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THE OFFICIAL PUBLICATION OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY ORGANIZED TO PROMOTE SCIENTIFIC INTEREST AND KNOWLEDGE RELATED TO UNDERSTANDING THE LEPIDOPTERA FAUNA OF THE SOUTHERN REGION OF THE UNITED STATES (WEBSITE: www.southernlepsoc.org/)

J. BARRY LOMBARDINI: EDITOR

ROSA FORM OF THE SOUTHERN DOGFACE

BY

KATHY MALONE

I look forward to the fall when I can search for Rosa forms of the Southern Dogface and Common Buckeye. I found this 'Rosa' Southern Dogface at Cedars of Lebanon State Park in Lebanon, Tennessee. When I arrived, it was cool and overcast, and not one butterfly was in sight. But thankfully, as I changed into my field shoes, the sun popped out. And oh wow! About 15 dogfaces arose all at once! It was magical. I found only two that were not Rosa forms. Cedars of Lebanon very well may be the Tennessee capital of Rosa forms. This was the first time I'd noticed the white over-scaling. Maybe for temperature regulation.....or maybe for beauty? Would love to know what you think.

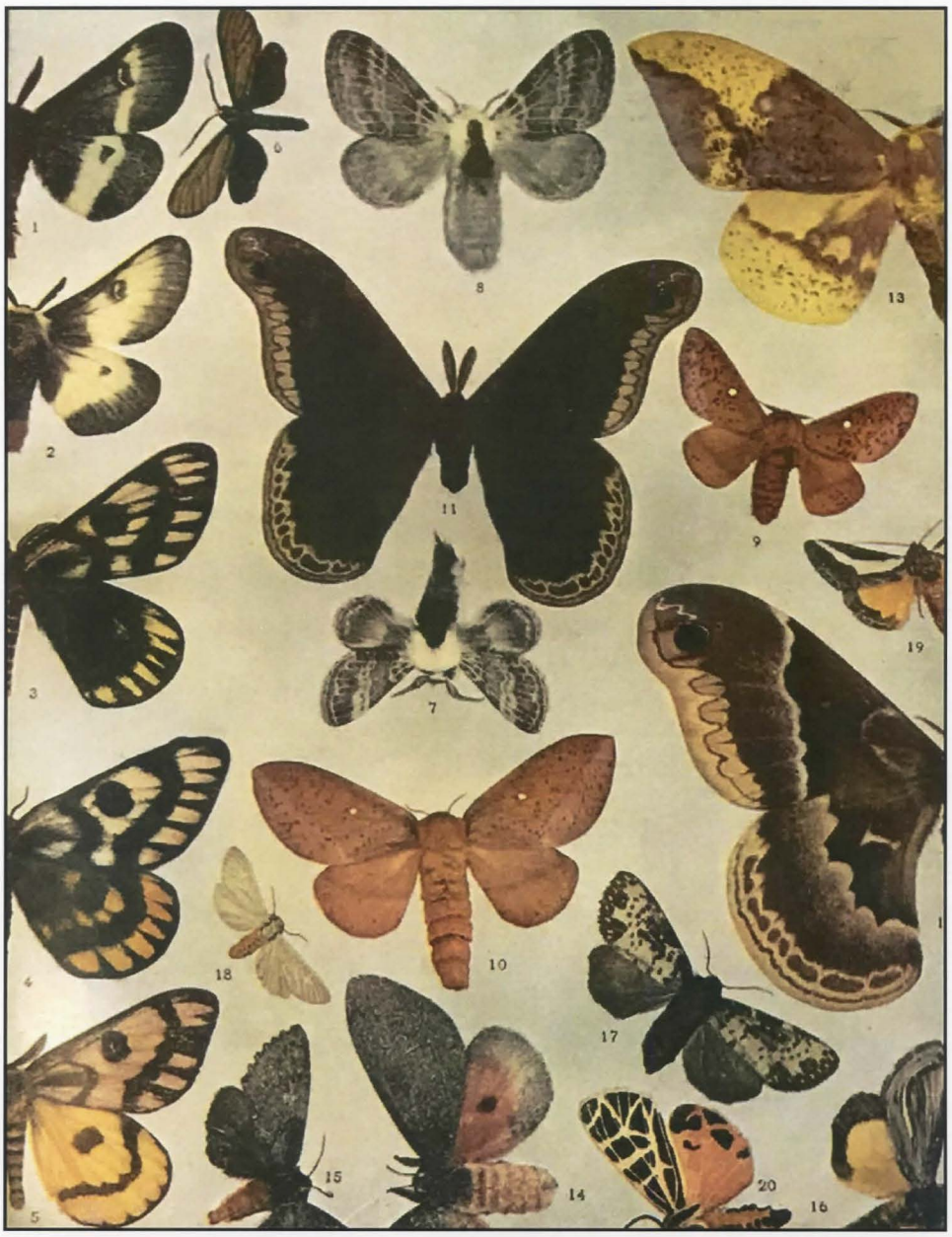
'Rosa' Southern Dogface at Cedars of Lebanon State Park in Lebanon, Tennessee (Photo: September 26, 2021)

KathyMalone98@gmail.com

THE MOTH BOOK

BY

W.J. HOLLAND, D.D., PH.D., ScD., LL.D.



EXPLANATION OF PLATE XI

(The specimens figured are contained in the collection of W. J. Holland.)

1. *Hemileuca maia* Drury, ♂.
2. *Hemileuca nevadensis* Stretch, ♂.
3. *Pseudohazis hera pica* Walker, ♂.
4. *Pseudohazis hera pica* Walker, ♀.
5. *Pseudohazis eglanterina nuttalli* Strecker, ♂.
6. *Ctenucha brunnea* Stretch, ♂.
7. *Tolype velleda* Stoll, ♂.
8. *Tolype velleda* Stoll, ♀.
9. *Anisota stigma* Fabricius, ♂.
10. *Anisota stigma* Fabricius, ♀.
11. *Callosamia promethea* Drury, ♂.
12. *Callosamia promethea* Drury, ♀.
13. *Basilona imperialis* Drury, ♂.
14. *Syssphinx heiligbrodti* Harvey, ♀.
15. *Cargida pyrrha* Druce, ♂.
16. *Fenaria longipes* Druce, ♂.
17. *Xanthopastis timais* Cramer, ♀.
18. *Euchætias murina* Stretch, ♀.
19. *Copidryas cosyra* Druce, ♂.
20. *Apantesis intermedia* Stretch, ♂.

Garden City New York, Doubleday, Page & Company 1917

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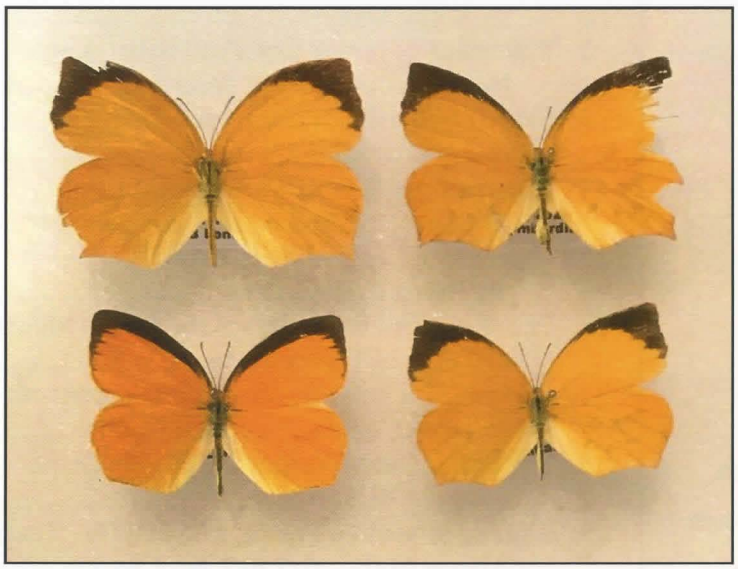
"Cover illustrations: First known drawing of a North American butterfly from the Modern Age: Eastern Tiger Swallowtail *(Papilio glaucus)* by John White, North Carolina, 1587 (original design by J.V. Calhoun, 1996)."

I have collected butterflies/moths in my garden in Lubbock, Texas, since 1973. This year (2021) is the first time that I have seen and collected the Tailed Orange. A friend who has a very large butterfly garden in Lubbock observed approximately 50 this fall. This year was the first time in many years that he has seen the Tailed Orange in Lubbock.



Tailed Orange (*Eurema proterpia*)

The Sleepy Orange is fairly common in my garden and I have collected a number over the last 48 years.

Sleepy Orange (*Eurema nicippe*)

All butterflies (Tailed Orange and Sleepy Orange) shown in photos were collected between October 11 - October 18, 2021.

Barry Lombardini

BUTTERFLIES OF LOWER EAST PEARL RIVER WMA

BY

LINDA BARBER AULD, NOLA BUGLADY

Every summer volunteers from all across the United States, Eastern Canada, and Mexico, count butterflies for the North American Butterfly Association. These surveys document the native species within a specified 7 ½-mile radius area and over three hundred counts are done in 23 divided regions. Southeast Region 10 encompasses Alabama-Arkansas-Louisiana-Mississippi and the results are published in an annual report. In the year 2020, Louisiana count locations were Alexandria, Allen Acres, Catahoula Butterfly Garden, Catahoula NWR, Indian Bayou WMA, Kisatchie Longleaf Trail, Lower East Pearl River MWA, Shreveport, and Thistlewaite WMA. This count program began in 1975 and the Lower East Pearl River is *one of the three oldest counts in the nation!* For 46 years folks have dedicatedly spent time at three locations: 1) Berkeley, California, 2) Gilpin Co, Colorado, and 3) the East Pearl River Wildlife Management Area which created huge databases of information that list the observed butterfly species.

Frank (Phil) Fischer, Jr. started this count during the first year of the program and visited Pearl River five times each year, determined to see which butterflies occurred during each season. Thus far, a grand total of eighty-six species of butterflies have been seen and documented. It is interesting to see how the reporting process has changed throughout the years. The first year, hand-written, progressed into a form produced on a typewriter, then a standard form which now is posted online. This electronic filing definitely helps speed up the reporting process for our regional editor, Marty Floyd.

This year Mother Nature has presented several hurdles such as the covid pandemic, excessive rainfall and flooding topped off by Hurricane Ida. The Pearl River/Honey Island Swamp surveys are traditionally held around the same dates each year and the same trails are hiked to keep the data consistent. However, this year our first visit wasn't until August 14. It was definitely a rare treat to see twenty-nine swallowtails that day and eighteen were Tigers. This is the list of what we saw:

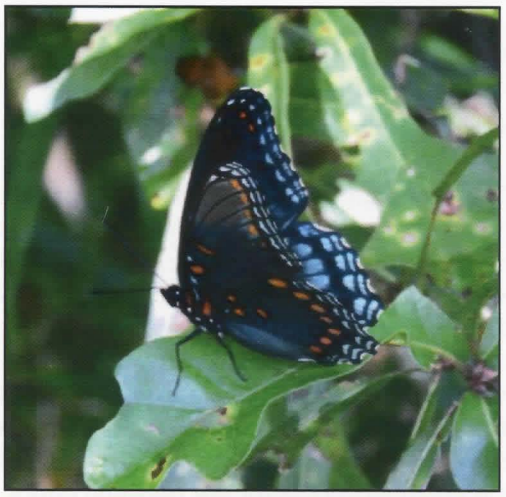
Butterflies (August 14, 2021):

7	Giant Swallowtail
4	Palamedes Swallowtail
18	Tiger Swallowtail
2	Buckeye
6	Gulf Fritillary
18	Pearl Crescent
3	Question mark
11	Red-Spotted Purple
5	Cloudless Sulphur
7	Sleepy orange
11	Viceroy
17	Carolina Satyr
3	Southern Pearly eye
1	Clouded skipper
30	Horace Duskywing
15	Common Checkered Skipper
1	Tropical Checkered skipper
1	Least Skipper
1	Ocola longwing skipper
2	Silver Spotted skipper

20 species / 163 individuals

Tiger Swallowtail males puddling for minerals ←

Pearl Crescent →



Red-Spotted Purple ←

Southern Pearly Eye →

All photos by Linda Barber Auld

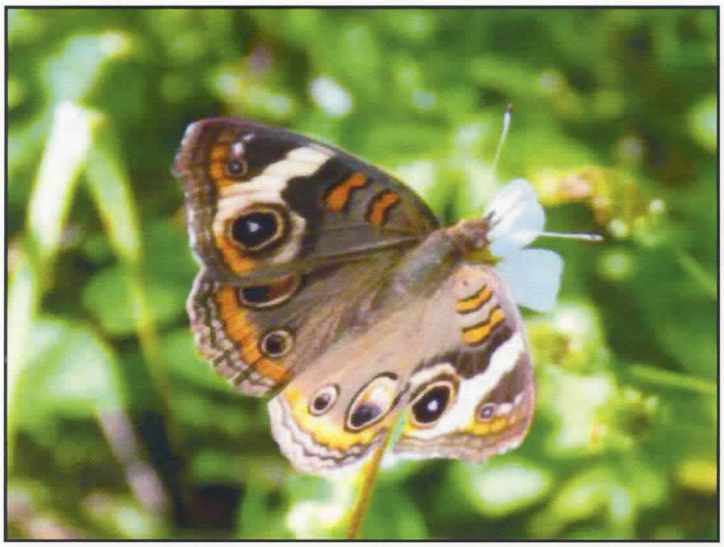
Hurricane Ida hit our area on August 29 causing much devastation. Curious to see its effects on the swamp, I returned on September 25. Almost four weeks later, the damage was still very apparent. Many trees were uprooted and huge tree trunks just snapped in half. Heavy debris lined the roadsides plus several trails had large piles of dirt, gravel and aggregate lined-up and ready to repair the sections of roads that were still torn up/blocked-off. Since many leaves were blown from the stands of trees, areas of land topography usually blocked by thick vegetation were now visible. Large areas of slippery, muddy, bare ground made it obvious that flood waters had been standing there for quite a while. We did spot butterflies collecting pollen from sporadic patches of bidens and lobelia flowers, but immense stands of late boneset (*Eupitorium serotinum*) in two different locations were the main pollen buffet attraction. We spent nearly 45 minutes gazing at a dozen or so species of bees, wasps, and butterflies. We watched a cloudless sulphur busily laying eggs on a small grouping of six sicklepod (*Cassia obtusifolia*) plants which were already dotted with eggs. (We stopped counting at 100.) Pipevine swallowtails and sleepy orange butterflies were enjoying the white morning glory nectar. PoBoy Road was open which allowed us to cover areas that had been closed for almost 2 years due to road washout. Shooting range road was not passable at all.

The highlight of the day happened at the nature trail area when Shane spotted a Zebra longwing fluttering along the forest edge. We bounded across the meadow to confirm but were not able to snap a picture due to its patrolling and constant motion. Later on the high road I spotted a second one which appeared to be tasting the leaves with its feet and stopped ever-so-briefly to sip nectar from an Elephant's Foot (*Elephantopus carolinanus*) flower before it headed into the forest. At that point, I suspected that this was going to be a new record for our count. Here is the list of what was recorded. I find it so fascinating that six weeks later we observed a different assortment and number of butterflies.

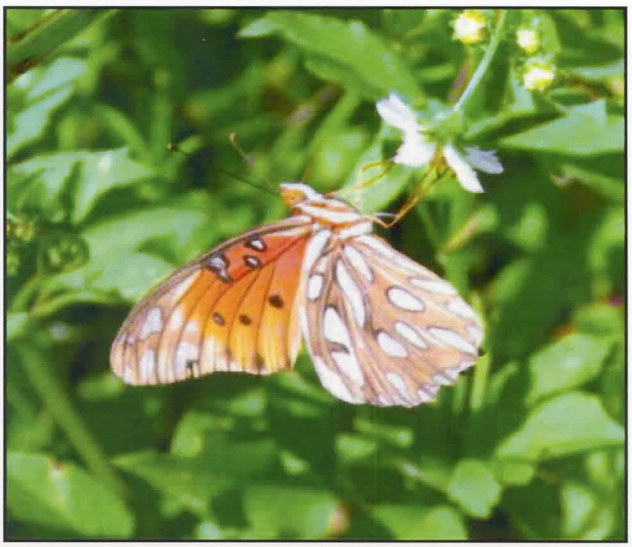
Butterflies (September 25, 2021):

1 Giant Swallowtail
1 Palamedes Swallowtail
2 Pipevine Swallowtail
14 Buckeye
21 Gulf Fritillary
1 Variegated Fritillary
7 Pearl Crescent
1 Question Mark
1 Red Spotted Purple
5 Viceroy
2 Zebra Longwing (never seen before on this count- possible new record!)
3 Monarch
21 Carolina Satyr
3 Southern Pearly Eye
55 Cloudless Sulphur
3 Little Sulphur
6 Sleepy Orange
2 Gray Hairstreak
1 Red-banded Hairstreak
1 Dun Skipper
3 Fiery Skipper
5 Clouded Skipper
14 Common Checkered Skipper
2 Tropical Checkered Skipper
6 Horace Duskywing
10 Long-tailed Skipper
9 Ocola Longwing Skipper
1 Silver-Spotted Skipper
2 Whirlabout Skipper
3 Yehl Slipper

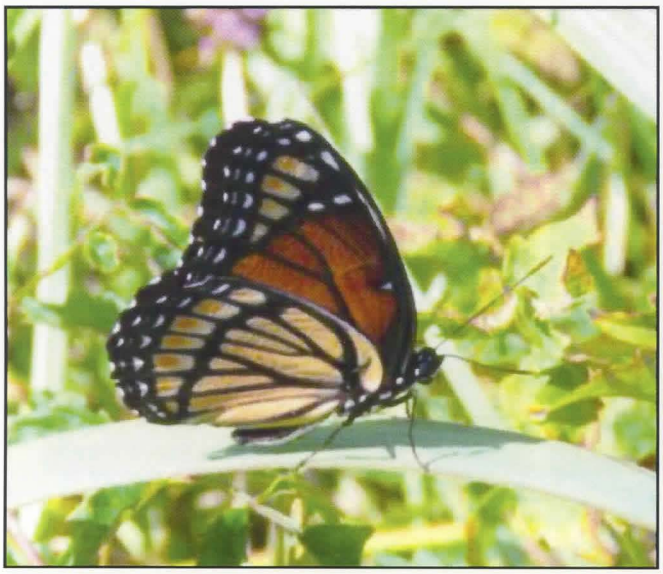
206 individuals/30 species



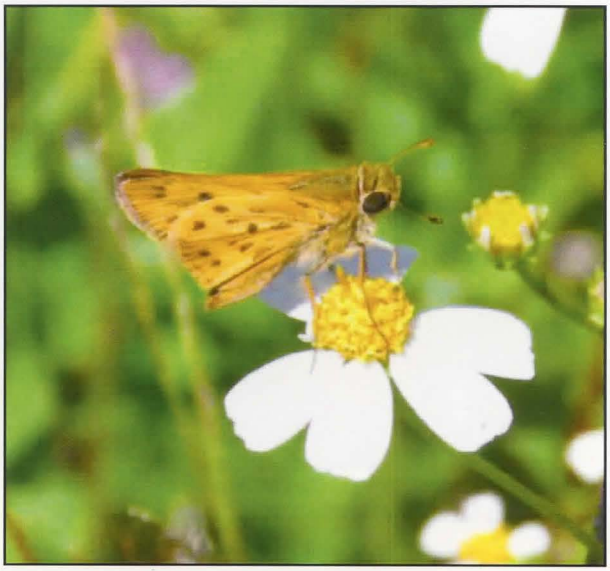
Buckeye



Gulf Fritillary



Viceroy



Fiery Skipper

Late Boneset, also called Late Thoroughwort (*Eupitonium Seotinum*)

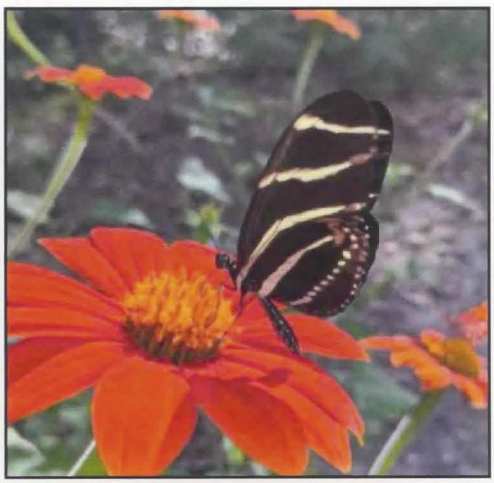
Later that day I checked the NABA database spreadsheets and confirmed that Zebra Longwing had not been recorded on any count in our Region 10 It is indeed a new record!

A new twist to this story:
Beginning in early August I began to see Facebook posts of Zebra longwings that folks were spotting in their gardens in both Mississippi and Louisiana. This was another reason why I wanted to return to Honey Island to attempt finding caterpillars on the native passionflower vines. We definitely spotted the adults but were not able to locate their host plants due to the post-hurricane conditions. Several times I almost slipped due to the slick mud and other times the mud almost sucked my shoes off of my feet!

Other reported sightings:
September 18, 2021
Dinah Maygarden
Pearlington, MS

October 6, 2021
Emily Taylor
Pass Christian, MS

Linda Kingsland (October 16, 2021)
Bayou Savage National Wildlife Refuge



Cheri Ben-Iesau (October 23, 2021)
Mandeville, LA

And even today!
November 2, 2021
Lisa Stansky
Metro New Orleans, LA
(Gentilly subdivision)

(Linda Barber Auld: nolabuglady@gmail.com www.nolabuglady.com)

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FLORIDA BUTTERFLIES VISITING BIRD DROPPINGS

BY
MARC C. MINNO

Adult butterflies typically feed on nectar in flowers, at least occasionally (Minno and Minno 2020). Males of some species also sip water at seeps and soil to collect nutrients and minerals needed in preparation for mating. Puddling butterflies may bend the tip of the abdomen forward and squirt droplets of water from the rear end onto the substrate from which they are sipping, especially dryer materials, to facilitate this process.

Some butterflies and moths are also attracted to fermenting fruit or sap, dung, urine, rotting animal carcasses, and animal eye secretions (Hilgartner et al. 2007, Main 2013). In July 2014 Rick Cech (Nov. 13, 2021 email to the author) observed swallowtails, pierids, metalmarks, and many kinds of nymphalids attracted to soapy water thrown onto the ground at Cristalino Lodge located near Alta Floresta in northern Mato Grosso State, Brazil. He notes that "butterflies did not aggregate in dense feeding groups (as pierids did along the river bank), but they were varied and persistent throughout the afternoon, when other habitats often were comparatively quiet."

In addition some butterflies feed on bird droppings. Classic examples are neotropical butterflies which visit droppings of birds that follow army ant colonies (Ray and Andrews 1980). George T. Austin, former curator at the Florida Museum McGuire Center for Lepidoptera and Biodiversity, highly recommended using chewed wads of paper placed on leaves as bird dropping mimics to attract tropical forest butterflies, especially skippers (Hesperiidae). He mentioned to me that not brushing teeth for several days added to the attractiveness of the mimics. Dr. Austin found and described new species skippers such as the Army-ant Phanus (*Phanus ecitonorum*) using this technique (see https://www.butterfliesofamerica.com/GTA.htm).

There are several species of skippers that I have observed in Florida occasionally feeding at bird droppings including the Long-tailed Skipper (*Urbanus proteus*), Dorantes Skipper (*Cecropterus dorantes)*, and Silver-spotted Skipper (*Epargyreus clarus*) (Figure 1). These are all in the Broad-winged Skipper subfamily (Hesperiidae, Eudaminae). Mostly, however, they feed at flowers.

I've tested Dr. Austin's chewed paper technique a few times in Florida. Once at Peacock Springs Conservation Area where butterflies, including Silver-spotted Skippers, were visiting Comfortroot (*Hibiscus aculeatus*) flowers. I chewed a small piece of notebook paper and placed it on a Comfortroot stem. To my amazement, a Silver-spotted Skipper flew to the paper and started feeding (Figure 1).

I also tried the chewed paper at Torreya State Park with Mary Ann Friedman. We found a few male Summer Azures (*Celastrina neglecta*) puddling along a small stream. Males of the Summer Azure commonly mud puddle singly or in small groups and sometimes feed on or in close proximity to dung or rotting animals. I chewed some paper, rolled it into a bird dropping shape and placed it on the ground near the azures. This disturbed the butterflies, but they did not fly far and two quickly resettled and began feeding on the chewed paper (Figure 1). I always brush my teeth to start the day so it may have been even more attractive had I not!

Perhaps other Florida butterflies visit bird droppings sometimes. Please send me your observations. The chewed paper technique does work in Florida, but likely only when there are males seeking nutrients are nearby. More testing is needed.

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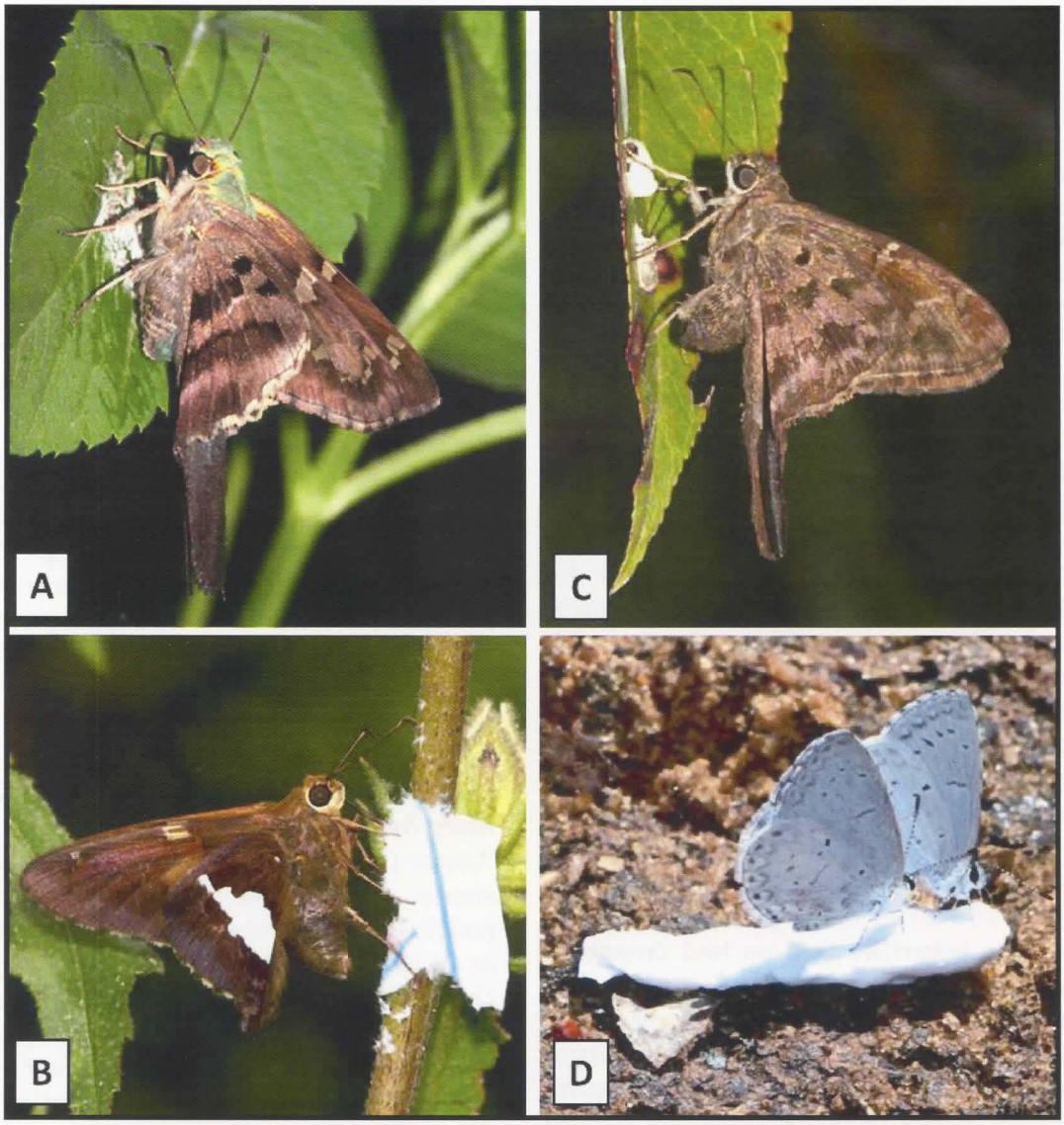

Figure 1. Florida butterflies feeding on bird droppings and bird dropping mimics:

A: *Urbanus proteus* (L., 1758) feeding on a bird dropping in my yard in Gainesville (Alachua Co.), 7/18/2015.

B: *Epargyreus c. clarus* (Cramer, 1775) feeding at chewed paper at Peacock Springs Conservation Area (Suwannee Co.), 7/20/2018.

