



# *Southern Lepidopterists' NEWS*

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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/](http://www.southernlepsoc.org/))

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J. BARRY LOMBARDINI: EDITOR

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## A SHORT PROFILE OF YOUR CURRENT (AND SOON PAST) CHAIRMAN

BY

BRIAN G. SCHOLTENS

As with many of us, my interest in Lepidoptera started early. A neighbor went to summer 4-H camp and came home with an insect net having made a collection at camp. The whole neighborhood was soon collecting butterflies, with moms doing most of the actual work. At that point everyone was fascinated. I am simply the one remaining neighborhood kid that still remains fascinated. My interest tailed off a bit during the junior high years, but one day coming home from the pool, I took a back alley that ran along a field and saw a buckeye. This was a butterfly I knew

I had not seen before (they migrate regularly into Iowa, where I grew up). I was instantly hooked again, and spent many pleasant hours exploring the fields and parks near my hometown of Winterset, IA, through my high school years.



Brian G. Scholtens, Chairman Southern Lepidopterists' Society.

I continued my interest in college and did a senior honor's thesis on a population estimate of a couple of butterflies on a remnant prairie in my home county. As I was completing my undergraduate degree, I joined the Lepidopterists' Society and met the first professional lepidopterist I had known, Dr. John Downey, who taught at the University of Northern Iowa. The idea that I could continue my interest and turn it into a career was very appealing, so I applied and was accepted at the University of Michigan for graduate school,

where I completed my thesis on egg laying behavior in the Baltimore checkerspot, based largely at the University of Michigan Biological Station at Pellston, MI. I was lucky enough have Dr. Herb Wagner and Dr. Ed Voss as mentors, both professional botanists, but also accomplished lepidopterists. They did an excellent job instilling in me the importance of plants and the relationship of plants to insects. I learned as much about plants and ecological relationships as I did about Lepidoptera, and it has served me well.

After completing my thesis, I applied for and received a position at the College of Charleston, in Charleston, SC, where I have been ever since. The College is a state, liberal arts school with about 10,000 undergraduates. My main duties are coordinating the introductory biology laboratories, teaching lecture sections of introductory biology, a required sophomore course, and entomology. Currently I am also associate chair of the Biology Department. The department is one of the largest on campus, with over 1000 majors and we serve a large number of the other students through their natural science general degree requirement.

Even before I went to Charleston, and throughout my time there, I have spent my summers in northern Michigan teaching Biology of Insects and General Ecology at the University of Michigan Biological Station. There is no better experience than spending a summer at a field station. It is an ideal place to learn insects, and I always love the experience.

Over the years, I have conducted research projects on the Baltimore checkerspot (my thesis), buckmoths (*Hemileuca* spp.), conservation biology of the Lake Huron locust (a threatened species on the Great Lakes) and Hungerford's crawling water beetle (an endangered species in northern Michigan), and most recently have actively been involved in efforts to survey species in National and State parks. I co-coordinated (with Dr. Dave Wagner) and am responsible for the Lepidoptera database for the All Taxa Biodiversity Inventory in Great Smoky Mountains National Park. Over a period of a decade this survey documented nearly 1900 spp. of Lepidoptera from the Park, identified significant populations of northern disjunct species, and discovered several undescribed species. I have recently been involved in similar efforts in Acadia National Park, Congaree National Park, and the South Carolina State Parks system. I will be running a bioblitz in Cheraw State Park, Cheraw, SC, just the weekend after our SLS annual meeting. I have also worked toward a long-term survey of all the Lepidoptera species at the University of Michigan Biological Station, continuing an effort started by Dr. Ed Voss. Our list now totals 1400 spp. for a two county region at the tip of the lower peninsula of Michigan.

Mostly by coincidence, I have taken on the Pyralidae and Crambidae as specialty groups. When I was a graduate student, I spent a year as the research assistant in the Insect Division of the UM Museum. During that time, we received all the specimens back that had been loaned to Alexander Klots. Some were identified, but many he did not finish with before his death. I plunged into reincorporating these specimens and in the process became enamored with this group of moths, spending many hours dissecting and identifying the species in the UM collection. This group was my focus in the Smokies and I currently serve as the referee for Pyraloids for the Moth Photographers Group (organized by Bob Patterson).

None of these things would be possible if it were not for the support of many (too numerous to mention) lepidopterist friends over the years. I found these great friends through the Lepidopterists' Society and regional groups like the Southern Lepidopterists' Society. When I was in high school, I felt I must certainly be just about the only person with an interest in butterflies and moths. Discovering societies of like-minded people was an epiphany for me, and I have always valued the interactions that I have with their members. Every meeting is like a family reunion, only without the uncles and aunts that wish wouldn't attend!

I'm very pleased to serve as the SLS chairman for this year, and look forward to many great meetings and interactions in the future.

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The Southern Lepidopterists' Society is open to anyone with an interest in the Lepidoptera of the southern region of the United States. Annual membership dues:

Regular	\$20.00
Student	\$15.00
Sustaining	\$30.00
Contributor	\$50.00
Benefactor	\$70.00

A newsletter, The News of the Southern Lepidopterists' Society is published four times annually.

Information about the Society may be obtained from the Membership Coordinator or the Society Website: [www.southernlepsoc.org/](http://www.southernlepsoc.org/)

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Your Editor [photograph by Gwynne Little]

COLLECTING IN THE  
LINCOLN NATIONAL FOREST  
IN NEW MEXICO



# METALMARK MOTHS OF SOUTH FLORIDA AND THE MOST COLORFUL LEPIDOPTERAN IN THE USA???

BY

ALAN CHIN LEE AND DAVID FINE

There had always been a Pyralid that has been common around where I (David Fine) grew up in Delray Beach that had always grabbed my attention. It shows up somewhat commonly as a day flying moth that frequently visits the blooms of the Indian Pongam tree (*Pongamia pinnata*). Several poorly mounted individuals exist in my collection from when I was about 12 or 13 years old back in May of 1990 and 1991. I certainly had no interest in collecting micros at that time in my "Lepping" career so for there to be several specimens of a micro species in my collection from that time says a lot about the impressive nature of the moth. I will never forget the first time I saw an adult *Tortyrria slossonia*. With a wing span of less than ½ inch, the vibrant iridescent colors make up for the small size. This moth has 2 vibrant iridescent peach colored bands on the forewing with an orange/red over-scaling. The head and antennae have iridescent red scaling on them. The hind-wing is a non-descript grey color. When in the sun light, the reddish-peach colors on the fore-wing and abdomen glow with a very impressive shine. These bright colors along with bright green eyes make this moth a sight to behold. I probably became quickly discouraged at that age when I found out how easily the beautiful scales are removed when attempting to mount it. These early specimen in my collection do not do the species any justice at all for most of the "impressive" had been worn away by my inexperienced 12 year old fingers.



Reared specimen of *Hemerophila diva*. Please note the variety of iridescent coloration (photo by A.C. Lee).

While *Tortyrria slossonia* has always been frequent at flowers and at black lights in South Florida, it was, however, its cousin, *Hemerophila diva*, that blew me away the first time I saw it. It was in the bottom of a light trap while conducting a moth survey in Crocodile Lake National Wildlife Refuge in June of 2004. After sifting through the slew of Spingids, Noctuids and June beetles, the next task is to sift through the bottom of the bucket for any different micro moths. While sifting through the "BBM" – "Basic Brown Moths", a small, bright orange speck caught my eye. I picked it up with the tweezers and was amazed at what I saw. This tiny little moth with less than a half inch wing span displayed every color of the rainbow in an iridescent fashion. The forewing has a pair of golden bands, a bright red marginal band, is dusted with iridescent red, orange, yellow, green, blue and purple scaling. It has a bright orange-red hind wing with a black fringe. The thorax is chrome colored. The abdomen is orange and black striped. It had a red head, green eyes, red and black striped legs, a bright reddish-orange underside and red, silver and black antennae. The word "DIVA" is the Latin word for GODDESS. This creature certainly lives up to its name. I couldn't believe that such a beautiful creature has not been made more a big deal of by photography in publications. I started to interrogate some of my long time "nothing" friends about this beast but nobody really knew much about it. Over a year went by and frequent trips to the Keys lighting only produced 3 or 4 individuals. Other than these individuals, this species remained elusive. It was only taken at the old abandoned "cock fighting arena" in the refuge. Trapping in all other locations never turned up this species. The host plant was a mystery to us as we wondered what was different about this sight than all the other places we were lighting.

It wasn't until Alan Chin Lee found a listing of the creature on the web site [www.bugguide.com](http://www.bugguide.com) in March of 2008 where a man researching spiders and had collected what he thought was a spiders web posted a photograph of a deformed specimen of *H. diva* that had emerged from the webbing (which wasn't a spiders web at all but rather a moth





Top: *Hemerophila diva*;  
Bottom: *Tortyria slossonia*  
(photo by A.C. Lee)



*Hemerophila diva* life cycle  
(photo by A.C. Lee)

cocoon) that we got our first clue as to the life history of this species. He posted that the webbing was collected at the Jupiter lighthouse park on a strangler fig tree. This began the search. Alan and I began a fervent search of all strangler fig trees for evidence of larval damage. We found that nearly all strangler fig trees contain at least some larval damage at the new leaf terminals, however, we found that *H. diva* were not easy to find in the larval stages for the most part. Instead, *T. slossonia* larvae are more frequent on the terminal buds of these trees making very obvious webbing around the new leaves turning the newest leaves brown. The larva completely kills the meristem causing that stem to push out no new leaves. The top few dead leaves are webbed together and the larva lives in a burrow of what is left of the devoured leaves emerging to eat and release frass pellets. These housings are very obvious and easy to find. *T. slossonia* seem to be present at almost all inspected trees at least to a minimal degree. Larvae are non-descript and are a brownish green color. The larvae of *T. slossonia* pupate inside the dead leaf housing and emerge within 8 days of pupating.

We would find an emerged *H. diva* pupa every now and then but it took some work. This silk housing really looks like a web of a small spider. I would never have guessed it to be a moth pupa had I not seen the photograph from the web site. Eventually, Alan found a different larva a few weeks later. It was green and had a different type of larval housing. The housing is a lacy web that is placed on the flat surfaces of a leaf. The leaf could be young or old it didn't seem to matter. That larva turned out to be *H. diva*. The larvae hide under the silk housing and eat by scraping and skeletonizing the leaf under the housing. Once they have run out of "meat" under their housing, they move to a new spot and build a new one. The larvae are not picky at all about the "quality" of leaf they eat. We found larvae on fairly new leaves but for the most part, they favored hard, older leaves even feeding on leaves that seemed to be close to falling off the branch for they were so old. *H. diva* pupates under the same type of housing in the middle of a leaf usually right on the vein of the leaf. One can easily tell which housing contains a pupa. The translucent silk of a pupal housing shows the whiter and denser silk of the cocoon underneath. One can also tell when a pupa is emerged for most of the time, the pupal shell of an emerged *H. diva* pupa had been drug out of the cocoon by the emerging moth and is usually stuck to the outside of the housing.

After several individual were found and successfully reared through, the jackpot came. It was on a free standing tree near the beach in Delray where I found an absolute swarm of *H. diva*. I found adults easy to spot as they rested on the tops of leaves. They seem to be quite comfortably diurnal. This was a short tree that seemed to have been cut many times for it had a thick trunk but stood as a bush only about

10 feet tall, this being very short for this type of tree. The strangler fig tree is (I believe), the grandest of organisms in Florida with the canopy reaching 40 or 50 feet tall. The tree also grows laterally by displacing aerial roots from the branches. When they grow long enough to hit the ground, they later become new trunks as they grow. This is quite typical of *Ficus* species. This tree was a runt, however. There was no new growth as it seemed to be weak or struggling for some reason. This moth was certainly taking advantage. There were several larval and pupal housings on every leaf. I collected about 35 larvae and pupae. As during most insect swarms, parasitisation was rampant. From these pupae that I took, only 8 emerged as adults. The rest bore a slew of parasitic wasps including 2 species of *Trichogramma* and 2 species of what appear to be some sort of *Ichneumon* wasp. The adult of one species of *Ichneumon* that emerged seemed to be greater in size than the moth itself seeming highly unlikely that an internal



parasite of that size could feed itself without killing the host. However, this wasp was the most common species of parasite observed.

Only a short time after this encounter, Alan and I found a fig tree in the middle of a large vacant lot standing alone. We parked the car and walked over to it to check it out and found dozens of adults flying on lower branches of this tree. To date, this has been the healthiest colony of *H. diva* that we have found. Adults can be found at all times throughout the day perching on low leaves of the strangler fig tree. They are also very active at night. Since



**Strangler Fig Tree:** the host plant and habitat for moths of the metalmark moth family. This tree in a vacant lot in Delray Beach, Florida, is home to the healthiest colony of *Hemerophila diva* that David Fine ever encountered (photo by D. Fine)



*Hemerophila dyari* (photo by A.C. Lee)

then, we have begun encountering them in almost every light trap in North Key Largo. I

cannot explain why previous years did not yield more of these moths but now it is not uncommon to see upwards of 20 or 30 in a trap and this occurs across many trapping locations, no longer just at the Cock Fighting Arena. Howard Grisham was the first to experience *H. diva* in large numbers in light traps collecting upwards of 40 in a few days in North Key Largo.

There is a third species of "Metalmark Moth" that exists in South Florida - *Hemerophila dyari*. One adult specimen has been found at the same strangler fig tree in the field in Delray Beach. It was found mid morning September 1<sup>st</sup> of 2008. It was found on the same low-laying fig vegetation that the *H. diva* were found on. Of the dozens of larvae that we have reared through, we have not had a *H. dyari* emerge from reared pupa. Life cycle to this point is still unknown to us. We are assuming that Strangler fig is the larval host for *H. dyari*. Adults are about the same size and shape of *H. diva* but with far fewer showy colors. Adult thorax, head and inner fore-wing margin is a golden, flakey, metallic brown (if there is such a color). This brown in the fore-wing is then terminated by a silver band then followed by silver dusting on the outer fore-wing. There then is a golden yellow fore-wing tip with silver fringe scales. Antennae, legs and palpi are black and white striped making for a rather striking moth. The hind-wing remains hidden while resting as in the other two species but is a rather non-descript grayish brown color.

These three species certainly live up to the name "metalmark moths". I venture to say (perhaps out of ignorance) that *Hemerophila diva* is probably the most colorful Lepidopteran species in the United States. I can't imagine that there is a species that is arrayed more regally than this one. God

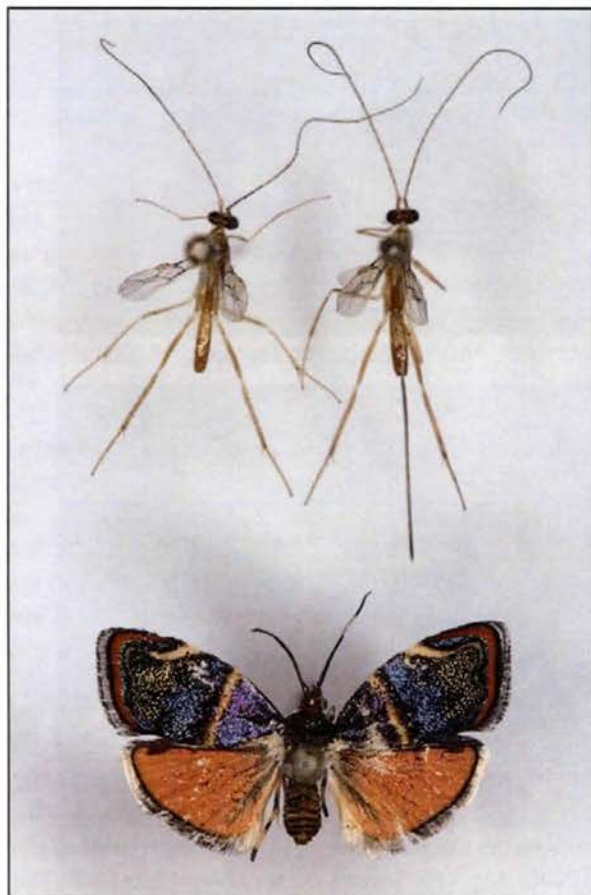


*Tortyria slossonia* larva (photo by D. Fine)



*Tortyria slossonia* pupal casing (photo by D. Fine)





Ichneumon wasps from *Hemerophila diva* pupa  
(photo by A.C. Lee)



Wasp eating *Hemerophila diva* pupa (photo by A.C. Lee)

certainly has a sense of humor. If this micro moth with a  $\frac{1}{4}$  inch wing span were just an inch larger, it would probably be one of the more talked about Leps in the US and people would come from all ends of the country looking for it. I will cite, as an example, the craze that exists with many moth enthusiasts over the genus "*Shinia*". I know dozens of men who will travel 3,000 miles to find a moth that has a wing span of less than an inch that simply has some pink coloration on the forewing and they are drooling when they look in a light trap and find them on the bottom (I am one of them). I have seen these little moths, which are thought of as a more beautiful genus, cause arguments,

jealousy and animosity between collectors. While I do not hold any Lep in that exalted a position on this earth to cause animosity between myself and a friend, I do understand the passion and the inspiration of awe that comes when we get the privilege of collecting a new rare and beautiful species like various members of the *Shinia* genus and *Hemerophila diva* blows all members of the *Shinia* genus out of the water in my opinion! This group of moths has sparked in me a fascination for micros which will add a huge facet to my collection. I enjoy looking at these small moths as a new frontier, one that is much less explored than perhaps the rest of the world of Lepidoptera, however, I do not hold my breath to find one as awesome as *Hemerophila diva*!

(David Fine, E-Mail: [vladnuts@aol.com](mailto:vladnuts@aol.com))

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## DONATIONS SINCE THE JUNE ISSUE OF THE SLS NEWS

**Bill Conner** (Sustaining)  
**Charles Bordelon** (Contributor)  
**Tony Gilyard** (Sustaining)

The SL Society thanks the above members for their very generous donations.

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ELADA CHECKERSPOT (*TEXOLA ELADA*) LIFE HISTORY

BY  
BERRY NALL



20-II-2010, mating pair of Elada Checkerspots

I collected a mating pair of Elada Checkerspots in February, 2010. I provided Tube Tongue (*Siphonoglossa pilosella*) and Flame Acanthus (*Anisacanthus wrightii*) as possible host plants. I had previously found caterpillars on Flame Acanthus, and Tube Tongue is often listed as a host plant (for example, Mike Quinn's excellent *Caterpillar Food Plants for the Lower Rio Grande Valley of Texas*).

The female oviposited two groups of eggs on Tube Tongue after four days. One group was on a cut branch; the other on a potted plant. When the caterpillars emerged, I decided to try an experiment. I placed the cut branch of Tube Tongue and a few leaves of Flame Acanthus in the same container, in order to see which plant was preferred. Several, but not all, of the caterpillars chose the Flame Acanthus.



Eggs on 1-III-2010 (laid on 24-II-2010)

I now had three groups of caterpillars: two in containers, and one on a potted plant. I noticed after a couple of days that the caterpillars in the container with Tube Tongue were not growing. Most died after another day or two; one lasted 2 weeks but eventually died also. I inspected the potted Tube Tongue, and was unable to locate any caterpillars on it. Those, too, had died. Clearly, Tube Tongue was an incompatible host plant when I performed this study. Perhaps the results would be different at a different time of the year, or with a larger group of caterpillars, but on this occasion the plant was not what the larvae needed. Later in the season I discovered that Eladas seem to favor a plant called Texas Wrightwort (*Carlowrightia texana*). It is also used by Texan Crescents.



7-III-2010, caterpillars emerging

Fortunately, the caterpillars that chose the Flame Acanthus were thriving. They pupated after about 3 weeks, and the adults emerged after approximately 7 days. The caterpillars of this group were not as yellow as those I raised in a previous study.

Vesta and Texan Crescents, and Tiny Checkerspots, all may use the same hosts. The coloration of each of these varies to some extent during different instars and between different caterpillars. I have found the face, if a good picture or look can be obtained, is the best indicator of species. The Elada Checkerspot has a black head (contrast the red of Tiny Checkerspot) with numerous white markings that give it the appearance of having eyes and a nose.



11-III-2010



20-III-2010





26-III-2010, mature caterpillar



4-IV-2010, butterfly almost ready to emerge from chrysalis



4-IV-2010, fresh Elada Checkerspot



29-III-2010, newly formed chrysalis



30-III-2010, typical appearance of chrysalis



Face of Elada Checkerspot

(Berry Nall's home page: <<http://leps.thenalls.net/index.php>>; Berry's Butterfly Photos  
<[http://leps.thenalls.net/content2.php?ref=Species/Nymphalinae/elada/life/elada\\_life.htm](http://leps.thenalls.net/content2.php?ref=Species/Nymphalinae/elada/life/elada_life.htm)>;  
E-Mail: [lb@THENALLS.NET](mailto:lb@THENALLS.NET))

[The SLS thanks Mr. Berry Nall for allowing us to publish his life history of the Elada Checkerspot in the NEWS - The Editor]

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## WELCOME TO THE NEWEST MEMBERS OF THE SL SOCIETY

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# NYSA ROADSIDE - SKIPPER (*AMBLYSKIRTES NYSA*) LIFE HISTORY

BY  
BERRY NALL



Nysa Roadside-Skipper (*Amblyscirtes nysa*)

One evening in March I noticed a Nysa Roadside-Skipper ovipositing on grass blades in our yard. I believe that we have a variety of St. Augustine grass (*Stenotaphrum secundatum*). I was able to locate one (only!) egg which I monitored and then collected when it appeared near the time when the caterpillar would emerge.

The fresh caterpillar appeared on March 18. It had a black head, which changed to stripes on March 29. In later instars, the striping was even more pronounced,

The caterpillar grew slowly, finally pupating on April 14. The adult butterfly emerged 9 days later. The journey from egg to adult took 45 days.

## Facial development of Nysa Roadside Skipper



Early instar



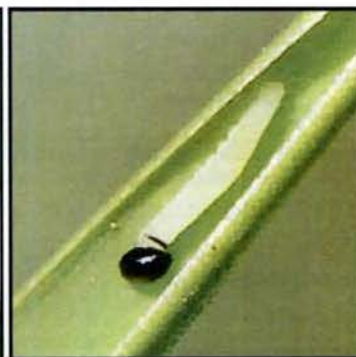
First striped face



Later instars



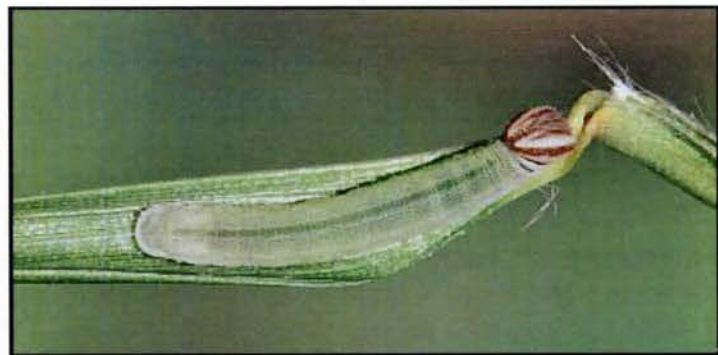
Egg, 9-III-2009



Recently emerged caterpillar, 18-III-2010



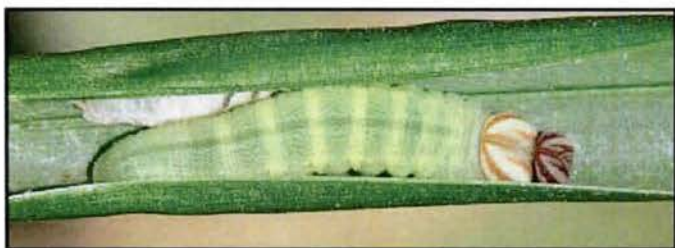
30-III-2010, in shelter



1-IV-2010, head now has Nysa coloration

[The SLS thanks Mr. Berry Nall for giving us permission to publish his life history of the Nysa Roadside-Skipper in the Southern Lepidopterists' Society NEWS - The Editor.] Mr. Nall's photographs continue on the next page.

