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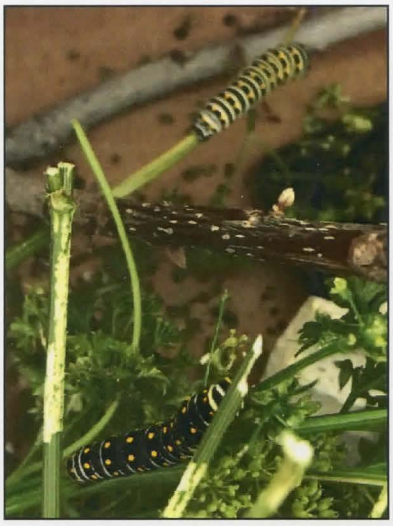
THE OFFICIAL PUBLICATION OF THE SOUTHERN LEPIDOPTERISTS' SOCIETY ORGANIZED TO PROMOTE SCIENTIFIC INTEREST AND KNOWLEDGE RELATED TO UNDERSTANDING THE LEPIDOPTERA FAUNA OF THE SOUTHERN REGION OF THE UNITED STATES (WEBSITE: www.southernlepsoc.org/)

J. BARRY LOMBARDINI: EDITOR



The first of 5 Black Swallowtails (*Papilio polyxenes asterius*) eclosed on July 21, 2021.

Caterpillars fed on Dill and Parsley.

Dallas Dowhower, Member of the Southern Lepidopterists' Society
died earlier this year

The Members of the Southern Lepidopterists' Society send their condolences to the family and friends of Dallas upon learning of his death.

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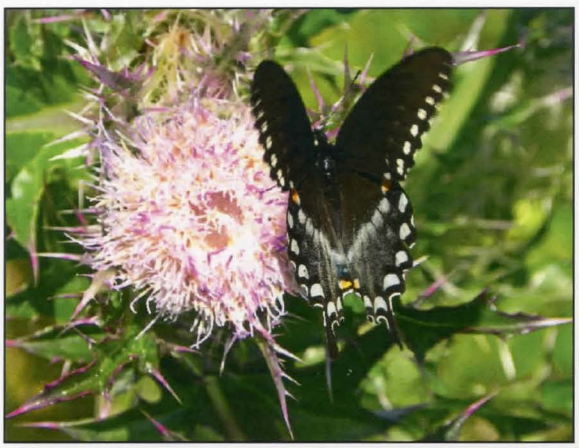
PHOTOS FROM AVERY ISLAND, APRIL – JUNE 2019

BY
GARY NOEL ROSS



Spicebush Swallowtail (*Papilio troilus*) nectaring on bull thistle (*Cirsium horridulum*)

Migratory monarch (*Danaus plexippus*) nectaring on bull thistle (*Cirsium horridulum*) atop Prospect Hill

Great egrets (*Ardea alba modesta*) on bamboo nesting racks in Bird City

Close-up of great egrets (*Ardea alba modesta*) nesting in Bird City

INDEX

Page

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

From a drawing by W.I. Beecroft

FIVE INTERESTING BUTTERFLIES

The Spring Azure at the top; the Falcate Orange-Tip next; the Bronze Copper, female, next: the Spring Azure resting on a leaf, next: and the Great Purple Hairstreak, female below.

BUTTERFLIES WORTH KNOWING

By
Clarence M. Weed, D.Sc.
Published by Doubleday Page & Company
For
Nelson Doubleday Inc.
1925

ALCATHOE CAUDATA (HARRIS, 1839) (LEPIDOPTERA: SESIIDAE) IN LOUISIANA

BY

VERNON ANTOINE BROU, JR. AND CHARLOTTE DOZAR BROU

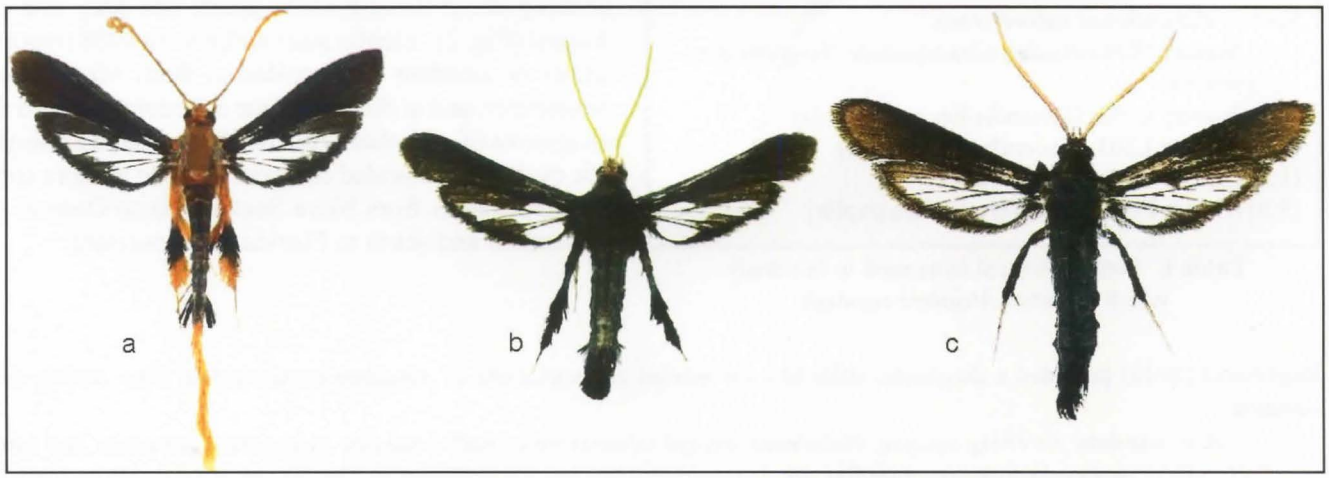


Fig. 1. ***Alcathoe caudata:*** *male*: a. (July 14 to September 15-2011) Orleans Parish, *females*: b. September 8-1978 St. John the Baptist Parish, c. June 4-1980 St. John the Baptist Parish.

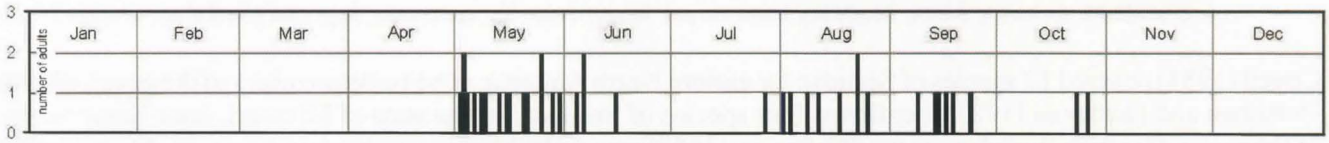


Fig. 2. Adult ***Alcathoe caudata*** captured in Louisiana. n = 37

Alcathoe Henry Edwards, 1882 is a genus of clearwing moths in the family Sesiidae currently consisting of about 11 described species. One species ***Alcathoe caudata*** (Harris) (Fig. 1) Type locality Massachusetts, occurs in Louisiana. This species is not often encountered in Louisiana. It reportedly utilizes hostplants of the genera ***Clematis*** and ***Ribes***, both of which occur at the **Abita entomological study site*.

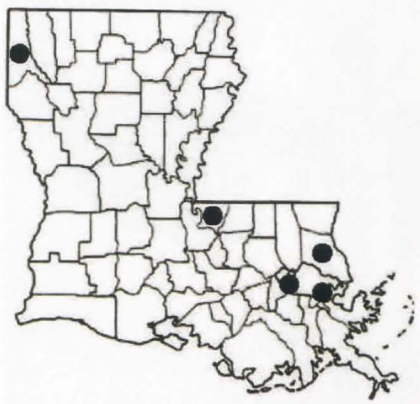


Fig. 3. Parish records for *Alcathoe caudata*

A. caudata was first reported in the state of Louisiana by Eichlin and Duckworth (1988) and more recently by Brou and Lemann (2012). All of those earlier mentioned Louisiana specimens were captured by us, the earliest ones were sent to Eichlin during the 10 years prior to 1988. The majority of captured adults in the state were captured at the **Abita Entomological study site* where most of the insect collecting in Louisiana has occurred 24-hours daily for about 40 consecutive years (1981-2021), using hundreds of self-designed, automatic capture insect traps of varying novel designs and utilizing granular sodium cyanide as the dispatching agent.

In this current study, adult ***caudata*** were captured in ultraviolet light traps, by hand netting, and using automatic capture, self-designed sesiidae lure traps employing commercial and special order semiochemical lures, Table 1. We captured more than 100 adult males and females of ***caudata*** over the decades beginning in the early 1970s through present day (2021); only a small number (37) were logged noting the specific calendar dates of capture (Fig. 2). Most adult males were captured over monitoring periods of weeks to months, and specific dates of capture were not eligible to be included on the phenogram Fig. 2. A small number of females (5) were captured by hand netting ~(40-50) years ago, none since.

Eichlin and Duckworth (1988) treated five species of ***Alcathoe*** in North America north of Mexico: ***caudata***, ***Alcathoe autumnalis*** Englehardt, ***Alcathoe carolinensis*** Engelhardt, ***Alcathoe pepsioides*** Englehardt and ***Alcathoe verrugo*** (Druce).

E3Z13-18OH
Scentry L103
Scentry *Synanthedon bibionipennis*
Scentry *Synanthedon fatifera*
Scentry Lesser Peachtree borer
Scentry *Paranthrene tabaniformis*
(1:1) Scentry (*Synanthedon bibionipennis: Synanthedon pictipes*)
(1:1) Scentry L103: (*Synanthedon rubrofascia*)
(1:1) Scentry L103: (*Synanthedon fatifera*)
(1:1) (E3Z13-18Ac:E3Z13-18OH)
(3:5) (Lesser Peachtree borer: western poplar)

Table 1. Semiochemical lures used in this study which attracted ***Alcathoe caudata.***

Knudson and Bordelon (2010) listed only two species of ***Alcathoe*** for the state of Texas: ***autumnalis*** and ***pepsioides.***

Within Louisiana, ***caudata*** has two annual broods peaking about three months apart, late May and late August (Fig. 2). Eichlin and Duckworth (1988) reported adults of ***caudata*** were collected from May through September, and at the same time anecdotally stated that all species of ***Alcathoe*** north of Mexico have a one-year life cycle, but provided no proof. These authors stated ***caudata*** ranges from Nova Scotia west to Ontario and Wisconsin and south to Florida and Louisiana.

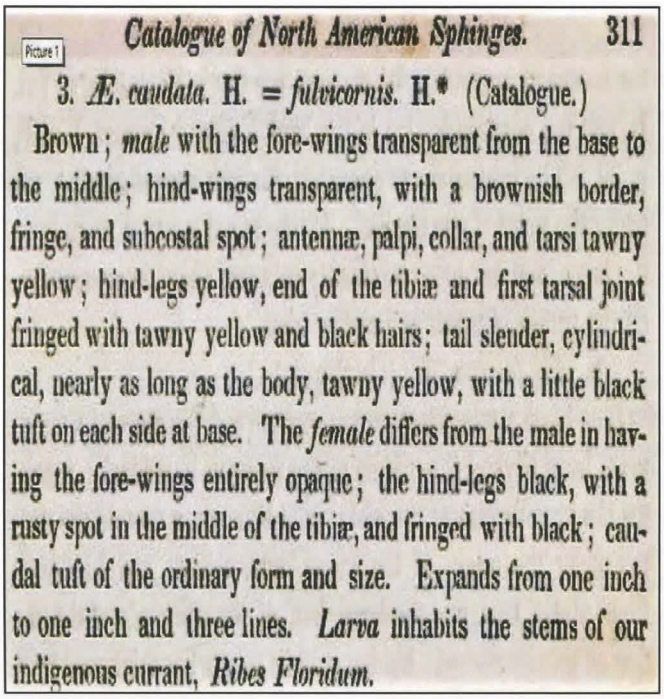
Engelhardt (1946) provided a diagnostic color key for species and variations of ***Alcathoe*** known at that time, stating about ***caudata***:

A. c. caudata: *forewing opaque, violaceous, except vitreous basal half, hindwing transparent, antennae and caudal appendage orange.* (see Fig. 4).

A. c. annettella: *hindwing transparent, broadly margined, suffused between veins 5 and 6 to cell and between veins 1b and 1c irregularly inward.* (see Fig. 5).

A. c. walkeri: *forewing black, hindwing transparent, margin narrow, antennae, legs and caudal appendage black.*

Covell (1984) covered 12 species of Sesiidae for eastern North America, none being members of the genus ***Alcathoe***. Heitzman and Heitzman (1987) mentioned four species of Sesiidae for the state of Missouri, none being members of the genus ***Alcathoe,*** though a year earlier Brown (1986) reported taking ***carolinensis*** in that state. Heppner (2003) listed two species of ***Alcathoe*** for the state of Florida, ***carolinensis*** and ***caudata***. For ***caudata,*** this same author stated its range to include Nova Scotia to Florida and Wisconsin to Louisiana. More recently, Krogmann and Riefenstahla (2004) described a new species, ***Alcathoe cuauhtemoci*** (Type locality: Guerrero, México). Powell and Opler (2009) mentions there are two species of ***Alcathoe*** in the southwest US, but discusses only one, ***verrugo***.



Catalogue of North American Sphinges. 311

3. *Æ. caudata.* H. = *fulvicornis.* H.* (Catalogue.)

Brown; *male* with the fore-wings transparent from the base to the middle; hind-wings transparent, with a brownish border, fringe, and subcostal spot; antennæ, palpi, collar, and tarsi tawny yellow; hind-legs yellow, end of the tibiæ and first tarsal joint fringed with tawny yellow and black hairs; tail slender, cylindrical, nearly as long as the body, tawny yellow, with a little black tuft on each side at base. The *female* differs from the male in having the fore-wings entirely opaque; the hind-legs black, with a rusty spot in the middle of the tibiæ, and fringed with black; caudal tuft of the ordinary form and size. Expands from one inch to one inch and three lines. *Larva* inhabits the stems of our indigenous currant, *Ribes Floridum.*

Fig. 4. Original 1839 description of ***Alcathoe caudata***.

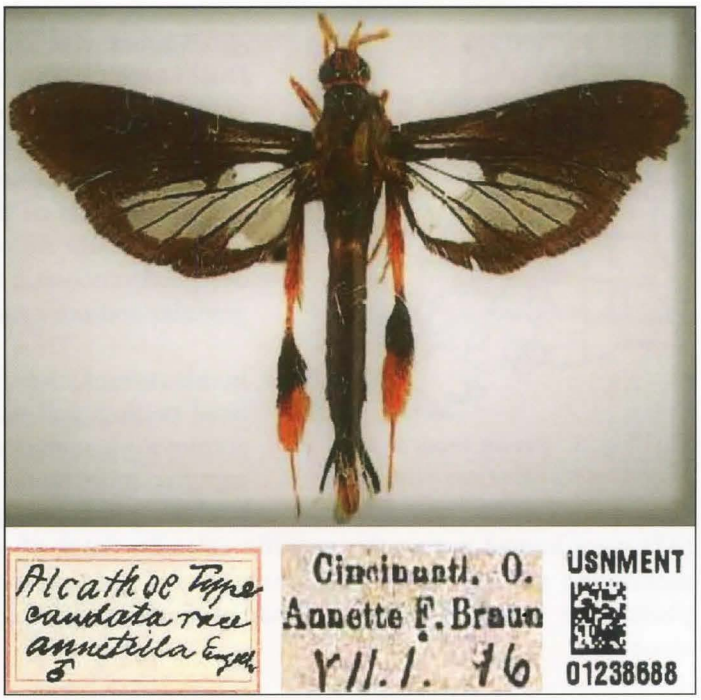


Fig. 5. TYPE of ***A. c. annettella*** Engelhardt, 1946.

A. c. annettella Engelhardt, 1946. Type locality: Cincinnati, Ohio. (Was described as new race, the name can apply to both sexes). Labeled data indicates the Type was collected by Braun July 1-1916 (Engelhardt, 1946). (Annette Francis Braun was born 1884, and died 1978).

A. c. walkeri Neumoegen 1894. Type locality: Jamaica, Long Island, New York. (Described as a color variation, name applies only to males). It shares the distribution of the normal species, (Engelhardt, 1946).

Snow, Eichlin and Tumlinson (1985) reported capturing ***caudata*** using the semiochemical ZZA-EZA. Brown and Mizell (1993) reported ***carolinensis*** captured only in the month of October in Florida. Brown and Mizell reported adults of ***caudata*** were captured in Florida, May to September, in one generation yearly and attracted to lures composed of (E,Z) 3,13-octadecadien-1ol alcohol, and (1:1) (Z,Z) 3,13-octadecadien-1-ol acetate: (E,Z) 3,13-octadecadien-1ol acetate.

Regarding hostplants for ***caudata***, only ***Ribes floridum*** L'Hér (a synonym of ***Ribes americanum*** Mill.) is mentioned in the original description by Harris, yet Eichlin and Duckworth (1988) failed to mention this hostplant, instead only mentioning ***caudata*** have been reared from ***Clematis virginiana*** Linnaeus. Only ***Ribes curvatum*** Small is known to occur in Louisiana (Brown, 1945). ***R. curvatum*** is also known from the surrounding states of Alabama, Arkansas, Georgia, Oklahoma, Tennessee, and Texas. ***C. virginiana*** is native in all states of the eastern US, and north to New Brunswick, Prince Edwards Island, and Quebec.

The Louisiana parish records for ***caudata*** in this study are illustrated in Fig. 3. We thank Ricky Patterson for supplying records and commenting upon this manuscript.

**Abita entomological study site*: sec.24,T6S, Range 12 East, 4.2 miles northeast of Abita Springs, St. Tammany Parish, Louisiana.

Mention of trade names or commercial products in this publication is solely for the purpose of providing accurate information and does not imply recommendations or endorsement by the authors.

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(Vernon Antoine Brou Jr. and Charlotte Dozar Brou, 74320 Jack Loyd Road, Abita Springs, Louisiana 70420;
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MOTHS – TRINITY RIVER NATIONAL WILDLIFE REFUGE, LIBERTY COUNTY, TEXAS

BY

STUART J. MARCUS

Eight of the following moths were observed for the first time at Trinity River National Wildlife Refuge between May 1, 2021, and July 31, 2021. One, *Helvibotys pucilla*, was observed in 2019 but just recently identified.

CRAMBIDAE:
Helvibotys pucilla

CRAMBIDAE:
***Terastia meticulosalis* -**
Erythrina borer

EREBIDAE: *Macrochilo louisiana* -
Louisiana Macrochilo

EREBIDAE:
Toxonprucha excavata

Undescribed MORPHA:
nr. *Metallifera*

GRACILLARIIDAE:
Phyllonorycter rileyella

GEOMETRIDAE:
***Plagodis phlogosaria* -**
Straight-lined Plagodis

NOCTUIDAE:
Metaponpneumata rogenhoferi

PYRALIDAE:
Sciota rubrisparsella

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

ON THE SEARCH FOR A SPLENDID MOTH IN ARIZONA

BY

KELLY RICHERS

Last year for the first time this author decided to look for individual "target" species for the first time, with, I might add, a notable lack of success. The one butterfly and one moth toward which I directed my efforts were not making themselves available for me to catch in Arizona at the time I was looking for them. I heard I was too late, or too early, or it was too dry to find them. So, never one to give up, or for that matter to learn from my mistakes, I returned this year. I headed back to Sierra Vista, where several canyons open into the Huachuca Mountains, notable among them Ash Canyon, Miller Canyon, Carr Canyon, Ramsey Canyon and Garden Canyon (which is on Fort Huachuca property and requires a permit). Carr Canyon is my choice, as Ash Canyon has still not remotely recovered from the forest fires of several years ago, and Ramsey does not lead upward to very great levels.

Never one to be daunted by failure, I determined to try again with a new target species, since I am apparently a bear of very little brain, like Winnie the Pooh. Seizing the opportunity to go back to Carr Canyon to look for some rarely caught moths (for a government entity) that sometimes appear at the lower reaches of Carr Canyon around the Carr House area, I determined that if I had the chance I would go up to the higher levels of the canyon and look for the rare green geometrid *Nemoria splendidaria*, one of the endemic and very local moths in Arizona.

Upper Carr Canyon is completely different from lower Carr Canyon. The lower part of the canyon, for a stretch of about a mile and a half, is fairly level, a little over 5000 feet in elevation and contains deciduous trees and a mixed habitat more reminiscent of an east coast valley in the southern Appalachian mountains than the west, a fact which has been documented several times. The upper reaches are primarily coniferous, and there is an over 2,500' climb to get to the more level upper parts. The climb is steep, narrow,

Forest in Upper Carr Canyon, Arizona

Forest in Upper Carr Canyon, Arizona

rough, and rocks might fall on the road. About halfway up there is a waterfall at one of the sharp bends, which is a popular tourist stop, often with a couple of vehicles visiting. Other than that and the occasional campers at the top in the campgrounds, there is little traffic over the five mile climb. This climb cannot be made at more than 15 miles per hour, and that speed is sometimes just a wish when the rocks protrude from the road. After about 7000' the road levels out some and becomes more manageable.

Last year there was virtually no real monsoon summer rain period in Arizona. Overall, the collecting and observation of moths and butterflies in the summer time in 2020 was of the lowest caliber of recent history. There were great fears that this could continue into 2021. The west overall is in one of the greatest droughts in hundreds of years, with the snowpack that normally feeds the great Colorado River and the western snowpack that feeds the rivers of California at very low levels. So it was with trepidation that I awaited the time I was to go to Arizona.

The fears of having no monsoon rains in Arizona were dispelled quickly this year. With numerous notifications via email and phone texts flashing around to the interested lepidopterists in the southwest, it became apparent in late June that there were indeed monsoon rains returning. Within three weeks the total

rain amount this year, just into the beginning of July exceeded the total rain amount of all last summer. And the rains have kept coming. And coming. Probably six to eight times the amount of rain of last year was there by late July. And, it has kept raining through August.

The storm wins, Carr Canyon, Arizona

Not knowing that there was such heavy rain on such a constant basis, but anticipating a better situation than las year, (from the text and email traffic) I arranged to meet the team that would help set the traps in lower Carr Canyon and Garden Canyon (part of Fort Huachuca) in Sierra Vista on the 21st of July. The next heavy rains were not due until the 24th. We dutifully set traps where recommended in lower Carr Canyon searching for the moths for the feds, and I proceeded alone up the steep grade to upper Carr Canyon.

Now, a word about *Nemoria splendidaria*. This moth, referenced in the Moths of North America green geometrid volume as "a rare and extremely distinct species from mountains of northwestern Mexico and southern Arizona", is one I actually tried to catch in 2019. In that year, I was collecting under some serious afternoon clouds building up in Madera Canyon, and drove over to meet Dave Wagner in Ramsey Canyon, after he said it was clear there. It wasn't, by the time I got there. However, since I was footloose and fancy free, I decided to go up Carr Canyon to the top, where I had never been, and set up a sheet for night collecting, and maybe some traps. He told me exactly where to go to find the rarely caught *Nemoria splendidaria*, and said he would join me later. He also mentioned that it flew late, so not to expect it on a sheet until after midnight.

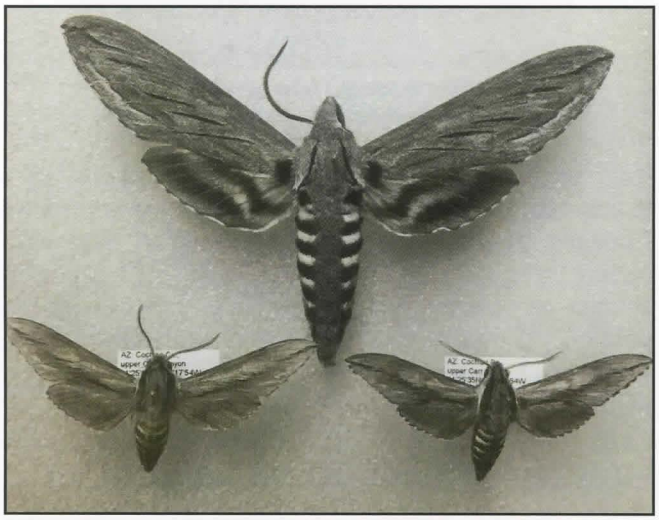
After driving up the narrow, twisting road to upper Carr Canyon on that night in 2019, I located the spot without much difficulty, and set up my sheet and mercury vapor light after setting some traps up and down Carr Canyon. But the night was somewhat volatile. I experienced a thunderstorm after dark, forcing me to take down the mercury vapor light, steady rain after that, and significantly lowering temperatures, which can happen suddenly in the sky islands of Arizona. Monsieur Wagner, after informing me that he was happily drinking the night away at a party, decided not to come up to meet poor pitiful freezing me, and I eventually crawled into my truck and went to sleep. Needless to say, I caught virtually nothing on the sheet, and certainly no *splendidaria*.

My various traps that year, scattered around the higher elevations, had some interesting specimens, despite the rain that night, so a return to the area was at least certain to bring some more unusual and largely endemic species.

Trap in place, Carr Canyon, Arizona

Sheet set up, Carr Canyon, Arizona

One of the most informed and notable studiers of moths in Arizona is Bruce Walsh, and he directed me to the exact same spot to which Dave Wagner sent me. I had called him for advice. I think they were in cahoots. This time I was more prepared. Or maybe not. Having driven through the California and Arizona deserts the night of the 20th, to avoid the 108 degree daytime heat, I discovered that maybe going without sleep for some 36 hours might slow me down some. Regardless, I set up my small mercury vapor light and my small generator, and prepared for a vigil to watch the sheet. As a backup I set two traps some 300 yards away from the sheet light, out of sight on either side of the ridge over the area, so I could have the area covered. I also set up two traps about a mile away in another opening that looked promising for higher elevation mothing.



Sphinx chersis, S. dollii

At this point I might mention that there are bears and mountain lions in Carr Canyon, and that the higher elevations are pretty isolated, especially after the heavy rains that had already occurred. I might also mention that there is a large sign at the entrance to the canyon warning of illegal and smuggling persons possibly in the vicinity. Such is the stuff of hearing noises throughout the night. A perfect setup to raise hairs on the back of your neck at the slightest noise. Add into that no sleep the night before.

In addition, Bruce told me two interesting additional facts. One, that *splendidaria* does not frequent the actual sheet, but tends to flop around and perch outside the lighted area on the edge of light and dark, and two, that it does not fly until 3:30 in the morning. Wait, what? Yeah, 3:30 in the morning. What kind of stupid moth flies then? No wonder it is rarely caught. Any normal human being is sleeping by then. Any human being up since 6 the previous day might just miss it. This was getting difficult.

However, I wandered about the bushes in the dark and the light areas, searching for any moths that might have been eyeballing things, listening for lions and tigers and bears, (or worse) and alternating between the sheet and the truck for rest. The traps might not catch any because of the habit of this moth of landing out of the direct light, so I pretty much had to rely on one coming to the sheet. Except that, of course, they apparently did not actually come to the sheet. This is the stuff bad dreams ae made of.

The good news is that the weather held, and a warm evening and night was bringing in other great specimens. Not many of each species, but generally fresh and prime specimens after the recent rains. Other green geometrids were coming in to the sheet. No *splendidaria*. However, many other scarce and rarely caught moths were coming in. I decided on the strategy of sleeping in short naps and revisiting the sheet whenever I got too cramped up in my truck seat. This resulted in visiting the sheet every half hour or so from 9:30 p.m. on. A nice *Sphinx chersis* came in. Then a fresh *Hyalophora gloveri* landed on the sheet. A few small *Quadrina diazoma*, very dark specimens, then many smaller moths appeared over the hours. Endemics such as *Metemaea virgate*, a beautiful geometid, and the arctiid *Lophocampa roseata*, very noticeable in its red coloration, were present. Endemic micros such as *Dichomeris mulsa* also were there. Many other notable moths were flying, but not in any large numbers.

Hyalophora gloveri

The hours ticked by. Then, suddenly, at 2:37 a.m. (yes, I checked the time, actually) a single *Nemoria splendidaria* landed on the sheet. I quickly captured it and eagerly anticipated more. Alas, there were no more. This singleton proved to be the highlight of the night.

In the morning I gathered up the traps. There were, as I suspected, no *splendidaria* in the traps, but there were more of the fascinating endemics of the area, and more of the great Arizona monsoon moths found in the Huachuca Mountains.

So, after an afternoon of sleep, the team and I set traps again in lower Carr Canyon and went to Fort Huachuca. The weather pattern had deteriorated, and rain was again expected, as well as a temperature drop of some 30 degrees at the top of Carr Canyon. I decided to forgo driving up there again as I expected to be in the area for two more nights, so I got a good night's sleep.

Melemea virgata

The third day, the weather cleared a little bit. In the afternoon, the team left to return to Phoenix, and I was on my own. I decided to set every one of my ten traps in the area where I caught the one specimen, and texted Bruce for any clues. He said the "horseshoe" just above where I caught the one was where the range seemed to start and end, and so I drove up and set 10 traps above 7000 feet, with at least five of them exactly where he indicated, three lower down a bit, and two higher up a bit. I then returned to my motel room and retired for the evening. The plan was to get the traps in the morning, and if things were good, set them again that night in the same area.

Mother Nature had other plans. First, the temperature did not rise to its previous levels, so it was much cooler all night. I woke up at 5 a.m., planning to get up at 5:30 and go up to the traps. However, my weather app that I checked just in case (I am such a technophile!) showed a HUGE storm to the north of Sierra Vista, maybe just about an hour from Carr Canyon, so I rushed out, jumped in my truck and tore off to get the traps before the storm hit.

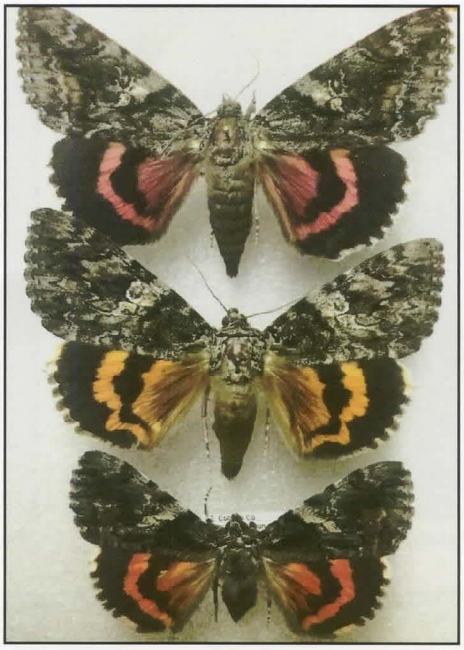
Lophocampa reseata, L. argentata, Leucanopsis lurida

Nay, nay, sayeth Mother Nature. The rain hit as I picked up the first traps, and for the next hour or more I dodged raindrops as I picked up the other traps. No sorting was done, the contents were just put into storage as fast as possible to keep them as dry as possible. The good news is that the sophisticated cover apparatus I developed (18" metal trash can lids held with bungee cords) worked perfectly, there were no high winds so the traps did not blow over, and all the traps worked throughout the night.

The bad news is that there were no *Nemoria splendidaria* in any of the traps. None. Zip. Zero. So, after three nights in a motel, driving 1550 miles round trip, and setting some 16 traps as well as sheet collecting, I collected exactly one specimen of my target species.

I packed up and headed down the mountain in the rain. After assessing the weather, I headed home mid-morning in a driving rain, which lasted from Tucson to near Phoenix. I say near Phoenix because there was so much water they closed the Interstate near Phoenix and I had to cut west to Gila Bend to get out of the rain. It even rained in Blythe. It never rains in Blythe. The monsoon was tremendous, and entire swaths of the desert were covered inches deep in water. One report was that from this single storm Harshaw Creek in Patagonia got 12 inches of rain. Many areas reported six inches from this storm. It was a wise decision to leave. As of today, August 18, the monsoon is still going on in Arizona, and rain is still falling. I hope to return in the fall to look for the target species I missed last year.

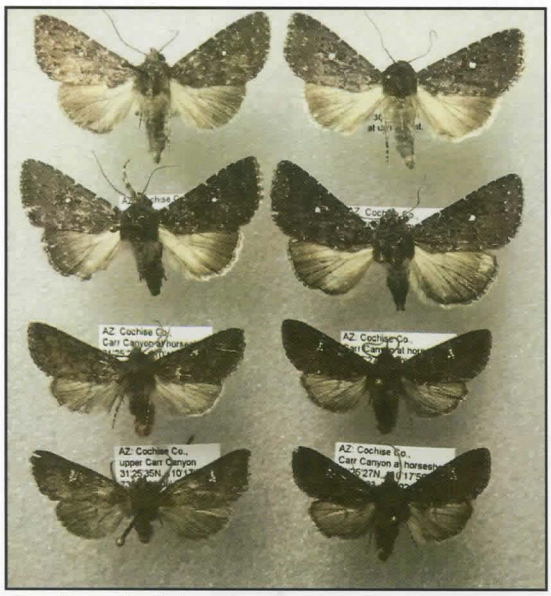
Dichomeria mulsa



Catocala

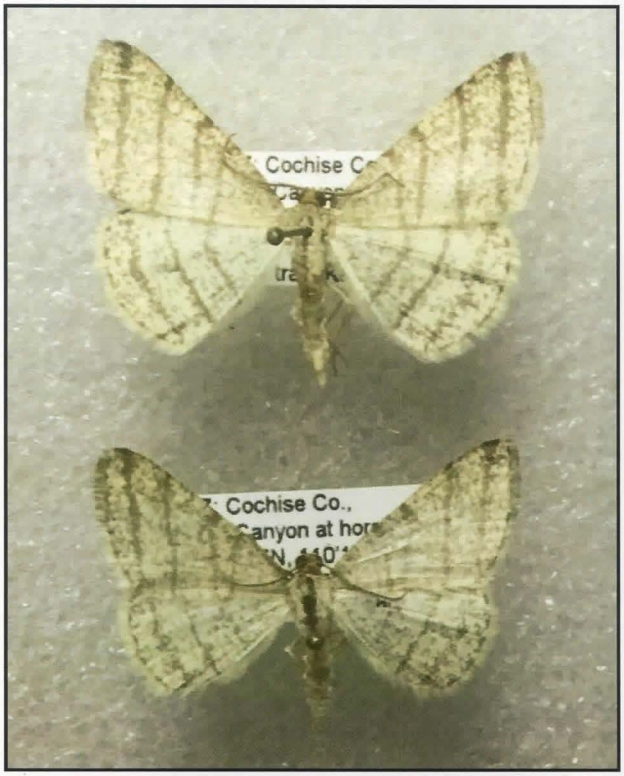
Lacosoma arizonicum, Tolype nigricaria

Caripeta macularia



Condica albolabes, Lophoceramica artega

Nemoria splendidaria



Taeniogramma octolineata

***Nemoria splendidaria* (Photo by Kathryn Busby)**

Storm clouds, leaving Carr Canyon, Arizona

(Kelly Richers, E-Mail: kerichers@wuesd.org)

HIGH ALTITUDE SPRING BUTTERFLYING IN THE SOUTHERN ROCKIES

BY

CRAIG W. MARKS

In the fall of 2001, Steven Cary wrote an article about Sugarite Canyon State Park (New Mexico) in NABA's *American Butterflies* magazine. I have always enjoyed the "Definitive Destination" articles in that magazine, paying particular attention to any species identified therein with which I was either not familiar or had an interest in seeing. Cary's reference to Alberta Arctics in his article immediately caught my eye.

The Alberta Arctic (*Oeneis alberta*) is sometimes also referred to as the Prairie Arctic. It is a smaller arctic found primarily east of the Rocky Mountains. Its range is from Canada to Montana and North Dakota, skipping Wyoming and then in Colorado, New Mexico and Arizona where isolated populations exist around 9000' in altitude (one source suggested it "occupies the lowest habitat for its genus"). Despite that large range, Scott (2016) suggested, "it occupies few places in the U.S." Royer indicated there were "very few records" from the northwestern corner of North Dakota, and Fisher felt it was one of the "more difficult butterflies to find" in Colorado.

It is a spring arctic, flying annually in its southern range from mid-May to early June. Its preferred habitat is dry, tundra-like prairie with bunchgrass. Royer described it as colonial, but in isolate colonies present in windblown shortgrass prairie. The host plant in Colorado is *Festuca idahioensis*, described as, "a moderately-sized bunchgrass in prairie or sparce-sagebrush." Cary suggested *F. idahioensis* and *F. arizonica* may be the food plants in New Mexico.

While Fisher described it as a miniture *chryxus,* he suggested it was more often confused with *uhleri* which can occasionally occur in the same locals. Both Fisher and Cary noted typically the need to walk through the bunchgrass in order to "kick up" the butterfly as they spent the majority of their time resting in that grass, although Fisher did note that both sexes may fly up to investigate a "passing interest." Fisher also noted their activity is limited to the warmth of late morning, with activity ceasing by 2:30-3:00. Scott (2020) suggested it "probably" rarely visits flowers but was noted to "often" visit mud. He reported that males rest, awaiting females "in swales of gentle slopes in the open grassland," "mostly on the ground."

The race found on the Raton Mesa has been called the Capulin Mountain Arctic as it was first discovered at Capulin Mountain National Monument in Union Co., NM; however, Cary has indicated it may now be extirpated from that location. At Sugarite Canyon SP, it has been found among the bunchgrass on Little Horse Mesa at about 8300' as well as on other "wind blown grassy mesas" which make up the Raton Mesa complex (including immediately across the state-line in extreme southern Colorado). It has also been located at Sierra Grande State Park in NM.

