudopostega albogalleriella – 16 May, Francis Marion NF, Ion Swamp trail, Charleston Co, **State Record**

Dryadaulidae:
Dryadaula visaliella – 20 Apr-4 May, Charleston Co., Santee Coastal Reserve, trail by cypress, at lure ZZOH/EZOH; **County Record**
Dryadaula sp.1 – 20 Apr-4 May, Charleston Co., Santee Coastal Reserve, trail by cypress, at lure EZE 23; **State Record**
Dryadaula sp.2 – 20 Apr-24 May, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd, at lure API; **State Record**

Tineidae:
Nemapogon clematella - 4-24 May, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd, at lure ZZA L103; **County Record**
Nemapogon granella – 20 Apr-17 May, Santee Coastal Reserve, Charleston Co – at EZE 23 & ZZOH/EZOH
Nemapogon variatella – 5 Mar, Santee Coastal Reserve, Charleston Co, **County Record**
Nemapogon angulifasciella – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Amydria effrentella – 16 May, Francis Marion NF, Ion Swamp trail, Charleston Co
Stenoptinea auriferella – 16 May, Francis Marion NF, Ion Swamp trail, Charleston Co, **County Record**
Niditinea sabroskyi – 5 Mar, Santee Coastal Reserve, Charleston Co, **County Record**
Diachorisia velatella – 31 Mar & 12 Jun, Santee Coastal Reserve, Charleston Co

Pychidae:
Kearfottia albifasciella – 16 May, Francis Marion NF, Ion Swamp homesite, Charleston Co

Bucculatricidae:
Bucculatrix solidaginiella – 25 May, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; **County Record**

Gracillariidae:
Caloptilia rhoifoliella – 5 Mar, 7 Oct, Santee Coastal Reserve, Charleston Co – overwintering adults in Mar
Caloptilia sassafrassella – 7 Oct, Santee Coastal Reserve, Charleston Co, **State Record**
Acrocercops astericola – 5 Mar, 31 Mar, Santee Coastal Reserve, Charleston Co, **County Record**
Phyllonorycter propinquinella – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**

Cosmopterigidae:
Walshia elegans – 15 May, 12 Jun, 7 Oct, Santee Coastal Reserve, Charleston Co
Cosmopterix astrapias – 12 Jun, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; **County Record**
Cosmopterix dapifera – 15 May, Santee Coastal Reserve, Charleston Co, **State Record**
Cosmopterix abdita – 7 Oct, Santee Coastal Reserve, Charleston Co
Cosmopterix gemmiferella – 15 May, Santee Coastal Reserve, Charleston Co
Anatrachyntis testor – 15 May, 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Teladoma helianthi – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Triclonella bicoloripennis – 12 Jun, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; 2nd state record – 1st at Wedge Plantation

Gelechiidae:
Coleotechnites canusella – 5 Mar, Santee Coastal Reserve, Charleston Co

Coleotechnites variella – 16 May, Francis Marion NF, Ion Swamp trail, Charleston Co, **County Record**
Aproaerema palpiliniella – 5 Mar, 27 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Arogalea cristifasciella – 5 Mar, Santee Coastal Reserve, Charleston Co
Pseudotelphusa basifasciella – 5 Mar, Santee Coastal Reserve, Charleston Co, **County Record**
Pubitelphusa latifasciella – 16 May, Francis Marion NF, Ion Swamp homesite, Charleston Co
Dichomeris pelta – Eric LoPresti, 29 Sep, Santee Coastal Reserve, Charleston Co
Dichomeris fistuca – 15 May, Santee Coastal Reserve, Charleston Co
Numata bipunctella – 15 May, Santee Coastal Reserve, Charleston Co, **County Record**
Stereomita andropogonis – 7 Oct, Santee Coastal Reserve, Charleston Co
Isophrictis rudbeckiella – 7 Oct, 27 Oct, Santee Coastal Reserve, Charleston Co, **State Record**
Deltophora sella – 27 Oct, Santee Coastal Reserve, Charleston Co
Exoteleia anomala – 12 Jun, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; **County Record**

Depressariidae:
Agonopterix argillacea – 16 May, Francis Marion NF, Ion Swamp homesite, Charleston Co

Autostichidae:
Taygete gallaegenitella – 16 May, Francis Marion NF, Ion Swamp trail, Charleston Co, **County Record**

Oecophoridae:
Decantha stecia – 15 May, Santee Coastal Reserve, Charleston Co

Momphidae:
Mompha eloisella – 15 May, Santee Coastal Reserve, Charleston Co

Batrachedridae:
Pyroderces albistrigella – 7 Oct, Santee Coastal Reserve, Charleston Co

Elachistidae:
Elachista brachyelytrifoliella – 5 Mar, Charleston Co., Santee Coastal Reserve, cypress; **State Record**

Tortricidae:
Cochylis bucera – 18 Aug, 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Aethes bomonana – 7 Oct, 27 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Aethes matheri – 15 May 2023, Charleston Co., Santee Coastal Reserve, pitcherplant bog; **State Record**
Aethes ringsi – 15 May, 7 Oct, Santee Coastal Reserve, Charleston Co
Choristoneura argentifasciata – Eric LoPresti, 18 Aug 2023, Santee Coastal Reserve, Charleston Co, **County Record**
Sparganothis sullivani – 5 Mar, 7 Oct, Santee Coastal Reserve, Charleston Co
Eucosma ambodaidaleia – 5 Mar, Santee Coastal Reserve, Charleston Co
Eucosma gomonana – 5 Mar, Santee Coastal Reserve, Charleston Co, **State Record**
Eucosma parmatana – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Pelochrista sombreana – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Epiblema exacerbatricana – 7 Oct, Santee Coastal Reserve, Charleston Co, **County Record**
Paralobesia viteana – 30 Mar, Santee Coastal Reserve, Charleston Co
Cydia laricana – 7 Oct, Santee Coastal Reserve, Charleston Co
Cydia marita – 5 Mar, Santee Coastal Reserve, Charleston Co, **State Record**

Sesiidae:
Paranthrene simulans – 20 Apr-17 May, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd, at lure ZZA L103; **County Record**
Synanthedon dominicki – 8 Apr-4 May, Santee Coastal Reserve, Charleston Co – described from Wedge, fairly common at EZE 23
Sannina uroceriformis – 4-17 May, Charleston Co., Santee Coastal Reserve, trail by cypress, at lure ZZOH/EZOH; **County Record**
Carmenta laurelae – 4-17 May, Charleston Co., Santee Coastal Reserve, trail by cypress, at lure ZZOH/EZOH; recorded previously by WH Taft, Jr.