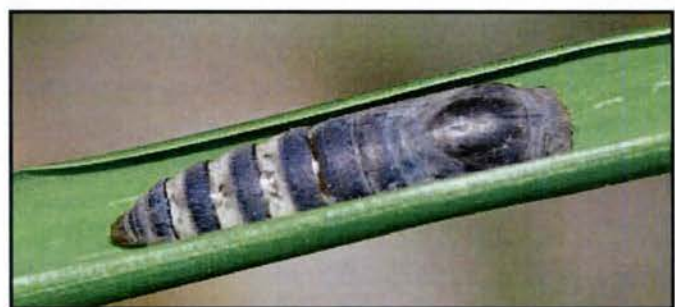




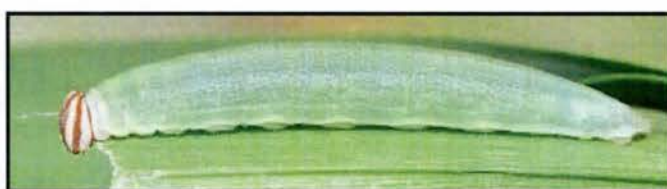
5-IV-2010, new instar - note presence of old "head" and light color of new one



11-IV-2010, mature caterpillar



Pre-emergent chrysalis, 23-IV-2010



8-IV-2010



Chrysalis, 14-IV-2010



Fresh Nysa Roadside-Skipper, 23-IV-2010

(Berry's Butterfly Photos <[http://leps.thenalls.net/content2.php?ref=Species/Hesperiinae/nysa/life/nysa\\_life.htm](http://leps.thenalls.net/content2.php?ref=Species/Hesperiinae/nysa/life/nysa_life.htm)>;  
Berry's Butterfly website <<http://leps.thenalls.net/index.php>>; E-Mail: [lb@THE.NALLS.NET](mailto:lb@THE.NALLS.NET))

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## SOCIETY OF KENTUCKY LEPIDOPTERISTS 2010 ANNUAL MEETING

The Society of Kentucky Lepidopterists will have their 2010 Annual Meeting November 19 & 20, 2010. The meeting will be at the University of Kentucky, Lexington, Kentucky, at the Insect Museum in the Animal Pathology Building on Friday and Saturday, November 19 & 20. Friday will be an informal get together at the Insect Museum, the collection will be open for viewing and specimens can be identified, meet old friends and make some new ones. A business meeting and presentation of papers will on Saturday. Dr. Larry Gaul will be the featured speaker. Larry will talk about the Catocala Moths of North America. Make your plans to attend now. For detailed information, contact Leroy C. Koehn at [Lepttraps@aol.com](mailto:Lepttraps@aol.com) or Tel: (502) 542-7091 for a complimentary Newsletter with detailed meeting information.

Make plans to join us in Lexington, Kentucky.



## THE FLAT FROM DELIVERANCE

BY

KELLY RICHERS

Collecting in Arizona is seen by many moth collectors as the Garden of Eden, with new and unknown species showing up at unexpected times. Whether collecting in the White Mountains, Mount Graham, the Baboquivari Mountains, the Huachuca Mountains, the Hualapai Mountains, the Santa Rita Mountains, the Pena Blanca area, or the Chiricahua Mountains, each range offers its own rewards and its own challenges.

It is a difficult environment in which to collect in midsummer. Sudden downpours, remote locations, difficult roads and the fickle weather can and do impact collecting severely. Over the course of several summers collecting in Arizona, all of these factors have had an effect on me at some time, but the summer of 2007 might have been the worst.



Brown Canyon in the Baboquivari Mountains, Arizona



The gate at Brown Canyon

Peter Jump and I went to the Baboquivari Mountains to join Bruce Walsh and a group in a lodge to which he has access. The Baboquivari Mountains are a difficult access collecting locale, as the eastern side is all private ranches and the western side is Native American reservation. Only at Brown Canyon is there access, and only if you have an invitation, such as the dozen of us invited by Bruce to meet him.

So, the Brown Canyon lodge in the Baboquivari Mountains was the destination for Peter and myself, but since we arrived at the turnoff early, we decided to go on the road to Arivaca and look for butterflies in Arivaca at a location we both knew. Driving toward the little scatter of buildings that comprises Arivaca, the thump-thump sound near my wheel informed me that a tire was quickly going flat, and we pulled over to the sudden silence and excruciating 103 degree heat on the deserted road.

Now, keep in mind that Peter and I consider ourselves educated, intelligent people, so it should come as no surprise that over half an hour later, we still couldn't figure out how to release the spare tire from below my Silverado pickup, and we were quickly succumbing to the heat. Then, just like in the movies, down the road came, sputtering and creaking, a banged up small pickup, with the front windshield cracked and split, windows down, with two of the sorriest scraggiest male residents of the area peering out of the windows. It crept up to us and the passenger stuck his head out of the window.

Through his missing front teeth, under a battered baseball cap, he croaked "Y'all need hep?"

You could almost hear the music from *"Deliverance"* in the background.

However, we did indeed, although they were reluctant to stop. Eventually the magic words *"I have some beer in the*



back of the truck" did the trick, and they climbed out to help. So, after another 30 minutes, there were now four of us standing around, unable to free the damn tire, getting absolutely nowhere, now partly drunk, swooning from the heat.

But then they volunteered to take me and the bad tire to Arivaca, to a decrepit old tire shop, where, of course, the owner did not have anything remotely like a Silverado tire, but rigged something up from the rim I took in. My tire he deemed unfixable.

So, back to the Silverado we went, and finally got something on the axle, tenuously attached and several inches smaller than the other three tires. With a wave and several more beers (I keep an ample supply for emergencies) our new friends continued on their way and Peter and I were faced with the prospect of either going to Brown Canyon on this assortment of tires or heading over to Green Valley an hour away to a tire shop. We wisely opted for the tire shop, and six hours after we had the flat (which was at 11:00 a.m.) we had a new correctly sized tire and were on our way to Brown Canyon. By then I was over \$400 poorer, but we were ready to collect, and thought our troubles were behind us.

At approximately seven that evening we pulled up at the gate to Brown Canyon, punched in the code we were given, and headed up to the lodge.

Next Issue: The real disasters strike.

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## NOTE ON THE LYSIDE SULPHUR IN LOUISIANA BY GARY NOEL ROSS

Thanks to the increasing amount of butterfly/moth fieldwork in Louisiana, new records are being published rather consistently. Case in point: lyside sulphur (*Kricogonia lyside*). This tropical species now has been sighted, photographed and collected in Louisiana. The single record is from October 29, 2006, Cane's Landing in Bossier City (Bossier Parish) in the northwest sector of the state and is considered a stray/vagrant.

This record has received attention in several publications. Unfortunately, all of these publications did not include a bibliography. Therefore, to facilitate the work of future compilers of a comprehensive list of Louisiana's expanding butterfly fauna, I am listing here all references to the species.

### Published References to *Kricogonia lyside* in Louisiana (in chronological order):

**Trahan, J.**, 2007. Zone 9: Southeast (Louisiana), Brian G. Scholtens coordinator. IN 2006 Season Summary of *News of the Lepidopterists' Society*, Vol. 49 (Supplement S1), page 104.

**Ross, G.N.**, 2008. Unusual butterfly sightings in northwest Louisiana in 2007. *News of the Lepidopterists' Society* (Vol. 50:1), pages 7, 15.

**Trahan, J.**, 2009. The butterflies of Caddo Parish, Louisiana. *Southern Lepidopterists' News* (Vol. 31:2), pages 54-59.

**Trahan, J. and T. Davis**, 2010. First state record of lyside sulphur in Louisiana. *Southern Lepidopterists' News* (Vol. 32:1), page 6.



## AN ADVENTURE WITH A LOUISIANA SWAMP MUSE

BY

GARY NOEL ROSS

Wednesday, May 31, 2000. According to headlines in my local newspaper, the swamp was dry. The Bluebonnet Swamp Nature Center, a new, limelight preserve located conveniently within the southern limits of Baton Rouge, had become another victim of the South's record-setting dry spell. The color photographs were dramatic. Portly, buttressed bald cypress and tupelo gum trees, characteristic stalwarts of quiet, tannic swamps in the deep South, now anchored in inky muck fractured into mini polygons of limitless variety. All in all, wildlife was scarce: no raccoons, graceful herons and egrets, or the all-time favorite, alligators. Nearby residents were reporting an increase in road kills of normally reclusive turtles and snakes—presumably, attempting to relocate to a more habitable environment.



Bluebonnet Swamp Nature Center in Baton Rouge, LA., administered by East Baton Rouge Recreation and Park Commission (BREC). Normal water level.



The swamp with normal water level. Wind storms often topple trees and cause increase in light penetration, which in turn, causes host plants to be smothered out.

land." Yet "my" butterflies are flying; I even observe a female laying eggs on a small, unrecognizable plant growing what was once water's edge. I snip a sample, placing it into a plastic sandwich bag for later identification. After a cursory few hours, I depart to consult my home library.

Current butterfly field guides offer little information on Seminole crescents. Since 1911, venerable taxonomists have considered the insect to be officially designated as *Anthanassa texana seminole*, a subspecies akin to the Texas crescent, or *Anthanassa texana texana*. [The species, based on Texas specimens, was considered a tropical/subtropical butterfly and named *Melitaea texana* in 1863 by the iconic English/Australian/American actor/entomologist William

Management personnel were noting a steep decline in visitors, most of whom expressed criticism regarding the sanctuary's debilitated persona; some actually requested a refund of the modest entrance fee.

I was particularly alarmed. Just three weeks before, a friend (Robert) and I had discovered a small colony of a rarely encountered and poorly understood butterfly referred to as the Seminole crescent. Barely an inch across and hardly flamboyant as far as butterflies go, Seminoles are nonetheless quite debonair and distinctive: daintily scalloped wings, dark brown except near the body where there is a blush of orange-red—all accented with small squares and crescents creamy in color. I knew that crescent butterflies are usually sun-loving and fond of open places. What on earth was this insect doing in such a spooky habitat? With the center barely 10 minutes from my residence and my summer relatively open, I welcomed the opportunity to experience "real biology" in a relatively comfortable and safe setting. Serendipitously, the project would require no outside funding. Now, if the newspaper article were true, was my project in jeopardy? Unfortunately, because of prior responsibilities I had to delay a visit.

Sunday June 4. My first morning free. Brimming with expectation, I get into my aging pickup and hustle to the urban swampland. The reporter had been right on target: this is no ordinary time. Drained of life-giving water, much of the swamp's understory foliage appears toasted. Even the haunting titans of the parched kingdom are shedding their yellowing leaves. The air is hot, dry, mute. The swamp seems inconsonant, less primordial—certainly not swampy. I shake my head as my mind reflects on the Biblical "scourge upon the





and *A. t. seminole* in the East (the name *seminole* is based on a Muskogean Indian tribe of Florida)]. For this reason, common names include Seminole Crescent and 'Seminole' Texan Crescent. But the taxonomy is by no means certain. Several researchers in Florida suggested that the two forms are ostensibly separate species.



The waterless swamp during extended drought of spring 2000.

Regardless, the two insects are easy to differentiate: the orangey wing splashes in Seminoles are barely discernible in "Texans." [Crescents, with 15 species recorded within North America, are related to checkerspots, with about another 15 species, all within the family Nymphalidae. The profile for crescents and checkerspots includes highly figured wings (hence their names), small in size, and capricious denizens of sunny, flower-filled habitats—in essence, the quintessential butterflies of classic Elysium.] The demographics and ecologies of the two forms remain different, too. Consider: While the Texas crescent is common throughout the American Southwest, and much of Mexico and Guatemala, the Seminole form occupies a more easterly and confined distribution that extends between southeastern Louisiana in the west to northern and central Florida and southeastern South Carolina in the east. In addition, one text notes that Seminoles are most

frequently encountered "close to the banks of streams and rivers" whereas the more western Texas crescent prefers "gulches and dry stream beds." From personal data, I and several other butterfly aficionados had on rare occasion observed a Seminole or two in fields bordered by wetlands in a few locations throughout southeastern Louisiana. But never was I privy to their reproductive behavior. However, in 1980, Howard Dave Baggett, a researcher in Florida,



Native host plant for Seminole Crescent in swamp is lance-leaved waterwillow (*Justicia ovata* var. *lanceolata*), a member of the Acanthaceae family.



The low-growing plant is a pioneer species that spreads into bare areas by underground stems during dry periods. Plant is very tolerant of water submergence for upwards of several weeks.

H. Edwards. After several generic name changes (for example, *Phyciodes*, *Eresia*) and the discovery of southeastern populations of the butterfly, the species was split into two distinct subspecies: *Anthanassa texana texana* in the West and tropical America,





Native host plant for Seminole Crescent (*Justicia ovata* var. *lanceolata*).

wrote that *A. t. texana* in Texas breeds on drought-tolerant *Dicliptera brachiata*, and that *A. t. seminole* in Florida probably utilizes *Ruellia caroliniensis* (both plants are in the Acanthaceae). In 1991, John R. Watts and Dale H. Habeck (also Floridians), reared the species successfully on *Justicia ovata*, a native wetland acanthus. The authors noted some differences between the larvae and pupae of the eastern and western subspecies. Consequently, Florida researchers concluded that the two forms should be considered separate species.

I wonder: Could my research in Bluebonnet Swamp in Baton Rouge edify this unsettled pedigree?

My mystery plant turns out to be *Justicia ovata* var. *lanceolata*



A male Texan Crescent (*Anthanassa texana texana*), common throughout the Southwest USA, Mexico and Guatemala. Subspecies breeds on a variety of native and exotic plants within the Acanthaceae family.



A male Seminole Crescent (*Anthanassa texana seminole*), found in swampy localities scattered throughout much of the Southeast: southern Louisiana, southern Mississippi, southern Georgia, northern and central Florida, and southeastern South Carolina.



A female Seminole Crescent.

or in everyday parlance, lance-leaved waterwillow (I simply use "waterwillow")—the same species reported as the larval food plant (host) in Florida. The plant is semi-aquatic, representing the northernmost member of a large, tropical/semi-tropical family known as the Acanthaceae (acanthus for short). But while most rank and file members are robust with resplendent flower heads, waterwillow is unconventional. Relatively inconspicuous, the plants are short, shallow-rooted, with narrow, dark green, slightly glossy leaves. The individual blooms are perched on a thin axial spike between leaf and stem. Small, basically two-lobed and subtle lavender in color, each flower opens singularly in sequence throughout the long summer season. Waterwillow is a pioneer or

colonizing species that is easily crowded out. That Seminoles are exploiting waterwillow makes good sense: Current butterfly texts record the acanthus family as the exclusive host for the related Texas crescent.

The following day, Monday, I return to the beleaguered sanctuary. Owned and operated by the East Baton Rouge Recreation and Park Commission (BREC), Bluebonnet Nature Center is a 101-acre facility dedicated in 1997 to conservation, education, recreation and tourism (the facility logs about 40,000 visitors annually). Only about 69 acres of the sanctuary are typically under water. Wide, elevated boardwalks wind through this picturesque sector. Peripheral lands are heavily forested and accessed by designated stone-bed trails. My fieldwork begins well. Although still not inured to the waterless world, I now have opportunity for sleuthing the entire eerie bottomland. I





A male Seminole Crescent resting on a common swamp plant, lizard's tail (*Saururus cernuus*).

carry a nylon shoulder pack, small but roomy enough to accommodate a note pad/pencil, a pair of close-focusing binoculars, a bottle of GATORADE and—my all time favorite, FIG NEWTONS. I reserve my camera equipment for a later foray. A dead twig is my weapon of choice for tearing apart any of the myriad webs of orb-weaving spiders that may block my passage and the swirling cones of midges that mysteriously materialize before me. The heart of the swamp presents itself as a mosaic of saucers of patterned earth, bone bare, and ringed by a mélange of wilting vegetation and dead branches that I have to butt my way through. The dried sludge

reveals a legacy of man's folly: aluminum can here, frosted bottle there.

There are weird objects, too. Take "knees." These are natural protuberances ranging from nubbins to pinnacles nearly waist high, and are, in reality, aerial appendages of roots of the cypress—adaptations, according to some, for drawing in oxygen to make up a deficiency imposed by stagnant soil. But no one is really sure. Whatever, the curiosities remind me of a tented encampment of Lilliputians overshadowed by the iconic skyscrapers erected by a colossal folk of yore or perhaps even a miniaturized work of Spain's whimsical architectural genius Antoni Gaudi. An odor—musty, organic—wafts into my nostrils. I question the long-term future of this enigmatic microcosm.



Typical cluster of eggs on waterwillow.

But for the moment, life seems good. As I snoop about, I notice that the waterwillows, normally found as isolated, circular colonies at the interface between normal water level and terra firma, now seem to be expanding in circumference as splashes of emerald on a dry, crackled earthen canvas. I note that the Seminole's milieu within the swamp appears to be simpatico with that of the greatest concentrations of its host—one small section in the southeastern corner of the swamp where the usual inundated land gives way dramatically to higher ground. The canopy of the swamp, normally opaque, is now penetrated by enhanced sunlight. From the corner of my eye I detect a flash of telltale orange. My head swivels. Voila, my first Seminole of the day! Its wings are almost



Female Seminole Crescent laying eggs on the underside of waterwillow. Eggs are laid in clusters varying from one or two to nearly 150 - all during one session that could consume over one-half hour if butterfly is not disturbed.



First instar larvae. Larvae remain on undersurface of leaf and feed on soft tissues.

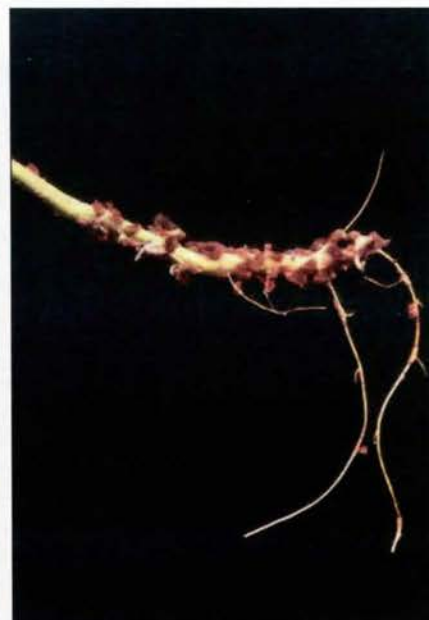




Second/third instar larvae on undersurface of leaf of waterwillow.



Third instar larvae feeding on Mexican petunia (*Ruellia brittoniana*), an exotic ornamental common in southern gardens.



Root of waterwillow and exuviae of third instar larvae that had fed on soft tissue of root.



Fourth instar larva.



Fifth instar larva.



When disturbed larvae curl and drop from plant. They remain motionless and imperceptible on the ground for upwards of 15 minutes.



Inside of rearing chamber with frass. Stained paper towel illustrates high water content of frass.





Pre-pupa.



Pupa. Mottled brown color camouflages structure as a dead leaf.



Pupae in group within a rearing chamber ("critter cage").



Newly emerged adult clinging to its pupal skin.

luminous. During the morning hours I tally between 30-45 individuals—all within no more than one acre. I feel that the little "hot-shots" are now a bit more cavalier than usual. (Although non-sentients, can they grasp that the drought has assured them "windfall" food for "bumper"

families? Is this what butterfly happiness is all about?) I, too, shuffle along with reckless abandon, fettered to the moment and its pleasure.

Seminoles are late snoozers; a typical begins about 9 AM. Males select low sun-dappled leaves, or at times, even the railings of the boardwalk to perch for basking. They spread and often fan their wings to harvest all the candlepower that the filtered rays can muster. But by late morning, hormones are flowing and so males begin to prowl for newly emerged, virgin females (females are a bit larger than males). A Romeo-want-a-be first circles his perspective mate. If she is receptive to his wooing, she settles onto a leaf and displays quivering wings. The male makes several loops above her but then alights by her side. After a few probes with his abdomen, he positions himself for a back-to-back coupling. The two remain in tandem for several hours. And that's that. When not engaged in "butterfly happiness," males usually spend their time chasing other males or, on occasion, other varieties of butterflies such as the Carolina satyr, a small, mousy butterfly that depends upon various grasses for its host, is common within most shaded habitats throughout the South. When two butterflies meet, attitudes flare. The testy twosome pirouette upwards until one dashes off.

Pregnant females, on the other hand, spend most of their time searching—almost in slow motion—for waterwillows. The first-time mothers, however, have

eclectic tastes, preferring individual plants growing adjacent to others exhibiting leaf damage from feedings by previous Seminole young (remember the adage "*the proof is in the pudding*"?). Egg laying has a decided finesse. First, the butterfly alights on an upper leaf, closes her wings and backs up to an edge. Extending and arching her bloated abdomen beneath the leaf, she extrudes and glues her first tiny yellow egg, and then another and another, every 4-5 seconds. Her abdomen sweeps from side to side, shortening with each sweep, as she packs the eggs into tight rows. But due to mechanics dictating the movements of her bloated abdomen, the number of individual eggs varies from row to row (early and late rows have fewer eggs than those in the middle). This unevenness results in a circular cluster composed of upwards to nearly 150 individual eggs (I once observed a particularly fertile female deposit 145 eggs during an uninterrupted session lasting 31 minutes). However, if disturbed or if the area on the leaf is very small, the prudent mother will depart to search for an alternate site, or declare downtime for basking. Since a female carries upwards of 300 eggs, she may produce from 4-6 small clutches during her brief lifespan of barely 3 weeks (typical for most butterfly species). Once all eggs are deposited, motherhood ends.





Female adult feeding on algal crust in dry swamp.

*d'oeuvres*.) The caterpillars munch on the undersurface spongy tissues, thereby avoiding the internal tough, infrastructures as well as detection by overhead predators. After only two days, the leaf appears as a wisp of fine lace

Seminole eggs soon turn pale greenish in color, and after 5 days hatch synchronously into tiny caterpillars or larvae—the “creepy crawlies” or “worms” of many die-hard gardeners. At first, the peewees are cylindrical with four rows of short spines, and virtually transparent except for their heads—glossy and jet-black. Within hours, the caterpillars appear to turn greenish in color. However, under magnification the color is, in reality, nothing more than leaf mash in the long, distended gut visible in their “see-through” body. (Comically, each baby reminds me of candy “Gummy Bears”—minuscule, green and caterpillar shaped, of course.) Young larvae are social, gregarious, remaining within their tightly packed cluster. (Again, my mind’s eye conjures a slice of kiwi fruit on a platter of *hors*



Lace-like appearance of a waterwillow leaf following feeding by early instar Seminole larvae. Such appearance is a telltale sign for the past presence of Seminole larvae.



Leaf damage to King's crown (*Justicia suberecta*) by early and mid instar larvae.



Skeletonization of waterwillow leaf by late instar larvae. Larvae sometimes will even nibble on the dermis of leaf veins.

due to the uneaten upper dermis—confirmation of the presence of Seminole caterpillars. If disturbed, larvae immediately curl en masse, and plunge to the ground. Cryptic and motionless, the little “possums” are almost impossible to distinguish from ground litter. After 10-15 minutes, they re-climb their plants to forage once again.

To better monitor Seminole caterpillars, I relocate several small broods of hatchlings to my makeshift home laboratory. However, although the caterpillars’ habit of dislodging may be a powerful strategy for avoiding predators, it was certainly a turn-off for me. But I have learned to be creative. Rather than snip a leaf, I first positioned a small plastic sandwich box underneath. When the tiny vixens dropped, they were mine!