My first attempt to see this arctic was on 5/26/2004, when my Dad and I traveled to Sugarite Canyon SP. We had a beautiful day with sun, mild temps. and moderate wind, but I found no arctics on Little Horse Mesa [although I did find a couple of W. Pine Elfins (*Callophrys eryphon*) among the trees]. At the time, I thought I was too late in its season to find it. We ended up seeing 14 species there in the park along with several Pronghorn Antelope, 2 Mirium Turkeys and Broad-tailed and Black-chinned Hummingbirds.

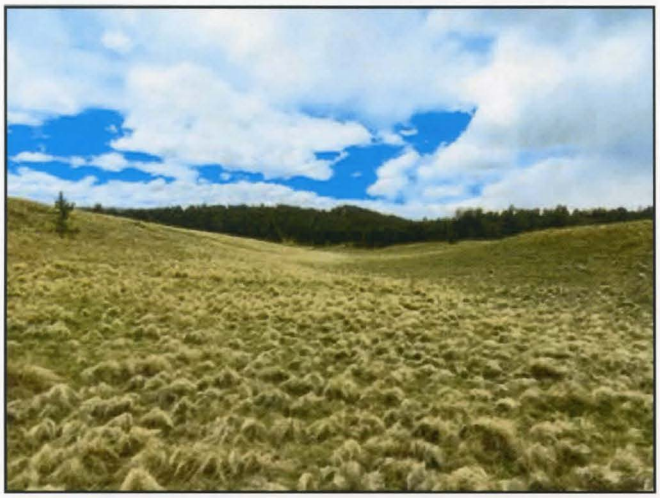
Fast forward to March 2021. After successfully finding Jutta Arctics and Macoun Arctics in 2020 (see Vol. 43, No. 1, p. 9 of the Southern Lep. Society Newsletter), I decided to try again to find Alberta Arctics with my initial attention directed back at Sugarite Canyon. In furtherance of that hope, I reached out to Steve Cary by e-mail, and he was nice enough to respond. He suggested my target date should be the 5/15-16 weekend, but he cautioned that spring weather in that region could be extremely unpredictable as well as inhospitable for butterflies.

My daughter had a soccer game in Arkansas in mid-March so I drove up to watch. Taking advantage of that opportunity, I went searching for Cobweb Skippers at Bells Slough (without success) with Bob Harden, a butterflier, dragonflier and birder as well as photographer extraordinaire, and with whom I have done two NABA counts in Arkansas over the last 10 years. I mentioned my May plans to Bob. With a son living in the Denver area and a desire to spend some time in the region, he agreed to join me. So, the plan developed that on 5/14, I would fly into Colorado Springs (the closest airport to Raton) where Bob would pick me up, and we would head south to visit the Raton Mesa on the 15th and 16th. The plan was that after I left on the 17th, he would head on to Denver, Rocky Mountain NP and other locations on his own.

During the days before May 14, the weather at Raton looked foreboding, chilly, gray and wet. Bob, who was already in the region, confirmed my concerns. As Steve Cary had warned, flexibility is required when spring butterflying in the Rockies, so I decided to push back my departure until May 21. In the interim, Bob would head on to Denver and then to the other locations he had on his agenda.

When I arrived on the 21st, the weather in the Raton area was still disappointing so we went to plan B which involved staying in the Colorado Springs area where the weather was more accommodating with warmer temps and partly cloudy skies. I landed at 10:00, and we immediately headed north to Teller County. We ended up walking in an area of open, dry grassland and ponderosa pines at around 8600'. The wind was steady with alternating periods of sun and cloud cover.

It was not too long before I flushed a Painted Lady, but the insect/butterfly activity was primarily limited to a couple of species of grasshoppers. After about a half hour, I decided to walk down into a gully between two swales (see picture), thinking that the Alberta Arctics might be in that gully to avoid the wind. In just a few moments, I kicked up a male, but shortly thereafter the sun disappeared and there was no further activity.



Teller County, Colorado, at about 8600', 5/21/21

We continued to walk for at least an hour in intermittent the sun. Bob saw a fresh Cabbage White (*Pieris rapae*) (see photo) and then headed to his truck to get some water. Because the sun was shining, I decided to walk back into the gully we had traversed previously. I saw immediate activity. At least 5 individuals were moving around, with brief flights up out of the grass before diving back down. On one occasion, I was watching one that had flown about 10 feet when a second popped up to briefly investigate.

Just before 3:00, the sun disappeared again, and all activity ceased. By that time, I needed some water, so I returned to the truck. Not seeing any sun in the immediately foreseeable future, we decided to head back to Colorado Springs where the weather appeared better. We arrived at Bear Creek Nature Area around 4:00 and walked for an hour without seeing a single butterfly.

Cabbage White, Teller Co., 5/21/21

The next morning was warm and sunny. By 9:30 we were back at Bear Creek. Although there were flowers blooming and water flowing in the creeks, we only saw 2 Mourning Cloaks and two Cabbage Whites. Disappointed at the lack of activity, we headed back to Teller County, arriving at yesterday's location about 12:00. We walked directly back to the gully and spent about one hour in that immediate area. With the sun shining most of the time, we saw a minimum of 6 Alberta Arctics, and this time Bob was able to get some good pictures. The first male we saw posed patiently while Bob took his picture but then a grasshopper flew over, and he gave immediate chase.

Alberta Arctics, Teller Co., 5/22/21

On occasion, an arctic would simply pop up in front of us without having been flushed. Other times, they were clearly disturbed as we walked through the gully. Both males and females were present although my impression was that most were males. The fight was always brief unless picked up and carried away by the wind. While airborne, they flew just above the grass, with the brighter, dorsal goldish tan color showing. Most stayed in the bottom of or flew along the northern side of

the swale; however, upon being disturbed, two actually flew up and out of the gully onto the top of that northern swale, before landing on bare ground.

I have included a couple of up-close pictures of what I believe was the grass they were using as their larval foodplant (see below). Some would perch on bare spots between the clumps of the grass where they sat with their wings closed, extremely difficult to discern. Others would perch on top of the grass, where they were much more noticeable as dark splotches in the otherwise lighter colored grass.

Grass that may be used by larvae

By 2:30ish, the sun went behind the quickly gathering clouds, and, just as the day before, all activity stopped. I would note that while we saw at least 6 of the arctics from about 12:00 to 2:30, we saw no other butterflies that afternoon. With a long drive ahead, we decided to head toward Raton. In route we drove through three severe cloudbursts. When we arrived in Raton, there was a tornado watch in place, and the skies over the mountains were black with rain. The storm hit in the middle of the night with significant lightning and hail.

The next morning was gray and very windy. The forecast was for clearing skies and, by 11:00, we had clear blue skies. We headed to Sugarite Canyon where, while the forecast of bright sun and warm temps was correct, the projected strong winds also held true. I didn't see my first butterfly until almost noon, an Echo Blue (*Celastrina echo*) on the trail up to Little Horse Mesa. Upon arrival at the top, the winds were howling. Living in Louisiana, I've had experience with high winds associated with hurricanes and tropical storms. I can say without fear of contradiction that the wind on Little Horse Mesa that Sunday qualified as "high" under any definition. I had to continually use one hand to hold my hat on my head or lose it.

In the face of that wind, there was nothing flying on the mesa, not even birds. After an hour, we came down with no plans of returning later in the day. I did see some butterflies along the trail at the base of the mesa, including three Rocky Mountain Duskywings (*Erynnis telemachrus*), a lifer for me. Others seen included a tiny Dreamy Duskywing (*E. iselus*), several more Echo Azures, a Marine Blue (*Leptotes marina*), an American Lady (*Vanessa virginiensis*), a Red Admiral (*V. atalanta*) and a couple of unidentified commas. We also saw an Orange Sulphur (*Colias eurytheme*) at Lake Maloya.

Rocky Mountain Duskywing, Sugarite Canyon, 5/23/21

We only saw 3 dragonflies, one of which I believe was a skimmer (Roseate vs Red Rock?). Bob got a picture of a green tiger beetle, possibly a Cow Path Tiger Beetle (*Cicindela purpurea*). The lack of insects was offset by

Possible Cow Path Tiger Beetle

the number of "fun" birds, the highlight of which were five Lewis's Woodpeckers. All of the pictures herein were taken by Bob, are used with his permission, and are much appreciated as my camera skills typically turn out to be much lacking.

Sugarite Canyon, 5/23/21

In the end, I didn't really see a lot of butterflies. Bob was luckier that I, seeing several good western/mountain butterflies before I arrived, particularly at Mesa Verde, Colorado. I did see the butterfly I set out to see, and, in addition, I was able to visit some unique habitat I had not previously experienced, saw some cool birds and enjoyed some time away from work. Any chance to be outdoors is better than time spent behind a desk.

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MANY THANKS TO THE FOLLOWING MEMBERS WHO DONATED TO THE SOUTHERN LEPIDOPTERISTS' SOCIETY

Sustaining	Contributor	Benefactor	Benefactor+
Charlie Covell	*Monica Krancevic*	*Jon Turner*	*Tom Neal*
Sharalee L. Dias Pod	*Richard L. Brown*		*Rosemary Seidler*
Lawrence Hribar	*Riley Gott*		*Sara Bright*
Stanley A. Gorodenski			

MONSTROUS MARVEL, THE REGAL MOTH

BY

LINDA BARBER AULD, NOLA BUGLADY

Listed in the *Peterson Field Guide to Moths of Northeastern North America* as an uncommon Royal Silkworm Moth, the Regal can have a whopping 3.5 to 5.5 inch wingspan (Covell 2005). It has been my distinct pleasure to observe the growth of its fantastic caterpillar, the "Hickory Horned Devil" only four times during my 45 years of raising butterflies and moths. First in 2006 my friend, Kirk Dietrich, brought me two caterpillars. In 2009 at the BugStock-6 event at the Barney Farm in Washington, Louisiana, a female Regal appeared at someone's blacklight rig and laid multiple eggs. Next in 2016 I adopted three partially grown larvae from Amy Graham, Director of Gardens at Longue Vue Gardens in Metairie, and again just recently when she asked me to ""babysit" seven of these outstanding creatures while she was out of town.

The Regal Moth, *Citheronia regalis*, a member of the insect family Saturniidae, is one of the largest, most spectacular moths in our region. Like most other moths, it is nocturnal. Regals have a short life as an adult because it possesses no functional mouthparts (only feeds in the caterpillar stage). Although its range covers the deciduous forest areas of the eastern United States from New Jersey to Missouri and southward to eastern Texas and central Florida, (Wagner 2005) it is discovered occurring more in the southern part of its distribution.

The Hickory Horned Devil is among the largest of our native saturniid caterpillars, reaching to the size of a fat cigar or large hot dog. Mine measured 4 ½ inches long! Its color slightly varies, but is usually blue-green. Although this larva has a fierce appearance, it is harmless. The caterpillars eat a wide list of host trees and are usually found on species of the family Juglandaceae which includes walnut (*Juglans nigra*), butternut or white walnut (*Juglans cinerea*), and a variety of hickories (*Carya spp.*), including pecan. Persimmon (*Diospyros virginiana*), sweetgum (*Liquidambar styraciflua*), and sumacs (*Rhus spp.*) are other frequent hosts with reports that larva grew larger and faster on persimmon (Heppner 2003).

Having only one life cycle per year, the Regal overwinters in the pupal stage. Adults mate during the second evening after emergence and begin ovipositing at dusk of the third evening. Eggs hatch in six to ten days and the caterpillars are consuming foliage for approximately thirty-five days.

Parasitoids of the Regal: At least five species of tachinid flies (Diptera: Tachinidae), one species of sarcophagid fly (Diptera: Sarcophagidae), and one species of braconid wasp have been reported. Tachinid parasitoids of *Citheronia regalis*: *Belvosia argentifrons, Belvosia bifasciata, Belvosia townsendi, Lespesia frenchii,* and *Winthemia cithoniae;* Sarcophagid parasitoid: *Sarcophaga lambens;* and Braconid parasitoid: *Cotesia teleae.*

With everything we do, we always learn something. Unfortunately, none of the caterpillars I've raised have successfully hatched as adult moths. The first two opportunities ended with emergence of horrid tachinid flies and the third time they did not complete pupation. My theory is that the plant material which I fed them had been cut and placed in water for several days but still appeared to be "fresh". Over time the plant material degrades and loses the moisture essential for the caterpillar to function. In nature, the caterpillars have benefit of dew and rain but in captivity they do not. It's a delicate balance. This time I cut fresh food branches every morning when cleaning out the cage of their enormous poop, which resembles the shape of a hand grenade. The branches were stuck into a plastic vial filled with water to keep the plant material fresh but I paid particular attention to covering the vial top to prevent the caterpillar from accidentally crawling down inside and drowning.

Amy Graham shared a link with excellent information that answered many questions as to why the creatures may not have finished properly. Helpful "Do's and Don'ts":

1) Offer several different host plants. Don't rely on a single host that is in short supply. Remember, they feed for thirty-five days.

2) Avoid overcrowding. Despite the Regal's resistance to disease, overcrowding is never a good idea. Divide up your Regal eggs so there are only a few eggs in a good sized hatching container. Don't put all your eggs in one basket!

3) Hatchlings can have the behavior where they arrange themselves so that the top of the body looks limp and is bent downwards toward the anal claspers. In this typical resting posture, they resemble bird droppings and their pose can simply be a camouflage mechanism. (I called this "the droop".)

4) When you see larvae crawling around at the cage/container bottom, it is time to remove them to pupation chambers. At this time, their coloration turns a pretty aqua.

5) The larvae are simply placed inside a individual chamber, allowing them to "sweat" and shrivel considerably. This is natural~! Legs will get stumpy and larvae should pupate within three to five days. They may crawl around for a day, resembling a rowdy child who is resisting going to sleep, before settling to the container bottom. Darkness helps so I placed a towel over the cage.

6) It is suggested to use a Styrofoam cooler as a pupation box. Put a layer of moist paper toweling at bottom and a few layers of crumpled newspaper and more moist paper toweling. The Regal larvae burrow to the bottom and pupate. (I used a large, clear Tupperware thinking I could watch them better. I placed a few sweet gum leaves between paper towel layers to give them a familiar smell and just in case they wanted a last minute snack.)

7) Newly formed pupae are extremely soft and should not be moved/touched for at least several days to give pupal shell a chance to harden.

8) It's not good for larvae to crawl over other fresh pupae, so consider smaller individual chambers for larvae that are ready to pupate. (I created a cardboard divider, separating them into 4 sections, putting the date each one pupated which they staggered: #1 - 7/27/21; #2 - 7/29/21; #3 - 7/30/21; #4 - 7/31/21; #5 - 8/2/21; #6 - 8/8/21 and as of today 8/10/21, # 7 – I call him "the runt"– is still eating. They do this behavior so that they will also emerge at different times in the spring, somewhat helping assure continuation of the species.)

9) Pupae can be kept wrapped to keep moisture constant all the way to emergence. Wrapping consists of taking the hardened pupae and literally wrapping them in a piece of toilet tissue or tissue paper. Don't make the wrap too tight; placing the pupa at one edge of the tissue and then gently rolling will have the desired effect.

10) In the fall, the wrapped pupae can be placed in storage tubs. A light misting of the tissue will help to conserve moisture and simulate the humidity encountered in the natural subterranean chambers. Check your storage containers once a month throughout winter and mist wraps if necessary. This monthly check also serves to freshen air in otherwise airtight container. In the spring, pupae can come out of storage and should be placed in an emergence cage.

11) Their caterpillar host plant list is much more extensive:

Scientific Name	Common Name	Scientific Name	Common Name
Carya glabra	**Pignut hickory**	***Nyssa sylvatica***	**Black gum**
Carya illinoensis	**Pecan**	***Oxydendrum arboreum***	**Sourwood**
Carya ovata	**Shagbark hickory**	***Platanus occidentalis***	**American plane tree/Sycamore**
Cephalanthus occidentalis....	**Button Bush**	***Platanus orientalis***	**Oriental sycamore**
Corylus	**Hazel**	***Prunus domestica***	**Garden plum**
Diervilla	**Bush honeysuckle**	***Prunus serotina***	**Wild black cherry**
Diospyros virginiana	**Common persimmon**	***Quercus***	**Oak**
Fraxinus	**Ash**	***Rhus cismontana***	**Mountain sumac**
Gossypium herbaceum	**Levant cotton**	***Rhus choriophylla***	**Sumac**
Juglans cinerea	**Butternut**	***Rhus glabra***	**Smooth sumac**
Juglans nigra	**Black walnut**	***Rhus laurina***	**Laurel sumac**
Juglans regia	**English walnut**	***Rhus typhina***	**Staghorn sumac**
Ligustrum	**Privet**	***Salix***	**Willow**
Liquidambar straciflua.....	**Sweetgum**	***Sassafras albidum***	**Sassafras**
		Syringa vulgaris	**Common iliac**

12) Opening the first pupation chamber this morning. I am delighted to report that all of the first four have successfully pupated! Hurray!

Photos – a mixture of ones taken through the years during each rearing opportunity – all by Linda Auld.

Regal moth eggs.

A few days old.

Imitating the "bird splat".

See how they change colors as they grow.

Surprisingly, they like to eat while standing on their head! Using suction cup toes to hold onto branch hanging upside down while eating – resembling a sloth's position.

Ornamental headdress like Chinese dragon head.

Biggest one measures 4.5 inches.

Turns aqua before going into pupation chamber.

Top pupa is hardened. Bottom one is freshly pupated and outer covering is still soft.

The final product: Adult Regal Moth.

(Linda Auld, E-Mail: nolabuglady@gmail.com)

SPECIMENS OF BEAN POD BORERS (*MARUCA VITRATA*) COLLECTED IN FLORIDA

BY

JAMES E. HAYDEN

The bean pod borer, *Maruca vitrata* (Fabricius) (Crambidae), is a major pest of legumes. It is established in most tropical countries, but breeding populations (evidenced by immature stages) are not known in the continental United States. Vernon Brou has collected this species at light in Louisiana (Brou 1993). Because it occurs in the Greater Antilles, including Cuba (Núñez Aguila and Barro Cañamero 2012), it is predictable that specimens may turn up in southern Florida. After David Fine and Jim Troubridge collected a specimen on Big Pine Key in 2018, the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) visited the site (Figs. 8, 9). After three days of searching widely, we did not find larvae in legumes on the Keys, nor did any turn up in the Malaise trap set afterwards for monitoring (Steele Cabrera et al. 2020).

In preparation for the DPI survey, I visited the collection of Terry Dickel at his house in Anthony, Florida. He collected extensively in the Florida Keys from the 1970s to the 1990s, and he reported a specimen of *M. vitrata* in 1980 (Dickel 1981). My eyes popped out when I saw that he had caught ten more over the years. This year, Terry formally donated his specimens to the Florida State Collection of Arthropods, curated in the McGuire Center (University of Florida, Gainesville). The data of his specimens are informative:

FL, Miami-Dade County: 1♀: Fuchs Hammock near Homestead, 14 Mar. 1986; 1♀: Fuchs Hammock near Homestead, 2 Apr. 1987*; 1♀: [Coral Gables], USDA CF [Chapman Field], 13 May 1983*; **Monroe County:** 1♂: Upper Key Largo, 1 Mar. 1980; 1♀: Upper Key Largo, 8 Feb. 1992, mercury vapor lamp; 1♀: Long Key, 27 Jan. 1984; 1♀: Long Key, 24 Feb. 1984; 1♀: Long Key State Rec. Area, Long Key, 16 Mar. 1986; 1♀: Bahia Honda State Recreation Area, 20 Feb. 1988, mercury vapor lamp; 1♂: Bahia Honda State Recreation Area, 12 Mar. 1989, mercury vapor lamp; 1♀: No Name Key, 19 Mar. 1987, mercury vapor lamp.

Fuchs Hammock was the site of Terry's house. Chapman Field is the site of the USDA's Subtropical Horticulture Research Station.

Linwood Dow collected one specimen, deposited in the McGuire Center:

1♀: Monroe Co., Key Largo, 11 Mar. 1986 (Fig. 3)

The one collected by David Fine and Jim Troubridge:

1♀: Monroe Co., Big Pine Key, trail N. of Blue Hole, 24.7093, -81.3824, UVL trap, 13 Mar. 2018 (Fig. 7)

The specimens were collected in the spring, especially March. Most are from the Florida Keys, and most are females. Hurricane Andrew altered the environment in August 1992, and Terry stopped collecting in South Florida when he moved north in the 1990s. I know of no other specimens collected from then until 2018.

Most of the specimens have a wing pattern that is characteristic of the Greater Antilles populations. The marginal brown band of the hind wing (*m*) is relatively smooth, and the forewing white antemedial spot (*s*) is small and round (Figs. 1-3, 6). However, two (* above) have a pattern characteristic of the Central and South American populations (Figs. 4, 5). The hind wing marginal band is more jagged, the forewing antemedial spot is larger and U-shaped, and the smaller spot next to it is relatively large.

As an unexpected coda, Laura Gaudette collected a specimen at her moth lights in Gainesville in 2019:

1♀: Alachua Co., Gainesville, 1721 NE 75th St. UV & porch light, 22 Oct. 2019 (Fig. 6)

It has the wing pattern of the Caribbean population. Laura and I walked her property and nearby fields but found no legumes infested with this species. The specimen is unusual: it was collected in October, in North-Central Florida, and the forewing white spots are covered with melanic black scales. This could have been caused by cold stress during development (Andrei Sourakov, pers. comm.). I have never seen other such melanic specimens of *M. vitrata*.

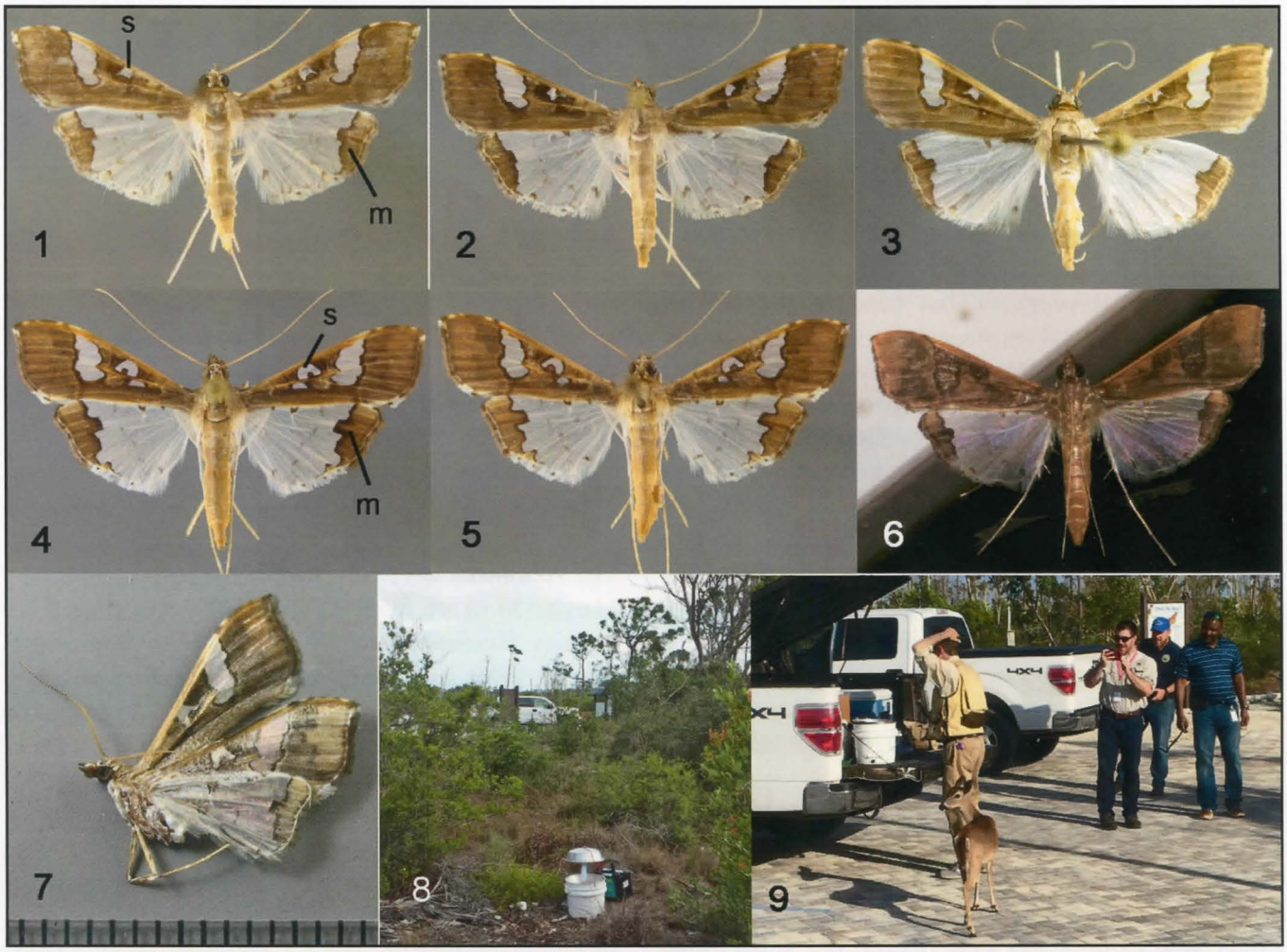

Fig. 1. Dickel's first (1980) specimen; 2. Dickel's last (1992) specimen; 3. Linwood Dow's specimen; 4. Fuchs Hammock, 2 April 1987, leg. Dickel; 5. Chapman Field, 1983, leg. Dickel; 6. Live specimen taken by Laura Gaudette (2019, Gainesville), with black-scaled forewing spots (photo courtesy of Laura Gaudette); 7. Fine and Troubridge leg., Big Pine Key, 2018 (scale mm); 8. UV light trap set by DPI at Fine and Troubridge's site (which yielded no more specimens); 9. The author (left) oblivious to one of the ubiquitous Key deer. More observant DPI personnel left to right: Brad Danner, Jason Stanley, Leroy Whilby (photo courtesy of Jake Farnum, USDA).

Kimball (1965) knew of none collected in Florida except for port interceptions in commodities from Puerto Rico. In his words (p. 304), the finds "are listed as an illustration of what might take a foothold [...] [T]here are many potential pests which are ready to pounce greedily on our vegetation and against which we must be on our guard.

Thanks to Julieta Brambila (USDA) and DPI personnel Kevin Burnette, Paul Skelley, and Greg Hodges for reviewing this article.

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(james.hayden@fdacs.gov)

BRUSH-FOOTED BUTTERFLIES (NYMPHALIDAE) OF ARKANSAS

BY

HERSCHEL D. RANEY, JR., AND COLLABORATORS

This is the 5th in a series of 5 reports illustrating the distributions of Arkansas' 162 recorded butterfly species. The dot maps displayed are based on the website, "Arkansas Butterflies" [http://www.hr-rna.com/ RNA/ Butterfly%20main.htm]: those in the present report represent the 40 nymphalid species known from the state. Previous reporting in the SL NEWS has treated Arkansas' other butterfly families (website described, SL NEWS 41(2): 116-117; **hesperiid** maps, 41(4): 311-323; **lycaenid & riodinid** maps, 42(2): 109-116; **papilionid & pierid** maps, 42(4): 335-340). The records included are based on voucher specimens, clear photographs, and sightings reported by experienced observers.

Nomenclature, Symbols: Technical nomenclature in this article follows Pelham (2008, *A catalogue of the butterflies of the United States and Canada with a complete bibliography of the descriptive and systematic literature*, J. Res. Lep. 40: xiv + 658 pp.). Each species' unique **P** number (referring to Pelham 2008) is shown beneath its assigned dot map, followed by the species' 'MONA' number (from Hodges 1983, prefix **H83**). Asterisks (*) placed to the right of selected **P** numbers (7 cases) designate species regarded as strays or vagrants in the state. Sincere appreciation is extended to the naturalists who have provided records for this mapping effort: a list of contributors, along with a KEY to the use of colored dots, is included at the end of this report.

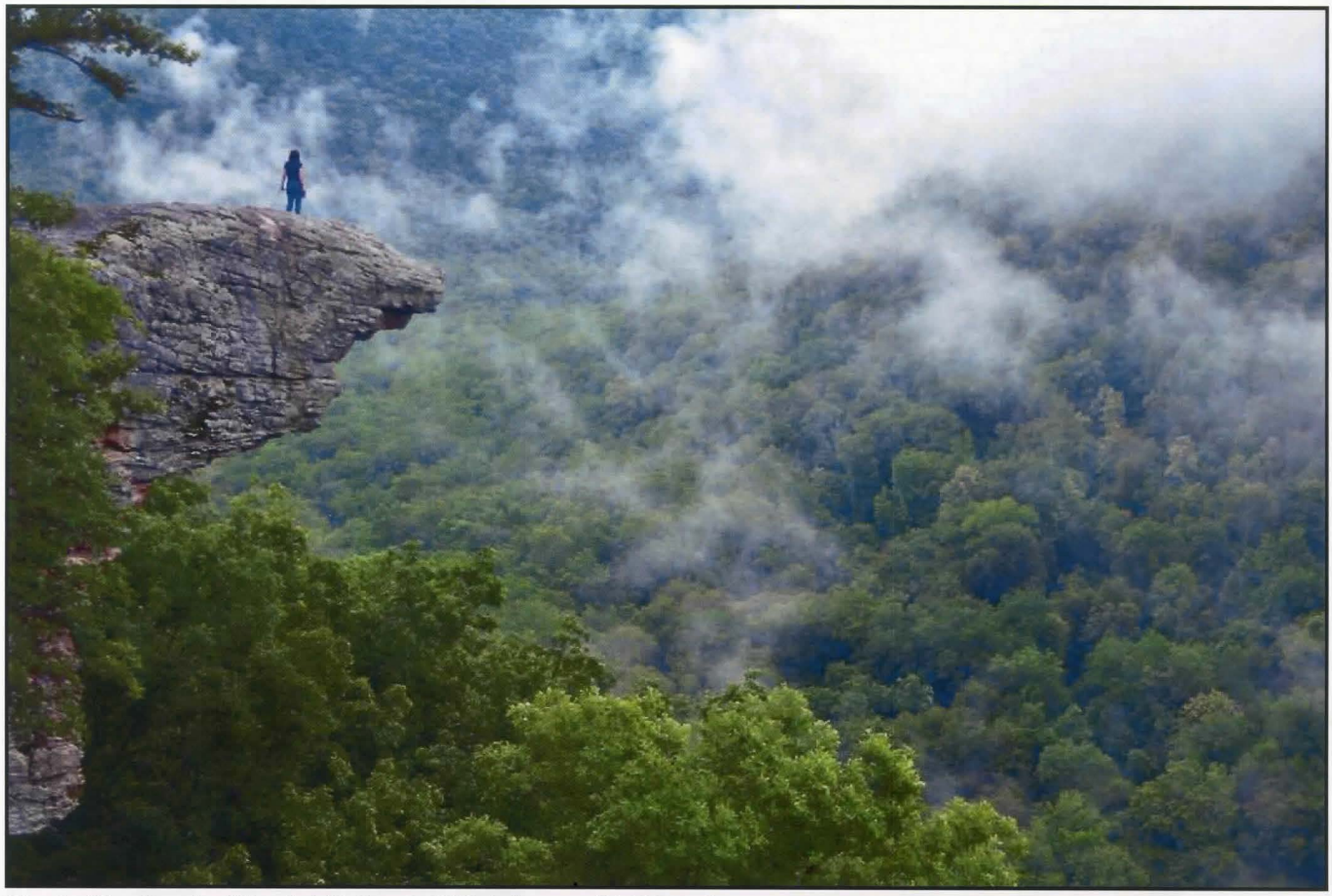


Fig. 1. The Ozarks (Hawksbill Crag), NW Arkansas [Jeff Rose].

DISTRIBUTIONAL MAPS OF ARKANSAS NYMPHALIDAE

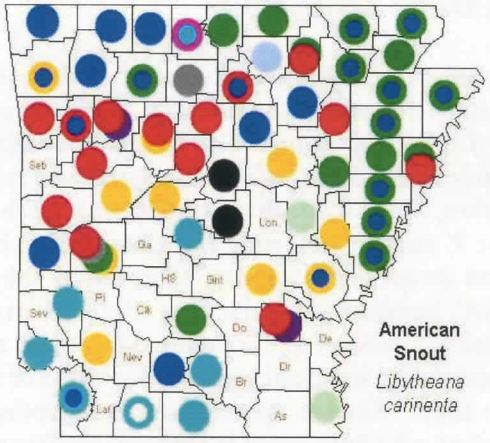


Fig. 2. P**586** [H83:4411].

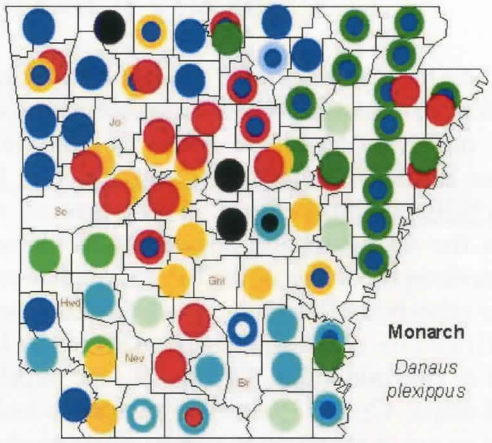


Fig. 3. P**588** [H83:4614].

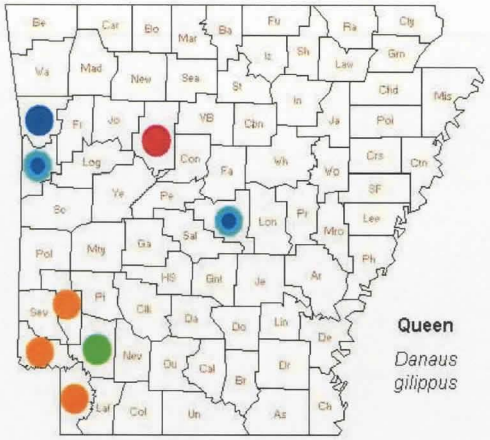


Fig. 4. P**589*** [H83:4615].

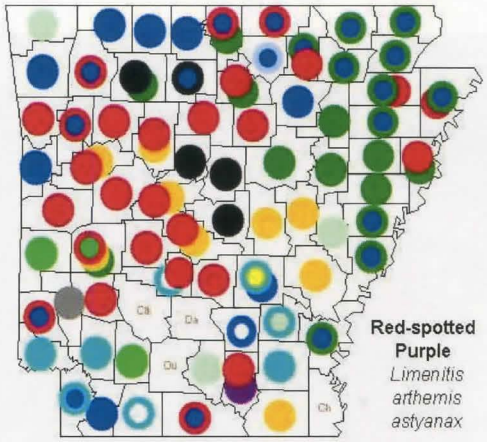


Fig. 5. P**593** [H83:4522].

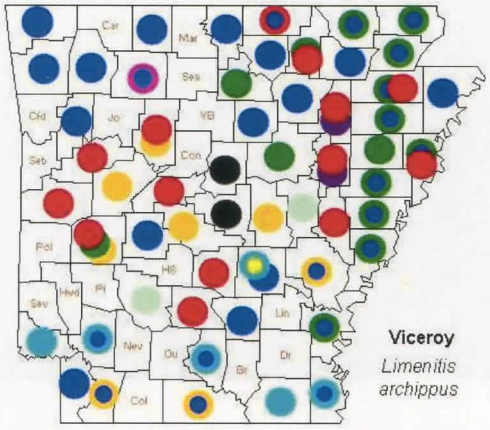


Fig. 6. P**596** [H83:4523].

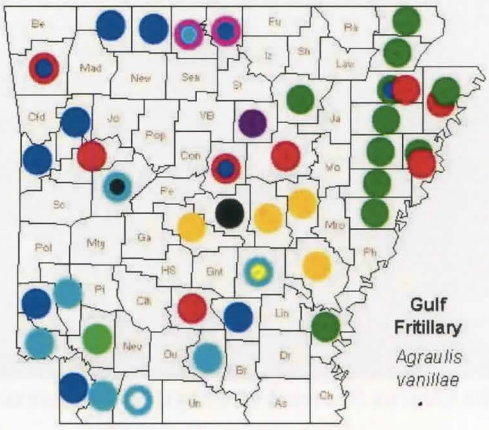


Fig. 7. P**602** [H83:4413].

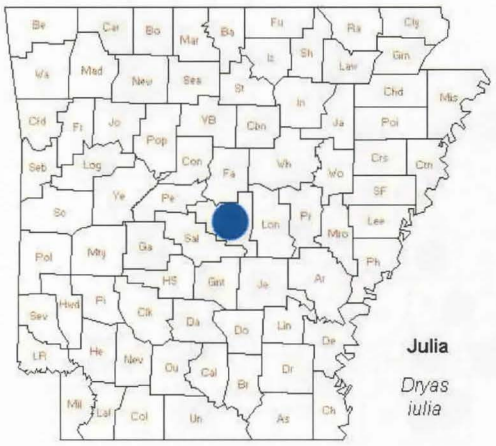


Fig. 8. P603* [H83:4416].

Fig. 9. P606* [H83:4418].