C: *Cecropterus d. dorantes* (Stoll, 1790) squirting water from the rear and feeding on a bird dropping at B.B. Brown's Gardens (Lake Co.), 10/9/2021.

D: *Celastrina neglecta* (W.H. Edwards, 1862) feeding at chewed paper at Torreya State Park (Liberty Co.), 3/23/2019.

(Marc C. Minno, E-Mail: marccminno@gmail.com)

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LIFE HISTORY OF THE ZEBRA HELICONIAN

BY

MARY JANE KROTZER AND STEVE KROTZER

The Zebra Heliconian, *Heliconius charithonius* (Linnaeus, 1767), is a member of the subfamily Heliconiinae of the family Nymphalidae. Its range extends from South America, through Central America, and into southern North America. In warmer months, Zebra Heliconians may extend their range northward in the United States as far as Maryland in the east and Nebraska in the central part of the country.

The eggs depicted in this plate (Figure 1) were deposited on the end of a tendril of *Passiflora* 'Incense', a type of tropical passionflower vine, on the afternoon of 20 September 2021 in Duval County, Florida. On 25 September these eggs hatched into first instar caterpillars. The caterpillars were initially reared on the *P.* 'Incense' but were eventually transferred to the more readily available native *Passiflora incarnata*.

Figure 1. Life history of the Zebra Heliconian

On 14 October, day 20 as a caterpillar, the lone surviving final instar caterpillar's white color began to darken to tan. In addition, the caterpillar stopped eating and wandered about on the provided host plant material. It finally settled, head down, on the stem and after several hours formed the prepupal "J". By 16 October the chrysalis was fully formed, although it continued to darken in pigment as the days progressed. On 31 October, day 15 as a chrysalis, the adult butterfly began to eclose at 4:10:14 p.m. and cleared the chrysalis by 4:14:44 p.m. (Figure 2).

Figure 2. Eclosure sequence of the Zebra Heliconian

(Mary Jane Krotzer, E-Mail: mjkrotzer@gmail.com)

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OVIPOSITING LEPS

A PHOTO ESSSAY

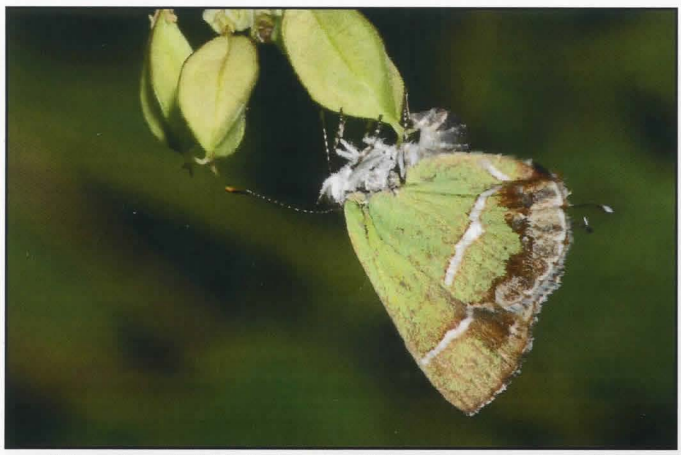
BY

BRYAN E. REYNOLDS

Here's the next installment of photo essays about lep behavior. The last two issues of the SLS News, had essays about courting leps and then mating leps. This issue showcases ovipositing leps. Where possible, I always try to get the larval plants identified. And as I said in the last installment, I've photographed butterflies for over forty years. Photographing fresh butterflies in wonderful habitats is very rewarding and fun. But, what's even better, is getting some hard to capture behavior such as ovipositing. Stay tuned, the next issue of the SLS News will feature 'baby' leps. I hope you enjoy the series.

Checkered White, *Pontia protodice*, female ovipositing on Spreading Yellowcress, *Rorippa sinuate*, Black Mesa Nature Preserve, Cimarron County, Oklahoma, 22 July 2013

Spalding's Blue, *Euphilotes spaldingi*, female ovipositing on Redroot Buckwheat, *Eriogonum racemosum*, Sandia Mountain Natural History Center, Sandia Mountains, Cibola National Forest, Bernalillo County, New Mexico, 8 August 2013



Silver-banded Hairstreak, *Chlorostrymon simaethis*, female ovipositing on *Urvillea ulmacea*, Frontera Audubon, Weslaco, Hidalgo County, Texas, 5 November 2013

Silver-banded Hairstreak, *Chlorostrymon simaethis*, female ovipositing on *Urvillea ulmacea*, Frontera Audubon, Weslaco, Hidalgo County, Texas, 5 November 2013

Silver-banded Hairstreak, *Chlorostrymon simaethis*, female ovipositing on *Urvillea ulmacea*, Frontera Audubon, Weslaco, Hidalgo County, Texas, 5 November 2013

Silver-banded Hairstreak, *Chlorostrymon simaethis*, female ovipositing on Balloon Vine, *Cardiospermum* sp., Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 6 November 2013

Silver-banded Hairstreak, *Chlorostrymon simaethis*, female ovipositing on Balloon Vine, *Cardiospermum* sp., Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 6 November 2013

Falcate Orangetip, *Anthocharis midea*, female ovipositing on Sand Bittercress, *Cardamine parviflora*, Little River National Wildlife Refuge, McCurtain County, Oklahoma, 24 March 2014

Summer Azure, *Celastrina neglecta*, female ovipositing on White Sweet Clover, *Melilotus albus*, Eastman Nature Center, Hennepin County, Minnesota, 28 June 2014

Summer Azure, *Celastrina neglecta*, female ovipositing on White Sweet Clover, *Melilotus albus*, Eastman Nature Center, Hennepin County, Minnesota, 28 June 2014

Crimson Patch, *Chlosyne janais*, female ovipositing on Smallflower Wrightwort, *Carlowrightia parviflora*, Frontera Audubon, Weslaco, Hidalgo County, Texas, 28 October 2014

Clearwing Moth, *Hemaris thetis*, ovipositing while hovering in flight, Hondo Canyon, Cibola National Forest, Bernalillo County, New Mexico, 14 April 2017

Checkered White, *Pontia protodice*, female ovipositing on Virginia Pepperweed, *Lepidium virginicum*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 May 2017

Checkered White, *Pontia protodice*, female ovipositing on Virginia Pepperweed, *Lepidium virginicum*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 May 2017

Checkered White, *Pontia protodice*, female ovipositing on Virginia Pepperweed, *Lepidium virginicum*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 May 2017

Checkered White, *Pontia protodice*, female ovipositing on Virginia Pepperweed, *Lepidium virginicum*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 May 2017

Marine Blue, *Leptotes marina*, female ovipositing on Prairie Clover, *Dalea* sp., Otero Canyon, Cibola National Forest, Bernalillo County, New Mexico, 2 June 2017

Marine Blue, *Leptotes marina*, female ovipositing on Prairie Clover, *Dalea* sp., Otero Canyon, Cibola National Forest, Bernalillo County, New Mexico, 2 June 2017

Red-bordered Metalmark, *Caria ino*, female ovipositing on Spiny Hackberry, *Celtis ehrenbergiana*, Weslaco, Hidalgo County, Texas, 29 October 2017

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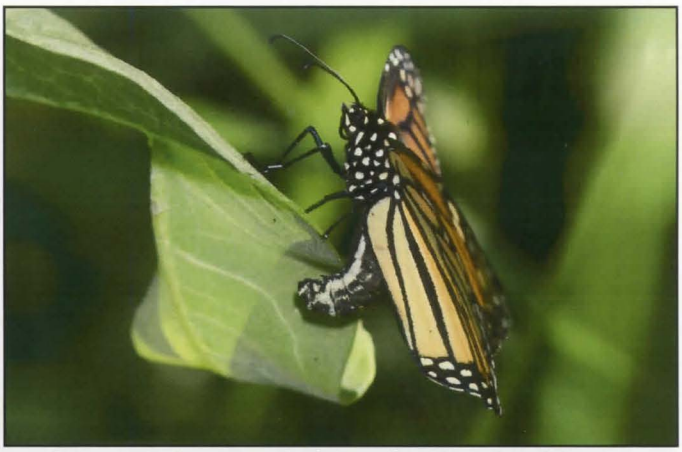
Red-bordered Metalmark, *Caria ino*, female ovipositing on Spiny Hackberry, *Celtis ehrenbergiana*, Weslaco, Hidalgo County, Texas, 29 October 2017

Cassius Blue, *Leptotes cassius*, female ovipositing, Frontera Audubon, Weslaco, Hidalgo County, Texas, 29 October 2017

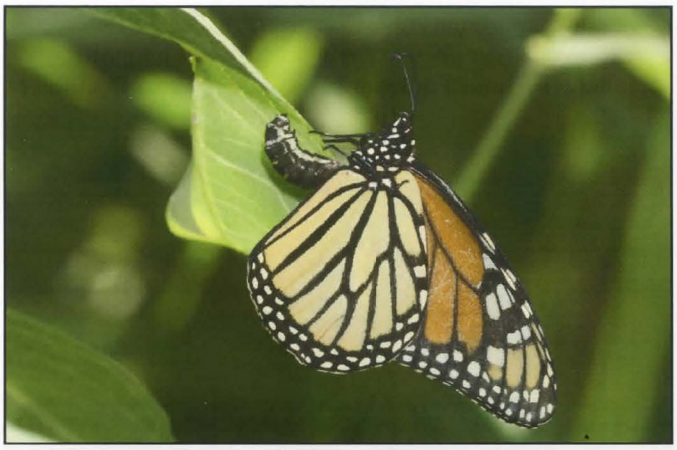
Cassius Blue, *Leptotes cassius*, female ovipositing, Frontera Audubon, Weslaco, Hidalgo County, Texas, 29 October 2017

Cassius Blue, *Leptotes cassius*, female ovipositing on Plumbago, *Plumbago* sp., Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 3 November 2017

Wild Indigo Duskywing, *Erynnis baptisiae*, female ovipositing on Crown Vetch, *Securigera varia*, Blue River Wildlife Management Area, Johnston County, Oklahoma, 10 April 2018



Monarch, *Danaus plexippus*, female ovipositing on Common Milkweed, *Asclepias syriaca*, Horicon National Wildlife Refuge, Dodge County, Wisconsin, 6 July 2018



Monarch, *Danaus plexippus*, female ovipositing on Common Milkweed, *Asclepias syriaca*, Horicon National Wildlife Refuge, Dodge County, Wisconsin, 6 July 2018

Monarch, *Danaus plexippus*, female ovipositing on Common Milkweed, *Asclepias syriaca*, Horicon National Wildlife Refuge, Dodge County, Wisconsin, 6 July 2018

Western Pygmy-Blue, *Brephidium exilis*, female ovipositing, Quail Creek, Green Valley, Pima County, Arizona, 28 July 2018

Pipevine Swallowtail, *Battus philenor*, female ovipositing on Pipevine, *Aristolochia* sp., Stone Road Glade Natural Area, Howard County, Arkansas, 2 June 2019

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on Bristly Greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on Bristly Greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019

Harvester, *Feniseca tarquinius*, female ovipositing in Woolly Maple Aphid, *Neoprociphilus aceris*, colony on Bristly Greenbrier, *Smilax tamnoides*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 June 2019

Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 1 July 2019

Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 1 July 2019

Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 2 July 2019

Yucca Giant-Skipper, *Megathymus yuccae*, female ovipositing on Arkansas Yucca, *Yucca arkansana*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 April 2020

Southern Cloudywing, *Thorybes bathyllus*, female ovipositing on Tall Lespedeza, *Lespedeza stuevei*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 26 April 2020

Goatweed Leafwing, *Anaea andria*, female ovipositing on Prairie Tea, *Croton monanthogynus*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 1 August 2020

Goatweed Leafwing, *Anaea andria*, female ovipositing on Prairie Tea, *Croton monanthogynus*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 1 August 2020

Goatweed Leafwing, *Anaea andria*, female ovipositing on Prairie Tea, *Croton monanthogynus*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 1 August 2020

Frosted Elfin, *Callophrys irus*, female ovipositing on Yellow Wild Indigo, *Baptisia sphaerocarpa*, near Idabel, McCurtain County, Oklahoma, 23 March 2021

Frosted Elfin, *Callophrys irus*, female ovipositing on Yellow Wild Indigo, *Baptisia sphaerocarpa*, near Idabel, McCurtain County, Oklahoma, 23 March 2021. These three photos show the 'before-during-and after' of a tiny egg popping out.

Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 24 June 2021

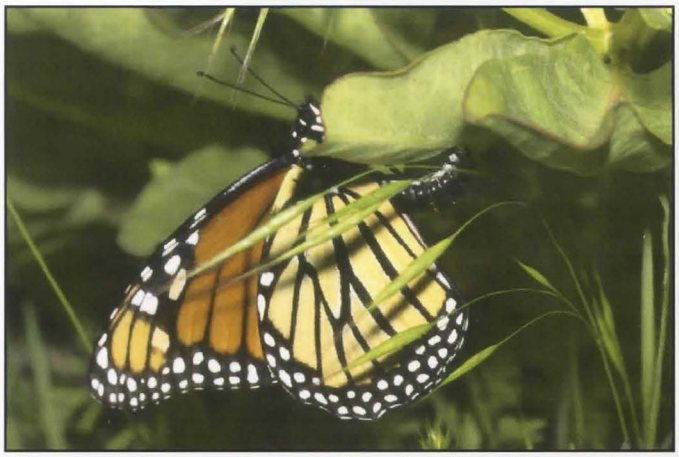
Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 24 June 2021

Outis Skipper, *Cogia outis*, female ovipositing on Prairie Acacia, *Acacia angustissima*, Cherokee Wildlife Management Area, Cherokee County, Oklahoma, 24 June 2021

Common Ringlet, *Coenonympha tullia*, female ovipositing, J. Clark Salyer National Wildlife Refuge, Bottineau County, North Dakota, 23 June 2002

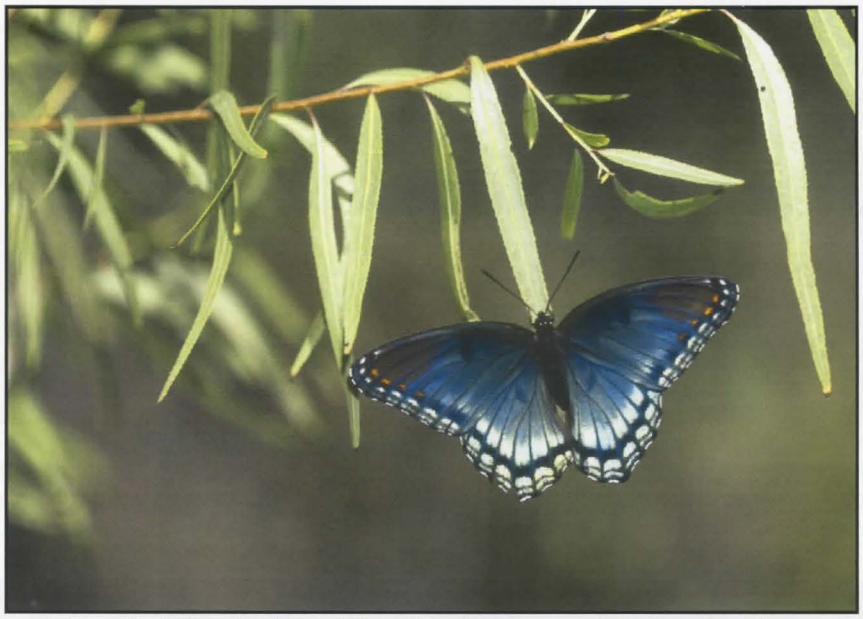
Gray Hairstreak, *Strymon melinus*, female ovipositing on Purple Prairie Clover, *Dalea purpureum*, Little Missouri National Grassland, Pasture 12, McKenzie County, North Dakota, 16 July 2005

Celastrina neglecta, female ovipositing on Roughleaf Dogwood, *Cornus drummondii*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 May 2006



Monarch, *Danaus plexippus*, female ovipositing on Green Milkweed, *Asclepias viridis*, Wichita Mountains National Wildlife Refuge, Comanche County, Oklahoma, 22 May 2007

Funereal Duskywing, *Erynnis funeralis*, female ovipositing, Wichita Mountains National Wildlife Refuge, Comanche County, Oklahoma, 22 May 2007



Red-spotted Purple, *Limenitis arthemis astyanax*, female oviposting on Black Willow, *Salix nigra*, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 30 September 2008

Variegated Fritillary, *Euptoieta claudia*, female ovipositing on Passionvine, *Passiflora* sp., Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 August 2010

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FIRE, RAIN, AND BUTTERFLIES IN THE CHISOS MOUNTAINS OF TEXAS

BY

CHUCK SEXTON

By all accounts, 2021 has been an extraordinary year in Big Bend National Park in west Texas. With restrictions from the pandemic easing in national parks, Big Bend was experiencing record visitation as the year began to unfold. Then on April 8, smoke was reported from a wildfire near the South Rim of the Chisos Mountains. With worsening weather conditions (high winds, low humidities), the fire spread east and north, moving though much of the high country of the southern part of the Chisos eventually reaching the East Rim, upper Juniper Canyon, Boot Canyon, Toll Mountain, and the base of Emory Peak (Fig.1). The Chisos Mountains were immediately shut down to the public as fire fighting efforts ramped up. The fire was mostly contained by April 20 and was declared out by mid-May, but not before it had charred 1,341 acres of juniper-oak woodlands in the high country. Fire is a natural and important part of the ecosystem in the Chisos. However, under extreme conditions, the effects can be long lasting. The Chisos woodlands are "now a mosaic of burned and unburned areas of various intensities" (NPS, May 21, 2021). I don't believe a cause of the fire has been definitively determined but it apparently started "near a popular back-country camping area near the South Rim" (NPS, April 12, 2021). The high country trails in the Chisos were re-opened to visitors on May 24.

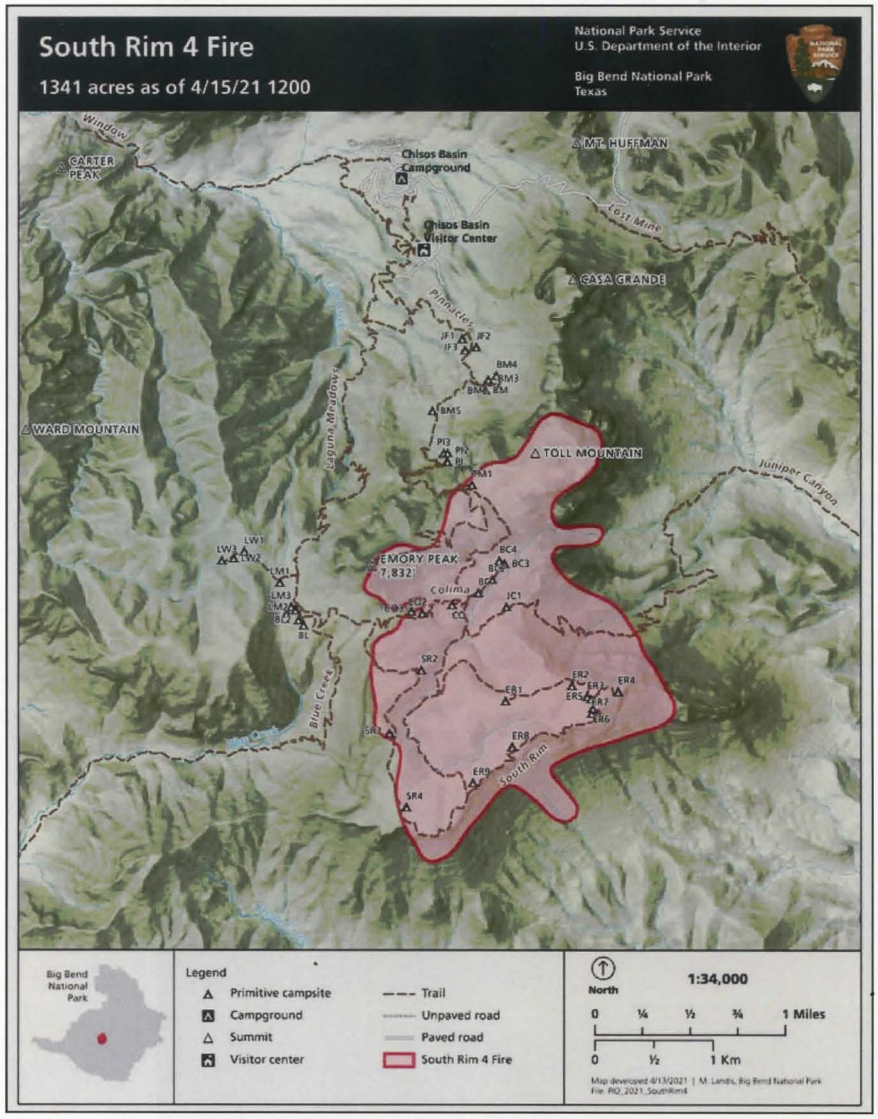

Fig. 1. National Park Service map of the South Rim Fire as of April 15, 2021.

Ecosystem recovery from fires is a complex process but much of the pathway to regrowth depends of course on rainfall. Happily, the Chisos experienced an exceptionally wet spring and summer, benefiting all habitats in the mountains and facilitating some rapid revegetation in the burned areas. On May 1, the Chisos Basin received about 1" of rain, the first substantial rain of the year. Monthly rainfall totals were: May (1.24"), June (2.12"), July (2.82"), August (9.70"), and September (1.31"), thus totaling over 17" of rain where the normal season total would be much less than 10".

My wife and I had the opportunity to visit Big Bend with friends on September 22-26, 2021. After passing through the droughty desert lowlands, we climbed up into the high country of the Chisos and were greeted by a dazzling green landscape with abundant flowering plants and an amazing abundance of life. We did a warm-up hike of 5 miles on the Window Trail on September 23, and then a long day hike to the South Rim and back via Laguna Meadows (13 miles) on September 24. These and other shorter hikes offered us an overview of the biological diversity of the area and a glimpse into a portion of the recently burned landscape (Figs. 2-3).

Fig. 2. Charred juniper-oak woodland along the SW Rim Trail in the Chisos Mountains.

Fig. 3. View of upper Boot Canyon from the SW Rim Trail. Note the patchiness of the burn scar on the distant slopes and the vigorous regrowth of grasses and forbs in the foreground.

During the course of our five days in the park, we encountered something over 40 species of butterflies, the total varying with however many different grass skippers we eventually decide that we viewed. The list included "all the usual suspects", but more than the diversity, the abundance of butterflies was just astonishing. I have been visiting Big Bend for 50 years and this topped any previous visit for butterfly density. On the hike to The Window on September 23, we passed through clouds of butterflies (Figs. 4-10). It was like being in a butterfly house at some major zoological park, but it went on for miles. In fact among the five of us, all seasoned nature lovers and travelers, we collectively agreed that none of us had ever experienced this kind of butterfly density anywhere else in our world travels.

At least nine species of sulphurs lead the charge with Sleepy Oranges, Mexican Yellows, and Dainty Sulphurs in uncountable numbers in the air, on flowers, and at mud puddles (Figs. 5, 6). Vesta Crescents ranked the most abundant in a set of crescents, checkerspots, and patches that also included numbers of the diminutive Elada Checkerspot and a few uncommon Crimson Patches (Fig. 7). From tiny Cyna Blues (Fig. 8) to the regal Two-tailed Swallowtails, the butterfly show was head-turning at every step. An unforgettable sight was sitting at the South Rim, after a long hike through the partially charred Chisos landscape, and watching a handful of migrating Monarchs launch themselves off into the blue towards their eventual Mexican winter destination (Fig. 11).

As one of the distinctive "sky island" ecosystems of the Southwest, the Chisos presented an enjoyable array of uncommon and endemic plants and animals in good form (Figs. 12-20). We enjoyed the entire breadth of natural diversity in the mountains with special appreciation for the robust perennial grasses, forbs, and shrubs which were already starting the process of revegetation in burned areas (Figs. 21-22). Despite the disappointment of seeing such a beloved landscape so badly scarred, it was gratifying to see firsthand the evidence of recovery.

Fig. 4. Dr. John Abbott getting close-up video of puddling sulphurs and other species along the Window Trail, Chisos Basin.

Fig. 5. A small portion of puddling butterflies along the Window Trail, Chisos Basin. Can you pick out at least 5 species of sulphurs and the one Checkered-Skipper?

Fig. 6. Mexican Yellows dominate this portion of the puddling cloud of sulphurs. Also in the scene are some Sleepy Oranges and Southern Dogfaces.

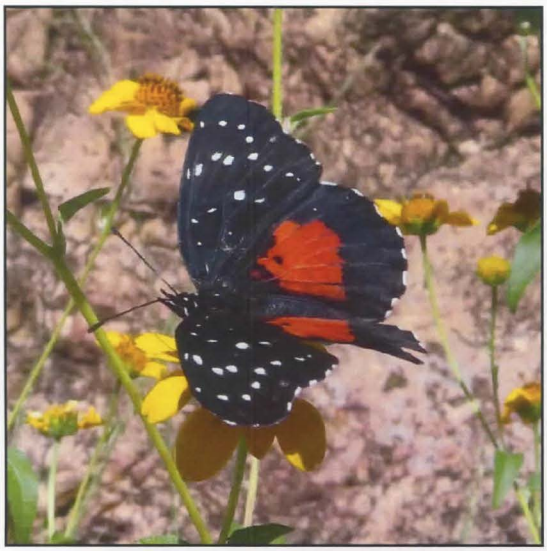

Fig. 7. Crimson Patch visiting one of the abundant Composites (probably plateau goldeneye, *Viguiera dentata*) which provided important nectar resources. ←

Fig. 8. Cyna Blue at a puddle along the Window Trail, Chisos Basin. →

Fig. 9. An interesting color morph of Gulf Fritillary sunning and nectaring on evergreen sumac (*Rhus virens*) along the Window Trail, Chisos Basin.

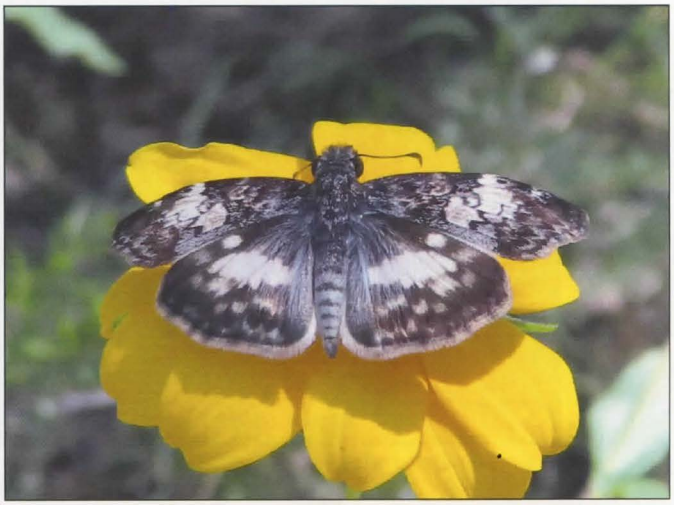

Fig. 10. White-patched Skipper on *Viguiera*, Window Trail, Chisos Basin.

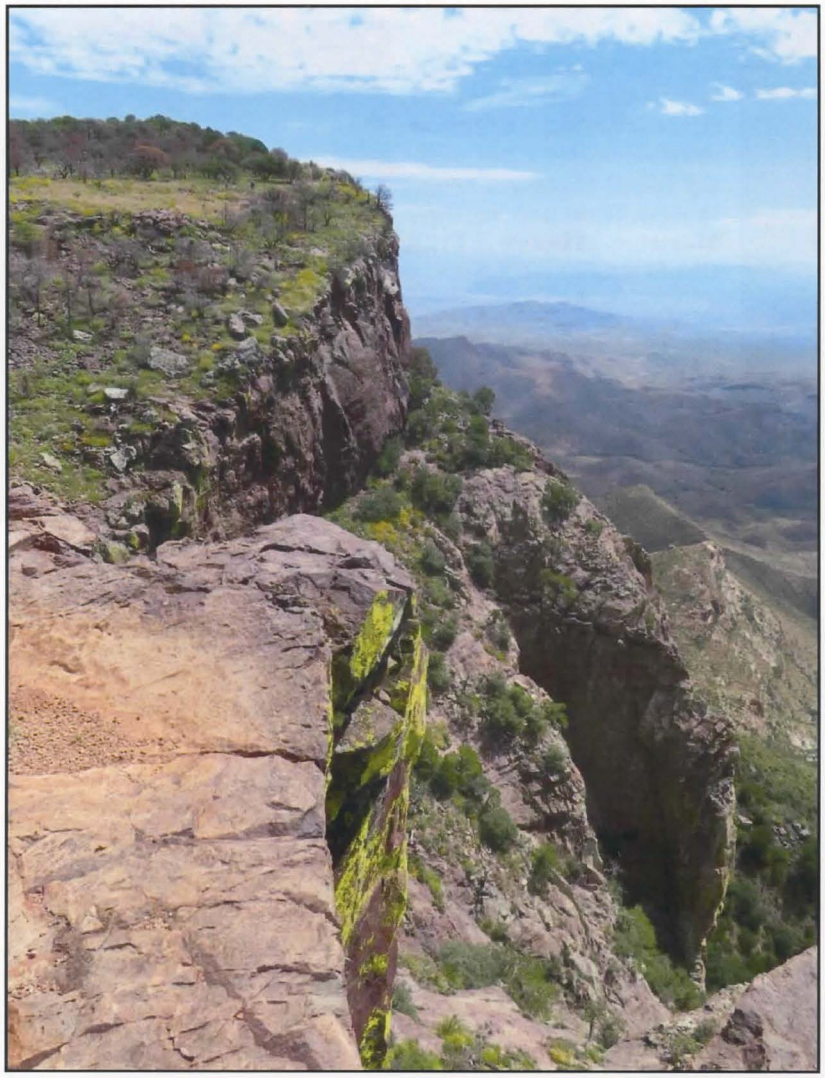

Fig. 11. South Rim of the Chisos. Note the edge of the fire scar on the plateau top. The South Rim fire started close to this location.