After uprooting several waterwillows and placing them into a bucket of water—the plants wilt almost immediately if not submerged—I skedaddle home. I transfer the plants to a narrow-mouthed, water-filled jar, which in turn, I place within a covered glass terrarium. With my “nursery” now guest-ready, I employ a fine-bristled artist’s paintbrush—slightly dampened—to gently pick up each caterpillar for transfer to the fresh salad produce. I am now an official caterpillar “housekeeper.”

The appetites of caterpillars operate constantly in overdrive. So gluttonous,





Buttress of cypress tree in dry swamp. Dry ground around trunks are ideal places for new colonies of waterwillows.



Cypress knees give the swamp a surreal appearance that is reminiscent of minitour cities.

the caterpillars must exchange their skins every few days for larger sizes. After its very first molt a Seminole caterpillar dons a panache that is opaque black with tan sides and bottom. A couture of black, plumose spines completes the ensemble. Although menacing in appearance the spines are a cunning bluff. The finery, however, can cause considerable distress to their owners. During molting, a small number of larvae are unable to free themselves from their old skins, and so, die. Often I watched as an individual would violently gyrate. Puzzled, I suspected that my laboratory might be overly dry compared to the



Branching foldwing (*Dicliptera branchiata*), a native acanthus found in isolated locales throughout Texas and the Gulf South. Species is an acceptable host for both *A. t. texana* and *A. t. seminole*.

natural swamp. I began misting my rearing chamber. But no. I continued to lose two to five percent of each brood during each molt. (Perhaps this problem is inherent to the species?)

Seminole caterpillars have two uncanny traits. First, when disturbed, they regurgitate green goo. Regarding this as a physical strategy to discourage potential enemies, I paid no attention. After reading about the acanthus family of plants, however, I altered my opinion. Although few members of the family have been analyzed for their chemical content, at least six species are cited as containing phytochemicals (substances that have no direct metabolic use to their producers) with toxic or hallucinogenic properties for vertebrates (of course, some sort of chemical attracts Seminole females to this particular plant family). Indeed, scientists at the Coastal Ecology Institute of my local Louisiana State University campus have documented that nutria—an alien, fecund rodent inflicting extensive damage on marsh vegetation—avoid *Justicia ovata* like a plague. Might the waterwillows possess some unknown cocktail of chemicals? Might these substances be passed along to Seminole caterpillars as they feed? And might these compounds, disguised within a chlorophyll base, constitute a chemical arsenal that is heaved

upon a nemesis? The questions await answers.

Second, caterpillar poop or "frass" from Seminoles produces indelible green blots on absorbent surfaces, such as the paper toweling I used as bottom cover in my terrarium. Another question: Might the spotting be caused by residual fluids spiked with foreign



Shrimp plant (*Beloperone guttata*), a common ornamental acanthus used in southern gardens. Flowers are an excellent nectar source for hummingbirds and leaves are used by Seminoles as a host plant.





High water in swamp following a torrential thunderstorm. Such heavy downpours can sweep away larvae that are present on waterwillows.



Mexican petunia (*Ruellia brittoniana*), an ornamental acanthus commonly used in southern gardens and an acceptable host for Seminoles.

cages"—small, plastic carrying cases available at most pet-supply stores. Then I drove to the sanctuary where I set them free.

My unencumbered reign of the swamp provided several other valuable insights into Seminole biology. Take predation, for example. Having reared many Seminoles within my laboratory, I knew that the body and legs of a fresh butterfly are clad with tiny scales. Easily shed, I questioned the function of such accoutrements. Then one day I happened upon a fresh female Seminole as she blundered into the gossamer threads of an orb weaver. Surprisingly, the butterfly did not become ensnared but bounced out, like a kid on a trampoline. Realizing that this was breaking the mold for most small butterflies, I began to pay attention to webs. Conclusion: Never did I happen upon a snagged Seminole, although I did observe two other types of butterflies partially wrapped within silken larders. Therefore, I advocate that the superficial scales of fresh Seminoles empower the insect as a "*quick escape artist*"—a survival strategy in a land beset with booby traps.

Then there was the question of food. From the very onset of the swamp project, I was puzzled by an observation. Namely, the butterflies were not feeding. Now, from my years of experience, I know that a typical "*butterfly day*" includes hours of hunting for sources of food: principally nectar. Sugar-rich, this high-octane fuel is secreted by flowers to lure insects for pollination. Alas, the sanctuary was remarkably free of flowers. Initially, I assumed that the butterflies were temporarily sallying out of the swamp during my absence. Top-dollar butterfly banquets were

plant toxins, concentrated during digestion and later excreted? Curious, I personally taste-tested (I didn't swallow, however) both the green vomitous and frass (my, oh my, what we scientists do!). Both were pungently bitter. This simple experiment, of course, is far from definitive. However, it does lend support to my hypothesis that Seminole caterpillars do engage in chemical warfare.

As Seminole caterpillars grow they become less social, dispersing to the nearby stems of other waterwillows. When feeding, larger caterpillars do not restrict themselves to soft leaf tissues but instead consume the entire leaf, except the tough veins (on exotic hosts, the feeding often produces a Swiss cheese effect); sometimes larvae even consume the dermis of veins. After approximately three weeks, each larva ceases to feed and crawls to a secure location—usually the trunk of a tree or bush usually a foot or so above normal water level. Next, the caterpillar lays down a pad of silk to which it attaches its rear in order to hang head downward. After nearly a day, the skin splits and peels away, exposing the pupa or chrysalis. Mottled dark brown with small tubercles, this stage mimics a fragment of dead leaf—another camouflage tactic. Within the mummy-like entombment, the magic of metamorphosis unfolds, producing in a week a new life form—a butterfly. (The time from butterfly to butterfly is about 30 days. However, in November, cool weather delays maturation so that the butterfly does not emerge until the following spring.) In the end, my nursery fledged about five-dozen adult Seminoles over 12-days. As the butterflies emerged, I transferred them to "*critter*



definitely available nearby. For instance, wildflowers such as verbena, black-eyed Susan, tickseed, and several types of clover turned many vacant lots into a color-dot matrix. Additionally, the man-made landscapes augmenting commercial buildings often included ornamentals such as lantana, Mexican heather, and purple coneflower. But repeated checks proved negative. Adding insult to injury, the original author of the name of the butterfly species chose *Anthanassa*, Greek terminology for "queen of the flowers," to indicate, I imagine, a characteristic trait. (As confirmation, during several of my tropical projects I had frequently encountered Texas crescents indulging themselves with flower nectar.) What were the Seminoles using as a source of energy? Was I hoodwinked?



**Brazilian plume (*Jacobinia carnea*),** a showy ornamental acanthus used in southern gardens and used by Seminoles as a host.

Then an epiphany. It was late afternoon. The sinking sun superimposed a broad grid of shadowy trunks and branches upon the polygonal earth. Suddenly, my attention was drawn to two female Seminoles within a few feet of each other, walking slowly while probing with their long uncoiled proboscises. Now, while butterflies usually are able to secure sufficient water from nectaring to satisfy their metabolic needs, during inordinately dry conditions some butterflies do indeed "drink" from wet soil. Additionally, males of some species congregate socially on damp ground rich in salts, minerals, and even nitrogenous compounds from animal fluids such as, urine, feces, and even blood. Termed "puddling," this behavior procures specific substances needed to produce semen and sex pheromones. Patently, the two females within my view were not puddling. And with the earth so blistered, neither were they drinking.

I dropped to my knees and crawled toward the errant butterflies. Shortly, I was in position for a "close encounter of the third kind." With bated breath, I realized that I was privy to something extraordinary. You see, the butterflies were not probing the ground *per se*. Instead, they were testing blue-green algae—that dark green film that advances over many well-lighted, damp, organic surfaces. Formed of single-celled, colonial organisms referred to as cyanobacteria, the scum was drying into a flaky Pillsbury crust. Cyanobacteria represent some of the earliest forms of life on our planet. The plants organic and inorganic compounds seemingly

provide an unusual fuel for Seminoles' modified engines. The head-rush caused me to become positively giddy. As if to lend its joy to the moment, a lone cicada punctuated the air with its litany of numbing band saw shrills. During the next hour, I spied four additional Seminoles, two females, two males, feeding on the shriveling algal crust. I espouse that the Seminole crescent is an afternoon algal feeder—most likely, a behavioral adaptation to a flower-poor habitat, and a behavior completely unfamiliar to me. The Seminole race is like a swampland cayuse. Eureka, my mystery was solved!

Or maybe not. A few days later, my butterfly/hummingbird-savvy friend, telephoned to say that he had just observed a female Seminole laying eggs on two different plants within his front flower garden. In disbelief, I rushed over. I found Robert staring at a blossoming lantana bush. Although the newcomer had ceased laying eggs she remained, nectaring on a lantana flower and oblivious to her rapt audience. I tailed Robert as he pointed out two small clutches of eggs, one on the leaf of a shrimp plant (*Beloperone guttata*) and the other, on King's crown or dicliptera (*Dicliptera suberecta*). Both are in the acanthus family and often planted in semi-shade to attract hummingbirds. I was terribly confused.

Turns out, my friend's garden Seminole was not a singular maverick but the tip of an iceberg. Within the next few days, I discovered Seminoles (adults and larvae) in no less than 6 residential south Baton Rouge neighborhoods. Adults were nectaring on lantana; larvae were feeding



**King's crown (*Justicia suberecta*),** a showy ornamental acanthus becoming more popular in southern gardens. Plant is used by *A. t. texana* in Texas and by *A. t. seminole* in Louisiana.





King's crown (*Justicia suberecta*).

in its natural habitats, it can use shady creeks, drainage canals, and even vehicle thoroughfares as causeways to resettlement into residential gardens, thereby exploiting a variety of ornamental acanthus plants for its biological imperatives of nourishment and reproduction.

Meanwhile, waterwillow whets my appetite. Specifically, I am interested in learning if the plant and butterfly inhabit other water-prone venues near the Nature Center. My quest uncovers both butterflies and waterwillows at several. However, the plant is more widespread than the butterfly. In particular, the Burden Research Station, seems ideal for the butterfly, but contains only the host. This 420-acre tract, just a hop, skip, and jump from my residence, is part of the Louisiana State University Agricultural Center. Devoted to cutting-edge research on a variety of horticultural and agricultural projects, the outdoor laboratory also includes 15 acres of formal gardens and 150 acres of forest. I am particularly interested in the gardens since they are highlighted with natural and artificial ponds as well as a natural drainage creek—ideal habitats for Seminoles. The situation sparks an idea: I will attempt to seed a population of Seminoles into the gardens.

On June 2, I transport about a dozen of my coddled adults to the banks of one of the ponds where I release them for their maiden flights. Like a doting father, I make daily rounds. The butterflies remain in residence; I even locate a clutch of Seminole eggs on a waterwillow.

But such is not to be. Just one week later, the management at Burden sprayed the creek sides with herbicide—a cosmetic cleanup for tourists. In response, the waterwillows and other aquatic vegetation turned yellow and disintegrated. Regarding Seminoles, the phrase “*departed for green pastures*” was probably quite literally true.

June slides into July. The dry weather deepens. Meteorological maps officially designate southeast Louisiana as “*extreme drought*.” Then on the afternoon of July 9, an energetic thunderstorm roars in, venting over two inches of rain within barely an hour. When the clouds lift, I rush to the sanctuary. The swamp seems to have been cursed by another of the ancient great plagues—ironically, one of water. Raped of a sponge of surface vegetation and soil, the surrounding concrete landscapes have channeled water at breakneck speed into a sink whose dry, rock-solid veneer was not primed for such onslaught. And so the torrents continued through the swamp, ravaging everything unsecured. Although the velocity has now slowed, water level remains high, covering the entire boardwalk. From my outside perspective it is clear that all low vegetation is submerged. A solitary Seminole male flutters silently a few inches above the water’s quieted surface like a refugee defiantly returning to its battle zone. I lament silently: If only I could cajole the wretched critter to leave this present “*hell*” and escape into its personal “*Elysian Fields*” brimming with ambrosia. Tough break!

After about a week and another, but smaller, thundershower, my mindset is back to science and analytical reasoning (aren’t scientists supposed to divorce themselves of emotion?). I revisit the swamp. The air is dank and literally abuzz with newly emerged mosquitoes—“*plankton*” of the air. All are ravenous for a meal of warm blood—my blood! The water has dropped to wading level. For my first “*real swamp*” experience within the sanctuary, I suit up: long-sleeve shirt, long pants, wide-brimmed hat and knee-high rubber boots. As a final precaution, I spray my

on Brazilian plume or flamingo plant (*Jacobinia carnea*), yellow Jacobinia (*Jacobinia aurea*), Mexican honeysuckle (*Justicia spicigera*), Mexican petunia (*Ruellia brittoniana*), and branching foldwing (*Dicliptera brachiata*)—again, all members of the acanthus family. I begged cuttings of the plants from my friends to begin preparing my personal banquet for Seminoles. Sure enough, within no more than four weeks after planting, I spotted a female butterfly depositing eggs on a leaf of my new shrimp plant, and a few days later I was a proud papa! These observations from urban gardens have allowed me to fine-tune my theories: *Anthanassa texana seminole* is a shade-loving species—decidedly at odds with its western counterpart—and while an exclusive algal feeder





**Widespread construction on edge of Bluebonnet Swamp Nature Center destabilizes the water levels within the swamp. Floods from downpours sweep through swamp and dislodge Seminole larvae, which are then easily eaten by aquatic predators.**

entire uncomfortable ensemble with insect repellent.

I ease into the languishing liquid, tepid and tinted brown by its cargo of extraneous silt. A little dicey. I sink an inch or two into the bottom gumbo, but the water levels off just below my knees. As I slosh along, I must zigzag to avoid stumbling on any of the submerged cypress knees. The recent maelstrom has proven an elixir for the ailing ecosystem (the human community is much delighted, too). Many plants are budding new leaves. Some of the swamps regular inhabitants have returned, too. In the near distance, a long-legged great egret is poised motionless, eyes peering for an unsuspecting swimmer; a few yards to my left a raccoon uses its hand-like paws to deftly feel for bottom morsels. Suddenly, a cottonmouth is directly in front of me. Its gray color, heavy body, and

diamond-shaped head signal: "*DON'T TREAD ON ME.*" Panic stricken, I freeze. But the snake is also alarmed. It undulates rhythmically to get out of my way, rippling the water's glassy surface. Relieved, I soldier on. A dragonfly, large but a mere shadow of its Jurassic predecessors, darts from its perch to snatch something I don't recognize, but certainly not a Seminole—thank God. I turn my attention to the crucial waterwillows. Many of the plants are still submerged; others on higher ground are coated with silt. I search for caterpillars. But the waters have sterilized the plants of their precious cargo. I do, however, uncover one cluster of 76 eggs; but they are coated with silt and most likely dead (I snipe the leaf to take with me for confirmation). After nearly four hours I have had enough of this misery and so beeline it back to the nearest boardwalk. My clothing is streaked with sweat and mud; my hands, neck and face sport red, itching welts—my "*red badge of courage.*" I refortify with the dregs of my GATORADE and loll a bit to drip-dry (oh well, I do try). Then I dash to the comforts of my home for an oh-so-good bath.

Throughout the rest of the summer, I revisit the swamp as often as I can. (Incidentally, the eggs that were flooded were indeed nonviable, and so the flood did deliver an untimely coup de grace to Seminole young.) Because the drought returned, the swamp dried—again. I located only a single adult Seminole. Residential gardens were another story, however. Seminole adults continued to visit flowers and to create new generations using ornamental acanthus. Might these man-made settings function as quasi sanctuaries for Seminoles during calamitous floods in their natural habitats? The idea was novel, but I would need more resources before taking a stand.

May 7, 2001. First anniversary of my introduction to swamp Seminoles. Following a mild, dry winter, waterwillow began budding in mid April. However, on this day of celebration I spot no adult Seminoles within the sanctuary. On June 1, I locate my first egg cluster within the swamp. On June 4, I notice one male Seminole in a residential garden. On June 5, Tropical Storm Allison wallops the northwestern Gulf coast. Luckily, the cyclone does not slam directly into Baton Rouge (Houston was not so lucky). However, she vacillates nearby for an unprecedented seven days, dumping nearly 20 inches of rain (9-plus inches during one day alone) on the metropolis. All surrounding wetlands are inundated, purging the habitats of most animal life. By autumn's first frost, I have recorded only a handful of adult Seminoles—all within urban gardens. I hope that I have overlooked some breeding sites. By year's end, I conclude that "*Lady Luck*" has not smiled on Seminoles this year of the new millennium.

May 7, 2002. Second anniversary. The early months are mild and relatively dry. Nevertheless, the wetlands fill with winter water. Then, on three occasions in March and April, more than 3 inches of rain falls within a single day, causing extensive high waters throughout swampy habitats. Rain throughout the summer is normal, but September and October experience Tropical Storm Isidore and Hurricane Lili. As a result, rainfall during what is normally the state's two driest months, totals over 15 inches. Predictably, nothing much happens with my butterfly pursuits: for the entire breeding season, I ferreted out 16 caterpillars—all on a single King's crown in one neighborhood garden.

Meanwhile, I try to make some sense of what appears to be a dynamic interplay between weather and butterfly biology, Seminole style. I pay a visit to the Louisiana Office of State Climatology located on the LSU campus. The



data are telling. Long-term records for Baton Rouge indicate that the city usually receives an average just short of 61 inches of rain each year—usually well disturbed throughout the 12 months. However, in 1998, the pattern changed drastically: 1998, 1999 and early 2000 experienced significant deficits and were spared gully-washers. Apparently, extended drought conditions had facilitated the colonization of waterwillow. This, in turn, promoted population explosions of the Seminole crescent, culminating during the early summer of 2000 when I began my investigations. But that drier regime was radically interrupted on July 9 when a catastrophic thunderstorm flushed the wetlands of the majority of their butterfly nurseries.

And so, there is a decided dark side to a swamp's reliance on water. My theory on Seminole abundance is this: Populations of the butterfly and its larval food plant are both crucially depend upon winter temperatures as well as rainfall totals and periods. Plainly put, butterfly and plant yo-yo in concert astride an ecological tightrope.

Reflecting upon what has turned out to be a three-year odyssey, I must admit I am still a long way from mastering the insect's intriguing biology. What has emerged, however, indicates that the butterfly is not what was previously imagined as typical for its kind. At least in Louisiana—and Florida—Seminole have evolved specific behavioral and metabolic adjustments that permit an exploitation of a native plant in wetland habitats that are poorly lighted, flower deficient, and periodically rent by droughts and floods. Once considered worthless and therefore left undisturbed, these lands are now under pressure by high-rolling developers who are driven by avarice rather than commonsense hydrology. Consequently, Louisiana's checkerboard of wetlands—center stage for Seminole—are increasingly marginalized and dwindling bit-by-bit, year-by-year.

It is clarion that human beings are, in a very real sense, major players in the destiny of one of Louisiana's rarest insects. Paradoxically, that doesn't have to be all bad. Judicious legislation for future wetland development could significantly slow the collapse of the delicate ecosystem (of course, global warming remains a wild card in this scenario). Also, given that Seminole are extremely resourceful with their diets and able to expand out of their natural bastions into urban landscapes, garden-savvy homeowners could retool to take up the mantle of "butterfly steward."

And so it stands. Other research has forced me to move on. In a sense I regret that I have had to close on such an unsettled note. I hope my research helps taxonomists settle the controversy as to whether or not *A. t. seminole* should be elevated to the status of distinct species. With such an investment in time, my penchant for Seminole remains high. I will keep a watchful eye on my acanthus-rich garden. I hope one day soon I will be graced by what I have endearingly dubbed my "Louisiana Swamp Muse."

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UPDATE: Since this work in the early 2000s, Bluebonnet Swamp has undergone major changes. For example, construction has continued around the fringes of the swamp and on September 1, 2008, Hurricane Gustav toppled the majority of trees. As a result, water levels fluctuate wildly within the swamp and the increased sunlight has sparked a build up of ground vegetation such as lizard's tail (*Saururus cernuus*) that chokes out the pioneer host, waterwillow. All of these alterations have been unfavorable for the biology of the Seminole Crescent. The swamp has had a volunteer who has become passionate about the urban ecosystem. John Hartgerink, a retired EXXON employee, devotes several days each week to clearing underbrush, cleaning trails, noting butterflies, and photographing virtually everything biological. According to John, except for 2006, sightings of Seminole have been few and far between; and as of this writing (mid July), there has been not a single sighting in 2010.

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Note: all photographs are the property of Gary N. Ross.

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Hours: Tuesday-Saturday: 9 am to 5 pm; Sunday: noon to 5 pm, closed Mondays.

Fees: Ages 3 and under, free; Ages 3-17, \$2; Ages 18-64, \$3; Ages 65+ and college students, \$2.50.

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## BARON LUDWIG VON REIZENSTEIN (1826 - 1885)

## FATHER OF LOUISIANA LEPIDOPTERISTS

BY

VERNON ANTOINE BROU JR.

The earliest known publication listing species of lepidoptera (butterflies and moths) occurring within the state of Louisiana is a civil war era document, dated 1863 by Ludwig von Reizenstein that myself and other researchers have cited numerous times since its publication. This typewriter recreated copy in my possession appears to have been obtained by Edward N. Lambremont who authored or coauthored several investigative articles (1954, 1963, 1965) in the mid-twentieth century concerning butterflies of Louisiana since von Reizenstein first, comprehensively listed all the known butterflies of the state. I obtained my copy of this document from the library of the entomology department at Louisiana State University Baton Rouge, specifically the Louisiana State Arthropod Museum (LSAM). The front page of the document states the (original) was prepared by L. von Reizenstein, printed for R.C. Kerr, librarian for the New Orleans Academy of Sciences, printed by Isaac T. Hinton, Commercial Place (New Orleans) in 1863.

Examining von Reizenstein's publication reveals there are species listed consecutively 1-194, with the scientific name of each identified and collected butterfly and moth species along with the describing author's name for each. Some species have additional information such as foodplant associations or captured on or in association with particular plants or trees. Additional information on some species includes notations that specimens were found at particular areas of the city, particular streets, and multiple references to locations which may or may not refer to other nearby locations in or out of, and surrounding Orleans Parish, the parish (= county) in which the City of New Orleans exists. Additionally, von Reizenstein ended the work by stating he had collected an additional 74 species of butterflies and mostly moths of which were species yet to be described. His grand total being 268 of lepidoptera species collected in New Orleans and it's vicinity.

It is obvious that von Reizenstein was not just a novice lepidopterist or weekend bug collector. In order for him to collect and identify the many varied species in his publication, would require access to the most up to date scientific publications of the time and the species listed would have required him to be deeply engaged in documenting and collecting specimens year-round and for much of his lifetime in New Orleans, Louisiana, to the 1863 publication date. At the end of his publication, von Reizenstein astutely discusses the number of broods for some Louisiana Saturniidae species and makes reference to them differing in their appearance and successive generations from those of the same species in the Northern States.

Most surprising is that there are no common names used in the publication, only scientific names and the majority of his species determinations are accurate, many even to present day nomenclature. This suggests he must have extensively studied scientific literature of the time. Consider, there were no field guides we know of during these times. He surely would have found the opportunity of collecting insects in the New Orleans year-round semitropical weather was almost limitless. Also, he was there when much of the city of New Orleans would be under water annually for as much as 6 months of the year – before the creation of the levee system along The Mississippi River throughout Louisiana and other states.

I find Ludwig von Reizenstein to be the consummate Louisiana lepidopterist considering the hardships of the times.



Fig 1. Baron Ludwig von Reizenstein (1826-1885), his wife, Augusta née Schroder (1824-1886), and daughter Sophie (1853-1923), in New Orleans (*circa* mid-1860s')



The city of New Orleans was captured and occupied by Union forces in 1862. von Reizenstein published his compilation in 1863, precisely during the midst of the Civil War Era, 1861-1865, a time of pestilence, turmoil and mayhem. Civil war battles were occurring throughout the state of Louisiana and years of continual yellow fever outbreaks continued to be a scourge on the city of New Orleans.