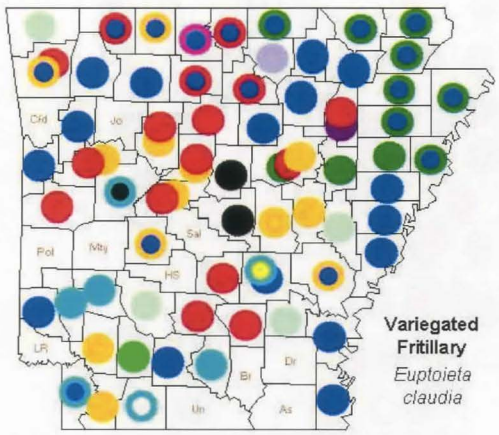


Fig. 10. P608 [H83:4447].

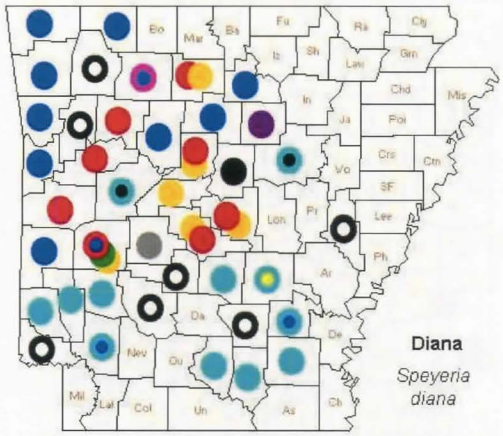


Fig. 11. P624 [H83:4449].

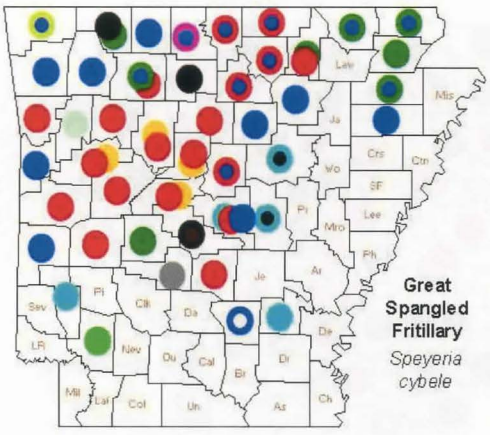


Fig. 12. P625 [H83:4450].

Fig. 13. P627* [H83:4452].

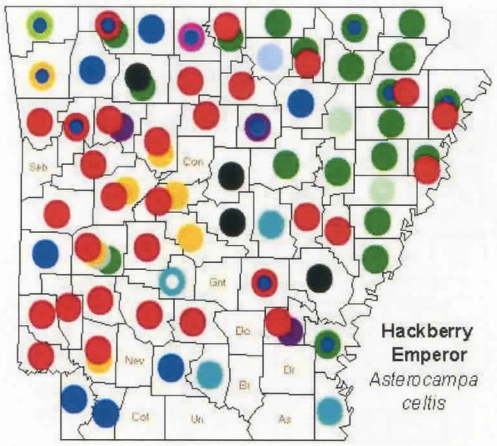


Fig. 14. P**640** [H83:4557].

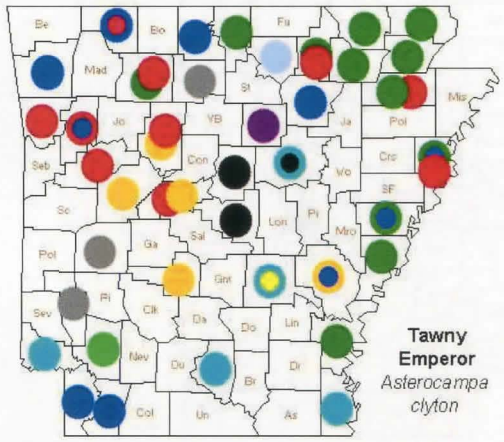


Fig. 15. P**642** [H83:4562.1].

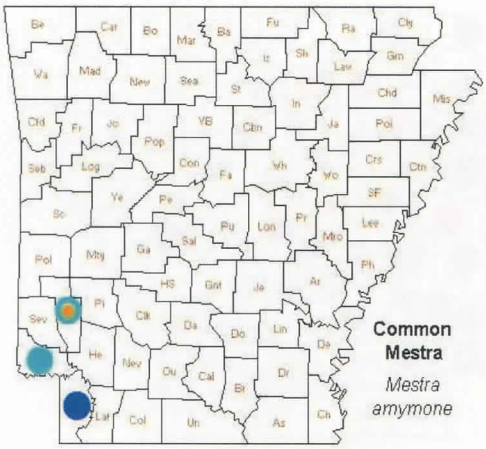


Fig. 16. P**647*** [H83:4537].

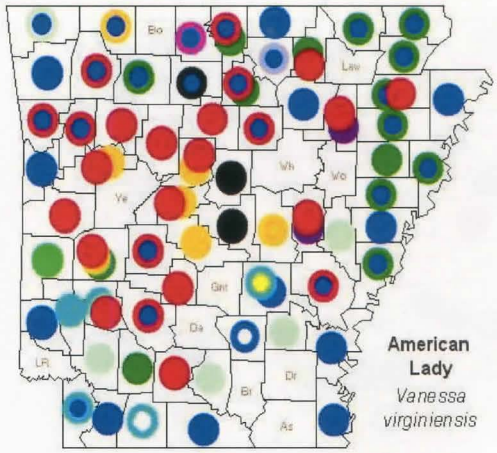


Fig. 17. P**672** [H83:4434].

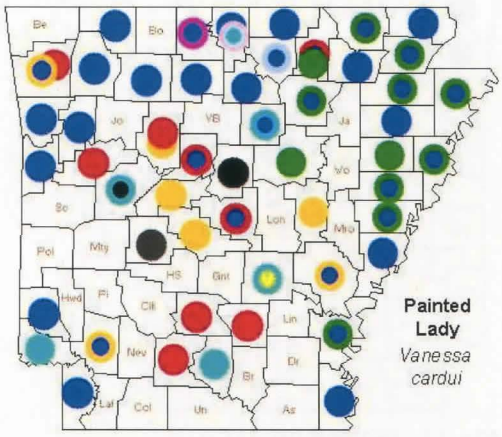


Fig. 18. P**673** [H83:4435].

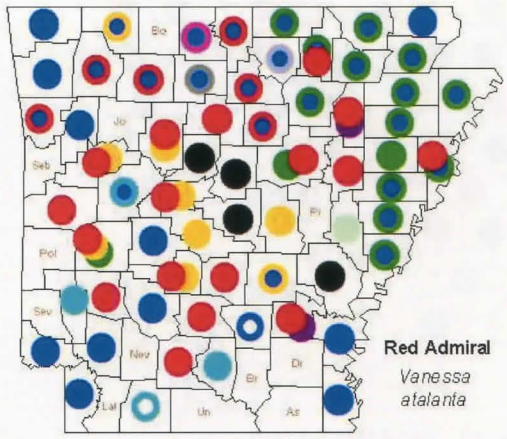


Fig. 19. P**675** [H83:4437].

Fig. 20. P677* [H83:4433].

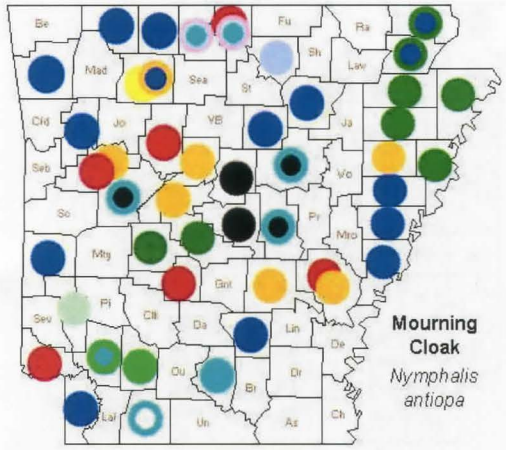


Fig. 21. P680 [H83:4432].

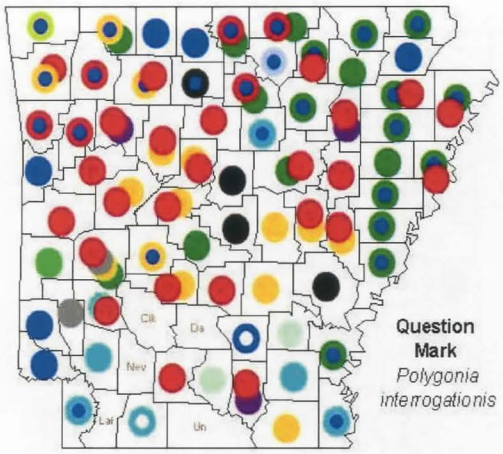


Fig. 22. P681 [H83:4420].

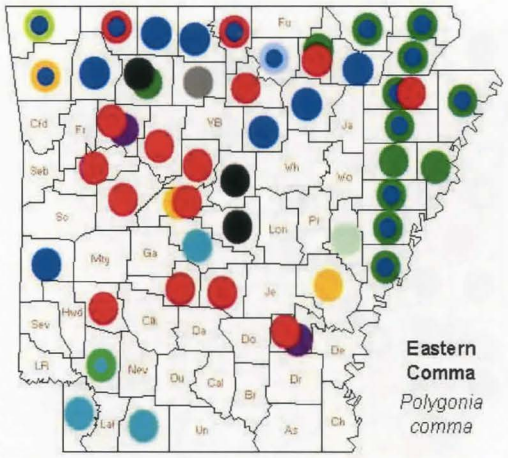


Fig. 23. P682 [H83:4421].

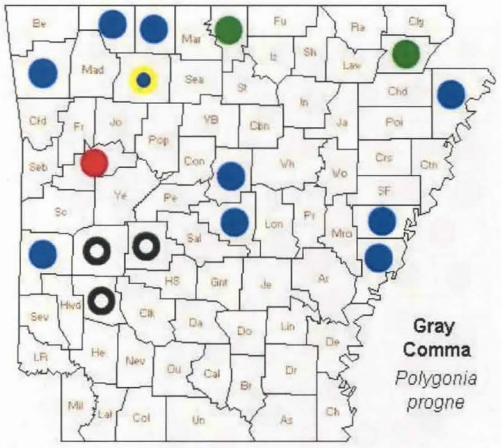


Fig. 24. P684 [H83:4429].

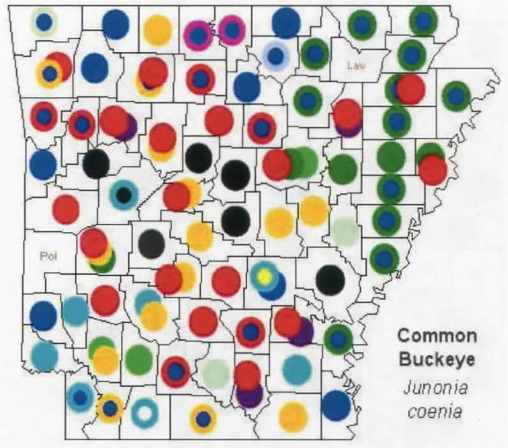


Fig. 25. P693 [H83:4440].

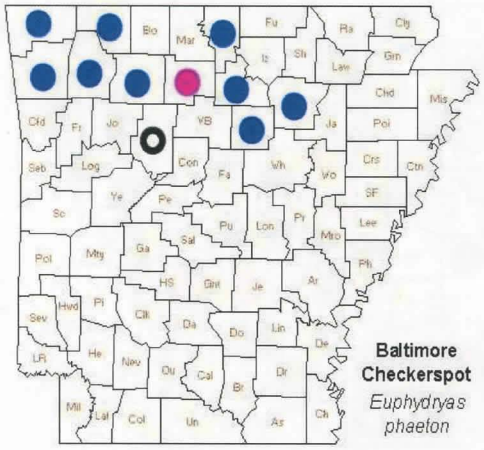


Fig. 26. P699 [H83:4516].

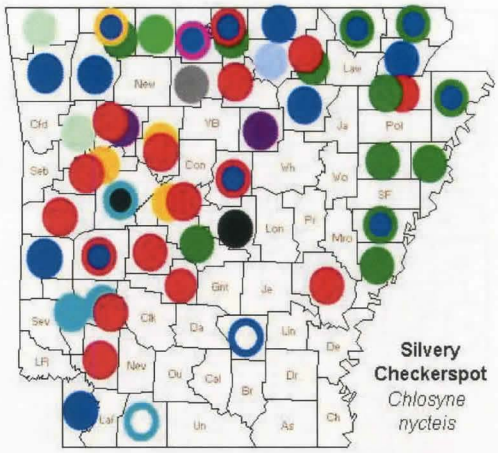


Fig. 27. P715 [H83:4490].

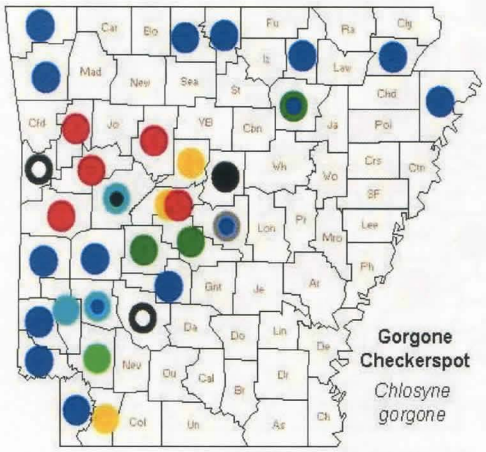


Fig. 28. P716 [H83:4489].

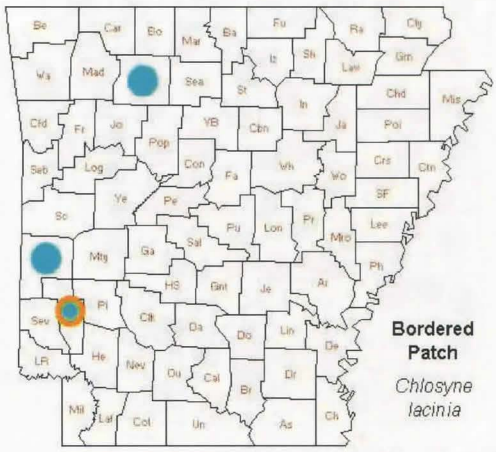


Fig. 29. P718* [H83:4499].

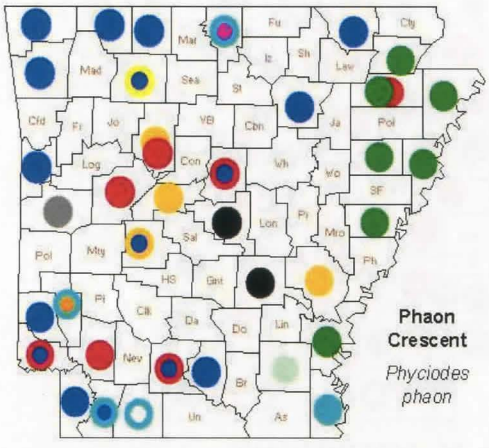


Fig. 30. P740 [H83:4480].

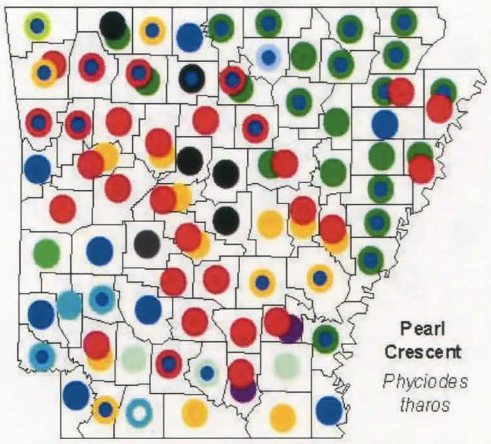


Fig. 31. P741 [H83:4481].

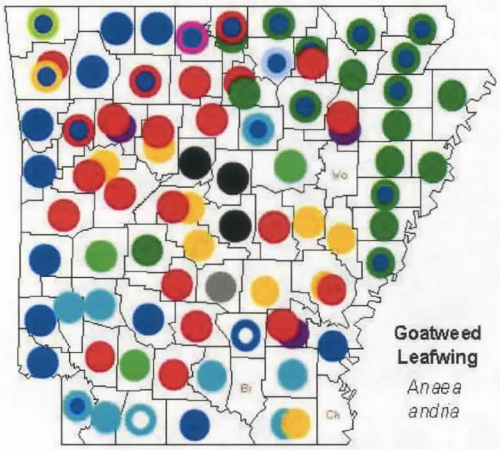


Fig. 32. P747 [H83:4554].

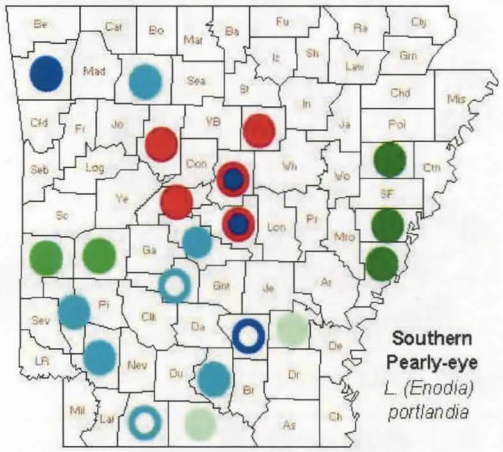


Fig. 33. P752 [H83:4568] [*Lethe*].

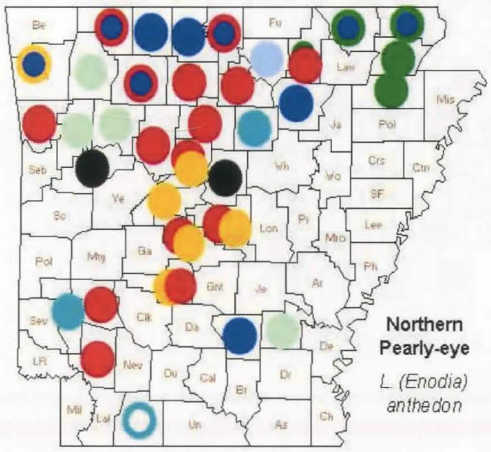


Fig. 34. P753 [H83:4568.1] [*Lethe*].

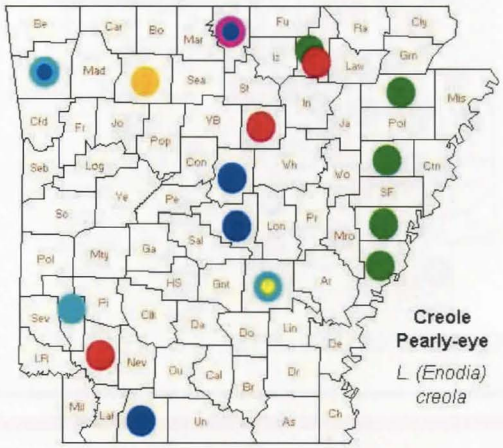


Fig. 35. P754 [H83:4568.2] [*Lethe*].

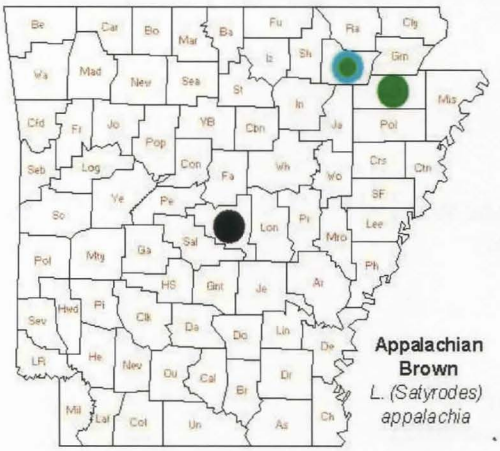


Fig. 36. P756 [H83:4569] [*Lethe*].

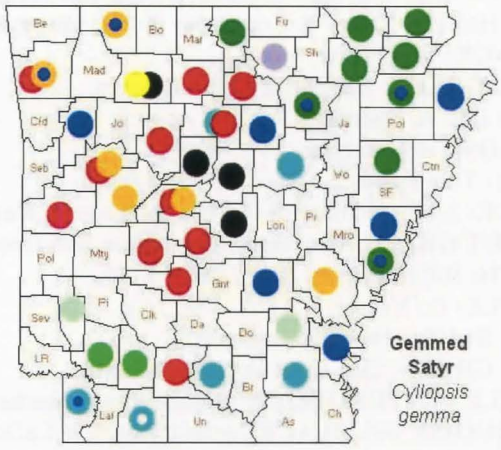


Fig. 37. P761 [H83:4573].

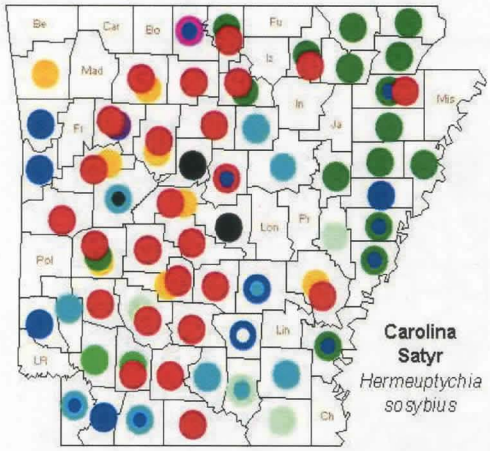


Fig. 38. P763 [H83:4575].

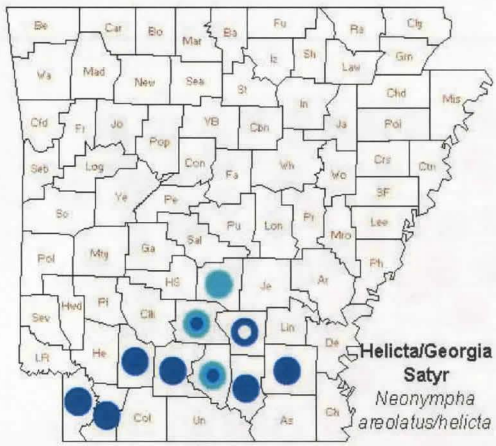


Fig. 39. P765,766 [H83:4576,4576.1].

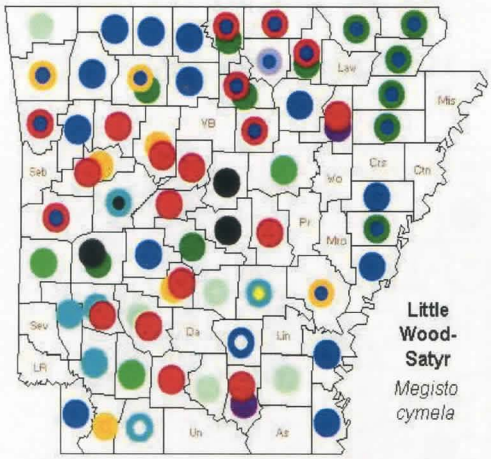


Fig. 40. P768 [H83:4578].

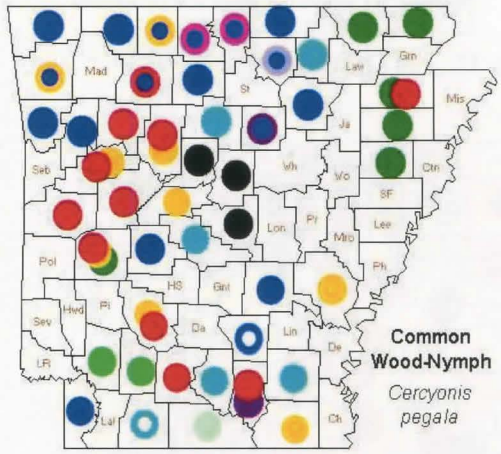


Fig. 41. P770 [H83:4587].

List of Collaborators & KEY to Colored dots

DARK BLUE dots: **USGS** surveys, pre-2004 ('baseline' records, incl. historical specimen collections).
DARK-BLUE-CENTERED dots: prior **USGS** records **confirmed** by more-recent sightings.
RED: Herschel **Raney** & Eric **Haley** & **Mt. Magazine** records.
ORANGE: Mel **White**.
DARK GREEN: Norman & Cheryl **Lavers**.
PINK: Lori A. **Spencer**.
YELLOW: Bob **Barber**.
GRAY: Tom **Lewis**.
BLACK: 3-sourced records (**USGS**, the **Lavers, Raney/Haley**, or Mel **White**).
BRIGHT GREEN: Heritage Commission lists (specimens or visual).
PEACH: Bill **Shepherd** &/or Lyndal **York**.
PURPLE: Bo **Verser**.
PALE BLUE: other (photographs).
PALE GREEN: Dan & Samantha **Scheiman**.
PURPLE with **TURQUOISE** centers: Rose **Maschek** (N. Arkansas).
TURQUOISE with **BLACK** centers: Kenny & LaDonna **Nichols** (post-2012).
TURQUOISE with **WHITE** centers: Devin **Moon** (Columbia Co. & SW Arkansas, 2016).
BLACK with **WHITE** centers: survey (**2010**) & action-plan papers from Baltosser, Rudolph, Ely, & Scheiman (**2015**).
TURQUOISE dots: **other** observers (visual records).

(Herschel D. Raney, Jr.; E-Mail: hrdragonfly1958@gmail.com)

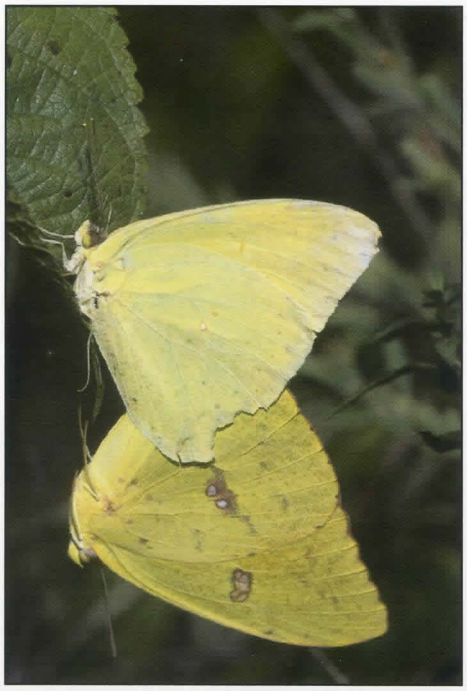
MATING LEPS
A PHOTO ESSAY
BY
BRYAN E. REYNOLDS

Here's the next installment of photo essays about lep behavior. The last issue of the SLS News, had an essay about courting leps. This issue showcases mating leps. 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 mating. Stay tuned, the next issue of the SLS News will feature ovipositing leps, and then after that, baby leps. I hope you enjoy the series.

Dainty Sulphurs, *Nathalis iole*, mating next to pupal case, Box Canyon, Coronado National Forest, Pima County, Arizona, 3 August 2018

Dainty Sulphurs, *Nathalis iole*, mating with intruding rival male, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 9 May 2012

Dainty Sulphurs, *Nathalis iole*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 May 2012



Cloudless Sulphurs, *Phoebis sennae*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 17 October 2006

←

Southern Dogfaces, *Zerene cesonia*, mating, Rick Evans Grandview Prairie Wildlife Management Area, Hempstead County, Arkansas, 30 May 2019

→

Orange Sulphurs, *Colias eurytheme*, mating, Little Missouri National Grassland, Summit Campground, McKenzie County, North Dakota, 23 August 2003

Little Yellows, *Pyrisitia lisa*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 8 October 2005

Eastern Tailed-Blues, *Cupido comyntas*, mating, Pontotoc Ridge Preserve, Pontotoc County, Oklahoma, 8 June 2013

Eastern Tailed-Blues, *Cupido comyntas*, mating, Pontotoc Ridge Preserve, Pontotoc County, Oklahoma, 23 August 2013

Silvery Blues, *Glaucopsyche lygdamus*, mating, Little Missouri National Grassland, Square Butte, Golden Valley County, North Dakota, 2 May 2004

Variegated Fritillaries, *Euptoieta claudia*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 May 2012

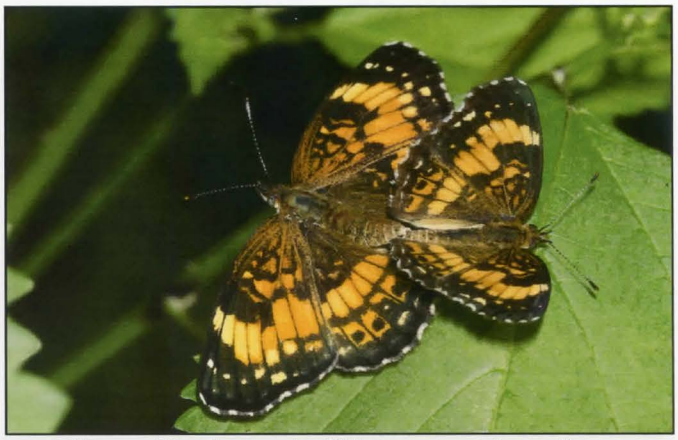
Edwards's Fritillaries, *Speyeria edwardsii*, mating, Little Missouri National Grassland, Pasture 7, McKenzie County, North Dakota, on 23 June 2003

Gorgone Checkerspots, *Chlosyne gorgone*, mating, Denbigh Experimental Forest, McHenry County, North Dakota, 4 June 2003

Gorgone Checkerspots, *Chlosyne gorgone*, mating, Little Missouri National Grassland, Square Butte, Golden Valley County, North Dakota, 8 May 2004

Silvery Checkerspots, *Chlosyne nycteis*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 24 April 2020

Silvery Checkerspots, *Chlosyne nycteis*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 24 April 2020

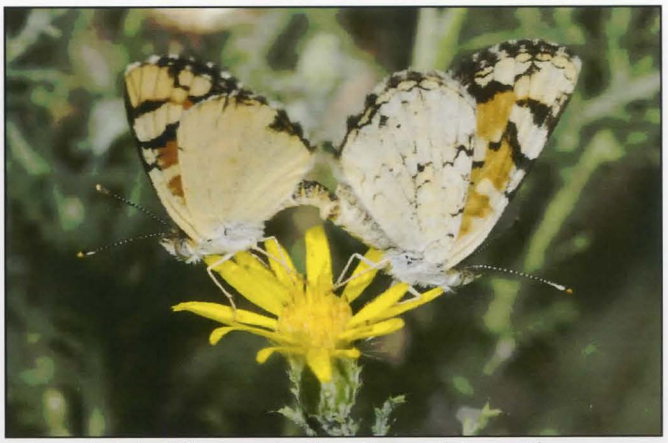


Silvery Checkerspots, *Chlosyne nycteis*, mating, J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 28 May 2014

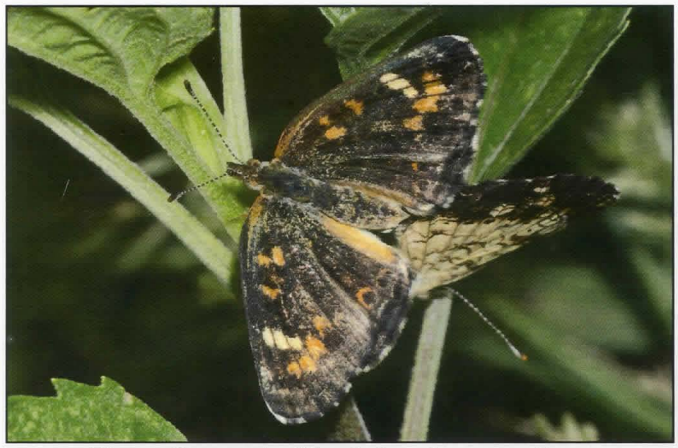
Mylitta Crescents, *Phyciodes mylitta*, mating, Embudito Canyon, Cibola National Forest, Bernalillo County, New Mexico, 10 April 2017

Mylitta Crescents, *Phyciodes mylitta*, mating, Embudito Canyon, Cibola National Forest, Bernalillo County, New Mexico, 10 April 2017

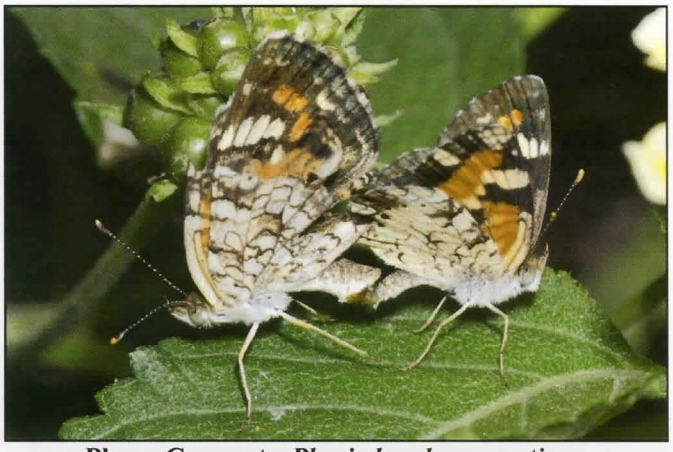
Painted Crescents, *Phyciodes picta*, mating, Black Mesa State Park, Cimarron County, Oklahoma, 15 August 2013



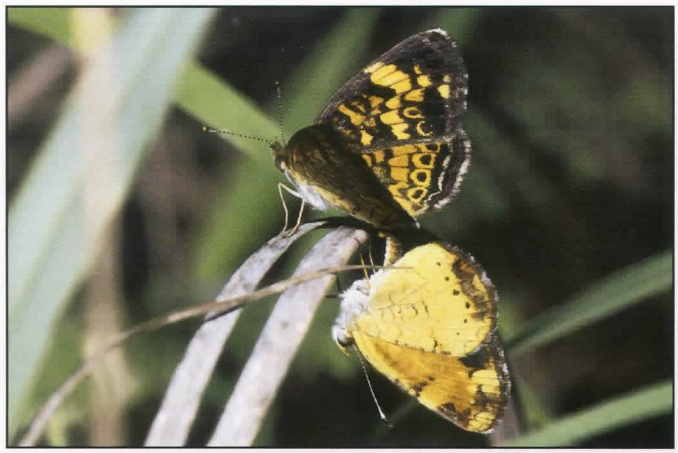
Painted Crescents, *Phyciodes picta*, mating, Black Mesa State Park, Cimarron County, Oklahoma, 22 July 2013



Phaon Crescents, *Phyciodes phaon*, mating, Wichita Mountains National Wildlife Refuge, Comanche County, Oklahoma, 15 September 2018



Phaon Crescents, *Phyciodes phaon*, mating, Santa Ana National Wildlife Refuge, Hidalgo County, Texas, 31 October 2017



Pearl Crescents, *Phyciodes tharos*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 11 June 2009

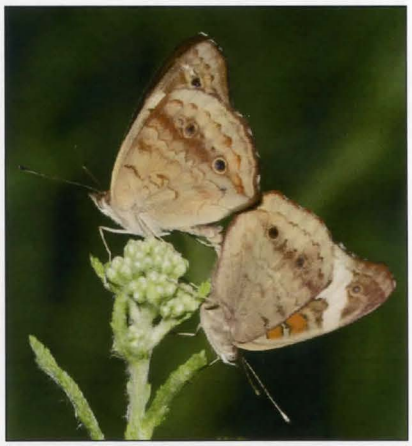
Pearl Crescents, *Phyciodes tharos*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 1 June 2018

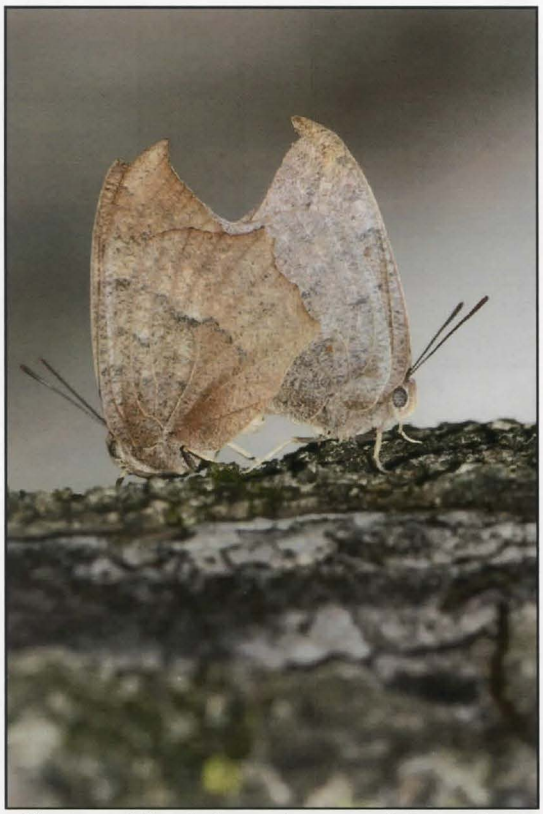
Pearl Crescents, *Phyciodes tharos*, mating, Pontotoc Ridge Preserve, Pontotoc County, Oklahoma, 8 June 2013

Bordered Patches, *Chlosyne lacinia*, mating, Box Canyon, Coronado National Forest, Pima County, Arizona, 3 August 2018