Fig. 12. Chisos Mountains Buckwheat, *Eriogonum hemipterum*, one of the many uncommon and endemic plants of this sky island range.

Fig. 13. A male walking stick, *Diapheromera torquata*, endemic to the Chisos Mountains, being studied by Dr. John & Kendra Abbott (University of Alabama).

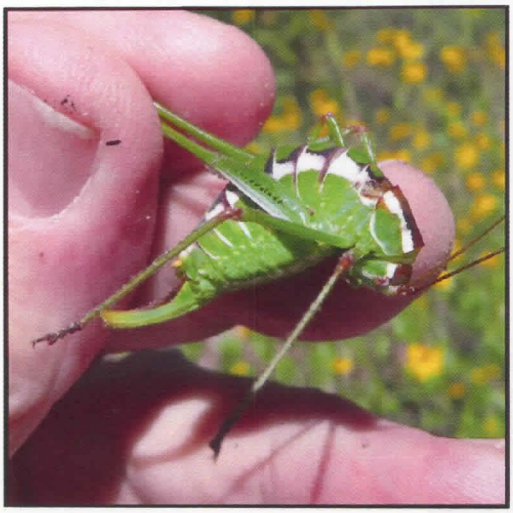

Fig. 14. Mountain-dwelling short-winged katydid, *Obolopteryx oreoeca*, endemic to just a few of the sky island mountain ranges in west Texas and northern Mexico. Window Trail, Chisos Basin.

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Fig. 15. *Ochraethes citrinus*, a very locally occurring longhorn beetle in a few west Texas mountain ranges. Window Trail, Chisos Basin.

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Fig. 16. *Phaulotettix eurycercus*, an uncommon brachypterous Acridid grasshopper associated with sotol grasslands. Window Trail, Chisos Basin.

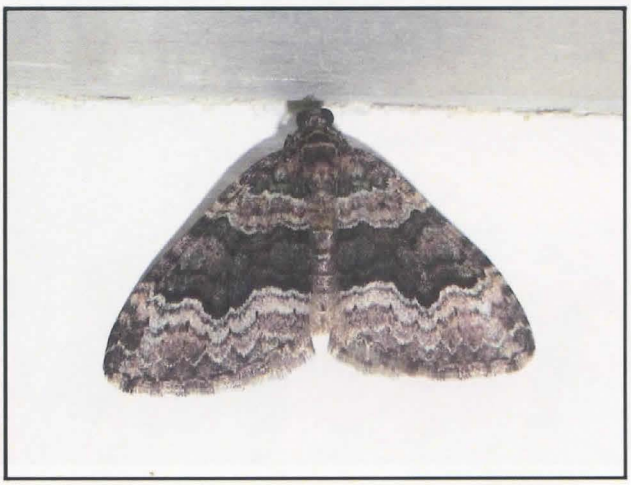

Fig. 17. *Euphyia swetti*, a regional specialty Geometrid moth. Chisos Basin Lodge.

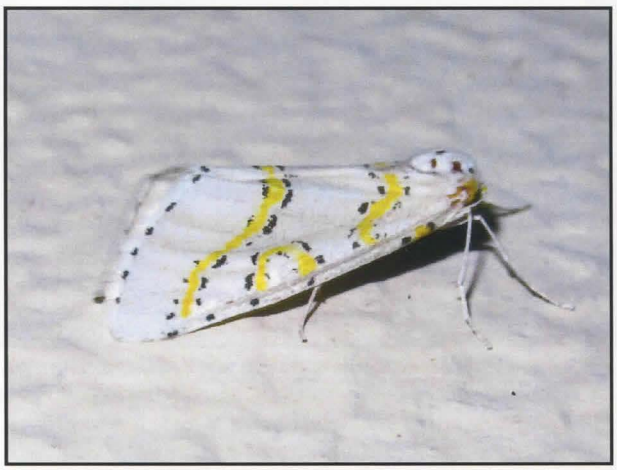

Fig. 18. *Philtraea paucimacula*, a distinctive Geometrid of arid southwest Texas. Chisos Basin Lodge.

Fig. 19. *Pyrausta flavibrunnea*, a rarely encountered Pyraustine moth of the Southwest. Chisos Basin Lodge.

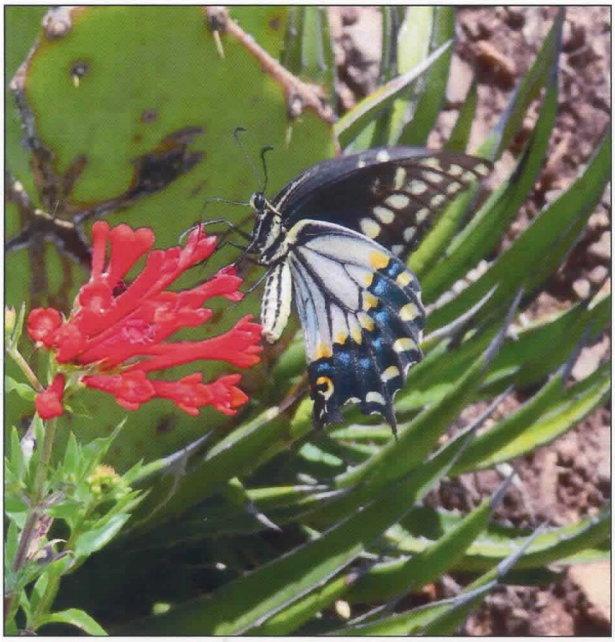

Fig. 20. The rare *pseudoamericus* yellow form of Black Swallowtail nectaring on firecrackerbush. This individual was the cause of much confusion and discussion on iNaturalist. It is not the "Desert" subspecies of Black Swallowtail; more northerly commenters were trying to make it into an Old World Swallowtail. Window View Trail, Chisos Basin.

Fig. 21. Firecrackerbush, *Bouvardia ternifolia*, in a hot burn scar along the SW Rim Trail. A major nectar source for hummingbirds and butterflies. Note the patchy fire scar in background.

Fig. 22. Sawtooth Candyleaf, *Stevia serrata*, showing vigorous regrowth on a hot fire scar, SW Rim Trail. A major nectar resource locally in the burned area.

Resources

Details of the timing and progress of the South Rim Fire were extracted from National Park Service news releases from April 9 to May 21, 2021, at www.nps.gov/bibe/learn/news. The National Park Service map of the fire was downloaded October 22 from InciWeb-Incident Information System at https://inciweb.nwcg.gov/incident/map/7374/1/.

Rainfall data were derived from "Precipitation Summary for Texas" at https://mesowest.utah.edu/, for the Chisos Basin weather station CSBT2. Rainfall amounts vary locally within the Chisos Mountains depending on the vagaries of each storm.

All of the accompanying images (except the fire map) were taken by the author in the Chisos Mountains, Big Bend NP, Texas, September 22-26, 2021. The full array of the author's natural history images in Big Bend National Park for that visit can be viewed on iNaturalist at https://tinyurl.com/yhpfe633.

(Chuck Sexton, E-Mail: gcwarbler@austin.rr.com)

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DUPONCHELIA FOVEALIS – EUROPEAN PEPPERMOTH
BY
DARRYL WILLIS

Notes on *Duponcelia fovealis* the European Pepper moth. This is a little - known, invasive, Pyralid species that has been spreading in the US since it's introduction in California in 2010. It has been found in commercial hothouse's for crops, vegetables and flowers. This species appears to occur in scattered colonies across the US and Canada, and has both increased it's range and become more common in recent years. It has been found in Canada, New York, Florida, several gulf coast states and Atlantic coast states to North Carolina.

***Duponcelia fovealis* (European Pepper moth)**

If you look on line for this species you will find several photos and a very complete article by the Department of Agriculture on it. There is a long list of flowers, crops, and vegetables it feeds upon including images of the larvae and the damage the larvae inflict.

This specimen was collected by my son in his condo in Wayland, Massachusetts, on 10/25/2021 – 19mm. It likely came from a pupa hidden in some hydrangeas purchased at a local store.

This species could become an invasive pest of economic importance in the US.

Moth Photographers Group shows several US records.

(Darryl Willis, E-Mail: dtwillis1@verizon.net)

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THE BUTTERFLIES OF VERNON PARISH, LOUISIANA

BY

CRAIG W. MARKS

The area that encompasses Vernon Parish became part of the United States as part of the Louisiana Purchase. The Parish, created in 1871, was named after George Washington's home, Mt. Vernon. The parish seat is Leesville which is also the largest incorporated town in the Parish. Logging/lumber has historically been a major industry in the parish and remains so today. Fort Polk, the 5th largest military installation in the U.S, is located within the Parish. Opened in 1941 by the U.S. Army, it has surpassed the timber industry as the largest industry within the Parish. The fort was named in honor of Leonidas Polk, the first Episcopal Bishop in Louisiana, known as the "Fighting Bishop of the Confederacy".' Fort Polk contains approximately 200,000 acres, some of which is open to the public.

Vernon Parish is in the Cen-La region of Louisiana, also known as the Crossroads region. Other parishes within this region and in which I have either conducted NABA Fourth of July counts or conducted regular surveys include Catahoula Parish, Grant Parish, Natchitoches Parish and Rapides Parish. From the standpoint of butterfly habitat, Cen-La includes bayous meandering through swamplands, piney hill country, extensive prairies, and deciduous forests. It also has clear streams with sandy bottoms. And of even more import, Kisatchie National Forest is located in the piney hills and hardwood bottoms of Cen-La.

The Kisatchie National Forest is the only national forest in the State. Spread across seven of the ten parishes that make up Cen-La, it is divided into five managed units that are called Ranger Districts and which total over 604,000 acres of public lands. For more extensive information, directions and maps, please go to the Kisatchie National Forest website. Vernon Parish is located in the Calcasieu Ranger District. That District is further divided into two land areas referred to as the Evangeline Unit and the Vernon Unit. In my exploration of Kisatchie's Vernon Unit, I've spent most of my time at the Cooter's Bog Special Interest Area, Fullerton Lake Rec Area, Blue Hole Rec Area and Dove Field.

Cooter's Bog, and the smaller Leo's Bog, are pitcher plant bogs. Cooter's Bog covers about 130 acres on National Forest lands. Both bog complexes are surrounded by Longleaf Pine habitat. The bogs are kept open from the encroachment of trees and shrubs by prescribed fires about every one to three years. Cooter's Bog is actually a complex of several hillside pitcher-plant bogs. The bogs include several species of pitcher plants, such as winged pitcher plants (*Sarracenia alata*), sundews (*Drosera spp*) and butterworts (*Pinguicula spp*). Another endemic bog plant species is toothache grass (*Ctenium aromaticum).* There are a couple of permanent streams that provide moisture to the environment even when the actual bogs are dry. There is a sign along Hwy 463 that designates the location of Cooter's Bog. The road at that sign off of the highway leads to the bogs. There are a couple of spots off of that road to park. The lower bog can be seen from the road off to the right. Further up the road, the upper bog is on the left, through an open pine meadow. There are no signs identifying Leo's Bog and it is not visible from the road, but it can be located by using a GPS.

Drake's Creek has been designated as a Louisiana Natural and Scenic River. The total section of that creek so designated is about 12 miles long. The northern portion is located within the boundaries of Fort Polk, and the southern portion of the creek is in Kisatchie NF. It begins about one mile east of the intersection of LA Highway 421 and 405. Recreational activities including wading, fishing, hunting, birding and hiking. Access points are available from both the Fort Polk and Kisatchie sections.

The Fullerton Lake Rec Area is located off of LA Highway 399, near the unincorporated community of Fullerton. That community once included one of the largest sawmill operations in the South, and ruins and foundations are present along the Fullerton Mill Trail. This Rec Complex has day-use picnic facilities, flush restrooms and showers, camping units, bank fishing, a small boat launch for boating on the lake, hiking and biking trails. The trail along the lake's levee is one of the designated areas covered as part of the Allen Acres NABA Count due to the presence of significant stands of buttonbush and Brazilian Vervain, both of which pull in the butterflies and skippers from the surrounding habitat. For example, one March, the only E. Pine Elfin recorded in the parish was found by Jean Trahan along that levee. Below the levee is hardwood bottoms, including patches of switchcane and sweetleaf.

Dove Field is a designated area of off Highway 399, just about one mile north of Fullerton Lake. There is a sign identifying the area at the intersection of 399 and Forestry Service Road 4922. Located within the piney woods of Kisatchie NF, the area has been designated as a location to be managed for the re-introduction of quail in Kisatchie NF. The open areas generated by those efforts are good habitat for butterflies,

particularly along the roads where low-growing verbena has been planted. The Blue Hole Rec Area includes a group-use picnic area and day-use shelter in the grass along the shore of Blue Hole, along with a loop trail around the lake. Most of the good spots I've found for butterflies are easy walks off of the loop trail. There is a small stream below the pond that leads into an area of hardwood bottoms.

Another spot that I have surveyed regularly within the Parish is Allen Acres, a nature-oriented Bed & Breakfast featuring a cozy country home on 26 wooded acres near the Kisatchie NF. Owned and operated by Dr. Charles Allen, author of several books devoted to native Louisiana flora, and his wife Susan, they have spent years developing the gardens to attract butterflies and hummingbirds. They also have included other gardens which focus on various curiosities, such as night-blooming flowers, bird watching, and "yard art". Dr. Allen offers plant id classes including basic, wetland plants, edible plants, and graminoids. There have been twelve NABA Fourth of July Counts there of which I have conducted nine. There are also annual "bio-blitzes" conducted there. Dr. Allen maintains fourteen sheets with mercury vapor lights which operate most nights and more than 950 species of moths have been documented. Allen Acres has been a site for two National Bugguide Gatherings, one in July 2019 and one late April early May of 2021.

While working on my book about Louisiana's Butterflies, I gathered records of what species have been recorded in which parishes, and I have continued to gather that data since the book's publication. That data currently reflects that 96 species have been documented in Vernon Parish (NOTE: this number does not include older, historical records on the BAMONA website as those records present no supporting data reflecting when, where or who). As noted, there have been twelve NABA Fourth of July Count at Allen Acres. In 2015, I took over the count and began to include Fullerton Lake Rec Area and Dove Field. Since its onset, 65 species have been identified during May (2 counts), July (7 counts), September (one count) and October (three counts). Dr. Allen organized a "Fort Polk" NABA Count from 2012-2014 which included Cooter's Bog, Blue Hole Rec Area, Little Cypress Rec Area and Alligator Lake Rec Area within that count circle. Overseen by Dr. Allen, the reported counts were conducted in April (1), May (1), July (1) and September (2). Dr. Allen provided me with a spreadsheet reflecting the results of the Fort Polk NABA counts as well as several surveys conducted there that were not reported as an official NABA count. Also, a group of Louisiana butterfliers, including Jean and Jeff Trahan, Rosemary Seidler, Brad Moon, Dave Paton, Phillip Wallace and myself, conducted a survey of Cooter's Bog, Fullerton Lake and Dove Field from March through October in 2019, and identified 70 species.

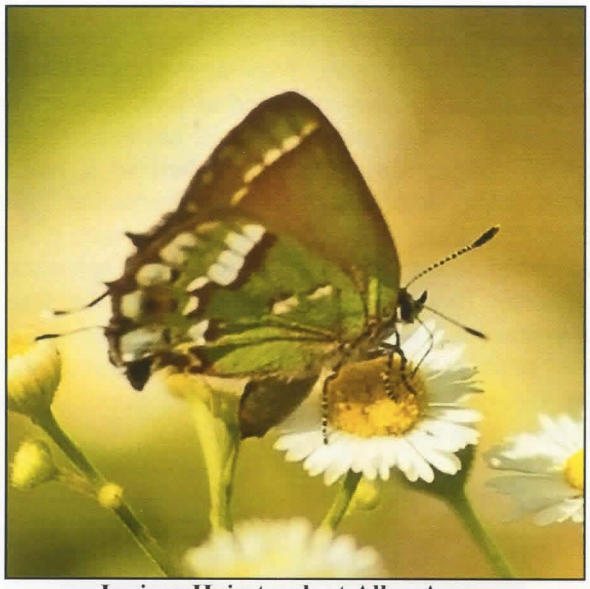
The Allen Acres NABA count started in 2012. Currently, the count starts at Allen Acres, working the various sections of the property the Allens have developed. After lunch (which is actually the highlight of the count as Susan Allen always has great food available for the participants), Dove Field is surveyed next, followed by Fullerton Lake Rec Area. During the 2021 count, done in July, I found a male Large Orange Sulphur at Brazilian vervain along the back of the levee at Fullerton Lake, both a new count and parish record.

Large Orange Sulphur at Fullerton Lake (by CWM)

Allen Acres contains several garden areas of both native and non-native flowering plants. All of the flowers are a magnet for swallowtails, and all seven species typically found in the State have been recorded there, including Zebra Swallowtails as late as September. Dr. Allen has included numerous larval foodplants on the property with the result that we regularly find multiple caterpillars during the count, including Pipevine Swallowtails, Cloudless Sulphurs, Sleepy Oranges, Gulf Fritillaries, Goatweed Leafwings, Buckeyes, Checkered-skippers and Brazilian Skippers.

Allen Acres Zabulous Zinnia Zone

The front portion of the property represents a typical example of Cajun Prairie habitat where we have occasionally found Dainty Sulphurs and Georgia Satyrs. The back portion is hardwood bottoms which yield sightings of Southern Pearly-eye, Gemmed Satyrs and, once, a Common Wood Nymph. In between are classic Louisiana piney woods. He has a allowed a stand of red cedars to grow, and, over the last few years, Juniper Hairstreaks have regularly been seen as late as July. Some other rarities that have shown up at (or near) Allen Acres include a couple of Queens, a Great Southern White, a White M Hairstreak and Little Metalmarks. Per my records, a total of 67 species have been reported in or around the property.



Juniper Hairstreak at Allen Acres (by Bette Kaufman)

Because of the great cross section of habitat present in Vernon Parish, I asked a group of friends to help with a year-long survey of Cooter's Bog, Fullerton Lake Rec Area and Dove Field. As indicated above, this was accomplished from March to October in 2019. I picked Cooter's Bog because of the unique butterfly fauna recorded there. Specifically, since I started surveying that location, Little Metalmarks have regularly been seen from as early as May and as late as September. Other regulars have included Palamedes Swallowtails, Georgia Satyrs and Common Wood Nymphs. In 2013, a Gorgone Checkerspot was seen there (confirmed by picture submitted to and accepted by BAMONA). Wild Indigo Duskywings have also been recorded there. On July 6, 2013, a male Wild Indigo Duskywing was perched right out in the middle of the bog (over than some Georgia Satyrs the other butterflies tended to fly around the edges of the bog). The only indigo plants that I was able to identify at the location were *B. bracteata*, and one day in June I watched as a female oviposited on two separate *B. bracteata* plants along a hunter's road above the bog.

At the western edge of its range in western Louisiana (also extending into extreme east Texas), the Little Metalmark is so innocuous that it can easily be missed. First, it is small, about the size of a male Phaon Crescent; however, its flight is fluttery, not gliding like a crescent. It really doesn't move around much unless disturbed. It flies low and will regularly perch on the underside of leaves close to the ground. While never far from its foodplant, yellow thistle (*Cirsium horridulum*), the Little Metalmark does not regularly perch on the thistle but seems to like to perch on plants about 6 to 12" in height in the immediate area around thistle. The flowers of that food plant are not always yellow, but also pink to reddish purple. In fact, in Louisiana, I've never seen thistle with yellow blooms, only purple.

Little Metalmark at Cooter's Bog (by Dave Patton)

In my experience, it typically prefers to fly in open, pine flats as opposed to deciduous woods. Also, it does not seem to be tied to water or wet areas. The best way to locate Little Metalmarks is to find areas of suitable habitat with large stands of its larval host plant. In Louisiana, it can have as many as four broods, March, May, August and late October into very early November. In July 2013, 10 were seen one day at Cooter's Bog. It has also been seen near Allen Acres as well as at Drake's Bog and Dove Field. During the survey, it was recorded at Cooter's Bog in April, June, July and September.

The Georgia Satyr is another unique, but regular inhabitant at Cooter's Bog. For example, fourteen were reported there during the Fort Polk NABA Count in September 2012. I saw more than 40 at Cooter's Bog on both May 19 and August 31, 2013, and then 66 in May of 2014. During the survey it was recorded in July and September (with double figures on both days in September). It has also been recorded there in June and October.

Of the three smaller satyrs (Gemmed, Carolina and Georgia), I find the Georgia Satyr to be the largest. Some females are as large as Little Wood Satyrs, with whom it will fly in May. This satyr is also the lightest colored of the three, with the Carolina Satyr being the darkest. Finally, this satyr is often found out in open grassy areas in full sunshine while the other two rarely leave the shade of the forest.

Georgia Satyr at Cooter's Bog
(by Dave Patton)

During the survey, Palamedes Swallowtails were seen every month across the three locations, with a high of 16 in early September. Common Wood Nymphs (the large *texana* subspecies with prominent yellow eyespot patches on the upper wings) were also recorded at all three locations, with a high of 28 at Cooter's Bog in mid-June. That species is a regular at Cooter's Bog.

Dusted Skippers, the *loammi* subspecies, were seen during the survey at Dove Field in April. For more information on this species in Louisiana, see SLS News, Vol 38 (3) pp 3-8. Meske's Skippers (June) and a Delaware Skipper (July) were also found at Dove Field during the survey. Meske's Skippers were later recorded at that location in September of 2020, confirming the existence of a second brood within the state. Vernon Parish is only the second parish in Louisiana in which that skipper has been recorded [for more information on this species in Louisiana, see SLS News, Vol 35(2) pp 67-70]. A King's Hairstreak was recorded at Fullerton Lake during the survey. As an aside, King's Hairstreaks have also been recorded in several other locations within the Vernon Unit of Kisatchie NF in June, including the Blue Hole Rec Area [for more information on this species in Louisiana, see SLS News, Vol 31(4) pp 144-48].

Meske's Skippesr at Dove Field
(by Brad Moon)

Twin-spotted Skippers were recorded at Cooter's Bog twice during the survey, May and September. That species was previously recorded at both Cooter's and Leo's Bogs in June and August. It has been recorded there as late as early October. I believe it has two broods, May-June and August-September, more prevalent in the fall. It appears to favor wet, if not at least damp, open areas near woods. It is attracted to blue/purple flowers, but I have also seen it feeding on white flowers. The larval foodplant has been listed by some sources as "grasses" without more specifics. Like Georgia Satyrs, I have found males actually perched out in the middle of those bogs.

Twin-spot Skipper at Cooter's Bog
(by Phillip Wallace)

The following is a list of the species that have been recorded in Vernon Parish. A couple of these records are historical without more recent reports. An "AA" designation indicates that species has been recorded during one or more of the Allen Acres NABA counts. A "FP" indicates that species was recorded during one or more of the Fort Polk counts. A "S" designation reflects that species was reported during the 2019 survey. These designations are not intended

to be exclusive as many of the species so designated have also been recorded elsewhere on other occasions. For some of the more rarely reported species, I have provided some additional details.

Silver-spotted Skipper (*Epargyreus clarus*) FP, AA, S; White-striped Longtail (*Chioides catillus*) (reported in 9/06); Long-tailed Skipper (*Urbanus proteus*) FP, AA, S; Hoary Edge (*Achalarus lyciades*) FP, AA, S; Northern Cloudywing (*Thorybes pylades*) FP, AA, S; Southern Cloudywing (*Thorybes bathyllus*) FP, AA, S; Confused Cloudywing (*Thorybes confusis*) AA, S; Sleepy Duskywing (*Erynnis brizo*) (recorded twice in Kisatchie NF (2019 & 2020); Juvenal's Duskywing (*Erynnis juvenalis*) FP, S; Horace's Duskywing (*Erynnis horatius*) FP, AA, S; Zarucco Duskywing (*Erynnis zarucco*) AA; Funereal Duskywing (*Erynnis funeralis*) AA, S (also reported at Fort Polk in the spring of 2014 and near Vernon Lake in 2006); Wild Indigo Duskywing (*Erynnis baptisiae*) AA, S; Common Checkered-Skipper (*Pyrgus communis*) FP, AA, S; Tropical Checkered-Skipper (*Pyrgus oileus*) FP, AA, S; Common Sootywing (*Pholisora catullus*) (historical, a specimen is located the LSU Museum collection, and also reported, but not verified, as seen on Fort Polk in the spring of 2014).

Swarthy Skipper (*Nastra lherminier*) FP, AA, S (also recorded at Cooter's Bog); Clouded Skipper (*Lerema accius*) FP, AA, S; Least Skipper (*Ancyloxypha numitor*) AA, S; Southern Skipperling (*Copaeodes minima*) FP, AA, S; Fiery Skipper (*Hylephila phyleus*) FP, AA, S; Meske's Skipper (*Hesperia meskei*) S; Sachem (*Atalopedes campestris*) FP, AA, S; Tawny-edged Skipper (*Polites themistocles*) S (also reported in 2020 at Fort Polk); Crossline Skipper (*Polites origenes*) (recorded at Dove Field in 10/15); Whirlabout (*Polites vibex*) FP, AA, S; Southern Broken-Dash (*Wallengrenia otho*) FP, AA, S; Northern Broken-Dash (*Wallengrenia egeremet*) FP, AA, S; Little Glassywing (*Pompeius verna*) AA, S (also seen at Cooter's Bog in 5/20); Delaware Skipper (*Anatrytone logan*) AA, S; Yehl Skipper (*Poanes yehl*) (recorded at Fullerton Lake in 2017); Dun Skipper (*Euphyes vestris*) FP, AA, S; Dusted Skipper (*Atrytonopsis hianna)* S; Pepper and Salt Skipper (*Amblyscirtes hegon)* (first reported in 3/17) S; Lace-winged Roadside-Skipper (*Amblyscirtes aesculapius*) AA (at Allen Acres); Common Roadside Skipper (*Amblyscirtes vialis*) (there is an historical report on BAMONA without any details on date or location); Dusky Roadside-Skipper (*Amblyscirtes alternata)* S; Eufala Skipper (*Lerodea eufala*) AA, S; Twin-spot Skipper (*Oligoria maculata*) S (also reported at Fort Polk in the spring of 2016); Brazilian Skipper (*Calpodes ethlius*) AA (at Allen Acres); Ocola Skipper (*Panoquina ocola*) FP, AA, S; Yucca Giant-skipper (*Megathymus yuccae*) (there is an historical report on BAMONA without any details on date or location).

Pipevine Swallowtail (*Battus philenor*) FP, AA, S; Zebra Swallowtail (*Eurytides marcellus*) FP, AA, S (as late as September at Allen Acres); Black Swallowtail (*Papilio polyxenes*) FP, AA, S; Eastern Tiger Swallowtail (*Papilio glaucus*) FP, AA, S; Spicebush Swallowtail (*Papilio troilus)* FP, AA, S; Palamedes Swallowtail (*Papilio palamedes*) FP, AA, S; Giant Swallowtail (*Papilio cresphontes*) FP, AA, S.

Falcate Orangetip (*Anthocharia midea*) (there is an historical report on BAMONA without any details on date or location); Checkered White (*Pontia protodice*) (recorded at Vernon Lake in 10/07); Cabbage White (*Pieris rapae*) (there is an historical report on BAMONA without any details on date or location); Great Southern White (*Ascia monuste*) FP; Orange Sulphur (*Colias eurytheme*) FP, AA, S; Southern Dogface (*Zerene cesonia*) FP, AA, S; Cloudless Sulphur (*Phoebis sennae*) FP, AA, S; Large Orange Sulphur (*Phoebis agarithe*) AA; Barred Yellow (*Eurema daira*) (Cooter's Bog in March and Fort Polk in October); Little Yellow (*Pyrisitia lisa*) FP, AA, S; Sleepy Orange (*Abaeis nicippe*) FP, AA, S; Dainty Sulphur (*Nathalis iole*) AA, S.