Pyralidae:
Vitula edmandsii – 7 Oct, Santee Coastal Reserve, Charleston Co
Dioryctria merkeli – 7 Oct, Santee Coastal Reserve, Charleston Co

Crambidae:
Herpetogramma pertextalis – Eric LoPresti, 6 Aug, Santee Coastal Reserve, Charleston Co, **County Record**

Geometridae:
Tornos cinctarius – 12 Jun, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; an uncommon coastal species

Erebidae:
Lesmone hinna – 5 Mar, Santee Coastal Reserve, Charleston Co

Nolidae:
Afrida ydatodes – 12 Jun, Charleston Co., Santee Coastal Reserve, end of Mayzck Rd; **County Record**

Carolina Butterfly Society trip – Southern 8ths Farm, Chesterfield Co., 10 Aug 2024

Papilionidae:
- Pterourus troilus
- Pterourus glaucus
- Papilio polyxenes
- Battus philenor

Pieridae:
- Phoebis sennae
- Abaeis nicippe
- Pyrisitia lisa

Lycaenidae:
- Feniseca tarquinius – **County Record**
- Calycopis cecrops
- Strymon melinus
- Celastrina neglecta
- Cupido comyntas

Nymphalidae:
- Dione incarnata
- Euptoieta claudia
- Phyciodes tharos
- Polygonia comma
- Vanessa virginiensis
- Vanessa atalanta
- Libytheana carinenta
- Junonia coenia
- Limenitis arthemis astyanax
- Limenitis archippus
- Danaus plexippus
- Asterocampa celtis
- Asterocampa clyton
- Lethe appalachia – **County Record**
- Lethe portlandia
- Lethe creola
- Hermeuptychia sosybius
- Hermeuptychia intricata – **County Record**
- Cyllopsis gemma

Hesperiidae:
- Epargyreus clarus
- Eyrnnis horatius
- Erynnis zarucco
- Pholisora catullus
- Copaeodes minima
- Hylephila phyleus
- Polites vibex
- Lerema accius
- Poanes zabulon

Dennis & Donna Forsythe – Nimmer Turf Farm, B & C Landing, Tillman Sand Ridge, Jasper Co., 17 Aug 2024

Pieridae:
- Phoebis sennae
- Abaeis nicippe
- Zerene cesonia
- Pyrisitia lisa
- Eurema daira
- Nathalis iole

Lycaenidae:
- Hemiargus ceraunus

Nymphalidae:
- Heliconius charithonius
- Dione incarnata
- Phyciodes tharos
- Junonia coenia

Hesperiidae:
- Eyrnnis horatius
- Burnsius oileus

Donna Forsythe – dog park near James Island Co Pk, Charleston Co., 18 Aug 2024

Nymphalidae:
- Anartia jatrophae

Heather Rayburn – Fish Haul Beach Park, Hilton Head, Beaufort Co., 12 Aug 2024

Pieridae:
Phoebis sennae
Lycaenidae:
Strymon melinus
Nymphalidae:
Heliconius charithonius
Dione incarnata
Hesperiidae:
Epargyreus clarus
Eyrnnis horatius
Erynnis zarucco
Hylephila phyleus
Panoquina panoquin

Heather Rayburn – Sea Pines Resort, Community Garden, Beaufort Co. 12 Aug 2024

Nymphalidae:
Dione incarnata
Anartia jatrophae
Danaus plexippus
Hesperiidae:
Hylephila phyleus

Heather Rayburn – Sea Pines Resort, South Beach, Beaufort Co. 14 Aug 2024

Pieridae:
Phoebis sennae
Pyrisitia lisa
Lycaenidae:
Hemiargus ceraunus
Nymphalidae:
Dione incarnata
Anartia jatrophae
Hesperiidae:
Erynnis horatius

Heather Rayburn – Savannah National Wildlife Refuge, Jasper Co. 15 Aug 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Lycaenidae:
Hemiargus ceraunus
Nymphalidae:
Heliconius charithonius
Dione incarnata
Euptoieta claudia
Hermeuptychia sosybius
Hesperiidae:
Burnsius albezens
Hylephila phyleus
Polites vibex
Amblyscirtes aesculapius

Dave & Marty Kastner – Wateree River Heritage Preserve & Wildlife Management Area, Eastover, Richland Co., 3 Sep 2024

Papilionidae:
Pterourus troilus
Pterourus glaucus
Pterourus palamedes
Eurytides marcellus
Pieridae:
Phoebis sennae
Abaeis nicippe
Zerene cesonia
Pyrisitia lisa
Lycaenidae:
Celastrina neglecta
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia interrogationis
Vanessa atalanta
Junonia coenia
Limenitis arthemis astyanax
Asterocampa celtis
Lethe portlandia
Hermeuptychia sosybius
Hermeuptychia intricata
Hesperiidae:
Epargyreus clarus
Urbanus proteus
Eyrnnis horatius
Erynnis zarucco
Burnsius albezens
Burnsius oileus
Hylephila phyleus
Euphyes vestris
Lerema accius
Amblyscirtes aesculapius

Diane Curlee, Alison Smith, Tom Austin, Scott Wietecha, and Dave & Marty Kastner, SI Group, Orangeburg, Orangeburg Co, 7 Sep 2024

Papilionidae:
Pterourus glaucus
Pterourus palamedes
Pieridae:
Phoebis sennae
Abaeis nicippe
Lycaenidae:
Calycopsis cecrops
Strymon melinus
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos

Junonia coenia
Limenitis archippus
Anaea andria
Asterocampa celtis
Lethe appalachia
Lethe portlandia
Lethe creola
Hermeuptychia sosybius
Cyllopsis gemma
Hesperiidae:
Epargyreus clarus
Urbanus proteus
Eyrnnis horatius
Erynnis zarucco
Ancyloxypha numitor
Hylephila phyleus
Polites vibex
Euphyes vestris
Lerema accius
Problema byssus

Dennis Forsythe – Fort Johnson, James Island, Charleston Co., 12 Sep 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Nymphalidae:
Heliconius charithonius
Dione incarnata
Anartia jatrophae
Hesperiidae:
Urbanus proteus
Eyrnnis horatius
Burnsius oileus
Panoquina panoquin

Dennis & Donna Forsythe – James Island Co Pk, Charleston Co., 13 Sep 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Nymphalidae:
Phyciodes tharos
Limenitis arthemis astyanax
Anartia jatrophae
Hermeuptychia intricata

Roger Smith, John Cox, & Nathan Dias, Santee NWR, Bluff Unit, Summerton, Clarendon Co., 14 Sep 2024

Nymphalidae:
Heliconius charithonius

Chris Sermons, Holly Wright, Rusty Wilson, Heather Rayburn and Dave & Marty Kastner
Bio Way Farm, Ware Shoals, Laurens Co., 21 Sep 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Pieris rapae
Lycaenidae:
Calycopis cecrops
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia comma
Vanessa virginiensis
Junonia coenia
Limenitis arthemis astyanax
Lethe appalachia
Lethe portlandia
Hermeuptychia sosybius
Hesperiidae:
Urbanus proteus
Copaeodes minima
Lerodea eufala
Hylephila phyleus
Atalopedes campestris
Lerema accius
Panoquina ocola

Chris Sermons, Rusty Wilson, Heather Rayburn, Scott Wietecha, Tom Austin and Dave & Marty Kastner, Tall Pines WMA, Cleveland, Greenville Co, 22 Sep 2024