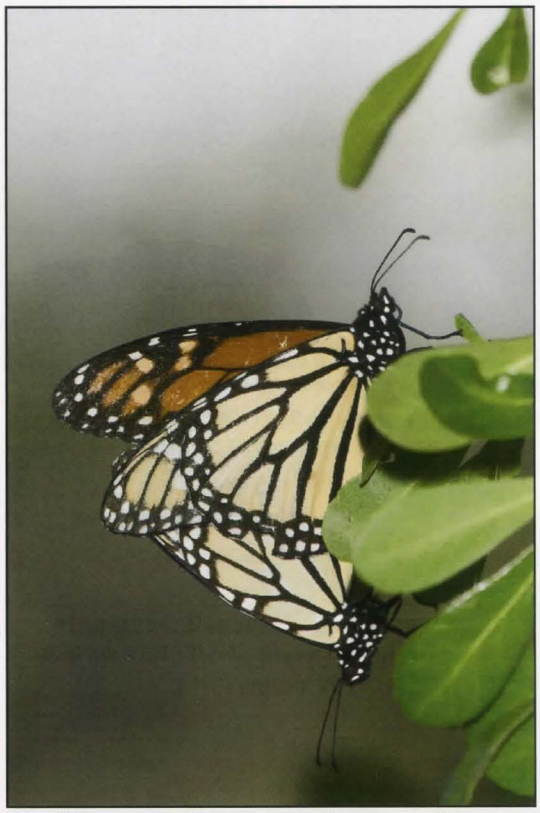
Common Buckeyes, *Junonia coenia*, mating, J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 28 May 2014 ←

Common Buckeyes, *Junonia coenia*, mating, J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 28 May 2014 →

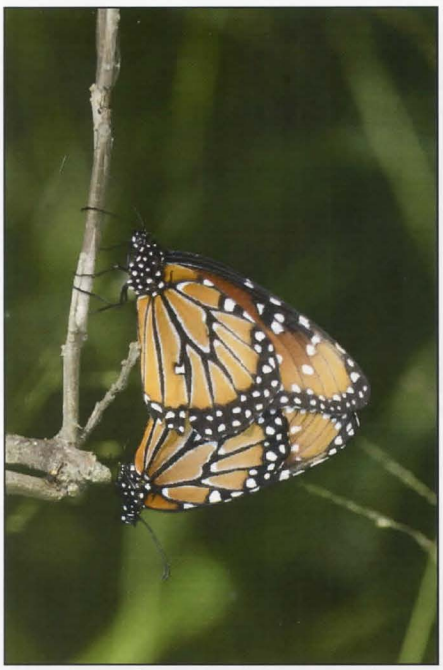




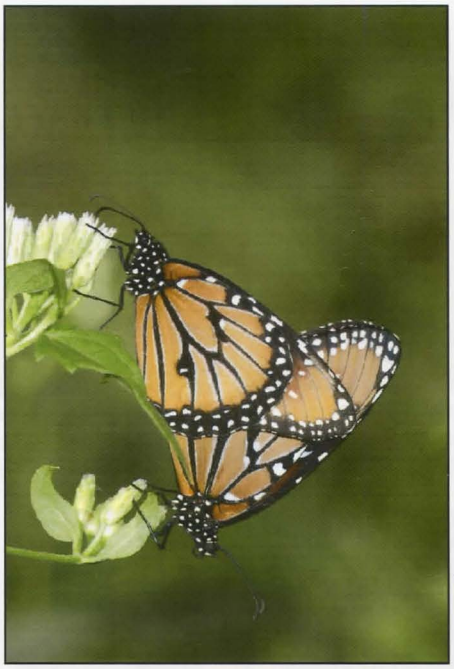
Goatweed Leafwings, *Anaea andria*, mating, J.T. Nickel Family Nature and Wildlife Preserve, Cherokee County, Oklahoma, 11 April 2014



Monarchs, *Danaus plexippus*, mating, Falcon State Park, Starr County, Texas, 4 November 2017



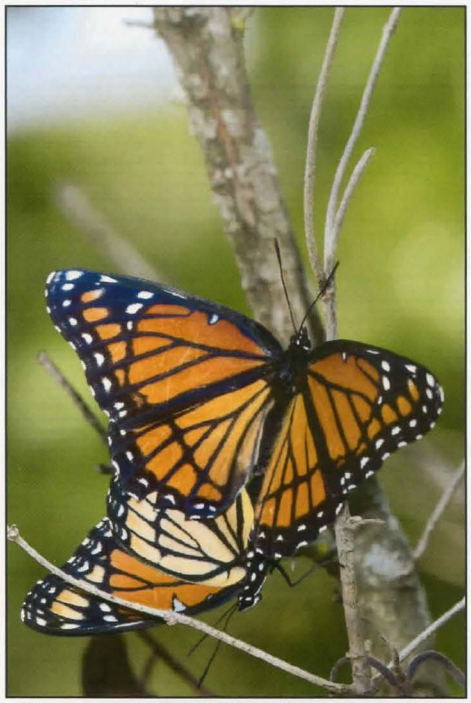
Queens, *Danaus gilippus*, mating, Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 30 October 2017



Queens, *Danaus gilippus*, mating, Santa Ana National Wildlife Refuge, Hidalgo County, Texas, 28 October 2014

Queens, *Danaus gilippus*, mating, Frontera Audubon, Weslaco, Hidalgo County, Texas, 26 October 2014

Viceroys, *Limenitis archippus*, mating with intruding male, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 September 2017



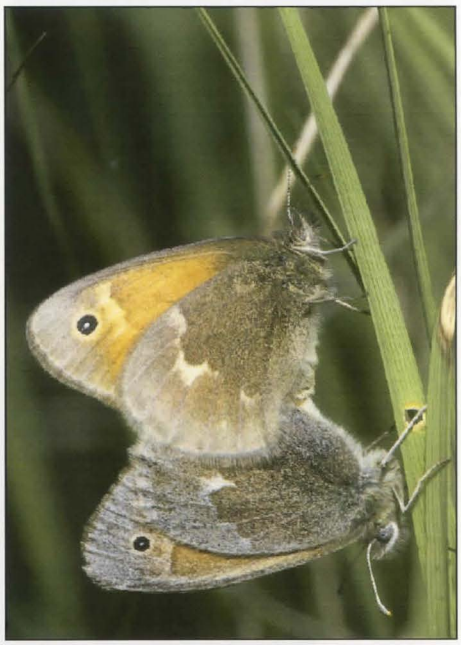
Viceroys, *Limenitis archippus*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 16 September 2017

Carolina Satyrs, *Hermeuptychia sosybius*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 28 April 2020

Carolina Satyrs, *Hermeuptychia sosybius*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 4 September 2009

Little Wood-Satyrs, *Megisto cymela*, mating, J. Clark Salyer National Wildlife Refuge, Bottineau County, North Dakota, 23 June 2002

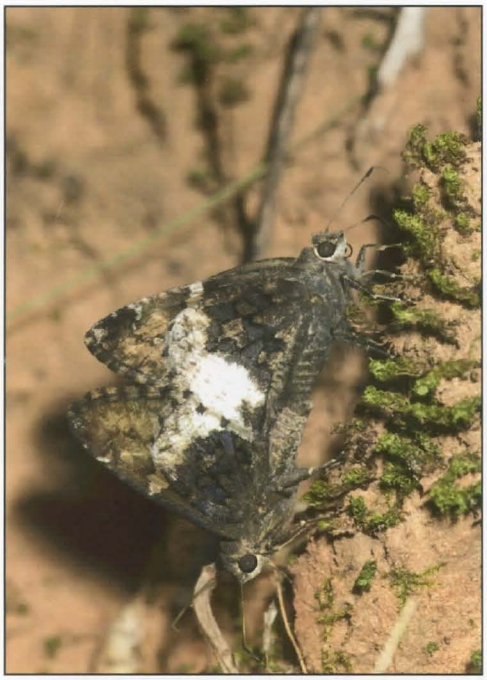
Common Wood-Nymphs, *Cercyonis pegala*, mating, Tallgrass Prairie Preserve, Osage County, Oklahoma, 15 June 2012



Common Ringlets, *Coenonympha tullia*, mating, Little Missouri National Grassland, near Cherry Creek, McKenzie County, North Dakota, 11 June 2005

Hayhurst's Scallopwings, *Staphylus hayhurstii*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 10 April 2006

Golden-headed Scallopwings, *Staphylus ceos*, mating, Box Canyon, Coronado National Forest, Pima County, Arizona, 3 August 2018



Hoary Edges, *Achalarus lyciades*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 7 July 2020

←

Horace's Duskywings, *Erynnis horatius*, mating, Little River National Wildlife Refuge, McCurtain County, Oklahoma, 24 March 2014

→

Sickle-winged Skippers, *Eantis tamenund*, male mating with dead female who is getting eaten by jagged ambush bug, *Phymata* sp., Resaca De La Palma State Park, Cameron County, Texas, 2 November 2017

Afranius Duskywings, *Erynnis afranius*, mating, Little Missouri National Grassland, Square Butte, Golden Valley County, North Dakota, 24 July 2004

Clouded Skippers, *Lerema accius*, mating, Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 30 October 2017

Clouded Skippers, *Lerema accius*, mating, Estero Llano Grande State Park, Weslaco, Hidalgo County, Texas, 30 October 2017

Clouded Skippers, *Lerema accius*, mating, Red Slough Wildlife Management Area, McCurtain County, Oklahoma, 10 September 2019

Outis Skippers, *Cogia outis*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 19 June 2016

Plains Branded Skippers, *Hesperia assiniboia*, mating, Littlel Missouri National Grassland, Summit Campground, McKenzie County, North Dakota, 24 August 2003

Yucca Giant-Skippers, *Megathymus yuccae*, mating, Chickasaw National Recreation Area, Murray County, 31 March 2012

Mournful Thyris, *Thyris sepulchralis*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 25 April 2014

Mournful Thyris, *Thyris sepulchralis*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 25 April 2014

Midgets, *Elaphria* sp., mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 4 September 2009

Geometrid Moths, *Pimaphera sparsaria*, mating, one mile south of Lexington Wildlife Management Area, Cleveland County, Oklahoma, 22 February 2017

Virginian Tiger Moths, *Spilosoma virginica*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 14 September 2015

Snowberry Clearwings, *Hemaris diffinis*, mating, Lexington Wildlife Management Area, Cleveland County, Oklahoma, 5 May 2019

(Bryan E. Reynolds, E-Mail: nature_photo_man@hotmail.com)

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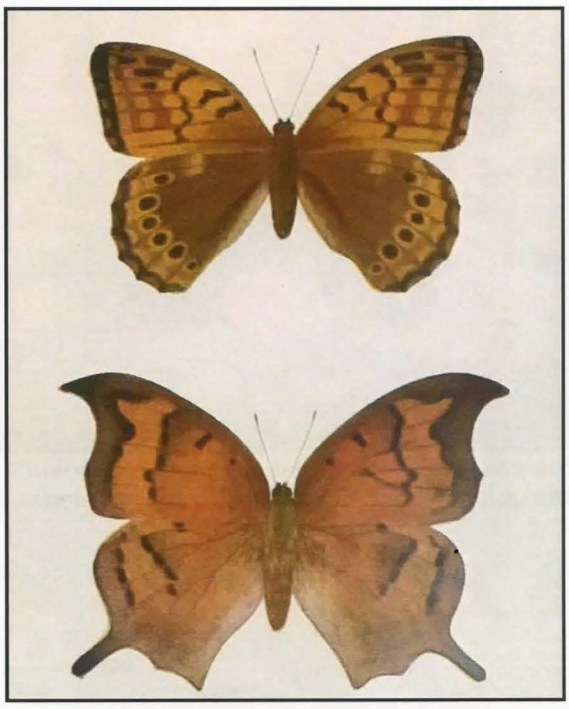
From drawings by W. I. Beecroft

EMPEROR BUTTERFLIES

The Tawny Emperor, female
The Goatweed Emperor, female

BUTTERFLIES WORTH KNOWING
by
Clarence M. Weed, D. Sc.

Published by
Doubleday, Page & Company
For
Nelson Doubleday, Inc.
1925



I MOVED

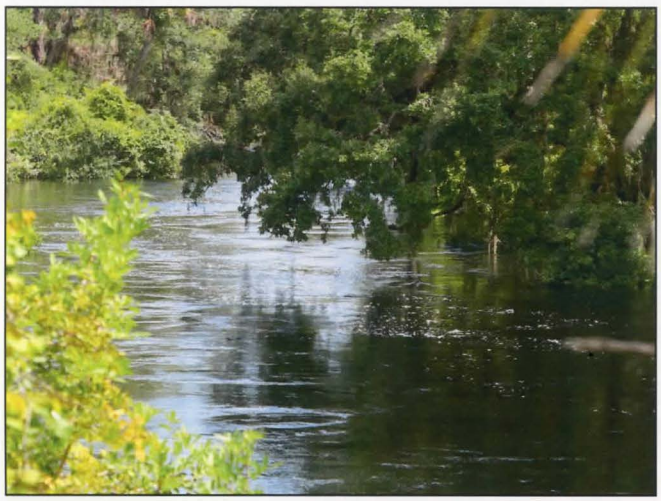
BY

SCOTT D. ANDERSON

I moved recently, not far but far enough to see my whole life packed and reopened. It kept me largely indoors for the last four months, something I'm not used to. I've moved closer to the Florida I was attracted to when I first came here. My backyard is protected, a stand of old habitat, a variety of native trees, hardwoods, pines and palms, surrounding a wetland filled with lilies. It is undeveloped and will always stay that way.

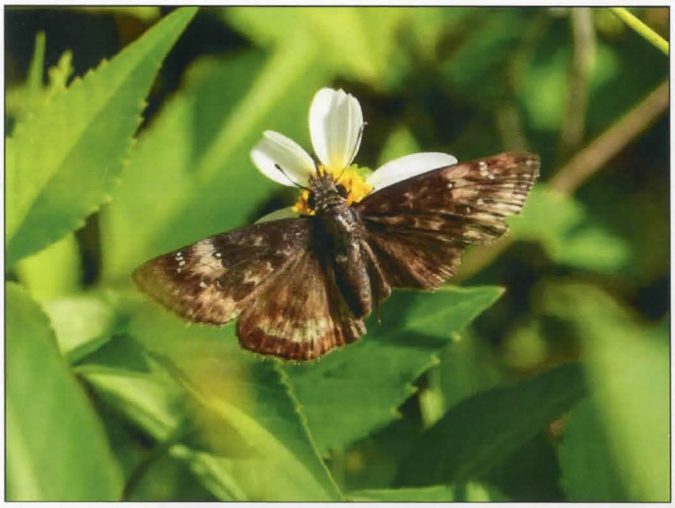
View from my backyard in North Venice, Florida

Just down the road, a one-mile stretch, is one of my favorite county preserves - Sleeping Turtles North. It sits along the Myakka River - a designated Wild and Scenic River by the state legislature. In the last two years, I have identified almost 50 species of butterflies in the preserve so it was with some excitement that I chose to revisit it after four months of moving. It was a Tuesday, mid-week and the area was all mine. I followed my usual route, off the beaten path, where I know butterflies will be found and it was nice to know, they were still there living out their lives and not dependent on me or anyone else observing them. It was a beautiful day, in the 80s, mostly sunny with a light breeze. Not even out of the parking lot, a Horace's Duskywing crossed my path and I sensed it would be a good day. It was.



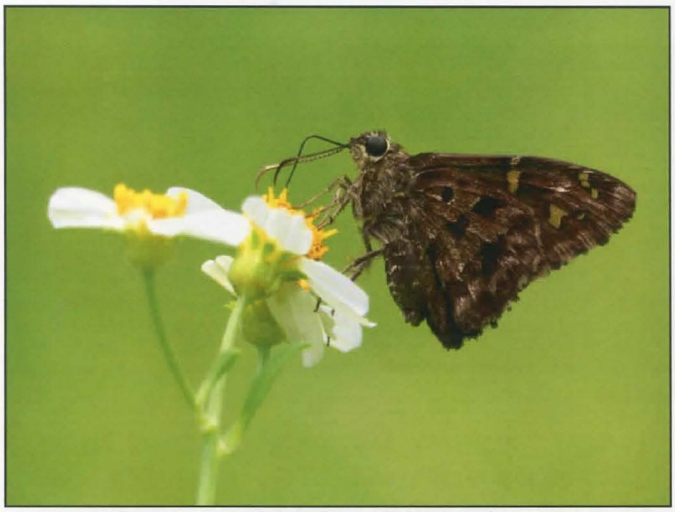
Myakka River bend

The meadows I first encountered have not been mowed this year, it has been wet. The grasses were knee high and wildflowers were abundant. I quickly came across more Horace's, Dainty Sulphurs, Three-spotted Skippers, Common Buckeyes, Phaon Crescents and enough other species to slow my pace and keep me busy. Despite the heat and humidity, it was not work to be in the field. I realized how lucky I was to have such a rich environment in my neighborhood, one I should never take for granted. The butterflies kept coming - Tropical and White Checkered Skippers, Fiery Skippers and Whirlabouts, and even a Delaware Skipper which is unusual for this location.

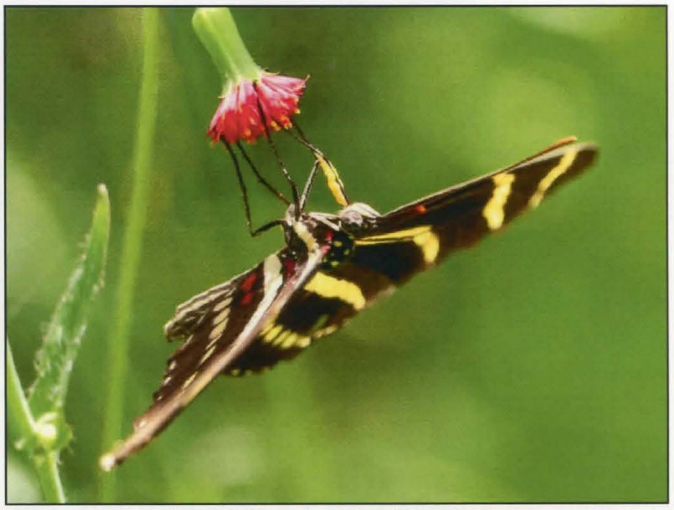


Horace's Duskywing *Erynnis horatius*

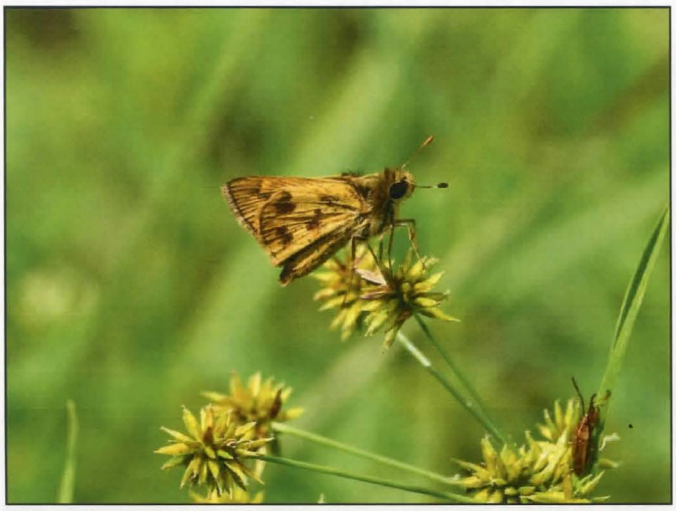
Delaware Skipper *Anatrytone logan*



Dorantes Longtail (tail missing) *Urbanus dorantes*



Zebra Heliconian *Heliconius charithonia*



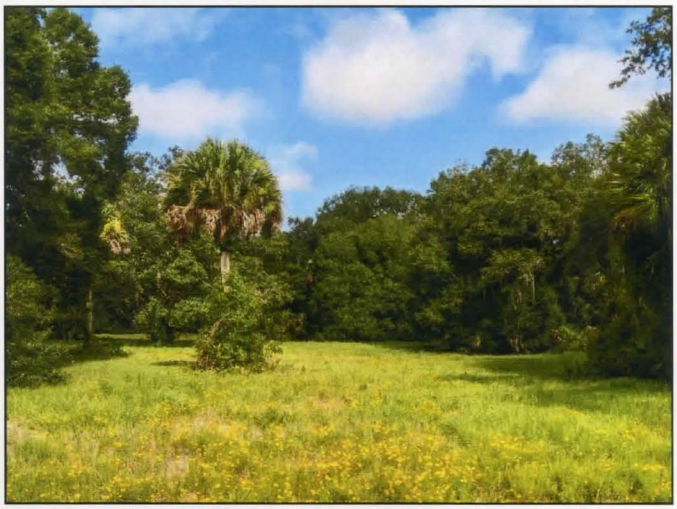
Whirlabout *Polites vibex*

White Peacock *Anartia jatrophae*

Barred Yellow *Eurema daira*

Gray Hairstreak *Strymon melinus*

Queen *Danaus gilippus*



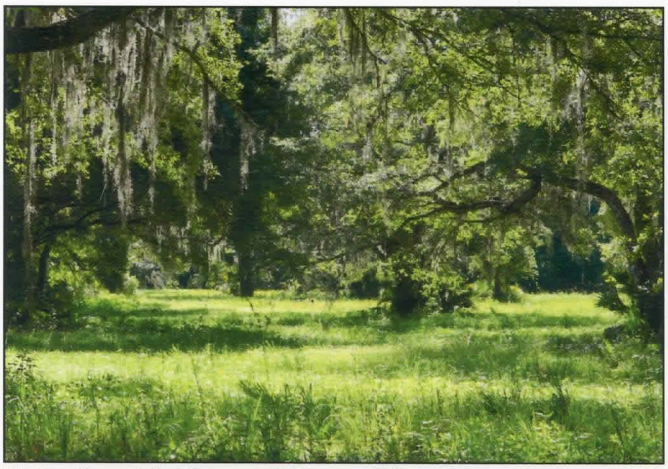
Meadow with wildflowers near Border Road

Pipevine Swallowtail 1
Barred Yellow 2
Little Yellow 5
Dainty Sulphur 22
Gray Hairstreak 1
Ceraunus Blue 14
Gulf Fritillary 1
Zebra Heliconian 2
Phaon Crescent 2
Pearl Crescent 1
Common Buckeye 7
White Peacock 2
Queen 2
Dorantes Longtail 3
Northern Cloudywing 1
Horace's Duskywing 21
White Checkered-Skipper 1
Tropical Checkered-Skipper 18
Three-spotted Skipper 3
Fiery Skipper 9
Whirlabout 8
Southern Broken-Dash 1
Delaware Skipper 2

The southern portion of the preserve is quite different from the north. It's a Gopher Tortoise habitat and I always enjoy seeing the occasional one sitting at the entrance of its burrow like an old man on his front porch. This section of the preserve has a large number of butterfly species but one can always rely on finding Zebra Heliconians, Dorantes Longtails, and Pipevine Swallowtails. The Zebras always grace one's presence with a gentle flyby seemingly using no energy at all. Of all the butterflies in this area, they are the species in slow-motion. On the other hand, manic Dorantes demonstrate inflight prowess darting around and right at you in a show of daring and strength. The Pipevines, of course, take iridescence to the next level and catching one at the right angle in the right light is unforgettable. How does something get so blue?

Three hours in the preserve were enough, at least for one day. The task at hand was nicely accomplished. I had returned to the field and found 23 species, all a welcome sight. Moving was more work than I care to repeat. Voluntarily, I will never do it again. That's all behind me now, I'm settled and more outings await me. Yes, I may have moved, but I'm right back where I belong.

Count for butterfly species and individuals on July 13



Oaks, Spanish Moss and Grass-Skippers

Preserve signs

(Scott Anderson, E-Mail: scottdanderson53@gmail.com)

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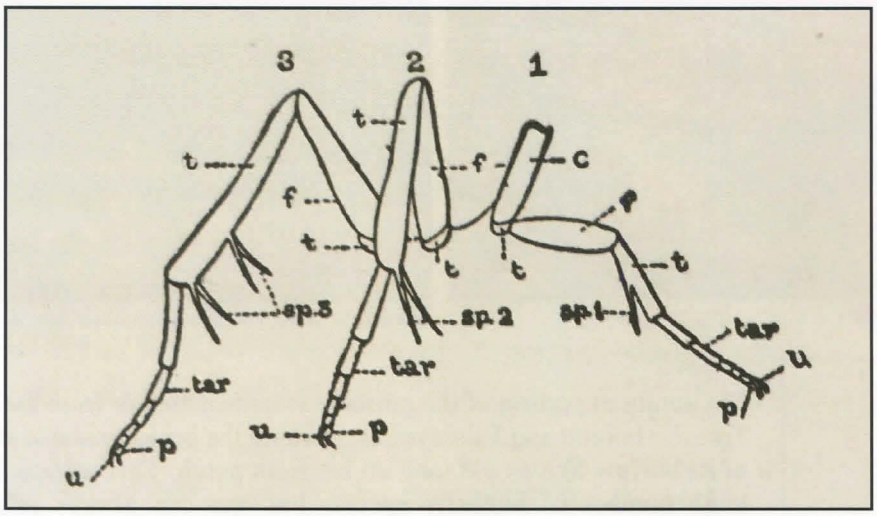


Fig. 11. (pg. 15) Legs of a moth. (From "Packard's Guide", p. 231)

1. Fore Leg. 2. Middle Leg. 3. Hind Leg.

c. Coxa	**u. Ungues**
t. Trochanter	**p. Pulvillus**
f. Femur	**sp. 1. Single anterior spur**
t. Tibia	**sp. 2. Paired medial spurs**
tar. Tarsus	**sp. 3. Two pairs of posterior spurs.**

THE MOTH BOOK by W. J. Holland
Garden City New York
Doubleday, Page & Company 1917

A GARDENER'S TALE OF WOE — NO, NOT THE PANDEMIC!

BY
GARY NOEL ROSS

As if the COVID-19 pandemic beginning in early 2020 were not misery enough, this veteran south Louisiana gardener was besieged by no less than six local "plagues."

But first, background. Back in 1995 much of the nation's news media headlined the "alarming global decline in pollinator species." As a lepidopterist with a familial gardening background, I became infused with a desire to do my part to mitigate the problem. My solution? Turn my frontal landscape into a massive pollinator-friendly space.

First, I removed all existing vegetation. I then cordoned off 1,522 square feet of bare soil into five distinct plots of varying size; these were then bordered by old railroad ties. For fresh garden soil, I mixed into the basic soil fresh river silt, masonry sand, aged pine bark, peat, composted leaves, aged chicken/horse/cow manure, and a small amount of pea gravel; total mixture was approximately 45 cubic yards raising beds to 18-24 inches above ground level.

Most conservationists usually suggest that personal wildlife gardens should rely heavily on native plants that bloom during warm months. I, however, envisioned a garden for all seasons and for all hours on the clock. (Baton Rouge is classified within USDA Plant Hardiness Zone 9A and has an average annual rainfall of at least 60 inches. As such, the climate is conducive for two distinct blooming seasons for annuals: summer/fall and winter/spring.) I concluded that I should concentrate on **both** native and exotic (ornamental) seasonal annuals with a smattering of flowering perennials that were known to lure diverse pollinators. The diversity enabled me to satisfy not only my passions for butterflies and flowers, but to create an enclave of beauty for the neighborhood that just might initiate conversations centered on "lawns vs. flower gardens" and "butterfly stewardship."

Fig. 1. Overview of main garden prior to infection with *Phytophthora*, a fungus-like pathogen that causes root rot in many plants. Aug. 15, 2020.

Over the years, my plant selections have included: blue mistflower, cassia, coleus, cosmos, daylily, fennel, foxglove, lantana, marigold, Mexican sunflower, milkweed (tropical, green antelopehorn), passionflower, pentas, porterweed, poppy (California, opium), salvia ("Lady in Red"), slender vervain,

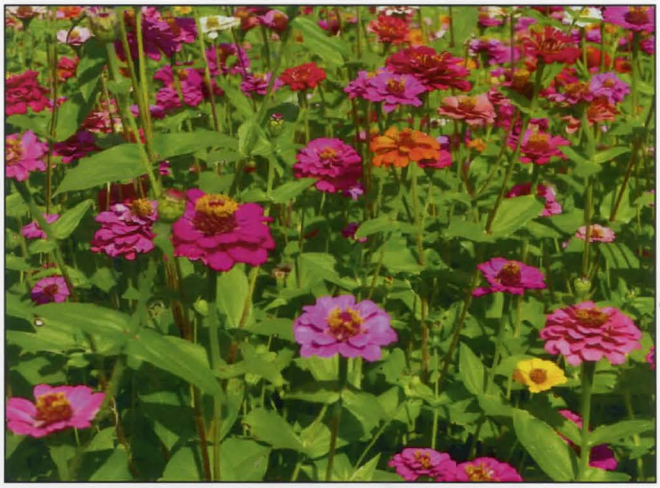


Fig. 2. Overview of colony of tall zinnias ("Benary's Giant" Series) prior to infection with root rot. Aug. 15, 2020.

snapdragon, spiderwort (2 species), tobacco, Turk's cap mallow, vinca, and zinnia (tall, dwarf). Most produced luxurious greenery and blossoms. For dependable late winter/early spring blooms I added nearly two hundred naturalizing bulbs of daffodil, paperwhite narcissus, and snowdrop. Year after year the plantings provided butterflies, moths, bees, hummingbirds, bats, and myriad other small insects with nourishment and sites for reproductive—and for me and my neighbors, kaleidoscopic "eye candy."

PLAGUE NUMBER 1: Mold. Mid-late summer 2020. The season's plantings relied heavily on blanket flower, coleus, marigold (tall), tobacco (ornamental), and zinnias ("Benary's Giant" series). By early September, the foliage of many of the zinnias and tobaccos began to droop, typically a sign of dehydration. I was befuddled. After all, between June and November five named tropical storms made

landfall (historic) in south Louisiana. I assumed my soil was sufficiently moist. But because symptoms seemed to indicate desiccation, I watered. But no improvement. Within the following three weeks, all wilted plants began to brown, eventually dying. In the aftermath, I discarded nearly 300 zinnias and tobacco plants. Fortunately, no other species were affected, but the essence of gardening was no more.

(Figs. 3-7 follow)

Figs. 3-7. PLAGUE 1: Tall zinnias exhibiting root rot. Sept. 30, 2020.

On September 25, I sent a soil sample for analysis to the LSU AgCenter Plant Diagnostic Center. Diagnosis? *Phytophthora* root/crown rot—a type of water mold classified as a fungus-like micro-organism. The report indicated that some fungicides are reasonably effective, and some plants are either resistant to or tolerant of the mold. To reduce symptoms, I was advised that I should improve soil drainage, reduce soil compaction, remove most mulching around base of stems, use minimal or no fertilizers, raise existing plantings if plausible, avoid replanting for a season, and select species documented to be unaffected by the fungus.

Reflecting on my previous two-plus decades of gardening, I theorized that most organic material in the soil was depleted. In addition, I had not aerated the soil in order not to disturb underground perennial bulbs. Similarly, I had frequently trampled through the beds for maintenance such as weeding. Result? Compaction of soil. And with that, poor drainage and poor aeration—in short, a virtual "Petri dish" for fungal and fungal-like pathogens.

To mitigate, I opted against fungicide—too expensive for my size installation. Instead, I discarded dead plants that were accruing almost on a daily basis. On November 14, I added five cubic yards of a bulk commercial high quality "Garden Mix" to my soil. I then amended this with three cubic yards of river silt and masonry sand that I secured bucket by bucket from completed construction sites. Additionally, I mixed in several commercial bags of composted cow and chicken manure, as well as blood and bone meal for nutrient enrichment. In the end, the beds were raised another 4-7 inches.

By December, I managed to plant roughly 1300 new fungi-tolerant species. These included: agapanthus, alyssum, blazing star, cabbage/kale (ornamental), columbine, coneflower (purple), crinum lily, daisy/aster (gerbera shasta, Stokes), daylily, dianthus (Amazon), dusty miller, foxglove, gaura, larkspur, milkweed (tropical, hairy balls) pansies, phlox (Louisiana, summer), poppy (California, Iceland, opium), statice, and slender vervain—taking care not to bury roots too deeply. Upping the ante, I sowed copious seeds of blanket flower in order to reduce seasonal plantings in the future.

Fig. 8. PLAGUE 1: Dwarf tobacco (*Nicotiana*) exhibiting root rot. Sept. 30, 2020.

Fig. 9. Five cubic yards of commercial high quality garden soil used to amend flower beds. Sand, river silt, and organic compost were added. All were worked into pre-existing soil that had compacted. Nov. 19, 2020.

Fig. 10. Colony (54 plants) of Mexican sunflower (*Tithonia*) in full bloom, no root rot. Oct. 1, 2020.

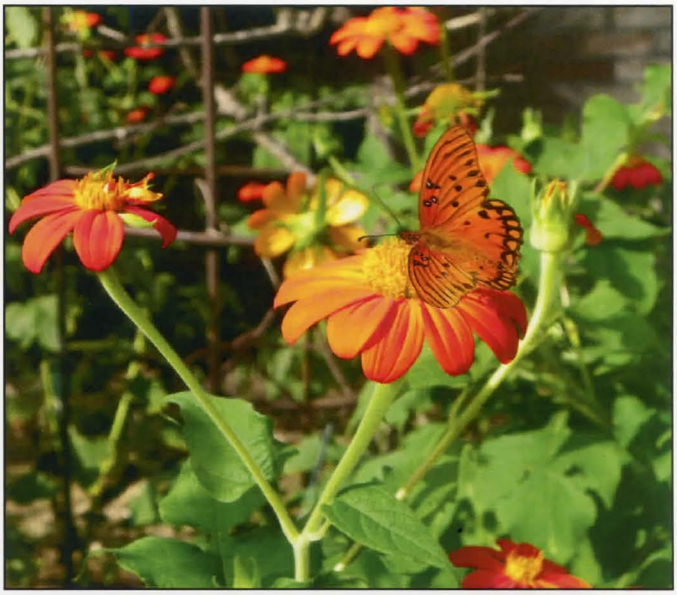


Fig. 11. Gulf fritillary (*Agraulis vanillae*) nectaring on *Tithonia.* Oct. 1, 2020.

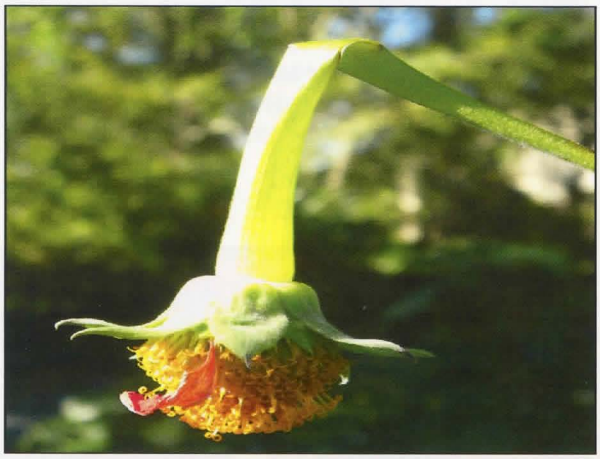
Fig. 12. Long-tailed skipper (*Urbanus proteus*) nectaring on *Tithonia*. Oct. 1, 2020.

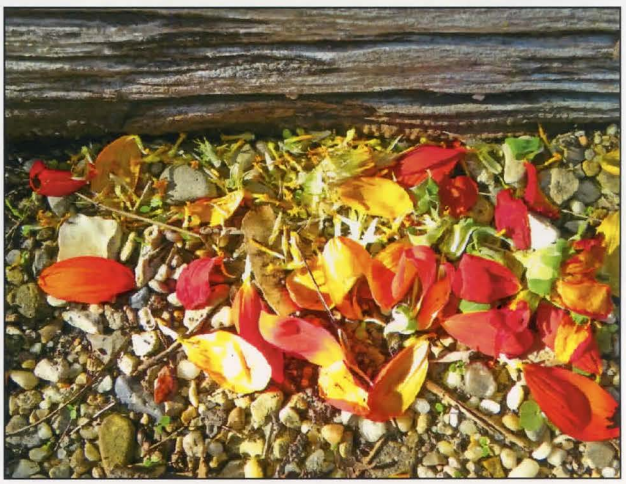
Fig. 13. Honey bee (*Apis mellifera*) feeding on *Tithonia*. Oct. 1, 2020.

Fig. 14. Bumblebee (*Bombus* sp.) feeding on *Tithonia*. Oct. 1, 2020.

PLAGUE NUMBER 2: Squirrels. Early autumn 2020. My 54 mature *Tithonia* plants, which I had planted in May in one of the flower beds, and which were now in full bloom, were attacked daily by the neighborhood's sizable resident population of gray squirrels (*Sciurus carolinensis*). From sunrise to sunset, the high-octane rodents would climb the stalks of the plants to reach the large, neon-orange blossoms—apparently, a delicacy. Invariably, stems would break causing both raiders and blossoms to plummet to the ground. The squirrels were delighted since they now had a convenient level "banquet table." After discovering the rodent's modus operandi, I would quietly exit my house, engage my nearby hose, and aim a strong stream of water at the pesky interlopers. Although the "flower snatchers" fled to nearby trees, they soon returned to their "treats." By early October, every *Tithonia* plant had been pillaged. Considering the lateness of the season, I discarded all so that I could work the soil in preparation for a December planting of new cool-season annuals.

Figs. 15-18 (page 4), Figs. 19-20 (page 5)] PLAGUE 2: October 10-30, 2020 Damage to *Tithonia* flower bed by gray squirrels (*Sciurus carolinensis*). Within two weeks virtually all flowers were eaten. Oct. 30, 2020.