Great Purple Hairstreak (*Atlides halesus*) (photographed at Allen Acres); Juniper Hairstreak (*Callophrys gryneus*) AA; Frosted Elfin (*Callophrys irus*) (there is an historical report on BAMONA without any details on date or location); Henry's Elfin (*Callophrys henrici*) (photographed along Hwy 10 south of Pitkin in 3/15); Eastern Pine Elfin (*Callophrys niphon*) S (seen in April); Banded Hairstreak (*Satyrium calanus*) (reported on Ft Polk in spring of 2017 and then photographed near Fullerton Lake along Cooter Johnson Loop); King's Hairstreak (*Satyrium kingi*) (recorded at several locations within Kisatchie NF); Striped Hairsteak (*Satyrium liparops*) (recorded at several locations within Kisatchie NF); Red-banded Hairstreak (*Calycopis cecrops*) FP, AA, S; Dusky-blue Groundstreak (*Calycopis isobeon*) (recorded at Clearcreek WMA in 2018); Gray Hairstreak (*Strymon melinus*) FP, AA, S; Mallow Scrub-Hairstreak (*Strymon istapa*) S (Dove Field in October, also in 2018); White M Hairstreak (*Parrhasius m-album*) AA; Cassius Blue (*Leptotes cassius*) AA (recorded at Allen Acres); Eastern Tailed-Blue (*Cupido comyntas*) FP, AA, S; Spring Azure (*Celastrina ladon*) (historically reported); Summer Azure (*Celastrina neglecta*) FP, AA, S; Ceranus Blue (*Hemiargus ceraunus*) FP, AA (also recorded at Fort Polk in 2017 & 2020); Reakirt's Blue (*Echinargus isola*) (recorded at Cooter's Bog, 6/14); Little Metalmark (*Calephelis virginiensis*) FP, S.

American Snout (*Libytheana carinenta*) FP, AA; Monarch (*Danaus plexippus*) FP, AA, S; Queen (*Danaus gilippus*) (reported twice at Allen Acres); Gulf Fritillary (*Agraulis vanillae*) FP, AA, S; Variegated Fritillary (*Euptoieta claudia*) FP, AA, S; Gorgone Checkerspot (*Chlosyne gorgone*) (in addition to older records primarily from Cooter's Bog, most recently photographed at that location during 2013 FP); Silvery Checkerspot (*Chlosyne nycteis*), FP, S; Phaon Crescent (*Phyciodes phaon*) FP, AA, S; Pearl Crescent (*Phyciodes tharos*) FP, AA, S; Common Buckeye (*Junonia coenia*) FP, AA, S; Question Mark (*Polygonia interrogationis*) FP (also recorded in Kisatchie NF); Eastern Comma (*Polygonia comma*) FP (2012 & 2013); Mourning Cloak (*Nymphalis antiopa*) FP (2012); Red Admiral (*Vanessa atalanta*) AA, S (also reported at Fort Polk in the spring of 2016); Painted Lady (*Vanessa cardui*) FP, AA, S; American Lady (*Vanessa virginiensis*) FP, AA, S; Red-spotted Purple (*Limenitis arthemis astyanax*) AA, S (also reported at Fort Polk in the spring of 2013 & 2017); Viceroy (*Limenitis archippus*) S (also seen at Allen Acres and reported at Fort Polk in the fall of 2014); Goatweed Leafwing (*Anaea andria*) FP, AA, S; Hackberry Emperor (*Asterocampa celtis*) (near Vernon Lake, 9/06 & 10/07); Southern Pearly Eye (*Enodia portlandia*) AA, S; Gemmed Satyr (*Cyllopsis gemma*) AA, S (also reported at Fort Polk in the spring of 2015); Carolina Satyr (*Hermeuptychia sosybius*) FP, AA, S; Georgia Satyr (*Neonympha areolatus*) FP, AA, S; Little Wood Satyr (*Megisto cymela*) FP, S (also reported at Blue Hole Rec Area where it was quite common in 5/06 and at Clear Creek WMA in 5/16; Common Wood Nymph (*Cercyonis pegala*) FP, AA, S.

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www.fs.usda.gov/recarea/kisatchie/recarea/?recid=34685

www.fs.usda.gov/recarea/kisatchie/recarea/?recid=34669

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

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BIOBLITZ AT MADDIN PRAIRIE, MITCHELL CO., TEXAS, AUGUST 21-22, 2021

BY
CHUCK SEXTON

Thirteen enthusiastic iNaturalists gathered at the Maddin Prairie in Mitchell County, Texas, for a bioblitz on the weekend of August 21-22. The preserve is owned and managed by Native Prairie Association of Texas. It consists of 1,114 acres of remnant and restored mixed-grass prairie, mesquite savanna, and riparian areas. Over two nights of black-lighting the team documented a remarkable 204 species of moths, one of the best bioblitz outcomes in Texas in recent memory. Along with many common and widespread species, the area harbors an array of specialties of western Texas, numbers ofwhich are adapted to the special prairie habitats. Because the area had been little sampled in the past, a large number of the encounters represented new county records. An array of the author's images from the bioblitz are shown below. The complete array of Lepidoptera observations from the bioblitz can be examined on iNaturalist at this link: https://tinyurl.com/45mhx42e Further information on the Maddin Prairie is available at: https://texasprairie.org/maddin-prairie/

Anavitrinella addendaria

Atascosa glareosella

Coenochroa californiella

Ectypia bivittata

Euchaetes bolteri

Frechinia helianthiales

Hileithia rehamalis

Horama panthalon

Lineostriastiria biundulalis

Mimorista subcostalis

Oligocentria alpica

Pelochrista bolanderana

Pelochrista reversana

Schinia alencis

Toripalpus breviornatalis

Syssphinx hubbardi

(Chuck Sexton, E-Mail: gcwarbler@austin.rr.com)

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Southern Lepidopterists' Society

Business Meeting – via Zoom.
20 August 2021, 2:30-3:41 PM EST.

ATTENDEES:

Lance Durden	Chairman
Jeffrey R. Slotten	Treasurer
Laura Gaudette	Secretary
Marc Minno	Membership Coordinator
Riley Gott	Member-at-Large
David Fine	Member-at-Large
Steve M. Mix	Member-at-Large
Dave Morgan	Website Manager
John Douglas	past recent Chair
Debbie Matthews	past recent Chair
Scott Anderson	
David Auth	
Jeff Belth	
Matt Blaine	
Charlie Covell	
James Hayden	
Jacqueline Miller	
Tom Neal	

MINUTES:

Meeting called to Order by Lance Durden at 2:30 PM EST

Note: For voting purposes, there was a quorum of current officers.

Minutes of the 28 July 2021 Zoom Board Meeting were reviewed.

> At that meeting, due to the unprecedented interruptions of the Society business in 2020 & 2021 caused by COVID, the possibility of the current elected officers continuing in their same roles for a third year (2022) was discussed, and the motion passed by all board members present.
>
> Subsequently, communications between Society members and the Board regarding that decision resulted in a reconsideration of this approach. The details to be discussed in item 1 of current meeting Agenda.

BUSINESS MEETING AGENDA:

1) Nomination of New Elected Officers for 2022-23 (Chairman, Secretary, 3 Members-at-Large).

A proposed interim solution to the pandemic related disruption to the Constitutionally outlined election process was agreed on at the 2021 Board meeting. This resulted in spirited pre-business meeting e-communications.

The following modified process and timeline was presented to those in attendance today:

- Announcement and call for nominations for each elected office will be published in September 2021 issue of *Southern Lepidopterists' News.*
- Ballots will be distributed with the December 2021 issue of *Southern Lepidopterists' News.*
- Ballots will be returned by members via USPS mail, or a via email with a photo of the unique ballot.
- Ballot counting to be finalized by February with term of office beginning 2 weeks afterward.

- Election results announcement will be emailed to membership and published in March 2022 issue of *Southern Lepidopterists' News*.

A motion to vote on above process was made; the motion passed without dissent.

Other election related items discussed:

- Lance called for volunteers to serve on Nominating Committee.
- Lance will reach out to current elected officers to gage willingness to serve a second term.
- To ensure the vote-by-mail will be secure – one person, one vote – and to reassure members that the process is legitimate, each ballot will be marked with a unique identifier which will be accounted for during the ballot tally.
- A short biography of each person running for elected office will be presented with ballots.

2) Suggested Small Revisions to Southern Lepidopterists' Society Constitution.

John Douglass presented proposed revisions to the SLS Constitution that more clearly outline the process and timeline for electing officers to the Society. The expanded wording is intended to promote wider participation in SLS's governance by:

- Formalizing the biennial election calendar.
- Digitizing and publicizing the various steps.
- Expanding the pool of potential nominees.
- Completely uncoupling the election cycle from the timing of Annual Meetings.
- Increasing voter participation by diversifying voting options while ensuring voting security.

Discussion included the concern that not all members have email and might be excluded from the process if exclusively done via electronic communications.

3) John Abbot Award

A call for nominations for the Abbot award will be published in the September 2021 *News.*

4) Treasurer's Report including Irving Finkelstein Bequest (Jeff Slotten).

The Treasurer's Report was presented by Lance due to technical difficulties experienced by Jeff Slotten; Jeff was able to re-join the meeting and provided clarifications on several items.

As of 31 July 2021 there were 151 paid members

Beginning Balance 1 January 2021 $7,954.25; ending balance $10,379.82

The Irving Finkelstein Bequest monies have been moved from Sun Trust to Edward Jones of Gainesville, Florida. The Trust signatories are Jeff Slotten, Lance Durden, and Marc Minno; Tom Neal will complete the necessary paperwork to sign on as signatory.

Jeff reported that there are no stipulations about how the Irving Finkelstein Bequest monies should be used. Ideas for using the gift included grants to graduate students to enable travel to meetings, newsletter printing expenses, and sponsoring memberships to young people interested in Lepidoptera. It was agreed that the funds should be allowed to grow for a few years and then a plan can be made for how best to utilize the interest on the principle investment.

Charlie Covell moved to approve Treasures report. The motion passed with no dissent.

Charlie moved to send thanks to the Editor of *Southern Lepidopterists' News,* J Barry Lombardini; Lance will send hard copy note. The motion passed enthusiastically with no dissent.

5) Southern Lepidopterists' Society Field Trip

The possibility of a field trip in October was discussed. The proposed site is Alligator Creek WMA in Wheeler Co., GA

COVID19 and it's variants remain a relevant concern. The possibility of having attendees sign a waiver of liability was presented.

If field trip deemed appropriate, Lance will announce field trip details with mass email.

6) Other Business

The Southern Lepidopterists' Society 2022 Meeting intends be in North Carolina as previously planned for 2021 and 2020.

Southern Lepidopterists' Society Constitution Amendments Article 1 was reviewed which includes a statement about harassment. A Diversity and Inclusion Statement will be added. This statement will be modeled after a similar statement by Lepidopterists' Society. It should include language to welcome non-collectors to the Society.

The duties of most Society officers are spelled out in the Constitution. It was suggested that the duties of Secretary be similarly outlined.

Meeting adjourned 3:41 pm EST

Respectfully submitted,
Laura Gaudette, Secretary

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MANY THANKS TO THE FOLLOWING DONORS TO THE SOUTHERN LEPIDOPTERISTS' SOCIETY

Sustaining

Brian Scholtens
Sue Rayner
Linda Williams

Benefactor

Scott Anderson

WELCOME TO OUR NEW MEMBERS

Kevin Haulk
1119 Placid Rd.
Griffin, Georgia 30224

Richard J. Teper
2833 Percussion Drive
Hillsborough, NC 27278

Robert Bryant
5419 Cathy Street
Cedar Bluff, AL 35959

Linda Williams
1329 Campbell Circle
Liberty, MO 64068

MOTHS — TRINITY RIVER NATIONAL WILDLIFE REFUGE, LIBERTY COUNTY, TEXAS

BY
STUART J. MARCUS

The following moths were observed for the first time at Trinity River National Wildlife Refuge between Aug 1, 2021 and Oct 31, 2021.

PYRALIDAE: ***Meroptera cviatella*** **– Poplar Bud Borer Moth**

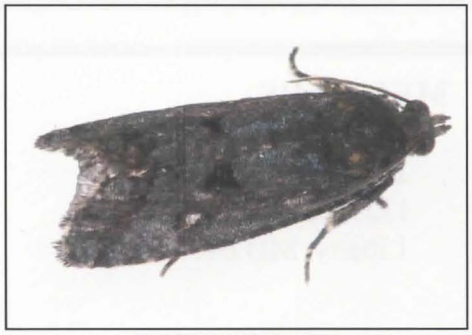
CRAMBIDAE: ***Pyrausta signatalis*** **– Raspberry Pyrausta**

EREBIDAE: ***Argyrostrotis anilis*** **– Short-lined Chocolate moth**

NOTODONTIDAE: ***Heterocampa buindata*** **– Wavy-Lined Heterocampa**

NOCTUIDAE: ***Spragueia apicalis*** **– Yellow Spragueia Moth**

PSYCHIDAE: ***Thyridopteryx ephemeraeformis*** **– Evergreen Bagworm**



TORTRICIDAE: ***Cryptaspasma bipenicilla***

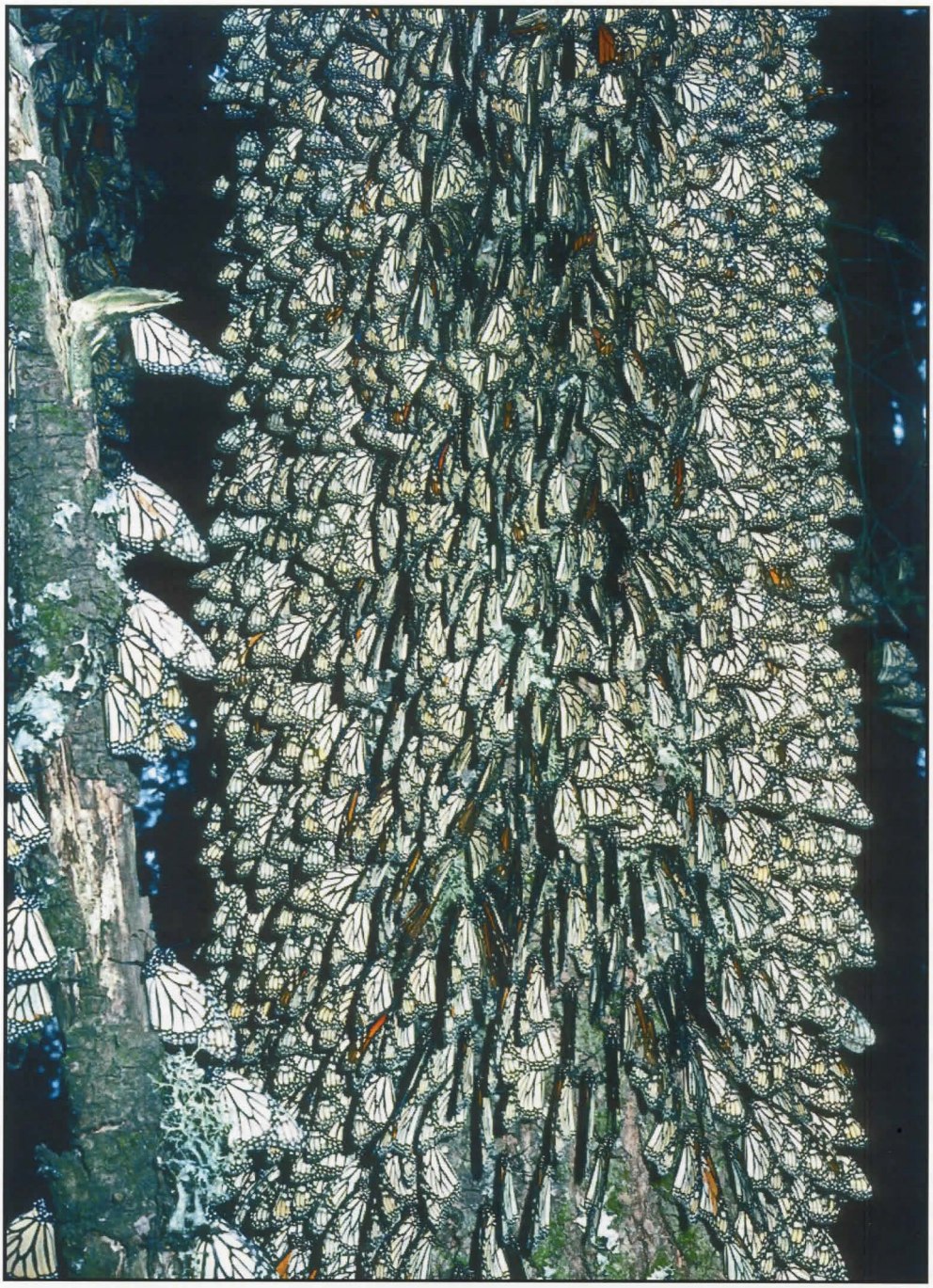
CRAMBIDAE: ***Pyrausta volupialis*** **– Volupial Pyrausta Moth**

GELECHIIDAE: ***Deltophora glandiferella***

THE MONARCH'S MEXICAN WINTER HIDEAWAY

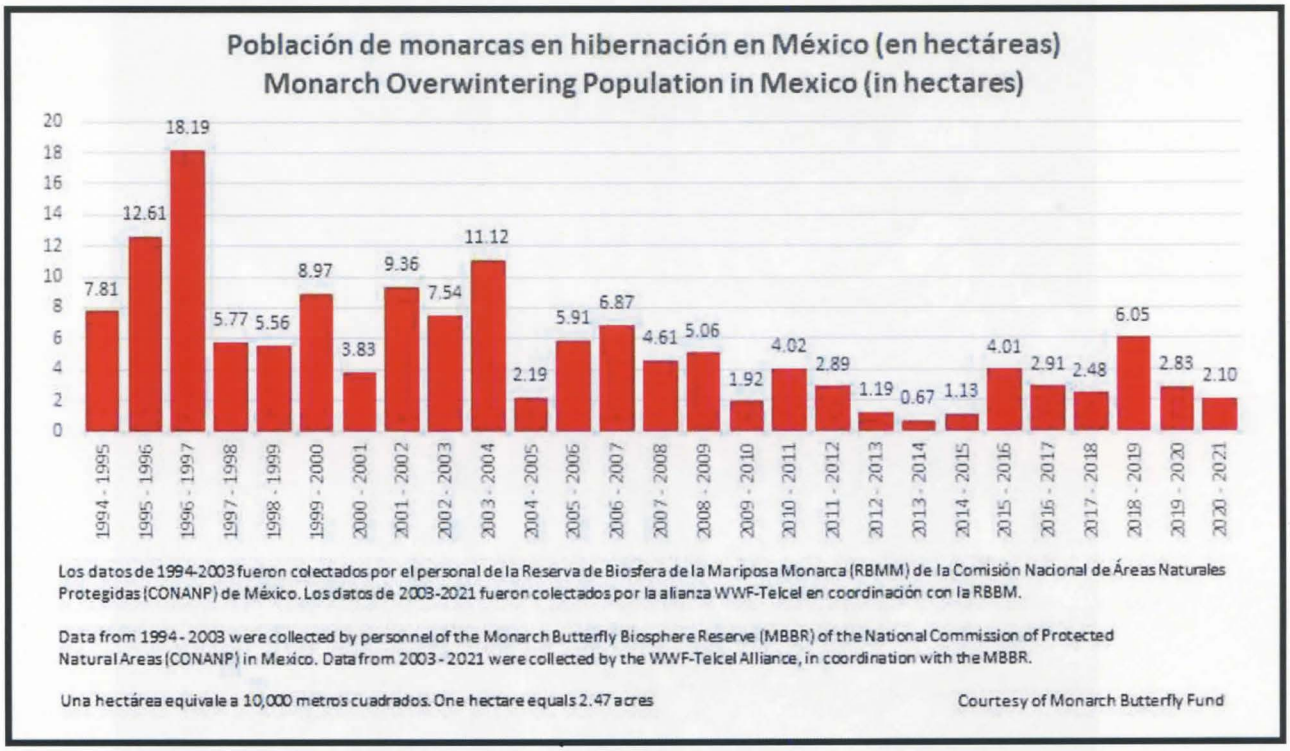
BY
GARY NOEL ROSS

On Thursday January 9, 1975, the overwintering site of North America's eastern population of monarch butterflies (*Danaus plexippus*) was discovered. The event had been long anticipated by American, Canadian, and Mexican scientists. Credit goes to American research assistant Kenneth C. Brugger and his Mexican wife Cathy—both volunteers working under the direction of Dr. Fred A. Urquhart associated with the University of Toronto Scarborough, Ontario, Canada. The news quickly spread, making the front-cover of *National Geographic* magazine in August 1976. [NOTE: As early as 1874 a local newspaper reported masses of monarchs along California's Pacific coast during winter months. However, monarchs west of the Rocky Mountains are significantly fewer—less than one percent—than their counterparts in the east. And for the most part, the western and eastern populations do not mix.]



The migratory eastern monarchs target the Transverse Neovolcanic Belt, a mineral-rich mountain range composed of tall, inactive volcanoes stretching across the southern end of the central Mexican plateau within the neighboring states of Mexico and Michoacán—approximately 60 miles northwest of Mexico City. At least eight major colonies are recognized as official sanctuaries within the 56,259 hectares (139,019 acres) classified as the MONARCH BUTTERFLY BISOSPHERE RESERVE (established in 1980) and UNESCO WORLD HERITAGE SITE (established in 2008). In addition, the sites are monitored by various Mexican and American conservation groups. Usually, only six of the sanctuaries are open for international tourism: El Rosario, Sierra Chincua, Cerro Pelón, Piedra Herrada (Valle de Bravo), La Mesa, and El Capulin. El Rosario remains the largest and most visited. All, however, are located at dizzying heights ranging between 9,000 and 12,000 feet above sea level.

Within each site, the butterflies congregate on south-facing slopes, taking advantage of the sun's warmth at such high altitudes. But the butterflies are not scattered randomly. Rather, the butterflies concentrate on specific trees: oyamel fir (*Abies religiosa*), the principal species above 10,000 feet in Mexican forests. Prime microhabitats are trunks, branches, and needle-leaves. Most of the butterflies are wedged together, wings held vertically over bodies, into distinct clusters—grayish in appearance because only the undersides of the wings are exposed. The butterflies remain motionless during the usual cold, foggy winter mornings. But when shafts of sunlight penetrate the forest, temperatures climb to nearly 50 degrees F. Then the magic happens. Those butterflies bathed in sunlight suddenly unfurl their wings, revealing their distinctive orange and black colors. In an effort to warm, the butterflies begin to vibrate (thermoregulate). When temperatures climb to 55-61 degrees F. and sunlight broadens, the butterflies launch into the air—as if on cue en masse! The air fills with myriad orange gossamer wings, wheeling and reeling about, spinning and floating and gliding. After a few moments you notice a faint whirring sound and specs of gold reigning down upon you. Although your mind tells you otherwise, you are forced to accept that both the sound and "fairy dust" must be the result of an incalculable number of wing membranes, veins, and scales rubbing one upon another. The tableau is spellbinding, sublime. Scientists and laymen alike regard the event as one of nature's most iconic phenomena.



Mexico's Monarch Overwintering population in Hectares (used with permission).

Following discovery in 1975, the number of butterflies at each site has varied significantly. Beginning in 1995-1996, populations have been scientifically monitored. The graph **above** indicates the most reasonable estimate of the area that hosts butterflies for the given winter. Using the figure of 21.1 million butterflies per hectare (an average based on several repeat surveys), the total butterfly population is then calculated, with a consideration for a wide margin for error. Highs have ranged from 18.19 hectares (44.95 acres) in 1996-1997

with an estimate of 300-400 million individuals, to a low of 0.67 hectares (1.66 acres) in 2013-2014 with an estimate of 14-15 million individuals. In 2020-2021, the estimate was 2.10 hectares (5.19 acres) containing 44.3 million individuals. (Of course, the size of the pre-1975 population remains an unknown, although some experts theorize that the number of butterflies may have maxed at one billion.)

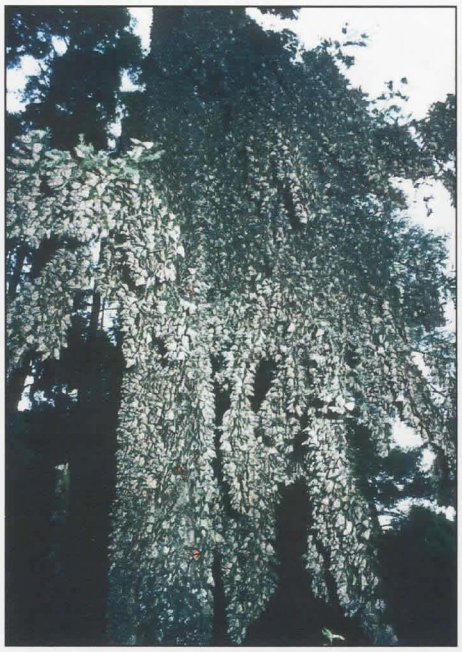
Before the pandemic began in 2019, the monarch colonies attracted upwards of one million international visitors each year. Since 1988, I have had the fortune during three spaced winters to visit one or more of the official sanctuaries. All visits were in the company of Thomas C. Emmel (1941-2018) of the University of Florida. Each time I have been transcended, mystified. But my initial visit in 1988 remains the most nostalgic. Then, sites pre-dated commercialization, and so were uncluttered by outsiders. Also, it was not difficult to locate a large number of trees hosting massive clusters of butterflies. In fact, it was common to hear in the crisp montane air, the snapping of over-weighted limbs. On such occasions, butterflies plummeted to the ground where later they would become victims to the cold or to an assortment of invertebrate and vertebrate predators that were not affected by the monarch's innate toxins.

During my periodic observations over several decades, I bear witness to a substantial decline in the numbers of butterflies. Theories include: (1) reduced breeding sites in the United States and Canada caused by human expansion and activities; (2) reduced breeding habitats principally in the midwestern and northeastern US states because of increased use of agriculture chemicals needed for GMO crops; (3) illegal logging, burning, and cattle grazing in Mexico's overwintering sanctuaries, forcing butterflies to seek higher altitudes where winter cold and wind are more severe; (4) climate warming, which in both breeding and overwintering locations, causes catastrophic weather events, and which in the Mexican colonies causes butterflies to seek higher, more hazardous altitudes; and (5) increased rates of disease from microbial parasites in warm-weather breeding habitats—likely as a result of butterfly gardeners using more convenient but non-native milkweeds for rearing monarchs for release.

In spite of increased interest in the butterfly by scientists, citizen scientists, and the public at large, eastern monarch migration continues to be at risk—down 90 percent. (The western populations are in serious decline, also, suffering a 99.4 percent reduction). As such, the extensive/massive displays of the past may be no more. Nonetheless, a visit to the overwintering sanctuaries remains uniquely inspirational. But because my photographs from my first visit to El Rosario and Sierra Chincua in 1988 are

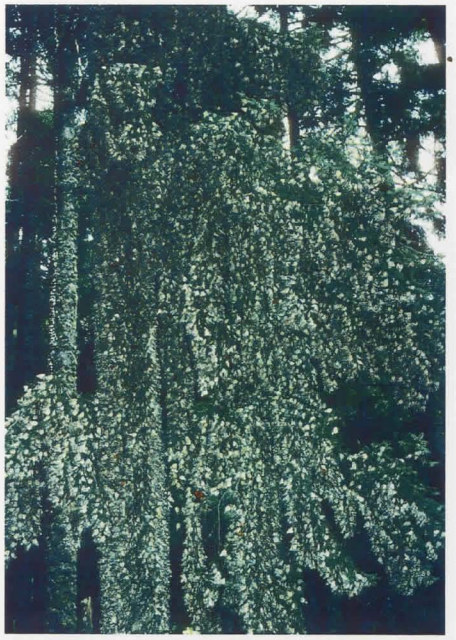
of historic importance and interest, I am presenting a sample here. All images were taken originally with a Cannon AE-1 35 mm SLR camera loaded with Kodachrome 64 (slide) film; a SUNPAK Auto 622 pro-system with a QUANTUM TURBO BATTERY supplied flash in the dark forest. The images were recently digitized on a Nikon Super Coolscan 5000 ED.