Papilionidae:
Pterourus glaucus
Pterourus troilus
Battus philenor
Pieridae:
Phoebis sennae
Abaeis nicippe
Pyrisita lisa
Lycaenidae:
Strymon melinus
Celastrina neglecta
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Argynnis cybele
Vanessa virginiensis
Vanessa atalanta
Junonia coenia
Limenitis arthemis astyanax
Danaus plexippus
Hermeuptychia sosybius
Hesperiidae:
Ancyloxypha numitor
Hylephila phyleus
Atalopedes campestris

Lerema accius
Panoquina ocola

Marty & Dave Kastner, Blythewood, Richland Co., 2 Oct 2024

Nymphalidae:
Heliconius charithonius

Eric Schaub, Bill Twomey, Ron Ahle, Scott Wietecha, Alison Smith and Dave and Marty Kastner, Wateree River HP & WMA, Eastover, Richland Co., 12 Oct 2024

Papilionidae:
Pterourus troilus
Pieridae:
Phoebis sennae
Abaeis nicippe
Zerene cesonia
Pyrisita lisa
Pieris rapae
Lycaenidae:
Calycopis cecrops
Celastrina neglecta
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Vanessa virginiensis
Vanessa cardui
Vanessa atalanta
Junonia coenia
Hermeuptychia sosybius
Hermeuptychia intricata
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius albezens
Burnsius oileus
Nastra lherminier
Lerodea eufala
Hylephila phyleus
Polites vibex
Lerema accius
Panoquina ocola

Dave & Marty Kastner, Carolina Sandhills NWR, Chesterfield Co., 14 Oct 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Pyrisita lisa
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Junonia coenia
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius oileus
Nastra lherminier
Lerodea eufala
Copaeodes minima
Hylephila phyleus
Lerema accius
Panoquina ocola

Dennis & Donna Forsythe – James Island, Charleston Co., 21 Oct 2024

Papilionidae:
Pterourus palamedes
Pieridae:
Phoebis sennae
Abaeis nicippe
Pyrisitia lisa
Nymphalidae:
Heliconius charithonius
Dione incarnata
Junonia coenia
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius albezens
Burnsius oileus
Erynnis horatius
Hylephila phyleus
Polites vibex
Panoquina ocola
Calpodes ethlius

Dennis Forsythe, Bill Twomey, Scott Wietecha and Alison Smith, Tillman Sand Ridge HP and nearby area, B & C Landing, Jct of Sandridge Rd and B & C Landing, Becks Ferry, Becks Landing, Jasper Co., 9 Nov 2024

Pieridae:
Phoebis sennae
Abaeis nicippe
Zerene cesonia
Pyrisitia lisa
Lycaenidae:
Hemiargus ceraunus
Nymphalidae:
Heliconius charithonius
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Vanessa virginiensis
Vanessa cardui

Vanessa atalanta
Junonia coenia
Hesperiidae:
Urbanus proteus
Burnsius oileus
Panoquina ocola

Bill Twomey, Scott Wietecha, Ron Ahle and Angela Valvasori, Alison Smith, Webb Wildlife Center, Hampton Co., 10 Nov 2024

Pieridae:
Abaeis nicippe
Pyrisitia lisa
Lycaenidae:
Calycopis cecrops
Nymphalidae:
Heliconius charithonius
Dione incarnata
Junonia coenia
Hermeuptychia sosybius
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius albezens
Polites otho

Doug Allen, Windmill Hill, Spartanburg Co., 25 Nov 2024

Pieridae:
Phoebis sennae
Lycaenidae:
Atlides halesus
Strymon melinus
Nymphalidae:
Diione incarnata
Euptoieta claudia
Vanessa virginiensis
Junonia coenia
Hesperiidae:
Urbanus proteus
Epargyreus
Hylephila phyleus
Lerema accius

Tennessee: John Hyatt, 233 Park Ridge Court, Kingsport, TN 37664, E-Mail: jkshyatt@centurylink.net

John sends in the following report:

Unaka Mountain is a long ridgetop that peaks out at 5200' in Unicoi Co., Tennessee. The ridgetop forms the TN/NC border. A gravel road runs along or just below the TN/NC line on the TN side for about 10 miles. This road was the site of the July, 2018 SLS summer field trip; it's a known site for such moths as *Catocala marmorata, Sphinx franckii, Caripeta piniata*, and several other fine things. See *Southern Lepidopterists' News* **40** (3), p. 177 (2018). Lance Durden and John Hyatt revisited the area in September, 2024. The overnight weather seemed suboptimal for moths (high winds, low temperatures) but we recorded some notable species.

Unaka Mountain, Unicoi Co., Tennessee Moth Records, 11-12 September 2024, Lance Durden & John Hyatt

LOWEST ELEVATION (Near Indian Grave Pass, ca. 3600'; 2 traps, but 1 trap malfunctioned).
Depressariidae: *Agonopteryx thelmae.* Tortricidae: *Epinotia medioviridana, Hulda impudens Pandemis lamprosana, Platynota idaeusalis.* Crambidae: *Agriphila ruricolellus, Diacme adipaloides, Hymenia perspectalis.* Geometridae:*Macaria bisignata, Macaria fissinotata Protoboarmia porcellaria, Epirrhoe alternata, Euphyia intermediata.* Notodontidae: *Dasylophia anguina.* Erebidae:*Idia laurentii, Zanclognatha obscuripennis, Renia adspergillus.* Noctuidae: *Protodeltote muscosula, Lithacodia musta, Marimatha nigrofimbria, Athetis tarda Nephelodes minians,* ***"Oligia"modica,*** *Phlogophora periculosa, Pseudorthodes vecors, Tricholita signata, Feltia subgothica, Xesta badicollis, Xestia normaniana, Xestia smithii Pseudohermonassa bicarnea.*

BEAUTY SPOT (Beside parking lot at 4522'. 1 trap, but it blew over early in the night and only a few moths were recoverable from the pool of ethyl acetate.)
Erebidae: *Caenurgia crassiuscula.* Noctuidae: *Nephelodes minians, Phlogophora periculosa Athetis tarda, Lacinipolia meditate, Lacinipolia olivacea, Lacinipolia renigera, Feltia herilis,* ***Papaipema cerina*** (2nd TN record. A Carter Co. *cerina* was reported on BugGuide 4 days earlier!) *Xestia smithii, Pseudohermonassa bicarnea.*