PLAGUE NUMBER 3: Ice Storm. Monday February 15, 2021. During the night, Baton Rouge (as well as the nation at large) experienced what was described as a "Polar Vortex" or "Arctic Blast." The expansive mass of extremely cold air engulfed much of the central U.S. Both Texas and Louisiana were hit especially hard. In Baton Rouge, sleet and freezing rain began during the previous night and didn't cease until mid morning. The high temperature for the day never climbed above the freezing point, plunging to 20 degrees that night. To prepare, on Sunday Feb. 14, when temperature reached a high of only 35 degrees, I covered the majority of my new plantings with two commercial tarps ("the Plar ket®") designed to ward off frost and light freezes. In addition, I spread pine straw over, or at least around, the bases of most other plants.

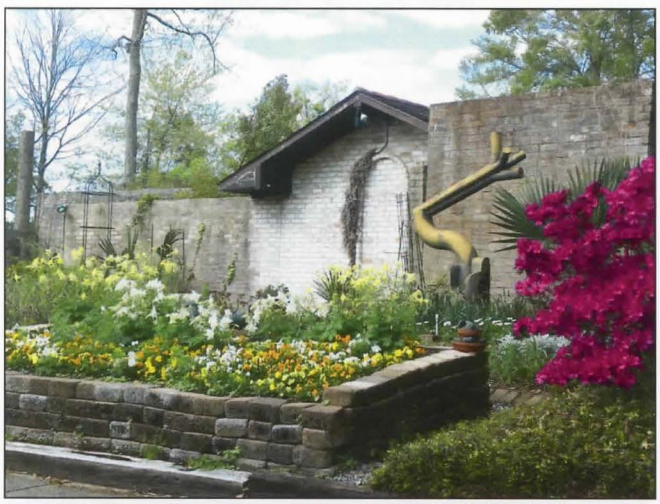


Fig. 21. Overview of beds prior to PLAGUE 3. Flowering species include yellow and white columbine, pansies ("Citrus Blend"), and perennial azalea ("Formosa"). Feb. 10, 2021.

When the precipitation ended, my landscape appeared as a winter wonderland, the first for my eight decades of life in south Louisiana. The crystalline coatings turned all stems, leaves, and flowers into glass-like sculptures. To compound the low temperature, my entire neighborhood lost electricity during the pre-dawn hours of Feb. 15. Lacking a personal generator, I remained without power until the afternoon of Thursday Feb. 18, nearly 78 hours later. All in all, ambient temperature didn't rise above 32 degrees F. until nearly noon on Wednesday Feb. 17, ending what tuned out to be a rare 65-hour subfreezing event (Sunday Feb. 14-Wednesday Feb. 17).

But there was more. Just when the temperature climbed slightly above freezing on Wednesday Feb. 17, another cold front—fortunately, not an "Arctic Blast"—moved through south Louisiana. Temperature the following morning, Feb. 18, dipped to 31 degrees, but then rose to 38 later in the day. But on the night of Friday Feb. 19, the temperature again fell to 24 degrees, rising to 46 that afternoon. Luckily, the system was dry and I had not removed cover from my plants until the following day, Saturday Feb. 20, when temperatures finally phased out the rash of subfreezing conditions. Surprisingly, after about three weeks I noticed that approximately 90 percent of my new plantings had survived. New ground-level leaves were emerging, and fresh greenery was sprouting from plants that had not been burned down. By early April, the flower beds were approaching full bloom.

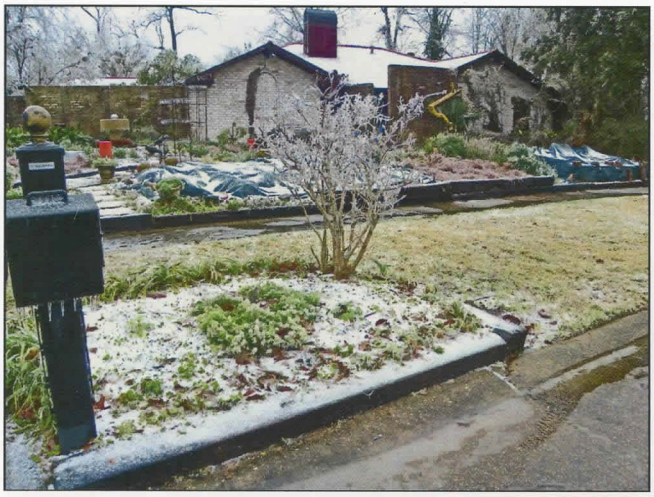


Fig. 22. PLAGUE 3: Heavy ice blanketing everything exposed due to unusual "Polar Vortex" ice storm. Feb. 17, 2021.

Fig. 23. PLAGUE 3: Icicles on driveway gate. Feb. 16, 2021.

Fig. 24. PLAGUE 3: A commercial tarp ("the PLANKET®") covering a raised flower bed with newly planted pansies. Tarp was successful. Feb. 16, 2021.

Fig. 25. PLAGUE 3: Pine straw covering to protect from ice. Feb. 16, 2021.

Fig. 26. PLAGUE 3: Bucket and other containers used for protection from ice. Feb. 16, 2021.

Fig. 27. PLAGUE 3: Close-up of containers used to cover from ice. Feb. 17, 2021.

Fig. 28. PLAGUE 3: Icicles on paperwhite narcissus (*N. papyraceus*). Feb. 17, 2021.

Fig. 29. PLAGUE 3: Close-up of icicles on paperwhite narcissus. Feb. 17, 2021.

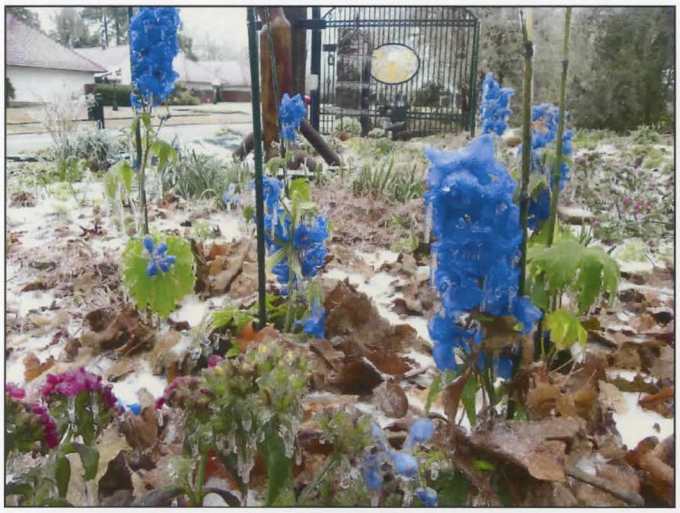


Fig. 30. PLAGUE 3: Icicles on delphinium (*D. grandiflorum* "Diamonds Blue." Feb. 17, 2021.

Fig. 31. PLAGUE 3: Close-up of icicles on delphinium. Feb. 17, 2021.

Fig. 32. PLAGUE 3: Close-up of icicles on Iceland poppy (*Papaver nudicaule*). Feb. 17, 2021.

PLAGUE NUMBER 4: Rain and Wind. April-May 15, 2021. The proverbial "April Showers" in 2021 are always problematic. The change in seasons often spawns violent thunderstorms—occasionally with tornados and hail. During the pandemic year, Baton Rouge logged in 12.48 inches—the second highest for any April (1980 recorded 14.48 inches) in recorded history (since 1894). Most precipitation occurred April 13-17 as a result of two slow-moving cold fronts that originated in the Pacific Northwest. Before exiting into the Gulf of Mexico, the systems stalled over southern Louisiana. During this protracted movement, nearly eleven inches of rain—sometimes embedded with hail—were dumped onto Baton Rouge. Most of this moisture was ascribed to thunderstorms—unusually violent and during the night. Soils became over-saturated and minor flooding occurred throughout the city. In addition, periodic winds maxing at 30-35 mph further devastated many plants now peeking. Understandably, many of the blossoms on my tender spring annuals could not retain their delicate petals—often opening for only a single day (opium poppies suffered the worst because of their massive/weighty flowers and their long slender petioles). In addition some entire plants were pelted to the ground. Fortunately, I had photographed the beds before the rains began.

Fig. 33. Overview of main bed prior to Plague 4. Dominant flowering plants are larkspur (*Delphinium* sp.), foxglove (*Digitalis* sp. "Sonata Series"), California poppy (*Eschscholzia caifornica*), and accented with ornamental kale ("Redbar"). April 11, 2021.

Fig. 34. Close-up of central bed prior to Plague 4. Flowering plant include delphinium ("Giant Pacific Blue," petunias ("Supertunia Vista Bubblegum®"), and opium poppy (*Papaver somniferum*). April 11, 2021.

←

Fig. 35. Close-up of delphinium surrounded by larkspur. April 11, 2021.

→

Fig. 36. Close-up of opium poppy, double pink. April 11, 2021.

Fig. 37. Close-up of opium poppy double lavender. April 11, 2021.

Fig. 38. Pansy (*Viola* hybrid "Citrus Blend") in raised rock-bordered bed. April 11, 2021.

Fig. 39. PRAGUE 4, rain and wind damage to opium poppies from severe storms April 13-17, 2021, April 18, 2021.

Fig. 40. PLAGUE 4. Opium poppies toppled. April 18, 2021.

Fig. 41. PLAGUE 4. Opium poppies and larkspur severely bent. April 18, 2021.

Fig. 42. PLAGUE 4. Opium poppy, single red, with petal damage. April 18, 2021.

PLAGUE NUMBER 5: Flood. May 17-18, 2021. In addition to the heavy rain earlier in the month, the night of May 17 witnessed an unpredicted severe storm that dropped as much as 12-15 inches of rain in about 15 hours on sections of Baton Rouge, Lake Charles, and surrounding areas. Flooding was widespread. I was fortunate in that my house was not inundated. Runoff from a nearby creek, however, back-flowed through street drains into my subdivision's roadways. The water maxed out at about 2.5 feet in the street but spread onto nearly 50 percent of my front flower beds. Fortunately, the flood water was short-lived—rising during the night but receding by dawn (hence no photographs here). Initially, I was fearful for my 200-plus newly planted dwarf zinnias and blanket flowers. Although many of the tender annuals were flattened (a few were even uprooted), only a handful died during the following days. And those that demonstrated some browning, sprouted new growth within the subsequent 10-12 days.

All in all, the month of May was problematic for gardeners. Specifically, between May 1 and 31, Baton Rouge officially recorded a total of 13.23 inches of rain—a distinction as the third wettest spring on record. As a corollary, the total rainfall from January 1-May 31 (less than half of the year) was 38.26 inches.

Fig. 43. PLAGUE 5. Flood, May 17-18, 2021. New plantings of dwarf zinnia ("Zahara®" series) not affected by 6 hours of inundation from flood water. May 23, 2021.

Fig. 44. PLAGUE 5. Close-up of new plantings of zinnias with no major damage from flood water. May 23, 2021.

Fig. 45. Overview of flower bed that escaped flooding. Major plantings are petunia and lady's slipper/touch-me-not/spotted snapweed (*Impatiens balsamina*). May 23, 2021.

Fig. 46. Overview of a group of lady's slippers. June 5, 2021.

Fig. 47. Close-up of lady's slippers. June 5, 2021.

Fig. 48. Close-up of lavender lady's slipper. Seedpods "snap open" when mature or when manually squeezed. June 5, 2021.

Fig. 49. Close-up of red lady's slipper with pink petunia in background. June 5, 2021.

Fig. 50. Close-up of pink lady's slipper. June 5, 2021.

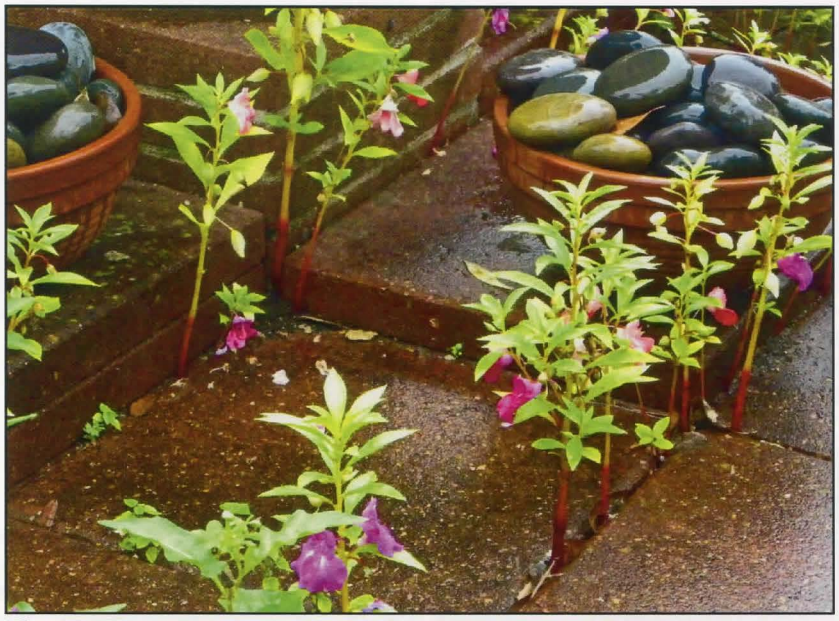


Fig. 51. Natural seed dispersal and germination of lady's slippers plants in cracks between concrete pavers. June 5, 2021.

PLAGUE NUMBER 6: More Rain. June 1-30, 2021. Rainfall during this period totaled 10.40 inches, bringing the total for the first six months of the year to 48.30 inches—the second wettest six-month total on record. Most ornamentals tolerated the wetness, but "weeds" became rampant. Each dry day necessitated weeding in order to keep from being overwhelmed. Examples include: bahiagrass (*Paspalum notatum*), chamberbitter (*Phyllanthus urinaria*), common purple morning glory (*Ipomoea* sp.), crabgrass (*Digitaria* sp.), horse nettle (*Solanum carolinense*), Johnson grass (*Sorghum halepense*), and yellow nutsedge (*Cyperus esculentus*). Also, the more or less daily showers pelted the maturing/blooming plants so that many flower heads were continually flattened. All in all, the usual imposing appearance of my landscape was compromised.

Fig. 52. PLAGUE 6. Black-eyed susans (*Rudbeckia hirta*) bent from frequent showers; stakes were of little help. Tall, red-flowering perennial in upper left is pagoda flower (*Clerodendrum paniculatum*). Common weeds include common purple morning glory (*Ipomoea* sp.), nutsedge (*Cyperus esculantus*), horse nettle (*Solanum carolinense*), and chamberbitter (*Phyllanthus urinaria*). Walkway was especially congested with chamberbitter and horse nettle. June 30, 2021.

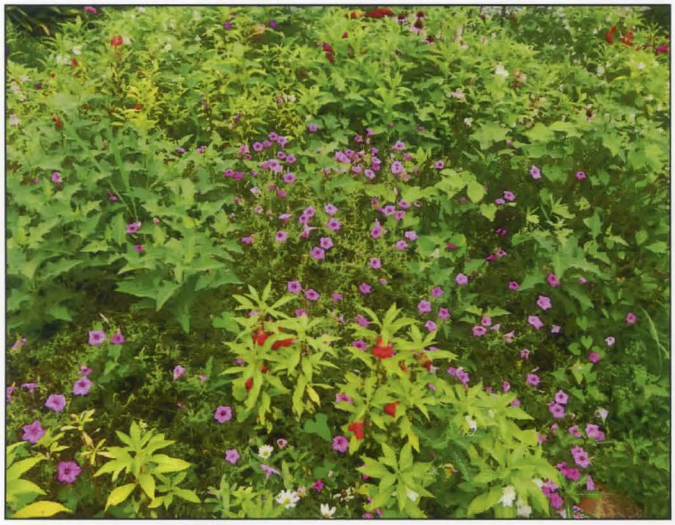


Fig. 53. PLAGUE 6. Petunias, lady's slipper, dwarf zinnias heavily infested with horse nettle and nutsedge. The white flowers of horse nettle are strong attractants for bees. June 30, 2021.

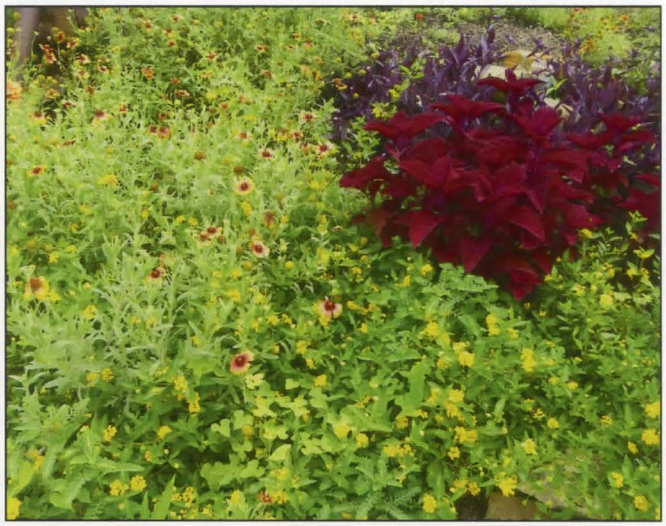


Fig. 54. PLAGUE 6. Blanket flower (*Gallardia* sp.), coleus, spiderwort (*Tradescantia pallida* "Purple Heart"), and dwarf lantana ("New Gold") with interspersed weeds. June 30, 2021.

CONCLUSION: June 30, 2021. In spite of the exceptionally devastating weather of the first part of the year, my cold-weather flower beds did provide a showcase of color, albeit for protracted periods between rainy spells. By mid May I replanted with species that are better adapted to warm weather. During the process I was edified that I could detect no evidence of my microbial nemesis—in spite of the extraordinary wet weather earlier in the year. And although the reconditioning of my flower beds following the *Phytophthora* infestation had proven costly both in time and finances, my experiences were priceless. Up until 2020, I had considered myself a conscientious gardener. MISTAKE! Now in my "Golden Years," I have learned that to garden in the Gulf South, one must not only select plants appropriate for a climate that includes long, sultry summers, but also: (1) maintain soil on the dry side; (2) maintain soil on the sandy side; (3) aerate soil annually; (4) amend soil at least every two years with aged organic matter; and (5) employ commercial fertilizers sparingly, relying on blood and bone meal. Now that we are on the cusp of summer, I am hoping for a good showing of summer flowers.

Notwithstanding, I remain cautious. After all, June 1 was the official beginning of the hurricane season. And there still remains a significant hidden player in my world: *Phytophthora*. Will the excessively wet weather during the first part of the year ignite a fall resurgence of this hydrophilic pathogen? Only time will tell.

Fig. 55. PLAGUE 6. Primary weeds are horse nettle (broad leaves, thorny stems, white flowers, heavy stamens with yellow pollen, underground rhizomes) and chamberbitter (mimosa-like leaves, abundant tiny seeds beneath leaves). Black-eyed susans (top left) are being smothered out by the hydrophilic weeds. June 30, 2021.

Fig. 56. PLAGUE 6. A species of small bumblebee collecting pollen from horse nettle (chamberbitter in background). The invasive southern weed is a member of the nightshade family (Solanaceae) along with the economically important tomato, potato, bell pepper, chili pepper, eggplant, and tobacco). All are pollinated chiefly by diurnal bees and nocturnal moths and bats. June 30, 2021.

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https://plantpathology.ces.ncsu.edu/wp - content/uploads

All photos by Gary Ross

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

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SIGHTINGS OF SILVERY CHECKERSPOT (*CHLOSYNE NYCTEIS*) AND TEXAS POWDERED SKIPPER (*SYSTASEA PULVERULENTA*) IN KENDALL COUNTY TEXAS

BY

DELMAR CAIN

In Kendall County on May 13, 2021, I found several separate groups of larvae on Frostweed (*Verbesina virginica*). I captured 10 specimen to determine the species. By June 1, they had pupated and emerged as Silvery Checkerspot (*Chlosyne nycteis*) butterflies. I continued to regularly see adults of the species through August 20, 2021.

On August 1, 2021, I found a pupa in a folded leaf of Velvet-leaf Mallow (*Allowissadula holosericea*). The pupa emerged on August 4, 2021, as a Texas Powdered Skipper (*Systasea pulverulenta*).

Neither of the sightings of these species may be a county record, but neither are they regularly seen at this location."

Silvery Checkerspot (*Chlosyne nycteis*), larvae found on Frostweed

Larva found on Frostweed, Silvery Checkerspot (*Chlosyne nycteis*)

Pupa, Silvery Checkerspot (*Chlosyne nycteis*)

Silvery Checkerspot (*Chlosyne nycteis*)

Texas Powdered-Skipper (*Systasea pulverulenta*), pupa on Velvet leaf Mallow

Texas Powdered-Skipper (*Systasea pulverulenta*) on Velvet leaf Mallow

(Delmar Cain, E-Mail: dlc1942@gvtc.com)

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CALL FOR NOMINATIONS FOR FIVE SLS OFFICES AND JOHN ABBOT AWARD

The Society's biennial election will be initiated in December (ballots and instructions) and completed in February (counting of votes). Board positions open will include the offices of **Chairman**, **Secretary**, and three **Members-at-Large**.

Members are invited and encouraged to nominate persons interested in running for these posts. Please submit names to the Nominating Committee chairman, John Hyatt (jkshyatt@centurylink.net), by **December 1, 2021,** along with a simple statement from each candidate indicating that he/she is willing to run if nominated, and to serve if elected. Candidates will be encouraged to submit a short Biography (a few sentences) which will be included with the ballots (in the December 2021 issue of the Southern Lepidopterists' News).

The Society also invites nominations for the **John Abbot Award**, an honor bestowed in occasional years upon an individual who has made outstanding contributions to lepidopterology in the U.S. Southeast, or who has significantly advanced the goals of the Society in other ways. Abbot award nominations should also be sent to John Hyatt at the above-mentioned e-mail address.

SPRINGTIME *CATOCALA* AT THE ALLIGATOR CREEK WMA (WHEELER COUNTY, GEORGIA)

BY

ROBERT J. BORTH & JAMES K. ADAMS

ABSTRACT

We surveyed the Alligator Creek WMA in Wheeler County, Georgia, on 15 to 23 May, 2021 for Lepidoptera using MV/UV lights and rotten banana/brown sugar bait. We recorded 20 species of *Catocala* mostly in sandy soil habitat dominated by oaks (*Quercus*), hawthorns (*Crataegus*) and sparkleberry (*Vaccinium arboreum*). Live images of many of the *Catocala* species seen on the bait trail are provided, including our primary goal, *C. grisatra*.

INTRODUCTION

The Alligator Creek Wildlife Management Area (ACWMA) is 3,086 acres with deep sandy soils supporting extensive xeric scrub forest with some cypress areas. From the 25-27 May 2018 the second author (JA) surveyed the Fall Line Sandhills with similar scrub habitat, sandy oak-pine woodlands and *Crataegus flava* where he recorded twenty-one species of *Catocala*. Of foremost interest among these was his series of the rare *C. grisatra* collected in UV traps.

Catocala grisatra has a limited distribution from southeastern North Carolina into Florida, is poorly represented in collections and prior to the Fall Line Sandhills experience was considered very difficult to attract to either lights or bait. We have never taken or seen a photo of this rare species in the wild. Because Fall Line Sandhills is currently being "restored" to Longleaf Pine habitat and most other known *C. grisatra* habitat had been eliminated by development and recent hurricane activity, a primary goal of this effort was to find an alternative suitable *C. grisatra* locality. To this end James Adams (JA) and Lance Durden obtained a research permit for ACWMA from the Georgia DNR, Wildlife Resources Division and they designated Jeff Slotten and the first author (RB) as additional researchers.

MATERIALS AND METHODS

Lepidoptera were sampled with a 400-watt MV illuminated sheet, twelve 15-watt UV light trap locations, a bait trail and eleven cylindrical bait traps with slotted plastic container bottoms filled with rotten bananas. On the bait trail we used a thick mixture of brown sugar and fermenting bananas recommended by Hugo Kons Jr. which requires straining out the banana juice. Survey methods are described in detail in Kons and Borth (2007a). Light trap localities are included in Figures 1 and 2; Figure 1 includes trapping locations from ALL trips made to ACWMA – not all were sampled in May 2021. The eleven bait traps were distributed relatively evenly close to the road between N31.9753° E-82.6894° and N31.97219° E-82.6915°. Two adjacent bait trails (see Roads 5 and 6 on Figure 2) with the longer one being 0.6 miles between N31.97314° E-82.69161° and N31.979406° E-82.69585° were checked two to three times throughout each night by RB prior to the MV sheet being turned off by 2:00 am. On two nights bait trails were also checked just before dawn.

Moth photos in the plates were taken by RB with a Canon 60D equipped with a 100 mm macro lens and a Canon MT-24EX flash.

RESULTS

A check list of 20 *Catocala* species recorded during the nine nights is presented in Table 1. All of these were collected with the exception of *C. orba* which was photographed in Figure 7.

The first night temperatures dropped into the low forties so only a few *Catocala* joined the less temperature sensitive *Zales* at the bait. Cool weather continued through the second night but *C. pretiosa*, the earliest of the three *C. flava* feeders, was already beginning to show up in numbers (Figures 5, 9, 16, 18 & 20). By the third night temperatures warmed up further and *C. pretiosa* showed up on the bait trail in record numbers. As many as five or six individuals were seen at a single tree on several occasions.

On the third night we were excited to record the first *Catocala grisatra* at ACWMA in a bait trap. The only *C. grisatra* attracted to lights was collected by Lance Durden at his UV sheet just after dark. The other ten specimens of *C. grisatra* were taken primarily on the bait trail over the remaining six nights (Figures 10 & 16).

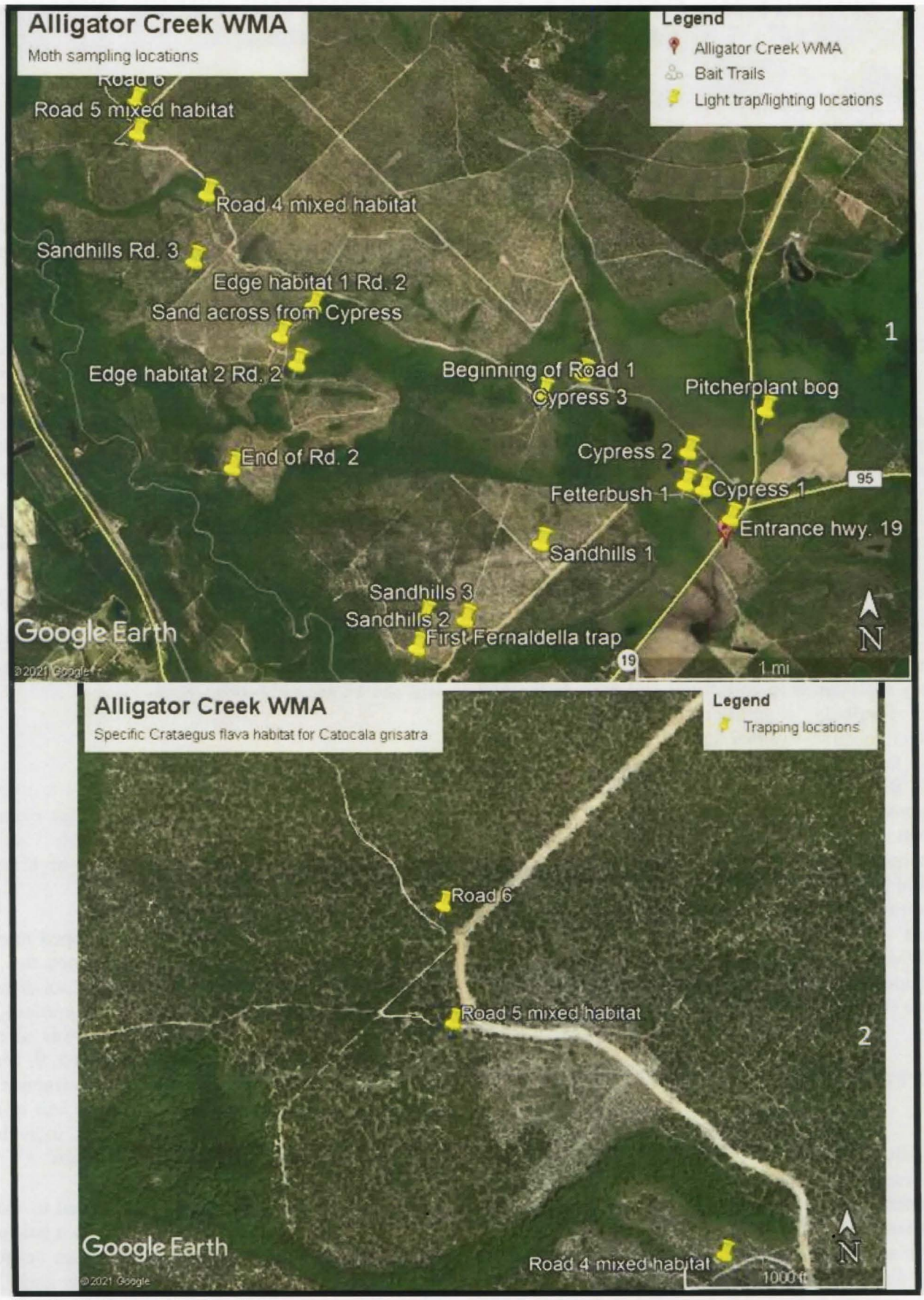


Fig. 1. Moth sampling locations

Fig. 2. *Crataegus flava* habitat at ACWMA

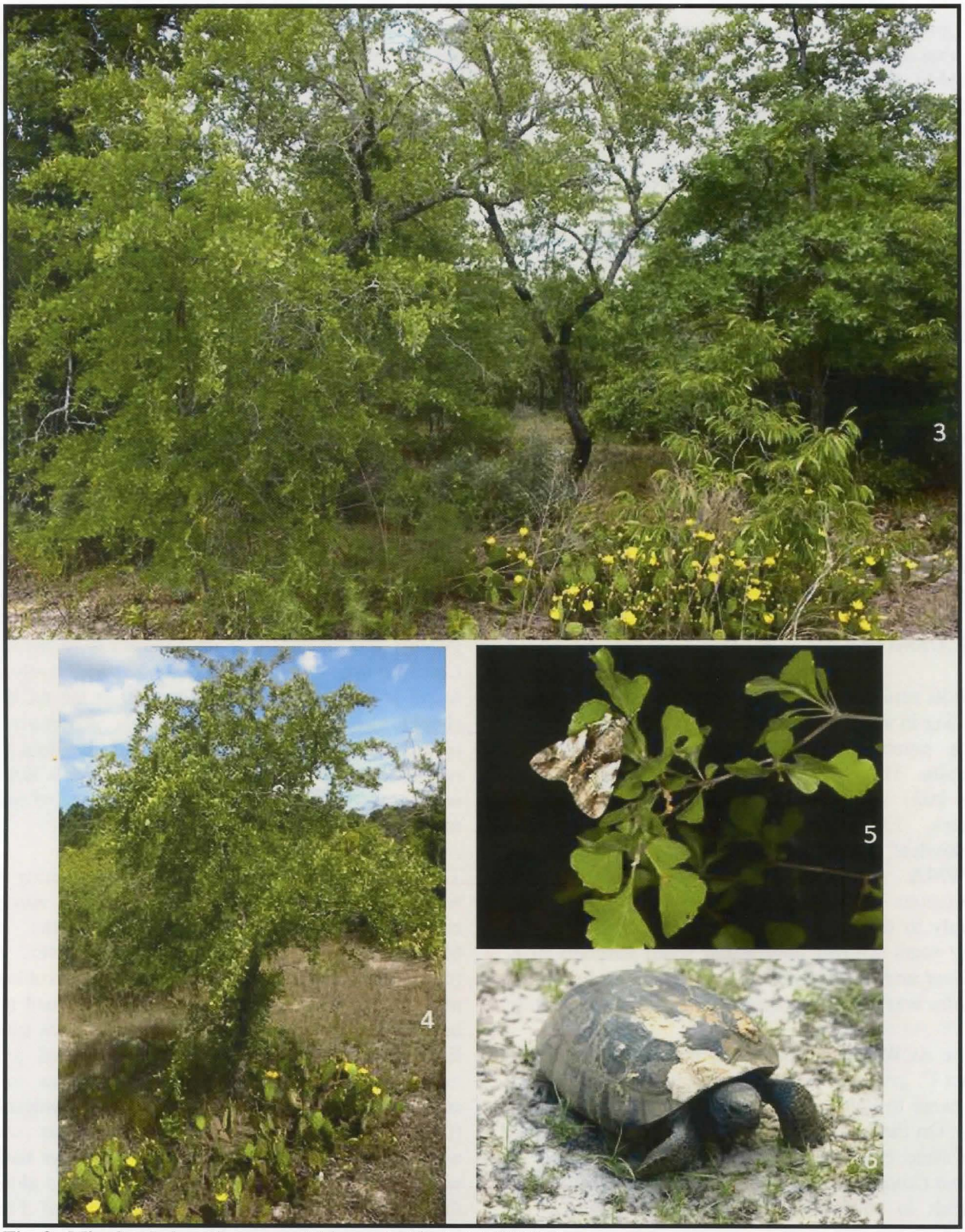


Fig. 3. Mixed oak, hawthorn, sparkleberry habitat at ACWMA
Fig. 4. *Crataeguvs flava* tree at ACWMA
Fig. 5. *C. Pretiosa* on leaves of *Crataegus flava*
Fig. 6. Gopher tortoise (*Gopherus polyphemus*) burrowing in sandy soil of ACWMA

A third *Crataegus flava* feeder, *C. alabamae* (Figure 11), gradually increased in numbers and by the end of the nine nights was nearly as common as *C. pretiosa* (Graph1). Other Rosaceae feeders included specimens of *C. praeclara* collected by JA and Jeff Slotten in light traps placed in wetter habitats within the wildlife management area. Three species known to feed on *Crataegus marshalli* including *C. orba* (Figure 7), *C. lincolnana* and *C. mira* (Figure 14), were seen as singletons only. *Catocala clintonii* is probably the earliest *Catocala* on the wing at ACWMA and was already showing significant wear throughout the study period (Figures 15 & 20). Like *C. clintonii*, *C ultronia* is a common and widespread Rosaceae feeder which we generally didn't bother to collect after securing a few examples (Figure 8).

Blueberry feeders including *C. andromedae, C. louiseae* (Figure 13) and *C. gracilis* (Figure 17) and oak feeders including *C. coccinata* (Figure 12), *C. ilia, C. umbrosa, C. micronympha, C. similis* (Figure 15) and *C. connubialis* gradually increased in numbers over the period but remained far less common than *C. pretiosa* and *C. alabamae* on the bait trail.

DISCUSSION

With its scrubby mixed oak-hawthorn forest (Figure 3) growing in sandy soils we considered the ACWMA to be a potentially good site for Spring *Catocala* diversity. Those expectations were exceeded in our May 2021 survey where we collected 20 *Catocala* species. Extensive stands of *Crataegus flava* (Yellowleaf Hawthorn) (Figures 4 & 5) at the ACWMA contributed to exceptionally healthy populations of *C. pretiosa* and *C. alabamae* and notably to the presence of the rare *C. grisatra*. Over many years we had only found small numbers of *C. pretiosa* and *C. alabamae* on any given night and *C. grisatra* was exceptionally difficult to find as an adult.

At the ACWMA bait proved to be the best method to attract *C. grisatra*. Of twelve specimens collected only one came to light, six to the bait trail and five to bait traps. On the bait trail less than half of the individuals seen were collected as *C. grisatra* tended to be the wariest *Catocala* at the baited trees and was often very difficult to approach. As soon as a flashlight was shined on the tree most *C. grisatra* individuals would fly towards the light or up into the trees. Trying to get good live pictures of it was especially frustrating because the moth would inevitably be gone after we glanced down to adjust a camera setting or altered the lighting in any way. *Catocala grisatra* occasionally revealed its hindwings on a tree but mostly just before taking off. The best opportunity to get a picture was when an individual was heavily preoccupied with feeding on the thick fermented banana bait. We never saw more than one *C. grisatra* at a time on a given tree and no more than five on a given night. Jeff Slotten did collect two *C. grisatra* on the night that we saw five individuals by quickly using his one-handed jarring technique.

Extant populations of *C. grisatra* are nearly unknown which makes the ACWMA a particularly valuable site for Lepidoptera conservation. Any management approach that removes the critical *Crataegus flava* foodplant could adversely affect the long-term survival of this species. Prescribed burns are part of the management regimen at the ACWMA but managers are interested in conserving the *Catocala* there. We recommended using only patchy burns during appropriate times which consider the mid-March through mid to late April larval stage of *C. grisatra*.

Several other *Catocala* at the ACWMA are also worthy of special consideration. The large stands there of *Vaccinium* contribute to vigorous populations of *C. louiseae, C. gracilis* and *C. andromedae* (though *C. gracilis* and *andromedae* are widespread in the state). *Catocala orba* and *C. lincolnana* have also rarely been found in Georgia so other *Crataegus* at the ACWMA should also be preserved. *Catocala praeclara* was restricted to the Cypress wetland habitats. The remaining *Catocala* recorded at the ACWMA are widespread generalists not currently in need of special management consideration.

The ACWMA is an excellent site for baiting with wide, level bait trails, and on this trip no annoying critters discovering and exploiting the bait. Mosquitoes (Culicidae) and carpenter ants (*Camponotus pennsylvanicus*) were not a problem at night, although bumblebees (*Bombus*) swarmed to the bait during the day (Figure 19). Hymenoptera such as European hornets (*Vespa crabo*) consumed a few moths in the bait traps. Despite warnings to the contrary, no Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*) or other venomous snakes were encountered. Distant gunshots and dogs barking were unsettling during nights when RB was alone at the site. His imagination with thoughts of Freddy Krueger making him feel he wasn't really alone on the trail made him really appreciate the companionship of his colleagues earlier on the trip. Hopefully researchers will find additional *Crataegus flava* sites suitable for *C. grisatra* and the species will continue to thrive in the ACWMA.