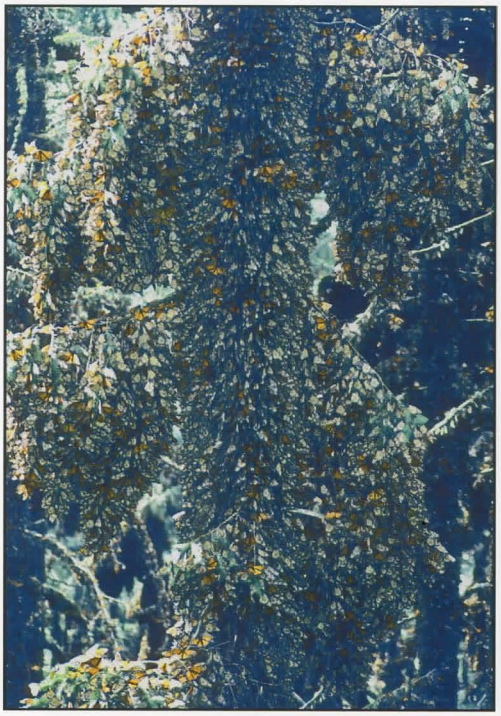
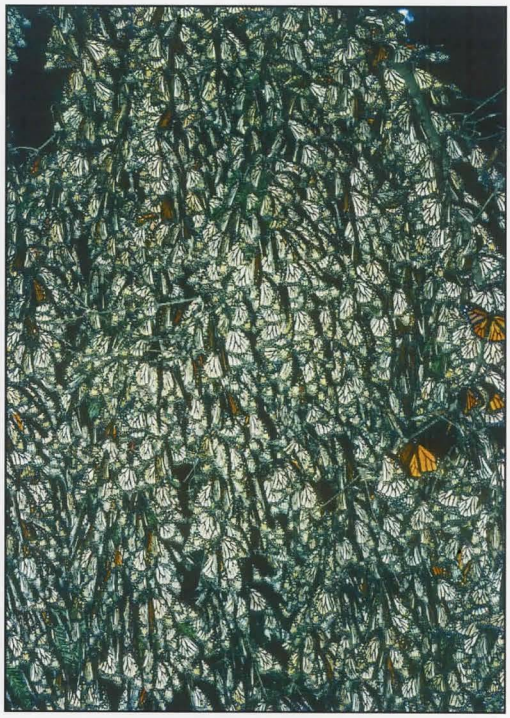
PHOTO GALLERY: Forty-one images. Cedited to Gary Noel Ross, January/February 1988.

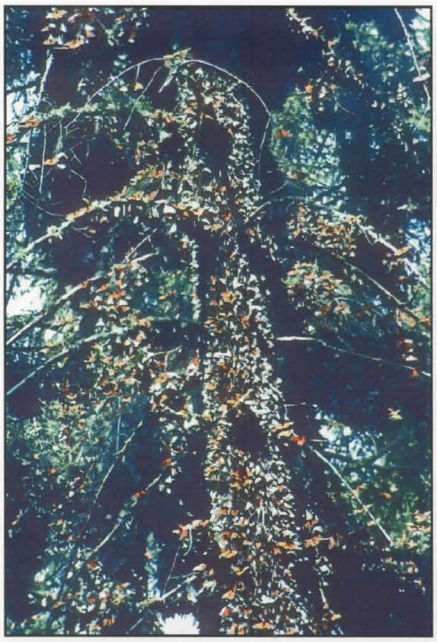
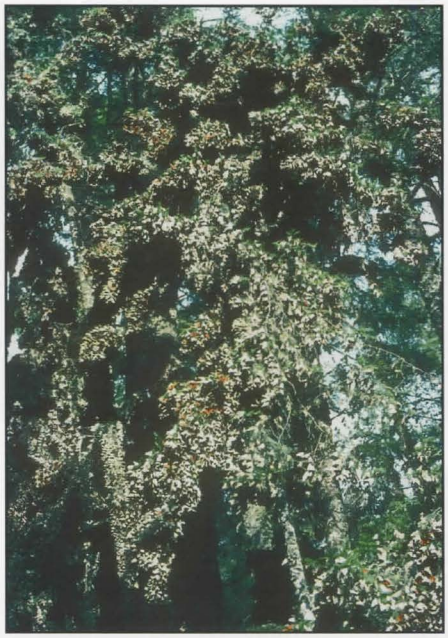
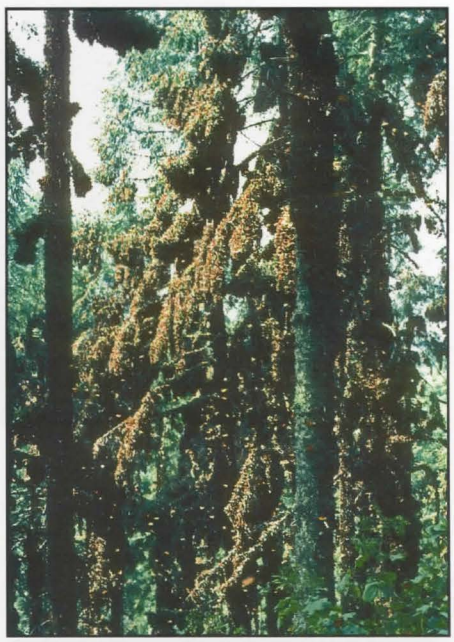
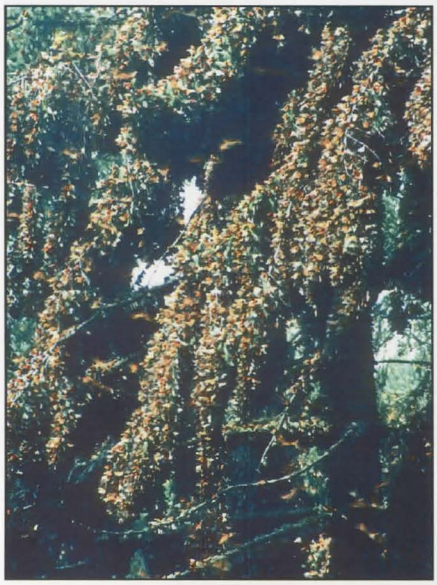
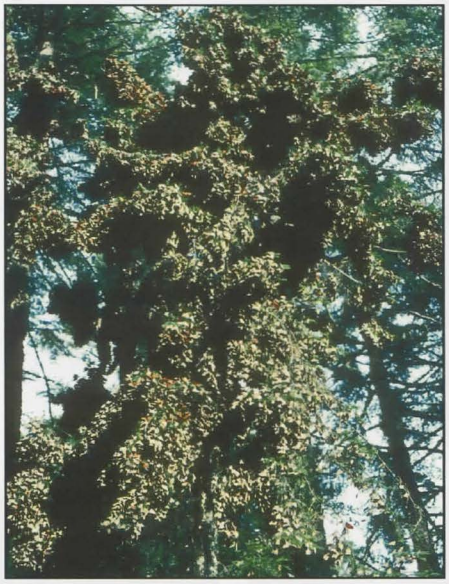
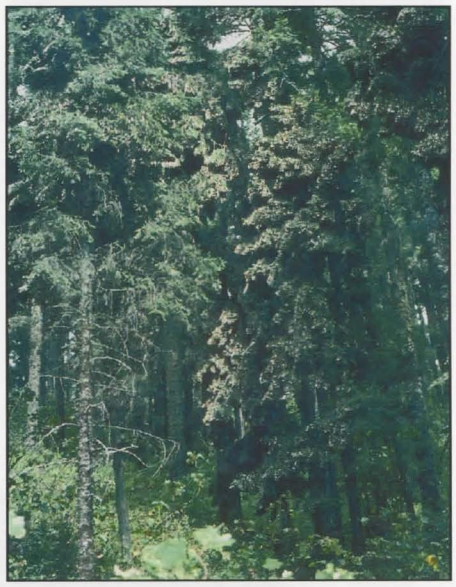
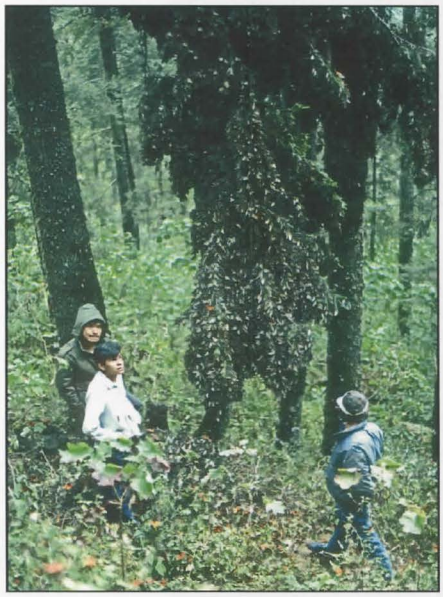
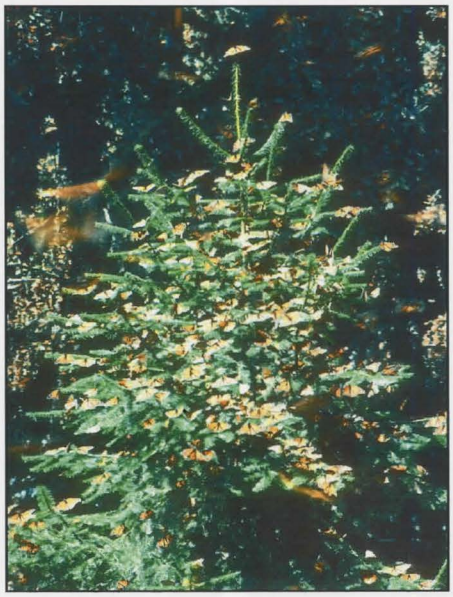








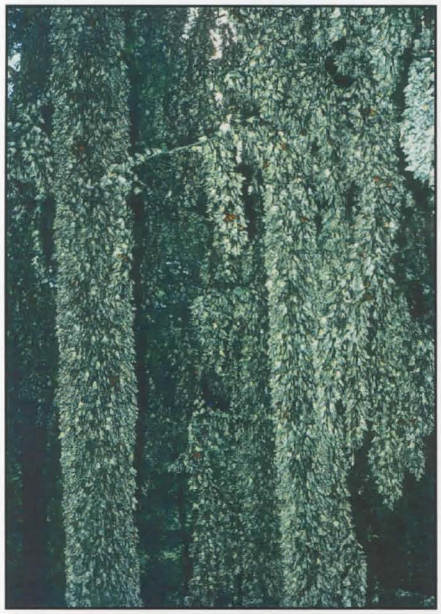



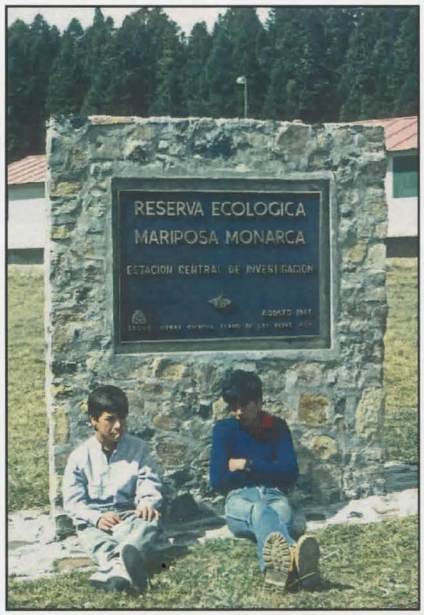















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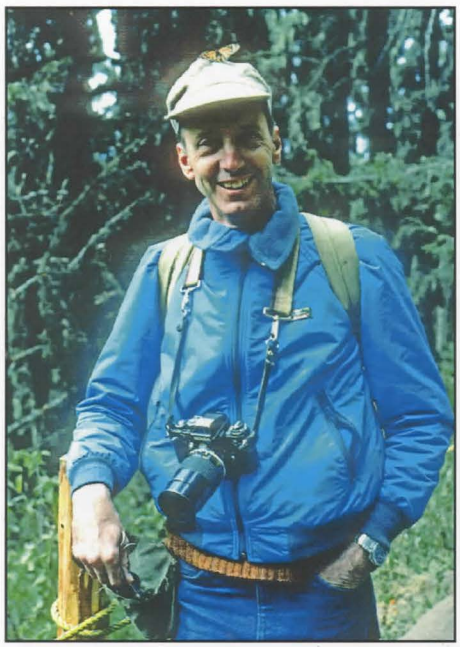
MARIPOSA MONARCA
ESTACION CENTRAL DE INVESTIGACION



(Gary N. Ross, E-Mail: gnross40@yahoo.com)

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Small cluster of migratory monarchs in a tamarisk (salt cedar) tree bedding for the night during their return trans-Gulf flight from their overwintering grounds in Mexico. Baton Rouge Audubon Society's Peveto Woods Sanctuary, Cameron Parish, March 1992. Gary Noel Ross.

MONARCH DEPICTED IN NATIVE AMERICAN TIE BOLOS

BY

GARY NOEL ROSS

Butterflies—and especially the monarch (*Danaus plexippus*)—are prominent in most Native American cultures. Over the years, I have been fortunate to have been able to visit, learn, and collect in several Native American homelands in the United States and Latin America. Exciting acquisitions include two tie bolos depicting the monarch. One is from the Oglala Lakota tribe (also referred to as Teton Sioux). The tribe's home is the sprawling Pine Ridge Indian Reservation (PRIR) in southwest South Dakota. The second tie bolo is from the Zuni tribe centered in the small Zuni Pueblo, New Mexico—south of Gallup.

Kevin Pourier (b. 1958) created the complex horn tie bolo (below left). The unique piece is carved from buffalo (American bison) horn, an ancestral and cultural art form now practiced exclusively by Pourier. In a conversation, Pourier explained: "The monarch butterfly has always been considered sacred by the Lakota. "Chief Sitting Bull," our most famous forefather, had a dried monarch glued to his hat." Pourier's buffalo horn art has been featured in internationally renowned magazines and museum collections, including the Smithsonian American Art Museum in Washington, D.C. The artist lives in Scenic, SD on the PRIR.

Quentin Quam (b. 1962) created the silver tie bolo (below right). Quam, who stems from an internationally renowned family of Zuni carvers, is recognized as a "master inlay artist." Quentin specializes in jewelry of sterling silver inlaid with semi-precious stones. Motifs ussually feature birds, flowers, and butterflies. Craftsmanship is so amazingly detailed that the final product appears as painted images on silver. According to Quam: "The natural world gives us sustenance. Butterfly Maiden, often depicted as a monarch, restores life to all." The artist lives in Zuni Pueblo.

Artist: Kevin Pourier, 2006. Buffalo horn with inlays of lapis lazuli. Blue representation of the traditional orange monarch is due to the artist's personal love of the semi-precious stone. Collection of Gary Noel Ross, 2006.

Artist: Quentin Quam, 2007 Sterling silver with inlays of turquoise (a sacred stone), coral, and jet. Collection of Gary Noel Ross, 2007.

(Gary Ross, E-Mail: gnross40@yahoo.com)

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PROSTERNAL GLANDS IN GREAT SPANGLED AND DIANA FRITLLARY CATERPILLARS

TEXT BY PAULETTE HAYWOOD OGARD
PHOTOS BY SARA BRIGHT

It is well known that swallowtail caterpillars have osmeteria, highly visible glands that dramatically pop out when larvae are disturbed, spraying a foul odor at predators in the process. Not so well known is the fact that Great Spangled and Diana Fritillary caterpillars possess similar, seldom-seen glands that emerge from under the head rather than behind it. *Journal of the Lepidopterists' Society* published an article by David James (2008) describing the larval stages of five greater fritillary species from the Pacific Northwest. Mention was made of a "fleshy, eversible osmeterium located ventrally between the head and first thoracic segment". Intrigued by this information and eager to see for ourselves, in 2009 Sara Bright and I reared Great Spangled Fritillary (*Speyeria cybele*) caterpillars from Alabama and found and documented the occurrence of these glands. Poking and prodding caused caterpillars to extrude a bright orange, bulb-shaped gland from a slit below the head, on the underside of the caterpillar. A faint, somewhat unpleasant odor was released. In 2020, we raised Diana Fritillary (*S. diana*) caterpillars from Alabama and were not surprised to see that they too have prosternal glands. Size and shape were similar to those of *S. cybele*, but in these Diana caterpillars, the color matched the reddish coloration of the base of their spines.

Osmeterium of Giant Swallowtail

Great Spangled Fritillary caterpillar

Prosternal gland of Great Spangled Fritillary caterpillar

Like swallowtail osmeteria, prosternal glands in the greater fritillaries serve as a defense mechanism. A cocktail of chemicals in the emissions generally includes substances that repel ants and other ground-dwelling insect predators. Additional chemicals may send an alarm signal when an individual is attacked, alerting nearby caterpillars to the danger. They may also be instrumental in causing larvae to disperse rather than congregate, cutting down on competition for host plants. The gland is absent in first instar larvae, but present in subsequent instars, increasing in size as they do.

The existence of prosternal glands is not a new discovery—it was first reported in the 1700's—and their presence is not limited to the greater fritillaries. These structures are also known to occur in some nymphalids, pierids, and skippers as well at least two families of moths. Much more observation is needed to determine just how widespread their occurrence is.

AKNOWLEDGMENTS

Thanks to David James for answering questions and for sharing his knowledge of prosternal glands. Thanks also to the U.S. Forest Service Talladega Ranger District for collection permission.

Diana Fritillary caterpillar

Prosternal gland of Diana Fritillary caterpillar

Great Spangled Fritillary (male)

Great Spangled Fritillary (female)

Diana Fritillary (male)

Diana Fritillary (female)

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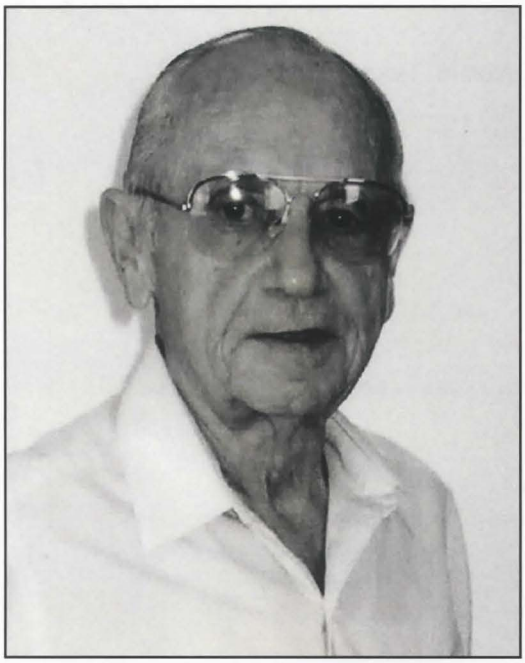
(Paulette H. Ogard: (habitatdesigns@hotmail.com)

JAMES E. KEELER (1925 - 2014) ALABAMA NATURALIST AND LEPIDOPTERIST

BY

J. B. HEPPNER

The naturalist and lepidopterist, James E. Keeler (1925-2014), was mostly unknown as a lepidopterist, but was long an avid collector of butterflies. His other main interest was birds and their conservation.



James E. Keeler (1925-2014)

He was born in Kansas in 1925, near Wichita, in the small farming town of Valley Center, but in 1948 moved to Alabama and remained there the rest of his life. He studied at Kansas State University, Manhattan, Kansas, and received a B.S. degree in biological sciences in 1947. He went to Alabama in 1948 to fill a job to study morning doves for the Alabama Department of Natural Resources, first in Auburn and later in Montgomery, and remained with the department throughout his career. After six years as a research biologist, he became chairman of the morning dove program for the entire Southeast. Moving to Montgomery, he later became Director of Wildlife Research division for what then was renamed the Alabama Department of Conservation and Natural Resources. He retired in 1981 and kept his residence in Montgomery. In 1952, he was one of the founders of the Alabama Ornithological Society, in Montgomery. His only lepidoptera society membership was with the Lepidopterists' Society for a few years, from 1986-92.

Besides work on birds, including editing a book on Alabama birds, he made several expeditions for both butterflies and bird studies, including a three-week trip to Yucatan in 1966 and a seven-week trip to Baja California in 1983. As early as 1936, he already began collecting butterflies in his native Kansas. He did not publish anything on butterflies, but did many papers and reports on Alabama birds.

The butterflies he amassed over the years came to 3,702 specimens, all neatly prepared. His butterfly specimens were mostly from Alabama, but also many from his expeditions to Mexico, besides from Kansas and other states. The Keeler Collection was received in 2006, after he called to have them picked up for donation to McGuire Center.

J. B. Heppner

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SHORT NOTE ON *COBUBATHA METASPILARIS*

BY
CHUCK SEXTON

Cobubatha metaspilaris

There was a very small northward incursion of the subtropical species *Cobubatha metaspilaris* (Noctuidae, Cobubathinae) into central Texas in the summer. The image above offers a first documented record for Travis County. The species was also documented further north in Hood County (Jack Cochran, iNaturalist).

Photo: Chuck Sexton, Austin, Texas, August 24, 2021.

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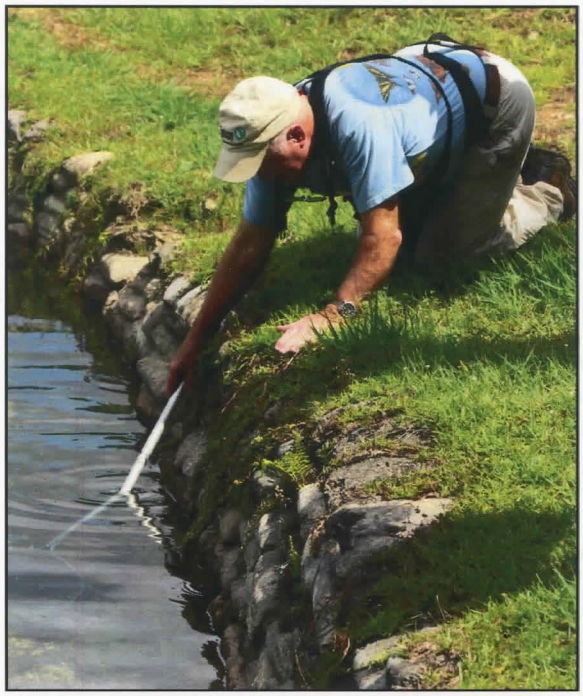

Bill Boothe on the 2017 SLS Field Trip to Blue Springs, NW Florida (retrieving a contact lens?) (Jody Wood-Putnam, FNPS)

THE FAMILY LUCANIDAE LATREILLE, 1804 (COLEOPTERA) IN LOUISIANA

BY

JUNSUK KIM AND VERNON ANTOINE BROU, JR.

The stag beetle family **Lucanidae** Latreille, 1804 contains four subfamilies in 108 genera and about 1,500 species around the world (Paulsen, 2005). There are 33 species in North America (Smith and Paulsen, 2017), and four species in two genera are currently known to occur in the state of Louisiana.

This study compiles records for 345 adult specimens of **Lucanidae** captured within the state of Louisiana in the private collections of the authors, colleagues, and the Louisiana State Arthropod Museum (LSAM). Not all specimens had specific dates of capture useful for the phenograms illustrated here. Adults housed at LSAM were examined and confirmed personally by the senior author, based upon Ratcliffe and Paulsen (2008) and rechecked by Victoria Moseley Bayless (LSAM). Details concerning nomenclature changes, identifications, and life histories of these species are found in Dillon and Dillon (1961), Hoffman (1937), Ritcher (1966), Mathieu (1969), Milne (1933), Paulsen (2006b), Ratcliffe (1991), Ratcliffe and Paulsen (2008), Riley and Wolfe (2003), Smith and Paulsen (2017), and Staines (1999) for the genus ***Lucanus*** Scopoli and Fuchs (1882), Paulsen (2010), Ratcliffe and Paulsen (2008), and Smith and Paulsen (2017) for the genus ***Dorcus*** MacLeay. This study is a sequel to our work addressing some of the larger eye-catching beetle species that occur in the state of Louisiana, e.g., the genus ***Strategus*** Kirby (Kim and Brou, 2018) and the species ***Dynastes tityus*** (Linnaeus) (Kim and Brou, 2019). The lucanid beetle genus ***Lucanus*** Scopoli (Coleoptera: Lucanidae: Lucaninae) contains about 90 species (Kim et al., 2019) with four species known from the United States (Ratcliffe and Paulsen 2008; Smith and Paulsen 2017). Three of these species occur in eastern North America, the fourth ***Lucanus mazama*** (LeConte) is from southwestern United States and northern Mexico. Distributions and phenograms for the three species of ***Lucanus*** occurring in Louisiana are provided.

Lucanus capreolus (Linnaeus, 1763) (Images 1a, b)

Ratcliffe and Paulsen (2008) stated the range of ***L. capreolus*** includes Quebec and Ontario in Canada and northeastern quadrant of the United States west to Nebraska and Kansas. We located and confirmed 156 specimens from collections of: Vernon A. Brou Jr., Michael L. Israel, Junsuk Kim, Cheryl King, and Justin Seo and LSAM, and dates range from 1962 to 2021. The peak adult flight period in Louisiana occurs in early July, and adults have been taken from mid-March through mid-October (Fig. 1). The parish records are illustrated (Fig. 4).

Lucanus elaphus Fabricius, 1775 (Images 2a, b, c)

Ratcliffe and Paulsen (2008) stated the range of ***L. elaphus*** to include southern Pennsylvania to northern Florida, west to east Texas, Oklahoma, Kansas, Nebraska, Minnesota, Michigan, and Canada. The earliest record within Louisiana was 1931 from LSAM. We list here 128 verified specimens from the collections of: Vernon A. Brou Jr., Michael L. Israel, Junsuk Kim, Justin Seo, Royal Tyler and the LSAM. Specimen label dates range from 1931 to 2021. The peak adult flight period in Louisiana occurs in mid-June, and adults taken from end of April through late August (Fig. 2). The parish records are illustrated (Fig. 4).

Lucanus placidus Say, 1825 (Images 3a, b)

Ratcliffe and Paulsen (2008) stated ***L. placidus*** is relatively abundant in Ontario, Canada, and in the United States from Illinois, Indiana, Kentucky, Michigan, Nebraska, and Pennsylvania, and is also known from Alabama, Iowa, Kansas, Minnesota, Missouri, New Mexico, New York, Ohio, Oklahoma and Texas. Though not mentioned in text, Paulsen (2006a) illustrated a map which included Louisiana. The senior author observed only 1-2 specimens each year (2017-2020), but found 32 mostly females during 2021. The earliest record within Louisiana was 1932 from the LSAM. We list here 55 specimens from the collections of: Vernon A. Brou Jr., Michael L. Israel, Junsuk Kim, Royal Tyler, and the LSAM. Specimen label dates range from 1932 to 2021. The peak adult flight period in Louisiana occurs in mid-May, and adults have been taken from late April through mid-July (Fig. 3). The parish records are illustrated (Fig. 4).

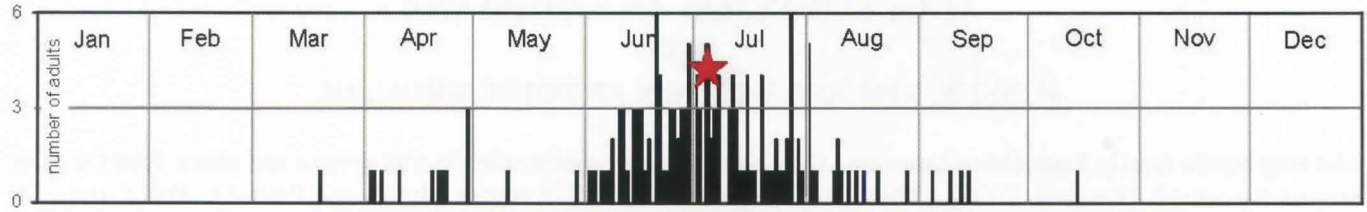

Fig. 1. Adult ***Lucanus capreolus*** captured in Louisiana. n = 156

Fig. 2. Adult ***Lucanus elaphus*** captured in Louisiana. n = 128

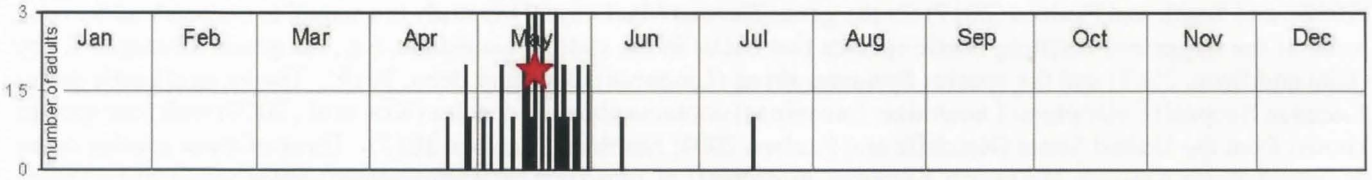

Fig. 3. Adult ***Lucanus placidus*** captured in Louisiana. n = 55

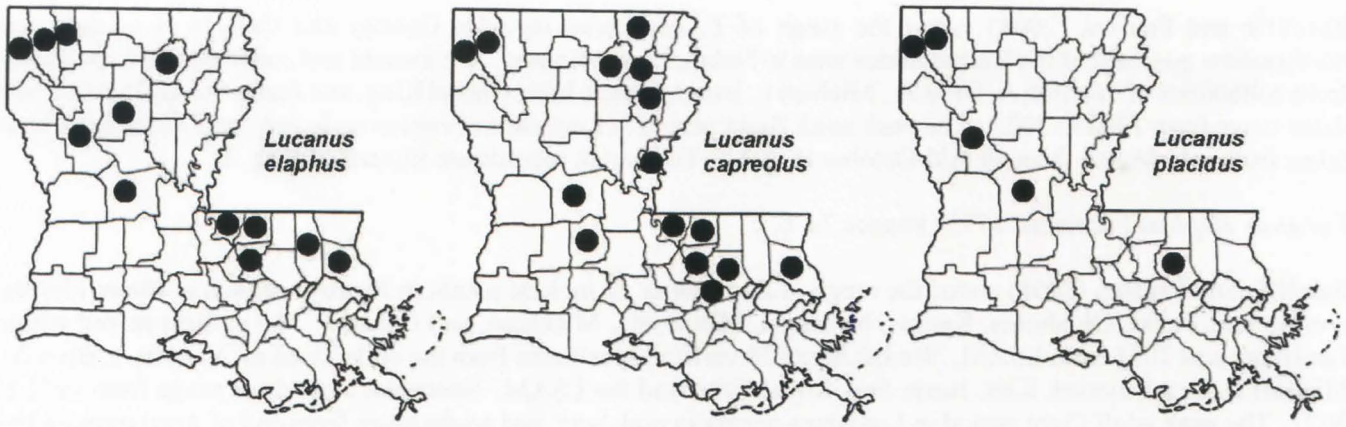

Fig. 4. Parish records for ***Lucanus*** species in Louisiana.