ROADSIDE (ca. 4700' in about an acre of open, shrubby ground; 3 light traps)
Acrolophidae: *Acrolophus texanella.* Tortricidae: *Dichrorampha simulana, Pandemis lamprosana, Syndemis afflictana.* Crambidae: *Udea rubigalis.* Geometridae:*Macaria pinistrobata, Iridopsis larvaria,* ***Stamnodes gibbicostata, Hypagyrtis piniata,*** *Campaea perlata Nepytia canosaria, Plagodis pulveraria,* ***Dysstroma citrata,*** *Dysstroma truncata, Epirrhoe aternata, Euphyia intermediate, Xanthorhoe packardata, Horisme intestinata.* Lasiocampidae: ***Tolype laricis.*** Notodontidae: *Ianassa lignicolor.* Erebidae: *Lascoria ambigualis, Palthis angulalis, Phalaenophana pyramusalis, Caenurgia crassiuscula,* ***Catocala habilis.*** Noctuidae: *Marimatha nigrofimbria, Ctenoplusia oxygramma, Anathix ralla, Elaphria chalcedonia, Elaphria grata, Lacinipolia explicate, Lacinipolia olivacea, Lacinipolia renigera, Nephelodes minian, Papaipema arctivorans,* ***Papaipema cerina, Papaipema lysimachiae,*** *Papaipema nelita,* ***Papaipema rigida*** **(State record),** *Phlogophora periculosa, Pseudorthodes vecors, Spodoptera frugiperda, Tricholita signata, Diarsia jucunda, Feltia herilis, Feltia jaculifera, Feltia subgothica, Xestia normaniana, Xestia smithii, Pseudohermonassa bicarnea, Noctua pronuba, Abagrotis alternata.*

U.S. FOREST SERVICE TRAIL (ca. 0.5 mile past roadside site, 4700', 1 light trap)
Gelechiidae: *Chionodes obscurusella.* Depressariidae: *Machimia tentoriferella.* Tortricidae: *Acleris macdunnoughi, Dichrorampha simulana, Epinotia medioviridana, Hulda impudens,Pandemis lamprosana, Pandemis limitata, Phtheochroa terminana, Platynota idaeusalis, Sparganothis sulfureana.* Crambidae: *Crambus albellus.* Geometridae: *Macaria minorata Lambdina fervidaria, Xanthorhoe packardata, Pero honestaria.* Noctuidae: *Lacinipolia olivacea, Lacinipolia renigera,* ***Melanapamea mixta,*** *Nephelodes minians,* ***"Oligia"modica, Papaipema cerina, Papaipema duplicatus*** **(State record),** ***Papaipema rigida*** **(State record),** *Phosphila miselioides, Spodoptera frugiperda, Tricholita signata, Xestia normanianus, Xestia smithii Pseudohormoassa bicarnea.*

HIGHEST ELEVATION (beside hairpin turn at ca. 4750'; 1 LED light trap)
Tortricidae: *Aethes angustana.* Geometridae: *Campaea perlata, Cyclophora pendulinaria, Plagodis pulveraria.* Erebidae: ***Catocala habilis.*** Noctuidae: *Athetis tarda,* ***Fishia illocata, Melanapamea mixta,*** *Nephelodes minians, Tricholita signata, Xestia normaniana, Xestia smithii, Pseudohermonassa bicarnea, Abagrotis alternata.*

Texas: Terry Doyle, 13310 Bar C Drive, San Antonio, TX 782253, E-Mail: tdoyle335@yahoo.com
Stuart Marcus, P.O. Box 463 Liberty, TX 77575**,** E-Mail: stuartmarcus13@gmail.com

Terry reports the following: "Seen consistently in my backyard nectaring on Crucita blossoms *Mestra amymone* and Queens. Both are fresh. Queens are *thersippus* ssp. Sulphurs have dwindled to a few Orange Sulphurs (*C. eurytheme*)."

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Moths for Trinity River National Wildlife Refuge
Liberty County, TX
8-1-24 through 10-30-24
Stuart J. Marcus
Stuart.marcus13@gmail.com

The following moths were seen at least once during the month indicated on sheets using black and mercury vapor lights at Trinity River National Wildlife Refuge. If you would like any photographs or phenology data dating back to 2012, please let me know at stuart.marcus13@gmail.com.

ATTEVIDAE
Atteva aurea Aug, Sept, Oct

AUTOSTICHIDAE
Glyphidocera juniperella Oct
Glyphidocera lactiflosella Aug, Sept

BLASTOBASIDAE
Hypatopa punctiferella Aug, Sept, Oct
Pigritia sp. Oct

COLEOPHORIDAE
Coleophora sp. Oct

COSMOPTERIGIDAE
Anatrachyntis sp. Oct
Euclemensia bassettella Aug
Triclonella bicoloripennis Aug, Sept, Oct

COSSIDAE
Givira anna Aug
Givira arbeloides Aug, Sept

CRAMBIDAE
Achyra bifidalis Oct
Achyra rantalis Aug, Sept, Oct
Aethiophysa invisalis Aug, Sept
Argyria gonogramma Aug, Sept, Oct
Carectocultus perstrialis Aug
Chrysendeton imitabilis Sept
Crambus quinquareatus Sept, Oct
Desmia sp. Aug, Sept
Diastictis fracturalis Aug, Sept, Oct
Diatraea evanescens Aug
Diatraea lisetta Aug, Sept, Oct
Dicymolomia julianalis Aug
Donacaula sp. Aug
Elophila gyralis Aug, Oct
Elophila obliteralis Aug, Sept, Oct
Elophila tinealis Aug, Sept, Oct
Eoreuma densellus Aug, Sept, Oct
Epipagis fenestralis Aug
Euchromius ocellea Aug, Sept, Oct
Fissicrambus sp. Aug, Oct
Glaphyria sesquistrialis Aug
Herpetogramma bipunctalis Sept, Oct
Herpetogramma phaeopteralis Aug, Sept, Oct
Hileithia magualis Aug
Hyalorista taeniolalis Oct
Hymenia perspectalis Aug, Sept, Oct
Lamprosema victoriae Oct
Leptosteges parthenialis Sept
Lineodes fontella Aug, Oct
Lineodes integra Aug, Oct
Marasmia cochrusalis Oct
Microcrambus elegans Aug. Oct
Niphograpta albiguttalis Aug, Oct
Nomophila nearctica Aug, Sept, Oct
Oenobotys vinotinctalis Sept
Ostrinia penitalis Sept, Oct
Palpita freemanalis Aug, Sept, Oct
Palpita illibalis Aug
Palpita magniferalis Aug, Sept
Palpita quadristigmalis Aug, Sept
Parapediasia decorellus Oct
Parapediasia teterrellus Aug, Sept, Oct
Parapoynx allionealis Aug, Sept
Pilocrocis ramentalis Sept, Oct
Pyrausta bicoloralis Aug, Sept
Pyrausta laticlavia Aug, Sept
Pyrausta pseuderosnealis Sept, Oct
Pyrausta signatalis Aug
Pyrausta tyralis Aug, Sept, Oct
Raphiptera argillaceellus Oct
Samea baccatalis Aug, Sept
Samea castellalis Aug, Sept, Oct
Samea multiplicalis Aug, Sept, Oct
Sericoplaga externalis Aug
Spoladea recurvalis Aug, Sept, Oct
Syngamia florella Aug, Sept, Oct
Udea rubigalis Sept, Oct
Uresiphita reversalis Oct
Urola nivalis Aug, Sept, Oct
Vaxi auratella Sept

DEPRESSARIIDAE
Antaeotricha humilis Sept
Antaeotricha leucillana Aug, Sept, Oct
Antaeotricha schlaegeri Sept
Psilocorsis reflexella Aug