Von Reizenstein was apparently not alone in his pursuit of lepidoptera in New Orleans during these times, as there are references to particular species being collected by other individuals among his species listings. Nothing is known about these individuals or their relative importance to von Reizenstein's work, if any, in these formative times of Louisiana lepidoptera history. These individuals are simply cited as: John Speck, Mr. Kerr (most probably, R.C. Kerr, librarian for the New Orleans Academy of Sciences), Mr. Trabant, Mr. Micou, C. Becker, and a reference to Boese's collection. There are few references listed in his publication, consequently, we do not know the basis for most all of his species determinations. There are occasional notations for species references as: "*Encycl.d'hist.nat.*", and "*Say's Entomol.*" probably (Thomas Say, American Entomology, or Descriptions of the Insects of North America, 3 volumes, Philadelphia, 1824-1828), inferring that species were identified using these publications.

Initially, I strongly suspected von Reizenstein may have corresponded with entomologists or museum experts of the time to figure some of these many species determinations. My suspicions were later confirmed when I read von Reizenstein's published description of a new sphinx moth which I will cover a bit later on in this article.

Information about the life and times of this remarkable early Louisiana lepidopterist has remained a mystery for well over a century, until Steven W. Rowan, professor of history at the University of Missouri at St. Louis translated von Reizenstein's scandalous novel for the first time from German into English. All of what we now know about Ludwig von Reizenstein is in the introduction to Professor Rowan's translation of that novel "*Die Geheimnisse von New Orleans*" (The Mysteries of New Orleans) discovered in the Historic New Orleans Collection and published by The Johns Hopkins University Press in 2007. S.W. Rowan (per. comm.) referred to von Reizenstein as a "*lepidopterist of some repute*". Much of what I cover in this article concerning the personal life and history of this remarkable early lepidopterist is taken from Rowan's published novel as well as from personal communications with this author. Professor Rowan's research into the persona of Ludwig von Reizenstein was not simply a brief interlude, but rather monumentally insightful and seemingly exhaustive, delving into all aspects of this enigmatic Renaissance man. Rowan's research involves more than a decade of travels to cities in the U.S. and Germany in search of the life and times of von Reizenstein.

A single complete copy of the original novel in German survived at the Historic New Orleans Collection. Without the discovery of this rare and forgotten literary novel and the remarkable work of unraveling the life and times of Ludwig von Reizenstein by Professor S.W. Rowan, we may never have known these most intriguing details concerning the "*Father of Louisiana Lepidopterists*".

Baron Ludwig von Reizenstein (1826-1885) was born July 14 in Marktstett am Main (Bavaria), a region located in the southeast of Germany, to a family of aristocrats of ancient noble lineage. His father sent him to America in 1848. After exhausting what money he had, he survived by shucking oysters, watching cows for a farmer, and as a traveling bird-cage salesman. A relative in St. Louis, Friedrich Wilhelm Baron von Egloffstein who ran a surveying office let him learn on the job, and Ludwig later settled in New Orleans. By 1851, he had established himself as a civil engineer, architect, journalist, amateur naturalist, and publisher in New Orleans. There he married, and began editing a German language weekly, the Alligator, and contributing to other German language newspapers, particularly the Louisiana Staats-Zeitung, a German daily. During the mid-nineteenth century, the population of New Orleans was around 50% of German heritage. L. von Reizenstein's novel *Die Geheimnisse von New Orleans* began its serial run in the Jan. 1, 1854, issue. The novel ended its run in March 1855 because of its accused moral decadence.

Augusta Von Reizenstein was the wife of Ludwig, and the 1880 U. S. Federal Census listed their home to be in New Orleans, Orleans Parish, Louisiana. Ludwig's age to be 54 and Augusta's age to be 51. Augusta is listed as a married, white, female, and occupation to be house keeper.

Another interesting event was that in 1881, four years before his death on August 19, 1885, von Reizenstein authored a description of the sphingid we now know as *Pachysphinx modesta* (Harris, 1839). In 1903, Rothschild and Jordan created the genus *Pachysphinx* to place the two North American species *P. modesta* known as (Big Poplar Sphinx) and *Pachysphinx occidentalis* (Henry Edwards, 1875) known as the (Western Poplar Sphinx). Prior to 1903, these two species were placed in the genus *Smerinthus* Latreille, 1802. In 1881, *Smerinthus cablei* Reizenstein was described in Scribner's Monthly Illustrated Magazine, 22: 864, Type locality: Spanish Fort, (New Orleans) Louisiana.



The species *cablei* was apparently confirmed as being a newly discovered species prior to publication of the description by noted lepidopterists of the times J. H. Comstock and Augustus R. Grote. In reading von Reizenstein's description, it appears that because of the very large size of the Louisiana specimen (phenotype), this is what initially led to the belief all concerned that he had discovered something new to science. Even though von Reizenstein mentions *modesta* in his article, he apparently made no connection to that previously described species. I illustrate the description here as it appeared in Scribner's Monthly. *S. cablei* was subsequently relegated as synonymous to the earlier described species *P. modesta* (Harris).

## A NEW MOTH.



SMERINTHUS CABLEI. (DRAWN BY R. RIORDAN AND ENGRAVED BY HENRY MARSH FROM THE ORIGINAL SPECIMEN REARED BY THE DISCOVERER, L. VON REIZENSTEIN.)

THE reader of these pages who is not learned in natural history may need to be told that the finding of a large new moth, in a field believed to be so well explored as the United States, is an event of great rarity. The recent discovery near New Orleans, by Baron L. von Reizenstein, of the above unusually large and beautiful *Smerinthus*, has already awakened the surprise and admiration of the entomologists who have known of it,—including Professor J. H. Comstock, late Government entomologist, and Augustus R. Grote, Esq., editor of "Papilio,"—who unite in regarding the species as not only clearly distinct from any other heretofore classified, but also intrinsically remarkable for size and beauty. Readers of "Madame Delphine" and "The Grandissimes" will be glad to note the compliment which has been paid to the author of those books in the choice of the specific name by the discoverer, from whose letter to us we make the following extracts.—ED. S. M.

"The discovery of the larva from which I reared this conspicuous moth was made

on the 18th of August, 1880, about six miles from New Orleans. I left the city on the ten o'clock night train, to hasten to Spanish Fort\* for the purpose of entomological researches along the outlet of the Bayou St. John and the rear portion of the park. Annoyed by the continual shop-talk of three passengers opposite, I left my seat, went out on the platform, and inhaled the pure air of an exquisitely beautiful night, after a day almost as perfect. When the train had arrived at the Lake depot, I noticed Orion shining brilliantly in the cloudless sky, as if to rival the pouring floods of electricity with which the park was lighted. Thousands of people were here gathered, strolling gayly along the luxurious gardens of this summer retreat, unaware of the great treasures which nature offered in remoter places, whither I directed my steps. This fire-ocean was in reality an

\* A place of public resort, projected in miniature after the features of Coney Island, and situated at the mouth of the historic Bayou St. John, where it opens into Lake Pontchartrain.



imposing spectacle. The electric light illuminated for many miles the whole region beyond the limits of the salt-marshes, touched the remotest bungalows of the fishermen, and seemed sometimes to kiss the spires of New Orleans. In such a night you see before you, allured by the intensity of light, the whole insect world, and all the quivering nations of flies, which sport

'Thick in yon stream of light, a thousand ways,  
Upwards and downwards, thwarting and convolved.'

Skirting a reedy region, covered with water ankle-deep, I forced my way through creeping and trailing vines, intermixed with the trumpet-shaped red flowers of the *Bignonia radicans*; then through a pass fringed here and there with dense bushes of hawthorn, sweet-brier, and mimosa. Right here was the spot to look for entomological treasures, and in the next moment occurred an event that left a deep impression on my mind. My heart gave a leap—here was a wholly unexpected discovery! Here, in the full splendor of the electric light, I observed a large unknown larva, preëminent of all I ever saw, feeding on the leaves of the pickerel weed (*Pontederia*). My hand trembled as I seized the rare creature and hurried it quickly into the depths of my collection *etui*—an empty cigar-box, provided with numerous air-holes. Satisfied if I might get this home in safety, I did not stop to look for others, but extricated myself from the tangle as best I could.

"The new species seems to me to supply the 'missing link' between the true *Sphingidae* and *Bombycidae*. Within the limits of the United States there are known to be seven different species of the sub-genus *Smerinthus*, which are separated from the *Sphingidae* proper: *Smerinthus geminatus*, *myops*, and *juglandis*, of the Southern States; *S. Astylus* and *modestus*, of the Lake Michigan region; *excaecatus*, of the Eastern States, and *S. ophthalmicus*, of California—none of which exceeds three and a half inches in breadth, and all of which have in general a dusky coloration. My new species measures over five inches in breadth, and has a quite different style of coloration from the other *Smerinthus*, and many other important characteristics that warrant its separation from that genus. In the larval state it differs entirely from the larvæ of our known *Smerinthus*, and, in fact, of all other known *Sphingidae*. The larva resembles more those of the *Bombycid* genus *Attacus*, and I believe that it is the

long-sought-for connecting link between *Smerinthus* and *Selea Polyphemus* and *Samia liocropia*, those well-known gigantic moths of our States. The primaries or fore-wings of the new moth, when quite fresh from the chrysalis, are of a pale slate-color, interrupted with dark, cloudy bands, which show a somewhat greenish luster. The secondaries or hind-wings present a beautiful contrast. About in the middle is seen a large white crescent, surrounded by a deep black band. The remaining surface of the hind-wings is shaded off with brilliant crimson. The under side of the wings is comparatively less vivid, if I exclude a large crimson patch on the fore-wings. The outer margins of the primaries are deeply notched and have by degrees lighter and darker tints. The antennæ are very prominent, strongly serrated, and of extraordinary length.

"But I must not forget the description of the wonderful larva. Its body is of a very clear bluish-green color, with a broad coral-red dorsal line. There are golden lateral stripes on each side of the body, which is dotted with innumerable golden atoms of the greatest brilliancy. The head is of a triangular shape, similar to *Smerinthus*, but considerably more extended and pointed. The presence of the coral-red colored warts on the fourth segment is an astonishing ornamentation, which occurs only in the genus *Dryocampa*, and in some of the *Saturniidae*.

"Being the first describer of the above insect, I have, according to the custom recognized among scientific men, the right to name it. In honor of Mr. George W. Cable, who is so much identified with Louisiana as citizen and *littérateur*, I propose to name the insect *Smerinthus Cablei*.

"L. VON REIZENSTEIN."

Some to whom the present discovery has become known have offered the conjecture that the larva found at Spanish Fort may have been carried from some portion of the Greater or Lesser Antilles, on drift moving across the Gulf of Mexico by the force of currents or of winds. But neither by currents nor winds could such an event be brought within the bounds of probability. The currents of the Gulf on its northern side set powerfully eastward through the straits of Florida. The nearest coast in the West Indies, that of Cuba, is several hundred miles from that of Louisiana, and the



borders of Lake Pontchartrain are open to the Gulf only by certain passes, or *rigoles*, of a few hundred feet width. There are, moreover, no *Smerinthi* known to exist in Cuba; so that, at any rate, the debate, could there be one, would be not at all on the authenticity of the discovery, but only on the native place of the newly discovered species. This, beyond any reasonable doubt, is the swamps of Louisiana, near New Orleans.

The entomology of the Mississippi delta seems to have been, thus far, only superficially treated. The depths of the Louisiana swamps have rarely been visited by those naturalists from abroad who have momentarily sojourned in their neighborhood, and among natives or residents of the region none have yet made known the results of any minute research in the insect life which teems about them on every hand. Thus it occurs that this large and beautiful

new species of moth has remained unknown to science during the nearly two hundred years in which white men have occupied the country to which it is native, and have built a great city within its immediate habitat. There is no telling, but by the actual exploration of naturalists, what, or what numbers of, unknown beauties are yet to be found—we need not say in the remote recesses of these delta swamps, but even in the immediate environs of New Orleans. The Baron Reizenstein alone has made numerous entomological discoveries—among others of a large unknown honey-bee and two or three wasps. It is to be hoped that his success may stimulate further research in the various departments of minute vegetable and animal life in this so nearly virgin field. It is probable that even in ornithology, notwithstanding the researches of Audubon in this, his native country, there is much awaiting the attention of new discoverers.



Fig. 2. Headstone of Edward Berthelson Tomb at Greenwood Cemetery as it exists in 2010.

The sphingid species *cablei*, was named in honor of noted author of the times, George Washington Cable. It is also interesting to note that Cable later published the book: "*Strong Hearts*" in 1899, containing a collection of three short stories. In one of Cable's stories titled "*The Entomologist*", von Reizenstein is the model for the story, and often referred to as the "*Baron*" and his German wife's fictional name "*Senda*". Cable was born in New Orleans, Louisiana, and served in the Confederate Army during the American Civil War. At the end of the war in 1865, he began writing for the New Orleans Picayune newspaper through 1879.

L. von Reizenstein, was characterized as a German nobleman, draftsman, naturalist and scandalous novelist (Eichhorn, 2007). L. von Reizenstein died on August 19, 1885, at 59 years of age and his wife Augusta von Reizenstein died on September 2, 1886, at the age of 62. Their daughter Sophie von Reizenstein Berthelson was born March 6, 1853, and died July 13, 1923, at the age of 70.

Through the efforts of Mary Lou Eichhorn of the Historic New Orleans Collection, the grave of Ludwig von Reizenstein was located at Greenwood Cemetery in New Orleans (Figs. 2 & 3). This cemetery was established by the Firemen's Charitable & Benevolent Association in 1852. Its opening immediately relieved the overcrowding at Cypress Grove Cemetery. At this time, New Orleans was America's third largest city, and within the first year of the yellow fever epidemic, over 8,000 residents in the city had expired from the disease. Ludwig von Reizenstein is buried in Greenwood Cemetery along with his widow Augusta, his daughter Sophie, son-in-law Edward Berthelson, and some grandchildren are laid to rest in the Edward Berthelson tomb.





Fig. 3. a) Edward Berthelson Tomb, b) close-up of upper portion of headstone listing Ludwig, Augusta, Sophie and other family members, relatives and later descendants interned in this tomb.

Regarding my own genealogy, the name Brou is of German ancestry, and my paternal ancestor's emigrated from the border territory Alsace-Lorraine, considered at different times in past history as belonging to either France or Germany. My immigrant ancestors settled in the late 1800s in Edgard, St. John Parish, about 30 mi north of New Orleans along the Mississippi River. Originally, a German settlement, Edgard exists in current times as the parish seat and a major sugar cane farming area of the state. Today, it is populated more than 95% by the descendants of the black slaves which worked the surrounding sugar cane plantations of long ago. Few German descendants live there presently, as most of them have moved away over numerous generations, often taking up residence closer to the big cities, New Orleans, and to a lesser extent Baton Rouge, where employment was more accessible. The same original 33-acre piece of Edgard property remains in my family to this day and I spent my childhood summers there chasing bugs and birds as well as living there for 17 years from the late 1960s - early 1980s. My parents, Vernon Antoine Brou of Edgard and Marillyn Haydel Brou of nearby Vacherie, St. James Parish, as so many others moved to New Orleans where better employment opportunities existed in the late 1940s, post World War II. I was born April 20, 1949, and grew up and lived in New Orleans until late 1968, moving to Edgard where I began in 1969, 41 consecutive years of year-round light trapping to date, and surveying the lepidoptera and other insects of the state of Louisiana.

The *Mysteries of New Orleans* is a large book originally published in 2002, consists of 33 pages of preface, acknowledgments and introduction where the bulk of what is known about von Reizenstein is located, and 559 pages of von Reizenstein's German to English translated and edited novel by Steven Rowan. The New Orleans "Times-Picayune" newspaper described the novel's content as "*Uncovering the vices of a city that was steeped in sexual promiscuity of every variety and crimes of greed, passion, and malice . . . von Reizenstein invests a good many satiric jibes at religion, society, and human nature in general.*" There are also three halftones in the \$30.00 paperback, one of which is the picture of Ludwig, Augusta, and Sophie, (Fig. 1) in this article. Steven Rowan graciously provided the "carte de visite" image (Fig. 1) appearing in this article. The Johns Hopkins University Press, ISBN 0-8018-6882-3, is provided for those wishing to obtain a copy of this informative novel. Steven Rowan is a professor of history at the University of Missouri at St. Louis. We can all be thankful to Professor Rowan for having the tenacity to investigate lost history involving Louisiana's most important nineteenth century Lepidopterist. This novel is available at most bookstores and online at Amazon.com booksellers.

I am indebted to and especially thankful to Steven W. Rowan and Mary Lou Eichhorn, both of whom exhibited willingness to freely share information and answer my many questions. Both were essential in discovering the most interesting facts about a truly remarkable personality in Louisiana's lost history, Baron Ludwig von Reizenstein. I thank the following individuals for providing helpful review and comments: Christopher Carlton, J. Barry Lombardini, and Steven W. Rowan.

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## RECENT DECLINE OF THE SCHAUS' SWALLOWTAIL (*HERACLIDES ARISTODEMUS PONCEANUS*) AND MIAMI BLUE (*CYCLARGUS THOMASI BETHUNEBAKERI*) IN FLORIDA

BY

MARC C. MINNO

As I have presented at the last few annual meetings of the Southern Lepidopterists' Society, there has been a dramatic decline and loss of butterflies in the Florida Keys and on the southern Florida mainland since the 1980s (Minno and Minno, 2009). Two endemic skippers, *Epargyreus zestos oregon* and *Hesperia meskei pinocayo*, are presumed extinct. Other butterflies in the region are disappearing as well. However, only a few of the imperiled butterflies in southern Florida have ever received the attention of private conservation groups, state and federal agencies that manage and protect wildlife, and the general public. This is very puzzling to me since many of the butterflies have been known to be in trouble for many years (Minno and Emmel, 1993, 1994).

The Schaus' Swallowtail (*Heraclides aristodemus ponceanus*: Papilionidae) has received a great deal attention over the last several decades. Numerous scientific and popular articles about this beautiful butterfly have been published. The Schaus' Swallowtail was even featured on a 32-cent US postage stamp issued on October 2, 1996 (one of a set of 15 endangered animals). It was first listed as threatened by the US Fish and Wildlife Service on April 26, 1976 (Federal Register volume 41, issue 83, pp. 17736-17740), but was upgraded to endangered in 1984 (Federal Register volume 49, issue 171, pp. 34501-34504).

In 1969 Charles V. Covell, Jr., then at the University of Louisville, began monitoring Schaus' Swallowtail abundance and distribution in order to determine how rare the butterfly really was (Covell and Rawson, 1973; Covell, 1976, 1977). He called this effort Project Ponceanus. In Florida, the Schaus' Swallowtail typically has only one generation per year with adults flying from mid-April through the end of June, although other subspecies in the Bahamas, Cuba, and Greater Antilles have two broods. Based on short visits in May and June to Elliott Key, other islands in Biscayne National Park, and Key Largo, Dr. Covell found the butterfly to be relatively common each year from 1969 through 1972, but much less so from 1973 through 1976.

In the mid-1980s Thomas C. Emmel at the University of Florida began population biology studies of the Schaus' Swallowtail, in which I was a participant. We used mark-recapture techniques to track the movements of the adults and estimate the population size. The Schaus' Swallowtail population varied from year to year during the late 1980s, but dozens of adults could be captured and marked on a single day in late May. As it turned out, these were productive years for the Schaus' population. We found the butterfly on most of the islands in Biscayne National Park that had the larval host plant, Torchwood (*Amyris elemifera*), as well as at a number of sites on northern Key Largo as far south as John Pennekamp State Park.

In 1992 Dr. Emmel was able to get permits and funding to breed the Schaus' Swallowtail in captivity at the University of Florida in Gainesville (Daniels and Emmel, 2005). Since Torchwood was hard to obtain and grew very slowly, Wild Lime (*Zanthoxylum fagara*) was fed to the caterpillars. Wild Lime is easy to grow in pots and flushes new growth frequently. Captive females laid eggs on potted Wild Lime plants and the larvae were reared in individual plastic containers on cut foliage. The captive colony was started with 100 eggs obtained from females temporarily caged on Elliott Key in June. Just a few months later, Hurricane Andrew devastated the northern Florida Keys (the entire range of the Schaus' Swallowtail) on August 24, 1992. It was not known whether the butterfly still survived



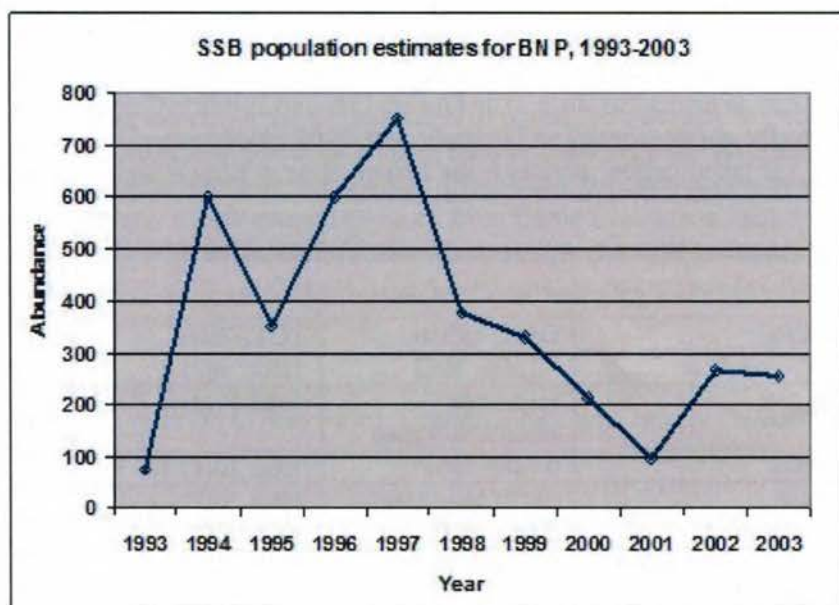


Fig. 1. Schaus' Swallowtail butterfly population estimates for Biscayne National Park since Hurricane Andrew, 1993 to 2003 (U.S. Fish and Wildlife Service 2008).

releasing newly emerged adults. Five hundred captive-reared individuals were set free in 1996 followed by 209 in 1997. Although there was initial success, none of the releases resulted in establishing colonies.

In the five years following Hurricane Andrew, the Schaus' Swallowtail population recovered, no doubt helped by the captive propagation releases, but then something happened, something not obvious like a hurricane. The Schaus' Swallowtail population declined greatly from 1997 to 2003 (Fig. 1) and in subsequent years.

2010 was an especially poor year for the Schaus' Swallowtail. I visited Elliott Key on April 30, May 1, June 6, and June 17 to tally butterflies. I only found one Schaus' Swallowtail, a male, on June 6 and another on June 17 flying along the same section of Spite Highway at the southern end of Elliott Key. I did not find any eggs or larvae, which should have been numerous in June. A North American Butterfly Association (NABA) group found about six adults on northern Key Largo and a similar number on Elliott Key in late May. These numbers are much too low to maintain a viable population.

Since the late 1990s attention on, and funding for, the Schaus' Swallowtail waned as a new imperiled butterfly, the Miami Blue (*Cyclargus thomasi bethunebakeri*; Lycaenidae: Polyommatainae), took center stage. The Miami Blue was once a locally common species in the Keys and coastal areas of southern and central Florida. However, during the 1980s it disappeared from most of the mainland (Leston *et al.*, 1982). At Hugh Taylor Birch State Recreation Area in Broward County I found single adults on July 11, 1982, January 2, 1983, and June 11, 1983. Members of the Southern Lepidopterists' Society found it on Sanibel Island in 1990 as well as the Keys in the late 1980s (Table 1). In 1935 the Miami Blue was common at Royal Palm Park (now Royal Palm Hammock in Everglades National Park) based on museum specimens (Minno, 2010). According to Barbara Lenczewski (1980), the last Miami Blues in Everglades National Park were found by Dr. Covell on May 10, 1972, at Flamingo. The last report of the Miami Blue on the mainland was at the University of Florida Tropical Research and Education Center north of Homestead on 7 September 1991 by Leroy Koehn (Table 1). Why would this butterfly last be found at an agricultural research farm in an urban area where pesticides and herbicides are sprayed on a regular basis and not in an unsprayed natural area with thousands of acres of seemingly suitable habitat?