The lucanid beetle genus ***Dorcus*** MacLeay (Coleoptera: Lucanidae: Lucaninae) contains about 150 species (Kim et al., 2019) with two species known from the United States (Paulsen, 2010): ***Dorcus parallelus*** (Say,1823) and ***Dorcus brevis*** (Say,1825) known to occur in eastern North America, ***Dorcus parallelus*** (Say,1823) being recorded from wider range.

Dorcus parallelus (Say,1823) (Image 4)

Ratcliffe and Paulsen (2008) and Paulsen (2010) stated ***D. parallelus*** is found from southeastern Canada to southern Georgia and west to Nebraska and Texas. We list and illustrate a single record from LSAM, collected 1973, in Baton Rouge at light.

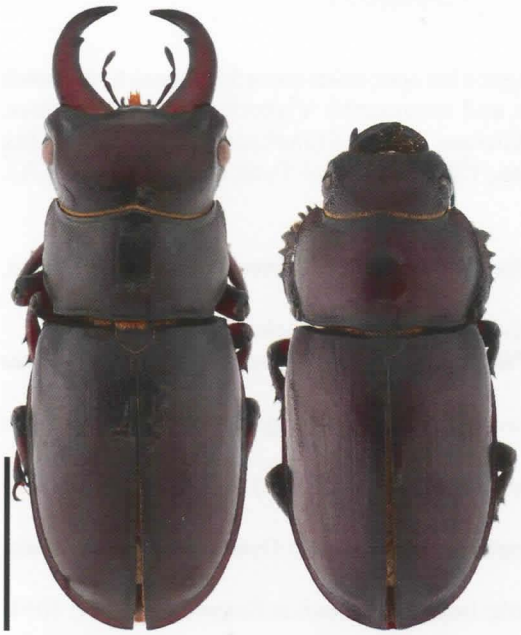

Image 1a, b. Adult ***Lucanus capreolus***, (L) male and (R) female, dorsal view Rapides Parish, Louisiana. Scale Bar = 10mm

Image 2a, b. Adult ***Lucanus elaphus***, (L) male and (R) female, dorsal view Natchitoches Parish, Louisiana. Scale bar = 10mm

Image 3a, b. Adult ***Lucanus placidus***, (L) male and (R) female, dorsal view Natchitoches Parish, Louisiana. Scale bar = 10mm

Image 4. Adult ***Dorcus parallelus***, female, dorsal view, East Baton Rouge Parish, Louisiana. Courtesy LSAM. Scale bar = 5mm

Image 2c. Adult male ***Lucanus elaphus***, lateral view Natchitoches Parish, Louisiana. Scale bar = 10mm

Acknowledgements

The authors acknowledge and thank the following individuals and colleagues for specimen records, access to research collections, verifiable records and beneficial information, peer-review and comments: Victoria Moseley Bayless, Christopher E. Carlton, and Nathan Lord (LSAM, Baton Rouge, LA), Michael L. Israel (Jackson, LA), Cheryl King (Watson, LA), M. J. Paulsen (UNSM, Lincoln, NE), Justin Seo (Houston, TX), and Royal Tyler (Bossier City, LA).

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RARE OBSERVATIONS OF *CHARISALIA AMERICANA* (HALDMANN, 1874) (COLEOPTERA: CERAMBYCIDAE: LEPTURINAE) IN LOUISIANA

BY

JUNSUK KIM

The Lepturinae is a subfamily of the longhorn beetle (family Cerambycidae) containing about 1,600 species in about 210 genera worldwide (Jang et al. 2015). Unlike majority of the longhorn beetles that are nocturnal and economic pests, most of the Lepturines are diurnal flower feeding pollinators (Schapker, 2017). The Tribe Lepturini is the largest tribe with around 400 species in 140 genera (Slipinski and Escalona, 2013). They are commonly slender, tapering bodied and smooth sided pronota with a whole range of different colors, shapes, and sizes (Özdikmen and Turgut 2009; Schapker 2017).

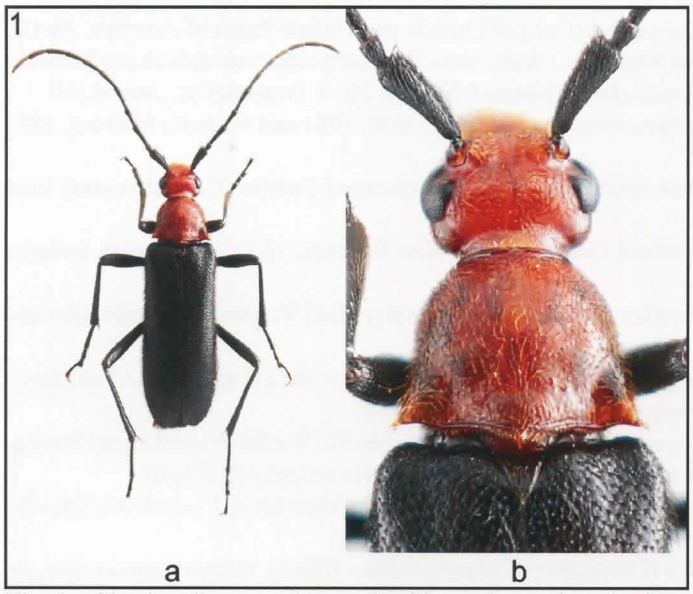

Fig. 1. ***Chariasalia americana*** (Haldmann), **a.** dorsal view, **b.** close up image of prothorax (27 March 2020 in Rapides Parish, Louisiana)

Charisalia americana (Haldmann, 1847) **(Figure 1)**, a sole species of the genus ***Charisalia*** Casey, 1913, ranges from Maine to Wisconsin and Nebraska, south to Oklahoma, and east to Florida in the U.S. and Ontario in Canada. ***C. americana*** is a very distinct species apparently rarely observed but widely recorded, and the name in many cases is applied to ***Neoalosterna capitata*** (Newman) in old collections. ***C. americana*** can be characterized by red head and prothorax, black elytra, and prothorax with sharply projecting corners posteriorly. Known US records acquired from literature are: Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, New York, Ohio, Pennsylvania, Rhode Island, and Tennessee (Bousquet 1991; Chemsak 1964; Cooper 1935; Holt 2013; Klingeman et al. 2017; McRae and Rice 2007; Monné and Nearns 2020; Rice and Veal 2006; Sikes and Webster 2005; Spomer 2014; Swaine and Hopping 1928). Swaine and Hopping (1928) mentioned records from the state of Louisiana with no further data than state. A total of two specimens are observed by the author in year 2020-2021 from the state of Louisiana in a single research site:

(1) *USA: Louisiana: Rapides Parish, Boyce. 31.237622, -92.684347, Kisatchie National Forest: Valentine Recreation Area. 27.iii.2020. 00:04. @MH/BL Trap.*

(2) *USA: Louisiana: Rapides Parish, Boyce. 31.237622, -92.684347, Kisatchie National Forest: Valentine Recreation Area. 19.iv.2021. 21:53. @MH/BL Trap.*

Known host plants recorded in literature are: decayed tulip tree and tupelos, *Cornus racemosa* Lamarck, *Rosa* sp., *Viburnum* sp., *Heracleum* sp. (Bond and Phillips 1999; Gosling 1984; Linsley and Chemsak 1976; Monne and Nearns 2020; Rice and Veal 2006; Yanega 1996)

Acknowledgements

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A NEW COUNTY RECORD OF *DYNASTES TITYUS* (LINNAEUS, 1763) (COLEOPTERA: SCARABAEIDAE: DYNASTINAE) IN TEXAS

BY

JUNSUK KIM

The dynastine scarab beetle genus ***Dynastes*** MacLeay, 1819 currently contains eight species with 12 subspecies found in the New World. Huang (2017) revised genus and elevated 10 taxa originally designated as subspecies of ***Dynastes hercules*** (Linnaeus) to full species status, however, Ratcliffe and Cave (2017) totally disagree with that. Species of ***Dynastes*** are recognized as having large to very large bodies with long, forward projecting pronotal horns. Two species of the genus ***Dynastes*** are found in the United States: ***Dynastes grantii*** Horn, 1870, occurring in southwestern United States, and ***Dynastes tityus*** (Linnaeus, 1763) (**Fig. 1**) occurring in the southeastern United States without overlapping distributions. The species ***tityus*** can easily be distinguished from other dynastine scarab beetles by its yellow-brown to olive-green, even pale-bluish colored dorsal body with a black suture and greatly varying amounts of reddish-brown to black asymmetrical spots, varying in sizes and sparse to large, and moderately dense to nearly mottled on elytra (Saylor 1948; Ritcher 1966; Hwang 2011; Ratcliffe and Cave 2017).

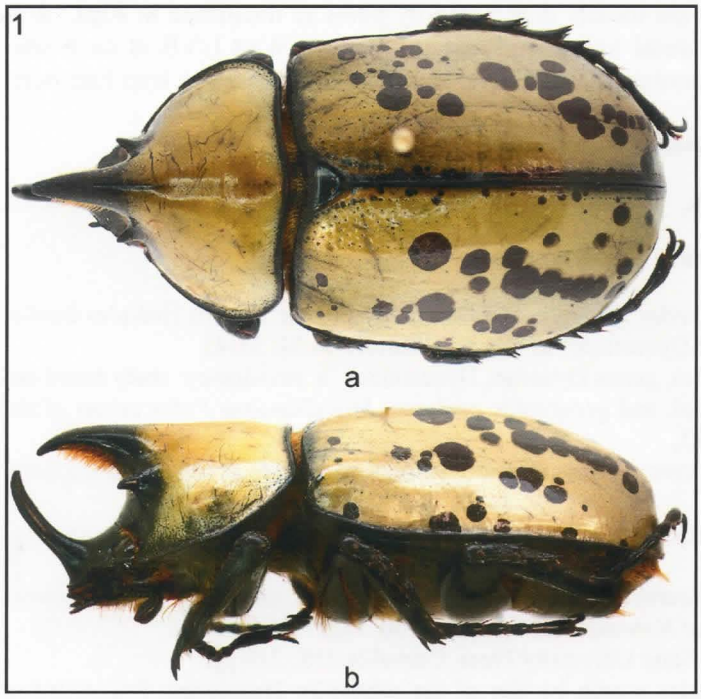

Fig. 1. ***Dynastes tityus***, male, **a.** dorsal view, **b.** lateral view (Hempill, Sabine County)

Fig. 2. Aerial image of research site, UV light trap Location (altitude: 100.0m). Image taken on 14 January 2021

Fig. 3. Aerial image of research site, river view (altitude: 100.0m). Image taken on 14 January 2021

Kim and Brou (2019) summarized its taxonomic history, life history, and phenograms and phenotypic variations from Louisiana. Bunch and Evans (2020) have noted their detailed observation on behavior, biology, and distribution from Virginia. Ratcliffe and Cave (2017) stated the range of ***tityus*** in Texas with no mention of records from Sabine County, probably due to a lack of study done in the region.

DATE	TIME	SEX	COORDINATES
3 July	21:16	F	31.310495, -93.697816
3 July	N/A	M	31.328160, -93.694632
13 July	21:22	M	31.328160, -93.694632
13 July	21:36	M	31.328160, -93.694632

Table 1. Observation data recorded from Sabine National Forest (Hemphill, Sabine County).

Multiple research trips made throughout summer of 2018 to Sabine National Forest (Hemphill, Sabine County), though only two trips were successful due to continued severe weather condition, resulted in a total of four specimens. Tree species observed and identified at the research sites are American Beech, Longleaf Pine, White Oak, Southern Red Oak, and Sweetgum, however, sites are mostly dominated by pines as illustrated in **Figs. 2-3**. UV light traps are operated with 400 and 1000-Watt metal halide and one to three 18-Watt UVB at each site. Three specimens observed flew over to the UV trap between 21:00-22:00, about an hour after the trap had been operated (**Table 1**).

Acknowledgement

Author acknowledges and thanks Justin Seo (Houston, TX) for collaborating research trips to record species accounts.

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THREE CASE STUDIES IN RESTORATION

BY
CANDY M. SARIKONDA

The City of Sylvania has three different land areas undergoing restoration of their native ecosystems. These are three very different locations, providing an interesting look at how citizens and government officials can work together to restore various city sites. The locations include a riverside park, a forest site, and a city-owned cemetery.

The Restoration of Ravine Cemetery:

The City of Sylvania has a tree commission. The tree commission is made up of volunteers who live in the city, and have some knowledge of trees, land restoration, and a desire to improve the city's urban forest. The volunteers are appointed by the mayor, and serve to advise city council on the care of our urban forest and help secure funding for those endeavors. I serve as Chair of the City of Sylvania's Tree Commission. In 2017, the city's Superintendent of Parks and Forestry, Pat O'Brien, approached our tree commission with an idea for a restoration project. The city owns historic Ravine Cemetery, with stunning landscape vistas, gorgeous native trees and a beautiful ravine and stream running through the center of the cemetery. The forestry superintendent had stopped mowing the ravine several years prior, allowing the 100-year-old native seedbank to germinate. Once again native plants and trees were beginning to re-establish in the ravine. O'Brien wondered if our tree commission might take on the task of further restoring the ravine, adding more native plants to the ravine site for pollinators.

Cheryl Rice, Pat O'Brien, Rick Barricklow, Eric Peterson, Candy Sarikonda and Toni Andrews plant wildflowers at Ravine Cemetery.

Admittedly, I was a bit uncomfortable in a cemetery. I grew up thinking cemeteries were the stuff of zombie movies. But a fellow tree commissioner said, "You know, we used to have picnics in the cemetery. That once was the place where everybody went to enjoy being outside and being together." Indeed, in the early 1800s, cities in America were in need of burial grounds. Church grounds had run out of space, and city land was becoming increasingly expensive. A group of horticulturalists in Cambridge, MA, came up with the idea to create a rural cemetery, and in 1831 designed the first modern cemetery. These early garden cemeteries were our nation's first parks. They were designed with spectacular vistas, winding roads, wide-open spaces and Victorian gardens. Often, they were the only green space near town, and as towns spread out, these cemeteries slowly became part of the city-center again. Eventually, the concept of city parks began to slowly replace cemeteries as public gathering green spaces. But now, that concept is once again changing, as a new movement has begun to bring cemeteries back to their former status as public gathering places.

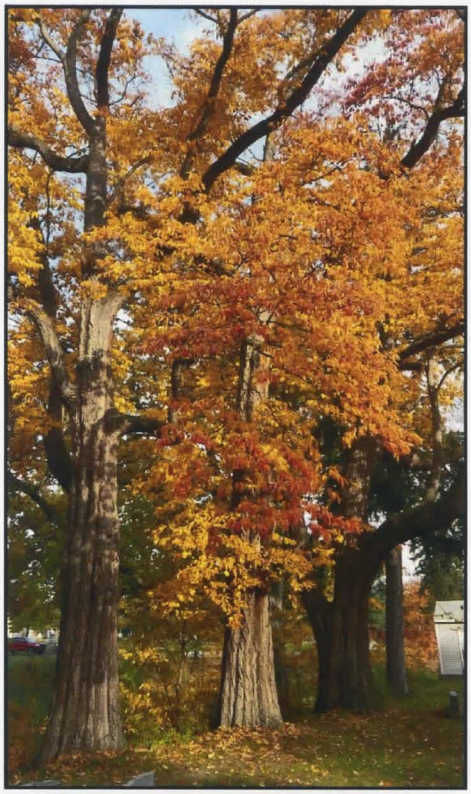
Monarch butterflies feed ravenously from Joe Pye weed in the ravine at Ravine Cemetery.

Ravine Cemetery was established in 1883. The state of Ohio's oldest living sassafras tree resides there, having been spared from logging likely due to its location next to the ravine. This gorgeous 300-year-old tree sits on the edge of the ravine, many of its offspring now growing within the ravine. The cemetery, and others like it, have some of the best and oldest specimens of various tree species throughout the city, rivaling specimens found on local nature preserves and parks. · By making the decision to further restore the ravine and its surrounding urban forest, the city would reap many benefits: the native plants would filter runoff entering the stream at the bottom of the ravine; city personnel would no longer have to mow the steep slope; the city would save

on mowing costs; the ravine site would serve as habitat for wildlife; and the restored grounds would provide a peaceful and inviting atmosphere for visitors.

Fall colors in the ravine at Ravine Cemetery.

Our Sylvania Tree Commission team is made up of several members from the Oak Openings chapter of Wild Ones, and we quickly developed a plan for further restoring the ravine with Ohio genotype native plants. Tree commissioners collected native seed the previous fall, grew plugs over the summer, and divided existing plants on our private properties in preparation for a large fall planting event in the ravine. We set a planting date of October 28, 2017, and invited additional Wild Ones volunteers to help with the planting. We spent that autumn morning installing hundreds of native wildflowers throughout the ravine. The work was made much faster by using a 4-inch drill bit, and the seven of us were done in 4 hours. Plant species included common milkweed, swamp milkweed, dense blazing star, great blue lobelia, woodland sunflower, Ohio spiderwort, spotted Joe Pye weed, cut-leaf coneflower, blue vervain, tall ironweed, nodding wild onion and more. We also removed Canada thistle and other invasive plants. We carried out plans for education and outreach, installing Monarch Waystation signage and inviting the local newspaper to cover our planting event. We certified the cemetery as Monarch Waystation #18143 through Monarch Watch, thereby demonstrating our city's commitment to monarchs and honoring our city's pledge to create habitat through the National Wildlife Federation's Mayor's Monarch Pledge program.



Three old sassafras trees at Ravine Cemetery, the state-winning 300-year-old tree is on the far right.

In the spring of 2018, Wild Ones member Eric Peterson and I spread a commercial-sized garbage can full of aster, stiff goldenrod and ironweed seed he had collected from his own prairie. We sowed the seed throughout the north side of the ravine, and removed more Canada thistle. Each fall since that time, we tree commissioners have divided native plants from our own native gardens, and obtained donations of wildflowers from our local metroparks growers and other Wild Ones members to plant more wildflowers in the ravine. The restored ecosystem now serves as excellent butterfly and bird habitat, and is currently home to a mother deer and her twin fawns. The deer have, however, taken a toll on some of the native plantings. We are now planting more deer-resistant species, such as wild bergamot, ironweed, Joe Pye weed and mountain mint, and enclosing swamp milkweed and ninebark bushes in tree cages for their protection.

The ravine restoration has received such a welcome response from the community, that we are now working on certifying the cemetery as an Arboretum. In June 2019, our City of Sylvania tree commission installed tree identification signage at over 60 trees throughout the cemetery. The signs identify each tree by its common and scientific names, and include our tree commission logo. We also created a tree map, so visitors can go on a self-guided tour of the trees in the cemetery. The tree map is available in a brochure box on cemetery grounds, and on the city's website. Also included in this brochure box are a number of pollinator identification and lifecycle information booklets, and we rotate brochure offerings as different brochures become available. Nearby benches allow visitors to peruse these booklets and identify butterflies they observe in the ravine.

McNeely Park Restoration: Old Growth Urban Forest

The City of Sylvania also owns a plot of land in the heart of a subdivision development. The development was

thankfully never completed, leaving a 4-acre parcel of old growth forest untouched. This special property has a large stream running through it, and hosts some of the oldest trees in the city. It also has the best display of woodland ephemerals in the city, with a spectacular trout lily and trillium bloom each spring. Though the site is available for public use, its hidden location leaves it underutilized. This has some benefits, as the rare woodland plants are less likely to be poached. But the city's tree commission recognized the importance of protecting and restoring the site for public use, so the commission began discussions with city council members to restore the park.

After some investigation, tree commissioner Rick Barricklow and Forestry Superintendent Pat O'Brien found the McNeely Park General Management Plan created years ago, which details proposed management and restoration of the park. Rick Barricklow then approached councilwoman Katie Capellini about restoring the park. Councilwoman Cappellini is Chair of the Parks and Forestry Committee on city council, and she reached out to other council members. Our tree commission decided it would be best to take city council on a tour of McNeely Park during peak spring bloom, to show them just how special the park is and highlight the need to restore it. The tour was conducted on May 8, 2019, and included Mayor Craig Stough; city council members Doug Haynam, Mark Luetke, Katie Cappellini, Sandy Husman; Candy Sarikonda and Rick Barricklow of the Tree Commission; Superintendent of Parks and Forestry Pat O'Brien; and The Nature Conservancy's Green Ribbon Initiative partnership specialist Ashlee Decker. City council was impressed with the quality of the site, and discussion ensued during the tour on how best to tackle the restoration needs of the park. The Nature Conservancy has an Interagency Restoration Team (IRT) for hire, and the group decided it would be wise to get an estimate from IRT to see what it would cost to restore the site. The tree commission offered to assist the forestry department in beginning restoration work at the McNeely Park site. The tree commission planned a fall workday, bringing in tree commissioners, city forestry staff and Wild Ones volunteers to remove invasive buckthorn, bush honeysuckle, multiflora rose, oriental bittersweet, privet and Japanese knotweed from the site. This would protect the woodland ephemerals and give more breathing room for the large, mature trees on the site.

Since that tour and early plans, plans have continued to evolve within the city's budget. The tree commission and forestry department have spearheaded the restoration of McNeely Park. Each fall, the tree commission has organized 1 or 2 workdays, during which tree commissioners, Wild Ones members, University of Toledo and Lourdes University biology students, and forestry staff all work together to remove invasives from the site. The city provides a chipper and truck, along with 3 forestry crew members to operate the chipper and apply herbicide. Tree commissioners and volunteers use loppers to cut brush, and haul it to the chipper. For university students, the workdays provide an opportunity for tree commissioners to educate students about the importance of invasive removal; how to properly identify, remove and stump-treat invasives; how to conduct proper self-care when working in the field; and demonstrate the ways in which city officials, volunteers and tree commissioners work together to care for the park and its trees. The workdays have been very productive, and after 3 years of working on the park site, we are seeing considerable improvement. We are now looking into certifying McNeely Park as a preserve, and conducting butterfly, bird and wildflower tours at the park.

Rick Barricklow shows members of city council the invasive Japanese knotweed that has invaded McNeely Park, and discusses how to eradicate it.

Harroun Park Restoration: A Riverside Park

Harroun Park is a 25-acre park located along the Ottawa River in Sylvania, Ohio. Much of the land is located in a floodplain, and was former pastureland. It has a beautiful concrete walking path along the river, and several trails through the adjacent floodplain areas. The floodplain includes numerous cottonwood, sycamore, maple and other floodplain tree species. Emerald Ash Borer beetles wiped out the many ash trees that were present years ago, and the city attempted to replace them with various oaks and buckeye trees. But the growing deer population put tremendous pressure on these young sapling trees, destroying many of them. In addition, buckthorn invaded the west end of the park, creating a dense infestation that led to the elimination of many of the native plants and trees on that side of the park.

The City of Sylvania Tree Commission, Forestry Department and City Council looked into hiring the Nature Conservancy's Interagency Restoration Team to restore the native ecosystem in the park. The city had obtained an EPA grant of $270,000 to restore the floodplain ecosystem, and it was conditional upon achieving at least 70% native plants in the floodplain.

Forestry crew leader Margie Ott and tree commissioner Rick Barricklow plant a black gum tree at Harroun Park. You can see the buckthorn shredded by the IRT's forestry mower in the foreground.

The forestry department had spent considerable time and effort to achieve this goal, but was falling short due to lack of time, skilled personnel and funding. It became clear the EPA could require repayment of the grant if the invasives could not be brought under control. The city tree commission met with city council and The Nature Conservancy (TNC), and TNC agreed to give council an estimate for restoration of the park. It was determined that it would cost $30,000 to restore the park over a 2-year period. Council then met with the EPA, and the EPA agreed that this effort would meet grant requirements to control the invasives. The tree commission offered to care for McNeely Park and be largely responsible for its restoration, if the city would be able to provide the funding to restore Harroun Park. City council agreed, and voted to hire The Nature Conservancy's IRT team to do the restoration. The restoration work by IRT began in winter of 2020.

The head of the IRT, Pete Blank, and councilwoman Katie Capellini and I began by creating signage to be posted at each of the three park entrances, informing visitors of the restoration plans. In addition, we wrote articles in the local newspaper, and posted information via the city's social media pages. Pete Blank also spoke with adjacent neighbors, informing them of our plans.

Pat O'Brien inspects a swamp white oak planted 10 years ago. It is now visible after removal of the large stand of buckthorn on the west end of Harroun Park.

The Nature Conservancy initially began by using chainsaws and a Hydro Ax (forestry mower) to remove the huge stand of buckthorn on the west end of the park. In areas where the hydro ax could not reach, TNC used chainsaws and hauled the debris to a staging area for city forestry crews to pick up and remove. The following spring, TNC continued to remove invasives using chainsaws, and began herbiciding any stumps that sprouted regrowth.

The invasive plant removal project at Harroun Park has been underway for the past year, and will continue this year. There are now clearings where once there were dense stands of common buckthorn. The river ecosystem, now increasingly free of these invasive trees, is beginning to heal itself.

I have been documenting the native wildflowers that are beginning to spring up from seeds that have long been dormant in the soil. Native wildflower seed has been shown to grow after remaining dormant for 70 or more years, and I am seeing plants like Golden Ragwort, wild geranium, jewelweed, dogbane, wild ginger, wild bergamot, cutleaf coneflower, blue violet, downy violet, wingstem and many others begin to appear or spread as

the restoration continues. Now that the buckthorn is removed, these plants have the sunlight and space they need to grow. And breathe.

Tori Diesing and Rick Barricklow plant river birch at Harroun Park.

The Nature Conservancy's Interagency Restoration Team (IRT) has been using a forestry mower to remove much of the buckthorn, and this spring they will continue to remove remaining stands of buckthorn on the west hillside by hand, using loppers and chainsaws. As TNC removes invasives in the park, they have been careful to preserve any native trees and wildflowers that they find. Trees planted years ago by our city's Forestry Department are now visible and thriving. Pat O'Brien, the City of Sylvania's Superintendent of Parks and Forestry, explained that about 10 years ago, emerald ash borer beetles destroyed most of the ash trees in Harroun Park. The dead ash trees were removed, and O'Brien and his crew installed sapling sycamore, river birch, black willow, swamp white oak, and Ohio buckeye trees in the area. Cottonwood trees emerged on their own. These trees are now much larger and quite healthy. Two tulip trees also survived the buckthorn invasion, and O'Brien is now training them, carefully pruning them to grow into healthy mature trees.

"One generation plants the trees, another gets the shade."

Our Sylvania Tree Commission has taken that to heart. Working together with the Forestry Department, the commission has been working to select the most appropriate tree and wildflower species for the floodplain ecosystem. Trees typical of such an ecosystem have been chosen for their ability to provide food and shelter for birds and butterflies, while also beautifying the park. Serviceberry trees have been planted on the east side of the park, alongside the river, in an area frequented by flocks of cedar waxwings. These trees will provide loads of healthy berries for these hungry birds to eat, and their white flowers are attractive to the human eye as well.

This past spring, our city's Tree Commission, Department of Forestry, the Sylvania Area Chamber of Commerce, and Sylvania Rotary partnered together for an Arbor Day event, hosted by the Chamber of Commerce in celebration of area businesses who have weathered the pandemic and served our city through this challenging time. The event, called "Here We Grow Again" brought these partners together to install 21 trees in the park in honor of the 21 businesses receiving honors this year. The large sapling trees included river birch, black gum, and sycamore and were planted on the west end of the park by forestry staff and tree commissioners. The Tree Commission will be caring for these trees during their first growing season, watering them and protecting them from deer browsing. Deer are a significant challenge in the park, causing damage to many young sapling trees and often killing them. So some newly planted trees have been enclosed in protective wire fencing, while others have been treated with repellant.

Tree caging used to protect a black gum sapling at Harroun Park.

Citizens have been encouraged to help protect these new trees by not feeding the deer. Feeding deer encourages them to linger too long in the park and browse too heavily on native vegetation. Native plants never have a chance to regrow when they are constantly chewed on, and invasive plants then have a chance to pop up in their place. Deer do not like to eat invasive plants. As a result, overbrowsing by deer can literally change an ecosystem — for the worse. Deer can also become aggressive when they get used to human contact. So it really is best to avoid feeding them, and instead support their more natural behavior. The Tree Commission continues to educate the public about the need to avoid feeding deer through newspaper articles and social media posts.