EREBIDAE
Ablemma brimleyana Aug
Anomis illita Aug, Oct
Anticarsia gemmatalis Aug, Sept, Oct
Argyrostrotis anilis Sept
Arugisa lutea Aug, Sept, Oct
Bleptina caradrinalis Oct
Caenurgia chloropha Aug, Sept, Oct
Catocala maestosa Aug, Sept, Oct
Cisseps fulvicollis Aug, Sept, Oct
Cisthene packardii Oct
Cisthene plumbea Aug, Sept, Oct
Cisthene unifascia Aug
Colobochyla interpuncta Aug
Crambidia pallida Aug, Oct
Cutina albopunctella Aug, Sept, Oct
Cutina aluticolor Aug, Sept
Dasychira meridionalis Aug, Sept
Dasychira tephra Aug
Epidromia rotundata Aug
Estigmene acrea Sept
Eublemma recta Oct
Gabara distema Aug, Oct
Halysidota sp. Aug, Sept, Oct
Hemeroplanis scopulepes Aug, Sept, Oct
Hypena minualis Sept
Hypena scabra Aug, Sept, Oct
Hypenopsis calusa Sept, Oct

Hypercompe scribonia Aug, Sept
Hyphantria cunea Aug, Sept, Oct
Hypocala andremona Sept
Hypoprepia fucosa Aug, Sept
Idia aemula Aug
Idia americalis Aug, Sept, Oct
Idia diminuendos Oct
Idia rotundalis Aug
Isogona tenuis Sept
Lascoria ambigualis Sept, Oct
Lesmone detrahens Aug, Sept
Macrochilo hypocritalis Aug, Sept, Oct
Melipotis cellaris Aug
Melipotis indomita Aug
Metalectra quadrisignata Sept
Mocis latipes Sept
Mocis marcida Aug, Oct
Mocis texana Aug
Nigetia formosalis Aug, Sept
Ommatochila mundula Sept
Orgyia leucostigma Sept
Palthis asopialis Sept, Oct
Panopoda carneicosta Aug, Sept, Oct
Panopoda rufimargo Sept
Phyprosopus callitrichoides Aug
Plusiodonta compressipalpis Sept, Oct
Ptichodis vinculum Aug, Sept, Oct
Pyrrharctia isabella Aug, Oct
Redectis vitrea Sept, Oct
Simplicia cornicalis Aug, Sept, Oct
Spiloloma lunilinea Aug, Sept
Tetanolita floridana Oct
Tetanolita mynesalis Sept, Oct
Virbia laeta Sept, Oct
Zale lunata Oct
Zanclognatha atrilineella Oct
Zanclognatha sp. Aug, Sept, Oct

GELECHIIDAE
Anacampsis conclusella Complex - 420495.96 Oct
Anacampsis fullonella Aug, Sept, Oct
Aristotelia corallina complex Sept, Oct
Deltophora sella Oct
Dichomeris agonia Oct
Dichomeris kimballi Aug
Dichomeris ventrellus Sept
Helcystogramma chambersella Oct
Monochroa sp. Aug, Sept
Polyhymno luteostrigella Aug, Sept
Stegasta bosqueella Aug, Sept, Oct
Untomia albistrigella Sept, Oct

GEOMETRIDAE
Anavitrinella pampinaria Oct
Digrammia gnophosaria Aug, Sept, Oct
Eupithecia miserulata Sept, Oct
Frederickia nigricomma Aug
Glenoides texanaria Oct
Hypagyrtis esther Sept
Hypagyrtis sp. Aug, Oct
Idaea tacturata Aug, Sept, Oct
Iridopsis defectaria Aug, Sept, Oct
Iridopsis pergracilis Sept, Oct
Iridopsis vellivolata Sept
Leptostales laevitaria Aug, Sept, Oct
Leptostales pannaria Aug, Sept, Oct
Lobocleta ossularia Aug, Sept, Oct
Macaria aequiferaria Sept, Oct
Macaria transitaria Sept, Oct
Mellilla xanthometata Aug, Sept, Oct
Nemoria elfa Sept, Oct
Pleuroprucha insulsaria Oct
Prochoerodes lineola Aug
Psamatodes abydata Aug, Sept, Oct
Scopula aemulata Oct
Scopula compensata Oct
Scopula lautaria Sept, Oct
Scopula umbilicate Sept
Synchlora frondaria Sept, Oct
Timandra amaturaria Aug, Sept, Oct
Tornos scolopacinaria Aug, Sept, Oct

GLYPHIPTERIGIDAE
Drymoana blanchardi Sept, Oct

GRACILLARIIDAE
Cameraria sp. Oct
Caloptilia stigmatella Sept
Caloptilia triadicae Sept, Oct
Cremastobombycia sp. Oct
Epicephala sp. Oct
Neurostrota gunniella Sept

HELIOZELIDAE
Coptodisca lucifluella Oct

LASIOCAMPIDAE
Heteropacha rileyana Aug, Sept, Oct

LIMACODIDAE
Apoda y-inversa Aug, Sept
Euclea delphinii Aug, Sept
Euclea sp. Aug, Sept
Isa textula Aug
Isochaetes beutenmuelleri Sept
Prolimacodes badia Sept, Oct

MEGALOPYGIDAE
Megalopyge opercularis Aug, Sept

MIMALLONIDAE
Lacosoma chiridota Aug

MOMPHIDAE
Mompha albocapitella Oct
Mompha cephalonthiella Oct

NOCTUIDAE
Acronicta impleta Aug, Sept
Acronicta insularis Aug
Acronicta longa Oct
Acronicta morula Aug
Acronicta rubricoma Aug, Oct
Acronicta vinnula Aug, Sept, Oct
Amyna stricta Aug, Sept, Oct
Anicla infecta Oct
Argyrogramma verruca Sept, Oct
Bagisara repanda Sept, Oct
Chloridea virescens Aug
Choephora fungorum Oct
Chrysodeixis includens Aug, Sept, Oct
Condica sutor Aug, Sept, Oct
Condica videns Aug, Sept, Oct
Ctenoplusia oxygramma Oct
Cydosia aurivitta Aug, Sept, Oct
Elaphria chalcedonia Sept, Oct
Elaphria grata Oct
Elaphria nucicolora Aug, Sept, Oct
Enigmogramma basigera Aug, Sept
Eudryas grata Aug, Oct
Eudryas unio Sept
Galgula partita Aug, Sept, Oct
Harrisimemna trisignata Sept, Oct
Helicoverpa zea Aug, Sept, Oct
Homophoberia apicosa Aug, Sept, Oct
Leucania incognita Aug, Sept, Oct
Marimatha nigrofimbria Aug, Sept, Oct
Micrathetis triplex Aug, Sept, Oct
Mythimna unipuncta Aug, Sept, Oct
Ogdoconta cinereola Aug, Sept, Oct
Orthodes majuscula Oct
Ozarba aeria Oct
Ozarba nebula Aug, Sept, Oct
Panthea furcilla Oct
Perigea xanthioides Oct
Ponometia candefacta Aug, Sept, Oct
Pseudeustrotia indeterminata Aug, Sept
Rachiplusia ou Oct
Raphia frater Aug, Sept, Oct
Schinia arcigera Sept, Oct
Schinia gracilenta Sept, Oct
Schinia rivulosa Aug, Sept
Schinia siren Aug, Sept
Schinia thoreaui Sept
Schinia trifascia Sept
Spodoptera albula Sept
Spodoptera frugiperda Aug, Sept, Oct
Spodoptera ornithogalli Aug, Sept, Oct
Spragueia apicalis Sept
Spragueia dama Sept, Oct
Spragueia leo Aug
Tarache aprica Aug, Sept
Tripudia flavofasciata Sept, Oct
Tripudia rectangular Aug