Table 1: *Catocala* Survey Data for Alligator Creek WMA from 15-23 May 2021

CATOCALA COLLECTED	FOODPLANT	Bait Trail & Trap 15 May 2021	Bait Trail & Trap 16 May 2021	Bait Trail & Trap 17 May 2021	Bait Trail & Trap 18 May 2021	Bait Trail & Trap 19 May 2021	Bait Trail & Trap 20 May 2021	Bait Trail & Trap 21 May 2021	Bait Trail & Trap 22 May 2021	Bait Trail & Trap 23 May 2021	UV Trap & Sheet 15 May 2021	UV Trap & Sheet 16 May 2021	UV Trap & Sheet 20 May 2021	UV Trap & Sheet 21 May 2021	MV Sheet 21 May 2021
alabamae	*Crataegus flava*		X	X	X	X	X	X	X	X					
andromedae	Ericaceae			X		X		X		X			X		
clintonii	Rosaceae		X	X	X	X							X		
coccinata	*Quercus*		X	X	X		X		X		X				
connubialis	*Quercus*				X	X	X	X	X						
gracilis	Ericacea		X	X	X	X	X	X	X	X	X				
grisatra	*Crataegus flava*			X		X	X	X	X				X		
grynea	Rosaceae				X				X						
ilia	*Quercus*	X	X	X		X			X	X					
lincolnana	*Crataegus marshallii*									X					
lineella	*Quercus*										X				
louiseae	Ericaceae				X	X	X	X	X	X					
micronympha	*Quercus*		X	X	X	X	X	X	X	X		X	X	X	X
mira	*Crataegus*						X								
orba	*Crataegus marshallii*					X									
pretiosa	*Crataegus flava*	X	X	X	X	X	X	X	X	X	X	X	X	X	
praeclara	*Amalanchier*												X	X	
similis	*Quercus*	X	X	X	X	X	X		X		X	X	X	X	X
ultronia	Rosaceae		X	X	X	X									
umbrosa	*Quercus*								X	X					

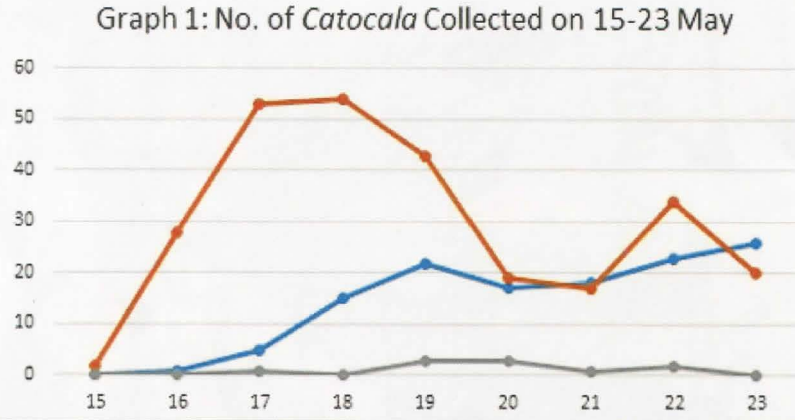


Table 1 and Graph 1: *Catocala* Survey data for Alligator Creek WMA from 15-23 May, 2021.

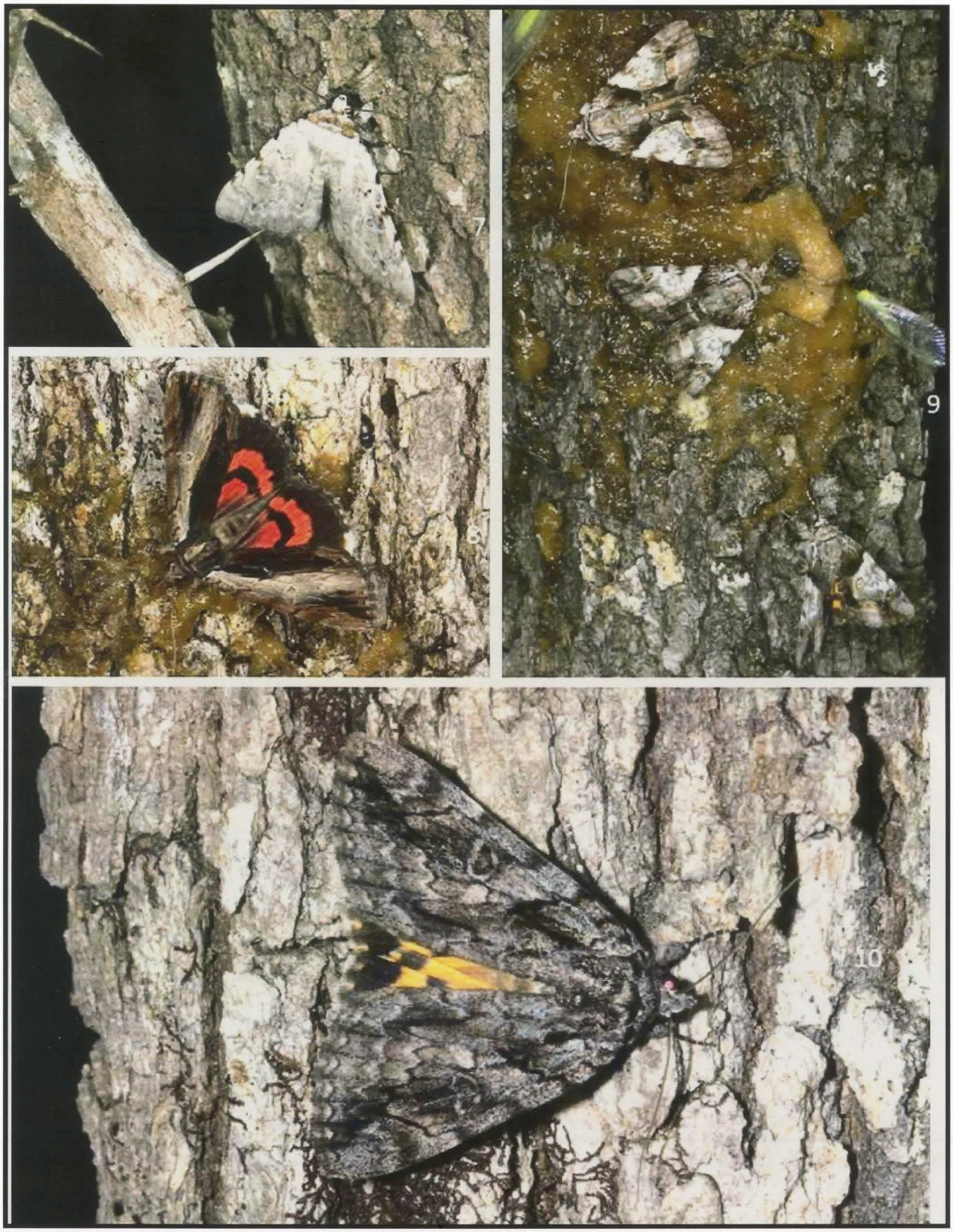
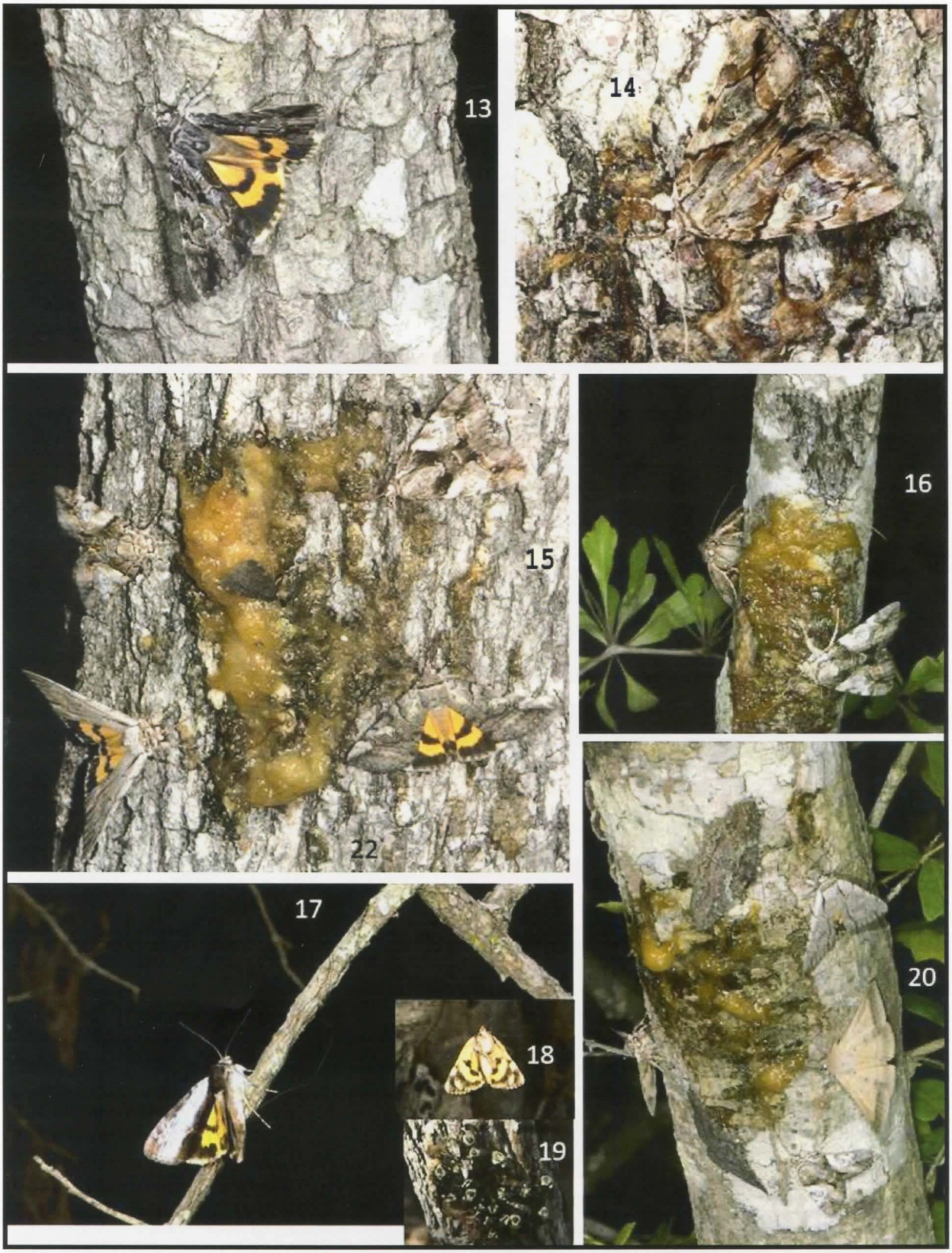


Fig. 7. *Catocala orba*
Fig. 8. *Catocala ultronia*
Fig. 9. *Catocala pretiosa*
Fig. 10. *Catocala grisatra*

Fig. 11. ***Catocala alabamae***
Fig. 12. ***Catocala coccinata***



13. *Catocala louiseae*
14. *Catocala mira*
15. *Catocala similis, C. clintonii, C. pretiosa*
16. *Catocala grisatra, C. ultronia, C. pretiosa*
17. *Catocala gracilis*
18. *Catocala pretiosa* **that had just flown into a spider web**
19. *Bombus* **at bait during day**
20. *Zale aeruginosa, C. clintonii, C. pretiosa*

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Kons, Hugo L. Jr. and Robert J. Borth, 2007. Lepidoptera Survey Methods Utilized in North American Journal of Lepidoptera Biodiversity Publications

We want to thank Chris Baumann and the Georgia Department of Natural Resources, Wildlife Resources Division for permitting this research at the ACWMA. We especially want to thank Wildlife biologist Anna Yellin for her strong interest in conserving species discussed in this publication. We also greatly appreciate Lance Durden, Jeff Slotten and Patrick Adams for their expertise and companionship in the field.

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

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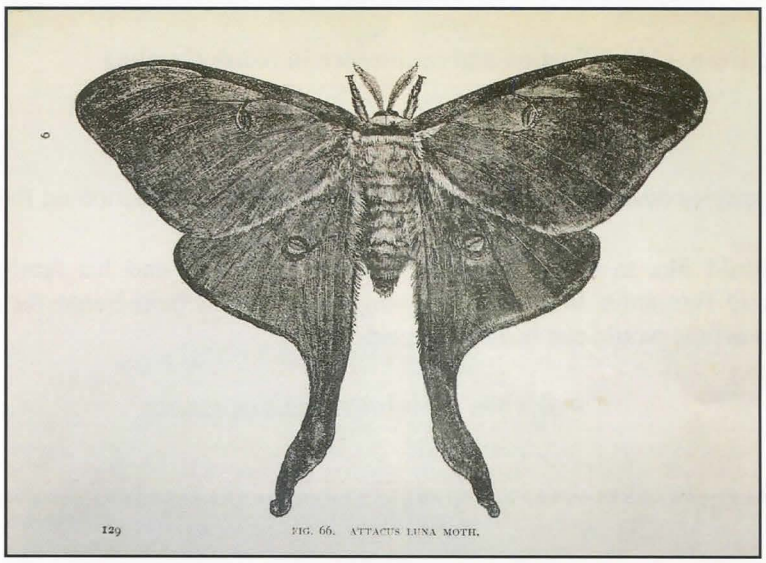

Figure 66 (PG. 129). ATTACUS LUNA MOTH

AMONG THE MOTHS AND BUTTERFLIES
BY
JULIA P. BALLARD

G. P. PUTNAM'S SONS (1890)

SPHACELODES VULNERARIA

BY

G. DARRYL WILLIS

This species is a little – known, large Geometer that occurs widely in the western Hemisphere. I first collected this species in Concord, NC on July 18, 2021. Bo Sullivan identified this specimen and told me this species is known from 3 localities in North Carolina: Mt. Mitchell, my specimens from Concord, NC, and Beaufort, NC. This specimen has a wingspan of 31 mm.

Sphacelodes vulneraria

Pictured is a female. The species is dimorphic with males having yellow or orange triangles along the outer costa of the forewing, male antennae are the same color as the triangles on the forewing. The female antennae are the ground color. The ground color of both sexes is dark grey to dark brown with 2 to 3 oblique concentric lines on the forewing. There is also a single, tiny white dot near the costal edge of the hindwing (see MPG).

Little is known of the early stages. The only record is of a last instar larva collected in Puerto Rico by Freddy Quesada in 2005. It was feeding on *Ziziphus guatemalensis* (*Rhamnacaea*). Rhamnaceae is known as the buckthorn group and is widespread in the US. Two species in this plant group, well known to most eastern Lepidopterists are buckthorn (*Rhamnus cathantica*) and New Jersey Tea (*Ceanothus americanus*).

Since there is no known US foodplant, the US specimens have been assumed to be migratory or strays.

References: J. Bolling Sullivan – Identification and occurrence in North Carolina.

Internet References:

1. MPG - range
2. Bug Guide – species description, range outside the US, and information on food plant

Acknowledgements: I would like to thank my son, Andrew R. Willis, and his family, Julianna Willis, Grant Willis, Andrew Willis, and Benjamin Willis for allowing me space in their home for an office and laboratory. Without their support this article would not have happened.

(Darryl Willis, E-Mail: dtwilllis1@verizon.net)

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UPDATE ON THE DISTRIBUTION OF KING'S HAIRSTREAK, *SATYRIUM KINGI* (KLOTS & CLENCH, 1952) (LYCAENIDAE: THECLINAE), IN FLORIDA

BY

MARC C. MINNO AND RICK OWEN

King's Hairstreak is a small, ephemeral, and locally distributed butterfly found in the southeastern United States. In Florida the adults are most similar to the Banded Hairstreak, *Satyrium calanus* (Hübner, [1809]), but King's Hairstreak can be easily identified by the reddish-orange cap on the blue patch below the eyespot on the underside of the hindwing (Klots and Clench, 1952; Scott, 1986). The Striped Hairstreak, *Satyrium liparops* (Leconte, 1833), has a similar cap on the blue patch, but the bands on the underside of the hindwing are much wider apart.

King's Hairstreak adults have been found from early April (Rick Owen, Florida Park Service District records) through August in Florida, but have most commonly been reported from June (Minno, 1994; Glassberg *et al.*, 2000). King's Hairstreak is closely associated with its larval host plant Common Sweetleaf or Horse Sugar, *Symplocos tinctoria* (L.) L'Hér., in the Symplocaceae (Figure 1A).

The native range of Common Sweetleaf extends from Long Island, New York and Delaware throughout the southeastern United States to eastern Texas and Oklahoma (USDA, NRCS, 2021). The cylindrical, fleshy fruit contain a single seed and are eaten and dispersed by birds. This shrub grows in patches in wet to dry hardwood forests. The patches usually consist of a mixture of mature plants and saplings. The roots are not stoloniferous. Most likely patches form when a founder individual produces seeds, some of which fall nearby and sprout.

The somewhat leathery leaves of Common Sweetleaf are arranged alternately and in Florida are tardily deciduous in spring around flowering time. They are usually lanceolate to oblanceolate in shape, bright green to yellowish green in color, the undersides a bit paler, not aromatic when crushed, and have inconspicuous serrations along the margin. As its common name suggests, the chewed leaves are sweet tasting (Kurz and Godfrey,1962; Nelson, 1996; Marc Minno, personal experience).

King's Hairstreak eggs overwinter on the twigs of the host plant. Common Sweetleaf produces cream-colored flowers in dense round clusters in the leaf axils/nodes from the previous year's growth (Figure 1A). Flowering occurs in March and early April in Florida (Atlas of Florida Plants website) and soon afterward the new leaves appear, which are eaten by the emerging King's Hairstreak larvae.

Here we report new locations for King's Hairstreak that significantly extend its range into north peninsular Florida. On May 21, 2010 Rick Owen conducted an invertebrate survey in Alachua County at San Felasco Hammock Preserve State Park (SP) within the Blues Creek drainage. At 3:00 pm a single individual adult King's Hairstreak was observed and photographed and subsequently reported to Florida Natural Areas Inventory (FNAI) as the first discovery of this species in peninsular Florida. This location is several counties southeast of Tallahassee in the eastern Panhandle. Other adult butterflies seen nearby during this survey included Lace-winged Roadside-Skipper, *Amblyscirtes aesculapius* (Fabricius, 1793); Red-banded Hairstreak, *Calycopis cecrops* (Fabricius, 1793); and several Banded Hairstreaks.

Rick and three other butterfly experts revisited the Blues Creek location at San Felasco Hammock Preserve SP on May 27, 2010. Again only one adult King's Hairstreak was observed and photographed (around 1:15 pm) perching on leaves (Figure 1B). Additional butterfly species seen nearby included Byssus Skipper, *Problema byssus* (W. H. Edwards, 1880); Red-spotted Purple, *Limenitis arthemis astyanax* (Fabricius, 1775); Carolina Satyr, *Hermeuptychia sosybius* (Fabricius, 1793); Viola's Wood-Satyr, *Megisto viola* (Maynard, 1891); and Question Mark, *Polygonia interrogationis* (Fabricius, 1798).

As news about King's Hairstreak in Alachua County spread, other naturalists began to search for it and report their findings to Rick Owen. In early May 2011 and again in early April 2015 Kathy Malone photographed adult King's Hairstreaks at O'Leno SP along the Santa Fe River in western Alachua County expanding this species range further westward. On April 5, 2015, King's Hairstreak caterpillars were found on Common Sweetleaf leaves by Barbara Woodmansee at a second location within San Felasco Hammock Preserve SP.

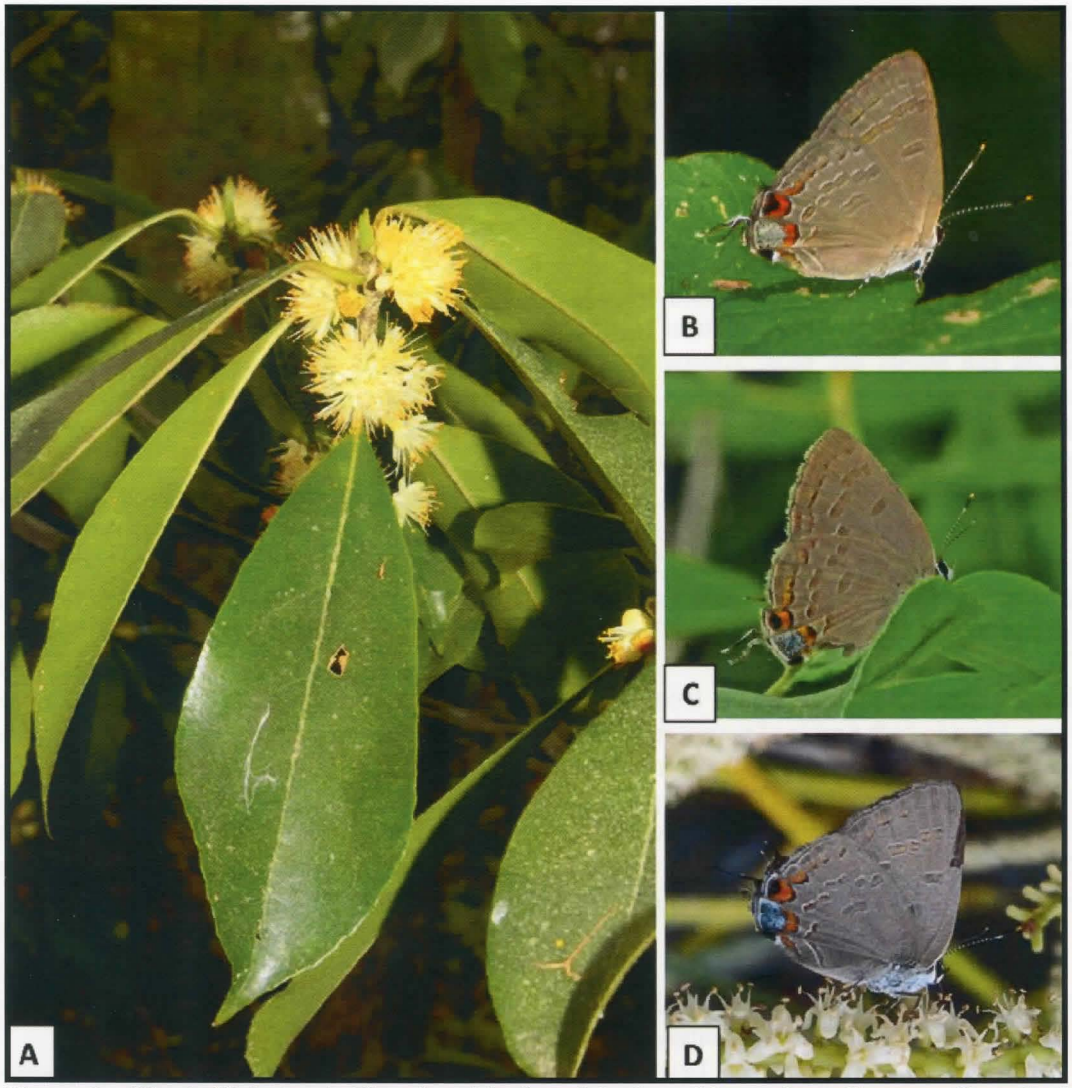

Figure 1. King's Hairstreak (*Satyrium kingi*) and its larval host plant Common Sweetleaf (*Symplocos tinctoria*) from Florida. A: Common Sweetleaf in flower at Florida, Jefferson County, Sneads Smokehouse Lake Park, March 23, 2014, M. C. Minno. B: King's Hairstreak at Florida, Alachua County, San Felasco Hammock Preserve State Park Blues Creek drainage, May 27, 2010, R. Owen. C: King's Hairstreak at Florida, Levy County, Manatee Springs State Park, June 2, 2014, R. Owen. D: King's Hairstreak visiting Saw Palmetto flowers at Florida, Clay County, Jennings State Forest along Pioneer Trail just west of Chapman's Camp on May 30, 2021, M. C. Minno.

Rick Owen and five other State Park staff conducted a routine resource evaluation on June 2, 2014 at Manatee Springs SP in Levy County. During this biological audit, two adult King's Hairstreaks were photographed by Rick at two separate locations within the park (Figure 1C) in the early afternoon. These records were subsequently submitted to FNAI. Nearly one year later, on May 3, 2015, Park Service Specialist, Teri Graves, sent a photograph of an adult King's Hairstreak to Rick Owen. She found this butterfly at 7:30 am perching on the outside wall of the Administrative Building at the Manatee Springs Main Park entrance. Perhaps this individual came to lights around the building during the previous evening. Common Sweetleaf was locally abundant at the San Felasco, Manatee Springs, and O'Leno sites described above. Representative photos of King's Hairstreak were posted by Rick Owen at iNaturalist.com.

While hiking and camping with Gainesville Scout Troop 432 on May 29, 2021, Marc Minno saw an adult King's Hairstreak visiting Saw Palmetto flowers, *Serenoa repens* (W. Bartram) Small, a few hours before sunset at Jennings State Forest in Clay County, Florida. Sweetleaf was present in the area. There were only a few Saw Palmettos in flower at the time. An Oak Hairstreak, *Satyrium favonius* (J. E. Smith, 1797), and a Red-banded Hairstreak were also feeding at the flowers. The next day he photographed a different individual of King's Hairstreak (Figure 1D) feeding on the flowers of the same plant, again late in the afternoon. Visitation at Saw Palmetto flowers is a new observation.

Adult King's Hairstreaks are most often seen perching on leaves. King's Hairstreaks appear torpid while perching during the day, but they are likely to become very active late in the afternoon, especially just before sunset, as does the Red-banded and some other Florida hairstreaks.

King's Hairstreak has been documented in Alachua, Clay, and Levy counties and the range of this butterfly now more closely matches the range of its host plant, Common Sweetleaf, in Florida. Previous information for King's Hairstreak based on specimen data had limited its range to the Panhandle region (Escambia, Santa Rosa, Bay, Okaloosa, Washington, Gadsden, Liberty, Leon, Wakulla counties) (Kimball, 1965; Oper and Krizek, 1984; Opler and Malikul, 1992; Minno, 1994; Heppner *et al*., 2003; Minno *et al*., 2005; Butterflies of America website accessed August 5, 2021; Butterflies and Moths of North America accessed August 5, 2021). The generalized range maps in Scott (1986), Glassberg (1999), Glassberg *et al*. (2000), and Cech and Tudor (2005) more closely match the currently known distribution.

Harris (1972) mentions that a King's Hairstreak larva was found on Flame Azalea (*Rhododendron calendulaceum*) in Georgia by John C. Symmes. Although that plant does not occur in Florida five other species of *Rhododendron* are native in northern and central areas of the state (see Atlas of Florida Plants website). If the Georgia observation is correct, King's Hairstreak may use wild azaleas in Florida as well, but these plants have not been investigated for larvae at the right time of year. Common Sweetleaf and *Rhododendron canescens* (Michx.) Sweet grow nearby or intermixed at the Jennings State Forest site along the North Fork of Black Creek, OLeno State Park (SP), River Rise Preserve SP, and Alachua Conservation Trust Preserve along the Santa Fe River, Suwannee River SP along the Withlacoochee River, as well as Big Shoals State Park (where three *Rhododendron* species have been documented) and at Stephen Foster Folk Cultural Center SP along the Suwannee River.

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

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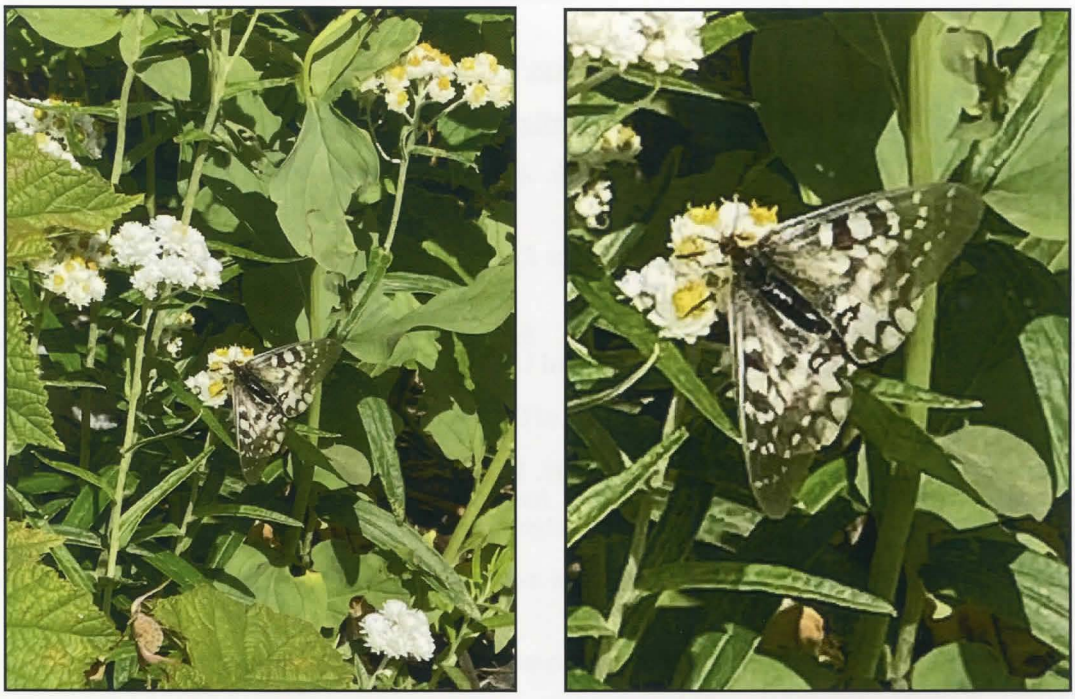

Snow Lake Trail in North Bend, Washington, photo by Richard Lombardini (August 9, 2021)

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EDWARDS' HAIRSTREAK (*SATYRIUM EDWARDSII*) KALAMAZOO COUNTY, MICHIGAN

BY

RONDA SPINK

The Edwards' Hairstreak (*Satyrium edwardsii*) lays its eggs in cracks and crevices of young scrub oaks. Eggs overwinter and hatch in late spring. The larvae are tended/protected by ants and in return these ants (*Formica integra*) feed on honeydew produced by the fourth-stage larvae. James A Scott's book, *The Butterflies of North America* says " young larvae eat host buds by day; older larvae eat leaves at night, and in the day rest around the trunk base within a chimney of litter built by ants". The ants will herd the larvae up the trunk base to feed and down the trunk base to rest in the leaf duff. I have witnessed the last instar larvae feeding during the day and being herded down the trunk base in the late afternoon.

When this butterfly decided to make its entrance it happened very quickly so that is why some of the photos are a bit blurry.

Fig. 1. Edwards' Hairstreaks Copulating

Fig. 3. Edwards' Hairstreak Egg

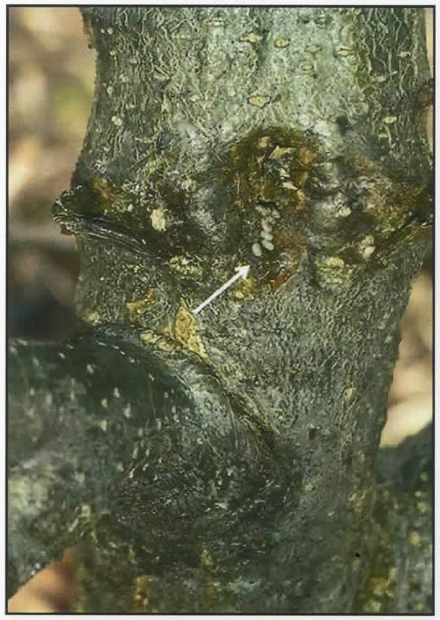

Fig. 2. Edwards' Hairstreak Eggs

Fig. 4. Edwards' Hairstreak Caterpillar (late 1st instar)

Fig. 5. Edwards' Hairstreak Caterpillars (three 2nd instars)

Fig. 6. Edwards' Hairstreak Caterpillar being herded down the tree trunk by ants

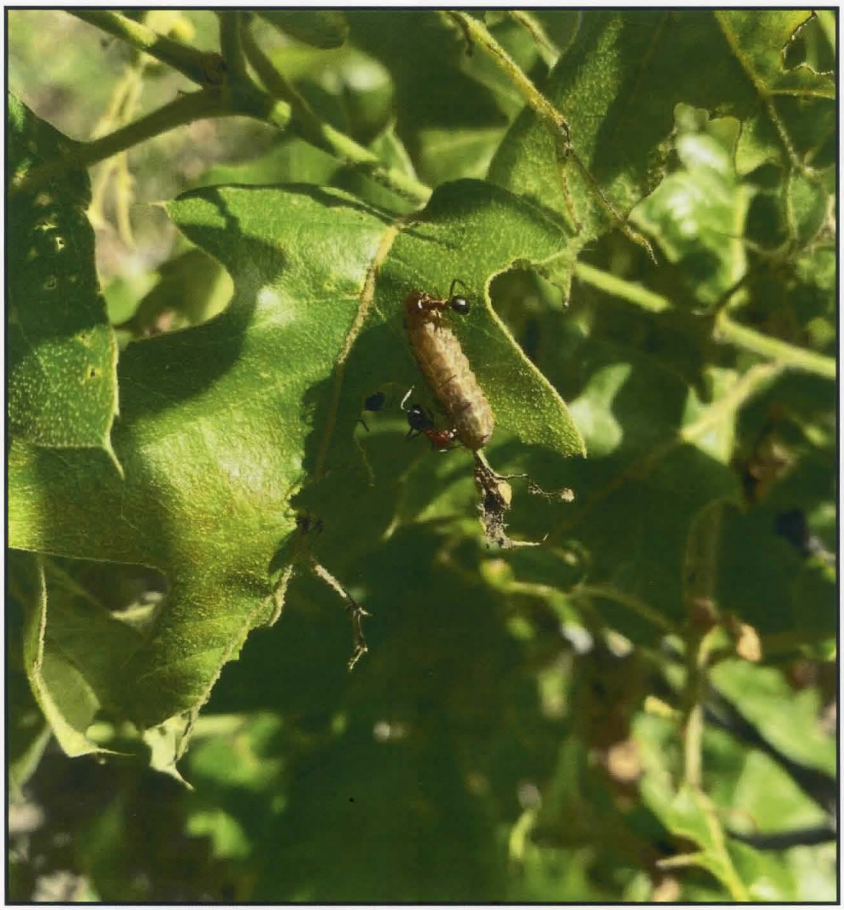

Fig. 7. Edwards' Hairstreak Caterpillar showing symbiotic relationship with ants

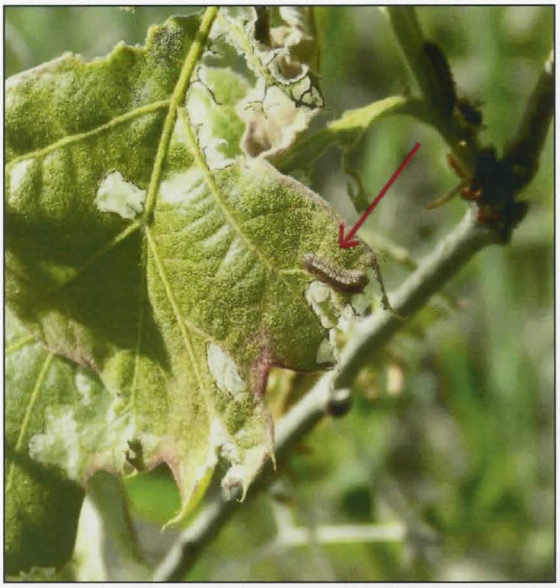

Fig. 8. Edwards' Hairstreak Caterpillar showing feeding pattern on leaf

Fig. 9. Edwards' Hairstreak Caterpillar showing symbiotic relationship with ants

Fig. 10. Edwards' Hairstreak Caterpillar (last instar) with ants

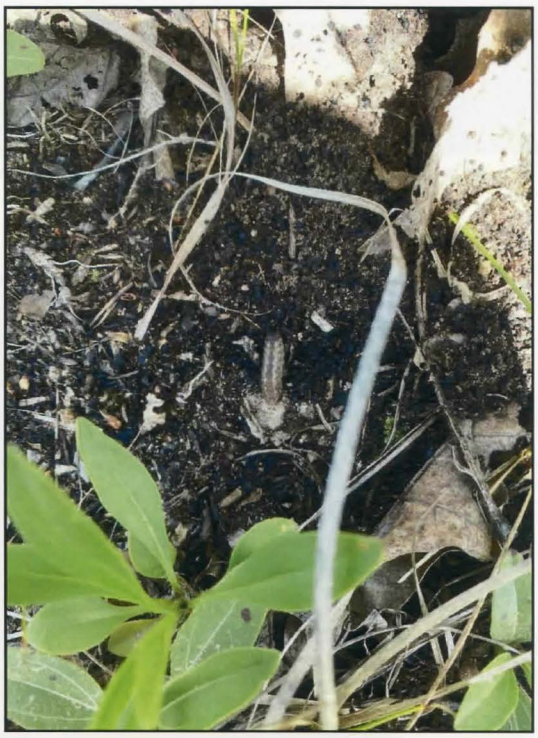

Fig. 11. Edwards' Hairstreak Caterpillar in leaf duff at the base of the host tree

Fig. 12. Edwards' Hairstreak Pupa

Fig. 13. Edwards' Hairstreak Adult Eclosing

Fig. 14. Edwards' Hairstreak Adult Eclosing

Fig. 15. Edwards' Hairstreak Adult Eclosing

Fig. 16. Edwards' Hairstreak Adult Eclosing

Fig. 17. Edwards' Hairstreak Adult Ready To Be Released

Fig. 18. Edwards' Hairstreak Adult

(Ronda Spink, E-Mail: rlovesbutterflies@gmail.com)

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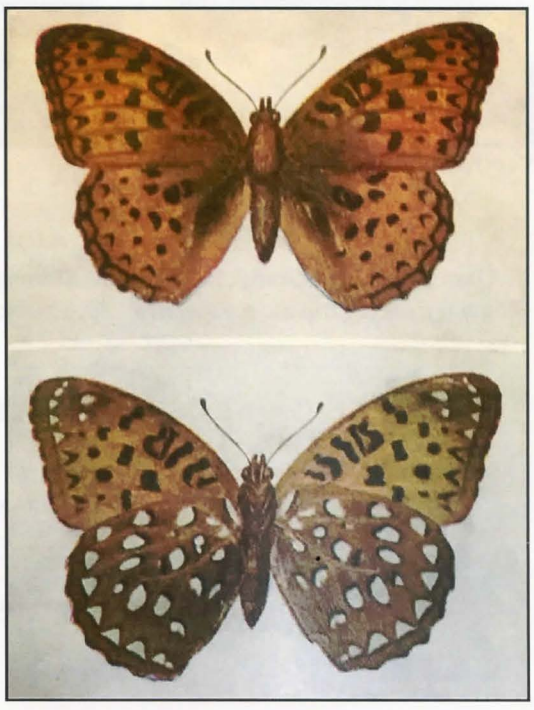
THE SILVER-SPOT FRITILLARY



BUTTERFLIES WORTH KNOWING
by
Clarence M. Weed, D. Sc.