The Forestry Department and Tree Commission will be planning outreach events in the future at Harroun Park. Visitors will be offered bird, pollinator and plant tours, as quarantine restrictions ease. Already, visitors can find numerous species of birds arriving to the area during spring migration in May, including warblers, Baltimore orioles, Rose-breasted grosbeaks, green herons, indigo buntings and many more. Sylvania Rotary has replaced the shelter alongside the river, it is a wonderful place to sit and relax. The park has been a refuge for visitors during the COVID-19 pandemic, giving visitors a place to walk outside mask-free and enjoy the sunlight and nature.

At the heart of all three of these restoration projects are the partnerships formed between citizen volunteers, forestry department members, city government officials and local organizations. No one group can do these projects alone. It takes a village, or in this case, a city. The City of Sylvania is working to preserve our local lands and native ecosystems for generations to come.

Here are additional photos taken during the installation of the new tree signage at Ravine Cemetery. https://www.flickr.com/.../candy.../albums/72157709093112301

Here is video of a tiger swallowtail butterfly nectaring on Culver's root in the ravine at Ravine Cemetery. This native plant grew from dormant seed estimated to be around 100 years old in the ravine. The plant emerged once mowing ceased https://www.youtube.com/watch?v=uEWfQBBba2k

See photos of the McNeely Park tour here https://www.flickr.com/photos/candy__kasey/albums/72157708339607735

See photos of the McNeely Park trillium bloom here https://www.flickr.com/photos/candy__kasey/albums/72157680277103258 and the trout lily bloom here https://www.flickr.com/photos/candy__kasey/albums/72157706683739151

Additional photos from the McNeely Park workdays https://www.flickr.com/photos/candy__kasey/albums

(Candy M. Sarikonda, E-Mail: koundinya@buckeye-express.com)

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REPORTS OF STATE COORDINATORS

Alabama: C. Howard Grisham, 573 Ohatchee Road, Huntsville, AL 35811, E-Mail: chgrisham@Comcast.net

Arkansas: Mack Shotts, 514 W. Main Street, Paragould, AR 72450, E-Mail: cshotts@grnco.net

Florida: Charles V. Covell Jr., 207 NE 9th Ave, Gainesville, FL 32601, E-Mail: covell@louisville.edu

Charlie sends in the following Florida Lepidoptera report, Gainesville, Alachua County, May 22 – August 31, 2021. Florida report, November 2021

September – November 2021, Gainesville, Alachua Co., FL. Overall butterfly numbers were higher in both species and individuals observed during this period. Thoughts of "butterfly decline" came to me in the spring to late summer period. However, for common species, numbers were reassuringly high from about mid-August to late October. I did no moth collecting this year.

As always, I invite observers and collectors from other parts of FL (especially South Florida) to share their records by either sending them to our Editor or to me by email (ccovell@flmnh.ufl.edu).

Battus philenor, Sept. 2
Papilio glaucus, Sept. 2, 5, 8,
Phoebis sennae, Sept. 2, 5, 6, 7, 8, 9, 14, 14, 15, 21, 25, 27, 30, Oct. 2, 9, 12, 16, 20, 26, Nov. 1, 2, 9, 16, 19, 20
Heliconius charithonia, Sept. 2, 3, 5, 6, 7, 8, 9, 13, 15, 21, 23, 26, 27, 30, Oct. 2, 3, 9, 12, 16, 20, 26, Nov. 1, 8,12, 20
Danaus plexippus, Sept. 2, 3, 5, 6, 7, 8, 27, Oct. 9, 16,26
Heraclides cresphontes, Sept. 3, 6, 13, 15, 21, 27,
Hylephila phyleus, Sept. 5, 14, 25, 27, 30, Oct. 2, 9, 16, 26,
Papilio troilus, Sept. 5, 14, 26, 27,
Abaeis nicippe, Sept. 5, 14, 25, 27, 30, Oct. 2,
Agraulis vanillae, Sept. 5, 9, 21, 23, 26, 27, 30, Oct. 2, 9, 12, 16, 20, 26, Nov. 2, 9, 18, 19
Asterocampa celtis, Sept. 5, 27,
Erynnis horatius, Sept. 7, 21, Oct. 16
Battus polydamas, Sept. 8, 23,
Phoebis philea, Sept. 9, Oct. 3, 20, 26
Vanessa atalanta, Sept. 14, Nov.18
Anartia jatrophae, Sept. 14, 25, 27, 30, Oct. 2, 9, 12, 16, 26, Nov. 2, 9, 18
Danaus gilippus, Sept. 14
Junonia coenia, Sept. 23, 25, 27, 30, Oct. 2, 9, 12, 16, 26, Nov, 2, 9, 20
Pyrisitia lisa, Sept. 30, Oct. 2, 9, 12, 16, 26
Urbanus proteus, Oct. 2, Nov. 10
Papilio polyxenes asterius, Oct. 2
Limenitis archippus, Oct. 2, 26
Phoebis agarithe, Oct. 12, 26
Eurema daira, Oct. 12,
Leptotes cassius, Oct. 20, 25, Nov. 10, 12, 17, 19
Asbolis capucinus, Oct. 16
Phyciodes phaon, Oct. 16

Cheers, Charlie

Georgia: James K. Adams, 346 Sunset Drive SE, Calhoun, GA 30701; jadams@daltonstate.edu
Check out the GA leps website at: http://www.galeps.org/

Most records are from James Adams (JKA 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. All records are 2021 unless otherwise specified.

Calhoun, Gordon Co., JKA residence:
EREBIDAE: *Catocala robinsonii* (Sept. 6). **NOCTUIDAE**: *Amyna stricta*, Oct. 6.

Lakeshore Park, Dalton, Whitfield Co., GA, Sept. 13-17:
HESPERIIDAE: *Euphyes dion.*

Rocky Face Ridgeline, Just SW of Dalton, top of Dug Gap Battle Mountain Road:
Sept. 5-6:
NOCTUIDAE: *Plagiomimicus pityochromus, Stiria rugifrons, Schinia thoreaui, S. nundina, Meropleon diversicolor, Mesapamea fractilinea, Papaipema arctivorens.*
Sept. 30-Oct. 1
GEOMETRIDAE: *Cyclophora myrtaria* (COUNTY, northern record), *Caripeta aretaria*. **EREBIDAE**: *Catocala robinsonii*. **NOCTUIDAE**: *Amyna bullula, Callopistria floridensis, Meropleon diversicolor, Papaipema polymniae, Mesapamea fractilinea, Magusa divaricata,*
Oct. 25-26:
GEOMETRIDAE: *Caripeta aretaria*. **EREBIDAE**: *Hypocala andremona*. **NOCTUIDAE**: *Papaipema cataphracta.*

Taylor's Ridge, 5 miles W of Villanow, south of Hwy 136:
August 28-29:
NOCTUIDAE: *Emarginea percara, Cirrhophanus triangulifer* (7), *Stiria rugifrons, Euplexia benesimilis.*
Sept. 25-26:
GEOMETRIDAE: *Caripeta aretaria*. **EREBIDAE**: *Catocala robinsonii*. **NOCTUIDAE**: *Papaipema marginidens, Anathix ralla.*
Oct. 14-15:
GEOMETRIDAE: *Cymatophora approximaria* (abundant!). **EREBIDAE**: *Catocala robinsonii*, **NOCTUIDAE**: *Papaipema marginidens.*

Crockford-Pigeon Mountain WMA, 8 mi. WSW of La Fayette, Walker Co., Tony McBride:
NOCTUIDAE: *Papaipema duplicata* (STATE), collected as larva out of *Polymnia* on July 6, emerged from pupa September 25 (see image).

Alligator Creek WMA, Wheeler Co.:
Sept. 9-10:
PSYCHIDAE: *Basicladus tracyi*. **TORTRICIDAE**: *Eucosma littorea*. **NOTODONTIDAE**: *Hyparpax aurora*. **EREBIDAE**: *Zanclognatha atrilineela, Melipotis fasciolaris*. **NOCTUIDAE**: *Acronicta connecta, Condica cupentia, Schinia scissoides, S. psamathea, S. sanguinea, S. fulleri.*
Oct. 10-11, with Lance Durden and Jeff Slotten:
SESIIDAE: *Synanthedon acerni* (*tepperi*). **TORTRICIDAE**: *Cenopis lamberti.* **LASIOCAMPIDAE**: *Tolype minta*. **EREBIDAE**: *Zanclognatha atrilineella, Phytometra ernestinana, Selenisa sueroides*. **NOCTUIDAE**: *Condica claufacta, Pyrrhia aurantiago, Schinia psamathea, S. nubila, Spodoptera albula, Eucoptocnemis dapsilis.*

Townsend WMA North, Long Co.:
Sept. 10-12, with Lance Durden:
SESIIDAE: *Synanthedon acerni* (*tepperi*). **TORTRICIDAE**: *Eucosma quinquemaculana*. **CRAMBIDAE**: *Condylorrhiza vestigialis*. **GEOMETRIDAE**: *Nemoria catachloa, Glena cognataria*. **SATURNIIDAE**: *Callosamia securifera*. **NOTODONTIDAE**: *Hyparpax aurora, H. perophoroides* (see image). **NOCTUIDAE**: *Acronicta betulae, Derrima stellata* (this is TRUE *stellata*, not the spring flying *henrietta*; see image), *Pyrrhia aurantiago, Schinia sanguinea, S. saturata, Acherdoa ferraria, Parapamea buffaloensis* (see image).
Oct. 2-4, with Patrick Adams and Lance Durden:
PSYCHIDAE: *Cryptothelea gloverii*. **TORTRICIDAE**: *Eucosma quinquemaculana*. **NYMPHALIDAE**: *Lethe portlandia*. **GEOMETRIDAE**: *Eupithecia peckorum, Iridopsis pergracilis*. **EREBIDAE**: *Hypenodes franclemonti, Sigela rosea* (COUNTY), *Abablemma brimleyana, Melanomma auricinctaria, Cisthene kentuckiensis, Cutina distincta, C. aluticolor, C. arcuata, Metalectra albilinea, Gondysia similis, Catocala carissima*. **NOCTUIDAE**: *Acronicta laetifica, betulae, Condica claufacta, Pyrrhia aurantiago, Schinia sanguinea, S. fulleri, S. petulans, S. tuberculum, S. sordidus, Mesapamea fractilinea, Feltia floridensis.*

Left: *Derrima henrietta* from Sapelo Island, McIntosh Co., early May; Right: *Derrima stellata* from Townsend North WMA, Long Co., September 10-12 (this report).

Hyparpax perophoroides

Papaipema duplicata

Parapamea buffaloensis

Georgia, McIntosh Co., near Meridian, Dec.4, '21: *H. charitonius, A. vanillae, P. sennae eubule, E. lisa*, and *E. nicippe* all on the wing, per J. Hyatt.

Louisiana: Michael Lockwood, 215 Hialeah Avenue, Houma, LA 70363, E-Mail: mikelock34@hotmail.com

Mississippi: Ricky Patterson, 400 Winona Rd., Vicksburg, MS 39180, E-Mail: rpatte42@aol.com
Ricky sends in the following report:

10 September 2021, Grand Bay NWR, near Pecan, Jackson county county, MS (under permit):

Phoebis sennae eubule, Abaeis nicippe, Pyrisitia lisa lisa, Eurema daira daira, Oligoria maculata, Nastra lherminier, Anatrytone logan logan, Euphyes dion alabamae, Euphyes pilatka pilatka, Euphyes berryi, Euphyes vestris metacomet, Polites vibex vibex, Polites themistocles themistocles, Polites otho otho, Urbanus proteus proteus, Thorybes bathyllus, Hylephila phyleus phyleus, Panoquina ocala ocala, Erynnis horatius, Junonia coenia coenia, Limentis archippus archippus, Libytheana carinenta bachmanii, Danaus plexippus plexippus, Strymon melinus melinus, Pterourus palamedes palamedes, Pterourus troilus troilus.

5 October 2021, Grand Bay NWR, near Pecan, Jackson county, MS (under permit):

Moths – *Papaipema stenocelis* (STATE, det by Quinter), *Dasychira dominickaria, Harrismemna trisignata, Dargida rubripenis, Enyo lugubris, Eumorpha fasciatus, Xylophanes tersa*

Butterflies – *Erynnis zarucco, Burnsius oileus, Nastra lherminier, Euphyes berryi* (late for MS), *Strymon melinus melinus, Hermeuptychia* sp.

4-5 October 2021, Mississippi Sandhill Crane NWR, near Ocean Springs, Jackson county, MS (under permit):

Cercyonis pegala pegala, Dione vanilla nigrior, Urbanus proteus proteus, Nastra lherminier, Euphyes arpa (first MS records since one specimen collected in 1988), *Polites themistocles themistocles, Polites otho otho, Junonia coenia coenia, Neonympha areolatus areolatus, Pterourus palamedes palamedes.*

North Carolina: Harry LeGrand, 1109 Nichols Drive, Raleigh, NC 27605, E-Mail: hlegrandjr@gmail.com
Harry sends in the following report:

FALL BUTTERFLY RECORDS FOR NORTH CAROLINA – 2021

Records are from September through November 10, 2021, except as indicated. Names in parentheses are counties; when in bold, a first county record.

Fall 2021 "luckily" avoided any hurricanes or major tropical storms and flood events that might have strongly impacted local butterfly populations through excessive rainfall. Temperatures ran slight above normal, and September was remarkably like usual October weather – mostly sunny, low humidity, and excellent butterfly viewing conditions. Rainfall events all season were few and far between, though there were some heavy localized amounts of rain.

Despite good conditions for butterfly populations to thrive, numbers still remain depressed for skippers in the Coastal Plain. In addition, there seemed no rebound in many or most brushfoot numbers statewide, especially for anglewings. Also, the push of northbound immigrants remained disappointing in 2021, though at least species like Urbanus proteus and Panoquina ocola did spread across most of the state. And, the state continued to see a continued increase in reports of Burnsius oileus, and it now might be a local resident in the southeastern corner of the state.

PAPILIONIDAE:

Heraclides cresphontes, one in the mountains in Madison County, as seen by Gail Lankford and party on September 17, was an excellent find, though it is not clear if the species breeds locally or not. In the central Piedmont, Loretta Lutman again had an adult in her yard, on September 14 and 17, in Asheboro (Randolph); she does have hostplants in her yard and has had successful natural eclosures of adults in previous years. Nonetheless, the species is otherwise essentially absent as a breeder in central NC.

PIERIDAE:

Pyrisitia lisa, after a big season for this semi-immigrant in 2020, the species was nearly absent over most of the state this fall, with only a small number in late summer and early fall in the southern Coastal Plain.

Pontia protodice, disappointingly just one was reported all season, a male photographed by Taylor Piephoff at the Charlotte Motor Speedway (Cabarrus) on October 24.

RIODINIDAE:

Calephelis virginiensis, few people are now searching the savannas in the state for butterflies, though Derb Carter did at Holly Shelter Game Land (Pender) on September 18, tallying eight individuals.

LYCAENIDAE:

Lycaena phlaeas, this species has declined greatly east of the mountains and is seldom reported in the Piedmont or Coastal Plain; thus, a complete surprise was a fresh individual photographed by Richard Stickney along the Yadkin River at Jonesville (**Yadkin**) on October 18.

Atlides halesus, quite late was a fresh individual photographed at the Raulston Arboretum in Raleigh (Wake) by Matthew Shaynak on November 2.

Parrhasius m-album, there were a large number of reports across the state this season, including a new county record for **Iredell** – one photographed at Mooresville on September 28 by Chris Paradise. Marie Poteat had one to three in her Jamestown (Guilford) yard for much of September and even offered "public viewing" for folks who made reservations!

NYMPHALIDAE:

Danaus gilippus, as usual the only seasonal reports came from the main stronghold at Fort Fisher (New Hanover). Peak counts were 10 on September 3 (John Taggart) and 14 on September 7 (Lior Carlson, John Jarvis).

Heliconius charithonia, quite a controversy erupted this season regarding the repeated sightings of this species at Airlie Gardens in Wilmington (New Hanover)! One or two had been reported here earlier in the summer, but it was pointed out to me and others that there is a butterfly house at these gardens. Lior Carlson and John Jarvis visited the gardens in September, noted over two *dozen* adults outdoors, but they did visit the inside of the butterfly house, noting one adult there. Also, they found out that garden staff acquire pupae of this species and some other showy brushfoots native to NC for eclosure so that the adults can be seen by visitors in the butterfly house. It is assumed that at least one gravid female must have escaped, oviposited on passionvine on the garden grounds, and started a new brood of adults about two months later. As a result, I am discounting any adult reports from this site for record-keeping reasons. It is likely that the adult seen less than a mile away, at the New Hanover County Arboretum, by John Taggart on September 25, flew over from Airlie Gardens. A few miles farther away, Derb Carter saw an adult on Figure Eight Island in that county on October 22; and in the eastern Piedmont, Jamie Nunnelly photographed one in Pittsboro (Chatham) on October 16. These three reports will be considered as valid for record-keeping purposes. Certainly, adults of this species do "migrate" northward, or perhaps more likely "get blown" northward in the late summer and fall, but it may be that most seen in NC have eclosed at local yard or garden patches of passionvine that might have contained eggs, larvae, or pupae on them when purchased prior to planting.

Nymphalis antiopa, a complete shock was Nick Flanders' report of one he saw along Emperor Landing Road near Edenton (**Chowan**) on October 2. There are very few records for the northeastern corner of the state, and the species is quite hard to find anywhere in NC in the fall season.

Polygonia faunus smithii, this species was disturbingly scarce at Mount Mitchell State Park (Yancey) this season, with a single report of just one individual as photographed by Heather Rayburn on September 3.

Vanessa cardui, this migrant species remained scarce for the entire calendar year, as there were just seven state reports, all of single individuals except for two noted by Will Stuart in the Sandhills Game Land (Richmond) on October 14.

Phyciodes phaon, fairly late and near the northern edge of the range was one photographed by Rachel Veal at Frisco (Dare) on October 15.

Cyllopsis gemma, though not a new county record, one photographed at Pine Island Audubon Sanctuary (Currituck) on October 27 by Rachel Veal was one of the few records for the northeastern corner of the state.

HESPERIIDAE:

Burnsius oileus, this colonizing species was encountered on a handful of occasions this season, though the first was one photographed by James Wemyss on iNaturalist from Ocean Isle Beach (Brunswick) on the early date of June 13; the previous early state date was September 7! Additional records, all of singles were: one photographed at Figure Eight Island (New Hanover) on September 25 by Derb Carter, one seen at Weymouth Woods preserve (Moore) on October 3 by Richard Stickney, another seen at Figure Eight Island on October 17 by Carter, one photographed at the Brunswick County Botanical Garden in Bolivia (Brunswick) on October 20 by Lori Arent and Harry LeGrand, and one seen at the New Hanover County Landfill Revegetation Project on November 3 by John Taggart.

Euphyes pilatka, Nick Flanders noted a new locale for this tidal species, finding eight at the Taylor Bay portion of North River Game Land (Currituck) on September 12.

Euphyes berryi, the only report for the year was one photographed (on iNaturalist) by Jim Brighton on the Dare County mainland, on September 19; this area is the northeastern edge of the species' range.

Euphyes dukesi, another new colony site was found this fall, as Nick Flanders noted four at Waterlily (Currituck) on September 12. Though there are perhaps just 10 known sites now for it in the state, additional sites for it certainly occur elsewhere along the fringes of Currituck Sound, where very little butterfly study has taken place.

Hesperia leonardus, again the only fall report came from Madison County, where Pete Dixon luckily discovered one is his yard near Hot Springs on September 5. The strong decline of the species in the eastern Piedmont over the recent decade seems to be related to the replacement of its favored lavender-blue-flowered nectar source – *Symphyotrichum grandiflorum* – by other tall but non-blue-flowered species such as the yellow-flowered *Bidens aristosa* and two species of *Verbesina*. However, reasons for the replacement are not clear, though the *Bidens* is an aggressive and fairly recent "immigrant" from farther west. As is well known, this butterfly species simply will not nectar on flowers that are yellow or white; for whatever reason, adults must have large numbers of pink, lavender, or blue flowers in their territories.

Hesperia attalus, all reports came from the Sandhills Game Land (Richmond); the peak counts were five each on September 7 and 10, and one was very late on October 10, as noted by Will Stuart.

Hesperia meskei, this Sandhills species was quite difficult to find this season, causing much concern. Nobody saw more than one in a day, and the only report away from the Sandhills Game Land was one seen by Mike Turner at Carvers Creek State Park (Cumberland) on October 10.

Poanes yehl, the 11 noted by Mike Turner along Deep Creek (Moore), on September 18, was one of the higher state counts for this species.

Poanes viator, Mike Turner saw three along Grassy Island Road near Blewett Falls Lake (Richmond) on September 25, at the inner edge of the range. Very extensive stands of the hostplant – *Zizaniopsis miliacea* – are found along the river. There are two somewhat old (2001) records for this area, but it is nice to have a current record.

Problema byssus, there were a few eastern Piedmont records, at the inner edge of the range, with the best being of one near Jordan Lake (Chatham), seen by Matt Spangler on September 6.

Oligoria maculata, Mike Turner saw one on September 12 at a boat ramp at Tar Heel on the Cape Fear River (**Bladen**); this is farther inland than most recent records, and it helps to fill a small hole in the range map.

Lerodea eufala, this species had a very good fall season, as it did in summer; these results strongly suggest that it is not much of an immigrant, but mostly a "winter-stressed" species, one that can survive milder winters in much of the state (though in low numbers), and not completely repopulate locales from immigrants.

Calpodes ethlius, this was a typically poor fall season for them, with only several reports of adults. John Taggart saw one at the New Hanover County Arboretum on September 25, and Harry LeGrand saw one near the NC Aquarium at Fort Fisher in that county, on November 1.

South Carolina: Brian Scholtens, College of Charleston, Charleston, SC 29424, E-Mail: scholtensb@cofc.edu

Brian sends in the following state report:

Brian Scholtens, Francis Marion NF, Halfway Creek Rd. @ pitcherplant bog., Berkeley Co.

20 May 2020

Momphidae:

Mompha capella (State record)

Gelechiidae:

Monochroa absconditella

Monochroa angustipennella (State record)

Coleotechnites ca. huntella

Sinoe kwakae

Telphusa perspicua (State record)

Pseudotelphusa floridana (State record)

Scrobipalpula psilella
Filatima hemicrossa
Battaristis nov. sp.
Dichomeris fistuca
Dichomeris bolize
Dichomeris agonia
Oecophoridae
Ymeldia janae
Tortricidae:
Eucosma grindeliana
Pelochrista cataclystiana
Rhopobota dietziana
Cydia erotella
Cydia ingens
Archips magnoliana
Sparganothis sullivani
Sparganothis niteolinea
Sparganothis azulispecca
Coelostathma placidana
Aethes promptana
Aethes ca. ringsi
Crambidae:
Undulambia striatalis
Chilo erianthalis
Haimbachia placidella
Leptosteges xantholeucalis
Caretctocultus perstrialis
Pyralidae:
Sciota subfuscella
Caudellia apyrella
Ephestia columbiella
Varneria atrifasciella
Cabnia myronella
Homosassa platella (State record)
Macalla zelleri
Hypsopygia nov. sp.
Geometridae:
Iridopsis cypressaria
Iridopsis ephyraria
Erebidae:
Phytometra ernestinana
Catocala praeclara
Haploa colona
Orgyia detrita
Noctuidae:
Exyra ridingsii

Brian Scholtens, Francis Marion NF, Halfway Creek Rd. @ Steed Creek Rd., Charleston Co.

20 May 2020
Buculatricidae:
Bucculatrix magnella (State record)
Gelechiidae:
Monochroa absconditella
Monochroa angustipennella
Aristotelia monilella
Telphusa perspicua
Pseudotelphusa floridana
Aroga argutiola
Dichomeris fistuca
Dichomeris bolize
Tortricidae:
Eucosma grindeliana
Pelochrista cataclystiana
Cydia erotella
Cydia ingens
Sparganothis sullivani
Sparganothis niteolinea
Sparganothis azulispecca
Sparganothis xanthoides
Crambidae:
Chilo erianthalis
Pyralidae:
Salebriaria rufimaculatella
Salebriaria pumilella
Sciota subfuscella
Ephestia columbiella
Erelieva parvulella
Macalla zelleri
Noctuidae:
Ponometia parvula

Brian Scholtens, Spring Island, Beaufort Co. (all county records)

16 Jan 2021
Geometridae:
Phigalia denticulata
Noctuidae:
Feralia major
Sericaglaea signata
Metaxaglaea australis

27-28 Feb 2021
Tineidae:
Nemapogon granella
Gracillariiae:
Phyllonorycter propinquinella
Batrachedridae:
Batrachedra decoctor
Gelechiidae:
Glauce nov. sp. (State record)
Chionodes discoocellella
Tortricidae:
Eucosma parmatana
Eucosma ambodaidaleia
Pseudexentera spoliana
Pseudexentera faracana
Pseudexentera hodsoni
Chimoptesis matheri
Rhopobota finitimana
Eugnosta bimaculana

Geometridae:
Glenoides lenticuligera
Phigalia titea
Phigalia strigataria
Ceratonyx satanaria
Erebidae:
Ptichodis vinculum
Clemensia ochreata
Spilosoma dubia
Noctuidae:
Psaphida rolandi
Psaphida styracis
Pasphida resumens
Orthosia alurina

12-13 Mar 2021
Eriocraniidae:
Dyseriocrania griseocapitella
Heliozelidae:
Antispila ampelopsifoliella
Tineidae:
Homosetia fasciella
Stenoptinea auriferella
Tinea apicimaculella
Tinea pellionella
Momphidae:
Mompha passerella
Batrachedridae:
Batrachedra testor
Argyresthiidae:
Argyresthia austerella
Tortricidae:
Paralobesia liriodendrana
Pseudexentera sepia
Satronia tantilla
Pyralidae:
Ephestia kuehniella
Geometridae:
Cleora projecta
Tacparia zalissaria
Hydriomena pluviata
Erebidae:
Hypenodes franclemonti
Lesmone hinna
Noctuidae:
Psaphida electilis (State record)

16-18 Apr 2021
Nepticulidae:
Ectoedemia ochrefasciella
Ectodemia bosquella
Tischeriidae:
Astrotischeria sp.
Tineidae:
Diachorisia velatella
Scardia approximatella
Niditinea orleansella
Amydria margoriella (State record)
Bucculatricidae:
Bucculatrix ca. recognita
Gracillariidae:
Cameraria conglomeratella
Cosmopterigidae:
Stagmatophora sexnotella
Gelechiidae:
Trypanisma prudens (State record)
Polyhymno luteostrigella
Battaristis concinusella
Battaristis nigratomella
Dichomeris bipunctella
Dichomeris sylphe
Dichomeris punctipennella
Dichomeris inversella
Dichomeris kimballi
Acrolepiidae:
Digitivalva clarkei (State record)
Tortricidae:
Eucosma grindeliana
Cydia laricana
Crambidae:
Anania leuschneri
Pyralidae:
Ephestia columbiella
Varneria postremella
Noctuidae:
Hadena capsularis
Leucania subpunctata
Ulolonche culea

14-15 May 2021
Tineidae:
Oenoe hybromella
Hybromella servulella
Tinea unomaculella (State record)
Gracillariidae:
Acrocercops albinatella
Phyllocnistis liquidambarisella (emerged 20 May)
Glyphidoceridae:
Glyphidocera democratica
Gelechiidae:
Besciva nov. sp.
Numata bipunctella (State record)
Taygete gallaegenitella
Publitelphusa latifasciella
Chionodes suasor
Chionodes emptor
Chionodes pereyra
Chionodes sevir
Anacampsis nov. sp.
Dichomeris punctidiscella
Dichomeris vacciniella
Tortricidae:
Olethreutes fasciatana
Cenopis diluticostana

Pyralidae:
Hypsopygia intermedialis

11 Jun 2021
Tischeriidae:
Tischeria quercitella
Tineidae:
Nemapogon ca. clematella
Acrolophus panamae
Bucculatricidae:
Bucculatrix coronatella
Gracillariidae:
Caloptilia ca. packardella
Cosmopoterigidae:
Pyroderces badia
Triclonella pergandeella
Gelechiidae:
Telphusa perspicua
Chionodes bicostomaculella
Oecophoridae
Ymeldia janae
Tortricidae:
Paralobesia cyclopiana
Proteoteras aesculana
Larisa subsolana
Cenopis lamberti
Cochylis hoffmanana
Crambidae:
Parapoynx diminutalis
Pyralidae:
Baphala pallida
Vitula edmandsii
Cabnia myronella

13-14 Aug 2021
Tineidae
Nemapogon angulifasciella
Acrolophus piger
Gracillariidae:
Cameraria hamadryadella (State record)
Glyphidoceridae:
Glyphidocera lactiflosella
Autostichidae:
Autosticha kyotensis
Gelechiidae:
Pseudotelphusa floridana
Pseudotelphusa quercinigracella
Sesiidae:
Synanthedon sapygaeformis
Crambidae:
Rhectocraspeda periusalis
Pyralidae:
Laetilia fiskeella
Peoria insularis (State record)

Dennis and Donna Forsythe, Hampton Park, Charleston Co.