NOLIDAE
Afrida ydatodes Aug, Sept, Oct
Baileya acadiana Aug
Garella nilotica Aug, Sept, Oct
Nola cereella Aug, Sept, Oct

NOTODONTIDAE
Cecrita biundata Aug
Clostera inclusa Sept
Coelodasys unicornis Sept, Oct
Datana integerrima Aug, Sept
Furcula cinerea Oct
Misogada unicolor Oct
Nerice bidentate Sept
Oedemasia concinna Aug
Oedemasia leptinoides Aug, Sept, Oct
Peridea angulosa Aug, Sept, Oct
Rifargia subrotata Sept
Schizura ipomaeae Aug
Symmerista sp. Aug, Sept

OECOPHORIDAE
Inga sparsiciliella Aug, Sept

PSYCHIDAE
Cryptothelea sp. Aug, Sept, Oct
Oiketicus abbotii Aug, Sept
Thyridopteryx ephemeraeformis Sept

PTEROPHORIDAE
Adaina ambrosiae Oct
Adaina bipunctatus Complex Oct
Exelastis montischristi Oct
Hellinsia inquinatus Oct
Lioptilodes albistriolatus Oct
Pselnophorus belfragei Aug, Sept, Oct
Sphenarches anisodactylus Sept, Oct
Stenoptilodes sp. Oct

PYRALIDAE
Acrobasis caryae Aug
Acrobasis exsulella Aug, Sept, Oct

Acrobasis texana Aug, Sept
Acrobasis sp. Aug, Sept
Amyelois transitella Sept
Clydonopteron sacculana Sept, Oct
Dioryctria amatella Aug
Dioryctria pygmaeella Sept
Eulogia ochrifrontella Sept
Eurythmia sp. Sept
Galasa nigrinodis Oct
Hypsopygia binodulalis Aug, Sept, Oct
Hypsopygia nostralis Sept
Hypsopygia olinalis Aug, Oct
Laetilia fiskeella Oct
Macrorrhinia endonephele Aug, Sept, Oct
Moodna pallidostrinella Oct
Penthesilea sacculalis Sept
Phycitodes mucidella Sept, Oct
Pococera asperatella Sept
Pococera expandens Sept
Pococera maritimalis Oct
Pococera robustella Aug
Sciota celtidella Aug, Sept
Sciota uvinella Aug, Sept, Oct
Tallula atrifascialis Aug, Oct
Tampa dimediatella Oct
Tlascala reductella Aug, Sept

SATURNIIDAE
Actias luna Aug, Sept, Oct
Anisota virginiensis Aug
Antheraea polyphemus Sept, Oct
Automeris io Aug, Sept
Eacles imperialis Sept
Syssphinx bicolor Aug, Sept, Oct

SCHRECKENSTEINIIDAE
Schreckensteinia erythriella Sept, Oct

SPHINGIDAE
Agrius cingulata Sept
Amorpha juglandis Aug, Sept
Ceratomia undulosa Aug, Sept
Darapsa myron Aug, Sept
Enyo lugubris Aug, Sept, Oct
Eumorpha fasciatus Aug
Eumorpha pandorus Aug
Manduca quinquemaculatus Oct
Manduca rustica Aug, Sept
Manduca sexta Aug, Sept
Pachysphinx modesta Sept
Paratrea plebeja Aug
Xylophanes tersa Aug

TINEIDAE
Acrolophus heppneri Sept, Oct
Acrolophus popeanella Aug, Sept
Acrolophus texanella Oct
Bucculatrix ivella Oct
Bucculatrix sp. Oct
Homostinea curviliniella Oct

TORTRICIDAE
Aethes sp. Oct
Ancylis comptana Sept, Oct
Bactra furfurana Aug, Oct
Bactra verutana Sept, Oct
Cagiva cephalanthana Sept
Choristoneura rosaceana Aug, Sept
Clepsis peritana Sept, Oct
Cochylichroa hospes Sept, Oct
Cochylis sp. Aug
Coelostathma discopunctana Oct
Crocidosema sp. Oct
Cydia caryana Sept, Oct
Cydia latiferreana Aug, Sept
Ecdytolopha mana Aug, Sept, Oct
Endothenia hebesana Sept, Oct
Epiblema otiosana Sept, Oct
Epiblema scudderiana Aug
Epiblema strenuana Sept
Episimus argutana Sept, Oct
Eugnosta bimaculana Sept, Oct
Eumarozia malachitana Aug, Sept, Oct
Olethreutes sp. Aug, Sept, Oct
Paralobesia viteana Aug, Sept, Oct
Pelochrista consobrinana Sept
Platphalonidia magdalenae Oct
Platynota exasperatana Sept
Platynota flavedana Aug, Sept, Oct
Platynota rostrana Aug, Sept, Oct
Platynota semiustana Aug, Sept, Oct
Proteoteras aesculana Oct
Rhyacionia frustrana Sept
Sparganothis sulfureana Sept, Oct

Virginia: Harry Pavulaan, 606 Hunton Place, Leesburg, VA. 20176, E-Mail: Pavulaan@aol.com

Harry sends in the 2025 winter report for Virginia:

New County/City records are indicated in all CAPITALS. Several of these records are the first verified (photographic) county records, confirming older unverified (sight) records, and are indicated as "first

verified record". The bulk of these records are based on photo submissions to iNaturalist and are listed as "via iNat." I find iNat and BAMONA very useful when it comes to updating statewide checklists, but requires an inordinate amount of time to vet all the countless misidentifications. Many photographers posted photos from previous years, thus another data dump here.

Note: I do not accept the fake pseudonyms of contributors to iNaturalist, BAMONA, or those who do not post their full names. These will be listed as "Anonymous" and they certainly do not get name recognition for their valuable contributions to science. More annoying are all the anonymous "obscured" records for common species in iNaturalist, that could be county records, thus wasting my time looking at them. Also, species such as *Fixsenia favonius* are obscured in Virginia, apparently by iNat default. This is unfortunate, as I do not record these (unless I can do some "stalking" within iNat) and we know less of the distribution of such species. Obscured records are not considered and I simply do not have the time and resources to track down anonymous contributors and press them for data.

Hesperiidae:

Epargyreus clarus – AMELIA Co.: Jetersville, 8/24/2024 (Scott Starr, via iNat). Brunswick Co.: Meredithville, 6/3/2024 (Victoria Gordon, via iNat. First verified record for county). GREENSVILLE Co.: Skippers, 9/22/2024 (Anonymous, via iNat. Larva.)