Shortly after Hurricane Andrew, the Miami Blue disappeared from Biscayne National Park and other areas of the Keys. Several years went by without any reports of Miami Blues. Then on November 29, 1999, Jane Ruffin discovered an overlooked colony at Bahia Honda State Park in the lower Florida Keys (Ruffin and Glassberg, 2000). There was a sighting of one adult on Key Largo on May 5, 2001 by Rick Gillmore (Calhoun *et al.*, 2002), but no colonies were known except for the one at Bahia Honda State Park.

in the wild immediately after the hurricane because adults would not emerge until April or May the following year. Perhaps the captive colony was all that was left! The hurricane provided additional incentive for government agencies and private conservation groups to fund the captive propagation program. As it turned out, small numbers of the Schaus' Swallowtail did survive the hurricane in Biscayne National Park and on northern Key Largo.

Dr. Emmel received authorization to release captive-bred Schaus' Swallowtails into the wild in 1995. That spring, prior to the flight season, 764 reared pupae were placed in natural habitat at the Deering Estate County Park on the shore of Biscayne Bay south of Miami and at six other sites in the northern Keys. Due to heavy predation of the pupae by birds, strategy changed the following year to



Reports of the loss of the Miami Blue from most of its range and the existence of a single vulnerable colony triggered Jeffrey Glassberg of the North American Butterfly Association to file in November 2002 an emergency petition with the US Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission to list the Miami Blue as endangered. These agencies have legal authority to protect wildlife. The Florida Fish and Wildlife Conservation Commission acted promptly and listed the butterfly as endangered on December 10, 2002. However, nearly eight years later, the US Fish and Wildlife has not yet taken action, although the Miami Blue is now a high ranking candidate for listing.

**Table 1. Reports of the Miami Blue (*Cyclargus thomasi*, formerly *Hemiargus thomasi*) published in the Southern Lepidopterists' News (SLN).**

LOCATION	OBSERVERS	DATE SEEN	SLN ISSUE
Elliott Key (Miami-Dade Co.)	Charles V. Covell, Jr.	18 May 1982	1982 4(2):8
Tampa area	Dave Baggett	Reprinted Historical Paper	1988 10(1):4-7
South Keys (Monroe Co.)	Leroy Koehn	4 April 1988	1988 10(1):10
Key Largo (Monroe Co.)	Leroy Koehn	14-15 May 1988	1988 10(2):22
Lee County	John V. Calhoun	5 Oct. 1979	1988 10(3):25-28
Big Pine Key (Monroe Co.)	Leroy Koehn, Jeff Sloten	10 June 1988	1988 10(3):35
North Key Largo (Monroe Co.)	Leroy Koehn, Jeff Sloten	11 June 1988	1988 10(3):35
Key Largo (Monroe Co.)	So. Lepid. Soc. members	18-20 Nov. 1988	1989 11(1):5-6
Sanibel Island (Lee Co.)	Leroy Koehn, Jack Heinrich	10 Nov. 1990	1990 12(4):50
IFAS Station, Homestead (Miami-Dade Co.)	Leroy Koehn	7 Sep. 1991	1991 13(4):54

As with the Schaus' Swallowtail, publicity about the rarity of the Miami Blue resulted in funding and research. Jaret Daniels and students at the University of Florida conducted population biology and genetics studies and established a captive breeding colony in Gainesville in 2003. However, when it was announced that releases of captive-reared stock would be made in the Keys, the Florida Keys Mosquito Control District filed a lawsuit to stop the re-introductions. The Mosquito Control District did not want to be held liable for harming an endangered species while carrying out its mission to protect public health (Florida Coordinating Council on Mosquito Control 1998) and did not want to be constrained from spraying during disease outbreaks. Mosquitoes transmit West Nile Virus, Eastern Equine Encephalitis Virus, St. Louis Encephalitis Virus, and other viruses and pathogens that kill several people every year as well as cause harm to wildlife, farm animals, and pets. Although Malaria and Yellow Fever were eradicated from Florida many years ago, there's a continued threat of re-introduction of these and other emerging diseases such as Chikungunya into Florida from other parts of the world. The Florida Keys Mosquito Control District is currently trying to eradicate an outbreak of Dengue Fever in Key West, which was first identified in 2009. The issue of which law takes precedence, endangered species *versus* public health, was never determined because the parties settled the dispute out of court. The University of Florida agreed to release captive-bred Miami Blues only in certain areas of their former range including Everglades National Park, Biscayne National Park, and Dagny Johnson Key Largo Hammocks State Park. Thousands of captive-reared Miami Blues were released at these sites, but no viable colonies were established.

In 2006 Paula Cannon and Tom Wilmers of the Key West National Wildlife Refuge discovered additional colonies of the Miami Blue in the Marquesas and on Boca Grande (Cannon, 2006, 2007a, b). These tiny, remote islands lie west of Key West in the Gulf of Mexico. The new discoveries gave hope that perhaps the Miami Blue could be restored in other parts of its former range.

According to Paula, the beach habitat of the Miami Blue in the Key West National Wildlife Refuge had been highly impacted by Hurricane Wilma in 2005 as was Bahia Honda (Salvato and Salvato, 2007), but the Miami Blue colonies survived. However, a different threat, feral Green Iguanas (*Iguana iguana*), were becoming abundant in parts of the Keys. Early in 2009 NABA members visiting Bahia Honda found that iguanas were defoliating Gray Nicker (*Caesalpinia bonduc*) plants, the main larval host of the Miami Blue at this site, and alerted the park staff. After several months, traps were deployed and more than 100 iguanas were removed, but by then the Gray Nicker plants had been greatly impacted. During the summer of 2009, Dr. Daniels found that the Miami Blues still survived at Bahia Honda at about the same level of abundance as the year before, and with the iguana trapping effort, the nickerbear plants began to recover.



Unfortunately, conditions in 2010 have not been favorable to the Miami Blue. The Keys experienced very cold temperatures early in the year. There were frost-damaged plants on Key Largo and other islands in the upper Keys. It now appears that the Miami Blue is likely to be gone from Bahia Honda. Although iguana control has been a continuing effort and the habitat and host plants are currently in good condition, as of this writing in September, no adult Miami Blues have been seen on Bahia Honda in 2010. With each passing month, the hope that the butterfly still survives there is greatly diminished. In addition, the captive colony at the University of Florida that was started with and regularly supplemented by stock from Bahia Honda was shut down in early June for various reasons. The loss of the wild population on Bahia Honda as well as the captive breeding colony is a huge setback for the conservation of the Miami Blue. In August NABA filed another emergency petition with the US Fish and Wildlife Service in order list the butterfly as endangered.

It appears to me that the agencies in charge of our wildlife resources, the US Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission, have utterly failed to protect rare butterflies in Florida. Endemic butterflies have gone extinct without notice. Others are nearing minimum population viability. The federal and state endangered Schaus' Swallowtail has declined to near extinction, and one of the last colonies of the Miami Blue has disappeared under the authority and management of these agencies. Time is of the essence and more research on the causes of decline is greatly needed. Monitoring and breeding programs will be needed to prevent the extinction of other imperiled butterflies in southern Florida. It's unfortunate that just as funding is needed the most for imperiled butterfly research, state and federal budgets have been cut due to poor economic conditions.

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## THE BISCAYNE NATIONAL PARK 2010 BIOBLITZ

BY

MARC C. MINNO

The National Geographic Society and Biscayne National Park co-hosted a 24-hour biological inventory of the park on April 30-May 1, 2010. Dozens of staff, scientists, and volunteers joined hundreds of students and members of the public in this brief tally of the plants and animals present in the park<sup>1</sup>. Biscayne National Park is located in southeastern Miami-Dade County and encompasses 207 square miles of the northern part of the Florida Keys. The mainland headquarters, which includes an interpretive visitor center and butterfly garden, is located about 8.5 miles east of Krome Avenue and SW 8<sup>th</sup> (Lucy) Street in Homestead, but most of the park is accessible only by boat. The islands in the park support many West Indian species of butterflies and consist mostly of mangrove and salt marsh wetlands and tropical hardwood hammock uplands. The main island, Elliott Key, has a marina, visitor center, and other facilities, and was the focus of our butterfly surveys. A diversity of weedy plants favored by butterflies for nectar and larval hosts grows in the mown areas and forest edges around the visitor center complex.

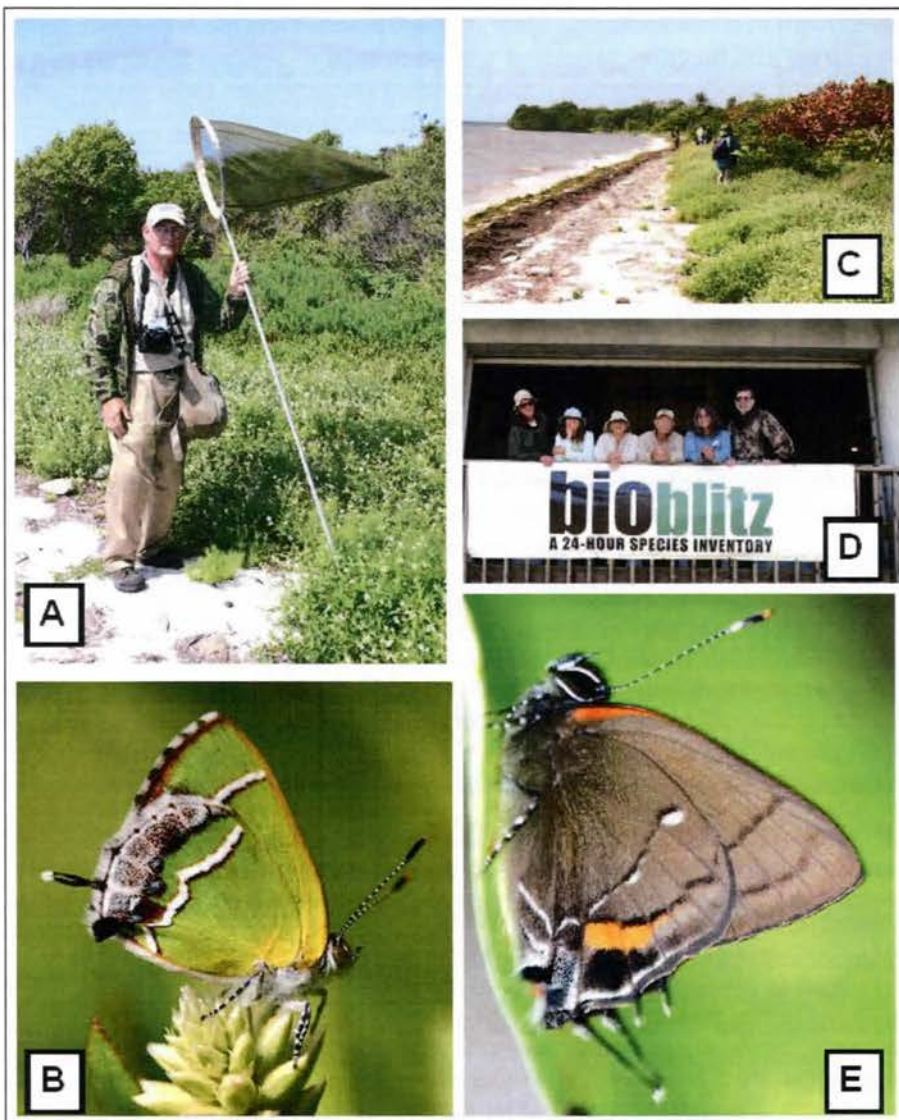


Fig. 1. Dr. Covell at Tannehill Beach on Elliott Key, Biscayne National Park (A), a Silver-banded Hairstreak from Key Largo, 2 May 2010 (B), Lepidoptera team searching for butterflies at Tannehill Beach (C), Lepidoptera team from left to right: Akers Pence, Alana Edwards, Sandy Koi, Charlie Covell, Suzanne Koptur, and Marc Minno (D), and a Fulvous Hairstreak from Key Largo 29 May 2010 (E).

The Lepidoptera team consisted of Charles V. Covell, Jr., Alana Edwards, Sandy Koi, Marc C. Minno, Akers Pence, and Jeff Buell. In addition, Julietta Brambila and Suzanne Koptur introduced students and participants to many kinds of live insects on Elliott Key, including butterflies and moths. North American Butterfly Association, Miami Blue Chapter members Linda Evans, Elane Nuehring, Patty Phares, Mary Rose, and Becky Smith provided information about butterflies at a booth at park headquarters on the mainland. Thousands of people attended the BioBlitz activities at the park headquarters.

On Friday April 30, 2010 we searched for butterflies and moths around the visitor center complex and nature trail areas on Elliott Key from 9:30 am till 4:30 pm. Alana and Sandy started a bit earlier and walked the main trail known as Spite Highway to the southern part of Elliott Key. Mosquitoes were moderately abundant, especially in the morning, and we had to use our head nets and protective clothing. Late in the afternoon, Dr. Covell set out two bucket-type light traps in the vicinity of the visitor center complex to collect moths and other insects.

Among the butterflies we observed

were Fulvous Hairstreaks (*Electrostrymon angelia*) perching and flying high in the top of a large False Tamarind tree



Table 1. Number of adult and larval butterflies observed in Biscayne National Park on April 30 and May 1, 2010.

SCIENTIFIC NAME	Elliott Key 4/30/2010	Elliott Key 5/1/2010	BNP HQ 5/1/2010	TOTALS
<b>Family Hesperidae</b>				
<i>Phocides pigmalion okeechobee</i> (Worthington)	2 larvae	0	0	2 larvae
<i>Hylephila phyleus</i> (Drury)	0	0	1	1
<b>Family Papilionidae</b>				
<i>Battus polydamas lucayus</i> (Rothschild and Jordan)	0	2	0	2
<i>Heracles cressphontes</i> Cramer	1	0	0	1
<b>Family Pieridae</b>				
<i>Ascia monuste</i> (Linnaeus)	4	3	1	8
<i>Phoebis agarithe maxima</i> (Neumoegen)	4	2	0	6
<b>Family Lycaenidae</b>				
<i>Chlorostyemon simaethis</i> (Drury)	1	1	0	2
<i>Electrostyemon angelia</i> (Hewitson)	4	1	0	5
<i>Leptotes cassius theonius</i> (Lucas)	4	0	0	4
<b>Family Nymphalidae</b>				
<i>Agraulis vanillae nigrior</i> Michener	1	11	0	12
<i>Dryas iulia largo</i> Clench	10	2	0	12
<i>Heliconius charithonia tuckerorum</i> Comstock & Brown	0	0	1	1
TOTALS	29	22	3	54

(*Lysiloma latisiliquum*) growing near the ranger residences. Alana was able to confirm the identification with her binoculars, since these individuals were too high to capture or to view their wing patterns with unaided eyes. To my knowledge, *E. angelia* has not been previously reported from Elliott Key or other islands in Biscayne National Park, although it is locally common on the mainland and parts of Key Largo. We also found a worn Silver-banded Hairstreak (*Chlorostyemon simaethis*) perching on shrubs near balloonvines (*Cardiospermum corindum*) in the same area. The Silver-banded Hairstreak is an imperiled butterfly in Florida and is closely associated with balloonvine, the larval host plant. Although the balloonvine seed pods were mostly dried and brown, we found a few with frass and chewed seeds, but no caterpillars. During the late 1980s I only found *C. corindum* in a small

part of the visitor center complex used by maintenance staff to compost organic debris. Although there were few plants present at that time, I found larvae of Silver-banded Hairstreaks feeding in green seed pods. After Hurricane Andrew tore up Elliott Key on August 24, 1992, *C. corindum* became much more abundant around the visitor center complex and also appeared along the nature trail and parts of the middle section of Spite Highway.

On Saturday May 1<sup>st</sup> we again searched the visitor center and nature trail areas, beginning at 8:00 am, while Dr. Covell recovered his light traps. Alana spotted another *C. simaethis* near the ranger residences. This female was not as worn and appeared to be ovipositing on young pods of balloonvine. Around mid-morning we drove the park motorized cart northward on Spite Highway to Tannehill Beach. Virginia and Paul Tannehill once had a house at this site on the northeastern shore of the island. However, the house was damaged by Hurricane Andrew and the remains were removed by the park. The vegetation here is still somewhat weedy and a great place to find butterflies. There were also patches of coastal prairie along the shoreline where butterflies were flying. We observed Polydamas Swallowtails (*Battus polydamas*), Gulf Fritillaries (*Agraulis vanillae nigrior*), and Great Southern Whites (*Ascia monuste philetas*) in this area of Elliott Key.

Our surveys concluded at 11:45 am on May 1<sup>st</sup> and after lunch we packed our equipment and crowded onto the park landing craft boat with dozens of other BioBlitz volunteers for the eight mile ride across Biscayne Bay to the park headquarters on the mainland.

During this BioBlitz event, butterflies were rather scarce. In more than nine hours of searching on Elliott Key we tallied 51 adult butterflies of nine species and also found two larvae of the Mangrove Skipper (*Phocides pigmalion okeechobee*) on Red Mangrove (*Rhizophora mangle*) (Table 1). At least 62 species and subspecies of butterflies and two others that are unconfirmed have previously been reported from Elliott Key (Minno and Emmel, 1993), which now increases to 63 with our finding of the Fulvous Hairstreak. In the butterfly garden area of the mainland park headquarters, I also found one adult each of the Fiery Skipper (*Hylephila phyleus*), Great Southern White (*Ascia monuste*), and Zebra Heliconian (*Heliconius charithonia*) in 15 minutes of searching. Elane Neuhring observed Large Orange Sulphur (*Phoebis agarithe*), Great Southern White, and Gulf Fritillary in the same area of the park headquarters. So the total number of species of butterflies observed in Biscayne National Park during the BioBlitz was twelve.



Table 2. Moths found on Elliott Key, Biscayne National Park on April 30 and May 1, 2010 (identified by Charles V. Covell, Jr.).

Note: MONA # refers to the check list by Hodges *et al.* (1983).

MONA #	NAME	NOTES
<b>Family Acrolophidae</b>		
386.1	<i>Acrolophus</i> sp. (walsinghami ?)	several in light trap at sewage facility
<b>Family Psychidae</b>		
442	<i>Cryptothoele gloverii</i> (Packard)	2 males in light trap at sewage facility
454	<i>Oiketicus abbotii</i> Grote	3 in light trap at sewage facility
<b>Family Choreutidae</b>		
2653	<i>Tortyra slossonia</i> Fernald	1 specimen collected near ranger station by Julieta Brambila; 1 in light trap at sewage facility
<b>Family Tortricidae</b>		
2703.1	<i>Episemus kimbali</i> Heppner	3 specimens in light trap
3500	<i>Pseudogalleria inimicella</i> (Zeller)	1 in light trap
3653	<i>Archips semiferana</i> (Walker)	1 in light trap
3732	<i>Platynota flavedana</i> Clem.	1 in light trap
<b>Family Megalopygidae</b>		
4647	<i>Megalopyge opercularis</i> (J. E. Smith) (Southern Flannel Moth)	6 in light trap at sewage facility
<b>Family Pyralidae</b>		
5078.1	<i>Gonocausta sabinalis</i> Dyar	1 in light trap at sewage facility
5196	<i>Synclera jacobusalis</i> (Walker)	2 in light trap at sewage facility
5538	<i>Parachma ochracealis</i> Walker	3 in light trap
5592	<i>Tallula watsoni</i> Barnes & McDunn.	1 in light trap
<b>Family Thyrididae</b>		
6082	<i>Hexens enhydria</i> Grote (Seagrape Borer)	2 in light trap at sewage facility; 1 photographed by Alana Edwards
6087	<i>Banisia furva fracta</i> Whalley	2 in light trap at sewage facility
<b>Family Geometridae</b>		
7417	<i>Disclisioprocta stellata</i> (Guenée) (Somber Carpet)	1 in light trap at sewage facility
<b>Family Sphingidae</b>		
7867	<i>Cautethia grotei</i> H. Edwards (Grote's Sphinx)	9 in light trap at sewage facility
<b>Family Arctiidae</b>		
8038	<i>Composia fidelissima</i> Her.-Schäf. (Faithful Beauty)	2 seen at northern end of Spite Highway on May 1; 1 photographed by Alana Edwards
<b>Family Noctuidae</b>		
8375	<i>Bleptine</i> sp. (possibly undescribed)	8 specimens in light trap
8649	<i>Ascalapha odorata</i> (Linnaeus) (Black Witch)	male resting on rafter of visitor center on Apr. 30 (photograph)
8586	<i>Massala obvertens</i> (Walker)	1 in light trap
8662	<i>Coxina cinctipalpis</i> (Smith)	1 in light trap
9077	<i>Eumestole cinnamomea</i> (Her.-Schäf.)	2 in light trap

Dr. Covell gave a partial list of butterflies and moths that he found during the BioBlitz in the last issue of Southern Lepidopterists' News (Covell, 2010). He has now identified 23 species of moths representing 11 families that were either observed or collected in light traps on Elliott Key during the BioBlitz (Table 2). Specimens were taken under permits specially issued to Dr. Covell by Biscayne National Park for the BioBlitz inventory and are now deposited at the University of Florida, Florida Museum of Natural History in Gainesville.

Perhaps of greater interest, given the broad-scale decline and loss of butterflies in the Florida Keys (Minno and Minno, 2009), are the butterflies that we did not find. We did not see any Bahamian Swallowtails (*Heraclides andraemon bonhotei*), Schaus' Swallowtails (*Heraclides aristodemus ponceanus*), Florida Whites (*Glutophrissa drusilla neumogenii*), Martial Scrub-hairstreaks (*Strymon martialis*), or Florida Purplewings (*Eunica tatila tatilista*). All of these species have declined since the 1990s and I believe that the Bahamian

Swallowtail is now extirpated from Florida. In addition, the federally endangered Schaus' Swallowtail has experienced steep population declines since the 1990s and, in my opinion, is not likely to survive much longer.

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## CHASING SILVER AND GOLD: SCINTILLANT METALMARKS ACROSS THE SLS REGION

BY

CRAIG W. MARKS

One use of the word, "*scintillant*," is to describe something having small, brilliant points or flashes of light. For the group of metalmarks in the genus *Calephelis*, taken from Greek words meaning, "*the beautiful deceiver*," that definition is completely appropriate. Found only in the Americas and bewilderingly similar, scintillant Metalmarks are just that, flashes of brilliant sparkle on a tiny butterfly. They derive their name from the silvery metallic markings on both upper and underwings. Those markings are most noticeable against the gold background color of the ventral wings. The following reflects what I've seen and learned as I searched for these treasures across the SLS region.

### Rawson's Metalmark

I'll start on the western side of this region. Over the years I have seen many posts on the Texas Listserv by Chris Durden, Dan Hardy and others about Barton Creek in Austin. Finally, on April 21, 2010, I got to visit this unique location. One of my targets had been Rawson's Metalmark (*Calephelis rawsoni*), consistently reported from that location over the years. Mike Quinn had provided me with a spreadsheet that showed its presence at Barton Creek during the months of April (early and late), May (mid-month), June through November (entire months) and December (early), so I was optimistic about my chances of seeing it. With detailed information from Dan, I was able to see six in precisely the area he predicted, along the main trail that skirts the base of the cliffs south of the Camp Croft entrance. After walking me through several of the distinguishing features discussed below, Dan confirmed they were, in fact, Rawson's.



Rawson's Metalmark, ventral, female, 21-IV-2010,  
Barton Creek WMA, Austin, Texas.