Published by
Doubleday, Page & Company
For
Nelson Doubleday, Inc.
1925

TWINTIP BUCKEYE, *JUNONIA STEMOSA*, GRISHIN, SP.N. ANOTHER CRYPTIC SPECIES IN TEXAS

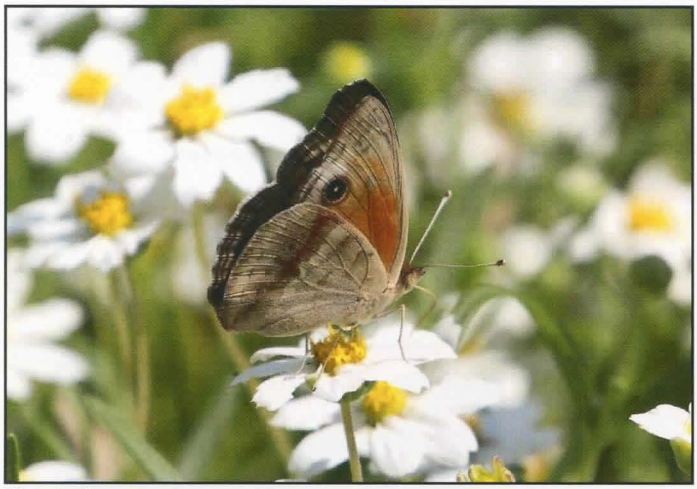
BY

JOSEPH F. DOYLE

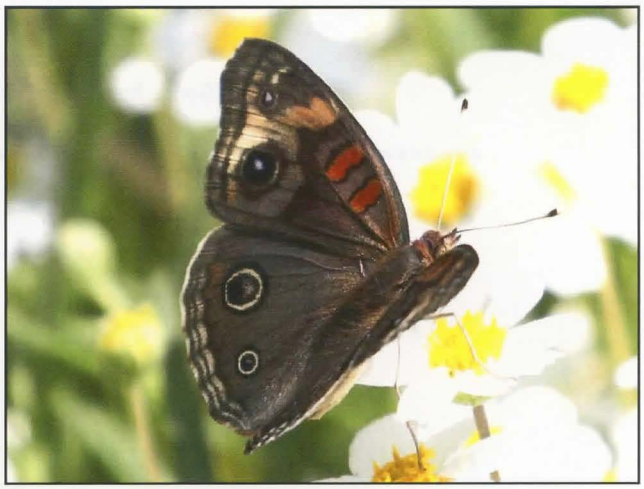
In a recent paper [1], a revision of U. S. Buckeyes revealed that six species are present. One, Twintip Buckeye, *Junonia stemosa*, is found in south Texas placed closest to the Dark Buckeye, *J. nigrosuffusa* with its dark color in southeast Arizona and west Texas. Range is central and south Texas: from Austin to Houston and south to the Rio Grande Valley. Highest abundance near Gulf coast. Farthest record west is Medina County. The following is an account of a sighting by Zachery Tonzetich in Bexar County of *J. stemosa* and his photos of dorsal and ventral views of the butterfly.

On Wednesday, July 28 at ca. 11:00 AM, I encountered up to four Twintip Buckeyes nectaring on and nearby a patch (approximately 8 x 12 sq. ft) of *Stemodia lanata* at Confluence Park in San Antonio, TX. The plant, which is the larval host for the species, is not native to Bexar county as far as I know, but was likely planted by the staff of the San Antonio River Foundation, who was responsible for installing the vegetation in the park. I immediately noticed the dark coloration of the buckeyes and the lack of a creamy white band surrounding the large eye spot on the FW. The underwing of the bugs also appeared more orange than I am used to with the Common Buckeye. The underside of the antennal clubs were light colored, also consistent with *J. stemosa*. Numerous photographs were taken showing the different aspects of the butterflies. All appeared to be quite fresh looking adults.

My appreciation is extended for this information and photos in this article.



Ventral



Dorsal

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History and update on The International Lepidoptera Survey (TILS) and The Taxonomic Report (TTR)

TILS was founded in 1998 by the late Rev. Ron Gatrelle as a 501c non-profit organization with one of the goals to provide an outlet for avocational lepidopterists to quickly publish their research free of page charges, lengthy publication delays, and "heavy handed" peer review treatment often encountered with the more "prestigious" vanity journals. That goal was The Taxonomic Report (TTR). Despite unfounded claims by some that TTR was "not peer reviewed", it was and is, in fact: peer reviewed! TILS review policy was different from the vanity journals in that an author may elect to choose their own peer reviewer, preferably one with expertise in the subject matter at hand or of a particular taxonomic group, or have TILS provide a reviewer. TILS-provided reviewers had the option to remain anonymous, however, the policy was to have authors work directly with peer reviewers to produce quality manuscripts. Once a paper was reviewed and accepted, the reviewer would then notify the TTR editor that the work was sound and ready for publication. TTR issues consisted of single-topic papers pertaining mostly to taxonomic issues, species or subspecies descriptions, life history studies and lepidopteran faunal surveys.

Many new taxa were described or others had their status revised in TTR:

1998: *Anthocharis midea texana* Gatrelle (new ssp.), *Chlosyne ismeria ismeria* Boisduval & LeConte (revised status), *Chlosyne ismeria nycteis* Doubleday & Hewitson (new combination), *Chlosyne ismeria drusius* W. H. Edwards (new combination), *Chlosyne ismeria reversa* F. & R. Chermock (new combination), *Speyeria aphrodite cullasaja* Gatrelle (new ssp.), *Phyciodes batesii maconensis* Gatrelle (new ssp.).

1999: *Megathymus cofaqui slotteni* Gatrelle (new ssp.), *Deciduphagus henrici yahwehus* Gatrelle (new ssp.), *Brephidium isopthalma insularus* Pavulaan & Gatrelle (new ssp.), *Neonympha helicta helicta* Hübner (revised status), *Neonympha helicta septentrionalis* Davis (new combination), *Neonympha helicta dadeensis* Gatrelle (new ssp.), *Celastrina idella* Wright & Pavulaan (new species), *Euphyes bimacula arbogasti* Gatrelle (new ssp.), *Poanes aaroni minimus* Gatrelle (new ssp.), *Hesperia attalus nigrescens* Gatrelle (new ssp.).

2000: *Ahlbergia hsui* Johnson (new species), *Poanes aaroni bordeloni* Gatrelle (new ssp.), *Angulopis puntalaraensis* Canals & Johnson (new species), *Pterourus troilus fakahatcheensis* Gatrelle (new ssp.).

2001: *Lacinipolia delongi* Selman & Leuschner (new species), *Lacinipolia aileenae* Selman & Leuschner (new species), *Lacinipolia triplehorni* Selman & Leuschner (new species), *Lacinipolia bucketti* Selman & Leuschner (new species), *Lacinipolia baueri* Selman & Leuschner (new species), *Lacinipolia sharonae* Selman & Leuschner (new species), *Lacinipolia fordi* Selman & Leuschner (new species), *Lacinipolia franclemonti* Selman & Leuschner (new species), *Lacinipolia martini* Selman & Leuschner (new species), *Satyrium edwardsii meridionale* Gatrelle (new ssp.), *Satyrium liparops floridensis* Gatrelle (new ssp.), *Mitoura hesseli angulata* Gatrelle (new ssp.).

2002: *Pterourus appalachiensis* Pavulaan & Wright (new species), *Poanes hobomok monofacies* Gatrelle (new ssp.).

2003: *Hesperia sassacus nantahala* Gatrelle & Grkovich (new ssp.), *Hesperia metea intermedia* Gatrelle (new ssp.), *Hesperia meskei pinocayo* Gatrelle & Minno (new ssp.), *Chlosyne ismeria obsoleta* Gatrelle (new ssp.), *Enodia anthedon borealis* A. H. Clark (revised status).

2004: *Harkenclenus titus winteri* Gatrelle (new ssp.), *Harkenclenus titus campus* Gatrelle (new ssp.), *Phyciodes incognitus* Gatrelle (new species).

2005: *Megisto eurytris* Fabricius (revised status), *Celastrina serotina* Pavulaan & Wright (new species).

2006: *Colias gigantea inupiat* Harry (new ssp.).

2007: *Lycaena phlaeas weberi* Kohler (new ssp.).

2010: In TTR 7(5) Guppy & Kondla presented many changes in the availability and authorship of *Pieris* names.

2014: *Cercyonis pegala agawamensis* Arey & Grkovich (new ssp.). In TTR 7(7) Pavulaan affirmed separate species status for *Celastrina ladon* Cramer, *C. lucia* W. Kirby and *C. neglecta* W. H. Edwards.

2019: In TTR 8(2), Zhang, Cong, Shen, Opler & Grishin proposed a great number of genus and species name changes, new combinations and new descriptions too numerous to list here.

2020: *Hemileuca maia maia* Drury (revised ssp. status), *Hemileuca maia sandra* Pavulaan (new ssp.), *Hemileuca maia warreni* Pavulaan (new ssp.), *Hemileuca maia orleans* Pavulaan (new ssp.), *Hemileuca maia menyanthevora* Pavulaan (new ssp.), *Euchloe olympia olympia* W. H. Edwards (revised ssp. status), *Euchloe olympia rosa* W. H. Edwards (revised ssp. status), *Euchloe olympia wagneri* Pavulaan (new ssp.), *Euchloe olympia huron* Pavulaan (new ssp.), *Speyeria egleis morrellensis* Kohler (new ssp.), *Speyeria egleis kutoyisiks* Kohler (new ssp.). In TTR 8(7), Zhang, Cong, Shen, Opler & Grishin proposed a great number of genus and species name changes, new combinations and new descriptions too numerous to list here.

2021: *Eurytides marcellus marcellus* Cramer (revised ssp. status), *Eurytides marcellus floridensis* Klots (revised ssp. status and authorship determination). *Euphilotes heracleoides* Kohler & A. Warren (new species). *Euphilotes baueri borealis* Kohler (new ssp.). *Euphilotes baueri shoshone* Kohler (new ssp.). *Euphilotes oakleyi* Kohler (new species). *Euphilotes oakleyi oakleyi* Kohler (new ssp.). *Euphilotes oakleyi madisonensis* Kohler (new ssp.). *Euphilotes ancilla montosa* Kohler (new ssp.). *Euphilotes ancilla campestris* Kohler (new ssp.). *Euphilotes rita montanensis* Kohler (new ssp.). In TTR 9(3), Zhang, Cong, Shen, Opler & Grishin proposed a great number of genus and species name changes, new combinations and new descriptions too numerous to list here.

In an unfortunate turn of events, founding member and TILS president Ron Gatrelle passed away in 2005. I assumed role of acting President. For several years, the remaining board members managed to keep TILS going and to produce a few TTR issues. To complicate matters further, TILS lost its 501c non-profit status at an undetermined date around 2014 due to changes in the IRS tax code regarding reporting requirements for non-profits, but the IRS failed to adequately notify all individual organizations [not everyone spends hours reading through each daily issue of the Federal Register]. Reinstatement of non-profit status was not possible due to outlandish IRS fee. Through Vol. 7, TILS operated with remaining funds from a subscriber base. Unfortunately, likely due to insufficient submittal of manuscripts to maintain an annual target of at least 8 issues, the subscription base shrank to the point where printing of TTR was no longer cost effective.

In 2018, TILS was incorporated as a Virginia LLC business. Though no longer a 501c non-profit organization, operating as an LLC was much simpler, and goals of TILS were revised to just publication of TTR. Commencing with Vol. 8 in 2019, TTR became an online digital open-access journal. No membership is required to download papers or to publish in TTR. Issues are uploaded to Archive.org, Biodiversitylibrary.org, Zobodat.at and to Will Cook's Carolina Nature website which still hosts the archived TILS website with current updates to TTR. Printed copies of TTR are still mailed to select institutional repositories to meet confusing, old ICZN print requirements. All printing expenses for Vol. 8 have been absorbed by myself.

The outlook for the immediate future looks promising, with several manuscripts either submitted, currently in work, or promised. A GoFundMe fundraiser was started for TILS in December 2020, with several generous donations both online and direct. If interested in helping support publication of TTR, go to: www.gf.me/u/zapxfj. Donations will help support printing and mailing of TTR for several select institutional repositories, who do not pay for subscriptions. TTR will continue as a digital open-access journal, but printed copies will be available at cost to anyone interested in purchasing copies.

I encourage lepidopterists who are sitting on undocumented life history information to consider publishing their findings in an issue of TTR. Simply submit an email to intlepsurvey@gmail.com and I'll get back shortly.

Harry Pavulaan,
Director, chief editor, secretary, treasurer, staff researcher, public relations manager, TTR printer, workhorse
TILS/TTR

(Harry Pavulaan, E-Mail: harrypav@hotmail.com)

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Floyd W. Preston Remembrance

To friends of Floyd Wayne Preston, Floyd passed away peacefully on April 1st, 2021 at home in Lawrence, Kansas at the age of 98.

Floyd was born on February 11, 1923, in Albuquerque, New Mexico. He was the oldest son of Thomas Floyd Preston and Edna Veronica Ledwich Preston. Shortly after his birth the family moved to Los Angeles, California, where he spent the rest of his childhood years. Floyd attended Arlington Heights Elementary, Mount Vernon Junior High, and Los Angeles High School where he graduated in the winter of 1941. During the spring, summer, and early fall of 1941, Floyd worked as a teller at Security First National Bank in Los Angeles. In September 1941, Floyd began pursuing a degree in chemistry at UCLA. During the second half of his sophomore year, he met the love of his life, Eleanor June Daus (June), his physics lab partner. Shortly after they began dating, Floyd transferred to Cal Tech, majoring in Chemistry. Floyd and June became engaged on Christmas Eve, 1943, and Floyd completed his degree in June 1944, and began working on a NDRC (National Defense Research Committee) rocket research project at Cal Tech under Dr. Linus Pauling until the end of the war. Floyd and June married July 8, 1945 and the couple moved to Ann Arbor, Michigan, where he completed his Master's degree in chemical engineering. The couple then moved back to Southern California where Floyd was a research engineer for Standard Oil of California in La Habra, California. And they welcomed their first child, Carl Bruce Preston. After two years in California, the couple moved to Penn State where Floyd completed his doctorate in petroleum and natural gas. Within the first year at Penn State, Floyd and June welcomed their second son, Harold Wayne Preston. In early 1955, the family moved to Lawrence, Kansas, where Floyd accepted a position as an assistant professor of petroleum engineering and became a half-time employee of the Kansas Geological Survey at the University of Kansas. On where their third son Donald Floyd Preston was born. In September 1958, Floyd was promoted to associate professor, and Steven Dean Preston was born.

Shortly after Steven was born, Floyd accepted a two-year appointment as an advisor to the Venezuelan Oil Ministry in Caracas, Venezuela. Floyd moved to Venezuela in January 1959 and the family joined him in June and lived in Venezuela for the next two years. The whole family returned to Lawrence, Kansas, in January 1961. The journey home became a life-threatening experience, as they were on board a Portuguese Caribbean cruise ship that was hijacked by 25 political revolutionaries. (Google: Hijacking of SS Santa Maria) For two weeks everyone on board was a hostage; but thankfully, this situation ended safely and the family returned home to Lawrence, Kansas.
After their return, life returned to normal. In 1966, Floyd became professor in chemical and petroleum engineering and assumed the dept chairmanship from 1974 to 1979. During 1971 and 1972, he served as the first faculty advisor to the newly established minority program, SCORMEBE (Student Council for Recruiting and Motivating Educating Black Engineers) which developed into the School of Engineering Minority Program. Floyd's international involvement continued through the summer of 1974 as an advisor to the Algerian National Oil Company in Algeria and in mid-winter service to the Petroleum Research Center in Tripoli, Libya. He served as a Fulbright Senior Lecturer as the Trinidad Tesoro distinguished professor in the academic year 1981 to 1982 at the University of the West Indies. June was able to accompany him during that year.
Following his Fulbright service in Trinidad he continued to be a consultant at the National Institute of Higher Education Science and Technology for the government of Trinidad and Tobago, West Indies, from 1983 to 1987. Floyd specialized in flow of fluids and porous media, digital computer applications to the description of structure of porous media and applications of computers to geology.
During his professional career he was a member of the American Chemical Society, American Institute of Chemical Engineers, American Statistical Society, Society of Petroleum of Engineering, International Association of Mathematical Geology, as well as a member honor society in science and engineering.

In addition to his engineering professional career, with his wife June, they collected nearly 100,000 butterflies of North America considered by the McGuire Center of Lepidoptera and Biodiversity, to which their collection was given, to be probably one of the most significant collections of North American butterflies ever assembled.

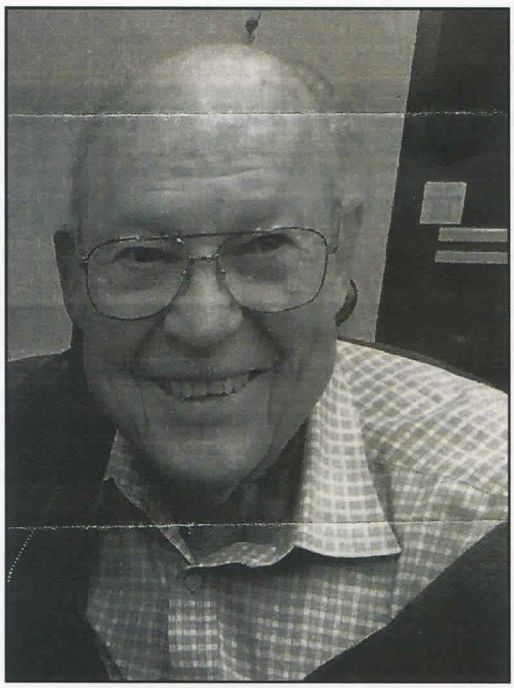
Floyd leaves behind sons, Bruce (Linda) of Ft. Collins, CO; Harold (Kathy) of Carrollton, TX; Donald (Bobbie) of Kenmore, WA; Steve (Sonia) of Saratoga Springs, UT; six grandchildren and eight great grandchildren.

A Celebration of Life will occur on September 2, 2021 at 10:00 a.m. Central Standard Time, US at the Plymouth Congregational Church. Inurnment is at Pioneer Cemetery next to the love of his life. It will be virtually available via:
https://www.youtube.com/watch?v=52-2V7uFmpM

(Continued on next page)

Memorial contributions can be made to the Plymouth Congregational Church or the Lawrence Habitat for Humanity and may be sent in care of Warren-McElwain Mortuary, 120 W. 13th Street, Lawrence, KS 66044.

For more information or to post a condolence go to warrenmcelwain.com.



Floyd W. Preston
February 11, 1923 – April 1, 2021

June D. Preston
June 16, 1923 – January 13, 2017

Thank you for being a friend.

Steven Preston (one of the sons of Floyd and June) wrote the above obituary (the editor of the SLS NEWS added the photo of June D. Preston).

After a 10-year struggle with Parkinson's disease, June Daus Preston passed away peacefully on January 13, 2017, with family, friends and her beloved husband Floyd by her side.

The Members of the Southern Lepidopterists' Society send their condolences to the family of Floyd and June Preston.

[One comment from the Editor: I went on a field with Floyd and June in early March 2006 for 5 days. I met them in Portales, New Mexico. And we parted company 5 days later in El Paso, Texas. We were looking for subspecies of *Megathymus yuccae* . We examined thousands of yucca plants and in these 5 days I found one pupa and June found 1 pupa at the end of the trip in El Paso county. June gave the pupa she found to me. They both hatched (male and female) 2 days after I returned home to Lubbock, Texas. (They both were *Megathymus yuccae reubeni*) It was a wonderful trip following the Prestons in their home made traveling butterfly, laboratory vehicle. · Floyd drove a lot faster then me and I lost them about 4 times (once in El Paso – still don't know how I found them). But being out in the field with them was a lot of fun. One might say that this was a long trip for only 2 specimens but I look at it differently. It was a great time with 2 of the best butterfly collectors that I have ever known. They will be missed. J. Barry Lombardini]

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.

Papilio glaucus, May 22, 25, 29, June 8, 17, 21, Aug. 7, 28, 31
Papilio troilus, My 22, 25, June 5, 8, 26, July 10, 15, 21, Aug. 21, 28, 31
Heraclides cresphontes, May 22, June 1, 5, 8, 25, 26, 29, July 5, 10, 12, 19, Aug. 28
Junonia coenia, May 22, 25, 29, June 1, 5, 8, 10, 26, July 10, Aug. 14, 21, 24
Papilio polyxenes asterius, May 25, 29, June 1, 5, Aug. 31
Agraulis vanillae, May 25, June 10, 17, 13, Aug. 10, 14, 21, 24, 28, 31
Vanessa atalanta, May 29, Aug. 28, 31
Hylephila phyleus, May 29, June 8, 12, 26, July 10, Aug. 10, 14, 21, 24, 31
Papilio palamedes, June 1, 8
Limenitis archippus, June 1, Aug. 24, 31
Heliconius charithonia, June 2, 4, 18, 24, 28, 30, July 2, 5, 8, 10, 12, 13, 15, Aug. 4, 11, 21, 24
Danaus plexippus, June 4, 5, 6, 10, 29, July 10, 15, 21, 22, 30, Aug. 7, 21, 28
Asterocampa clyton, June 12, Aug. 21
Phoebis sennae, June 24, 26, July 15, 22, 30, Aug. 3, 7, 21, 24, 28, 31
Erynnis horatius, June 26, July 10, 15,
Limenitis archippus, June 26
Urbanus dorantes, June 29
Danaus gilippus, July 15
Leptotes cassius, July 18
Phoebis philea, July 21
Abaeis nicippe, Aug. 21, 28

Moth: *Seiarctia echo (*Erebidae, Arctiinae*)*, freshly emerged from pupa, June 10, Gainesville Country Club fairway.

Jaret Daniels reported that their survey for *Papilio aristodemus poncesanus* in the upper Keys (Monroe County) was very successful in May, with over 500 individuals recorded. Sarah Steele Cabrera added that a small number of *Papilio andraemon bonhotei* were also seen.

Georgia: James K. Adams, 346 Sunset Drive SE, Calhoun, GA 30701, E-Mail: jadams@daltonstate.edu (Please check out the GA leps website at: http://www.galelps.org/

James sends in the following report:

Third Summary for 2021.

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:
LIMACODIDAE: *Euclea nanina* (June 30). **LASIOCAMPIDAE**: *Heteropacha rileyana* (June 30).

Rocky Face Ridgeline, just SW of Dalton March :

June 1-2:

EREBIDAE: *Zale undularis*. **NOCTUIDAE**: *Apamea vulgaris*.

June 4-5, with Bill Murphy, Neil Rulien:

SPHINGIDAE: *Eumorpha pandorus*.

Brasstown Bald, Union/Towns Cos.:

Bill Murphy, Bill King and Neil Rulien, June 5-6:

Powerline cut (Towns Co.; 3600'): **GEOMETRIDAE**: *Lytrosis permagnaria*. **NOCTUIDAE**: *Hyppa contrasta, Pyrrhia exprimens*.

Sharp curve near top (Towns; 4200'): **GEOMETRIDAE**: *Homochlodes* sp., *Eufidonia* sp., *Xanthorhoe iduata*. **NOCTUIDAE**: *Hyppa contrasta*.

Parking lot,west side (Union, 4300'): **GEOMETRIDAE**: *Biston betularia, Eufidonia* sp. **EREBIDAE**: *Catocala marmorata* (COUNTY). **NOCTUIDAE**: *Harrisimemna trisignata, Phlogophora iris, Hyppa contrasta, Pyrrhia exprimens*.

June 23-26:

Misty Mountain Cottages, Union County:

SESIIDAE: *Synanthedon kathyae* (at pheromone bait).

Powerline cut (Towns Co.; 3600'):

GEOMETRIDAE: *Eulithis molliculata* (COUNTY, second in STATE). **EREBIDAE**: *Catocala blandula*. **NOCTUIDAE**: *Acronicta superans*, *Loscopia velata*.

Sharp curve near top (Towns; 4200'):

URANIIDAE: *Calledapteryx dryopterata*. **GEOMETRIDAE**: *Rheumaptera undulata, Dysstroma truncata, Euchlaena muzaria, Cepphis armataria*. **NOCTUIDAE**: *Acronicta superans* (COUNTY).

Near parking lot (Towns Co., 4400'):

LIMACODIDAE: *Packardia elegans* (common), *P. geminata*. **GEOMETRIDAE**: *Macaria notata*. **NOCTUIDAE**: *Amphipoea americana*, *Acronicta fragilis* common across elevations.

Rocky Face Ridgeline, Just SW of Dalton, top of Dug Gap Battle Mountain Road:

June 30-July 1:

GEOMETRIDAE: *Erastria cruentaria*. **EREBIDAE**: *Cycnia collaris, Catocala insolabilis*. **NOCTUIDAE**: *Heliothis lupatus, Euplexia benesimilis*.

Aug. 13-14:

COSSIDAE: *Givira anna*. **SATURNIIDAE**: *Citheronia sepulcralis*. **SPHINGIDAE**: *Paonias astylus*. **NOTODONTIDAE**: *Tecmessa scitiscripta* (almost always found singly and at this location, one every few years). **NOCTUIDAE**: *Acronicta funeralis, A. fallax* (many), *Callopistria floridensis, Euplexia benesimilis, Properigia* nr. *costa* (one of two locations for this species in Georgia, and the only one where it is found regularly),

Taylor's Ridge, 5 miles W of Villanow, south of Hwy 136:

May 25-26:

CRAMBIDAE: *Compacta capitalis* (third record for STATE, first female). **DREPANIDAE**: *Oreta rosea* (female red form, first for me). **GEOMETRIDAE**: *Lytrosis permagnaria* (common, though a little past prime flight). **EREBIDAE**: *Apantesis anna* (abundant; with some interesting forms), *Zanclognatha atrilineela*. **NOCTUIDAE**: *Alypia octomaculata* (in light trap).

June 3-4, with Bill Murphy, Bill King and Neil Rulien:

SPHINGIDAE: *Manduca jasminearum* (several). The season is late as there were very few *Catocala*.

June 12-13:

CRAMBIDAE: *Compacta capitalis* (see image, next page). **SPHINGIDAE**: *Manduca jasminearum*. **EREBIDAE**: *Catocala miranda* (four specimens), *Dinumma deponens*. **NOCTUIDAE**: *Apamea cristata*.

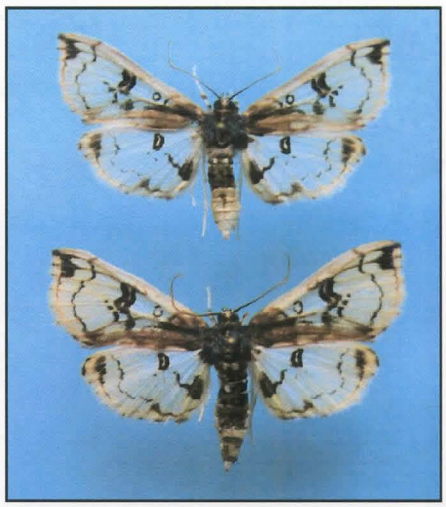
June 20-21:

CRAMBIDAE: *Compacta capitalis*. **GEOMETRIDAE**: *Selenia kentaria*. **EREBIDAE**: *Catocala judith, Catocala mira* (COUNTY). **NOCTUIDAE**: *Euplexia benesimilis, Hadena ectypa*.

June 26-27, with LD:

CRAMBIDAE: *Compacta capitalis*. **GEOMETRIDAE**: *Selenia kentaria*. **EREBIDAE**: *Catocala judith, C. amestris*. **NOCTUIDAE**: *Emarginea percara*.

Compacta capitalis



August 1-2:

LIMACODIDAE: *Phobetron pithecium*. **EREBIDAE**: *Catocala innubens, C. cerogama, C. judith* (LATE), *C. retecta, C. luctuosa, C. habilis*. **NOCTUIDAE**: *Acronicta funeralis, Euplexia benesimilis, Hadena ectypa.*

August 7-8:

NOTODONTIDAE: *Hyparpax aurora*. **EREBIDAE**: *Catocala luctuosa, C. habilis*. **NOCTUIDAE**: *Acronicta funeralis, Harrisimemna trisignata, Helicheilus lupatus.*

Crockford-Pigeon Mountain WMA, 8 mi. WSW LaFayette, at Pocket Rd., Walker Co.:

May 4:

HESPERIIDAE: *Amblyscirtes belli*. **LYCAENIDAE**: *Feniseca tarquinius*.

Serenbe, Fulton Co., GA, 33.51715 N, 84.73998 W, June 12, Giff Beaton:

EREBIDAE: *Catocala mira*.

Canoochee Sandhills WMA, Bulloch Co., LD:

May 9-10:

PSYCHIDAE: *Basicladus tracyi, Prochalia pygmaea*. **COSSIDAE**: *Inguromorpha basalis*. **TORTRICIDAE**: *Henricus edwardsiana*. **CRAMBIDAE**: *Donacaula unipunctellus, Chilo erianthalis*. **DREPANIDAE**: *Eudeilinea herminiata*. **GEOMETRIDAE**: *Macaria coortaria, Metarranthis lateritiaria* (see image). **SPHINGIDAE**: *Paonias astylus* (COUNTY). **NOTODONTIDAE**: *Hyparpax perophoroides*. **EREBIDAE**: *Dasychira leucophaea* (see image).

Metarranthis lateritiaria

Dasychira leucophaea

June 10-11:

GEOMETRIDAE: *Cyclophora culicaria, Nemoria outina, Tornos abjectarius*. **EREBIDAE**: *Macrochilo louisiana, Catocala alabamae, C. louiseae, C. muliercula*. **NOCTUIDAE**: *Fagitana littera, Azenia obtusa.*

Alligator Creek WMA, Wheeler Co.:
May 15-22 (JKA, Bob Borth), all COUNTY records:
GEOMETRIDAE: *Metarranthis* (near) *lateritiaria.* **EREBIDAE**: *Catocala orba* (see image; third location in STATE), *C. lincolnana* (third location in STATE).

Catocala orba

Parapoynx obscuralis

This crambid (*P. obscuralis*) was labelled incorrectly in the June (2021) issue of the SLS NEWS.
Editor's mistake!

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 sent in the following report on August 22:

29 July 2021, *Catocala robinsonii* (incl. form missouriensis), *Catocala luctuosa, Catocala maestosa,* Crawford, Lowndes county, MS

7 August 2021, *Catocala angusi, Catocala vidua, Cercyonis pegala alope,* NE of Palmetto community, Lee county, MS

7 August 2021, *Catocala ulalume*, ENE of Troy, Pontotoc county, MS

8 August 2021, *Catocala lacrymosa, Catocala* sp ("white fringed residua"), County Road #149, Yalobusha county, MS, GPS N 33.8912, W -89.5340

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

Harry sends in the following report: SUMMER BUTTERFLY RECORDS FOR NORTH CAROLINA – 2021

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

Summer 2021 was essentially devoid of tropical storms or other major weather events to hamper butterflies or butterfliers (except for remnants of one in the mountains in August). Temperatures for most of the season, until around August 20, were around normal, though rainfall was rather high. A change came in the latter part of August, with very high temperatures and a near lack of rainfall.

Though conditions for watching butterflies were excellent, butterfly numbers for most species remained low, and got worse as the season advanced. *Hesperiidae* and *Nympalidae* species were most heavily impacted, yet these two groups account for much more than half of all species. Some folks simply quit visiting the lower Coastal Plain owing to it being not worth the effort, and most mountain field work was centered in the northern counties and in Madison County. Thus, the preponderance of effort was in the Piedmont and the Sandhills regions.

In addition to general low numbers and observer apathy, we also had a dismal summer for nearly all immigrant species. Pyrisitia lisa, Dione vanillae, Vanessa cardui, Urbanus proteus, and Calpodes ethlius were all found a few times, but mostly just just one per trip, and more common ones such as Phoebis sennae and Panoquina ocola were in far below numbers as well. Thankfully, the state does have enough people reporting records to the carolinaleps listserve that a sizable number of notable records accrued, including a new species (#178) for the state!

PAPILIONIDAE:

Heraclides cresphontes, in addition to the usual several reports from the Duck/Kitty Hawk (Dare) area, there were a few from much farther inland, where very rare or a migrant. Perhaps a local breeder was one seen by Doug Allen at Tryon Peak (Polk) on July 27. Definitely breeders were singles seen along the New River (Ashe) by Will Stuart on August 3 and August 24. A likely stray, though Parker Backstrom's third record in several years, was one in his yard near Bear Creek (Chatham) on August 5.

PIERIDAE:

Pontia protodice, this rarity was encountered on five occasions, as singles – near Raleigh (Wake) on June 24 by Harry LeGrand, Unionville (Union) on July 1 by Elaine Long, Durham (Durham) on July 2 by Christina Chia, near Tar Heel (**Bladen**) on July 11 by Mike Turner, and at the Sandhills Game Land (Richmond) on August 24 by LeGrand.

LYCAENIDAE:

Callophrys gryneus, Mike Turner saw one along the Cape Fear River near Tar Heel (**Bladen**) on June 19; this is slightly southeast of the range of the nominate subspecies. One at Stone Mountain State Park (**Alleghany**), photographed by Mark Shields on June 25, was at last a first record for the northern mountains of the state. Notable coastal counts for the *sweadneri* subspecies were 35 at Cape Lookout (Carteret) noted by Matt Spangler on April 23, and 15 by John Taggart at Fort Fisher (New Hanover) on August 9.

Callophrys hesseli, this uncommon species was often found in its second brood, in July – in Harnett, Moore, Richmond, and Brunswick counties, but nearly all were just of single individuals.

Satyrium titus, the more notable records were an excellent nine seen near Butner (Granville) on June 13 by Harry LeGrand and Lori Arent; and singles seen on several dates in the first half of July by Will Stuart at the Northwest Trading Post in eastern Ashe County.

Satyrium favonius, only the second mountain record, both for the same county, was one photographed at Stone Mountain State Park (Alleghany) by Mark Shields on June 25.

Satyrium kingi, notable for the western Piedmont, near the inner edge of the range, were one near Old Fort (McDowell) as photographed by Nancy Cowal on June 11, and one near Maple Springs (**Wilkes**) as photographed by Lori Arent on June 30.

Satyrium liparops, the only report for the entire year was one photographed by Matt Spangler near Jordan Lake (Chatham) on June 7.

Brephidium pseudofea, a tropical storm a few days earlier probably carried an individual to Bob Cavanaugh's garden in Newport (**Carteret**) **(STATE)**, where he collected it on June 20. A photo is posted on the Butterflies of North Carolina website. Though it breeds coastally north to northern South Carolina, it has yet to be found in our state's tidal marshes, and Carteret is well north of the known range.

NYMPHALIDAE:

Danaus gilippus, John Taggart encountered it on several dates at its main state haunt at Fort Fisher (New Hanover); best counts were nine on July 6, and 15 on August 9.

Heliconius charithonia, this was the only truly rare stray for the season. One was photographed by Mark Kosiewski on July 26 at Airlie Gardens near Wilmington (New Hanover), certainly a suitable place to expect one!

Euphydryas phaeton, the only reports in 2021 came from a site in Buncombe County, where singletons were seen on May 30 and June 6 by Karah Jaffe.

Vanessa cardui, there were just three reports, all singletons, from Alleghany, Wake, and Wilkes counties.