Burnsius communis – COLONIAL HEIGHTS City: 11/8/2024 (Anonymous, via iNat). CUMBERLAND Co.: nr. Kimberly Hills, 10/24/2024 (Liam Potter, via iNat).

Cecropterus lyciades – CAMPBELL Co.: Evington, 7/19/2024 (Anonymous, via iNat). Danville City: 6/10/2024 (Anonymous, via iNat. First verified record for city). LYNCHBURG City: 9/12/2024 (Henry Nase, via iNat)

Cecropterus bathyllus – CAMPBELL Co.: nr. Rustburg, 7/7/2024 (Anonymous, via iNat).

Urbanus proteus proteus – Greene Co.: Ruckersville, 9/5/2024 (Anonymous, via iNat. First verified record for county). KING AND QUEEN Co.: Tappahannock, 10/4/2024 (Joey Coker, Maeve Coker, via iNat). LANCASTER Co.: nr. Somers, 11/5/2024 (Joey Coker, Maeve Coker, via iNat). NELSON Co.: Lovingston, 10/8/2024 (Anonymous, via iNat).

Erynnis brizo brizo – Greene Co.: Dyke, 4/23/2024 (Anonymous, via iNat. First verified record for county).

Gesta juvenalis juvenalis – Madison Co.: Shenandoah National Park, 3/26/2023 (David Cox, via iNat. First verified record for county).

Gesta horatius - CAMPBELL Co.: nr. Rustburg, 5/1/2024 (Anonymous, via iNat). DANVILLE City: 6/29/2024 (Anonymous, via iNat). FLUVANNA Co.: Scheier Natural Area, 6/22/2024 (JoAnn Dalley, via iNat). GREENSVILLE Co.: nr. Skippers, 7/27/2024 (Anonymous, via iNat). MANASSAS City: 7/15/2024 (Anonymous, via iNat). NELSON Co.: Schuyler, 7/12/2023 (Anonymous, via iNat).

Gesta baptisiae – CAMPBELL Co.: nr. Rustburg, 9/19/2024 (Anonymous, via iNat). NELSON Co.: Wintergreen Resort, 7/23/2024 (Anonymous, via iNat).

Pholisora catullus – CAMPBELL Co.: Long Mountain Park, 8/30/2024 (Anonymous, via iNat). CHESTERFIELD Co.: Robious Landing Park, 6/14/2024 (Adam Sima, via iNat). GOOCHLAND Co.: Oilville, 7/6/2024 (Rebeca Burr, via iNat).

Staphylus hayhurstii – AMELIA Co.: Jetersville, 8/18/2024 (Ty Smith, via iNat).

Burnsius communis – BUCKINGHAM Co: nr. Enonville, 9/15/2024 (Andre Knocklein, via iNat).

Euphyes dion – FREDERICKSBURG City: 8/16/2024 (David Cox, via iNat).

Anatrytone logan logan – AMELIA Co.: Jetersville, 8/18/2024 (Ty Smith, via iNat). AMHERST Co.: Madison Heights, 8/20/2024 (Anonymous, via iNat). CAMPBELL Co.: nr. Rustburg, 8/30/2024 (Anonymous, via iNat). HALIFAX Co.: Halifax, 8/22/2024 (Dennis Von Linden, via iNat).

Limochores origenes origenes – AMELIA Co.: Jetersville, 8/18/2024 (Ty Smith, via iNat). Campbell Co.: Gladys, 8/29/2024 (Anonymous, via iNat. First verified record for county). KING AND QUEEN Co.: Coldwater, 8/27/2024 (Anne Parker, via iNat).

Polites themistocles themistocles – LUNENBURG Co.: nr. Victoria, 8/4/2024 (Ty Smith, via iNat).

Polites coras coras – MADISON Co.: Shenandoah National Park, 7/6/2024 (Diane Lepkowski, via iNat).

Polites egeremet – HALIFAX Co.: Halifax, 8/13/2024 (Dennis Von Linden, via iNat).

Vernia verna – HOPEWELL City: 8/9/2024 (Jackie Donaldson, via iNat).

Poanes aaroni – MATHEWS Co.: Bethel Beach Natural Area, 9/28/2024 (Larry Lynch, via iNat). MIDDLESEX Co.: Urbanna, 6/17/2023 (Joey Coker, Maeve Coker, via iNat).

Euphyes vestris metacomet – MIDDLESEX Co.: Locust Hill, 7/22/2024 (Anonymous, via iNat).

Atalopedes huron – ALLEGHANY Co.: Longdale Furnace, 9/14/24 (Anonymous, via iNat). Charlotte Co.: nr. Fort Mitchell, 9/23/2024 (Anonymous, via iNat. First verified record for county). COLONIAL HEIGHTS City: 9/29/2024 (Greg Predmore, via iNat).

Lerema accius – AMHERST Co.: Madison Heights, 8/20/2024 (Anonymous, via iNat). Charlotte Co.: nr. Drakes Branch, 10/20/2024 (JoAnn Dalley, via iNat. First verified record for county). Craig Co.: Simmonsville, 9/23/2024 (Anonymous, via iNat. First verified record for county). HENRY Co.: nr. Ridgeway, 10/14/2024 (Regina Flora, via iNat). MANASSAS City: 11/8/2024 (Anonymous, via iNat).

Panoquina ocola – CAMPBELL Co.: nr. Rustburg, 10/5/2024 (Anonymous, via iNat).

Nastra lherminier – Charlotte Co.: nr. Fort Mitchell, 9/23/2024 (Anonymous, via iNat. First verified record for county). FREDERICKSBURG City: 8/23/2024 (David Cox, via iNat). HIGHLAND Co.: nr. McDowell, 8/14/2024 (Ellison Orcutt, via iNat). LYNCHBURG City: 8/18/2023 (Allison Ferris, via iNat).

Lerodea eufala – MONTGOMERY Co.: nr. Blacksburg, 9/14/2024 (Anonymous, via iNat).

Ancyloxypha numitor – GREENSVILLE Co.: nr. Purdy, 9/2/2024 (Evan Spears, via iNat).

Papilionidae:

Battus philenor philenor – Chesapeake City: 7/8/2024 (Anonymous, via iNat. First verified record for city. Larvae on *Aristolochia macrophylla*).

Eurytides marcellus marcellus – Danville City: 7/12/2024 (Anonymous, via iNat. First verified record for city).

Pterourus troilus troilus – Buchanan Co.: nr. Rowe, 8/7/2024 (Anonymous, via iNat. First verified record for county). FALLS CHURCH City: 8/24/2024 (Anonymous, via iNat).

Pterourus palamedes palamedes – Fauquier Co.: Chester Gap, 7/29/2024 (Anonymous, via iNat. Second verified record for county.)

Pieridae:

Abaeis nicippe – Hopewell City: 7/26/2024 (Jackie Donaldson, via iNat. First verified record for city).

Anthocharis midea annickae – Craig Co.: nr. Huffman, 4/27/2024 (Anonymous, via iNat. First verified record for county). KING AND QUEEN Co.: nr. Bruington, 3/24/2024 (Anne Parker, via iNat).