Rawson's Metalmark, dorsal, female, 18-VIII-2001,  
Hondo Creek, Medina Co., Texas.

Rawson's Metalmark is one of several scintillant metalmarks that can be found in Texas. These small, dorsally drab colored butterflies can be easily dismissed as a moth and even more easily overlooked. McAlpine first described Rawson's Metalmark in 1939, two years after he had described the Swamp Metalmark (*C. muticum*). This metalmark was named for a friend of McAlpine, Dr. George Rawson, who had sent McAlpine some samples of a *Calephelis* captured around San Antonio in 1919 that turned out to be this new species. In 1971, he did a revision of the genus, but really did nothing to modify his description of this particular bug. Referencing Kendall, he identified shrubby boneset (*Eupatorium havanensa*) and palm leaf eupatorium (*E. greggii*) as its foodplants.

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At Barton Creek there were many stands of *Eupatorium* growing on the side of the cliff that runs parallel to the trail, but that is not where I found the metalmarks. All six seen were directly along the trail, at shoe level, perched on small white flowers in the sun. The habitat, moist with lush growth along Barton Creek, reminded me somewhat of the habitat where I have found Northern (*C. borealis*) and Swamp Metalmarks in Missouri and Oklahoma. Rawson's seem to fly much faster than those eastern metalmarks, but it is possible they simply seem to fly faster because they are smaller than the Northern and Swamp Metalmarks and are harder to follow.



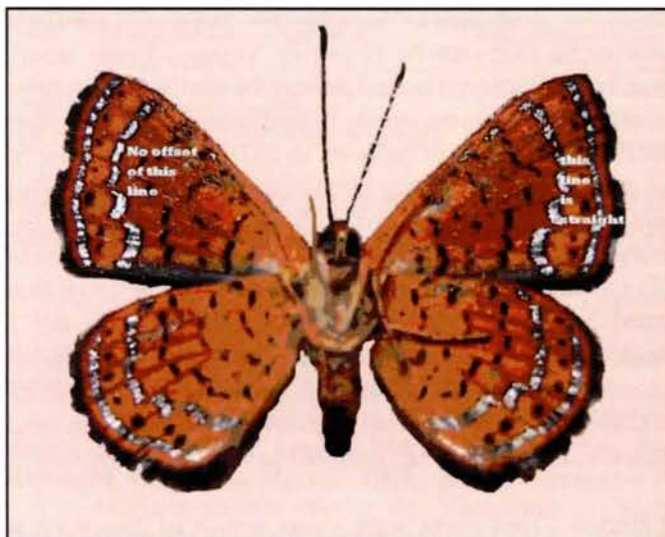
There was some controversy associated with McAlpine's description of Rawson's Metalmark. In 1951, Klots wrote, "Recently named from Texas. . . It may be a subspecies of (*C.*) *guadeloupe*." Howe identified this bug as *C. Guadeloupe*, stating, "This Texas species was long unrecognized after its original description and was redescribed as *rawsoni* McAlpine 1939, (TL: Kerrville TX) and has been so treated in recent literature." He gave its distribution as from south central Texas to the Big Bend area with the original type locality from vicinity of New Braunfels. Pyle did not agree, stating that in the past the metalmark that ranges from south central Texas west to Big Bend and also the Edwards Plateau was mistakenly identified as *C. guadeloupe*, "another species that is part of the nearly indistinguishable southwestern *Calephelis* metalmarks."

According to Kendall, Rawson's Metalmark is, "(d)escribed and known only from Texas at present. The range and habitat of this metalmark appear to be chiefly along the Edwards Plateau escarpment westward into the Chisos Mountains, and Presidio County." "It seems to prefer a semi-shaded habitat along limestone outcroppings where the larval foodplants grow" (See also Scott and Tilden/Smith). Kendall found it to be multiple brooded, possible five broods overlapping, with adults collected in March, May and June through November. Wauer (2006) reported it from the Trans-Pecos (Big Bend), Edwards Plateau (Concan, Kerrville, Guadeloupe River State Park, Government Canyon SNA and Austin/Barton Creek), and South Texas Bushland (Del Rio/Amistad National Recreation Area, Park Chalk Bluff, Hondo-Castroville, San Antonio and Choke Canyon State Park) Regions.

Eleven years earlier, in October of 1999, I had visited Big Bend National Park, spending two days around Chisos Basin and the Visitor's Center at Chisos Mountain Lodge. I was able to see many of the more common butterflies of West Texas, including two Rawson's Metalmarks. The metalmarks were along the side of the Juniper Canyon Trail as it wound upward from the Visitor's Center, in the immediate area of a small stream and within sight of a stand of *Eupatorium*. Although not as lush as Barton Creek, the area where I found them was the "wettest" area I found in the Park.

#### Fatal Metalmark

Other scintillant metalmarks that might fly with Rawson's include the Fatal Metalmark (*C. nemesis*) and the Rounded Metalmark (*C. perditalis*). Wauer (2004) indicated the three are often confused in the Valley. Scott reported that Rawson's "usually" occurred with Fatal and Rounded in central and south Texas.



Fatal Metalmark, ventral, male, 4-VIII-2010, Barton Creek, Austin, Texas.



Fatal Metalmark, dorsal, male, 4-VIII-2010, Barton Creek, Austin, Texas.

My experience with Fatal Metalmarks has been primarily in the Valley at places like Bentsen-Rio State Park, Frontera Audubon Center and Anzalduas County Park, drier in nature but still green. The farthest north I've found *nemesis* was Kleberg Park in Kingsville in east Texas and, recently on August 4, 2010, at Barton Creek in central Texas. I have also found Rounded Metalmark in the Valley, but that bug seems to require more moisture than *nemesis* as I've only found it in places where I got my feet wet like Sabal Palm. I also found it in Jim Wells County at a stream that crosses Hwy 281.

Differentiating between the three is not always easy. Wauer (2002) described Rawson's Metalmark as somewhat



larger than the Fatal Metalmark. The Fatal Metalmark is usually a duller, flatter brown (Glassberg). To distinguish these "look-alikes," Wauer suggested examination of the underwing pattern. The metallic postmedian margin line is broken on Rawson's, but solid on the Fatal. Glassberg stated the submarginal metallic line is almost straight on the Fatal and Rawson's Metalmark. Also, the Fatal has an upperside post median band that is wider and darker, more so with the male. On the Rawson's, this band may be slightly darker but is often lacking.

### Rounded Metalmark

Regarding the Rounded Metalmark, Wauer stated the forewings are rounded and the fringe is indistinctly checkered. Also, the Rounded has a bulging submarginal thin metallic line on the forewing. Glassberg indicated the forewing median band is not particularly darkened; however, particularly in females, there is a dark smudge on both sides of the metallic band.



Rounded Metalmark, ventral, 1-XI-2002,  
Valley Nature Center, Texas.



Rounded Metalmark, dorsal, 31-X-2001,  
Sabal Palm, Texas.

In some of the older guides, the Rounded Metalmark is referred to as the "Lost" Metalmark (Klots, Pyle and Scott). Also, some guides have described this bug as a subspecies of *C. nilus* [Ehrlich and Opler (1984)]; however, in his 1971 revision of this genus, McAlpine explained why, in 1961, he had included the Rounded Metalmark as a subspecies of *nilus*, described his subsequent investigatory work on that designation and then concluded, "... that *C. perditalis* is a distinct species and not a subspecies of *C. nilus*, which I consider a doubtful species or species inquirenda."

### Red-bordered Metalmark



Red-bordered Metalmark, ventral, female, 31-X-2001,  
Bentsen-Rio Grande State Park, Texas.



Red-bordered Metalmark, dorsal, male, 31-X-2003,  
SANWR, Texas.



Although similar in appearance, the Red-bordered Metalmark (*Caria ino*) is a non-*Calephelis* metalmark found in the Valley and up the Gulf Coast to Corpus Christi (Wauer, 2006). The male has a clear reddish hue to the dorsal forewing, making it easy to identify. While the female, dorsally, is colored like a *Calephelis*, it is easily distinguishable from the other metalmarks in Texas for three distinct reasons, the reddish outer margin along both of the ventral wings, the lack of a post median metallic line on the dorsal forewing and the curvy nature of the leading edge of the forewing (see photos).

In addition to seeing this metalmark at several locations in the Valley, on July 29, 2006, I saw nine at the Corpus Christi Botanical Garden. All seen were perched on the outer leaves of bushes that lined the trails through the garden, from around knee to shoulder height. I've noticed this tendency in the Valley as well, unlike Rawson's, Fatal and Rounded Metalmarks which prefer to perch on low growing grasses or other plants rather than bushes. Otherwise, its behavior is similar to its cousins, fluttery, moth-like in flight, perching with open wings, both under and on top of the leaves on which it had landed.

### Little Metalmark

With the western edge of its range extending into east Texas (see Wauer, 2006), the Little Metalmark (*C. virginienensis*) is another member of this confusing family present in Texas. It is so innocuous that it can easily be missed. First, it is small, about the size of a male Phaon Crescent; however, its flight is fluttery, not gliding like a crescent. It really doesn't move around much unless disturbed. Like Rawson's and Swamp Metalmarks, it flies low and will regularly perch on the underside of leaves close to the ground. While never far from its foodplant, yellow thistle (*Cirsium horridulum*), the Little Metalmark does not regularly perch on the thistle, but seems to like to perch on plants about 6 to 12" in height in the immediate area around thistle. There is a small, orange spread-winged moth that flies in the pines of central Louisiana and which regularly confuses me when I happen to flush one.



Little Metalmark, ventral view, male, 19-X-2005, near Asphodel Plantation, Louisiana.



Little Metalmark, dorsal view, male, 19-X-2005, near Asphodel Plantation, Louisiana.

Even though the Little Metalmark looks and acts very similar to its cousins, in my experience, it prefers to fly in open, pine flats as opposed to the deciduous woods preferred by Rawson's, Swamp and Northern Metalmarks. Also, it does not seem to be as tied to water or wet areas. Northerns seem to fly about a foot higher, probably because it tends to perch on its foodplant and to visit taller flowers like black-eyed susans in the *Rudbeckia* family to feed. Like Northerns, the best way to locate Little Metalmarks is to find areas of suitable habitat with large stands of its larval host plant.

In Louisiana, this bug can have as many as four broods, March, May, August and late October/early November (See TLS Season Summaries for 2002, 2003, 2005, 2006 and 2009). Reported by Ross from central Louisiana, the habitat there seems right for this bug; however, I've yet to find an area with sufficient quantities of thistle to support a colony (see *Journal of Lep. Soc.*, vol. 19; 3/31/65, pp. 47-52). My experience with it has been limited to West Feliciana Parish in late October and early November (Mary Brown Nature Preserve and near Asphodel Plantation). I also found three at mile marker 18 on the Natchez Trace, north of Natchez, MS, on 11/01/98, but have returned several times since without relocating the colony.

The Little Metalmark's range matches its foodplant's range in the southeast which grows along the Gulf Coast and



then up the East Coast to Maine. It is especially fond of sandy soils. It grows in open and disturbed places, including roadsides, flowering from March to June, often later further south. The flowers are not always yellow, but also pink to reddish purple. In fact, in Louisiana, I've never seen yellow flowers, only purple.

Glassberg states the range of the Little Metalmark doesn't overlap with the other two eastern metalmarks, and it seems to be the only metalmark throughout virtually all of this range. This range extends eastward from extreme eastern Texas, sporadically, across Louisiana, into southern Mississippi, Alabama, Georgia and Florida, then up the east coast into North Carolina. The ranges of the three eastern Metalmarks come close in extreme eastern Oklahoma (Dole). Also, Herschel Raney has stated on his website that he expects to find the Little Metalmark in Arkansas, and if it is present in western Arkansas, then there is the potential of some range overlap.

Pyle suggested that as the ranges of the three eastern metalmarks, "*cover most of the United States east of the Mississippi . . . these (three) metalmarks may have developed relatively recently from a common ancestor.*" Certainly the similarities in appearance and habits give credence to this theory. I wonder, given its use of similar habitat and relative proximity to the western range limit of the other three, whether Rawson's might also have evolved from that same common ancestor and/or might it be a bridge between the eastern metalmarks and those to the south and west.

### Northern Metalmark

North and east of Texas, the Northern Metalmark has three major and disjunct population clusters: (1) northwest Connecticut to northwestern New Jersey (extant in Sussex and Warren Counties in New York); (2) Appalachia from central Pennsylvania through West Virginia then northwest into Ohio-Indiana; and (3) the Ozark region including southwest Missouri, northern Arkansas and extreme eastern Oklahoma [Opler (1992); Scott]. My experiences with this bug have involved this third population along the Arkansas-Oklahoma and Arkansas-Missouri borders in the lower limits of the Upper Austral Zone.



Northern Metalmark, ventral view, female,  
27-VIII-2005, LeFlore County, Oklahoma



Northern Metalmark, dorsal view, female,  
27-VIII-2005, LeFlore County, Oklahoma

Specifically, I found this metalmark in extreme eastern Oklahoma and extreme southwest Missouri, both locations literally within a few miles of the Arkansas border. Herschel Raney has an excellent website on Arkansas butterflies which has pictures and data, including a listing of counties and locations where Northerns have been reported within that state. Spencer lists it at Gaston's White River Resort in Baxter County and Bell Slough WMA near Mayflower, Arkansas.

The best way to find Northern Metalmarks is to find its one known host plant, roundleaf ragwort (*Senecio olovatus*). The typical native habitat for ragwort is calcareous rocks, slopes & rich, wooded banks. It usually grows in limestone soil and is common in the Edwards Plateau to North Central Texas, preferring moist, humus-rich soils, well-drained loam and clay. Its native distribution is south from Vermont to Florida, west to Kansas & Texas; rare northward, common southward. Like the butterfly that feeds on it, round-leaf ragwort prefers part shade to full shade.

This metalmark's flight is weak, fluttery, and it rarely flies for any length of time. Like the Little Metalmark, in flight it can easily be mistaken for a day-flying moth. Adults do not typically stray far from the larval food plant. Even



when disturbed, they tend to alight quickly on nearby ragwort leaves, sometimes under the leaves, other times on top. Like other metalmarks, the Northern Metalmark is a perching butterfly, always resting with its wings held horizontally. Easily overlooked, almost all were discovered after being flushed from their perch.

### Swamp Metalmark

As noted above, the Swamp Metalmark was not described as a separate species until 1937. McAlpine did so relying upon specimens he had caught in Michigan, and which he determined were not *borealis*. Prior to that there was much confusion between it and the Northern Metalmark across the Swamp's now known range, understandable since the two are essentially the same size. I would note, however, that the Swamp Metalmark appears to be more orange in color, like the Little Metalmark, rather than chocolate colored like the Northern. Like the Northern, this bug has two broods per year, late June and late August, in the southern portion of its range. Its current range includes limited locations in Wisconsin, Michigan, Illinois, Indiana, Missouri and Arkansas.



Swamp Metalmark, dorsal view, 23-VIII-2009, Victoria Glade, Missouri.

As I've previously reported (Vol. 31, No. 2 of the SLS Newsletter), several authors have described the Northern Metalmark's habitat as dry, upland forest. My experience agrees more with the Douglas' book which identifies this butterfly's preferred habitat as streams in open woodlands as well as near man-made clearings associated with roads, bridges and campgrounds. Rupe differentiated the Northern from the Swamp Metalmark in several ways including habitat, identifying the Swamp's chosen habitat as lowland or wetland areas.

While the two areas in which I have found the Northern metalmark are both "upland" and "forest", within that general habitat the bug prefers lower areas near water. This habitat seems virtually identical to the Swamp's preferred habitat in the Ozark part of that bug's range. The Heitzmans described the Swamp Metalmark's preferred habitat in Missouri as damp, brushy woods, especially along small streams

or wet meadows. To my eye, locations in southeastern Missouri where Northerns are known to exist such as St. Francois State Park and Victoria Glade present the same general environment as Roaring River and/or Lafllore County. Within this general ecosystem both bugs prefer areas of open woods and limestone soil around water (see Homeyer).

My father and I visited both St. Francois and Victoria Glade in August, 2006, and found suitable habitat with the proper food plant, swamp thistle (*Cirsium muticum*) in the former and tall thistle (*C. altissimum*) in the latter; however, it was extremely dry and no Swamp Metalmarks were seen. We returned in 2009 to both locations, but we struck out again at St Francois even though I found significantly more thistle along a creek with slow moving water in an open forest. The next day, August 23, we saw 12 at Victoria Glade. The area was along a creek bed, with tall thistle growing in the semi-shade of where the prairie met the tree-line of the creek bed. The area was not heavily overgrown. In fact, the metalmarks seemed to prefer open areas under the trees, perching in spots of sunshine piercing the canopy.

While its chosen habitat seems identical to that of the Northern Metalmark, this bug's conduct is more similar to the Little Metalmark in that it flies lower to the ground and has a habit of perching on grasses or other low growing plants rather than the tall thistle which, by the way, can grow to be as tall as ragwort. Its flight is slow and fluttery. If not overly disturbed, it simply moves a few feet before perching again with its wings open. Like both Northern and Little Metalmarks, I witnessed this metalmark land on the underside of leaves, leaving only a small portion of its wing showing, but for the most part during my limited time around it, both males and females were perching in sunny spots to bask.

Spencer lists the Swamp Metalmark as a breeding resident in Arkansas, local and rare, recorded from four counties



in the Ozark region of the state, with flights in June and August. Raney identified the same four counties on his website plus a fifth county, Izard County. The sixth county listed on Raney's site, Logan County, apparently reflects a colony of Northern Metalmarks per my personal conversations with Lori Spencer. Via the Arkansas Butterfly Listserv I have learned Cheryl and Norm Lavers have located a colony at Harold E. Alexander State WMA in Sharp County. It has also been recorded from extreme northeast Oklahoma (Dole). Via e-mail, I learned from John Fisher the colony in Ottawa County, OK, is located on private property.

### Freeman's Metalmark

It appears there may be one more *Calephelis* to be found within the SLS's region, Freeman's Metalmark (*C. freemani*). Because he felt the wing pattern, host plants and behavior were similar, Scott treated *freemani* and *arizonensis* as subspecies of *rawsoni*. In 1999, Opler (and Wright) also included both *freemani* and *arizonensis* as subspecies based on similarities in genitalia, and expanded the range of *rawsoni* to include the Davis Mountains of west Texas (*freemani*) and southern New Mexico and Arizona (*arizonensis*). In what appears to be a contradiction, in 2003, Opler and Warren declined to accept Scott's lumping of *freemani* and *arizonensis* as subspecies of *rawsoni* as they felt Scott had provided no data to support that proposition. Citing Neck who listed *freemani* a separate species, they suggested further study was needed, chose to follow McAlpine, as had Pelham, and listed both as separate species.

This bug was named for H.A. Freeman, one of the initial collectors who had submitted specimens to McAlpine. The food plant and life history was unknown to McAlpine as of 1971. He gave the type locality as, "Davis Mtns, Jeff Davis County, Texas, about twelve miles northwest of Alpine, Texas, along State Highway 118, near a small stream." Another location given was near Fort Davis within the same mountains and county. Per McAlpine, Freeman's Metalmark closely resembles the Rawson's in wing shape, coloration and markings, but he noted there were differences in genitalia.

So, it appears my search for silver and gold, for those little flashes of sparkle, will continue as the Davis Mountains now beckon me.

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## BOOK REVIEW

**BUTTERFLIES OF ALABAMA: Glimpses into Their Lives.** Photographs by Sara Bright, Text by Paulette Haywood Ogard, 486 pp., The University of Alabama Press (Gosse Nature Guides series), 2010. ISBN 978 - 0 - 8173 - 5595 - 1. \$29.95.

Joining the still small number of guides devoted specifically to the lepidopteran fauna of the Southeastern United States is the new and impressive volume, **Butterflies of Alabama**, focusing on a state whose butterflies have been woefully understudied and until now poorly understood. The book has been in progress for the last 15 years at least. Its authors, Sara Bright, a respected professional photographer whose works have been published and exhibited, and Paulette Haywood Ogard, a writer who has taught classes at the University of Alabama on wildflowers and native plants and numerous workshops on wildlife, butterflies and butterfly gardening, have combined their love of lepidoptera and their extensive field experience to produce a book that is quite unique in many ways.

Not intended to be a "field guide" in the traditional sense, **Butterflies of Alabama** features each of the state's 84 native species in their natural, live poses as one would observe them behaving in the field, resting, basking, nectaring, mating, or, in one remarkable photo, being eaten by a praying mantis! As the book's subtitle suggests, the "glimpses into their lives" include many spectacular views of the immature stages of most of the species, which were lovingly and painstakingly reared by the authors for inclusion in the volume. Although the book will no doubt be a "must have" for many on the basis of the brilliant photography alone, **Butterflies of Alabama** is also commendable for its excellent text, which is filled with fascinating information about the butterflies, their life styles, their habitats and their interactions with the plants and the other creatures central to their survival strategies. While exhaustively researching the scientific detail woven into the book's pages, Paulette Haywood Ogard was careful to write a text in language that is accessible to neophyte butterfly watchers, butterfly gardeners, and seasoned lepidopterists alike. The text flows, is lively and often

includes humorous tidbits to bring a smile to the reader.

One of the book's great strengths is the attention it gives to the defenses Alabama's butterflies employ in outsmarting would-be predators, not just visual (camouflage, mimicry, aposematic warning devices) but also chemical. Here Ogard's strong knowledge of botany comes into play, and she covers the toxicity of the various plants the butterflies ingest as caterpillars, making them distasteful or even sickening to the birds, lizards and other creatures trying to devour them. Although the discussion includes technical terms like "*cardenolides and cardiac glycosides*" (in milkweeds), Ogard consistently defines or explains the terms to the general reader. Besides, there is an excellent glossary at the end of the book in which all the technical words and phrases are defined.

For some people the exclusion of skippers from **Butterflies of Alabama** will be a source of disappointment and may even be considered a significant flaw, as most butterfly guides past and present continue to include the Hesperidae. Their omission was a conscious decision by the authors. Although that decision is not explicitly explained in the book, the single reference to skippers in the introductory section (p. 2) contains the sentence, "*Traditionally considered butterflies, some taxonomists now believe they are more closely aligned with the moths.*" More simply and to the point, including the skippers would have resulted in expanding the book well beyond the current size and scope, and no doubt would have added quite a few more years to its completion. However, I would have liked to see the volume containing a listing of Alabama's native skippers somewhere, perhaps in the appendix section.

A few of the species appearing in **Butterflies of Alabama** will, perhaps, come as a surprise to some persons looking at the book for the first time. The Bronze Copper, *Lycaena hyllus*, seems to be way out of its normal geographic range. Yet, its presence has been confirmed (by Howard Grisham) at one location in northeastern Alabama, on private land. Another species



seemingly very far from home, Mitchell's Satyr, *Neonympha mitchelli*, has over the last decade been found in several small fragmented colonies in the westcentral part of the state. Hessel's Hairstreak, *Callophrys hesseli*, was recorded in Alabama for the first time by the book's authors, in two counties, as recently as March 31, 2010! Also included in the state's butterfly fauna are the recently described Appalachian Tiger Swallowtail, *Papilio appalachiensis*, and the Helicta Satyr, *Neonympha helicta*. As yet there is no universal acceptance among lepidopterists of these two as valid, distinct species, and the authors tacitly acknowledge that situation, at least for the Helicta Satyr: "*Species delineation of Helicta and Georgia Satyr remains murky and confusing. In the Coastal Plain, where both butterflies reside, many individuals display field marks of both species, making their identities too close to call*" (p. 374). Still, I am pleased by the decision to include both the Appalachian Tiger and the Helicta, as it serves to keep the debate alive and encourages much-needed further study into their respective species status.