2 Aug 2021
Papilionidae:
Papilio polyxenes
Pieridae:
Phoebis sennae
Lycaenidae:
Leptotes cassius
Nymphalidae:
Dione incarnata
Junonia coenia
Hesperiidae:
Epargyreus clarus
Burnsius sp.
Erynnis horatius
Hylephila phyleus
Atalopedes campestris
Calpodes ethlius

23 Oct 2021
Pieridae:
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Leptotes cassius
Nymphalidae:
Dione incarnata
Junonia coenia
Hesperiidae:
Urbanus proteus
Burnsius albscens
Burnsius oileus
Hylephila phyleus
Polites vibex
Panoquina ocola

Dennis and Donna Forsythe, Congaree butterfly count, Calhoun Co.

14 Aug 2021
Papilionidae:
Papilio polyxenes
Pterourus troilus
Pieridae:
Abaeis nicippe
Phoebis sennae
Pieris rapae
Nymphalidae:
Dione incarnata
Euptoeita claudia
Junonia coenia

Hesperiidae:
Burnsius albescens
Erynnis horatius
Erynnis zarucco
Hylephila phyleus
Polies vibex
Atalopedes campestris
Copaeodes minima

Marty & Dave Kastner, Congaree Creek HP and Old State Rd., Lexington Co.

28 Aug 2021
Papilionidae:
Eurytides marcellus
Pterourus glaucus
Papilio polyxenes
Pieridae:
Phoebis sennae
Abaeis nicippe
Lycaenidae:
Cupido comyntas
Celastrina neglecta
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Vanessa virginiensis
Vanessa atalanta
Libytheana carinenta
Junonia coenia
Limenitis arthemis astyanax
Limenitis archippus
Hermeuptychia sp.
Hesperiidae:
Epargyreus clarus
Urbanus proteus
Erynnis horatius
Erynnis zarucco
Burnsius albescens
Lerodea eufala
Euphyes vestris

Dennis & Donna Forsythe, Fort Lamar HP, Charleston Co.

2 Sep 2021
Papilionidae:
Heraclides cresphontes
Pieridae:
Phoebis sennae
Nymphalidae:
Danaus plexippus
Heliconius charithonius
Dione incarnata
Hesperiidae:
Urbanus proteus
Erynnis horatius
Panoquina panoquin

Marty & Dave Kastner, Carolina Sandhills NWR, Chesterfield Co.

3 Sep 2021
Papilionidae:
Pterourus palamedes
Pterourus glaucus
Pterourus troilus
Pieridae:
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Cupido comyntas
Strymon melinus
Nymphalidae:
Euptoieta claudia
Vanessa virginiensis
Junonia coenia
Limenitis arthemis astyanax
Hesperiidae:
Erynnis horatius
Erynnis zarucco
Epargyreus clarus

Marty & Dave Kastner, Wateree River HP and WMA, Richland Co.

10 Sep 2021
Papilionidae:
Pterourus palamedes
Pterourus glaucus
Eurytides marcellus
Pieridae:
Pyrisitia lisa
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Cupido comyntas
Strymon melinus
Nymphalidae:
Dione incarnata
Phyciodes tharos
Polygonia comma
Polygonia sp.
Vanessa atalanta
Limenitis arthemis astyanax
Lethe portlandia
Hermeuptychia sp.
Hesperiidae:
Burnsius albescens
Burnsius sp.
Euphyes vestris
Lerema accius
Panoquina ocola

30 Sep 2021
Papilionidae:
Pterourus palamedes
Pieridae:
Zerene eurydice
Pyrisitia lisa
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Celastrina neglecta
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Junonia coenia
Limenitis arthemis astyanax
Hermeuptychia sp.
Cyllopsis gemma
Hesperiidae:
Cecropterus lyciades
Urbanus proteus
Burnsius albescens
Burnsius sp.
Hylephila phyleus
Polites vibex
Atalopedes campestris
Euphyes vestris
Lerema accius
Poanes zabulon

19 Oct 2021
Papilionidae:
Eurytides marcellus
Pieridae:
Phoebis sennae
Abaeis nicippe
Zerene eurydice
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia interrogationis
Polygonia sp.
Libytheana carinenta
Junonia coenia
Lethe portlandia
Lethe creola
Hermeuptychia sp.
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius albescens
Burnsius oileus
Burnsius sp.
Euphyes vestris
Lerema accius
Panoquina ocola

21 Oct 2021
Papilionidae:
Euiytides marcellus
Pieridae:
Phoebis sennae
Abaeis nicippe
Zerene eurydice
Lycaenidae:
Calycopis cecrops
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia comma
Polygonia sp.
Vanessa virginiensis
Junonia coenia
Limenitis archippus
Lethe portlandia
Hermeuptychia sp.
Danaus plexippus
Hesperiidae:
Urbanus proteus
Epargyreus clarus larva
Burnsius albescens
Burnsius oileus
Burnsius sp.
Hylephila phyleus
Euphyes vestris
Lerema accius
Poanes zabulon
Panoquin ocola

Marty & Dave Kastner and Allison Smith, Wateree River HP and WMA, Richland Co.

14 Sep 2021
Papilionidae:
Pterourus palamedes
Pterourus glaucus
Eurytides marcellus
Pieridae:
Zerene eurydice
Pyrisitia lisa
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Atlides halesus
Strymon melinus
Cupido comyntas

Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia comma
Polygonia sp.
Vanessa atalanta
Junonia coenia
Limenitis arthemis astyanax
Limenitis archippus
Asterocampa celtis
Hermeuptychia sp.
Hesperiidae:
Epargyreus clarus
Burnsius albescens
Burnsius oileus
Burnsius sp.
Hylephila phyleus
Euphyes vestris
Lerema accius
Poanes zabulon

Richard Stickney, Purrysburg Rd. and nearby, Jasper Co.

18 Sep 2021
Papilionidae:
Pterourus glaucus
Pterourus palamedes
Pieridae:
Pyrisitia lisa
Abaeis nicippe
Phoebis sennae
Lycaenidae:
Strymon melinus
Calycopis cecrops
Hemiargus ceraunus
Nymphalidae:
Danaus plexippus
Dione incarnata
Euptoieta claudia
Junonia coenia
Phyciodes tharos
Hermeuptychia sp.
Hesperiidae:
Epargyreus clarus
Urbanus proteus
Erynnis sp.
Panoquina ocola
Lerodea eufala
Lerema accius
Hylephila phyleus
Polites vibex
Wallengrenia otho
Pompeius verna
Euphyes pilatka
Oligoria maculata

Brian Scholtens, Spring Island, Beaufort Co.

25 Sep & 16 Oct
Pieridae
Eurema daira
Lycaenidae
Hemiargus ceraunus

Dennis & Donna Forsythe, James Island, Pinckney Park, Charleston Co.

25 Sep 2021
Pieridae:
Pyrisitia lisa
Phoebis sennae
Nymphalidae:
Heliconius charithonia
Dione incarnata
Hesperiidae:
Urbanus proteus
Epargyreus clarus
Burnsius oileus
Hylephila phyleus
Polites vibex
Panoquina ocola

27 Sep 2021
Pieridae:
Pyrisitia lisa
Phoebis sennae
Nymphalidae:
Danaus plexippus
Heliconius charithonia
Dione incarnata
Junonia coenia
Hesperiidae:
Cecropterus bathyllus
Urbanus proteus
Burnsius oileus
Erynnis zarucco
Hylephila phyleus
Polites vibex
Lerema accius
Panoquina panoquin
Panoquina ocola

19 Oct 2021
Pieridae:
Pyrisitia lisa
Phoebis sennae
Nymphalidae:
Heliconius charithonia
Dione incarnata
Hesperiidae:
Urbanus proteus
Burnsius oileus
Panoquina ocola

Dennis & Donna Forsythe, James Island, Swanson Ave., Charleston Co.

10 Oct 2021
Lycaenidae:
Leptotes cassius – on *Plumbago*

Jean Fontaine, Jerry Griggs, John Demko and Marty and Dave Kastner, Timmerman Trail and Old State Road, Cayce, Lexington Co.

16 Oct 2021
Pieridae:
Phoebis sennae
Abaeis nicippe
Lycaenidae:
Cupido comyntas
Nymphalidae:
Dione incarnata
Euptoieta claudia
Phyciodes tharos
Polygonia interrogartionis
Polygonia sp.
Vanessa virginiensis
Vanessa atalanta
Junonia coenia
Limenitis archippus
Asterocampa celtis
Asterocampa clyton
Hermeuptychia sosybius
Hermeuptychia sp.
Danaus plexippus
Hesperiidae:
Urbanus proteus
Burnsius albescens
Burnsius oileus
Burnsius sp.
Ancyloxypha numitor
Hylephila phyleus
Euphyes vestris
Lerema accius
Pompeius verna
Poanes zabulon
Panoquina ocola

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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 sends in the following report for the 4rd quarter of 2021, and comments:

Climate for the period continued with the La Nina influence. Warm and dry. Some locations have had record breaking high temperatures. Some back-to-back days. Western Texas, High Plains and East Texas are still in extreme to abnormally high drought. West Central, Central and Coastal parts are not experiencing drought. Lepidoptera numbers, species and individual, continue to increase from precipitation of the 21 August, 2021 Category 3 hurricane that moved across central Mexico. Evidently, the ice and snow event of February 2021 did not provide any consequent effects. Normal late fall-early winter stray arrivals in the lower Rio Grande Valley are being sighted. Again, improvements of native habitat in northern Mexico are providing these bonus observations. However, none would be classified as new U.S. records. iNaturalist observations are the basis for these conclusions. A strong La Nina weather pattern is expected this winter. Less rainfall and warmer temperatures. Bexar County fall Lepidoptera populations are up from previous three years.

Habitat destruction continues in San Antonio and Austin with new subdivisions and supporting commercial structures.

Seen nectaring on cruciata (*Eupatorium odoratum*) at my home in far west of the county: 17 November 2021, Monarchs, Queens, Gulf Fritillary, Red Admiral, Sleepy Orange, Gray Hairstreak. Monarchs disappeared by 19 November. All others still present in mid-December. Good flight of Texas Buck Moths from 23 November-mid December. 29 November 2021, Queens, Sleepy Orange pair (courting), American Lady male, Red Admiral pair, Eufala Skipper male.

The following are from NABA citizen science count, 17 October 2021: seven locations central and south of San Antonio, Texas. Total of 60 species sighted, 1,071 individuals: 138 Monarchs, 122 Queens, Goatweed Leafwing 1 at Headwaters Sanctuary, Tailed Orange 1 Mitchell Lake Audubon Center, new species for SA count. Mallow Scrub Hairstreak 5, Great Purple Hairstreak 4, Gulf Fritillary 83, Rounded Metalmark 5, White-StrippedLongtails 63,Common/White Skipper 90, Clouded Skipper, 90. Compiled by Patty L. Pasztor and 25 other observers.

Observation of rare strays (Sourced from iNaturalist 2021).
Pearly-gray Hairstreak, *Strephonota tephreus*, Mission, Texas, 6 December 2021, obs. nwise01.
Hammock Skipper, *Polygonus leo arizonensis*, El Paso, Texas, 1 November 2021, obs. Braulio32

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Stuart sends in the following report:

Moths for Trinity River National Wildlife Refuge
Liberty County, TX
Aug 1, 2021, through Oct 31, 2021

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.

ACROLOPHIDAE
Acrolophus heppneri Sept, Oct
Acrolophus mycetophagus Aug, Sept
Acrolophus popeanella Aug, Sept, Oct

ATTEVIDAE
Atteva aurea Sept, Oct

AUTOSTICHIDAE
Glyphidocera lactiflosella Aug, Sept

BLASTOBASIDAE
Blastobasis glandulella Sept, Oct
Pigritia sp. Sept

BUCCULATRICIDAE
Bucculatrix sp. Aug

CARPOSINIDAE
Carposina sp. Aug

COLEOPHORIDAE
Coleophora sp. Aug, Oct

COSMOPTERIGIDAE
Cosmopterix scirpicolaOct
Euclemensia bassettella Aug
Pyroderces albistrigella Oct
Triclonella bicoloripennis Aug, Sept

COSSIDAE
Givira anna Aug, Oct

CRAMBIDAE
Achyra rantalis Aug, Oct
Aethiophysa invisalis Sept
Anageshna primordialis Sept, Oct
Argyria lacteella Aug, Sept, Oct
Carectocultus perstrialis Aug
Chrysendeton imitabilis Oct
Chrysendeton medicinalis Aug, Sept, Oct
Colomychus talis Sept
Condylorrhiza vestigialis Aug, Sept, Oct
Crambus quinquareatus Aug
Crocidophora tuberculalis Sept
Desmia funeralis complex Sept, Oct
Diaphania hyalinata Aug, Sept, Oct
Diasemiodes janassialis Oct
Diasemiopsis leodocusalis Oct
Diatraea evanescens Aug, Sept
Diatraea lisetta Aug, Sept, Oct
Dicymolomia julianalis Oct
Elophila gyralis Aug
Elophila obliteralis Aug, Sept, Oct
Elophila tinealis Aug, Sept, Oct
Epipagis fenestralis Aug, Sept, Oct
Euchromius ocellea Oct
Eudonia strigalis Aug, Sept, Oct
Fissicrambus sp. Aug, Sept, Oct
Glaphyria sesquistrialis Aug, Oct
Herpetogramma bipunctalis Oct
Herpetogramma phaeopteralis Aug, Sept, Oct
Hileithia magualis Aug
Hymenia perspectalis Aug, Sept, Oct
Lamprosema victoriae Sept
Leptosteges parthenialis Aug
Lineodes fontella Oct
Lineodes integra Oct
Marasmia sp. Sept
Microcrambus biguttellus Sept
Microcrambus elegans Aug
Microcrambus sp. Sept, Oct
Neohelvibotys neohelvialis Sept
Niphograpta albiguttalis Aug, Sept, Oct
Nomophila nearctica Sept, Oct
Omiodes indicate Oct
Ommatospila narcaeusalis Aug, Sept
Ostrinia penitalis Aug, Sept, Oct
Palpita atrisquamalis Aug
Palpita freemanalis Aug, Sept
Palpita magniferalis Aug, Sept
Palpita quadristigmalis Oct
Parapediasia decorellus Sept
Parapediasia teterrellus Aug, Sept
Parapoynx allionealis Aug, Sept, Oct
Patania silicalis Oct

Pilocrocis ramentalis Aug, Sept, Oct
Polygrammodes flavidalis Aug
Pyrausta acrionalis Aug, Oct
Pyrausta laticlavia Aug, Sept, Oct
Pyrausta signatalis Aug
Pyrausta tyralis Aug, Sept, Oct
Pyrausta volupialis Oct
Rupela tinctella Aug
Samea baccatalis Aug, Sept, Oct
Samea multiplicalis Aug, Sept, Oct
Spoladea recurvalis Aug, Sept, Oct
Syngamia florella Sept, Oct
Udea rubigalis Sept, Oct
Urola nivalis Aug, Sept, Oct
Xubida sp. Sept

DREPANIDAE
Oreta rosea - Rose Hooktip Sept

DEPRESSARIIDAE
Antaeotricha leucillana Aug, Sept, Oct
Antaeotricha schlaegeri Aug, Sept
Psilocorsis sp. Aug

EREBIDAE
Ablemma brimleyana Aug, Sept, Oct
Amolita obliqua Oct
Anomis illita Sept
Anticarsia gemmatalis Aug, Sept
Apantesis phalerata Aug, Oct
Argyrostrotis anilis Aug
Arugisa lutea Oct
Caenurgia chloropha Aug, Sept, Oct
Catocala agrippina Aug
Catocala maestosa Oct
Catocala micronympha
Cisseps fulvicollis Aug, Sept, Oct
Cisthene packardii Oct
Cisthene plumbea Aug, Sept, Oct
Cisthene unifascia Aug, Sept, Oct
Clemensia ochreata Oct
Crambidia pallida Aug, Sept, Oct
Cutina albopunctella Aug, Sept
Cutina distincta Aug
Dasychira meridionalis Aug, Sept, Oct
Dasychira tephra Aug, Oct
Estigmene acrea Sept, Oct
Gabara distema Aug, Sept
Halysidota sp. Aug, Sept, Oct
Hemeroplanis floccalis Aug, Sept, Oct
Hypena abalienalis Aug, Sept
Hypena baltimoralis Oct
Hypena bijugalis Aug
Hypena degesalis Sept
Hypena scabra Sept, Oct
Hypercompe scribonia Aug, Sept
Hyphantria cunea Aug, Sept, Oct
Hypoprepia fucosa Aug, Sept, Oct
Hypsoropha hormos Aug, Sept
Idia americalis Aug, Sept, Oct
Isogona tenuis Aug, Sept
Lascoria ambigualis Sept
Lesmone detrahens Aug, Sept, Oct
Macrochilo louisiana Aug
Melipotis cellaris Aug
Melipotis indomita Sept
Metalectra quadrisignata Aug
Metria amella Aug
Mocis latipes Oct
Mocis marcida Aug, Oct
Ommatochila mundula Oct
Orgyia detrita Aug
Orgyia leucostigma Sept
Oruza albocostaliata Sept
Pagara simplex Sept, Oct
Palthis asopialis Aug, Oct
Panopoda carneicosta Aug, Sept, Oct
Panopoda rufimargo Aug, Sept
Parallelia bistriaris Aug
Plusiodonta compressipalpis Sept, Oct
Pyrrharctia isabella Sept, Oct
Redectis vitrea Aug, Oct
Renia adspergillus Oct
Scolecocampa liburna Aug
Spiloloma lunilinea Aug, Oct
Spilosoma virginica Aug, Sept, Oct
Tathorhynchus exsiccate Oct
Tetanolita floridana Oct
Tetanolita mynesalis Aug, Oct
Virbia laeta Aug, Sept, Oct
Zale lunata Sept, Oct
Zanclognatha atrilineella Oct
Zanclognatha theralis complex Aug

EUTELIIDAE
Paectes abrostoloides Sept

GELECHIIDAE
Anacampsis fullonella Aug, Sept, Oct
Anacampsis New Sp - 420495.96 Oct
Aproaerema sp. Oct
Aristotelia corallina Sept, Oct
Chionodes discoocellella Sept
Deltophora glandiferella Oct
Dichomeris inserrata Sept
Dichomeris sp. Oct
Helcystogramma chambersella Sept
Helcystogramma melanocarpa Sept
Monochroa sp. Aug
Neodactylota sp. (Possibly) Aug, Sept, Oct
Polyhymno luteostrigella Aug, Sept
Stegasta bosqueella Oct
Untomia albistrigella Sept

GEOMETRIDAE
Chlorochlamys chloroleucaria Aug, Sept
Chloropteryx tepperaria Sept
Dichorda iridaria Sept
Digrammia gnophosaria Aug, Sept
Dyspteris abortivaria Sept
Eubaphe meridiana Oct
Eulithis diversilineata Complex Aug, Sept
Eupithecia miserulata Sept, Oct
Eupithecia sp. Sept
Eusarca confusaria Oct
Glenoides texanaria Aug, Sept, Oct
Horisme intestinata Aug
Hypagyrtis esther Aug, Sept
Hypagyrtis unipunctata Sept, Oct
Idaea tacturata Aug, Sept, Oct
Ilexia intractata Aug, Oct
Iridopsis defectaria Aug, Sept, Oct
Leptostales laevitaria Sept, Oct
Leptostales pannaria Aug, Sept, Oct
Lobocleta ossularia Aug, Sept, Oct
Lophosis labeculata Oct
Lychnosea intermicata Aug
Macaria aequiferaria Sept, Oct
Mellilla xanthometata Aug
Metarranthis homuraria Sept
Nemoria elfa Oct
Nemoria lixaria Aug, Sept, Oct
Orthonama obstipata Sept
Patalene olyzonaria Aug, Sept, Oct
Plagodis fervidaria Sept
Pleuroprucha insulsaria Oct
Prochoerodes lineola Aug, Sept, Oct
Psamatodes abydata Aug, Sept, Oct
Scopula lautaria Sept
Synchlora frondaria Aug, Sept, Oct
Timandra amaturaria Aug
Tornos scolopacinaria Aug, Oct

GLYPHIPTERIGIDAE
Drymoana blanchardi Oct
Diploschizia impigritella Aug, Sept

GRACILLARIIDAE
Cameraria sp. Oct
Caloptilia triadicae Aug, Oct
Epicephala sp. Oct
Neurostrota gunniella Oct

LACTURIDAE
Lactura pupula Sept

LASIOCAMPIDAE
Artace cribrarius Sept
Heteropacha rileyana Aug, Sept, Oct
Tolype sp. Aug, Sept

LIMACODIDAE
Adoneta spinuloides Sept
Apoda biguttata Sept
Apoda y-inversum Aug, Sept, Oct
Euclea delphinii Aug, Sept
Isa textula Sept
Isochaetes beutenmuelleri Aug
Phobetron pithecium Aug, Sept
Prolimacodes badia Aug, Sept

MEGALOPYGIDAE
Megalopyge opercularis Aug, Sept

MIMALLONIDAE
Lacosoma chiridota Aug, Sept

MOMPHIDAE
Mompha cephalonthiella Oct

NOCTUIDAE
Acronicta afflicta Aug
Acronicta connecta Oct
Acronicta insularis Aug, Sept
Acronicta longa Aug, Oct
Acronicta oblinita Aug
Acronicta ovata Aug, Sept, Oct
Acronicta rubricoma Oct
Acronicta vinnula Aug, Sept
Agrotis ipsilon Sept
Amyna stricta Aug, Oct
Anicla infecta Sept, Oct
Argyrogramma verruca Aug
Bagisara repanda Aug, Oct
Callopistria floridensis Aug
Charadra deridens Sept
Chrysodeixis includens Sept, Oct
Condica sutor Sept, Oct
Condica videns Sept, Oct
Ctenoplusia oxygramma Oct
Cydosia aurivitta Aug, Sept, Oct
Diphthera festiva Aug, Sept, Oct
Elaphria chalcedonia Sept, Oct
Elaphria nucicolora Aug, Sept
Eudryas grata Aug, Oct
Eudryas unio Aug, Sept
Galgula partita Aug, Sept, Oct
Harrisimemna trisignata Oct
Helicoverpa zea Aug, Sept, Oct
Lacinipolia laudabilis Oct
Leucania adjuta Oct
Leucania incognita Sept, Oct
Marimatha nigrofimbria Aug, Sept, Oct
Micrathetis triplex Oct
Mythimna unipuncta Sept, Oct
Ogdoconta cinereola Sept
Orthodes majuscula Oct
Ozarba aeria Aug, Sept

Perigea xanthioides Sept
Phosphila miselioides Sept
Phosphila turbulenta Sept
Polygrammate hebraeicum Aug
Rachiplusia ou Sept
Raphia frater Aug, Sept, Oct
Schinia arcigera Oct
Schinia gracilenta Sept, Oct
Schinia rivulosa Aug
Schinia siren Sept, Oct
Schinia sordidus Sept
Schinia trifascia Sept, Oct
Spodoptera dolichos Aug
Spodoptera exigua Oct
Spodoptera frugiperda Aug, Sept, Oct
Spodoptera latifascia Aug
Spodoptera ornithogalli Aug, Sept, Oct
Spragueia dama Oct
Tarache aprica Aug, Sept
Tripudia flavofasciata Aug, Sept, Oct
Tripudia quadrifera Sept, Oct
Tripudia rectangular Aug, Sept

NOLIDAE
Afrida ydatodes Aug, Sept, Oct
Baileya acadiana Aug, Sept
Garella nilotica Aug, Sept, Oct
Meganola minuscula Aug, Sept
Nola cereella Aug, Sept, Oct

NOTODONTIDAE
Clostera inclusa Aug, Sept
Datana integerrima Aug, Sept
Furcula cinerea Aug, Sept
Heterocampa biundata Sept
Heterocampa guttivitta Aug, Sept
Heterocampa subrotata Aug
Lochmaeus bilineata Aug, Sept, Oct
Lochmaeus manteo Sept, Oct
Macrurocampa marthesia Aug, Sept, Oct
Misogada unicolor Sept
Nadata gibbose Aug
Nerice bidentate Aug, Sept
Peridea angulosa Aug, Sept, Oct
Schizura leptinoides Aug, Sept, Oct
Schizura unicornis Aug, Sept, Oct
Symmerista albifrons Aug, Sept

OECOPHORIDAE
Inga sparsiciliella Aug, Sept

PLUTELLIDAE
Plutella xylostella Sept, Oct

PSYCHIDAE
Cryptothelea sp. Aug, Sept, Oct
Oiketicus abbotii Aug, Sept
Thyridopteryx ephemeraeformis Oct

PTEROPHORIDAE
Adaina sp. Aug
Hellinsia balanotes Sept
Pselnophorus belfragei Aug, Sept, Oct
Sphenarches anisodactylus Sept
Stenoptilodes sp. Aug, Sept, Oct

PYRALIDAE
Acrobasis exsulella Aug, Sept, Oct
Acrobasis texana Aug, Sept
Adelphia petrella Aug, Oct
Arta olivalis Aug
Canarsia ulmiarrosorella Sept
Ephestiodes gilvescentella Oct
Epipaschia superatalis Aug, Sept
Eulogia ochrifrontella Aug, Sept
Eurythmia angulella Aug, Sept
Euzophera semifuneralis Oct
Galasa nigrinodis Oct
Galleria mellonella Aug, Oct
Homoeosoma electella Oct
Hypsopygia binodulalis Aug, Sept, Oct
Hypsopygia nostralis Oct
Hypsopygia olinalis Aug, Sept, Oct
Laetilia coccidivora Sept, Oct
Macrorrhinia endonephele Aug, Sept, Oct
Meroptera cviatella Aug
Phycitodes reliquellum Sept, Oct
Pococera asperatella Aug, Sept, Oct
Pococera humerella Aug
Pococera maritimalis Aug
Pococera militella Oct
Salebriaria squamopalpiella Sept
Sciota celtidella Sept
Sciota uvinella Aug, Sept, Oct
Tallula atrifascialis Oct
Tlascala reductella Aug, Sept, Oct

SATURNIIDAE
Actias luna Aug, Sept, Oct
Anisota stigma Aug
Anisota virginiensis Sept
Antheraea polyphemus Sept
Automeris io Aug, Sept
Eacles imperialis Sept, Oct
Sphingicampa bicolor Aug, Sept, Oct

SPHINGIDAE
Amorpha juglandis Aug, Sept
Ceratomia undulosa Sept, Oct
Darapsa myron Aug, Sept
Dolba hyloeus Sept
Enyo lugubris Aug, Sept, Oct

Eumorpha pandorus Aug, Sept
Eumorpha fasciatus Sept
Manduca rustica Aug, Oct
Manduca sexta Aug
Paratrea plebeja Aug, Oct
Xylophanes tersa Aug, Sept, Oct

TINEIDAE
Homostinea curviliniella Sept
Phaeoses sabinella Oct
Tinea apicimaculella Oct

TORTRICIDAE
Aethes sp. Sept, Oct
Ancylis comptana Aug, Sept, Oct
Ancylis divisana Sept
Argyrotaenia hodgesi Oct
Bactra furfurana Aug
Bactra verutana Sept, Oct
Cagiva cephalanthana Aug
Choristoneura rosaceana Aug, Sept, Oct
Clepsis peritana Aug, Oct
Cochylichroa hospes Aug
Cochylis sp. Aug, Sept
Coelostathma discopunctana Aug, Oct
Coelostathma placidana Oct
Cryptaspasma bipenicilla Oct
Cydia caryana Aug, Sept, Oct
Cydia latiferreana Sept, Oct
Ecdytolopha mana Aug, Sept, Oct
Epiblema otiosana Aug, Sept, Oct
Epiblema strenuana Oct
Episimus argutana Aug, Sept, Oct
Episimus tyrius Sept
Eucosma grindeliana Sept
Eucosma radiatana Aug
Eugnosta bimaculana Aug, Sept, Oct
Eumarozia malachitana Aug, Sept
Gypsonoma salicicolana Aug
Larisa subsolana Aug
Olethreutes sp. Aug, Sept, Oct
Paralobesia viteana Aug, Sept
Pelochrista sp. Sept, Oct
Platynota exasperatana Sept
Platynota flavedana Aug, Oct
Platynota idaeusalis Aug, Sept, Oct
Platynota semiustana Aug, Sept, Oct
Rudenia leguminana Aug
Sparganothis distincta Aug
Sparganothis sulfureana Aug, Sept, Oct
Sparganothoides lentiginosana Sept

ZYGAENIDAE
Harrisina americana Aug

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