Pyrisitia lisa lisa – APPOMATTOX Co.: nr. Flood, 10/7/2024 (Anonymous, via iNat). CAMPBELL Co.: nr. Rustburg, 9/1/2024 (Anonymous, via iNat). Goochland Co.: Goochland, 9/10/2024 (Grace Croonenberghs, via iNat. First verified record for county).

Phoebis sennae eubule – Hopewell City: 8/29/2024 (Jackie Donaldson, via iNat. First verified record for city).

Pieris rapae rapae – Grayson Co.: Grayson Highlands State Park, 6/8/2024 (Deborah Humphries, via iNat. First verified record for county).

Lycaenidae:

Feniseca tarquinius tarquinius – HAMPTON City: 6/17/2024 (Thum Allen, via iNat).

Lycaena hypophlaeas hypophlaeas - Amelia Co.: Jetersville, 8/18/2024 (Ty Smith, via iNat. First verified record for county).

Atlides halesus halesus – LANCASTER Co.: nr. Kilmarnock, 7/30/2024 (Anonymous, via iNat).

Parrhasius m-album – LANCASTER Co.: Chilton Woods State Forest, 10/8/2024 (Anne Parker, via iNat).

Calycopis cecrops – Botetourt Co.: Blue Ridge Parkway, 8/15/2024 (Charles Andrews, via iNat. First verified record for county).

Callophrys gryneus gryneus – CHARLES CITY Co.: nr. Berkeley, 6/2/2024 (Anonymous, via iNat). KING WILLIAM Co.: Aylett, 4/23/2024 (Anonymous, via iNat).

Callophrys henrici henrici – CLIFTON FORGE City: 4/23/2022 (James Fox, via iNat).

Callophrys augustinus croesiodes – BUCKINGHAM Co.: James River State Park, 3/25/2024 (Anonymous, via iNat).

Strymon melinus – Alleghany Co.: George Washington & Jefferson National Forest, 9/14/2024 (Anonymous, via BAMONA. First verified record for county). AMELIA Co.: Jetersville, 8/18/2024 (Ty Smith, via iNat).

Satyrium liparops strigosum – CRAIG Co.: Bald Mountain, 7/17/2024 (Bruce Grimes, via iNat).

Nymphalidae:

Danaus plexippus - GREENSVILLE Co.: 8/16/2024 (Anonymous, via iNat. Larva).

Euptoieta claudia - Brunswick Co.: Cochran, 7/24/2024 (Joseph Cripe, via iNat. First verified record for county). Highland Co.: nr. Blue Grass, 6/28/2024 (David Larsen, via iNat. First verified record for county).

Argynnis cybele cybele – LANCASTER Co.: nr. Millenbeck, 6/10/2024 (Anonymous, via iNat).

Limenitis archippus archippus - FRANKLIN City: 10/11/2024 (Glenn Butler, via iNat).

Limenitis arthemis astyanax - HOPEWELL City: 8/20/2024 (Jackie Donaldson, via iNat).

Asterocampa celtis celtis – Highland Co.: 8/17/2024 (Anonymous, via iNat. First verified record for county).

Asterocampa clyton clyton – CAROLINE Co.: Port Royal, 8/6/2024 (Joey Coker, Maeve Coker, via iNat).

Nymphalis antiopa lintneri – HARRISONBURG City: 10/22/2024 (Anonymous, via iNat). LANCASTER Co.: Morattico, 10/13/2024 (Anonymous, via iNat).

Nymphalis (Polygonia) interrogationis – GREENSVILLE Co.: nr. Skippers, 7/3/2024 (Anonymous, via iNat). Highland Co.: nr. Blue Grass, 5/25/2024 (Scott Harris, via iNat. First verified record for county). HOPEWELL City: 8/20/2024 (Jackie Donaldson, via iNat).

Nymphalis (Polygonia) comma – BUENA VISTA City: 5/20/2024 (Ken Hawthorn, via iNat). Craig Co.: Maggie, 6/12/2024 (Abir Jain, via iNat. First verified record for county). FAIRFAX City: 5/25/2024 (Izabella Farr, via iNat).

Vanessa virginiensis - GALAX City: 5/26/2024 (Kali Collins, via iNat).

Vanessa cardui – CAMPBELL Co.: nr. Rustburg, 10/10/2024 (Anonymous, via iNat).

Vanessa atalanta rubria – CHARLOTTE Co.: nr. Charlotte Court House, 7/6/2024 (Anonymous, via iNat). DANVILLE City: 8/5/2024 (Anonymous, via iNat). HENRY Co.: West Bassett, 8/4/2024 (Regina Flora, via iNat).

Junonia coenia coenia - BUCKINGHAM Co: Appomattox-Buckingham State Forest, 9/15/2024 (Andre Knocklein, via iNat. First verified record for county). FRANKLIN City: 10/11/2024 (Glenn Butler, via iNat).

Phyciodes tharos tharos – Danville City: 8/10/2024 (Anonymous, via iNat).

Lethe anthedon anthedon – Alleghany Co.: George Washington & Jefferson National Forest, 9/14/2024 (Anonymous, via BAMONA. First verified record for county). GALAX City: 8/25/2024 (Kali Collins, via iNat). HENRY Co.: nr. Ridgeway (Regina Flora, via iNat).

Lethe creola – HENRICO Co.: Varina, 7/28/2024 (Zakk McCormick, via iNat).

Hermeuptychia sosybius – APPOMATTOX Co.: Holliday Lake State Park, 9/5/2024 (Evan Spears, via iNat).

Cyllopsis gemma – Craig Co.: Laurel Branch, 8/11/2024 (Bruce Grives, via iNat. First verified record for county). KING AND QUEEN Co.: nr. Saluda, 8/25/2024 (Anne Parker, via iNat).

Cercyonis pegala alope – CAMPBELL Co.: nr. Timberlake, 8/22/2024 (Henry Nase, via iNat).

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The Southern Lepidopterists' News is published four times annually. Membership dues are $30.00 annually. The organization is open to anyone, especially those with an interest in the Lepidoptera of the southern United States. Information about the Society may be obtained from Marc Minno, Membership Coordinator, 600 NW 34 Terrace, Gainesville, FL 32607, E-Mail: marccminno@gmail.com, and dues may be sent to Jeffrey R. Slotten, Treasurer, 5421 NW 69th Lane, Gainesville, FL 32653.

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SOUTHERN LEPIDOPTERISTS' SOCIETY
c/o J. BARRY LOMBARDINI, THE EDITOR
3507 41st Street
Lubbock, Texas 79413

DEAR COLLEAGUES AND FRIENDS: "I WILL BE RETIRED AFTER COMPLETION OF THE DECEMBER ISSUE OF THE SLS NEWS. I WISH TO THANK ALL THE SLS MEMBERS AND OTHERS WHO CONTRIBUTED TO THE NEWSLETTER. IT WAS A PLEASURE FOR ME TO FORMAT THE ARTICLES AND TO READ THE CORRESPONDENCE SENT TO ME."

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