**Butterflies of Alabama** is rounded out with an appropriate plea for habitat conservation and wildlife protection, in the final chapter, "*Focus on the Future.*" It is followed by extensive useful appendices that include the already mentioned glossary, a list of plant and animal associates, various organizations, some

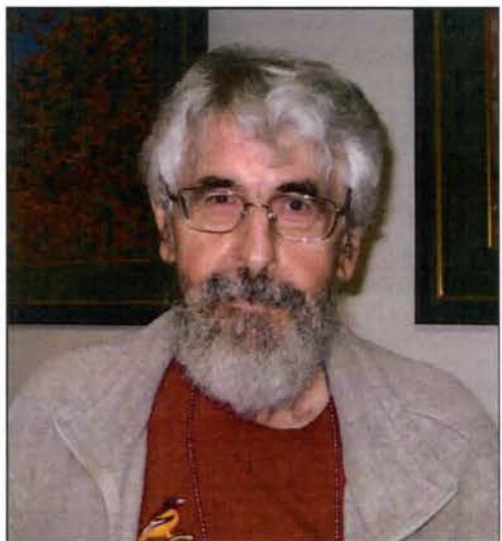
focusing on lepidoptera, others on Alabama's native plants and on conservation, a fine bibliography that includes websites, and a very detailed index. Most of the appendix section, however, is devoted to an annotated checklist of Alabama's butterflies, with range maps for each of the 84 species, in the order in which they are covered in the book. The range maps, derived from the Butterflies and Moths of North America website, provide a good overview of the distribution of each species through the state. But, as with all published range maps, these reflect actual records of specimens collected, and areas of the state as yet not collected or surveyed do not show up, so some species, like the Cabbage Butterfly, Monarch, Buckeye, Pearl Crescent, etc. which are found everywhere, appear in the maps to have spotty, or discontinuous, distribution.

In sum, I feel that **Butterflies of Alabama** is, even with what may be perceived as some flaws, a superb addition to the literature on the lepidoptera of our geographic region, and a book that will delight, enlighten and satisfy most of its viewers and readers. The breathtaking photography, the excellent text, and the valuable bonus information in the appendices combine to make the volume a treasure that will reward its users for years to come.

Irving L. Finkelstein

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## REMEMBERING DALE H. HABECK OCTOBER 21, 1931 – MAY 17, 2010



Dr. Dale H. Habeck, a dedicated member of our society since 1978, and our 1987 Abbot Award recipient, passed away on May 17, 2010. He is survived by his wife, Phyllis Habeck, their son Michael Habeck (wife Andrea), granddaughter Phoebe, two brothers and two sisters.

Dale was born in Bonduel, Wisconsin. Growing up in a small farming community, he enjoyed trout fishing, helped with the family dairy farm and with his dad's honeybee colonies. Natural history was thus an integral part of his early childhood. Dale received his B.S. (1953) and M.S. (1954) from the University of Wisconsin and his Ph.D. in 1959 from North Carolina State University. He was a professor of Entomology at the Department of Entomology and Nematology, University of Florida, Gainesville, for 33 years and taught various courses, his favorite being Immature Insects. His research centered primarily on the use of insects, particularly Lepidoptera, in the biological control of aquatic and terrestrial weeds. His autobiographical sketch/Abbot Award acceptance speech appears in the Volume 9, Number 3 issue of the *News* (available online:

<http://www.southernlepsoc.org/>) and details his childhood, education, and career, including his military service, from direct commission as 2<sup>nd</sup> Lieutenant in the Medical Service Corps in 1955 to Second Army Entomologist in 1957, as



well as his first academic position from 1959 to 1963 as Assistant Professor of Entomology at the University of Hawaii.

Habeck had a variety of interests and hobbies ranging from bird watching, gardening, growing ornamental cacti, rearing catfish, and collecting insect postcards. As an entomologist he developed expertise in several areas involving various taxa, not only Lepidoptera, but also several beetle families such as Nitidulidae. He is most remembered for the passion and enthusiasm he held for caterpillars. He was especially fond of the aquatic Crambidae or Acentropinae (=Nymphulinae) but collected larvae throughout Florida and the southeast and wherever his travels took him. Those of us fortunate enough to have accompanied Habeck in the field remember his pleasure in being able to share his wealth of knowledge with everyone, but especially students and visiting colleagues. He knew host plants and larval habits and could direct you to just the right place to find a certain species. Immature Insects was a favorite class in the department and students fondly recall "fishing" for Cicindelid larvae by lowering twigs into larval burrows, and wondering in the middle of a lab practical, having been clued in from previous students, if the wrinkled blob that doesn't quite follow the key to Diptera larvae, might actually be a raisin!

Habeck usually carried not a net, but rather a beating square, bundles of plastic bags and dozens of snap cap vials into the field. He brought bags full of various plant samples back to the lab to sort and process which were a continuing source of surprises that sent him, his dedicated assistant, Judy Gillmore, and the whole crew back into the field for more. He was frequently asked about how much material he wanted brought back to the lab and how many larvae to set up for rearing. He would smile and his response was always the same. If you look back in the *News*, Volume 12, Number 1, p. 6, you will see a picture of him at the 1989 Fall Meeting at Tall Timbers meeting wearing a custom T-shirt (complements of the crew) with a caterpillar and his reply - "More is Better." More was indeed better as his collection is a treasure trove of reared adults and preserved larvae that has and continues to provide valuable research material to specialists and countless new records for Florida and the Southeast.

Dale Habeck is the author of more than 138 scientific publications, many including or specifically on Lepidoptera. He was chairman of more than 40 graduate student committees and served as a member on more than 50 others. His research travels took him to more than 40 countries, and included a 4 month stay in Australia where he surveyed and studied aquatic caterpillars for biological control of *Hydrilla*. An emeritus professor at the Department of Entomology and Nematology and Research Associate at the McGuire Center and FSCA, Dale most recently spent summers at his home in Carmel, Indiana, and winters in Gainesville, working on his Lepidoptera collection, now housed at the McGuire Center for Lepidoptera and Biodiversity. His friendly and approachable manner made him a favorite around the Center and he is dearly missed.

-- Deborah L. Matthews and Jacqueline Y. Miller,  
McGuire Center for Lepidoptera and Biodiversity

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## REPORTS OF STATE COORDINATORS

**Alabama:** C. Howard Grisham, 573 Ohatchee Road, Huntsville, AL 35811, E-Mail: [chgrisham@Comcast.net](mailto:chgrisham@Comcast.net)

**Arkansas:** Mack Shotts, 514 W. Main Street, Paragould, AR 72450, E-Mail: [cshotts@grnco.net](mailto:cshotts@grnco.net)

Mack sends in the following reports from David Rupe:

- 1) May 8-15, 2010 Hwy 170 nr. Prairie Grove, Washington County, Arkansas:

*Battus philenor*, *Eurytides marcellus* (early summer form), *Pontia protodice*, *Celastrina ladon*, *Styrmon melinus*, *Polygonia interrogationis*, *Junonia coenia*, *Euptoieta claudia*, *Vanessa atalanta*, & *Polites themistocles*.

- 2) Listed below are some specimens David either collected or observed in western and northwestern Arkansas during June 2010.

June 10, 2010, Prairie Grove, Washington County, AR: *Speyeria cybele*, *Asterocampa clyton*, *A. celtis*, *Papilio polyxenes*, *P. cresphontes*, *Anaea andria*, *Polygonia interrogationis*, *Epargyreus clarus*, *Wallengrenia egeremet*,



*Hylephila phyleus*, and *Strymon melinus*.

June 9, 2010, South of Altus, Franklin County, AR: *Euphyes dion* and *Vitacea scepisiformis*.

June 2, 2010, Hwy 71 just north of Waldron, Scott County, AR: *Speyeria diana*, *S. cybele*, *Satyrus titus* (8), *S. calanus* (>20), *Thorybes bathyllus* (>20), and *Erynnis horatius* (5).

3) Yell County, Bluffton, AR, 29-August 2010: *Phoebis philea* (female) nectaring on *Hibiscus syriacus* — site record.

4) Washington County, Prairie grove, AR: 30-August-2010: *Polites peckius*, female. "Not a county record though, but the first one I have ever seen."

**Florida:** Charles V. Covell Jr., 207 NE 9<sup>th</sup> Ave, Gainesville, FL 32601, E-Mail: [covell@louisville.edu](mailto:covell@louisville.edu)

Charlie sends in the following Florida report, June 16 – Sept. 15, 2010:

Covell has added only 3 species to his home list in Gainesville since the last report of 19 species on June 15: 20. *Panoquina ocola*, July 19, resting on a leaf in the back yard; 21. *Urbanus proteus*, Aug. 21, resting on back steps at driveway; and 22. *Hylephila phyleus*, Sept. 6, on *Lantana*. As of this date (Sept. 17) I have seen no *Heliconius charithonius* or *Phoebis* species other than the common *sennae* since winter.

Other Gainesville, Alachua County records since June 15 are as follows: June 16, *Junonia coenia* and *Agraulis vanillae*; June 19, *Papilio troilus*, *Papilio glaucus*, *Heraclides cressphontes* and *A. vanillae*; June 23: *Phoebis sennae* and *A. vanillae*; July 3, *P. glaucus* and *P. sennae*; July 6, *Papilio palamedes*; July 7, *Danaus plexippus*; July 19, *Panoquina ocola*, *Papilio polyxenes asterius*, *H. cressphontes* and *A. vanillae*; July 20, *Erynnis horatius*, *H. cressphontes*, *Phyciodes phaon*, *Danaus gilippus*, and *D. plexippus*; July 21, *E. horatius* and *Strymon melinus*; July 22, *P. glaucus*; July 23, *H. cressphontes* and *A. vanillae*; July 24, *H. cressphontes* and *A. vanillae*; July 25, *P. glaucus*; July 26, *Urbanus proteus*, *Limenitis arthemis astyanax* and *A. vanillae*; July 27, *Limenitis archippus* and *A. vanillae*; July 28, *U. proteus*, *H. cressphontes*, *P. sennae*, *J. coenia* and *A. vanillae*; July 30, *U. proteus*, *E. horatius*, *Hylephila phyleus*, *P. glaucus*, *H. cressphontes*, *P. sennae*, *L. archippus* and *A. vanillae*; July 31, *E. horatius*, *Eurema nicippe*, *L. archippus*, *L. arthemis astyanax* and *A. vanillae*; Aug. 3, *U. proteus*, *E. horatius*, *P. ocola*, *E. nicippe*, *Libytheana carinenta*, and *A. vanillae*; Aug. 4, *U. proteus*, *E. horatius*, *H. phyleus*, *P. ocola*, *P. sennae*, *L. carinenta*, and *A. vanillae*; Aug. 6, *U. proteus*, *E. horatius*, *H. phyleus*, *P. glaucus*, *A. vanillae*, and *Hemaris thysbe* (Sphingidae); Aug. 7, *Ancylorhiza numitor*, *P. sennae*, *J. coenia*, *L. archippus* and *A. vanillae*; Aug. 8, *H. cressphontes*; Aug. 9, *P. polyxenes asterius*, *P. palamedes* and *H. cressphontes*; Aug. 10, *U. proteus*, *H. phyleus*, *P. sennae*, *A. vanillae* and *Hermeuptychia sosybius*; Aug. 11, *Epargyreus clarus*, *U. proteus*, *P. sennae*, *L. arthemis astyanax* and *A. vanillae*; Aug. 14, *H. phyleus*, *P. glaucus*, *P. sennae*, *Eurema lisa*, *L. carinenta*, *A. vanillae* and *H. sosybius*; Aug. 16, *P. sennae*; Aug. 17, *U. proteus*, *P. sennae*, *A. vanillae* and *Asterocampa celtis*; Aug. 18, *H. phyleus*, *A. numitor*, *P. troilus*, *P. glaucus*, *P. sennae* and *A. vanillae*; Aug. 19, *U. proteus*, *Eurytides marcellus* (2), and *A. vanillae*; Aug. 20, *H. phyleus*, *P. sennae*, *H. cressphontes*, *P. phaon* and *A. vanillae*; Aug. 21, *U. proteus*; Aug. 23, *P. palamedes*, *P. sennae* and *E. nicippe*; Aug. 25, *U. proteus*, *E. horatius*, *P. sennae*, *E. nicippe* and *A. vanillae*; Aug. 28, *P. sennae* and *A. vanillae*; Aug. 30, *U. proteus* and *A. vanillae*; Aug. 31, *U. proteus*, *P. sennae* and *A. vanillae*; Sept. 1, *U. proteus*, *E. horatius*, *H. phyleus*, *P. sennae*, *L. arthemis astyanax*, and *A. vanillae* (Tom Emmel reported seeing a *Urbanus dorantes*); Sept. 2, *U. proteus*, *H. phyleus*, *P. glaucus*, *P. troilus*, *P. palamedes*, *H. cressphontes*, *A. vanillae* and *D. plexippus*; Sept. 3, *U. proteus*, *H. phyleus*, *P. sennae*, *A. vanillae* and *D. plexippus*; Sept. 4, *P. troilus*, *P. sennae* and *A. vanillae*; Sept. 6 *H. phyleus*, *P. sennae*, *L. carinenta* and *A. vanillae*; Sept. 14, *P. palamedes* and *D. plexippus*; Sept. 15, *H. phyleus*, *P. sennae* and *A. vanillae*; Sept. 17, *P. sennae*, *E. nicippe*, *A. vanillae* and *H. sosybius*.

These records were submitted by Rick Gillmore for himself, Steve Pechgar and Mike Rich:

Dade County east of US #1 Florida City: August 14, 2010:

*Danaus gilippus*, Queen  
*Danaus plexippus*, Monarch  
*Phoebes agarithe*, Large Orange Sulphur  
*Phoebes philea*, Orange-barred Sulphur  
*Limenitis archippus*, Florida Viceroy

Broward County near Davie, FL: August 14 & 15, 2010:

*Danaus plexippus*, Monarch  
*Dryas iulia*, Julia  
*Agraulis vanillae*, Gulf Fritillary

*Heliconius charitonia*, Zebra Longwing  
*Anartia jatrophae*, White Peacock  
*Marpesia petreus*, Ruddy Dagger Wing  
*Phoebes agarithe*, Large Orange Sulphur  
*Phoebes philea*, Orange-barred Sulphur  
*Phoebes sennae*, Cloudless Sulphur  
*Heraclides cressphontes*, Giant Swallowtail  
*Battus polydamus*, Gold Rimmed Swallowtail  
*Eurema daira palmira*, Barred Sulphur  
*Leptotes cassius*, Cassius Blue  
*Junonia coenia*, Common Buckeye  
*Phyciodes tharos*, Pearl Crescent



In Fairchild Gardens we saw *Eumaeus atala* larvae and pupae, August 15, 2010.

A further report from Rick Gillmore:

"I saw many *H. charithonia* both in south Florida as well around my house and Lukas Nursery most of this summer (Oveida). This goes for both *P. philea* and *P. agarithe*.

While I was looking for host plant for the Sphinx larvae, I found a larva of *Eumorphia fasciata* (5th instar), *Ecpantheria scribonia*, and a black swallowtail (5th instars) all on plants along a small stream that I was walking past. My friend, Dale Hyman, told me he had a female *E. scribonia* female that laid 1200 ovum, recently. Bob Belmont found a fresh *Isoparce cypressi* and a fresh *Erinnyis obscura* in our new walk-in trap we placed at the Central Florida Zoo. This trap is powered by one 15 watt blacklight on top with a large steep funnel. Bob got the moths at his house, so I do not know the exact day in August, but it was probably between the 10th to the 17th of August."

Barbara Woodmansee sighted *Euphyes berryi* at Jennings State Forest, Middleburg, Clay County, on Sept. 5, 2010, confirmed by Linda Cooper from a photo. On Aug. 29 she recorded an *Automeris io* in Kanapaha Gardens near Gainesville, Alachua Co.

Jean Evoy sent this list of Butterfly Count Results for July 25, 2010 (Myakka River State Park, Sarasota East Circle)

Little Yellow 5	Zebra swallowtail 8
Monarch 2	Queen 36
Palamedes 26	Gray Hairstreak 1
Delaware skipper 4	Palmetto skipper 5
Horace's Duskywing 20	Twin spot skipper 2
Whirlabout 1	Barred sulphur 1
Fiery skipper 11	Eastern Tiger Swallowtail 5
Sachem 3	Southern Dogface 1
Clouded skipper 4	Orange barred Sulphur 1
Black swallowtail 12	Viceroy 15
Common Buckeye 2	Cloudless sulphur 8
Spicebush swallowtail 6	

The winning plants for attracting butterflies at Myakka were: *eupatorium*, *elephantopus*, and pickerel weed.

Jean's moth list for June 2 to August 30 at her home in the Peace River basin about 3 miles north of Arcadia, DeSoto County, is as follows:

*Eumaroza malachitana* 8/1, 8/16; *Eucosma robinsonana* 8/8, 8/20; *Epiblema strenuana* 8/11; *Sonia constrictana* 8/11; *Carolella bimaculana* 8/1; *Carolella sartana* 7/13; *Carolella erigeronana* 8/7; *Apoda rectilinea* 8/21; *Euclea* sp. 8/30; *Eudonia strigalis* 8/25; *Elophila icciusalis* 8/25; *Glaphyria fulminalis* 8/5, 8/22; *Pyrausta phoenicealis* 6/12; *Pyrausta acronalis* 8/27; *Hyalorista taeniolalis* 6/29; *Lineodes integra* 8/5; *Epipagis huronensis* 8/4; *Sameodes alboguttalis* 8/4; *Samea baccatalis* 8/27; *Diaphania hyalinata* 7/5; *Palpita magniferalis* 8/14, 8/23; *Herpetogramma bipunctalis* 8/27; *Syngamia florella* 8/10; *Crambus quinquareatus* 8/5; *Parapediasia decorella* 8/1; *Tallula watsoni* 6/22; *Mellilla xanthometata* 7/16; *Tornos scolopacinaris* 8/8; *Cicinnus melsheimeri* 7/15, 8/7; *Eacles imperialis* 7/12, 8/25; *Anisota virginensis* 6/10, 8/21 (caterpillar); *Automeris io* 7/6; *Antheraea polyphemus* 8/22; *Ceratomia undulosa* 7/23; *Lapara coniferarum* 8/21; *Lothoe juglandis* 6/6; *Darapsa myron* 6/7; *Datana ministra* 8/30; *Datana integerrima* 8/6; *Heterocampa subrotata* (? date); *Heterocampa guttivitta/biundata* 8/23; *Schizura ipomoeae* 8/1; *Cisthene striata* 6/9, 8/27; *Utetheisa bella* 8/18; *Holomelina rubicundaria* 8/30; *Cosmosoma myrodora*, 8/20; *Dasychira leucophaea* 8/6; *Orgyia definita* 6/22 (caterpillar); *Bleptina caradrinalis* 6/5, 8/17; *Redectis vitrea* 8/17; *Hemeroplanis scopulepes* 8/17; *Hemeroplanis habitalis* 8/1; *Phytometra ernestinana* 6/3, 7/5; *Anomis illita* 8/14; *Antiblemma concinnula* 6/4; *Panopoda rapanda* (? date); *Selenisa sueroides* 8/1, 8/22; *Metria amella* 6/3, 8/7; *Zale horrida* 6/5, 8/5; *Ptichodis vinculum* 8/4, 8/25; *Oruza albocostaliata* 6/11; *Homophoberia apicosa* 8/17; *Spragueia onagrifolia* 8/1, 8/10; *Agriopodes fallax* 6/6, 8/21; *Harrisimemna trisignata* 6/8; *Callopietria floridensis* 8/9; *Acherdoia ferraria* 8/8, 8/29; *Spodoptera ornithogalli* 6/8, 8/1; *Gonodes liquida* 8/14; *Azenia obtusa* 6/9; and *Amolita obliqua* 6/10.

**Georgia:** James K. Adams, 346 Sunset Drive SE, Calhoun, GA 30701, E-Mail: [jadams@daltonstate.edu](mailto:jadams@daltonstate.edu) (Please check out the GA leps website at: <http://www.daltonstate.edu/galeps/>).

The contributors include James Adams (JA or no notation) and Irving Finkelstein (IF). Other contributors are spelled out with the appropriate records. Most records presented here represent new or interesting records (range extensions, unusual dates, uncommon species, county records, etc.), or more complete lists for new locations/new



times of year. All dates listed below are 2010 unless otherwise specified. A large flight of the Little Sulfur, *Eurema lisa* was noted for many areas in Georgia and out of state as well (such as Ohio).

Atlanta, Fulton Co., IF residence:

**NOCTUIDAE:** *Acrionicta rubricoma*, July 24; *Diastema tigris* (COUNTY), first for north GA, June 19.

Calhoun, Gordon Co., JKA residence:

**HESPERIIDAE:** *Polites vibex*, Sept. 6 and 19. **LIMACODIDAE:** *Phobetron pithecium* (male; males uncommon at light), Aug. 19. **NOCTUIDAE:** *Cucullia asteroides*, Aug. 28; *Pyrrhia cilisca* (*adela* is a jr. synonym) (COUNTY), Sept. 20.

5 mi. ESE of Fairmount, Bartow Co., Salacoa Rd @ Salacoa Creek:

**PIERIDAE:** *Eurema lisa* (LOTS), several dates

August 13:

**HESPERIIDAE:** *Amblyscirtes aesculapias* (light trap). **EREBIDAE:** *Idia majoralis*, *Calyptra canadensis* **NOCTUIDAE:** *Papaipema polymniae* (EARLY). **DREPANIDAE:** *Eudeileia herminiata*

Rabun County, Hale Ridge Road:

June 21, Luke Theodorou:

**LYCAENIDAE:** American Copper (*Lycaena phlaes*; 2). **NYPHALIDAE:** Meadow Fritillaries (*Boloria bellona*; 7+).

**HESPERIIDAE:** Pecks Skipper (*Polites peckius*, several).

25 June 2010, Roy Brown:

**LYCAENIDAE:** American Copper (*Lycaena phlaes*). **NYPHALIDAE:** Aphrodite Fritillary (*Speyeria aphrodite*).

**HESPERIIDAE:** Peck's Skipper (*Polites peckius*).

Cohutta WMA, along the road to Lake Conasauga, Murray County, June 20, Dan Vickers:

**LYCAENIDAE:** King's Hairstreak (*Satyrus kingi*; 3 worn)

Lookout Mtn. GA, Dade Co., July 10, Bill Haley, Harold Birch, Tommie Rogers, Melanie Bergstrom, Libby Wolfe, Julia

Gregory, Nancy Williams, David Spicer and Scott Spicer:

**NYPHALIDAE:** Southern Pearly-Eye (*Enodia portlandia*, pretty far north in GA for this). **HESPERIIDAE:** Hayhurst's Scallopwing (*Staphylus hayhurstii*), Swarthy Sk. (*Nastra lherminieri*), Hobomok Sk. (*Poanes hobomok*), Lacewinged Roadside Sk. (*Amblyscirtes aesculapias*).

Catoosa-Whitfield Count, early July, Melanie Bergstrom, Harold Birch, Bill Haley, Susan Schott, David Spicer, Scott Spicer and Libby Wolfe

**LYCAENIDAE:** American Copper (*Lycaena phlaes*). **HESPERIIDAE:** Hayhurst's Scallopwing (*Staphylus hayhurstii*), Swarthy Sk. (*Nastra lherminieri*, several).

Monastery of the Holy Spirit, Fulton Co., Michael Stiteler:

July 25:

[Notes: Nectar Sources were Spurred Butterfly Pea, Prunella, Mountain Mint, Lantana, Butterfly Bush.]

**NYPHALIDAE:** *Enodia portlandia*, *Enodia creola*. **HESPERIIDAE:** *Nastra lherminieri*, *Polites vibex*, *Amblyscirtes aesculapius*, *Amblyscirtes belli* (UNCOMMON, 2 specimens).