Neonympha helicta, this poorly understood taxon/species has mostly disappeared from the state, other than at a few sites in Fort Bragg. Dave Pavlik photographed several there (Hoke) on June 2 that appear to be *helicta* and not *N. areolata*, which is of unsettled occurrence in this region.

HESPERIIDAE:

Thorybes confusis, a site in the Sandhills Game Land (Richmond) held at least 10 individuals on both July 9 (Will Stuart) and July 15 (Harry LeGrand, Lori Arent); these are good numbers for this rather scarce species.

Telegonus cellus, again the only records this season came from their best state site, in Madison County, where singles were reported on three dates. Those in June were rather worn, but the one on July 16 was fresh, indicating the start of the small second brood (Pete Dixon).

Erynnis icelus, remarkably late was a fresh individual (rare second brood?) photographed by Will Stuart in South Mountains Game Land (Rutherford) on July 1.

Erynnis baptisiae, very rare in the central Coastal Plain was one found by Mike Turner near Tar Heel (**Bladen**) on July 11.

Euphyes pilatka, Jim Parnell had an excellent count of at least 50 at Swanquarter NWR (Hyde) on June 19; this is a known site for the species. Matt Spangler canoed the White Oak River (**Jones**) and noted two individuals on June 17; *Cladium jamaicense* is present in the area.

Euphyes dukesi, Brian Bockhahn saw one from his canoe near Kitty Hawk (Dare) on June 20; this site is a few miles from the Duck site, one of less than 10 known locales for this rare species in the state.

Hesperia sassacus, the only summer report was at the far southern end of the range, near Hayesville (Clay), with a photograph on BAMONA (no observer given) on June 1.

Poanes aaroni, there are few first brood records in the state; thus, notable was one photographed by Tom Feild on the Dare County mainland on May 31.

Poanes viator, Matt Spangler discovered (by canoe) a new colony along the Haw River near Bynum (Chatham), at the inner edge of the range; he noted eight on August 1, near their *Zizaniopsis miliacea* host plant.

Problema byssus, notable records near the inner edge of the expanding range were three seen by Harry LeGrand and Lori Arent on June 16 at Umstead State Park (Wake); two at Harris Lake (Wake) by LeGrand on June 28; and one at the Jordan Lake dam (Chatham) by Luke Armstrong on August 28.

Polites origenes, an excellent count of 125 was made by Harry LeGrand and Lori Arent at a site near Butner (Granville) on June 13.

Lon hobomok, an excellent single day count was 46 noted by Chris Talkington in the Doughton Park area of the Blue Ridge Parkway (Alleghany) on June 1.

Atrytonopsis quinteri, quite notable for location was one photographed by C. Price in Morehead City (Carteret) on April 29. This might be the first record for the mainland for this insular species, though it breeds within 1-2 miles on Bogue Banks; it is presumed to have wandered there to search for nectar.

Amblyscirtes carolina, the only seasonal reports were singles noted by Nick Flanders – on June 13 in western Bertie County and on June 22 in the Great Dismal Swamp NWR (Pasquotank).

Lerodea eufala, continuing a string of surprising spring reports in the Piedmont, a few more were noted in June in the province, indicating that the species is capable of surviving some Piedmont winters. Normally the first Piedmont reports are not until later in July and August.

Oarisma minima, an excellent state count was 67 made by Mike Turner near Tar Heel (Bladen) on July 11. A good local count was 23 seen by John Taggart north of Wilmington (New Hanover) on August 9. One seen by Rob Gilson at Steven's Creek Nature Preserve (Mecklenburg) on July 4 was notable; though a scarce resident in that county, most reports come later in the season.

Calpodes ethlius, disappointingly the only seasonal reports were made at Raulston Arboretum in Raleigh (Wake) – two each on August 21 (Harry LeGrand, Lori Arent) and August 27 (John Connors).

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

Tennessee: John Hyatt, 233 Park Ridge Court, Kingsport, TN 37664, E-Mail: jkshyatt@centurylink.net

John sent in the following note on June 28, 2021:

> Sullivan County, Kingsport, June 25, J. Hyatt *Catocala illecta* (County record).

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 3rd quarter of 2021, and comments:

Following the below normal weather pattern this spring, temperatures in July and August continued below normal in Texas and south central US states. Steady Gulf winds brought high humidity with a few northern cold fronts that consequently produced scattered heavy rains. Six inches over two days in the San Antonio area and more in others. Extreme drought was down to 1% in the state. High drought remains near the Big Bend region.

The moderation of climactic conditions is producing an upswing in lepidopteran populations. Moth numbers exploded in May. By mid-summer, most moth species are in immature stages preparing for fall and early winter emergences. The short-lived movement of Mexican strays from the Rio Grande Valley and northern Mexico to Uvalde County did not appear again this year. The downpours in this region and south east winds produced the "Natural Dispersal" effect in 2020. The snow and ice storm of February 2021 ended all that.

Many of the butterfly "usual suspects" are showing healthy numbers with some still missing, i.e., hairstreak oak-feeders. In lieu of lacking report receipts, a list of total observations by species from the iNaturalist source will lend evidence. Start date of July 1 to mid-August was chosen to reflect the current reporting period. Total number of observations, ranges and annotations are also added.

(See: Ray Neck's Texas Butterfly Field Guide (out of print), copyrighted 1996, Gulf Printing, Houston. Can use as reference to clarify range location abbreviations in list.)

Checkered White, 50, north and south Central and east
Cabbage White, 41, no. Central and panhandle
Orange Sulphur, 20, panhandle, no. & so. Central
Southern Dogface, 21, Central and Trans-pecos
Cloudless Sulphur, 138, east, no. & so. Central
Large Orange Sulphur, 85, no. & so. Central, south and RGV
Lyside Sulphur, 34, so. Central and RGV
Little Yellow, 233, no. & so. Central, south, RGV
Mimosa Yellow, 9, so. Central
Dainty Sulphur, 95, South

Pipevine Swallowtail, 360, all, except panhandle
Black Swallowtail, 10, no. & so. Central
Spicebush Swallowtail, 94, so. Central and east
Eastern Tiger Swallowtail, 260, no. & so. Central
Two-tailed Swallowtail, 5, so. Central
Zebra Swallowtail, 6, East
Eastern Giant Swallowtail, no. & so. Central
Western Giant Swallwtail, 90, no. & so. Central and RGV
Palamedes Swallowtail, 15, so. East
Great Purple Hairstreak,18, no. & so. Central

Juniper Hairstreak, 35, Central
Gray Hairstreak, 364, all
Dusky- blue Groundstreak, 63, no. & so. Central, RGV
Malow Scrub-hairstreak, 24, South
Western Pygmy Blue, 40, all except East
Eastern Tailed-blue, 15, no. East
Chisos Metalmark, 2, Big Bend
Gulf Fritillary, all except Panhandle
Variegated Fritillary, 285, all except South and RGV
Bordered Patch, 891, all except e. Panhandle, Trans-Pecos and Far West

Crocale Bordered Patch, 1, 17 Jul, San Antonio, out of range
Elada Checkerspot, 35, so. Cent. & rgv
Silvery Checkerspot, 92, no. & so. Cent.
Pearl Crescent, 340, no. & so. Cent.
Vesta Crescent, 127, so. Cent.
Phaon Crescent, 390, no. & so. Cent.
Question Mark, 442, all
Red Admiral, 75, no. & so. Cent
Common Buckeye, 420, no. & so. Cent.
Twintip Buckeye, 4, 28 Jul, Confluence Park, San Antonio, Bexar Co.

Viceroy, 169, no. & so. Cent (ssp. *archippus* & *watsoni*)
Ruddy Daggerwing, 1, 10 Jul, Pearland,TX; 1, 5 Jul, El Lago,TX
Goatweed Leafwing, 190, no. Cent., South
Hackberry Emperor, 327, no. Cent., no. East
Tawny Emperor, 409, no. & so. Cent
American Snout, 87, all
Common Wood Nymph, 48, no. & so. Cent
Monarch, 665, no. & so. Cent
Queen, 539, no. & so. Cent
White-striped Skipper, 78, no. & so. Cent., Coastal

Long-tailed Skipper, 25, so. East
Brown-banded Skipper, 2, Estero Llano Grande State Park, Hidalgo Co.
Horace's Duskywing, 243, no. & so. Cent.
Southern Skipperling, 71, no. & so. Cent., Coastal
Orange Skipperling, 40, no. & so. Cent.
Clouded Skipper, 195, no. & so. Cent., East, no. East
Fiery Skipper, 315, no. & so. Cent.
Sachem, 108, no. & so. Cent.
Dun Skipper, 79, so. Cent.
Zabulon Skipper, 1, Denison, TX.

Dion Skipper, 2, Williamson County, TX.
Common Roadside Skipper, 2, no. Cent.

Celia's Roadside Skipper, 86, Central, Coastal, RGV
Bronze Roadside Skipper, 1, Bandera Co.
Brazilian Skipper, 121, no. Coastal, no. & so. Cent.
Yucca Giant Skipper, 2, Central

Moths

SESIIDAE

Mellitia snowii, 1 male, 16 Jun 2021, 13310 Bar C Dr., Bexar County, J F Doyle, EZODDA pheromone, bucket trap.

Footnote:

On 21 August, 2021, a Category 3 hurricane has struck and passed the peninsular Mexican state of Yucatan. Making landfall just north of Veracruz city. It is forecast to track due west. Torrential rains of 6-12" are predicted causing significant flooding in the coastal states of Tabasco and Veracruz. It will also effect the central states of Puebla, Hidalgo, Tlaxcala and Mexico City, D.F. This could result in a change in the lepidopteran population in Texas in the last quarter and into next year. North and central Mexico is a historical engine of the dynamics of butterflies in Texas south and central regions. The effects producing an increase in the number of stray species could reach as far as the central plains states of the U.S. A hurricane can double-down this scenario. With adequate rainfall, constant southeast Gulf winds and a mild winter it has capacity for a once-every-fifty-years happening. Last time was in the late 50's and early 60's.

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Stuart sends in the following report:

Moths for Trinity River National Wildlife Refuge
Liberty County, TX
May 1, 2021 through July 31, 2021
Stuart J. Marcus
Stuart.marcus13@gmail.com

The following moths were seen at least once during the month indicated on sheets using black and mercury vapor lights at Trinity River National Wildlife Refuge. If you would like any photographs or phenology data dating back to 2012, please let me know at stuart.marcus13@gmail.com.

ACROLOPHIDAE
Acrolophus heppneri May, July
Acrolophus popeanella July
Acrolophus texanella May

ATTEVIDAE
Atteva aurea May

AUTOSTICHIDAE
Glyphidocera lactiflosella May

BLASTOBASIDAE
Blastobasis sp. May, July

COLEOPHORIDAE
Coleophora cratipennella July
Coleophora sp. May, June, July

COSMOPTERIGIDAE
Euclemensia bassettella June
Triclonella bicoloripennis June

COSSIDAE
Cossula magnifica May
Givira anna May, June, July
Prionoxystus robiniae May

CRAMBIDAE
Achyra rantalis May, June, July
Aethiophysa invisalis June
Anageshna primordialis May
Apogeshna stenialis May, July
Argyria critica June
Argyria lacteella May, June, July
Carectocultus perstrialis July
Chrysendeton medicinalis May, July
Colomychus talis May, July

Crocidophora tuberculalis June, July
Desmia funeralis complex May, June
Diacme adipaloides May
Diastictis fracturalis May, June, July
Diatraea sp. May, June, July
Dicymolomia julianalis June
Elophila gyralis May, June, July
Elophila obliteralis May, June, July
Elophila tinealis May, June, July
Epipagis fenestralis May, June, July
Euchromius ocellea May
Eudonia strigalis May, July
Fissicrambus sp. July
Glaphyria sesquistrialis May, July
Herpetogramma fluctuosalis May
Herpetogramma phaeopteralis July
Hymenia perspectalis July
Leptosteges parthenialis July
Microcrambus biguttellus May, June
Microcrambus elegans May
Microcrambus kimballi July
Niphograpta albiguttalis June, July
Nomophila nearctica May, June
Ommatospila narcaeusalis July
Palpita freemanalis May, June, July
Palpita magniferalis June, July
Palpita quadristigmalis May, June, July
Parapediasia decorellus July
Parapediasia teterrellus June, July
Parapoynx allionealis May, June, July
Parapoynx obscuralis May, June
Pyrausta acrionalis July
Pyrausta laticlavia June
Pyrausta tyralis May, June, July
Rupela tinctella May, June, July
Samea baccatalis May, July
Samea multiplicalis June, July
Spoladea recurvalis June, July
Terastia meticulosalis July
Urola nivalis May, June, July

DEPRESSARIIDAE
Antaeotricha leucillana May
Antaeotricha schlaegeri May, June, July

EREBIDAE
Ablemma brimleyana May, July
Amolita fessa June
Apantesis phalerata May
Caenurgia chloropha May, June, July
Catocala agrippina June, July
Catocala amatrix July
Catocala amica June, July
Catocala connubialis May
Catocala illecta May
Catocala lineella May
Catocala micronympha May
Catocala minuta May
Catocala pretiosa May
Cisseps fulvicollis June, July
Cisthene plumbea June
Cisthene unifascia May
Colobochyla interpuncta June
Crambidia pallida May, June, July
Cutina albopunctella May, June, July
Cutina arcuate July
Cutina aluticolor May
Cutina distincta June
Dasychira meridionalis May, June, July
Estigmene acrea May, July
Euerythra phasma June
Gabara distema May
Halysidota sp. May, June, July
Hypena abalienalis May, July
Hypena palparia May
Hypena scabra June
Hypercompe scribonia May
Hyphantria cunea May, July
Hypoprepia fucosa May, July
Hypsoropha hormos June, July
Idia aemula June
Idia americalis June, July
Isogona tenuis June, July
Lascoria ambigualis June
Ledaea perditalis June
Lesmone detrahens May, June, July
Macrochilo hypocritalis May, June
Macrochilo louisiana May
Macrochilo orciferalis July
Melipotis cellaris June
Melipotis indomita June, July
Metalectra discalis July
Metria amella May
Mocis latipes July
Mocis marcida May, July
Nigetia formosalis May, July
Orgyia detrita May
Orgyia leucostigma May, June, July
Pagara simplex May, July
Palthis asopialis June, July
Panopoda carneicosta May, June, July
Panopoda rufimargo May, July
Phyprosopus callitrichoides July
Plusiodonta compressipalpis May, June, July
Ptichodis vinculum May, June, July
Pyrrharctia isabella May, June
Redectis vitrea May
Renia adspergillus May, June
Scolecocampa liburna July
Spiloloma lunilinea June
Spilosoma virginica May, June, July
Tetanolita mynesalis June
Toxonprucha excavate May
Virbia laeta May, June

Zale lunata June, July
Zanclognatha atrilineella June
Zanclognatha obscuripennis May
Zanclognatha theralis complex May, June

EUTELIIDAE
Paectes abrostoloides May, June

GELECHIIDAE
Anacampsis fullonella May
Chionodes dentella June, July
Coleotechnites sp. May
Dichomeris sp. May
Helcystogramma chambersella May, July
Monochroa sp. May, June, July
Neodactylota sp. (Possibly) May
Polyhymno luteostrigella May, July

GEOMETRIDAE
Anavitrinella pampinaria May
Chlorochlamys chloroleucaria May, June, July
Costaconvexa centrostrigaria May
Cyclophora packardi June
Dichomeris sp. July
Dichorda iridaria July
Digrammia continuata June, July
Digrammia gnophosaria May, July
Dyspteris abortivaria July
Ennomos subsignaria May
Epimecis hortaria May
Eulithis diversilineata or *gracilineata* Complex May, June
Eusarca confusaria July
Eutrapela clemataria May, June, July
Glenoides texanaria May, July
Haematopis grataria June
Hypagyrtis esther June
Hypagyrtis unipunctata May, June, July
Idaea tacturata May, July
Ilexia intractata May, June, July
Iridopsis defectaria May, June, July
Iridopsis ephyraria May
Iridopsis pergracilis June
Leptostales pannaria May, June, July
Lobocleta ossularia May, June, July
Lychnosea intermicata May, June
Macaria aequiferaria May, June
Melanolophia sp. July
Mellilla xanthometata May, June, July
Nematocampa resistaria May, June
Nemoria elfa May
Nemoria lixaria May, June, July
Nepytia semiclusaria May
Patalene olyzonaria June
Plagodis fervidaria July
Plagodis phlogosaria July
Pleuroprucha insulsaria June, July
Prochoerodes lineola May, June, July
Protoboarmia porcelaria June
Psamatodes abydata May, July
Scopula aemulata July
Synchlora frondaria May, June, July
Timandra amaturaria June
Tornos scolopacinaria May, June

GRACILLARIIDAE
Caloptilia triadicae July
Neurostrota gunniella July

LACTURIDAE
Lactura pupula May
Lactura subfervens May, June, July

LASIOCAMPIDAE
Artace cribrarius May, July
Heteropacha rileyana May, June, July
Malacosoma disstria May
Tolype sp. May, June

LIMACODIDAE
Apoda biguttata July
Apoda y-inversum May, June, July
Euclea sp. May
Isa textula June
Isochaetes beutenmuelleri June, July
Natada nasoni May

MEGALOPYGIDAE
Megalopyge opercularis May, June, July

MOMPHIDAE
Mompha circumscriptella July
Mompha rufocristatella May
Mompha sp. nr. metallifera (421856.97) May

NOCTUIDAE
Acronicta afflicta May, June
Acronicta clarescens May
Acronicta connecta June
Acronicta impleta May
Acronicta insularis May, June, July
Acronicta morula May, June
Acronicta oblinita May
Acronicta ovata June
Acronicta rubricoma May, June, July
Acronicta vinnula May, June, July
Agrotis ipsilon June
Amyna stricta July
Anicla infecta May, June, July
Cerma cerintha July
Charadra deridens May, July
Condica sutor June, July

Condica vecors May, June
Condica videns May, June
Crambodes talidiformis May
Cydosia aurivitta May, June, July
Diphthera festiva May
Elaphria chalcedonia May, July
Elaphria grata May
Enigmogramma basigera May, July
Eudryas unio May, June, July
Feltia subterranean June
Galgula partita May, June, July
Harrisimemna trisignata May
Helicoverpa zea May, July
Homophoberia apicosa June, July
Leucania adjuta May
Leuconycta lepidula May, June
Marimatha nigrofimbria May, June, July
Metaponpneumata rogenhoferi June
Orthodes majuscula May
Peridroma saucia July
Phosphila miselioides May, July
Polygrammate hebraeicum June
Ponometia candefacta July
Pseudeustrotia indeterminata June, July
Raphia frater May, June, July
Spodoptera frugiperda May, June, July
Spodoptera latifascia July
Spodoptera ornithogalli May, June, July
Spragueia leo July
Tarache aprica May, June
Tripudia rectangular May, July
Xanthopastis regnatrix May

NOLIDAE
Afrida ydatodes May, June
Baileya acadiana May, June, July
Baileya ophthalmica July
Garella nilotica May, June, July
Meganola minuscula May, June
Nola cereella May, June, July

NOTODONTIDAE
Clostera inclusa May, June, July
Datana integerrima May, June, July
Furcula cinerea June, July
Gluphisia septentrionis May, June, July
Heterocampa subrotata June, July
Heterocampa umbrata May
Lochmaeus bilineata May, June, July
Lochmaeus manteo July
Macrurocampa marthesia May, June
Misogada unicolor June
Nerice bidentate May, June
Paraeschra georgica May
Peridea angulosa May, June, July
Schizura concinna July
Schizura leptinoides May, June, July
Schizura unicornis June, July
Symmerista albifrons May, June, July

OECOPHORIDAE
Inga sparsiciliella May, June

OPOSTEGIDAE
Pseudopostega sp. June

PSYCHIDAE
Cryptothelea sp. June
Oiketicus abbotii June

PTEROPHORIDAE
Adaina ambrosiae May
Hellinsia inquinatus July
Hellinsia sp. May, July
Pselnophorus belfragei May, June, July

PYRALIDAE
Acrobasis demotella May 22, 2021
Acrobasis exsulella July
Acrobasis texana May, June
Canarsia ulmiarrosorella June
Clydonopteron sacculana June
Ephestiodes sp. May
Epipaschia superatalis June, July
Homoeosoma electella May
Hypsopygia binodulalis May, June
Hypsopygia olinalis May, June
Macrorrhinia endonephele May, June, July
Moodna ostrinella May
Penthesilea sacculalis June
Pococera asperatella May, June, July
Pococera humerella July
Pococera militella July
Sciota celtidella May, June
Sciota rubrisparsella June
Sciota uvinella June, July
Tlascala reductella June, July

SATURNIIDAE
Actias luna May, June, July
Automeris io May, July
Eacles imperialis May, June
Sphingicampa bicolor May, July

SPHINGIDAE
Amorpha juglandis May, June
Darapsa myron May, July
Eumorpha pandorus July
Hyles lineata May
Manduca rustica May
Paratrea plebeja May
Xylophanes tersa July

TINEIDAE
Diachorisia velatella June
Tiquadra inscitella July
Xylesthia pruniramiella June

TORTRICIDAE
Aethes angulatana May
Aethes sp. June, July
Ancylis platanana June
Archips argyrospila May
Archips semiferanus May
Argyrotaenia quercifoliana May, June
Bactra furfurana May, July
Bactra verutana May
Cenopis ferreana May, June
Cenopis reticulatana June
Cenopis vabroui June
Choristoneura pinus May
Choristoneura rosaceana May, June, July
Clepsis peritana June, July
Cochylis sp. July
Coelostathma discopunctana May, June
Coelostathma placidana May
Cydia caryana May
Ecdytolopha insiticiana July
Ecdytolopha mana May
Endothenia hebesana May, July
Epiblema otiosana May
Epiblema strenuana May, July
Episimus argutana May, June
Eucosma radiatana July
Eumarozia malachitana May, June, July
Goditha bumeliana May
Gypsonoma salicicolana May, June, July
Larisa subsolana May, June
Olethreutes sp. June
Paralobesia viteana June
Platynota flavedana May, June
Platynota idaeusalis May, June
Platynota semiustana May, June, July
Pseudogalleria inimicella May
Sonia constrictana June, July
Sparganothis distincta May, June, July
Sparganothis pulcherrimana May
Sparganothis sulfureana May, June, July

ZYGAENIDAE
Harrisina americana May

Virginia: Harry Pavulaan, 606 Hunton Place, Leesburg, VA. 20176, E-Mail: Pavulaan@aol.com

Harry sends in the following 2021 spring/summer report for Virginia:

The absolute worst butterfly season that I can ever recall continued unabated around Leesburg, VA. until about August 1. Virtually no butterflies to speak of in my butterfly garden from spring through July, despite an abundance of blooms. Yet some locations are showing good numbers, especially the Appalachians and Tidewater region around Norfolk. A special thanks goes to Nick Flanders, who is the only person reporting from the populous Tidewater region and to Mike Smith, for his diligent fieldwork, documenting butterflies in the Virginia mountains. County/City records are indicated in all CAPITALS.

Butterflies:

Battus philenor – Surry Co.: Hog Island WMA, 4/25/2021 (Nick Flanders – sight).

Pterourus palamedes – Chesapeake City: Great Dismal Swamp NWR, 5/16/2021, 7/31/2021 (Nick Flanders – sight). Isle of Wight Co.: Zuni Pine Barrens, 4/18/2021 (Mike Smith – sight). Northampton Co.: vic. Eastern Shore NWR, 5/23/2021 (Nick Flanders – sight). Portsmouth City: Churchland, 5/5/2021, 5/22/2021 (Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 6/5/2021 (Nick Flanders – sight).

Anthocharis midea – Chesapeake City: Great Dismal Swamp NWR, 4/4/2021 (Nick Flanders – sight). Portsmouth City: Craney Island, 3/28/2021 (Nick Flanders – sight); Churchland, 4/9/2021 (Nick Flanders – sight).

Abaeis nicippe – CULPEPER Co.: Brandy Station, 8/19/2021 (Harry Pavulaan – sight). SHENANDOAH Co.: Tom's Brook, 7/30/2021 (Mike Smith – sight).

Phoebis sennae – Chesapeake City: Great Dismal Swamp NWR, 5/16/2021 (Nick Flanders – sight). Isle of Wight Co.: Blackwater Ecologic Preserve, 6/16/2021 (Nick Flanders – sight); Zuni Pine Barrens, 4/18/2021 (Nick Flanders – sight). Loudoun Co.: Leesburg, 8/9/2021 (Harry Pavulaan – sight). Suffolk City: Suffolk-Seaboard Trail, 5/4/2021 (Nick Flanders – sight).

Lycaena phlaeas – Sussex Co.: Chub Sandhill Natural Area, 6/5/2021 (Nick Flanders – photo).

Parrhasius m-album – Chesapeake City: Great Dismal Swamp WMA, 7/31/2021 (Nick Flanders – photo). GREENE Co., 4/26/2021 (Mike Smith – sight); Shenandoah National Park, 5/1/2018 (Mike Smith – sight).

Strymon melinus – CULPEPER Co.: Culpeper, 8/19/2021 (Harry Pavulaan – photo). Isle of Wight Co.: Blackwater Ecological Preserve, 7/24/2021 (Nick Flanders – sight). NORTON City: 6/24/2021 (Nick Flanders – sight). Portsmouth City: Craney Island, 3/28/2021 (Nick Flanders – sight).

Satyrium calanus – Scott Co.: Jefferson Nat. Forest, 6/23/2021 (Nick Flanders – photo).

Satyrium edwardsii – James City Co.: Little Creek Reservoir, 6/18/2021 (Nick Flanders – sight). Page Co.: Massanutten Mountain, 7/16/2021 (Mike Smith, Dave Wendelken – sight).

Satyrium caryaevorus – FLOYD Co.: Buffalo Mtn., 7/21/2009 (Mike Smith – photo). MADISON Co.: Shenandoah National Park, 7/9/2021 (Walt Gould – photo). ROCKINGHAM Co.: Island Ford, 7/1/2005 (Mike Smith – photo).

Callophrys henrici – Chesapeake City: Great Dismal Swamp NWR, 4/4/2021 (Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 3/14/2021 (Nick Flanders – sight).

Erora laeta – Madison Co.: Syria, 7/31/2021 (Mary Bair – specimen found drowned in pet water pan).

Celastrina neglecta – Chesapeake City: Great Dismal Swamp NWR, 5/16/2021, 7/31/2021 (Nick Flanders – sight); Western Branch Park, 6/27/2021 (Nick Flanders – sight). Isle of Wight Co.: Blackwater Ecologic Preserve, 6/16/2021 (Nick Flanders – sight); Smithfield, 5/26/2021 (Nick Flanders – sight); Zuni Pine Barrens, 6/27/2021 (Nick Flanders – sight). James City Co.: Little Creek Reservoir, 6/18/2021 (Nick Flanders – sight). Northampton Co.: vic. Eastern Shore NWR, 5/23/2021 (Nick Flanders – sight). NORTON City: 6/24/2021 (NickFlanders – sight). PORTSMOUTH City: Paradise Creek Park, 5/14/2021, 5/22/2021 (Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 6/5/2021 (Nick Flanders – sight); Suffolk-Seaboard Trail, 5/4/2021, 5/22/2021, 6/15/2021 (Nick Flanders – sight). Sussex Co.: Newville, 6/6/2021 (Nick Flanders – sight).

Celastrina neglectamajor – GREENE Co.: Mattie's Run, 5/6/2019 (Mike Smith – sight).

Everes comyntas — GREENE Co.: 7/12/2003 (Mike Smith – sight). NORTON City: 6/24/2021 (Nick Flanders – sight).

Libytheana carinenta - Chesapeake City: Great Dismal Swamp NWR, 7/31/2021 (Nick Flanders – sight)

Dione incarnata nigrior – Virginia Beach City: Hampton Roads Agric. Res. & Ext. Center, 7/18/2021 (Nick Flanders – sight).

Argynnis (Speyeria) diana – Craig Co.: Bald Mtn., 7/12/2021 (Barry Kinsie, Mike Smith – sight).

Argynnis (Speyeria) cybele – NORTON City: 6/24/2021 (Nick Flanders – sight).

Phyciodes tharos tharos (black antenna male) - Culpeper Co.: Brandy Station, 8/19/2021 (Harry Pavulaan – net/release).

Nymphalis antiopa – Chesapeake City: Great Dismal Swamp NWR, 4/4/2021 (Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 3/14/2021, 6/5/2021 (Nick Flanders – sight). Sussex Co.: Chub Sandhill Natural Area, 6/5/2021 (Nick Flanders – sight).

Limenitis arthemis arthemis – LOUDOUN Co.: Indicated as "rare" in Loudoun County by Nicole Sudduth, author of "Field Guide to the Butterflies of Loudoun County". Photos accompany the species entry, but no data is indicated. Allison Gallo, Loudoun Wildlife Conservancy, recalled that there was a historic report for the county, but did not know details.

Limenitis arthemis astyanax – NORTON City: 6/24/2021 (Nick Flanders – sight).

Limenitis archippus archippus - CULPEPER Co.: Brandy Station, 8/19/2021 (Harry Pavulaan – sight).

Limenitis archippus floridensis – ROCKINGHAM Co.: Elkton, 6/29/2014 (Mike Smith – photo). While not the true subspecies, this dark form similar in appearance to the Floridian population, infrequently appears among typical ssp. *archippus* populations in the northeast.

Vanessa cardui – GREENE Co.: 7/17/2005 (Mike Smith – sight).

Junonia coenia – GREENE Co.: 7/17/2004 (Mike Smith – sight).

Lethe portlandia – Chesapeake City: Northwest River Park, 5/15/2021 (Nick Flanders – sight). Suffolk City: Great Dismal Swamp NWR, 6/5/2021 (Nick Flanders – sight); Suffolk-Seaboard Trail, 5/22/2021 (Nick Flanders – sight).

Lethe creola – Suffolk City: Suffolk-Seaboard Trail, 5/22/2021 (Nick Flanders – sight).

Megisto cymela – BATH Co.: 7/22/1994 (Mike Smith – sight). Hampton City: Gosnold's Hope Park, 7/1/2021 (Nick Flanders – sight).

Cyllopsis gemma - Craig Co.: Bald Mtn., 7/12/2021 (Barry Kinsie, Mike Smith – sight).

Cercyonis pegala – HAMPTON City: Gosnold's Hope Park, 7/1/2021 (Nick Flanders – sight). LOUISA Co.: 8/9/2021 (Larry Lynch – photo).

Epargyreus clarus – NORTON City: 6/24/2021 (Nick Flanders – sight).

Pholisora catullus – GREENE Co.: 7/17/2005 (Mike Smith – sight).

Cecropterus pylades – SCOTT Co.: Jefferson Nat. Forest, 6/23/2021 (Nick Flanders – photo).

Cecropterus confusis – MONTGOMERY Co.: Craigs Creek, 7/1/2013 (Mike Smith – photo).

Telegonus cellus – GREENE Co.: Matties Run, 7/17/2004 (Mike Smith – photo).

Gesta baptisiae – Scott Co.: Clinchport, 6/24/2021 (Nick Flanders – photo).

Gesta juvenalis – ISLE OF WIGHT Co.: Zuni Pine Barrens, 4/18/2021 (Nick Flanders – sight).

Gesta icelus – GREENE Co.: Matties Run, 5/1/2018 (Mike Smith – sight).

Gesta horatius – Chesapeake City: Great Dismal Swamp WMA, 7/31/2021 (Nick Flanders – sight). Isle of Wight Co.: Blackwater Ecological Preserve, 7/24/2021 (Nick Flanders – sight); Smithfield, 6/18/2021, 7/12/2021 (Nick Flanders – sight). Portsmouth City: Churchland, 7/28/2021 (Nick Flanders – sight). Sussex Co.: Newville, 6/6/2021 (Nick Flanders – sight).

Gesta zarucco – NEWPORT NEWS City: 8/28/2014 (Mike Smith – sight).

Staphyllus hayhursti – SHENANDOAH Co.: Tom's Brook, 7/31/2021 (Mike Smith – sight).

Burnsius communis – Chesapeake City: Great Dismal Swamp WMA, 7/31/2021 (Nick Flanders – photo).

Euphyes dion – Isle of Wight Co.: Smithfield, 6/9/2021 (Nick Flanders – sight). PORTSMOUTH City: Churchland, 6/29/2021 (Nick Flanders – sight). RICHMOND Co.: 6/6/2004 (Mike Smith – sight).

Euphyes vestris – CHARLOTTESVILLE City: Univ. of Virginia, 8/19/2021 (Harry Pavulaan – sight). CULPEPER Co.: Culpeper, 8/19/2021 (Harry Pavulaan – photo). ISLE OF WIGHT Co.: Blackwater Ecological Preserve, 7/24/2021 (Nick Flanders – sight); Smithfield, 6/9/2021, 7/24/2021 (Nick Flanders – sight).

Hylephila phyleus – CHARLOTTESVILLE City: Univ. of Virginia, 8/19/2021 (Harry Pavulaan – sight). GREEN Co.: Lydia, 8/21/2012 (Mike Smith – sight).

Limochores origenes – SUSSEX Co.: Chub Sandhill Natural Area, 6/5/2021 (Nick Flanders – photo).

Polites peckius – CHARLOTTESVILLE City: Univ. of Virginia, 8/19/2021 (Harry Pavulaan – sight).

Polites themistocles – CHARLOTTESVILLE City: Univ. of Virginia, 8/19/2021 (Harry Pavulaan – sight). CULPEPER Co.: Culpeper, 8/19/2021 (Harry Pavulaan – photo). GREENE Co.: 7/17/2005 (Mike Smith – sight).

Polites mystic – AUGUSTA Co.: Augusta Springs, 6/7/2005 (Mike Smith – photo).

Polites (Wallengrenia) egeremet – CHARLOTTESVILLE City: Univ. of Virginia, 8/19/2021 (Harry Pavulaan – sight). CULPEPER Co.: Culpeper, 8/19/2021 (Harry Pavulaan – photo).

Polites (Wallengrenia) otho – Rockingham Co.: 6/26/2020 (Ken Lorenzen – photo).

Vernia verna - CULPEPER Co.: Culpeper, 8/19/2021 (Harry Pavulaan – photo). ISLE OF WIGHT Co.: Smithfield, 6/9/2021 (Nick Flanders – sight). SUSSEX Co.: Chub Sandhill Natural Area, 6/5/2021 (Nick Flanders – photo).

Nastra lherminier – PAGE Co.: Shenandoah City, 6/14/2005 (Mike Smith – sight). ROCKINGHAM Co.: Slate Lick, 8/18/2005 (Mike Smith – sight). RUSSELL Co.: nr. Lebanon, 6/21/2021 (Mike Smith - photo).

Lon zabulon – HIGHLAND Co.: Blue Grass Valley, 5/21/2019 (Mike Smith – sight). Loudon Co.: Leesburg, Ida Lee and Morven Park complex, 8/7/2021 (many 4th of July Butterfly Count participants – sight and photo. A remarkable count of 216 observed – the most common butterfly recorded.)

Poanes viator - Isle of Wight Co.: Smithfield, 5/26/2021, 6/9/2021, 6/18/2021 (Nick Flanders – sight). James City Co.: Little Creek Reservoir, 6/18/2021 (Nick Flanders – sight).

Amblyscirtes vialis – GREENE Co.: Matties Run, 7/17/2004 (Mike Smith – sight).

Lerema accius – PAGE Co.: Shenandoah National Park, 7/14/2012 (Mike Smith – sight). Portsmouth City: Churchland, 7/28/2021 (Nick Flanders – sight); Paradise Creek Park, 5/14/2021 (Nick Flanders – sight). SHENANDOAH Co.: Tom's Brook, 7/31/2021 (Mike Smith – sight). Suffolk City: Great Dismal Swamp NWR, 6/5/2021, 7/31/2021 (Nick Flanders – sight); Suffolk-Seaboard Trail, 5/22/2021 (Nick Flanders – sight).

Panoquina panoquin – ISLE OF WIGHT Co.: Smithfield, 7/12/2021 (Nick Flanders – sight). Northampton Co.: vic. Eastern Shore NWR, 5/23/2021 (Nick Flanders – sight). Portsmouth City: Churchland, 7/18/2021 (Nick Flanders – sight).

Panoquina ocola – CAROLINE Co.: Campbell Corner, 9/30/2018 (Mike Smith – sight). GREENE Co.: 7/17/2005 (Mike Smith – sight). Page Co.: Elkton, 6/23/2021 (Mike Smith – sight). SHENANDOAH Co.: Tom's Brook, 7/31/2021 (Mike Smith – photo).

Ancyloxypha numitor – NORTON City: 6/24/2021 (Nick Flanders – sight).

Moths:

Acronicta americana – Loudoun Co.: Leesburg, 8/4/2021, larvae on *Prunus serotina* (Harry Pavulaan, sight).
Prionoxystus robiniae – Loudoun Co.: Leesburg, 6/7/2021 (Harry Pavulaan, photo).

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The Southern Lepidopterists' News is published four times annually. Membership dues are $30.00 annually. The organization is open to anyone, especially those with an interest in the Lepidoptera of the southern United States. Information about the Society may be obtained from Marc Minno, Membership Coordinator, 600 NW 34 Terrace, Gainesville, FL 32607, E-Mail: mminno@bellsouth.net, and dues may be sent to Jeffrey R. Slotten, Treasurer, 5421 NW 69th Lane, Gainesville, FL 32653.

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