July 28:

**NYPHALIDAE:** *Satyrodes Appalachia*, *Cercyonis pegala*. **HESPERIIDAE:** *Nastra lherminieri*, *Polites vibex*, *Problema byssus* (6 adults).

Hwy. 193 near intersection with Hog Jowl Rd., Walker Co., August 3, Jim Hengeveld:

**NYPHALIDAE:** *Enodia portlandia*.

Ohoopie Dunes Tract 3 (Hall's Bridge Tract), 8 mi WSW of Swainsboro, Emanuel Co., Sept. 3-6, JKA & IF:

**SATURNIIDAE:** *Dryocampa rubicunda*, *Anisota stigma*, *Actias luna*, *Aniharaea polyphemus*. **SPHINGIDAE:** *Ceratomia catalpae*, *Isoparce cupressi* (COUNTY), *Lapara coniferarum*, *Paonias excaecatus*, *Enyo lugubris*, *Darapsa myron*, *D. choerilus*, *Xylophanes tersa*. **NOTODONTIDAE:** *Datana* spp. (2), *Hyperaeschra georgica* (white HW), *Peridea angulosa*, *Heterocampa obliqua*, *H. umbrata*, *Lochmaeus manteo*, *Nadata gibbosa*, *Hyparpax aurora* (several, several forms – always GORGEOUS), *Schizura ipomoeae*, *Schizura* sp. (undescribed). **EREBIDAE:** *Cisthene packardii*, *C. subjecta*, *Hypoprepia miniata*, *H. fucosa*, *Virbia laeta*, *Hypercompe scribonia*, *Halysidota tessellaris*, *Leucanopsis longa*, *Idia gopheri* (2; four for the entire weekend, see tract 4, below; UNCOMMON), *Idia americalis*, *I. aemula*, *I. rotundalis*, *Zanclognatha minoralis*, *Z. lituralis*, *Z. nr. lituralis*, *Z. ochreipennis*, *Bleptina caradrinalis*, *Renia fraternalis*, *R. factiosalis*, *R. salusalis*, *Tetanolita mynesalis*, *Metalectra tantillus*, *Hypena scabra*, *Phyprosopus callitrichoides*, *Hypsoropha hormos*, *Phytometra rhodarialis*, *Hemeroplanis scopulepes*, *Hemeroplanis* sp. (undescribed), *Hyperstrotia pervertens*, *H. nana*, *Cutina distincta*, *C. aluticolar*, *C. arcuata*, *Arugisa lutea* (formerly *latiorella*), *Argyrostroma erasa*, *A. sylvanum*, *Lesmone hinna*, *L. detrahens*, *Drasteria grandirena* (several, most I've seen in one trapping period), *Neadysgonia smithii/telma*, *Panopoda rufimargo*, *Parallelia*



*bistriaris*, *Mocis latipes*, *Metria amella*, *Allotria elonympha*, *Catocala lacrymosa*. **NOLIDAE**: *Meganola phylla*. **EUTELIIDAE**: *Paectes abrostoloides*. **NOCTUIDAE**: *Enigmogramma basigera*, *Augtographa precatonis*, *Pseudoplusia includens*, *Ctenoplusia oxygramma*, *Marimatha nigrofimbria*, *Acronicta afflicta*, *A. brumosa*, *A. vinnula*, *A. tritona*, *A. inclara*, *Polygrammate hebraeicum*, *Cucullia alfarata* (COUNTY), *Helicoverpa zea*, *Schinia fuller* (several), *S. sordida*, *S. scissoides*, *S. siren*, *S. rivulosa*, *S. trifascia*, *Condica confederata* (FRESH), *C. vecors*, *C. sutor*, *C. videns*, *Galgula partita*, *Nedra ramulosa*, *Spodoptera ornithogalli*, *S. frugiperda*, *S. eridania*, *S. exigua*, *Mythimna unipuncta*, *Leucania multilinea*, *L. linia*, *Anicla infecta*, *Agrotis ipsilon*. **GEOMETRIDAE**: *Macaria aemulataria*, *M. bicolorata*, *M. transitaria*, *M. distribuaria*, *Digrammia eremiata*, *Eumacaria madopata*, *Fernaldella georgiana* (third brood in full swing, both during day and at lights), *Glenoides texanaria*, *Hypomecis umbrosaria*, *Iridopsis defectaria*, *I. larvaria*, *I. vellivolata*, *Melanolophia canadaria*, *Epimecis hortaria*, *Hypagyrtis unipunctata*, *H. esther*, *Euchlaena madusaria*, *E. umbrosaria*, *Plagodis phlogosaria*, *P. fervidaria*, *Besma quercivoraria*, *Eutrapela clemataria*, *Prochoerodes linearis*, *Nemoria bifilata* (COUNTY), *Synchlora frondaria*, *Cyclophora packardi*, *C. myrtaria*, *Pleuroprucha insulsaria*, *Costaconvexa centrostrigaria*, *Horisme intestinata*. **LIMACODIDAE**: *Isochaetes beutenmulleri*, *Apoda y-inversum*, *Prolimacodes badia*. **PYRALIDAE/CRAMBIDAE** (sorry about the lack of phylogenetic arrangement, did this list in a hurry!): *Desmia funeralis*, *Dioryctria taedivorella*, *D. amatella*, *Epipagis huronalis*, *Macala zelleri*, *Lepidomys irrenosa* (abundant!!), *Hymenia perspectalis*, *Pyrausta acronialis*, *P. laticlavata*, *Palpita magniferalis*, *Nomophila nearctica*, *Tallula watsoni*, *Ategumia ebulealis*. **TORTRICIDAE**: *Eucosma robinsonana*, *Cydia toreuta*. **OECOPHORIDAE**: *Antaeotricha leucilliana*, *Inga sparsiciliella*, *Inga cretacea*. **GELECHIIDAE**: *Aroga sp.* **ATTEVIDAE**: *Atteva punctella*.

Ohoopsee Dunes Tract 4 (Covena Tract along Stagecoach Rd.), 9 mi SW of Swainsboro, Emanuel Co., Sept. 3-6, JKA & IF:

**SATURNIIDAE**: *Dryocampa rubicunda*, *Anisota stigma*, *Callosamia angulifera*, *Actias luna*. **SPHINGIDAE**: *Ceratomia catalpae*, *Lapara coniferarum*, *Paonias myops*. **NOTODONTIDAE**: *Datana spp.* (2), *Hyperaeschra georgica* (white HW), *Peridea angulosa*, *Heterocampa obliqua*, *Lochmaeus manteo*, *Nadata gibbosa*, *Schizura ipomoeae*, *Schizura sp.* (undescribed). **EREBIDAE**: *Cisthene subjecta*, *Hypoprepia fucosa*, *Virbia sp.* (undescribed and STATE), *Halysidota tessellaris*, *Leucanopsis longa*, *Idia americalis*, *I. forbesi*, *I. rotundalis*, *I. gopheri* (2 specimens here, also two on tract 3; UNCOMMON), *Tetanolia mynesalis*, *T. floridana*, *Lascoria ambigua*, *Renia fraternalis*, *Metalectra discalis*, *Hemeroplanis sp.* (undescribed and abundant!), *Hypena scabra*, *Hyporophia hormos*, *Phyprosopus callitrichoides*, *Phytometra rhodaria*, *Nigetia formosalis*, *Arugisa lutea* (formerly *latiella*), *Hyperstrotia nana*, *Gabara sp.* (undescribed and STATE), *Pangrapta decoralis*, *Lesmone detrahens*, *Argyrostroma anilis*, *A. sylvanum*, *Panopoda rufimargo*, *Mocis marcida*, *Caenurgia chloropha*, *Drasteria grandirena* (see comment under Tract 3, above), *Zale lunata*, *Allotria elonympha*. **NOCTUIDAE**: *Pseudoplusia includens*, *Augtographa precatonis*, *Marimatha nigrofimbria*, *Lithacodia muscosa*, *Ponomotia semiflava*, *Acronicta brumosa*, *A. afflicta*, *Condica confederata*, *C. videns*, *Phosphila miseloides*, *Helicoverpa zea*, *Heliothis virescens*, *Schinia arefacta* (still only location in GEORGIA for this species), *S. sordida*, *S. scissoides*, *S. trifascia*, *Elaphria nr. agrotina*, *E. versicolor*, *Galgula partita*, *Spodoptera frugiperda*, *Orthodes fidelis*, *Mythimna unipuncta*, *Leucania extincta*, *Agrotis ipsilon*. **GEOMETRIDAE**: *Macaria bicolorata*, *M. transitaria*, *Digrammia eremiata*, *Glena plumosaria*, *Anavitrinella pampinaria*, *Iridopsis vellivolata*, *Hypagyrtis unipunctata*, *Tornos scolopacinaris*, *Besma quercivoraria*, *Synchlora frondaria*, *Chlorochlamys chloroleucaria*, *Scopula limboundata*, *Idaea taturata*, *Idaea nr. peralbata*, *Leptostatles laevitaria* (UNCOMMON in GA), *Lophosis labeculata*, *Disclisoprocta stellata*. **PYRALIDAE/CRAMBIDAE**: (sorry about the lack of phylogenetic arrangement, did this list in a hurry!): *Desmia funeralis*, *D. maculalis*, *Dioryctria taedivorella*, *D. amatella*, *D. clarioralis*, *Epipagis huronalis*, *Diacme elealis*, *Lepidomys irrenosa* (abundant!!), *Parachma ochracealis*, *Prionapteryx achatina*, *Hymenia perspectalis*, *Pyrausta bicoloralis*, *P. acronialis*, *P. laticlavata*, *Dolichomia olinalis*, *Palpita magniferalis*, *Palpita sp.*, *Nomophila nearctica*, *Peoria sp.* **LIMACODIDAE**: *Euclea delphinii*. **TORTRICIDAE**: *Choristoneura rosaceana*. **OECOPHORIDAE**: *Antaeotricha leucilliana*. **COSMOPTERIGIDAE**: *Stigmatophora sexnotella* (COUNTY).

10 miles west of Americus, Sumter Co., July 17, Saunders Pinckard:

**HESPERIIDAE**: Lace-Winged Sk. (*Amblyscirtes aesculapius*), Broad-Winged Sk. (*Poanes viator*).

Twiggs Co., July 6, Kenneth Waldrep and Terry Johnson:

**EREBIDAE**: *Catocala carrissima* (COUNTY).

Several areas along the coast, mainly Glynn and Camden counties. Sept. 4-6, Pierre Howard and Dan Vickers:

Check out Dan's photos at <http://www.flickr.com/photos/dfvickers/>

**PAPILIONIDAE**: Zebra Swallowtail, Black Swallowtail, Eastern Tiger Swallowtail, Spicebush Swallowtail, Palamedes Swallowtail. **PIERIDAE**: Great Southern White, Cloudless Sulphur, Sleepy Orange, Barred Yellow, Little Yellow. **LYCAENIDAE**: Great Purple Hairstreak, Gray Hairstreak, Red-banded Hairstreak, Eastern Pygmy-Blue. **NYMPHALIDAE**: Gulf Fritillary, Pearl Crescent, Common Buckeye, Viceroy, Tawny Emperor, Monarch. **HESPERIIDAE**: Long-tailed Skipper, Silver-spotted Skipper, Southern Cloudywing, Confused Cloudywing, Horace's Duskywing, Zarucco Duskywing, Common Checkered-Skipper, Clouded Skipper, Least Skipper, Southern Skipperling, Fiery Skipper, Tawny-edged Skipper, Crossline Skipper, Whirlabout, Southern Broken-Dash, Little Glassywing, Delaware Skipper, Byssus Skipper, Rare Skipper, Broad-winged Skipper, Dion Skipper, Dukes' Skipper, Dun Skipper, Lace-winged Roadside-Skipper, Twin-spot Skipper, Ocala Skipper, Salt Marsh Skipper.



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**North Carolina:** Steve Hall, North Carolina Natural Heritage Program, Div. of Parks & Recreation, 1615 MSC, Raleigh, NC 27699-1615, E-Mail: [Stephen.Hall@ncmail.net](mailto:Stephen.Hall@ncmail.net)

Steve sends in the following report:

#### NOCTUIDAE (ARCTIIDAE) -

*Arctia caja*: Collected on August 9 by Bo Sullivan and Bruce Dixon from a summit in Watuaga County at approximately 4,900 ft (STATE). This spectacular northern moth appears not to have been previously recorded south of New York in the East and joins the list of major northern disjuncts which are still managing to hang on at high elevations in the Southern Appalachians. Given the warming and increased droughts expected due to global climate change, their continued existence anywhere in the South is increasingly uncertain.



*Arctia caja*

*Grammia anna*: Collected on June 10 and 11 by Steve Hall and Bo Sullivan at several sites in the Uwharrie Mountains region in Montgomery County (COUNTY). This species was previously known in North Carolina from the mountains, although Hall collected one at Weymouth Woods in the Sandhills on June 13, 1996.

The following selected moth records were submitted by Parker Backstrom, all from observations made at outdoor lighting at gas stations/truck stops along the Chatham-Lee County line. The presence of a nearby river bottom, along with outcrops of diabase, a rock formation supporting basophilic plant species, may account for the concentration of interesting moths in this area.

#### SATURNIIDAE -

*Sphingicampa bicolor*: Photographed on July 31 and August 8 in Chatham County (COUNTY) and on August 18 in Lee County (COUNTY) from the same site where Parker observed *S. bisecta* in 2009.

#### NOTODONTIDAE -

*Heterocampa subrotata*: Photographed on August 12 in Lee County (COUNTY). Records for this species are fairly sparse, although its host plant – hackberries and sugarberries – are fairly common.

*Schizura* n. sp.: One individual was photographed on July 17 at a gas station in Chatham County (COUNTY). This species appears to be quite rare in North Carolina but has previously been collected in Wake County in the eastern Piedmont as well as several locations in the Outer Coastal Plain.

The following butterfly records were submitted by Harry LeGrand. Place names refer to counties unless otherwise stated, and records are not new county reports unless indicated. Records are all from June - August 2010. The "climatological summer" (June through August) was the hottest on record all across the state. Rainfall was about normal to below normal, with it being quite dry in some areas in August. Southern migrants were in poor numbers, except for a push of *Pyrisitia lisa* in late July and August into the Piedmont and mountains (from the west?). All three *Vanessa* species were in poor numbers, with *V. virginiensis* being especially scarce. Also, the hot conditions "sped up" the second broods of most skippers, and flights were typically about two weeks ahead of schedule.

#### PAPILIONIDAE -

*Papilio cressphontes*: Following up on a first Buncombe record in late May, Doug Johnston observed one in his yard in a different part of the county on August 30. Perhaps there is a tiny breeding population in the county, but this species is very rare in the state away from maritime forests and thickets.

#### PIERIDAE -

*Pontia protodice*: This seriously declining species was found (and documented by photos) only twice – one in the Sandhills region in Richmond on August 20 (John Flannery) and one remarkably high in elevation just off the Blue Ridge Parkway in Haywood on August 8 (Marty and Dave Kastner party).

#### LYCAENIDAE -



*Satyrrium titus*: Only the third county record for the mountains was the observation of four individuals on June 10, and again on June 18, at Sandy Mush Game Land in Buncombe (COUNTY) by Gail Lankford.

**NYMPHALIDAE -**

*Heliconius charithonia*: One seen well in Davie (COUNTY) on July 2 by Phil Crisp was a very rare stray, if not an escaped individual, as this was the only report for the state.

*Speyeria diana*: Along the eastern edge of the range was a male seen on July 30 at Baker's Mountain in Catawba (COUNTY) by David Campbell.

*Euphydryas phaeton*: This scarce and local species was reported only twice, with singles seen in Madison on June 10 by Edmund Taylor and on the same date in Buncombe by Gail Lankford.

*Polygonia faunus smythi*: Gail Lankford saw one in her wooded yard (!) north of Asheville in Buncombe on August 23, for a rare record away from Mount Mitchell State Park.

*Danaus gilippus*: Ed Corey and John Taggart had a state one-day record count of 31 adults in the Fort Fisher State Recreation Area in New Hanover, on August 28. This area is a known breeding site, though populations are highly variable from year to year.

**HESPERIIDAE -**

*Polites peckius*: Along the eastern edge of the species' range was one seen by Richard Stickney in Forsyth on August 2.

*Polites vibex*: Slightly north of the range was a female photographed by Ali Iyoob at Falls Lake in Wake, on July 11.

*Euphyes dion*: A notable range extension to the northwest was one photographed by Simon Thompson in the Piedmont foothills of Polk (COUNTY), on August 8. This is the state's first record for the upper Piedmont, though it nicely fills a large gap between Mecklenburg in North Carolina and Oconee in South Carolina.

*Euphyes dukesi dukesi*: John Fussell had a one-site count of about 200 adults in Craven on August 25. This quadruples the previous state one-day count of this scarce and local species. The habitat is a swampy hardwood forest with abundant *Carex hyalinolepis*, the local hostplant.

*Euphyes bimacula*: The state's only report was from a colony in the mountains in Alleghany, where Harry LeGrand, Derb Carter, and party counted six on June 12.

*Amblyscirtes reversa*: Salman Abdulali photographed one at an arboretum in Greenville in Pitt (COUNTY) on June 29; the species is quite scarce in the northern half of the state's Coastal Plain.

*Calpodus ethlius*: Quite a surprise were two records from Wake, near the inner edge of the range: single adults photographed by Ali Iyoob near Falls Lake on July 19 and by John Gerwin in his Raleigh yard on August 5. More expected were two adults seen on Roanoke Island in Dare on August 3 (Salman Abdulali) and one adult at Newport in Carteret on August 13 (Bob Cavanaugh).

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**Tennessee:** John Hyatt, 5336 Foxfire Place, Kingsport, TN 37664, E-Mail: [jkshyatt@aol.com](mailto:jkshyatt@aol.com)

John reports that a quick look at the coastal GA swamps by H. Grisham and J. Hyatt in mid-September revealed very low levels of skippers and butterflies generally; one or two *E. dion* and some *P. viator* were the only interesting things seen anywhere along the coast. Conditions very dry in southern coastal GA.

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**Virginia:** Harry Pavulaan, 494 Fillmore Street, Herndon, VA 22070, E-Mail: [pavulaan@aol.com](mailto:pavulaan@aol.com)

Harry sends in the following report for Virginia:

**BUTTERFLIES:** (HP=Harry Pavulaan)

**PAPILIONIDAE -**

*Battus philenor*: Rockingham Co., areas west of Briery Branch, esp. Slate Springs Mtn., 7/15/10, many thousands swarming along roadsides on all available nectar sources (HP).



*Heraclides cressphontes*: Loudoun Co., Leesburg, Edwards Landing Town Park, 8/6/10, two approx. 1/4-grown larvae found on young Wafer Ash (*Ptelea trifoliata*) tree. Also, Leesburg, 8/10/10, four half-grown larvae found on two potted Rue (*Ruta graveolens*) plants on my front porch (all HP).

*Pterourus palamedes*: Fairfax Co., Herndon, 8/11/09, female collected by Mona Miller in her yard, no doubt a stray from the coast. York Co., Water Country USA (near Williamsburg), 8/4/10, one nectaring on Butterfly Bush (*Buddleia* sp.) (HP).

*Pterourus appalachiensis*: Frederick Co., Gore, Old Knob, 5/27/10 (HP).

#### PIERIDAE -

*Anthocharis midea annickae*: Frederick Co., Gore, Old Knob summit, 4/6/10, common in woodlands in association with small woodland cresses (HP).

*Eurema nicippe*: Loudoun Co., Leesburg, 8/20/10, adults common in open field with *Cassia marilandica* (HP).

#### LYCAENIDAE -

*Harkenclenus titus*: Frederick Co. [COUNTY record], Gore, Old Knob powerline, 6/23/10, male feeding on Orange Butterflyweed (*Asclepias tuberosa*) (HP).

*Incisalia henrici henrici*: Frederick Co., Gore, Old Knob summit, 4/6/10, colony site in association with Redbud (*Cercis canadensis*), adults very active in early afternoon (HP).

*Mitoura gryneus gryneus*: Loudoun Co., Leesburg, several sites, 8/15/10, 8/20/10, freshly-emerged third brood adults common on Red Cedar (*Juniperus virginiana*) (HP). Typical spring and summer broods flew at same location in late April/early May and late June/early July.

*Celastrina lucia*: Fauquier Co., Blue Mountain, George Thompson WMA, 4/11/10, colony site located with females ovipositing on Black Cherry (*Prunus serotina*) flower buds (HP - 2 specimens collected). Frederick Co., Gore, Old Knob summit, 4/6/10 (state EARLY record), adults common in woodlands in association with Black Cherry (*Prunus serotina*) in vicinity of large ant mounds (HP - 7 specimens collected).

*Celastrina neglecta* spring form: Fauquier Co., Blue Mountain, George Thompson WMA, 4/11/10; spring form *neglecta* has completely replaced *C. ladon* at this location over the past several years (H.P.- 2 specimens collected). Loudoun Co., Leesburg, 4/11/10, females ovipositing on Cherry-leaved Viburnum (*Viburnum prunifolium*), both butterfly and host common in woodlands (HP).

*Celastrina neglectamajor*: Fauquier Co., Blue Mountain, George Thompson WMA, 4/11/10 (state EARLY record) (HP - 2 specimens collected).

#### NYMPHALIDAE -

*Libytheana bachmanni*: Fauquier Co., Markham, George Thompson WMA, 6/21/10, 10+ adults counted (unusually high number for area), all freshly-emerged (HP).

*Phyciodes tharos*: Frederick Co., Gore, 7/1/10, 5 females observed, 2 netted for oviposition, eggs obtained and larvae reared on New England Aster (*Aster novaeanglicae*), 106 adults emerged in 32 - 39 days after egg batch oviposition, all males bearing black-tipped antennae, no variation in antennal color (HP). This repeats and validates similar rearing experiment in 2009, in which all black-antenna males were produced.

*Phyciodes cocyta* group (exact placement of taxon undecided): Frederick Co., Gore, Old Knob summit, 5/30/10, one female (orange-tipped antennae) collected (no *P. tharos* present), eggs obtained and larvae reared on New England Aster (*Aster novaeanglicae*), 110 adults emerged in 41-52 days after egg batch oviposition, all males bearing orange-tipped antennae, no variation in antennal color (HP). This repeats and validates similar rearing experiment in 2009, in which all orange-antenna males were produced.

*Cercyonis pegala* near-*maritima*: Frederick Co., Gore, Old Knob summit, 6/23/10, 7/1/10, 3 captured mated match southern New England type very closely (HP).

*Chlosyne nycteis*: Loudoun Co., Leesburg, Balls Bluff Regional Park, 9/1/10, several fresh males (third brood) observed in woodlands, one female observed ovipositing on Wingstem (*Actinomeris alternifolia*). Third brood is unusual in this region, species is normally bivoltine (HP).

#### HESPERIIDAE -



*Urbanus proteus*: Loudoun Co., Leesburg, 8/6/10, male individual nectaring on Buddleia (HP).

*Amblyscirtes vialis*: Frederick Co., Gore, Old Knob summit, 7/1/10, 2 netted (1 collected), fresh condition indicating new brood just out (HP).

MOTHS:

**SPHINGIDAE -**

*Ceratomia undulosa*: Loudoun Co., Leesburg, larva found and reared on Privet (*Ligustrum vulgare*), adult emerged 8/2/10 (HP).

**SATURNIDAE -**

*Eacles imperialis*: York Co., Water Country USA (near Williamsburg), 8/4/10, female found alive, floating in wave pool (HP).

**NOCTUIDAE -**

*Noctua pronuba*: Loudoun Co., Leesburg: 8/18/07 (William Grooms); 6/15/08, two adults disturbed on my lawn while mowing (HP); 8/29/10, adult at porch light (HP).

*Catocala abbriana*: Loudoun Co., Ashburn, 11/5/08 (William Grooms).

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The Southern Lepidopterists' News is published four times annually. Membership dues are \$20.00 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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